

AlpBC Alpine Building Culture

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Alpine Building Culture - AlpBC Final Publication

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AlpBC - Alpine Building Culture

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Priority axis: Competitiveness and Attractiveness of the Alpine Space
Aim: Capitalising knowledge on Alpine Building Culture by performing regional smart planning and consultancy strategies for sustainable development and closed loop economies in the Alpine Space
www.alpbc.eu

Alpine Building Culture

AlpBC Final Publication

Project in the Alpine Space Programme 2012-15
Cofinanced by the European Regional Development Fund

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Posoški razvojni center, Soca Valley Development Centre (SI)



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COA Energia Finaosta S.p.A. (IT)



Regione Veneto,
Direzione urbanistica e paesaggio (IT)



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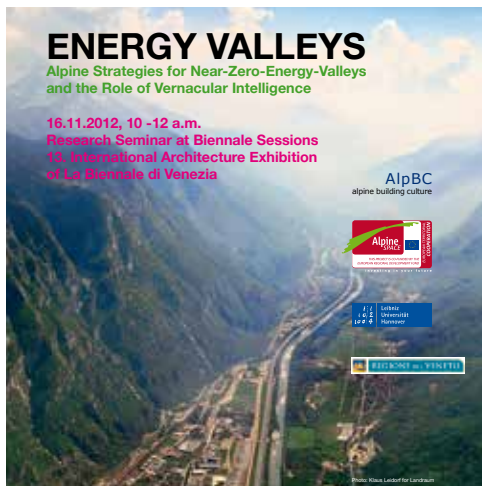


Regione Piemonte
Direzione Programmazione Strategica (IT)



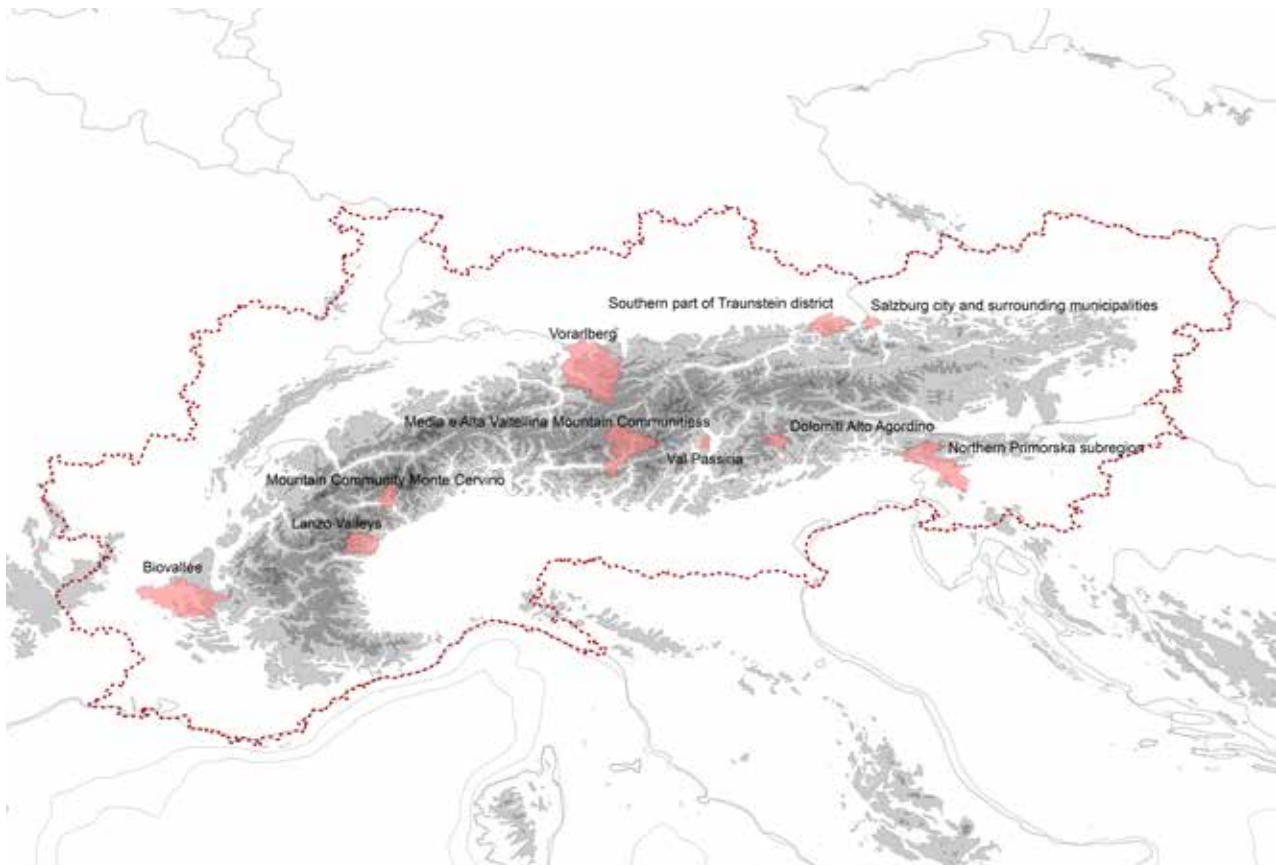
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Poster Energy Valleys event 2012

Image: Leibniz Universität Hannover, Chair for Regional Architecture and Urban Planning; and Veneto Region, Urban and Landscape Planning Department



AlpBC pilot areas

Map: Research Studios Austria – Studio iSPACE, and Chair for Regional Architecture and Urban Planning, Leibniz Universität Hannover.
Data sources: USGS-GTOPO30 DEM, Alpine Convention - Perimeter GIS data, Alpine Space Programme - Programme area, EuroGeographics for the administrative boundaries - NUTS boundaries, ESRI background data, Country, AlpHouse project, Region boundaries

Introduction

Regional Building Culture for Sustainable Development. The Idea of AlpBC

by Jörg Schröder, Sarah Hartmann, Lisa Leitgeb (Leibniz Universität Hannover, DE)

With the project AlpBC Alpine Building Culture for the activities of urban/rural planning and building construction in the Alps a significant overall framework and precise relevant points of interventions have been laid out. The general idea of connecting the different, often contradictory parts of planning and construction activities as part of common shared visions of Alpine regions, addressed firsthand an aesthetic and cultural task: to value not only newly used existing buildings and new architecture as important expressions of cultural identity, but also to value the process of decision and realisation of plans and buildings in itself as one of the important common activities of Alpine municipalities, valleys and regions.

Additionally this is one of the fields where local and regional powers still are significant; nevertheless AlpBC also formulated advice to adapt higher-level European and national frameworks toward specific needs of the Alps in planning and building.

The extended idea of AlpBC is to understand this cultural and aesthetic valorization and possibility to take decisions in planning and building as factor of very high ecological and economical potential for the sustainable future of the Alps, connected with needs and desires for living and working, with the diversity of valleys, with local products and materials, and local chains of energy, knowledge and incomes. In this understanding planning and building activities - even if until now not prominently addressed, researched or supported - can become one of the driving forces to enhance territorial sustainability and development.

In this regard, the concept of Energy Valleys as it was an intelligent strategic development perspective for supramunicipal associates, as presented at the conference 2012 at the International Architecture Exhibiton of La Biennale di Venezia by Veneto Region and Leibniz Universität Hanno-

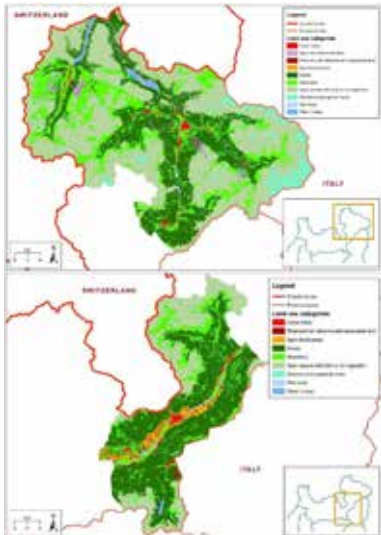
ver for AlpBC, in the project effectively has been the “file rouge” for all activities, extending the notion of the important energy aspects in planning and building activities to Energy Valleys as intelligent territorial strategies that relate strongly to Alpine Building Culture for shaping the built environment in the Alps.

Following this storyline, the main task of AlpBC has been an overall comprehensive approach towards a shared vision of Building Culture, in the Energy Valleys intermunicipal dimension, that connects regional and municipal planning with private construction needs and civil society involvement, and with the fostering of SMEs competences in architecture, planning and crafts. Energy strategies, that until now are conceived and run as separate policies, administration and entrepreneurship fields and regional closed loop economies in the construction sector (in regard to local materials, specialized craftsmanship and architectural knowledge and abilities) have been thematically included issues. With this thematic inclusion AlpBC also opened up a renewed role of building culture in territorial development in the different levels (regional, intermunicipal, municipal), and in the comprehensive approaches of ecological, economic and socio-cultural perspectives and related visions in the regions.

The actions of AlpBC in the pilot areas for intermunicipal cooperation have been based on a transferable analysis of the situation of the built environment, of planning processes, of the outset for architecture and crafts SMEs, and of the different inherent potentials. An intense stakeholder involvement and inclusion of the results of other development projects in the different pilot areas further strengthened the value and impact perspectives of the AlpBC actions. With a shared framework, a transferable catalogue of good practices and of measures (tools, processual inventions, guidelines),

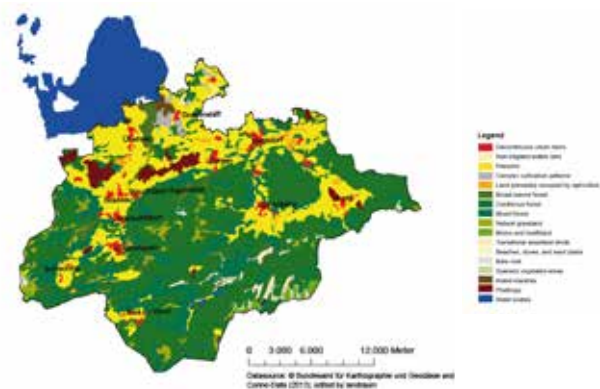
Pilot area Valtellina Valleys, Lombardy (IT)

Map and Images: ERSAF Regional Agency for Services to Agriculture and Forestry, Integrated Actions for Mountains and Applied Research Division, Lombardy Region



Pilot area Achenal, Bayern (DE)

Map and Images: Leibniz Universität Hannover, Chair for Regional Architecture and Urban Planning



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the results of this intermunicipal approach are accessible for other constellations in the Alps that deal with the need and the complexity of intermunicipal cooperation and the definition of common objectives, strategies and measures. With increased challenges related to overall trends of demographic change, climate change, economic imbalances, ecc. and with locally necessary collaboration of small communities in the scale of valleys, one of the main issues for effectively shaping Alpine futures is addressed by these AlpBC actions.

As contact points of regional activities of the cooperating partners, the common frame of network activities of AlpHouse centers provided during and beyond the project AlpBC the basis for strengthening the interfaces of competences between architecture, planning, crafts, local administrations and the citizens of the pilot areas. As effective tool of knowledge transfer, information and education, the AlpHouse centers have been implemented in the regions of Traunstein, Salzburg, Vorarlberg, Valle d'Aosta, Bozen-Südtirol and Veneto; the action leading project partners HWK and TIS installed a homepage platform also for further collaboration.

With the series of regional symposia the results of AlpBC have been spread to larger regional and national contexts. The different symposia addressed the project's overall objectives, frameworks and tools from specific regional perspectives and presented the regional work of AlpBC. This final publication is conceived as a comprehensive collection of policy-related statements, that for each region formulate advice for further programmes and policies related to urban/rural energy planning and building construction, coordinated by the AlpBC project-wide frame of objectives and measures catalogue. Moreover it collects the core statements of the partners, as presented and communicated at the symposia.

Intermunicipal Pilot Areas

The selected pilot areas for reference and measure implementation offer an actualized insight of Alpine spatial situations and of the status of planning and construction activities, strongly related to economic and social contexts of the different regions.

Lanzo Valleys (IT)

The pilot area in Piedmont region - Val di Viù, Val di Ala, Val Grande (together 16 municipalities, 14.500 inhabitants, 630 km²) shows a "cross-section" of very different influences, extending from the Torino metropolitan system and the recent Corona Verde project to peripheral mountain situations. The rich heritage in settlement and landscape has been identified as potential for a connected and overall development perspective along the valleys.

Valtellina Valleys (IT)

The pilot area in Lombardy region, Middle and Upper Valtellina Valleys (18 municipalities, 53.000 inhabitants, 1.347 km²) is characterized as typical set of Alpine fringe valleys, in this case feeding Adda river, in a peripheral situation to the urban agglomerations of the plains around Milan. The natural and cultural heritage, local materials (stone e.g.), tourism and agriculture form the potentials for the development of the valleys; actually low settlement influences, abandonment of houses and agriculture in the peripheral parts and large protected areas constitute threats and options.

Marmore Valley (IT)

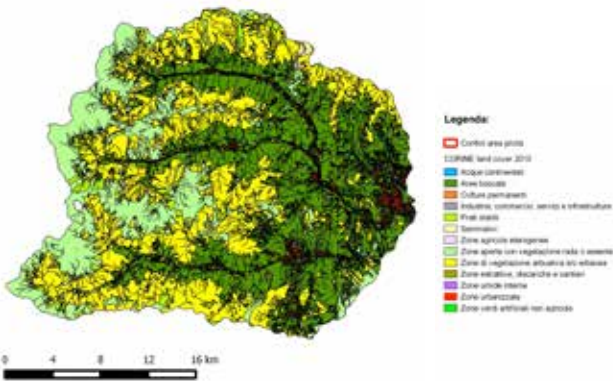
The selected pilot area for Aosta is the Mountain Community Monte Cervino (12 municipalities, 17.000 inhabitants, 335 km²) along the Marmore; it shows the characteristic setup of alpine landscapes in different heights and connected settlement patterns. With the nearby Matterhorn and Monte Rosa, and the significant heritage values, also the touristic and agricultural development perspectives can be addressed. The valley can be understood as typical for rural situations in Aosta.

Dolomiti Alto Agordino (IT)

The pilot area in Veneto region, Dolomiti Alto Agordino (5 municipalities, 5.000 inhabitants, 252 km²) is in a peripheral situation in relation to the urbanized plains around Venezia,

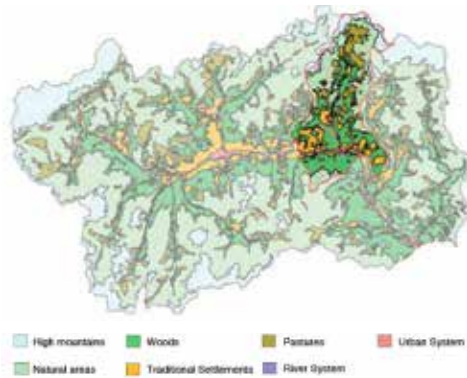
Pilot area Lanzo Valleys, Piemonte (IT)

Map and Images: Piemonte Region, Direction for Environment,
Governance and Protection of Territory



Pilot area Marmore Valley, Aosta (IT)

Map and Images: COA energia Service, Finaosta S.p.A. Aosta Valley
Regional Financing Company



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Padova and Treviso, but also to the province capital Belluno. The pilot area is the core of the Dolomiti UNESCO Heritage Site and with its cultural and natural heritage assets representative of the core values of the Alpine territory. It has a particularly high nature value, the majority of its surface is a Natura-2000 area. The Building stock is characterized by a majority of historical buildings (built before 1945) as well as of secondary houses. The economy is based on tourism, minor agricultural activities are still present.

Passiria Valley (IT)

Adjoining to the Meran basin and near to the Texel group natural park, the pilot area Passiria Valley (3 municipalities, 9.000 inhabitants, 313 km²) in South Tyrol can be described by the typical layers from valley bottoms with settlements towards woodland and grasslands on the slopes; the valley has high potentials for renewable energies. The settlement patterns of concentrated and disperse houses, with the traditional Blockbau, Ständerbau, Bundwerk construction systems, are facing different touristic and urban influences, that already lead to increased settlement areas.

Soca Valley (SL)

The pilot area in Slovenia, Northern Primorska Subregion (5 municipalities, 35.000 inhabitants, 1368 km²) is a remote area in the northwest of the country characterized by different landscapes from the narrow valley bottoms of Soca and Idrijca valleys (with towns and villages) up to the first heights of Alpine mountains. Mediterranean influences in climate and culture can be found in landscape and settlement heritage, already used for activities in tourism and agriculture; a tradition of constructions in wood can be further developed for actual building.

Bregenzerwald (AT)

The pilot area in Vorarlberg is Bregenzerwald (8 municipalities, 9.500 inhabitants, 154 km²) in the first row of valleys; connected to an important development axis as Rheintal Bregenzerwald shows different urban and rural influences and is characterized by a renewed local architecture, by innovative crafts and wood construction economy, that influences strongly all the construction activities.

Salzburg City Region (AT)

With a focus on the Salzburg City Region (5 municipalities, 228.000 inhabitants, 65 km²) as example for an Alpine

city and the connections to its surroundings, the pilot area clearly addresses the themes of further settlement development and the proposals of “inner development” within the built-up areas, connected to mobility, energy and open space issues.

Achental (DE)

In collaboration with the intermunicipal initiative Ökomodell Achental and the District of Traunstein, for an exemplary prealpine situation in Bavaria influenced by the metropolitan region Munich and by the development axis as Munich-Salzburg, but also built on high natural and cultural values, the pilot area Achental (12 municipalities, 51.000 inhabitants, 581 km²) clearly evidences the different challenges for the municipalities, due to their height position and distance to the axis, and between different development strategies of the rural municipalities.

Drôme Valley (FR)

The pilot area Biovallée (102 municipalities, 48.000 inhabitants, 2110 km²) as new regional cooperation along the Drôme river can be characterized as “cross-section” between the plains (river Rhône), the urban influences of the axis Lyon-Marseille, by prealpine situations and areas up to the high Alpine mountains, with distinct natural and cultural values; 18 of the municipalities are part of the Natural Regional Parc of Vercors. Biovallée has become a national brand and best practice for sustainable rural development in France.

Regional Building Culture - A Collection

With the selected core topics and activities as illustrated in the contributions of the project partners for this final publication, the effective influence of the projects in the pilot areas is evaluated and reflected towards an impact for the whole related region; as well as offered for further transfer. The range of activities includes strategies/programmes, guidelines/tools and manifestations/stakeholders involvement formats that have been developed for Building Culture as important part and possible driver of territorial development. The contributions are focussing on the theme of Building Culture and the different roles it can play firsthand in a regional focus for the qualities of the built environment, the sustainable setup of the future of construction economies and the governance-

Pilot area Passiria Valley, Bolzano-Sudtiroil (IT)

Map and Images: Tis Techno Innovation South Tyrol



Pilot area Salzburg City Region, Salzburg (AT)

Map and Images: Research Studios Austria – Studio iSPACE



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oriented enhanced approaches in planning and architecture related to Building Culture; frameworks and tools for the contribution of Building Culture to sustainable spatial development in Alps are described and discussed. The contributions show clearly transnational value of AlpBC; offered as transfer of approaches because of the very different legal, political, economic, social and last but not least architecture and territory related situations of the involved regions. This specific character of transfer for the issues of Building Culture has been developed and tested during the project AlpBC, the publication therefore aims at offering not only different frameworks and tools for an enhancement of Building Culture throughout the Alps, but invites to a general understanding of the specific nature of Building and Planning as strongly related to local and regional contexts, deriving their potential for sustainable development exactly from these differences.

1. Building in the Alps - A Sustainable Approach

Starting from a re-evaluation of core aspects of vernacular building, that in the Alps even more deeply than in other geographical areas has evolved in intrinsic relationship to topography, nature, climate, sun exposition, local materials and to the communities behind and before building, the approach of AlpBC is illustrated to draw from this inspiration and inherent knowledge the vision of a renewed building culture; a comprehensive vision that includes house construction, built landscapes, settlement perspectives - that all refer to the sustainability matrix of vernacular building and land use. The process of transfer, further development and evolvement of this idea along the steps of AlpBC project is laid out, illustrating the outline of the project, its questions and results.

1.1 Living and Building Settlements in the Mountains - The closed loop paradigm of AlpBC

ERSAF Regional Agency for Services to Agriculture and Forestry, Lombardy Region (IT)

In a general overview of vernacular building as part of vernacular circular economies and sustainable resilient modes to use all parts of the environment within an overall system, the contribution of ERSAF explains the inspiring power of traditional Alpine architectures, settlements and landscapes and their inherent potential for further development.

Creating traditional houses and settlements in the Alps are characterized as “intuitive wise answer to extreme conditions”. This approach related to raw materials and reducing the waste production is a significant application of the so-called closed loop economy model. With the re-discovery of traditional architecture and building systems a starting point for the definition of actual policies, sets of technologies and re-newed “smart” territorial planning can be drawn. The climatic and geographical features, the relations between settlements and landscapes in the traditional systems of the Alps, the concept of itinerant lives between different places according to the seasons and to the resource-related organization of living and working, their connection to rural manufacturing can help to re-shape and re-establish sustainable approaches in planning, building and economy, identified in this complex cross category of ecosystem services. Within AlpBC, Alpine building culture’s role for sustainable territorial planning, is defined as based on three principles: sustainability, smartness and inclusiveness, in order to increase territorial competitiveness and attractiveness through environmental fruition (natural, historic-architectural, urban and diffuse), with reference to the Manifest Smart Land by Bonomi/Masierio. Building culture relates to several aspects of “smart land”, linking the re-discovery of traditional architecture with actual techniques and materials of Alpine building and circular economies. A fundamental aspect is resources valorization through recycling processes and ecological materials.

1.2 The construction of Alpine Building Culture - Core elements of AlpBC

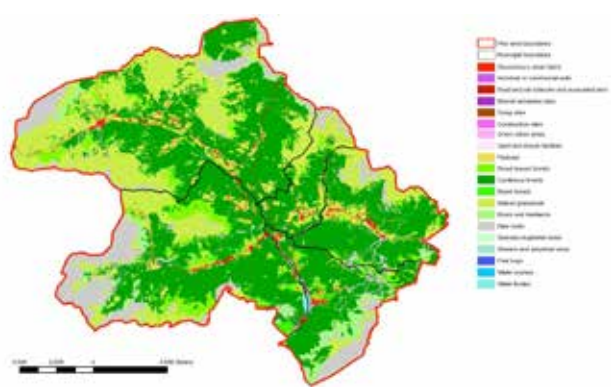
Chair for Regional Architecture and Urban Planning, Leibniz Universität Hannover (DE), in cooperation with the Bavarian Chamber of Architects (DE)

Following the main elements of the AlpBC project and illustrating the regional focus on the area Traunstein-Achental around lake Chiemsee at the Bavarian Alpine fringe, the innovations for regional building processes and the initiating role of architectural design and rural/urban planning for the further use of material and immaterial aspects of Alpine built heritage are explained. With the framework for analysis and conceptualization of intermunicipal projects and with the initiative of the AlpHouse center in Traunstein, central elements of AlpBC and its transalpine impact have been drawn in general, and tested for the pilot area in Bavaria itself.

Pilot area Bregenzerwald, Vorarlberg (AT)
Map and Images: EIV Energieinstitut Vorarlberg



Pilot area Dolomiti Alto Agordino, Veneto (IT)
Map and Images: Veneto Region, Urban and Landscape Planning Department



Introduction

Regional Building Culture for Sustainable Development. The Idea of AlpBC

A main result of these implementations is the assessment of knowledge transfer gaps between almost all involved actors in combined rural/urban planning and building processes, in order to reach shared visions for the future of the built environment and to design the necessary strategies and decision-making paths. The German planning system with its strong role of municipal autonomy in planning offers the chance to connect much more deeply and deliberately bottom-up approaches into larger territorial strategies valued as necessary and sustainable for territorial development in the Alps.

2. Strategies and Tools for Building Culture - from Planning to Technology

With enfolded AlpBC's activities, innovation in different scales and processes related to building culture has been concretized, with two main characteristics: the inclusion of object-related frameworks and technical guidelines into larger scale development projects and the connection of house and building detail related inventions to regional objectives and visions, has been proven to be not only effective, but an important line to follow for further research and development projects. Aiming also at an adaption of policies and decision making in regard to the built environment, the proposals of AlpBC in procedural aspects, in the inclusion of stakeholders and in enhanced competences from planning, technical and administrative sides for measure and project related working on concrete Alpine spatial situations, has been systemized in AlpBC and offered for the definition of regional as well as macro-regional objectives and related policy-processes.

2.1 Building Culture, Energy and Local Development

Piedmont Region, Department for strategic programming, spatial planning and housing (IT)

The project partner Piedmont Region illustrates in the contribution a sustainable development scenario for the Lanzo Valleys, set up as model project that combines different sectorial approaches and that includes strategic as well as measure related parts. Specifically the scenario takes its inspiration from the valorization and further use of the built heritage of the valleys. Involving local stakeholders during the whole process, the scenario is based on locally availa-

ble material and immaterial resources and on the definition of tools supporting spatial planning processes, pursuing the goals of landscape protection, settlements redevelopment and energy efficiency. An interdisciplinary experts' study and definition of tools, as well as experts input for the development scenario building have been the second pillar of Piemonte's activities in AlpBC, offering renewed approaches in energy issues, in the transformation of architectural typologies and settlement forms in alpine territories and in short supply chains in energy production leading to guidelines for energy and architectural requalification in the framework of the AlpBC project. The Lanzo valleys are seen as a laboratory for sustainable alpine development, for metro-Alpine character and perspectives connected to improved public transport lines with the Torino metropolitan area and to the Corona Verde project.

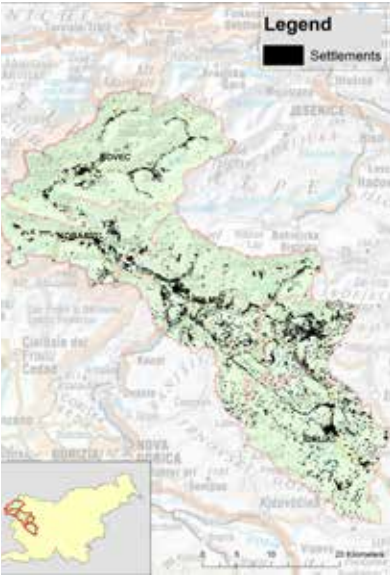
2.2 Local strategies: Energy planning at municipal and inter-municipal level and the role of administrators

COA energia Service, Finaosta S.p.a. Aosta Valley Regional Financing Company (IT)

For the Aosta Valley the project partner COA energia has focused - in a strong collaboration with the pilot area Mountain Community Monte Cervino, along the Marmore valley - on the integration of energy issues into municipal policies and planning tools. Right from the start, the cooperation with regional administrations has optimized transfer value for the whole region of the Aosta Valley, starting with a study aiming to supply advice on how a local process of sustainable energy planning can be drafted. In more detail, COA energia has developed tools and guidelines with special reference to the integration of energy saving measures and energy efficiency in the territorial planning instruments. This approach, integrated into spatial planning and building regulations, aims to raise awareness within the local administrations on the potential of their own territory and on the importance of providing themselves with tools for energy planning at municipal or intermunicipal level. The definition of the plan's strategy bases itself on specific development directives of the various actions and correlated tools, identifiable with the different roles that a Municipal administration can play in the energy field: manager (issue of public assets as building stock, lighting, vehicles and the improvement of their energy performance and management), promoter, coordinator and partner of territorial initiatives, regulator

Pilot area Soca Valley, Slovenia (SI)

Map and Images: Soca Valley Development Centre



Pilot area Biovallée, Drôme Valley, Rhône-Alpes (FR)

Map and Images: Neopolis, Chamber of Commerce and Industry of Drôme



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Regional Building Culture for Sustainable Development. The Idea of AlpBC

as planner and organizer of the territory and its activities. Further elements are a monitoring system for the energy strategy and guidelines to draft the Energy Annex to the Municipal Building Code.

2.3 Innovation Accelerator for materials of Alpine building

TIS Techno Innovation South Tyrol (IT), in cooperation with EU-RAC European Academy Bolzano/Bozen (IT)

The project partner from South Tyrol explains his main outputs in AlpBC with a focus on the construction market through the initiative “Accelerator innovation” that connects South Tyrolean companies in the construction industry. The objective is to initiate further research and development projects in practices of sustainability and energy efficiency in buildings; the themes dealt with have been sanitation, energy efficiency, economics and product ideas for Earthquakes, e.g. a plaster for renovations and structural energy in earthquake zones, a multi-layered insulation panel for interior (with simplified tools for technicians to assess the performance of the product and with an evaluation of sustainability), a lightweight concrete with power of thermal insulation, easily recyclable and a management offer for energy renovations of school buildings, with a simulator of feasibility based on a digital platform. A SWOT analysis for the natural stone chain in South Tyrol showed the possibility of a regional label in regard to sustainability qualities and local chains of products also addressing maintenance issues, relation to regional workforce and local skills, environmental and waste management, strategic land and exploitation management and especially standards for public procurement procedures.

3. Involvement and Interfaces as core of Building Culture

As already addressed in the AlpHouse project, that laid ground for AlpBC’s work, fostering and constantly building awareness before constructing houses and before planning for larger scales, has been integrated part of AlpBC; the project conceived and tested different tools for communication and participation. Building the bridge between awareness raising and activities starting in a multi-layered and multi-actor field as building culture evidently has to concentrate on concrete points of interaction between involved experts,

practioners, decision-makers and owners and investors in building activities. These interfaces have been addressed in AlpBC at different points of the planning and building processes, with content as well as process related innovative proposals to define these interface and to enhance their effectiveness and role in the whole process. A core instrument is seen in knowledge transfer between research and practice, as illustrated in the contributions of this chapter.

3.1 The Participative Symposium: model for knowledge transfer

Research Studios Austria – Studio iSPACE (AT), WKS Salzburg Economic Chamber (AT) and the Chamber of Crafts for Munich and Upper Bavaria (DE)

The project partners collaborated for the participative Symposium in Salzburg “Focus Alpine Building”, addressing four sub-themes: tourism and construction, high-tech vs. low-tech, redensification and hybrid buildings. The University of Applied Sciences of Salzburg for the first issue presented a research about measurements of the perceptions of tourists, in order to optimize architectures and locations for touristic uses. Also aspects of building and health were included in the symposium. For the objective of enhanced redensification, Studio iSPACE developed a GIS-tool to evaluate infrastructural, energy and mobility aspects of urban planning projects. With the question “How much technology need building” especially renovation issues have been discussed: “with high-tech approach modern materials and sophisticated automated building technology”, “the boundary between low-tech and high tech is disappearing”, “and the technology allows users individual settings”.

3.2 Mayors’ Interviews: What small municipalities need

EIV Energy Institute Vorarlberg (AT)

For Vorarlberg, EIV contributes with a collection of statements of mayors, related to Building and Planning issues with special attention to energy. The collection shows the demands especially of small municipalities to deal with spatial development and building construction and renovation topics, the need for expertise and consultancy and illustrated also clearly the achievements of EIV in this fields in the AlpBC project and beyond. The publication “Vorarlberger Vorbilder” (Vorarlberg Role Models), that includes

these interviews, illustrates a series of good practices in public buildings, with special focus on ecology and energy-efficiency related aspects of Building Culture; as well as calling specifically for the involvement of architects and for architectural competitions for public and private projects and for increased awareness for the need of planning phases before the construction. The service package “Sustainable Building” of EIV addresses the municipalities for public buildings, becoming almost a region-wide standard as tool for quality in public construction projects.

1. Building in the Alps - A Sustainable Approach



1.1 Living and Building Settlements in the Mountains

The closed loop paradigm of AlpBC

ERSAF Regional Agency for Services to Agriculture and Forestry, Lombardy Region (IT)

1. Introduction

When men chose to live and build their settlements on mountains, they did it recognizing the remarkable opportunity to take advantage of various resources that mountains were able to guarantee but at the same time they were aware of the necessity to adapt to each limit that living in a mountain environment could mean. The mountain territory guarantees, in fact, a reserve of precious resources like water, natural environments and a variety of landscapes, a lot of animal and vegetal species able to provide communities, a variety of resources supplied by geological features of the territories and by forests and woods. However, there are some significant risks and obstacles often connected to the presence and the coexistence of these resources that bring men to be exposed to difficult situations as a consequence of an adverse morphology of the territories, extreme climate conditions, the impossibility of a complex processing of raw materials and the necessity to use most of the resources locally because of the difficulty to move people and goods all around these territories. The result of the necessity of finding a balance between needs and limitations has created a tendency to adapt that is possible to find surprisingly in different regions of the Alps. This is not the unaware fatalism of people that chose to live near the mouth of a volcano but an intuitive wise answer to extreme conditions. In ancient times, the mountain populations were careful not to dwell unfavourable places with climatic and hydrological problems. Actually, the slopes without enough insolation or with a high humidity level were called using toponyms related to the insolation shortage and they were occupied only in case there were no alternatives. In the same way, a slope characterized by hydrogeological instability or that was crossed by a turbulent river or stream often had a name that couldn't make people have doubts about it. There it was unusual to observe anthropic settlements,

even temporary. That wisdom imposed therefore to locate safe places on sunny slopes for building houses, if it was possible. The settlements were organized in order to have close buildings for satisfying a deep need of safety but also for take advantage of one another's heat losses. A stone basement was built to place useful rooms connected with farming activities (cattleshed, stables, storages and proper rooms where cheese was stored, etc.) where there were situation of steep slopes so that digging could be reduced. The upper floors more ventilated and salubrious were made of wood and hosted all the domestic rooms. Sometimes, the dwelling developed near or above the cattleshed in order to benefit from the heat produced by the livestock, a kind of radiant floor heating system. Moreover, the house orientation was studied to better exploit the solar exposition for the most used rooms and the dimension of windows was reduced in order to reduce the heat exchange: there were few (or no) windows on northern facades. To optimize the exposition to the sun and air, the buildings had complex galleries helping to reach each floor and in the same time accommodating local products like chestnuts, corn, wood and grain in order to dry them for the wind while protecting from the rainwater. Each building was built using the available raw materials like the stone from local quarries (only noble palaces had facades and portals decorated with stone from 'foreign' quarries) and wood often shaped roughly and used also as a flexible element (in place of iron) to resist to traction. The horizontal structures of the buildings were frequently filled with vegetal wastes (cob leaves) or wooden materials with a double function of filling and insulating but also with a very smart recycling philosophy.

The alpine culture presents thus interesting symbiosis between the moments connected to work and domestic life so that people can save the precious raw materials replaced with other cheap materials. This approach related to raw materials and reducing the waste production is a significant

application of the so-called closed loop economy model. It's applied to food through solutions that allow to conserve precious resources for the most hard times (dried meat and chestnuts), to beverages (distillates made of grapes processing waste), to clothes (worn clothes are reused to produce shoes or rugs), but generally to the whole organization of the daily life. So the landscape, already characterized by natural elements whose by-products are optimized for some productions (willows branches are used for tying grapevines) is modified and shaped gradually through the installation and creation of new functional elements for the energy production (mills), for growing and breeding (irrigation ditches, drinking troughs), for managing the land (terraces) and regulating rivers and streams. When this is not enough to canalize water from mountain slopes in order to reduce the transport of solid materials, people protect their houses from water risk with mobile bulkheads.

What described is confirmed by some elements that seem to become strongly fashionable nowadays. It's possible to observe some relevant aspects in alpine building culture:

- ▶ The sustainability:
 - The ecological footprint is the lowest to guarantee the community survival;
 - Exchanges with other communities are few and related to essential products where the community is unsupplied;
 - Energy is produced exploiting renewable energy sources and with few emissions in the atmosphere.
- ▶ The resilience:
 - There is awareness about the territorial vulnerability and so favorable situations are optimized instead of exposing the community to unfavorable ones.
- ▶ The circular economy:
 - The production is organized so that it's possible to use at best available materials reducing waste by reusing and recycling it in other daily life moments;
 - Each landscape element (built and natural) has a precise function;
 - The competences and the know-how are handed down and become the heritage for the growing of the community.

2. Climatic and geographical features

Climate and geography are important aspects for the beginning of settlements on mountain areas. The territorial transformation and the succession of the seasons led to organise places where people lived and worked reducing waste and optimising the resources using to live in villages and quarters in autumn and winter and moving to places where people made forage for the livestock in spring and summer. That kind of use of the mountain territories in favourable periods during the year brought to start mountain pastures and follow fields and leaving the use of valley bottoms in unfavourable periods of the year. Paul Guichonnet describes the concept of the itinerant life with these words: "The mountain hollows make Alpine people not to be sedentary but, unlike Tibetans and people living on Andean Plateau, people of valleys [...]".¹ The choice of places where to start a settlement according to criteria based on healthiness and convenience excluded swampy bottom valleys: to start settlements men chose the mountain slopes with a favourable exposition to the sunlight. Each settlements presented near houses buildings for carrying out the activities connected to farming, stock rearing, craftsmanship and rural manufacturing. The rural manufacturing exploited the hydraulic power produced by rivers, streams and artificial canals. In some cases, the strong urbanization of the valley bottoms that started with the urban development of the modern age contributed to preserve the slopes, their ancient settlements and that wise use of the territory quite intact. The recent urbanization with its general layout hasn't tried to establish a dialogue between the traditional natural landscape and the anthropic landscape and usually the conditions of landscape conservation are better at higher altitudes and in lateral valleys. That's because the anthropic pressure is lower in these places and the quality of these landscapes is higher than at valley bottoms. In addition to the urban sprawl and the intensive urbanization, there is a depopulation phenomenon and people are leaving villages and residential areas. The consequence of this is the loss of a particular landscape where human activities and nature were strongly interconnected. The end of this relationship has interrupted or weakened the role of these activities to manage and protect the territory with hydrogeological instability phenomena, especially related to the giving up of the water stream control and the maintenance of woods.

¹ P. Guichonnet, *Storia e civiltà delle Alpi. Il destino storico*, Milano, Jaca Book, 1987, p.17

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This aspects bring to a huge territorial vulnerability, a loss of the landscape as a consequence of the enlargement of woods and forests occupying areas earlier occupied by meadows and pastures and the need of protection infrastructures characterized by a heavy environmental impact.

3. The settlement shape

Europe was characterized by a strong increase of population and economical activities most of all the farming ones between the half of XIth century and the half of XIVth century. Several studies have demonstrated that most of the human settlements already existed before the Black Death started in 1346, resulting in the death of an at least a third of the population. In that period men started getting together establishing communities and the first villages on alpine territories started an important and lasting activity related to the transformation of the rural mountain landscape. The basic cell of every settlement on the Alps was the farm based on the extended family that was extended beyond the family unit. The first elementary urban nucleus were organized around some main places like the house, the cattleshed, the barn and some areas for vegetable gardens and fields. In the alpine space there was an evolution of isolated settlements because of an increasing subdivision of plots and an increase of dwellings as a consequence of the appearance of new family units. That kind of settlement that anticipated the village is called "patronymic quarter" (that stands for "contrada patronimica" in Italian). The village was made of several patronymic quarters that joined together, that is a group of different family units with different family names. That sort of settlement already presented a separation between the private ownership, with an house and its vegetable garden or orchard, and properties that belonged to all the inhabitants like fields, woods and pastures. An assembly composed by each head of the family regulated the use of all the common properties and the life in common inside the village.

The alpine hamlet had a different structure that was more complex than the village one with several districts and located at the confluence of lateral valleys.

4. Manufacturing activities

The fields represented one of the most important resource and their location was decided following precise criteria.

Farmers that needed a large amount of water to irrigate the fields chose areas near water bodies. Cereals, potatoes and flax were diffusely grown and in some places farmers varied cultivations according to field positions from the valley bottom to the slopes. Farming was influenced by local climate conditions and, where allowed, crop rotation was practiced on the same fields in different period during the year. Generally, that practice was common to cultivate fields that were ploughed and dug rather than vegetable gardens; otherwise sometimes it was not possible to rotate crops because of unfavourable climate conditions. Very interesting the cultivation of several kind of trees like willows that were grown in damp areas near vineyards in order to provide flexible strong laces to tie vine shoots after the pruning. Nowadays, even the technique is abandoned and metal or plastic materials are used, it is rarely possible to observe this sort of conservation agriculture that is almost symbiotic, where each tree or plant occupies a precise place and collaborates to shape a very specific landscape. Regarding to woods, the municipal ones represented the prevalent part in comparison with the private ones and were an important resource to satisfy energy necessities, to guarantee place for pastures for livestock and provide sustenance to families managing a difficult economical situation. The areas characterized by woods and forests opportunely managed had a fundamental functions because they could control the runoff during stormwaters and reduce hydrological risks, with a protective purpose that allow us today to identify this approach in the complex cross category of ecosystem services.

Among different kind of trees, the chestnut tree supplied high quality wood that was used both like wood to build structures and wood to produce poles (for example to support vine rows) and biomass. The chestnut was an important food resource with high nutritional features (producing i.e. chestnut flour). In particular, the chestnuts were slowly dried above a fire using huge pieces of (chestnut, even the roots) wood burning without flames and guaranteeing a constant heat level. Chestnut leaves represented another precious resource used as fertilizer for fields and vegetable gardens. Stock rearing was as much significant for local economy. The livestock were kept in stables and cattlesheds feeding with hay during winter, spring and some summer months while the livestock moved to high mountain pastures from July to the end of the first half of September. That transhumance that was necessary where the life was characterized by the succession of the four seasons had two



View of Ponte in Valtellina
Image: Alessandra Gelmini



Stone arch in Sondrio
Image: Alessandra Gelmini



Building in the Municipality of Chiesa in Valmalenco
Image: Marco Brigatti



The main spring water of the Adda river sources in the Alpisella Valley in the Stelvio National Park.
Image: Daniele Bruno Levratti, ERSAF archive



Vineyards in Valtellina
Image: Carlo Silva, archivio ERSAF



Stone building in Ponte in Valtellina
Image: Alessandra Gelmini

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phases: one to the higher pastures in summer and the second for the return to the lower valleys in winter.

Agriculture and stock rearing had a strong influence both on houses and on the location of settlements. In fact, the dwellings were closed to work places and in some cases in order to optimize energy consumption the dwelling developed on the cattleshed so that it could benefit from the heat produced by the livestock. Every settlements and nature worked together to define a particular landscape. In addition to agriculture and stock rearing, it is important to mention rural manufacturing and craftsmanship. The settlements were located where craftsmen and factories could take advantage of hydraulic power by rivers, streams, canals and derivations that brought water to mills, machineries to process cereals or chestnuts, forges, sawmills, lathes, oil mills and devices to produce felt from wool and hemp. A lot of products from agriculture, stock rearing and forestry were processed by using those machineries.

5. The Alpine BC's role in a 'smart' territorial planning

The spatial planning today should start from some points of reflections, related to the elements carried out from the alpine territories to look for, in the common signs of each mountain culture, the addresses to re-think the current ways of transforming land and resources, promoting the examples which the vernacular architecture combines natural and built landscapes with.

The spatial planning need to be tackled through a multidisciplinary methodology that allows to plan the transformations processes of territory and landscape and aimed to a development model as much as possible sustainable able to answer, therefore, to the current needs without compromising the possibility of future generations to satisfy their own needs.

This kind of planning should thus be grounded on three basic principles: the sustainability, the smartness and the inclusiveness. The 'smart land' approach is a concrete example of the final result of this kind complex planning process, represented by a "territorial setting where through general and shared policies, the territorial competitiveness and attractiveness are increased, with a particular attention to the social cohesion, the environmental fruition (natural,

historic-architectural, urban and diffuse) and to landscape and citizens' life quality"²

The building culture theme, related to several fields of 'smart land', is for sure an aspect to promote, because it's an element of the cultural heritage, because it can drive the economic development and the territorial competitiveness, the know-how and exchange of skills and, moreover, it's an essential value of a unique and specific landscape, such the mountain landscape. A strong relation links together the re-discovery of the traditional architecture, of the techniques and the materials of the alpine building know-how and the circular economy.

In the circular economy approach, the resources in the manufacturing activities of each typology are used at best, meaning that they must last as long as possible in their economic cycle. The product has therefore a value and a meaning totally different and must be conceived starting from a new philosophy with respect to the linear economic approach.

The totally new aspect is that, even during the design phase the product is made in order to be considered at the end of its life, not as a waste, but as an element to be re-used or re-cycled, avoiding, on one hand, to the supply of new raw materials that, as we know well, are very expensive and not renewable, and on the other hand, reducing the waste production in the manufacturing system. This new approach and the new idea of production waste are within the 'smart land' as well in the 'smart city', where the natural resources valorization is fundamental for the sustainable development of the cities and territories. Specifically, the circular economy theme is deepened in the 'smart land' for what concerns the energy production, the support for the enterprises to re-convert and optimize the manufacturing chains and for the promotion and re-use of local building heritage. In this way, the re-use of local materials such as wood and stone, very popular in Valtellina and on the alpine arc, and the use of waste coming from apples and vineyards production chain for the production of green energy or eco-sustainable materials could be some effective examples of the application of the closed-loop economy able to make smart the mountain territory.

The training and the knowledge transferring, as much important for the smart land, are usual when we talk about

2 Manifesto Smart Land. A. Bonomi R. Masiero, *Dalla smart city alla smart land*, Agenda Marsilio 2014

economics and development, particularly related to the valorisation of local identities and specific know-how, that create the intangible cultural heritage of alpine valleys and aren't necessarily against the new technologies which can take new hints and innovative power from. The mutual relation between planning and design in a 'smart land' emerges strongly of course in the settings of development supported by a energy planning at an intermunicipal level, from mobility solutions managed through smart services and respectful of a territory where more and more it's needed to control the land use with an intelligent spatial planning aimed to free / reuse land rather than to transform new one. All this related and finalized to propose solutions for the production and consumption that are aware and complying with the sustainability features of the 2020 policy goals, thus necessarily dedicated to the all decision-making, the managing and economical levels, but also to the citizens as target of a new participated and shared philosophy.

1.1 Vivere e costruire gli insediamenti in montagna Il paradigma dell'economia circolare di AlpBC

ERSAF – Ente Regionale per i Servizi all'Agricoltura e alle Foreste (IT)

1. Premessa

Quando l'uomo ha scelto di abitare la montagna lo ha fatto certamente riconoscendo l'opportunità di trarre vantaggio dalle molteplici risorse che questa garantisce ma contemporaneamente consapevole della necessità di adattarsi a tutte le limitazioni che l'abitare in un'area alpina comporta. Da un lato infatti la montagna garantisce una riserva di risorse preziose, acqua, ambienti naturali e varietà di paesaggi, abbondanza di specie animali e vegetali capaci di assicurare il sostentamento della comunità, varietà di risorse fornite dalla conformazione geologica dei terreni e dalla presenza di estese superfici forestate. Dall'altro i rischi e gli ostacoli legati, spesso, alla presenza e compresenza di queste stesse risorse portano ad essere esposti ad una serie di situazioni limite quali una morfologia del territorio non sempre favorevole, condizioni climatiche anche estreme, l'impossibilità di trasformazione complessa delle materie prime e la necessità di disporre in loco di gran parte del fabbisogno, a causa delle difficoltà, anche stagionali, di effettuare spostamenti di merci e persone.

Il risultato della necessità di trovare un equilibrio tra bisogni e limitazioni ha generato una tendenza dell'adattarsi che ritroviamo, in modo sorprendente, rappresentata su differenti regioni dell'arco alpino. Non si tratta, si badi bene, dell'inconsapevole fatalismo di chi sceglie di abitare sulla bocca di un vulcano, ma piuttosto di una risposta, intuitiva e saggia al tempo stesso, a condizioni estreme. Le popolazioni montane si guardavano bene, almeno nell'antichità, dall'abitare luoghi sfavorevoli dal punto di vista climatico o idrogeologico: i pendii poco solivi o umidi venivano subito identificati con toponimi rappresentativi della scarsità di irraggiamento solare e occupati soltanto in mancanza di meglio; allo stesso modo un versante soggetto a instabilità o attraversato da un torrente volubile e turbolento portava spesso un nome sul quale non si potevano avere dubbi.

E in quelle zone era di conseguenza raro osservare un insediamento antropico, anche temporaneo.

Questa stessa saggezza imponeva quindi di individuare, per le abitazioni, luoghi sicuri e per quanto possibile posti su versanti ben esposti. Gli insediamenti si organizzavano in modo da avere gli edifici accostati, certamente per un insito bisogno di sicurezza, ma anche in modo da avvantaggiarsi l'uno delle perdite di calore del vicino. Nelle situazioni di terreno in pendenza, al fine di minimizzare i movimenti terra, si procedeva a realizzare un piano 'seminterrato' in pietra, dove collocare attività legate e funzionali a quelle della residenza (ricovero animali, deposito, stanza per il formaggio...). I piani superiori, più salubri e ventilati, erano realizzati in legno e ospitavano la casa vera e propria. Non di rado l'abitazione si sviluppava accanto, più spesso sopra, alla stalla, così da beneficiare del calore prodotto dagli animali, in una straordinaria forma ante-litteram di 'riscaldamento a pavimento'. Del resto l'orientamento delle abitazioni era studiato per sfruttare al meglio l'esposizione solare nelle stanze più utilizzate e le aperture per le finestre ridotte al minimo per minimizzare lo scambio termico con l'esterno, pochissime o nulle le aperture sulle facciate a nord. Per massimizzare l'esposizione al sole e all'aria gli edifici venivano dotati di complessi ballatoi che garantivano l'accesso ai piani con il vantaggio di poter esporre al sole ma non alla pioggia i prodotti della terra e del bosco da essiccare in vista delle necessità invernali (castagne, cereali, mais, legna da ardere, ...). Gli edifici si costruivano con le materie prime più abbondanti: pietra, ricavata da cave locali (solo nei palazzi nobiliari si ricorreva al trasporto di pietre alloctone per le parti decorative delle facciate o dei portali) e legno, spesso solo sbizzato e utilizzato, in mancanza di elementi di ferro, anche per resistere a trazione. Con frequenza gli orizzontamenti (meno gli elementi verticali) si riempivano di materiali vegetali o lignei essiccati

(i residui della raccolta delle pannocchie) conseguendo anche una blanda funzione di isolamento e contemporaneamente provvedendo a dare una funzione ad un materiale che oggi considereremmo 'di scarto'. La cultura alpina prevede infatti lo sviluppo di interessanti simbiosi tra i diversi momenti produttivi e della vita, in modo da ridurre, laddove possibile, lo sfruttamento di materie prime preziose sostituite con alternative meno costose ma di buona efficacia: con lo scopo di minimizzare la generazione di rifiuti (il popolare non si butta via niente...), in quella che si rivela essere, di nuovo, una straordinaria applicazione dell'approccio di economia circolare. Quest'ultima si applica infatti sul cibo attraverso soluzioni che permettono di conservare preziose risorse per le stagioni più difficili (carni stagionate, castagne essiccate), sulle bevande (i distillati ricavati dall'utilizzo dei residui della lavorazione dell'uva), sul vestiario (gli abiti consumati si recuperano per farne calzature o stracci), ma più generalmente sull'organizzazione della vita quotidiana; ecco perciò che il paesaggio, già caratterizzato da elementi naturali i cui sottoprodotti sono ottimizzati per alcune lavorazioni (si pensi ai salici usati per 'legare' le viti) viene via via modificato e modellato attraverso l'installazione e la realizzazione di nuovi elementi funzionali alla produzione di energia (mulini), alla coltivazioni e all'allevamento (rogge, abbeveratoi), alla gestione del suolo (terrazzamenti) e alla regimazione delle acque, solo per citare alcuni esempi. Quando, infine, incanalare le acque di versante per limitare il trasporto solido non è sufficiente, si ricorre a rimedi estremi, proteggendo direttamente gli usci delle case con un ingegnoso sistema di paratie mobili.

Quanto detto è conferma di alcuni elementi che sembrano oggi tornati prepotentemente di moda. Nella cultura edilizia alpina si osserva infatti questo:

l'impronta ecologica è quella minima per garantire la sopravvivenza della comunità, gli scambi con l'esterno sono ridotti e solo per prodotti essenziali di cui non si dispone in loco; l'energia è prodotta da forme rinnovabili e con emissioni ridottissime: è la sostenibilità;
c'è consapevolezza della vulnerabilità del territorio quindi si irrobustiscono le situazioni favorevoli piuttosto che esporsi a quelle svantaggiose: è la resilienza;
la produzione è organizzata in modo da utilizzare al meglio i materiali disponibili, riducendo gli sprechi attraverso il riuso

e riciclo in altri settori della vita quotidiana; ogni elemento del paesaggio (naturale e costruito) ha una precisa funzione; le abilità e i saperi sono tramandati e diventano patrimonio per la crescita della comunità: è economia circolare.

2. Clima e geografia

Clima e geografia sono stati elementi fondamentali per la nascita degli insediamenti in area montana. La trasformazione del territorio e l'adattamento al ciclo delle stagioni portavano ad organizzare gli stessi luoghi di vita e lavoro in modo da limitare gli sprechi e massimizzare le risorse, ricorrendo a soluzioni che prevedevano di abitare, durante l'inverno e l'autunno, nei villaggi e nelle contrade e di spostarsi in estate e primavera nei luoghi destinati alla cura e preparazione del foraggio per il bestiame. L'utilizzo della montagna nei momenti più idonei dell'anno ha quindi portato alla nascita di maggenghi e alpeggi, lasciando a periodi meteorologicamente sfavorevoli l'occupazione del fondovalle.

Paul Guichonnet spiega con queste parole il concetto di vita itinerante: "[...] Gli incavi del rilievo fanno sì che l'Alpino, a differenza del Tibetano e dell'abitante dell'Altopiano andino, non sia un sedentario degli alti piani, ma un uomo delle valli [...]"³.

Non soltanto con il clima si trovavano però a fare i conti gli uomini delle valli. La scelta dei siti dove insediare il luogo di vita valutava, ed escludeva, sulla base di ragionamenti di salubrità e convenienza, di scegliere il fondovalle paludoso: per gli insediamenti si sceglievano quindi i versanti, meglio se esposti favorevolmente al sole. All'interno degli insediamenti, accanto alle abitazioni sorgevano strutture per lo svolgimento delle attività legate ad agricoltura, pastorizia, artigianato e industria rurale, quest'ultima spesso sostenuta dall'energia idraulica generata dall'abbondanza di torrenti, ai quali allo scopo si aggiungeva una rete di canalizzazioni artificiali.

In qualche caso la massiccia occupazione delle aree a fondovalle avviata con lo sviluppo urbanistico dell'epoca moderna ha contribuito, in parte, a preservare i versanti e con essi le testimonianze di antichi insediamenti ancora sostanzialmente intatti e l'uso sapiente del territorio.

3 P. Guichonnet, *Storia e civiltà delle Alpi. Il destino storico*, Milano, Jaca Book, 1987, p. 17

1.1 Vivere e costruire gli insediamenti in montagna

Il paradigma dell'economia circolare di AlpBC

Le recenti urbanizzazioni e il loro assetto complessivo non hanno cercato di instaurare un dialogo con il tipico paesaggio naturale e antropizzato ed è frequente osservare, quindi, come lo stato di conservazione del paesaggio risulti essere più elevato al di sopra dei medi versanti e nelle valli laterali, questo in ragione sia di una minore pressione da parte dell'uomo sia per una più alta qualità dei paesaggi stessi. Accanto all'urbanizzazione sregolata e spesso intensiva, esiste anche un fenomeno di spopolamento e abbandono di alcune zone e centri abitati che hanno avuto e continuano ad avere come conseguenza la perdita di un paesaggio dove l'attività umana e la natura interagivano profondamente. La rottura di questo rapporto ha spesso interrotto, in ogni caso indebolito, il ruolo delle attività svolte per la gestione e protezione del territorio, con il verificarsi di fenomeni di dissesto legati principalmente alla mancata regimazione delle acque e alla manutenzione del bosco, elementi che conducono: ad una conseguente maggiore vulnerabilità dei territori, alla perdita di paesaggio dovuto all'avanzare del bosco rispetto alle destinazioni a prato e/o pascolo e, talvolta, alla realizzazione di infrastrutture di protezione caratterizzata da grande impatto sul paesaggio e gli ecosistemi.

3. La forma degli insediamenti

Tra la metà del XI e la metà del XIV secolo il continente europeo si è caratterizzato per un forte sviluppo demografico e delle attività economiche umane, specialmente quelle riguardanti l'agricoltura. Diversi studi hanno dimostrato che la maggior parte degli insediamenti umani era già nata prima che si verificasse tra il 1347 e il 1353 l'epidemia di peste, conosciuta come "Peste nera", che uccise almeno un terzo della popolazione del continente.

L'uomo inizia proprio allora a riunirsi in comunità fondando i primi villaggi sul territorio alpino, dando così l'avvio ad una importante e duratura opera di trasformazione del paesaggio rurale di montagna. La cellula elementare di ogni insediamento umano sulle Alpi è costituita dalla fattoria, fondata da una famiglia di tipo allargato, che comprende anche elementi 'non stretti' della parentela. I primi nuclei insediativi elementari si articolano attorno ad alcuni spazi principali: l'abitazione, la stalla e il fienile e l'area destinata agli orti e ai campi coltivati. Nel territorio alpino si assiste presto ad una evoluzione dell'insediamento isolato, a causa della crescente suddivisione degli appezzamenti

di terreno e dell'accrescimento delle unità abitative, come conseguenza della nascita di nuovi nuclei famigliari, nella direzione di una realtà insediativa che anticipa quella del villaggio vero e proprio, che viene denominata "contrada patronimica". Il villaggio deriva poi dall'unione di più contrade patronimiche, cioè da diversi nuclei famigliari aventi cognomi differenti. Tale modello di insediamento vede una netta separazione tra la proprietà privata, costituita dalla casa con le pertinenze dall'orto o dal frutteto, e i beni che appartengono a tutti gli abitanti quali campi, boschi e pascoli. La convivenza all'interno del villaggio e l'utilizzo di tali beni comuni sono attentamente regolati attraverso il giudizio di una assemblea che rappresenta tutti i capifamiglia.

Il borgo alpino possiede, infine, una struttura differente e dotata di maggiore complessità rispetto a quella del villaggio: è infatti caratterizzato da diversi quartieri e trova la sua collocazione alla confluenza delle valli laterali.

4. Le attività produttive

I campi costituivano una delle più importanti risorse e la loro localizzazione sul territorio non era casuale. Gli agricoltori, necessitando di grandi quantità di acqua per l'irrigazione dei campi stessi, prediligevano le aree in prossimità dei corsi d'acqua. Colture diffuse erano quelle dei cereali, della patate e del lino. In alcune località si provvedeva a diversificare le colture a seconda della posizione dei campi a salire dal fondovalle verso i pendii. L'attività agricola era influenzata in modo determinante, oltre che dalla presenza dell'acqua, dalle condizioni climatiche locali e, dove possibile, era praticata la rotazione delle colture sugli stessi terreni in diversi periodi dell'anno. Generalmente la pratica della rotazione era più diffusa per appezzamenti che venivano arati e vangati, quindi campi piuttosto che orti per uso famigliare; talvolta non era possibile ruotare le colture a causa del clima favorevole.

Interessante l'impianto di colture di supporto, come quella dei salici che, nel caso di presenza di una zona umida (il salice è un'essenza igrofila) venivano messi a dimora per garantire nella prossimità della vigna la disponibilità di legacci flessibili e resistenti, utili a fissare i tralci della vite subito dopo la potatura. Oggi la tecnica è stata abbandonata e si utilizzano materiali plastici o metallici non biodegradabili e solo raramente si assiste alla conservazione di questo uso di una agricoltura quasi simbiotica, dove ogni albero o



Panorama, Ponte in Valtellina
Foto: Alessandra Gelmini



Arco in pietra a Sondrio
Foto: Alessandra Gelmini



Edificio nel comune di Chiesa in Valmalenco
Foto: Marco Brigatti



La polla sorgiva principale delle sorgenti dell'Adda
in Valle Alpisella nel Parco Nazionale dello Stelvio
Foto: Daniele Bruno Levratti, ERSAF archive



Vigneti in Valtellina
Foto: Carlo Silva, archivio ERSAF



Struttura in pietra e piode a Ponte in Valtellina
Foto: Alessandra Gelmini

1.1 Vivere e costruire gli insediamenti in montagna Il paradigma dell'economia circolare di AlpBC

arbusto occupa uno spazio ragionato e concorre al disegno di un paesaggio ben preciso.

Relativamente ai boschi, quelli di proprietà comunale, rappresentavano la parte preponderante rispetto ai privati e costituivano un'importante risorsa per il soddisfacimento di esigenze di tipo energetico, per garantire spazi a pascolo per il bestiame e fornire la necessaria sussistenza alle famiglie che si trovavano in una situazione di contingenza. Non bisogna dimenticare che le aree boscate, opportunamente gestite, rivestivano anche una funzione fondamentale di controllo del ruscellamento delle acque e di riduzione conseguente del rischio idrogeologico, garantendo quindi anche questa importante funzione protettiva alle molte altre funzioni che oggi identifichiamo con la complessa e trasversale categoria dei 'servizi ecosistemici'.

Tra le essenze vegetali, in area montana il castagno forniva legno di ottima qualità che veniva utilizzato sia come materiale da opera e per la realizzazione di pali (per esempio per il sostegno dei filati delle viti), che come biomassa combustibile. I frutti del castagno costituivano un'importante risorsa alimentare di elevato valore energetico per l'uomo e famosa era la farina che si poteva produrre. In particolare per le operazioni di essiccazione delle castagne il fuoco dell'essiccatoio veniva alimentato con grossi ceppi di castagno (anche le porzioni di radice), per la sua peculiare caratteristica di bruciare lentamente producendo molte braci, e assicurare così un calore costante con assenza di fiamma. Le foglie di castagno rappresentavano, infine, una fonte preziosa per la produzione di ammendante utile a rendere più fertili campi e orti.

Altrettanto significativo era per l'economia locale l'allevamento. Il bestiame in inverno, primavera e in alcuni mesi estivi veniva mantenuto nelle stalle, alimentato con fieno proveniente dai prati, mentre a partire da luglio e fino alla prima metà di settembre raggiungeva i pascoli di montagna. Questa migrazione delle greggi e delle mandrie, accompagnate dai pastori, tipica dei territori montani dove la vita era scandita dalle diverse stagioni, vedeva due fasi fondamentali: la monticazione e la demonticazione. Nella prima fase, che avveniva in primavera, gli armenti venivano condotti dalla pianura ai pascoli d'alta quota, in alpeggio, mentre la seconda prevedeva la discesa ai pascoli di pianura.

Agricoltura e allevamento esercitavano una forte influen-

za sia sui luoghi di residenza: era stretta la vicinanza di quest'ultimi con gli spazi del lavoro, tanto che in qualche caso, anche per ragioni di convenienza energetica, l'abitazione sorgeva sopra la stalla dalla quale ricavava calore; sia sulla localizzazione degli insediamenti stessi, che concorrevano con l'elemento naturale a disegnare un paesaggio ben definito. Accanto alle attività agropastorali una menzione particolare va riservata alle produzioni dell'industria e dell'artigianato rurali. Gli insediamenti urbani erano localizzati con preferenza là dove artigiani ed opifici potessero avvantaggiarsi dell'energia idraulica fornita da torrenti e rogge, anche tramite la costruzione di canalizzazioni e derivazioni utili a condurre l'acqua presso i mulini, le pile (utilizzate per esempio per liberare dalla buccia e/o dal guscio cereali e castagne), le fucine, le segherie, i torni e i frantoi, le folle o gualchiere (utilizzate per infeltrire le stoffe di fibre animali e vegetali) attraverso cui venivano lavorati e trasformati i prodotti ottenuti dalle attività agricole e della silvicoltura.

5. Il ruolo della Cultura Edilizia Alpina nella pianificazione "smart" del territorio

Ri-Progettare il territorio oggi dovrebbe partire da alcuni spunti di riflessione, proprio legati agli elementi emersi dall'analisi sui territori alpini per cercare, nei segni ricorrenti in ogni cultura di montagna, gli indirizzi per ripensare il modo attuale di trasformare suolo e risorse, valorizzando gli esempi con i quali l'architettura spontanea combinava in modo sostenibile il paesaggio naturale e il costruito.

La pianificazione del territorio necessita di essere affrontata attraverso un metodo multidisciplinare che permetta di programmare processi di trasformazione del territorio e del paesaggio equilibrati e che abbiamo come obiettivo un modello di sviluppo il più possibile sostenibile, che risponda, perciò, alle esigenze del presente senza compromettere la capacità delle generazioni future di soddisfare le proprie.

Questo tipo di pianificazione dovrebbe perciò ruotare intorno a tre principi fondamentali: la sostenibilità, l'intelligenza e l'inclusività. Lo "smart land" rappresenta un esempio concreto di quello che dovrebbe essere il risultato finale di un processo pianificatorio si fatto ed è rappresentato da "un ambito territoriale nel quale attraverso politiche diffuse e condivise si aumenta la competitività e attrattività del territorio, con una attenzione particolare alla coesione sociale, alla diffusione della conoscenza, alla crescita creativa,

all'accessibilità e alla libertà di movimento, alla fruibilità dell'ambiente (naturale, storico-architettonico, urbano e diffuso) e alla qualità del paesaggio e della vita dei cittadini".⁴

Il tema della cultura edilizia, afferente a diversi ambiti di interesse dello "smart land", costituisce sicuramente un aspetto da promuovere, in quanto si tratta di un elemento del patrimonio culturale, di un possibile motore di sviluppo economico dell'indotto locale e della competitività territoriale, di un vettore di scambio di saperi e possiede, inoltre, un valore intrinseco imprescindibile di un paesaggio caratteristico e unico nel suo genere, come quello montano. Esiste un forte rapporto che lega tra loro il recupero dell'architettura tradizionale, di tutte le tecniche e i materiali della tradizione costruttiva alpina e il tema dell'economia circolare.

Nel modello economico circolare il concetto di circolarità implica che le risorse all'interno delle attività produttive di qualsiasi tipologia vengano impiegate nel modo migliore, ovvero facendole durare il più a lungo possibile nel loro ciclo economico. Il prodotto assume, perciò, un valore e un significato differente e deve essere pertanto concepito utilizzando un approccio nuovo rispetto a come viene progettato nei modelli economici lineari. L'aspetto che fa veramente la differenza è costituita dal fatto che già in fase di progettazione ogni prodotto viene pensato per non essere più considerato come rifiuto al termine del suo ciclo di vita, ma come elemento da riusare o riciclare, ovviando, in parte, al problema dell'approvvigionamento delle materie prime che, come è noto, sono molto costose e non sono inesauribili, e dall'altro lato limitando la produzione di rifiuti da parte del sistema produttivo in generale. Questa nuova impostazione economica e il modo differente di guardare al rifiuto e allo scarto di produzione si ritrovano all'interno dello "smart land" e della "smart city" dove la valorizzazione delle risorse naturali e del paesaggio e la gestione sostenibile delle risorse sono aspetti di primaria importanza per lo sviluppo sostenibile di città e territorio. Nello specifico, il tema dell'economia circolare è approfondito nella trattazione dello "smart land" per quanto riguarda la produzione energetica, il supporto alle imprese per la riconversione e l'ottimizzazione delle filiere produttive e per la valorizzazione e il recupero del patrimonio edilizio locale. In questo senso, il riutilizzo di materiali locali come la pietra e il legno,

abbondantemente utilizzati in Valtellina e su tutto l'arco alpino, e l'impiego di scarti provenienti dalla filiera della mela e della lavorazione dell'uva per la produzione di energia da biomassa o di materiali ecosostenibili rappresenterebbe l'applicazione del concetto di economia circolare per rendere veramente smart il territorio montano.

La formazione e il trasferimento di saperi, altrettanto importanti per un territorio intelligente, sono ricorrenti quando si parla di economia e sviluppo soprattutto incentrati sulla valorizzazione di particolarità locali e competenze o abilità specifiche, che costituiscono il patrimonio di cultura immateriale delle valli alpine e non sono necessariamente in contrasto con le nuove tecnologie dalle quali possono invece trarre nuovi spunti e spinta innovativa. Il rapporto biunivoco tra pianificazione e progettazione di una "smart land" emerge con particolare forza ovviamente negli ambiti dello sviluppo sostenuto da una programmazione energetica a scala sovra locale, da soluzioni di mobilità gestite da servizi intelligenti e rispettosi in un territorio dove si pone sempre più pressante la necessità di controllare l'uso del suolo con una pianificazione spaziale intelligente e votata a liberare/riutilizzare spazio piuttosto che a trasformarne di nuovo. Tutto ciò connesso e finalizzato a mettere in campo soluzioni di produzione e consumo consapevoli e rispondenti agli obiettivi di sostenibilità richiesti dalle politiche 2020, quindi necessariamente dedicato a tutti i livelli decisionali, gestionali, economici, ma anche ai cittadini come destinatari di una nuova pratica di partecipazione e condivisione.

⁴ Dal Manifesto Smart Land. A. Bonomi R. Masiero, *Dalla smart city alla smart land*, Agenda Marsilio 2014



Stone cave in Chiesa in Valmalenco (SO)
Marco Brigatti



Aerial Photo Pilot Area Achental
Klaus Leidorf

1.2 The Construction of Alpine Building Culture Core Elements of AlpBC

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The overall aim of AlpBC, to validate Building Culture in order to support and enhance sustainable territorial development, for the Pilot Area in Bavaria - the Achenal valley in prealpine Traunstein district - has been based on and addressed with an analysis of regional conditions and challenges, strongly connected with stakeholder involvement that also included further definition of the steps of the project AlpBC: Connecting the Parts (chapter 1) focuses on the overall idea of Building Culture to gather expertise and involvement in different fields of construction and planning; and especially that Building Culture has to be constructed: as framework of objectives, of research, of practice, and as network. Based also on the experiences of the project AlpHouse, funded within the Alpine Space Programme 2009-12, the concept From Heritage Re-Use to Building Futures (chapter 2) shows that increased collaboration between separated professional and practical fields for Alpine Building Culture can be based in a sustainable way on a comprehensive understanding of building activities, and the innovative role of strengthening interfaces between the technical and concept related fields of construction and planning. With the specific approach of AlpBC on the guiding role of planning for architectural qualities of single interventions, and especially on the inclusion of energy tasks in these processes, for the Pilot Area and a larger Bavarian context, with the tools of Gemeindedialoge and Fachtagung Planen und Bauen in den Alpen, transferable measures of Consultancy and Communication (chapter 3) have been developed to strengthen the shared knowledge base of the involved different stakeholders and to shape possible

processual and strategic approaches for Regional Building Culture. With a transalpine framework and steady exchange of concepts, measures and tools the collaboration between the international project partners of AlpBC, based on the previous collaboration in the AlpHouse project, proved to be significantly effective in this regard. A further field of intense international collaboration, and of perspective beyond the project AlpBC, has been installed with the Transalpine Model of AlpHouse Centers (chapter 4). In the connection of regional points of information, education and expertise - for the German Pilot Area the concept for the AlpHouse Center in Traunstein has been realized - the Network of AlpHouse Centers provides an added value of the collaboration of regional points with different content and context related focuses on Building Culture, for future activities of communicating of, educating in and formulating also political advice and new projects in Alpine Building Culture. For the activities in AlpBC of Leibniz Universität Hannover in cooperation with the Bavarian Chamber of Architects, the Federal Transnational Cooperation Programme by the Federal Ministry of Transport and Digital Infrastructure has cofinanced the project work. A series of regional and local observers supported the project, especially the Ökomodell Achenal regional development initiative.

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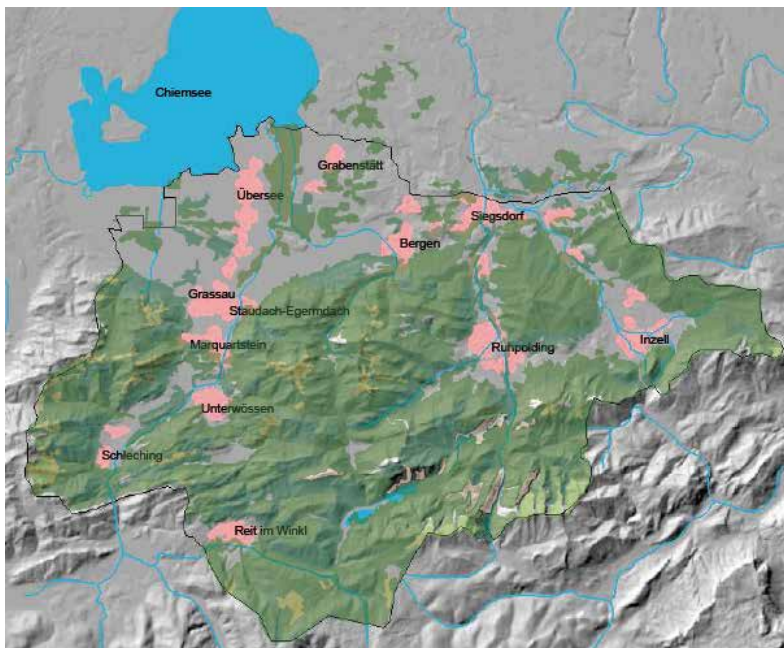
² In the German Pilot Area Achenal (Traunstein district) for the project AlpBC, the Chair for Regional Architecture and Urban Planning of Leibniz Universität Hannover cooperated with the Bavarian Chamber of Architects as regional partner. We thank the managing director Oliver Heiss, and Nadja Schuh for their decisive support for the AlpBC project. The work has been coordinated with the activities of the Chamber of Crafts for Munich and Upper Bavaria (Leadpartner of AlpBC) in the same Pilot Area, we thank for the collaboration.



Structural Map Pilot Area Achental

Image: LUH Regionales Bauen und Siedlungsplanung,
data: Landesamt für Vermessung und Geoinformation Bayern

1	Schleching	7	Markt Grassau
2	Unterwössen	8	Marquartstein
3	Staudach-Egerndach	9	Reit im Winkl
4	Grabenstätt	10	Ruhpolding
5	Bergen	11	Inzell
6	Übersee	12	Siegsdorf



Land-use in the Pilot Area Achental, importance of woods

Image: LUH Regionales Bauen und
Siedlungsplanung, based on CORINE 2006,
data: Bayerisches Landesamt für Vermessung und Geoinformation
Bayern, Bundesamt für Kartographie und Geodäsie, 2012.



Aerial Photo Pilot Area Achental
Klaus Leidorf

1.2 The Construction of Alpine Building Culture Core Elements of AlpBC

1. Connecting the Parts

Fields of Regional Building Culture

AlpBC followed in its activities an inherent definition of Building Culture³ as

- ▶ enlarged objective focus: the built environment, with special regard to houses and settlements,
- ▶ enlarged actors' focus: all processes and stakeholders of construction and planning, including specifically building and environment related energy issues,
- ▶ qualitative focus: building culture as combination of structural, economic, social and esthetic aspects,
- ▶ comprehensive focus: new construction and further use of building stock as connected field of action, construction and planning levels as interdependent spheres of building culture.

The Alpine character of building in the mountains and pre-mountains on one hand offers easily accessible common tasks: to deal with extreme topographies and climates, with narrow settlement areas, strong interdependencies with nature protection and with built heritage. On the other hand during the project's activities the rich differences between the Alpine regions in cultural mindsets and heritage, in planning and building legal and procedural backgrounds, in setup of construction industry and crafts, architects and planners organizations, professional practices and acting cultures became very clear, these differences can be defined as asset of Alpine Building Culture in general; "building-diversity" is an advantage for shaping the future of the inhabited spaces in the Alps.

1.1 Structural characteristics of the pilot area

The District of Traunstein as larger reference area of the Pilot Area Achenal can be characterized as mainly rural, with a complex system of centralities (regional center city of Traunstein with important historic city center, smaller town and market places, villages and dispersed settlement with historical agricultural background). The spatial structures and the communities are strongly influenced by four factors: the proximity to Munich and the economic and social

concentrations of the Metropolitan region Munich, the international development axis Munich-Salzburg (along TEN-17 corridor, highway A8) and the transalpine connections (TEN-1 corridor of Brenner, highway to Innsbruck/Verona, but also Tauern-Connection) and regional economic forces in industry (chemical industry e.g.) and especially crafts, but also in the tourism and leisure sector.

In regards to demographics the area is underlying significant changes: urban concentration processes and attraction of the core of the Metropolitan Region, increasing of the senior population part within the region, secondary homes of mainly senior incomings, and new (small) industrial and leisure related population - but also commuter based communities - mainly along the axis of A8 and at lake Chiemsee. The overall structural changes in agriculture and tourism are also a crucial factor for settlement and building perspectives in the area. With the changing and expanding the historical settlement structures especially in the last 25 years, and various new developments of the fabric of settlements and the specific building elements have occurred, that additionally influence decisions about future strategies (e.g. detached house settlements, industrial areas, large agricultural and tourism facilities).

In the regional work of AlpBC the most important fields of future action and decisions have been identified in analysis and stakeholder involvement (see 3.1). In general in the Traunstein area, and especially in Achenal, chances for a qualitative approach to future construction and planning activities are significant, also based on the economic possibilities of private house owners and on the general economic strong conditions of the area. In detailed analysis for the municipalities of the Pilot Area conditions and challenges for construction and planning have been summarized (see table). The municipalities are: Schleching, Bergen, Grabenstätt, Grassau, Inzell, Ruhpolding, Reit im Winkl, Siegsdorf, Staudach-Egerndach, Übersee, Unterwössen, Marquartstein. Nine of the twelve municipalities are actually forming the association Ökomodell Achenal, three additional municipalities have been adjoined for the cooperation as Pilot Area of AlpBC, in order to test and develop transfer processes already within the project.

³ Abteilung für Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover: AlpBC Framework for WP 5, Analysis and Conceptbuilding. 2013; AlpBC comprehensive report WP 5. 2014

Abteilung für Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover: AlpBC Regional Analysis Achenal. 2013

1.2 Processes of construction and planning

Planning and building activities in the area of Traunstein can be characterized in the following layers. They are organized and guided by different regulations and financed in different ways. Interdependencies in many cases formally and legally are consolidated, nevertheless a coherent strategic and cultural approach to the built environment is not foreseen and effectively missing. Former governing practices of district administrations increasingly are restricted to legal business. As main factor in the German planning system, the autonomy of municipalities in planning is powerful inside of built-up areas, even if often not effectively used and depending on political decisions on municipal level; and at the same time weak regarding construction in the outside areas of the built-up zones. The overall picture of different organization forms and targets as follows:

- ▶ Formal planning of municipalities, separated in single areas, in most cases not including dispersed settlement and limited to the built-up areas (General Regulation Plans, Building Zone Plans, Area Regulations and Building Codes),
- ▶ separated processes of construction in the not-built-up areas (=outside areas), privilege for agricultural buildings,
- ▶ processes of decision for placing new energy infrastructures (wind, water, biogas, for transport and storage networks)
- ▶ separated federal and state programmes, formal and informal (e.g. Village Renewal, Urban Renovation, ISEK, ILEK, Bioenergieregionen, new housing models ecc.),
- ▶ European programmes (e.g. Social Fund, ERDF, Rural Development Fund Agriculture, CAP ecc., for Achenal e.g. projects like MountEE)
- ▶ Public buildings (federal and state programmes),
- ▶ Larger housing and industrial/crafts buildings (architectural projects)

AlpBC Expertenkreis								
Gemeinde	Schwerpunkt Thema	Fallbeispiel	Bearbeitungsansatz	Potentielle Partner	Bestehende Beratungen	Kooperationen	Vision/Leitbild	Rahmenbedingungen
Schlechting	Tradition/Moderne Neue Wohnformen Tourismus/Infrastruktur/ Flächenmanagement (Nachhaltigkeit) Energetische Gesamtausrichtung	Denkmalgeschütztes Gasthaus „Edelweiß“ Bestandsgebäude	Polizentrik, Bürgerinfo/ Partizipation	VorarlbergerGestaltungsrat Walseralpe Energetische Gesamtausrichtung Baubook als ergänzendes Planungsinstrument	Energieberatung Öko- modell, Bauberatung i.R. Dorferneuerung-verfahren, Seniorenbeauftragter, Behindertenbeauftragte	ArgeAlp, Aida, Ökomodell Achenal	Leitbild im Rahmen der Dorferneuerung erarbeitet und im Hinblick „Schlechting 2020“ analysiert und ergänzt	Gestaltungsatzung zur Holzverwendung, Flächen- nutzungsplan
Unterwössen	Ortszentrum/ Einzelhandel, Neue Wohnformen, Energieparks/ Energetische Gesamtausrichtung	Hackschnitzelversorgung Teilbereich Unterwössen, 50/70er Jahre Gebäude sanieren	Flächenmanagement- datenbank Bürgerinfo/Partizipation Umwidmung von Flächen Reaktivierung Dorfkern	Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG Solarpark Blons	Ökomodell Achenal	Aida, ILEG, LEADER ab 2014, Euregio Salzburg, Chiemgau Tourismus- Tourismus, Infrastruktur und Dorferneuerung, Erweitern und Weiterführen!	Leitbild von 2004 unter Leitung von Herrn Prof. Dr. Pietrusky zu Nachhaltigkeit, Tourismus, Infrastruktur und Dorferneuerung, Erweitern und Weiterführen!	keine Gestaltungsatzung/ Bauleitpläne und FNP vorhanden/ Einheimis- chenmodell
Grabenstätt	Gewerbegebiete, Neue Wohnformen	OT Winkl	Flächenmanagement- datenbank Bürgerinfo/Partizipation	Polizentrische Entwicklung Rheinthal Mehrgenerationshäuser Langenfelder/ neues Wohnen Tiedolo Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG	keine spezifischen	ArgeAlp, Aida, Ökomodell Achenal	keines	einige Bauleitpläne z.B. Turnhalle mit Fernwärme/ FNP von 1987/ Einheimis- chenmodell/ neue Baulandausweisung für 30 Parzellen
Übersee	Neue Wohnformen/ Infrastrukturumgestaltung, Ortskernerneuerung	Leerstände/Bestand (alt)	Polizentrik, Bürgerinfo/ Partizipation	Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG Fläsch Mountee	keine, bisher auch kein Bedarf/Anfragen	ArgeAlp, Aida, Ökomodell Achenal	keines	seitens genutzte Gestaltungsatzung/ Ausweisung neues Bauland/ Bebauungspläne Gewerbe- gebiet, Freiflächengestaltung Chiemsees, Ortsmitte FNP Einheimischenmodell, Flächenknappheit
Markt Grassau	Gewerbegebiete Neue Wohnformen Ortskernerneuerung/ Entwicklung	ehemalige Schwerlasthalle, Generationswohnen	Polizentrik, Bürgerinfo/ Partizipation Reaktivierung Dorfkern/ Entwicklung	Mehrgenerationshäuser Langenfelder/ neues Wohnen Tiedolo Polizentrische Entwicklung Rheinthal Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG Mountee	Ökomodell Achenal	ArgeAlp, Aida, Ökomodell Achenal	Erhält ländl. Erschein- ungsbildes, Sicherung innerörtlicher gewerblicher kleinteiliger Infrastruktur, Einheimischenmodell für junge Familien, Verbes- serung Seniorenangebot+ Fremdenverkehr, ularke Energieversorgung	Ortsstellabhängige Gestaltungsatzungen/ Bauleitpläne vorhanden/ Neuauweisungen gewin- schl/ Wohnungen kämpf, Ho- tels vorhanden/ Gemeinde versucht durch Ankauf und Teilung von Parzellen Preise für junge Familien attraktiv zu halten
Marquartstein/ Staudach- Egerndach	Gewerbegebiete, Ortskernerneuerung, Infrastruktur, Tourismus	Gebäude der „Neue Heimat“ Gemeindeaal Hotelnuebau	Flächenmanagement- datenbank Reaktivierung und Entwick- lung Dorfkern Polizentrik Nachhaltiger Tourismus	TU München/Baubook Fläsch / Mountee Polizentrische Entwicklung Rheinthal	Allgemein durch das Bauamt: Bauherren lassen sich jedoch umfangreich extern beraten	Ökomodell Achenal, Aida	Lebenswerte Gemeinde: wie bspw. Schaffung eines verträglichen Gewerbe- gebietes, Verbesserung der Ortsbeschilderung und Schulwegsicherheit, Über- sichtsbildliche Maßnahmen, wie Verschönerung des Ortszentrums, Bau einer Fuß- und Radwegebrücke über die Tiroler Ache, Errich- tung eines Erlebnisbereiches Tiroler Ache, Sanierung der Hochplattenbahn und Schaffung eines Bergwälderlebnisweges, Städtebauförderung ganz allgemein, bis hin zu kulturel- len Projekten, wie das Lesedorf Marquartstein.	Gestaltungsatzung Egerndach aus 70er Jahren/ neuer FNP für Wettbewerb/ Förderung von neuen Pro- jekten/ Ex-Einheimischen- modell/ Bebauungsplan Gewerbegebiet
Reit im Winkl	Tourismus und Unterkunft, Tradition/Moderne	Entwicklung von „Gut Stein- bach“ (Bauleitplanung läuft), Wohnhaus als „best practice“ für Moderne/Tradition	Bürgerinfo/Partizipation Nachhaltiger Tourismus	Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG Umbauen im Dorf-Ratgeber für belgische Eifel	keine spezifische, allgemeine durch das Bauamt selbst	Ökomodell Achenal, Aida	tourismusorientiert, Grundzüge der Bauleitpla- nung ausgelegt auf erhöhte Attraktivität bei Touristen, Steigerung der Übernach- tungen und des Angebots erwünscht, gesichert durch Satzung	strenge Gestaltungsatzung/ Bauleitpläne vorhanden zB: Für Lebensmittelmärkte und Seilbahn/ FNP gestaffelt und gebunden an Einheimischen- modell/ Grünflächen frei verkäuflich
Ruhpolding	Ortskernerneuerung, Tourismus und Unterkunft	Umnutzung Bahnhof/ Schloss	Bürgerinfo/Partizipation Nachhaltiger Tourismus	Vor Ort Ideenwerkstatt nonconform / TU München/ Baubook Ballenberg Course Center?	durch ehemaligen Kreis- baumeister, Arbeitskreis Energie	Aida, Leader	Wintersport	Gestaltungsatzung/ qualifizierter Bebauungsplan/ FNP und Landschaftsplan vorhanden
Siegsdorf	Tourismus und Unterkunft, Renovierung	Feriensiedlung	Umwidmung und neuer Nutzungsplan Polizentrik	Mountee	private Anbieter (Kaminkehrer), Interesse an energetischer an Solar- Beratung	LEADER, Aida, Chiemgau Tourismus,	Vision eines Gesundheits- standortes	gestaltungsatzung im OT Eisenärzt (Ensembleschutz) / Bauleitpläne zB für Schule und Gewerbegebiet/ FNP 60/70er Jahre strukturelle Neuplanung / Einheimischen Modell
Bergen	Energieparks/ Energetische Gesamtausrichtung	Fläche ehemalige Deponie	Flächenmanagement- datenbank	TU München/ Baubook Solarpark Blons	Nein	LEADER, Aida, ArgeAlp, Verwaltungsgemeinschaft mit Vachendörf, Über- regionale Konzepte mit Reit im Winkl/Inzell/Siegsdorf/ Ruhpolding	Luftkurort	Gestaltungsatzung zu Sat- teldach, Holzverwendung, Putz und rote Dachziegel/ Bauleitpläne zu Rathaus, Krippe, Gewerbe/ Flächen- nutzung 2/3 Einheimis- chenmodell

Municipalities' focus overview in planning and building
Image: LUH Regionales Bauen und Siedlungsplanung

1.2 The Construction of Alpine Building Culture Core Elements of AlpBC

- ▶ Tourism (regional owners, larger investing enterprises),
- ▶ Private construction (mainly planned by crafts: 95% of single houses, small part of architectural projects, huge influence of do-it-yourself),
- ▶ Incentive programmes of municipalities (e.g. for inhabitants
- ▶ renovation of monuments and important buildings for settlement and landscape contexts,
- ▶ Influence of energy issues in regulations and programmes of European, federal, state and municipal levels.

Furthermore planning and building paradigms developed in the 1960-90ies (mainly in an approach of conservation of formal village images) are now considered not answering to participative and civil-society desires and needs of decision-making, and are especially challenged by overall trends of quite different and complex demographic and economic shrinking or increased development in the areas formerly simply called "rural", that now show different characteristics and that call for actualized spatial strategies. In a differentiated consideration the specific positioning of municipalities in patterns of periphery, development axis, valley concentrations, maxi- and micro-suburbanisation (new settlement areas), tourism hubs and dispersed tourism patterns, and infrastructural influences, an actualized vision of settlement in connection with the Alpine and Prealpine landscapes in general seems necessary. Since nature conservation, mitigation of climate change, and landscape values and their importance for economy and society are perceived as highly relevant in the mountain areas, this influence has to effectively be included in approaches for planning and building in the Traunstein area. Top-down formal and incentive oriented planning tools will have to be combined with bottom-up and municipally and inter-municipally relevant initiatives and needs for an overall and comprehensive strategy and procedural setup to decide about the future of the built environment, that focuses on structural patterns and elements, combined with an esthetic re-evaluation of regional building.

1.3 Initiatives and interfaces

Regional initiatives and projects with different aims and legal/financial background have been included in the stakeholder involvement of AlpBC, in order to clarify their contribution and possible added values of cooperation for an overall strategy of Regional Building Culture.

The Ökomodell Achenal e.V. e.g. serves as a platform for a range of projects initiated under the proposition of combining renewable energies with regional economies, nature preservation and sustainable tourism. The knowledge generated through and via these projects and initiatives is valuable to the AlpBC project to coordinate consultancy forms on a public and private level. The chance to increase the efficiency and have a long-term partner in the region at the same time is an important outcome aim for the AlpBC project. Notable projects to include are e.g. Biogas Initiative, Biomassehof, district heating Grassau, wood chips plants, wood distillation plant, climatefriendly hotel, „Märchenpark“ event park, short rotation forestry, mobilising of organic waste, local heating network. AlpBC expanded the knowledge transfer of the Ökomodell Achenal to combine with building culture and craft to path the way for an even more effective coordination between spatial planning and renewable energy generation and consumption in the region, also focussing more on small power/heat-plants, storage innovations etc.; especially the inclusion of planning and building within the objectives and the activities of Ökomodell in an increased way has been formulated as important result. An initiative by the District of Traunstein, the Sonnenkreis aims to create awareness: good information for all citizens, personal energy check, reducing energy consumption, heat insulation, proper heating, economical and environmentally friendly mobility. Therefore Sonnenkreis supports cooperation, the involvement of local experts, a knowledge platform on climate, an energy conference, and is taking up innovative ideas and impulses for the economy. Goals are climate protection, conservation of resources, a healthy environment, energy saving, stable living costs, energy efficiency, commissions for the regional economy, regional and renewable energy, local value. Potential for further cooperations have been identified, also with support of the AlpBC project: connecting renewable energies with local resources, DENA, Ökomodell, energy consultations by architects, energie-effizienz-experten.de, consumer, klimahaus-bayern.de, unendlich-viel-energie.de, kirchanschönering.info, Funding through KfW, BINE promotion compass, individual and project-related fundings.

2. From Heritage Re-Use to Building Futures - connecting the shaping of the Built Environment with knowledge and abilities

2.1 Architectural Approach for Concept and Context The Paradigm of “Building-On”

The project AlpBC further developed approaches to Alpine Building already researched and promoted with the project AlpHouse (e.g. with the AlpHouse Fair Stand⁴ at 20 venues and manifestations in the Alps). Alpine Building in this regard is seen as combination of activities from different professional, academic and political-administrative backgrounds: specific renovation techniques derived from monument preservation for larger parts of the building stock, advanced technological innovation in energy efficiency, storage and technical devices, in ecological construction materials and processes, in production, prefabrication and transport innovations, are combined with the rediscovery of renewable and local building materials and specific craft traditions. This wide range of technologies firsthand refers to renovation tasks or separately to new construction - but in empirical findings it became obvious already in the AlpHouse⁵ project that many construction projects in the Alps need to combine the different technologies. This merged and clustered construction activities can be described as reality and as ability of “Building-On”, in the form of add-on-buildings, enlargements, partial replacements, building-beneath, ecc. This reality and future condition constitutes a challenge for the professional crafts and architects; for education in crafts specifically, that are still separated in “Gewerke” (material/technique based guilds). And with the same paradigm of “Building-On”, architectural practices and research are challenged for increased cooperation between established disciplinary separations. The condition of “Building-On” beyond the focus on projects in themselves also suggests strongly a refreshed view on the contextualisation necessary for Alpine Building in general, as field of renewed significance in a high-value space like the Alps,

that every building has to integrate in its concept.

Two specific Alpine conditions further influence the approach to Building: firsthand the high values of built heritage, not only of single monuments but especially of contexts of settlements, and the high landscape values every building intervention in the Alps has to face. Secondly the programmatic demands for the use of buildings increased significantly with a differentiation of Alpine societies and economies: needed is a large range of architectural concepts responding to varied household models according to demographical changes, new combinations of living and working, innovative small enterprises in many fields, new adaptive forms of community infrastructures, that correspond to changes ways of living; also an enlarged range of touristic structures and infrastructures: ranging from high impact and highly concentrated nodes to light small-scale facilities as hotels, B&B, secondary homes, huts, etc. Similar differentiated and enlarged programmatic demands can be observed between multifunctional agriculture and specialized farming.

For these two conditions of heritage preservation and differentiated development needs, and for the socio-economic demands for intelligent and sustainable house and settlement models, the architectural knowledge of concept and design has to play a major role in the future, and has to be developed and adapted to the specific conditions and perspectives of Alpine Building - a huge challenge for the small number of academic schools and for research in and around the Alps. The architectural approach will be essential for the future of Alpine Building: to comprehensively draw plans with overall spatial concepts and different advanced technological parts, with floor plans and sections answering to use demands, to heritage and landscape contexts, and with a cultural positioning towards tradition, modernity, and future; and not at least with an actualized awareness of rural-urban relations.⁶

4 Jörg Schröder: *The AlpHouse Approach*. In: *Handwerkskammer für München und Oberbayern, Bayerische Architektenkammer* (eds.): *AlpHouse Fair Stand Catalogue*. München 2011

5 Jörg Schröder: *The AlpHouse Approach - Framework and Key Topics*. In: *Bayerische Architektenkammer, Technische Universität München, Energieinstitut Vorarlberg, Research Studios Austria - Studio iSpace* (eds.): *AlpHouse. Alpine Building Culture and Energy-efficiency. Joint Synoptic Report of Analysis*. München 2011

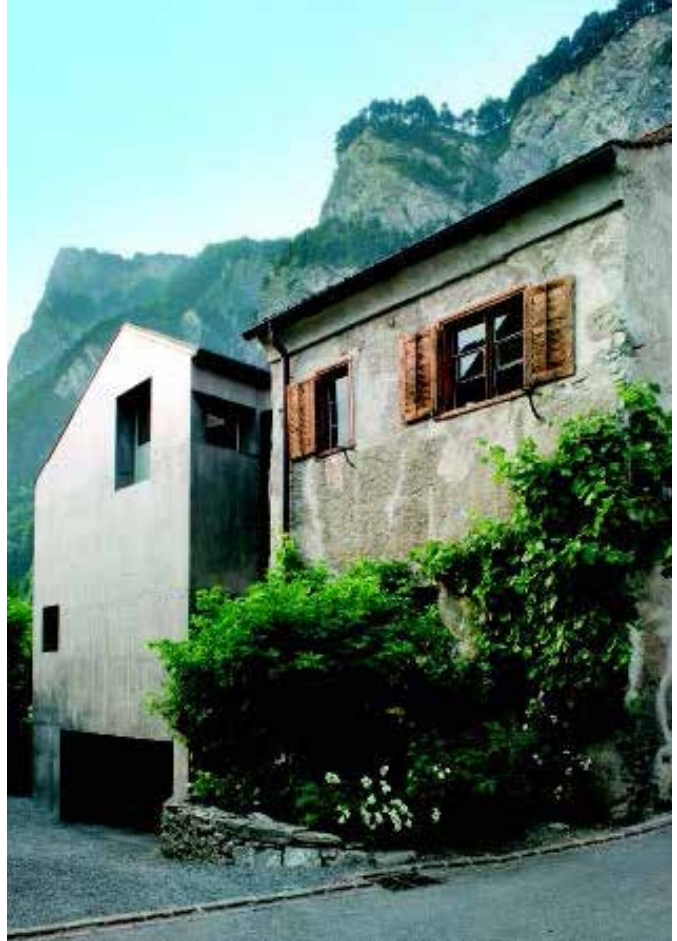
6 see: the RURBANCE project in the *Alpine Space Programme*, www.rurbance.eu
Abteilung Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover, und Allgäu GmbH: RURBANCE Broschüre Bayerischer Voralpenbogen. 2015
Direzione Generale Ambiente, Energia, Sviluppo Sostenibile, Regione Lombardia, Leadpartner, for the consortium of RURBANCE (ed.): *RURBANCE Final Report*. 2015



Strategic map Fläsch: Green connections in the village
Image: LUH Regionales Bauen und Siedlungsplanung. data: Municipality of Fläsch, and prof. Wagner, HTW Chur

Casa Scura Fläsch. Architect Hauenstein
Image: Laura Egger

Overview Photo Fläsch
Image: Laura Egger

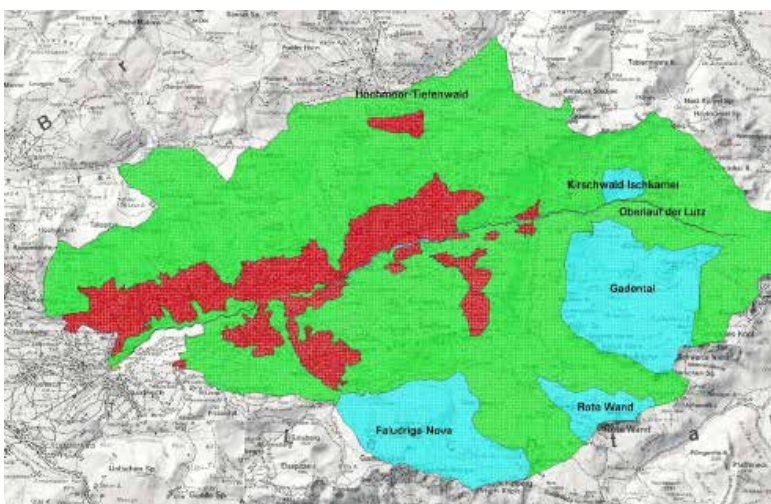




Aerial Photo Großes Walsertal
Image: Klaus Leidorf



Gemeindehaus St. Gerold.
Architects Cukrowicz Nachbaur
Image: Hanspeter Schiess



Strategic map Großes Walsertal: zone plan
(protection, maintenance, development)

1.2 The Construction of Alpine Building Culture Core Elements of AlpBC

The scale of planning and intermunicipal concepts in territorial development and energy issues within AlpBC has been connected in multiple ways with this actualized role of Alpine Architecture: in the part of exploring contextual conditions for territorial development, in the part of strategic and measure-focussed approaches to planning, and in communication and education.

AlpBC therefore promoted that for sustainable territorial development in the Alpine Space, Building has to re-connect the architecture of houses with planning visions for larger scales - villages, municipalities, valleys. Similar to the challenges in the profession and professional education of crafts, the separation of architects' and planners' specializations, and also of renovation, high-tech, tourism etc. experts in a certain regard has to be re-combined towards a comprehensive professional and academic approach to the Alpine built environment, that includes not only deeper integration of specific architecture and crafts abilities and knowledge, but of regional building economies and closed loop systems in a larger sense.

2.2 Vernacular Intelligence⁷ and Building Diversity

For the illustrated challenges for crafts and architects, in the Alpine Space the understanding and sustainable valorization of tradition, and its relation to modernity has been identified as crucial theoretical and action-related question. With the term "tradition", in Building usually crafts' as well as architectural abilities to use materials, to ensemble, to design are addressed in a simplified opposition of "past" vs. "today": for the forms of details and houses, and of settlement structures. The rich differences of Alpine buildings and village, their interior composition as layers of different pasts, different approaches to landscape, density, volumes, facades, etc. in all research activities and stakehold-

er involvements of AlpBC have shown the possibilities to use this "biodiversity" of Alpine Heritage - as Building Diversity - much more intensely, consciously and systematically to draw lines to actual building codes, planning strategies and architectural concepts. Therefore for Alpine Building there are multiple "pasts" and significant potential lines towards the "future", shaping the spatial effect of ongoing trends in culture, economy and society.⁸

The Alps as space of man-nature interrelation and as culturally formed and connected traditional and actual landscape and settlement spheres,⁹ can be described by a significant difference between north and south in settlement structures and landscape layout, due to cultural and climatic factors; numerous sub- and mixtypes of this basic characterisation in detail nevertheless strengthen the impact of this difference, and the further need for systematic typologisation of transformations of Alpine built environments.¹⁰

The fundamental difference in settlement structure between southern and northern Alps - more concentrated nuclei in the South, more dispersed organization in the north - in both cases is embedded in refined networks of hierarchical organizations from small units to bigger ones including different types of common infrastructures; in both cases traditional structures are influencing strongly territorial transformations related to step-by-step and enforced urbanization processes, to rediscovered rural dynamics, to elite and mass tourism, and to deep changes in land and resource use since the industrial age. The transalpine routes varied already the traditional structures with trading routes and movements of people through Europe, that diffused also building techniques and innovations. In the traditional agricultural landscapes the difference between arable land - alpine meadows to pastures- alpine meadows (woods) systems from south to north is also definable.

7 Jörg Schröder, Sarah Hartmann, et.al.: *Cross Scale Analysis as Basis for Spatial Strategies*. In: *Handwerkskammer für München und Oberbayern, Bayerische Architektenkammer, Technische Universität München: AlpHouse Final Project*. Publication. München 2012

8 Jörg Schröder: *Alpine Baukultur der Zukunft. Alpine Building Futures*. In: Claudia Miller, Hannes Bäuerle (eds.): *AlpenOrte. edition Detail, München 2014 (DE/EN)*

9 Jörg Schröder, Kerstin Weigert: *Landraum*. Jovis, Berlin 2010

10 An actualized coherent scientific study to Alpine settlement structures is lacking; last coherent studies are dating back to 20th century, have concentrated on national territories and are available only in separate languages. For example the crucial study of Helmut Gebhard, Helmut Klein: *Bauernhäuser in Bayern. Oberbayern* (1998) is available only in German, the book of Emilio Sereni: *Storia del paesaggio agrario italiano*. 1961 at least has in 2014 translated into English (but interestingly does not specify much on the Alps), Luigi Dematteis: *Alpinia. testimonianze di cultura alpina* (1975) is neither available in English, German or French. Of Paul Guichonnet: *Histoire et Civilisations des Alpes* (1980) an Italian translation has been provided in 1987. The only coherent study of Alpine geography available also in French and Italian is Werner Bätzing: *Die Alpen. Geschichte und Zukunft einer europäischen Kulturlandschaft* (1984, 1991, 2003), with acute statements related to settlements and architecture for the Alps in the agrarian age, and the new forms of use since 19th century. Bätzing with a series of publication is also constantly addressing the need for strategic and sustainable approaches towards Alpine futures.

The concept of Vernacular Intelligence has been formulated for the interrelation between settlement and landscape structures; in a further and more precise understanding of the Alpine Built Heritage Vernacular Intelligence addresses old buildings and settlements not only as context for Building today, as “environment” to further develop with new interventions, but as source of architectural, planning and crafts knowledge for transformation itself. With vernacular intelligence models of design and construction in different scales (valleys, villages, houses, construction details) are systematized, a that respond in a precise way to Alpine conditions - climate, topography, natural forces and dangers, accessibility, restricted spaces for settlements, effort to transport and build in extreme conditions, temporary intensities of use, high cultural demands, ecc.

In contrast to “Tradition”, that somehow draws the image of a coherent and logical past as normative reference for today, Vernacular Intelligence is the source for an ability of today to open up different strategies of building for future use: strategies that in trial and error have been developed in the different Alpine regions, that became temporary standards, that vanished with the emerging industrial standards, that have been transformed according to inherent logics of architecture and settlement development, to social and economic demands - and that at the same time always influenced strongly cultural, social and also economic set-ups of the different regions. To further use the existing houses and settlements, to answer to climate and landscape, to form overall cultural models for Alpine Building, are not an invention of today. The necessary frameworks for planning and building, the cultural understanding and policies in Alpine Building can refer to the great advantage of the Alps as proactive collector of Building-Diversity for Building Futures.

2.3 Good Practices

As examples of connecting the future of the Built Environment with knowledge and abilities, in AlpBC good practices of planning and development on a municipal/intermunicipal scale have been analysed; they contributed to the framework of the project and have been concrete reference materials for stakeholder involvement in the pilot region.

Großes Walsertal¹¹ - Bio Sphere Park and Intermunicipal Cooperation (Vorarlberg, AT)

The best practice Grosses Walsertal combines intermunicipal cooperation of the municipalities Thüringerberg, St. Gerold, Blons, Raggal, Sonntag, and Fontanella in the REGIO organisation with the Biosphärenpark Grosses Walsertal initiative and with the Energy Model Region initiative within the Austrian e5 programme. The intermunicipal cooperation REGIO with its organisation as association is based on similar legal and planning background as in the Bavarian pilot area Achental, and can be seen as possible model. The board of REGIO as decision-making body for strategic planning is supported by sub-committees with a technical advisory function, and also governs the Bio Sphere Park Grosses Walsertal initiative. As precondition for Park the masterplan of the valley has been adapted into a new system of zoning: protection zone, curative zone, development zone, restoration zone, that depend upon different objectives for natural structures. Regional building culture has been fostered since years, in combination of highly qualitative architecture and local materials promotion (Bergholz initiative).

The consultancy models in energy (supported by EIV) for privates and specifically for public building are an international good practice. As part of the intermunicipal cooperation a common planning and building office has been installed, to facilitate coordination in planning across municipality borders and to secure architectural quality. Especially the public buildings are good practices for the combination of energetic, ecological and architectural qualities. Through connected strategic and measure definitions in participatory processes, from the beginning they have been related not only to rural development and ecological objectives, but also to energy aims, now enhanced through the participation in the e5 programme and its evaluation consultancy.

¹¹ Jörg Schröder, Sarah Hartmann: AlpBC Good practice Grosses Walsertal. Abteilung Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover. 2013 (DE)

1.2 The Construction of Alpine Building Culture Core Elements of AlpBC

Village development plan Fläsch¹² (Canton Grisons, CH)

The small municipality of Fläsch, in the Rhein valley, has 590 inhabitants and is characterized by wine production, the infrastructural advantage of the Rhein valley network causes demand in settlement extension. In order to meet this challenge 2008 Fläsch decided an innovative revision of its development plan. The innovative development plan of Fläsch (by architect Christian Wagner) can be used as good example how to orient planning to cultural, but also energetic and ecological aims. Fläsch decided not to build on the vineyard areas inside the village, in order to enhance connection with the landscape and to foster the local wine producers, that sell most of their products directly and make use of the vineyard atmosphere in the village. For new houses concentrated satellites at the border of the village are planned, that make reference to spatial qualities and the density of the old village core. At the same time empty agricultural buildings in the village center have been chosen as second main target for new housing, contribution to the aims of inner development and less ground sealing (example Casa Scura). The new development plan has been implemented in a participative model. Innovative consultancy elements in the building regulation process since then enhanced architectural quality and the awareness for building culture. Fläsch in 2010 has won the Wakkerpreis for sustainable development.

3. Consultancy and communication

3.1 Thematic fields of a cooperation strategy in spatial planning and energy¹³

For the twelve municipalities of the German Pilot Area Achenal with the AlpBC analysis work and stakeholders' and experts' involvement the following main thematic fields of intermunicipal cooperation and regional strategy in Building Culture have been identified, for future common initiatives and projects. Due to the different status-quo of the settlement structure in the municipalities, cooperation can also be reasonable on theme-related groups, not including the whole

Pilot Area, or in enlarged cooperation beyond the area.

- ▶ Post-agricultural building stock, re-use of empty barns, stables and whole farms in dispersed structures (Einzelhöfe) as well as in denser settlement patterns (Weiler, Dörfer), with the special theme of the buildings of Alpine meadows,
- ▶ Village centers: re-use of historic building stock, securing of community infrastructures, especially shopping for daily uses
- ▶ Touristic buildings and infrastructures: renewal and new construction in landscape-adapted small structures, but also larger projects and all sorts of leisure, culture and sports infrastructures, questions of overall design of destinations and structural/aesthetic values of touristic buildings
- ▶ Industrial and craft zones: objectives of ground protection and missing extension possibilities due to topography and nature protection lead to necessary cooperation in the establishment of new zones, at the same time first examples of transformation of older zones,
- ▶ Zones of detached houses: renovation of the building stock mainly from 50ies-90ies, questions of adaption strategy to demographic changes (infrastructures, accessibility), but also further use / renewal of secondary homes in these zones,
- ▶ New housing models: community-oriented housing models, mix of different age classes and household forms/sizes are increasingly asked for in the area, in difference to urban contexts adapted forms of organization and financing of these models are not yet established,
- ▶ Energetic aspects: energy-efficiency objectives to be sustainably achievable in the building stock and existing settlements, architectural quality of energy-efficient renovations not only for protected monuments, but also for settlement contexts, and the processes of decision related to energy production, storage, and transport infrastructures as parts of the built environment,
- ▶ As general issue, crossing all other fields: an overall structural and aesthetic Leitbild to protect and further develop the inherent and valuable qualities of Alpine settlements and buildings, with a strong cultural aspect to combine traditions and modernities.

¹² Jörg Schröder, Sarah Hartmann: *AlpBC Good practice Fläsch. Abteilung Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover. 2013 (DE)*

¹³ *Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität Hannover, Handwerkskammer für München und Oberbayern (eds.): AlpBC Kooperationsstrategie Achenal. 2014*



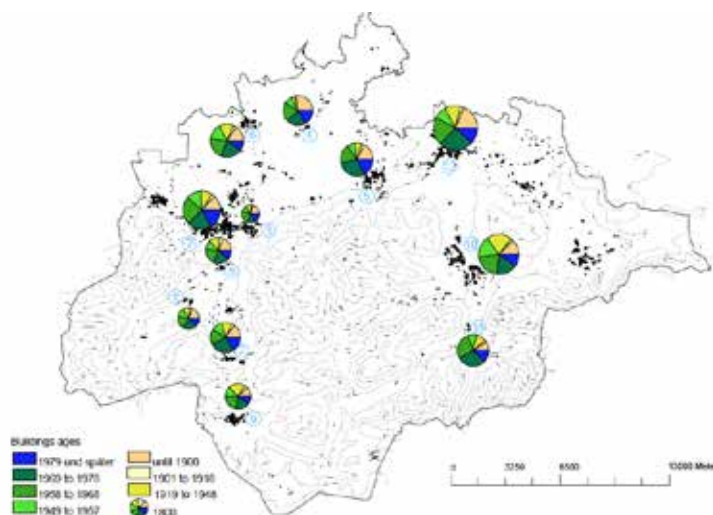
Interdependency of thematic focuses.
Village center Schleching

Image: LUH Regionales Bauen und Siedlungsplanung,
Aerial Photo by Klaus Leidorf



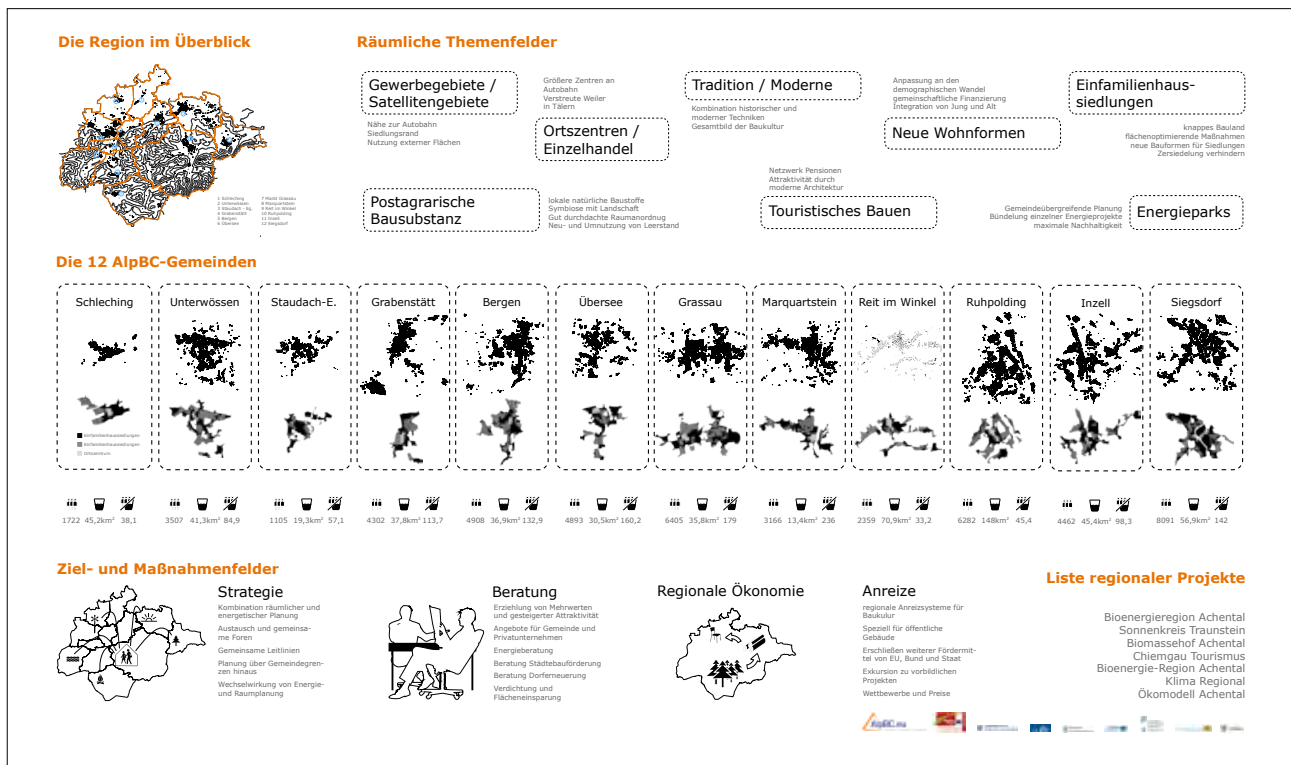
Exemplary focus village centers and
infrastructures, Schleching

Image: LUH Regionales Bauen und Siedlungsplanung, data: Landesamt für Vermessung und Geoinformation Bayern, and field research.



Exemplary focus settlements of detached
houses: Overview of building stock
age classes in the Pilot Area Achenal.

Image: LUH Regionales Bauen und Siedlungsplanung, data: Landesamt für Vermessung und Geoinformation Bayern



Poster concept Intermunicipal Strategy Achenal
Image: LUH Regionales Bauen und Siedlungsplanung

The example of the village center of Schleching (see illustration) furthermore demonstrates clearly that the defined thematic fields regard single buildings, but also settlement contexts: decisions about use, renovation or new construction of single buildings depend on the neighbourhood as built context and also as future perspective of living and working space. Furthermore the specific interdependencies of the thematic fields in regard to complex larger settlement contexts and future challenges are obvious due to the spatial relation of the patterns:

- Need of securing community infrastructures, and of re-use of empty former agricultural buildings in the village center,
- Dispersed settlement as landscape-related structure,
- Settlement areas of the 50ies-90ies as neighbourhoods of living qualities and energy production.

During analysis and concept work, the interrelation between territorial development strategies and the goal to reach energy aims (in efficiency, production, nets), has been shown as crucial. Especially for existing building stock (post-agricultural buildings, touristic buildings, detached houses) and for the connected settlement patterns sustainable energy orientation can only be reached within coordinated urban and rural development concepts.

3.2 Gemeindedialoge Consultancy Tool¹⁴

With the development of the consultancy tool “Gemeindedialoge” and its test implementation for Achenal, regional SMEs in craft and architecture have been included in the development discussions, with the aim to enhance regional performance of SMEs, especially for renovation, and to foster regional resource networks (RCLE). As part of the regional implementation of the project AlpBC with an inter-municipal focus - innovation in the combination of energy issues and territorial development - the pilot activity Gemeindedialoge had the aim to set up a consultancy model for the municipalities, in regard to planning and building combined with strengthened regional economy in the construction sector. For this pilot activity LUH cooperated with the Chamber of Crafts for Munich and Upper Bavaria, and with Ökomodell Achenal, supported within the EU-project Mountee, further involved observers were the Traunstein District, Kreishandwerkerschaft Traunstein, Sonnenkreis Traunstein, and Bayerische Architektenkammer.

The overall objective of Gemeindedialoge are cross-sectoral consultancy and knowledge transfer in planning and building, based on the combination of existing sectoral consultancies (urban renovation programmes, rural development programmes, energy saving) for privates, and extended consultancy towards a planning level for

¹⁴ Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität Hannover, Handwerkskammer für München und Oberbayern, Ökomodell Achenal (eds.): Gemeindedialoge Dokumentation. 2015



Cover documentation Gemeindedialoge
Image: LUH Regionales Bauen und Siedlungsplanung



Cover documentation Fachtagung
Planen und Bauen in den Alpen
Image: LUH Regionales Bauen und Siedlungsplanung

1.2 The Construction of Alpine Building Culture Core Elements of AlpBC

municipalities (zoning codes, re-use of vacant lots and building, ground saving). To strengthen abilities of strategic decisions and innovative implementations in sustainable territorial planning and building culture, has been core motivation for Gemeindedialoge. In form of an innovative “market of ideas” expertise offers, also from international experts, have been provided and discussed, with the aim to merge the specific and different needs of the municipalities, their decision-making and financial possibilities with innovative practice and research. The concept of enlarging and deepening the cooperation of the association Ökomodell (9 municipalities) with the 3 additional cooperating municipalities, in addressing planning and building as important issue for reaching sustainability, environment and energy objectives, was part of the results of the conference implementation on July 2nd 2014 in Bergen/Chiemsee. Gemeindedialoge are structured in 3 parts: Sustainable and energetic strategies related to territorial development; local development and landscape; local materials and innovative technologies.

3.3 Symposium Planning and Building in the Alps¹⁵

Symposium focus and aims

The public conference and workshop AlpBC Symposium Planning and Building in the Alps on March 10th 2015 in Munich has been organized by the Bavarian Chamber of Architects, by the Institute for Regional Architecture and Urban Planning of Leibniz Universität Hannover, and by the Chamber of Crafts for Munich and Upper Bavaria. The symposium addressed experts and SMEs in planning and architecture, administrative experts and public decision makers, craft SMEs and private house-owners.

The aim of the symposium was an overview of the project AlpBC and its results, starting from a regional focus of the pilot area Traunstein, and especially the transfer to regional and Bavarian levels. The symposium has been supported by the Federal Ministry for Transport and Digital Infrastructure (BBSR), the Bavarian State Ministry of the Environment and Consumer protection, and by the District of Traunstein (also co-funding partners); as well as by the Bavarian State Ministry for Economy and Media, Energy and Technology (with special funding for the conference),

by Ökomodell Achenal and by the Bavarian Association of Municipalities.

With the quotation “There is nothing to invent, everything is to re-invent” by the Swiss architect Luigi Snozzi, the symposium enfolded comprehensive approaches to regional architecture and settlement development in the Alps, that illustrated the paradigm of “Vernacular Intelligence” (see chapter 2.2). Knowledge transfer and implementation advice are discussed with good practices, in regard to municipal, regional and transnational aspects:

Consultancy

The symposium has been organized in four thematic parts, with introduction and discussion coordinated by Eva Herrmann. The first thematic field - Consultancy - explains general strategies and concrete good practices of different consultancy models focussed on two aspects: how to provide knowledge transfer from expertise to practice in regard to small municipalities and privates, and how to combine this transfer with effective forms of citizens’ and enterprises’ participation and awareness-building for Alpine building culture. In the contributions to this panel building culture as part of regional identities, role of design and experimentation in planning processes and architectural re-use and innovation (by Prof. Ton Matton, University of Linz, Austria); consultancy as combination of expertise and participation, shared development strategies for architectural and planning projects (by Christine Steininger, office nonconform architects Vienna, Austria); architectural projects as incentive and communication force within management concepts for the re-use of areas and buildings (by Prof. Hans Drexler, Hochschule Oldenburg).

Planning and Architecture

The focus of the second parts discussed the role of architectural projects and design within overall development concepts for villages and valleys, and also stressed a regional background how to conceive building as driving force and expression of regional identities; therefore the geographic focus of the contributions has been concentrated on Canton Grisons in Switzerland, as one of the generally discussed examples of evolved building culture in the Alps. In the contributions Tradition and continuity of regional architecture,

¹⁵ Bayerische Architektenkammer, Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität

Hannover, und Handwerkskammer für München und Oberbayern (eds.): *Fachtagung Planen und Bauen in den Alpen - Dokumentation Regionales Symposium AlpBC. 2015*

starting with touristic occupation in 19th century, connected to dedicated research and experiments in architecture (by Dr. Ulrike Fischer, KIT University of Karlsruhe); identity in various relations (to materials, constructions, design, use) as core theme of architectural projects (by Ramun Capaul, Capaul & Blumenthal architects, Ilanz, Switzerland).

Construction and planning as part of regional economies

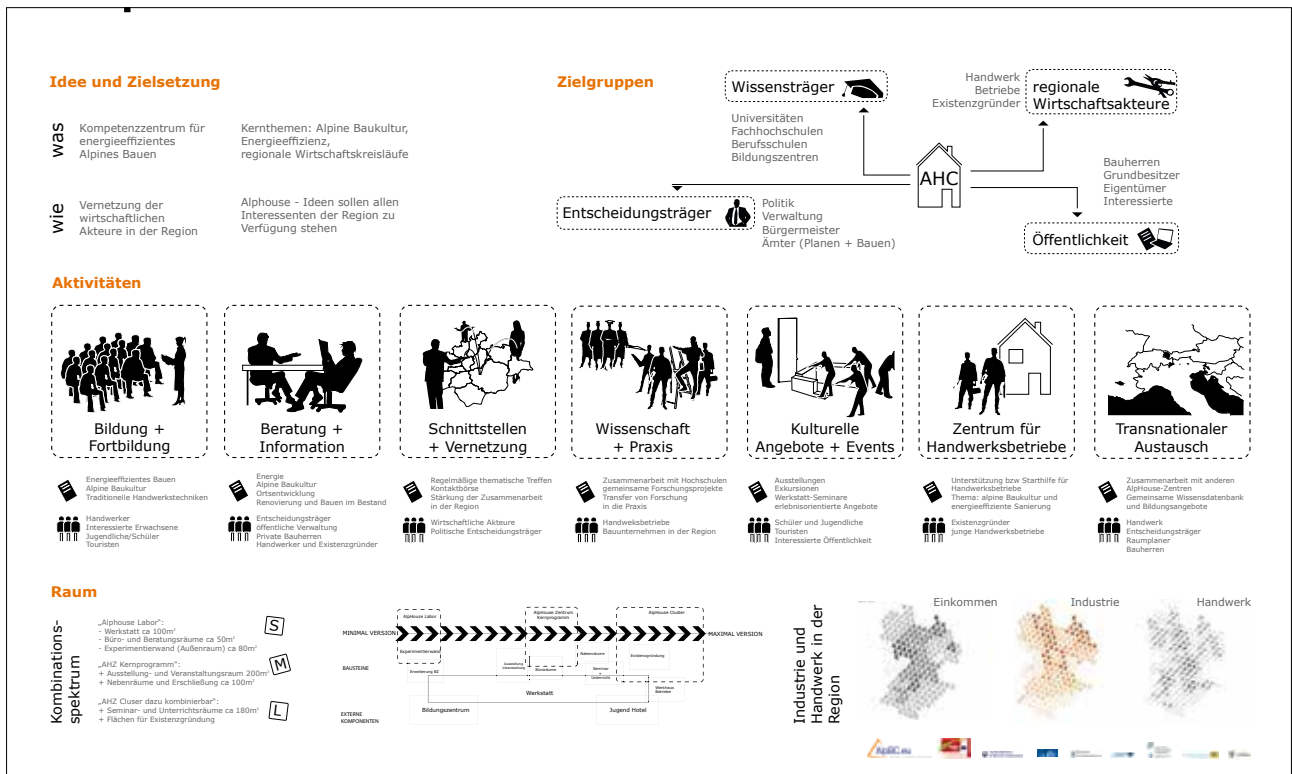
The third part of the symposium addresses construction, from planning to realization, with all involved actors, as important part and possible driving force for regional economic development and as enhancement of regional added value connected to production and knowledge chains, ecological systems of materials, resources, and energy.

In the contributions: Regional products initiative and certification based on successful regional branding in tourism and economy, in Allgäu region (by Klaus Fischer, Allgäu GmbH); circular systems of resources, explained with the Vorholz initiative for regional wood in Vorarlberg (by Kurt Bereuther, Alberschwende, Austria); regional economy and construction explained in flows and embedding in larger networks of knowledge, materials and money (by Jürg Inderbitzin, Hochschule Luzern, Switzerland).

Incentives, policy systems and tools

In the forth part of Fachttagung, an overview of public consultancy tools and incentives in the State of Bavaria has been combined with a presentation of different Vorarlberg measures, in order to draw lines of possible transferability of tools between the regions.

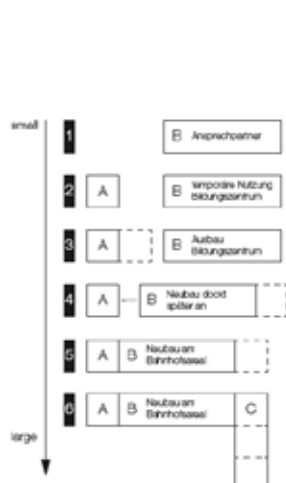
In the contributions: Overview of existing and planned measures (by Ulrich Hach, Bavarian State Ministry for Economy and Media, Energy and Technology); and the regional certification of Baubook as collection of ecological building materials is based on research and application in many regional built good practice examples, and has been developed as incentive for the economic success of regional SMEs in the construction sector (by Christoph Sutter, Energy Institute Vorarlberg, Austria)



Poster concept Alphouse Center Traunstein
Image: LUH Regionales Bauen und Siedlungsplanung



Alternatives for positioning the Alphouse Center in Traunstein
Image: LUH Regionales Bauen und Siedlungsplanung, data: Google Earth



A Ausstellungswand / -raum am Bahnhofsweg

B Althouse Center

C Jugendherberge, Apartments, usw.
Werkstätten, Gründerzentrum, Betriebs,
Showroom, „Bauwerk“, Läden, usw.
Wohnungsbau



Core functions Althouse Center Traunstein

Image: Adriana Bär, and LUH Regionales Bauen und Siedlungsplanung

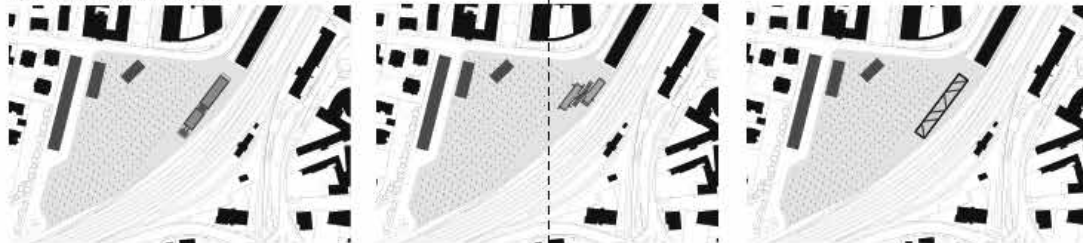
Programmatic alternatives for the Althouse Center

Image: LUH Regionales Bauen und Siedlungsplanung

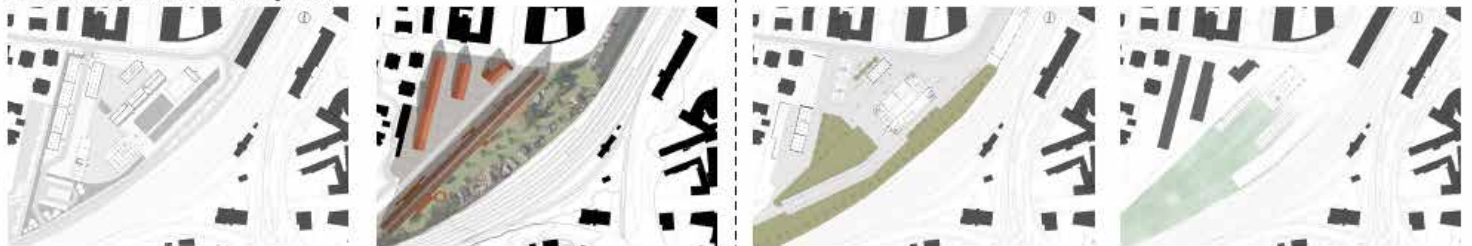
Overview of architectural alternatives Althouse Center Traunstein

Image: LUH Regionales Bauen und Siedlungsplanung, based on architectural design projects from Jörg Schröder and Lisa Leitgeb for Leibniz Universität Hannover; projects by Universität Liechtenstein; and by the diploma thesis of Sarah Hartmann and Robert Schneider, at Technische Universität München

6.2.3 Varianten Althouse Zentrum



6.3.4 Varianten Althouse Zentrum und Jugendhotel



6.3.5 Variante Stadtbaustein



1.2 The Construction of Alpine Building Culture Core Elements of AlpBC

4. The Transalpine Model of AlpHouse Centers

4.1 Realisation Concept for an AlpHouse Center in Traunstein

The idea of AlpHouse Centers¹⁶ (named according to the Alpine Space project AlpHouse, to which AlpBC connected to in themes and approach) is to materialize and provide sustainable implementation of the project's gained expertise even beyond its period. As regional contact points in regard to construction and planning in the Alps, the Centers aim at information, education and knowledge transfer in the participating regions, directed towards experts and SMEs of architecture and crafts, towards general public and house-owners, and also toward technical administrative experts and local as well as regional politicians.

The concept and first implementations of the AlpHouse Center Traunstein are basis for investments and longer lasting implementation of the Center, the realisation study¹⁷ for this provides evaluated alternative approaches in size and programme, and also architectural and urbanistic concepts. The setting up of the programme and possible organization forms of the Center involved many regional stakeholders and organizations in a collaboration for a regional strategy towards an enhanced building culture also as economic asset. This activity has been supported e.g. by the City and the District of Traunstein, and by the Bavarian Chamber of Architects. AlpBC therefore laid also ground for further regional collaborations and initiatives in this regard, the AlpHouse center combines regional economic strengths, sustainable planning and building and building culture as common objective in an innovative way.

Main areas of activities (see graphical illustration) of the AlpHouse Center in Traunstein are:

- ▶ Information and consultancy
- ▶ Specific further education
- ▶ Networking for SME and for knowledge transfer from research
- ▶ Public manifestations, marketing, touristic offers

For the possible location of a built version of the Center in Traunstein two alternative options have been evaluated, in regard to organizational and financial feasibility, added values for urban development, visibility and advantages in cooperations with existing institutions (on a central area near the station and the old city center of Traunstein; or as extension of the education center of HWK in Traunstein).

Architectural scenarios of different programme compositions and sizes, with a range of interpretations of Alpine values in an architectural concept for an AlpHouse Center have been drawn and evaluated for the realization study. Contributions include overall conceptualization by LUH, a range of alternatives of the Center by LUH, a range of alternatives of the Center and a cooperation youth hostel by Universität Liechtenstein (invited by HWK), and the proposal of a new urban quarter connected to the AlpHouse Center, diploma thesis at Technische Universität München, by Sarah Hartmann and Robert Schneider. With the realization study for a built intervention in Traunstein, decisions on institutional organization and financing of a Center are facilitated thoroughly.

¹⁶ Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität Hannover, Handwerkskammer für München und Oberbayern (eds.): *Arbeitsheft AlpHouse Zentrum Traunstein*. 2013-15

¹⁷ Handwerkskammer für München und Oberbayern / Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität Hannover (eds.): *Konzept und Machbarkeitsanalyse AlpHouse Zentrum Traunstein*. 2015.

Authors: Adriana Bär / Jörg Schröder, Sarah Hartmann, Lisa Leitgeb, Miriam Mlecek, Kerstin Finkenzeller

4.2 A Network of AlpHouse Centers

As already planned in the preparation of AlpBC, the different thematic and competence focuses of the regional AlpHouse centers have been developed within the project together with regional cooperation partners, coordinated by the Chamber of Crafts for Munich and Upper Bavaria with TIS Bozen. This transnational portfolio of the Centers offers the basis for further cooperation.

- ▶ Traunstein AlpHouse Center (Handwerkskammer für München und Oberbayern - DE): Concentration of consultancy offers especially for building renovation and energy efficiency
- ▶ Salzburg AlpHouse Center (Wirtschaftskammer Salzburg, Bauinnung Salzburg - AT): Concentration on energy storage within building
- ▶ Bozen AlpHouse Center (Techno Innovation South Tyrol Bozen TIS - IT): Technology transfer for ecological renovation
- ▶ Belluno AlpHouse Center (Veneto Region and Chamber of Architects of Belluno -IT): Renovation, Planning, and Energy Tasks
- ▶ Vorarlberg AlpHouse Center (Energieinstitut Vorarlberg Dornbirn - AT): Consultancy and planning for “zero-energy-buildings”
- ▶ Aosta AlpHouse Center (Finaosta Energia - IT): Improvement of energy-efficiency in vernacular buildings

The network of regional AlpHouse Centers provides a transferable model of competence centers rooted in regional expertises and strenghts, and a common platform for fostering the theme of Alpine Building Culture:

- ▶ collaboration for the theme and communication/education tools of Alpine Building Culture as further development of traditional strengths in the Alps: in architecture, in planning, in crafts (network of transfer),
- ▶ collaboration in thematic elements, complementarity of offers based on different focuses of the Centers; common education, communication and knowledge transfer projects (travelling building school); and international network building for the regional partners of each Center (network of knowledge),
- ▶ common addressing towards national and European institutions and programmes regarding the important role of planning and building for sustainable development, also towards the strategy for an Alpine Macroregion, and towards the citizens of the Alps and throughout Europe (network of promotion),
- ▶ collaboration for further research and development projects in regard to Alpine Building Culture (network of ideas).

1.2 Die Konstruktion Alpiner Baukultur Kernelemente von AlpBC

Jörg Schröder, Sarah Hartmann, Lisa Leitgeb, Miriam Mlecek, Kerstin Finkenzeller
(Leibniz Universität Hannover)¹, für den Projektpartner Abteilung Regionales Bauen und Siedlungsplanung,
Leibniz Universität Hannover (DE), in Kooperation mit der Bayerischen Architektenkammer (DE)²

Das übergeordnete Ziel von AlpBC, Baukultur in Wert zu setzen um nachhaltige räumliche Entwicklung zu unterstützen, wurde für die deutsche Pilotregion Traunstein/Achental auf eine Analyse regionaler Bedingungen und Herausforderungen aufgebaut, verbunden mit der Einbeziehung regionaler Akteure der Baukultur, die auch in der schrittweisen Entwicklung des Projekts AlpBC beteiligt waren.

Die Teile Verbinden (Kapitel 1) dieses Berichts stellt Baukultur als Idee dar, um Wissen und Engagement aus verschiedenen Bereichen von Bauen und Planen zu sammeln. Auch auf Grundlage des Projekts AlpHouse, das im Alpenraumprogramm 2009-12 gefördert wurde, wird der inhaltliche Fokus des Projekts AlpBC definiert mit dem Leitsatz Vom Weiternutzen des Bestands zum Bauen der Zukunft (Kapitel 2). Darin wird deutlich, dass verstärkte Kooperation zwischen getrennten beruflichen und praktischen Spezialisierung im Planen und Bauen zum Erreichen von Nachhaltigkeitszielen auf einem umfassenden Verständnis von Baukultur beruht. Ein bewußtes und innovatives Offenlegen der Schnittstellen zwischen verschiedenen technischen und gestalterischen Kompetenzen im Planen und Bauen wird von AlpBC als wesentlicher Beitrag formuliert. Verbunden mit der Ausrichtung des Projekts auf die steuernde Rolle von Planung für die architektonische Qualität einzelner baulicher Eingriffe, und besonders zur Intergration von Energiefragen in diese Prozesse, wurden für die Pilotregion Vorgehensweisen und besonders Veranstaltungsformate entwickelt, die dann als übertragbare Werkzeuge für Beratung und Kommunikation (Kapitel 3) im Projekt AlpBC

bereitgestellt wurden: Die Gemeindedialoge als Forum des Wissenstransfers, und die Fachtagung Planen und Bauen in den Alpen. Bei beiden Formaten geht es um die Stärkung einer gemeinsamen Wissensbasis für die beteiligten Akteure und um die Gestaltung gemeinsamer prozessualer und strategischer Vorgehensweisen zur Stärkung Regionaler Baukultur. Mit einem transalpinen Rahmenwerk und dem ständigen Austausch von Konzepten, Maßnahmen und Werkzeugen hat sich die Projektpartnerschaft von AlpBC, auch aufbauend auf der früheren Zusammenarbeit im Projekt AlpHouse, als sehr effektiv erwiesen.

Ein weiterer Bereich internationaler Kooperation - und auch eine Perspektive über AlpBC hinaus - wurde mit dem Transalpinen Modell der AlpHouse Zentren (Kapitel 4) im Projekt verwirklicht. In der Verbindung regionaler Anlaufstellen für Information, Weiterbildung und Expertise - in der deutschen Pilotregion Traunstein/Achental wurde dafür das Konzept für ein AlpHouse Zentrum in Traunstein erarbeitet - wird das Netzwerk der AlpHouse Zentren in der internationalen Kooperation gemeinsam einen deutlichen Mehrwert erzielen: verschiedene inhaltliche Schwerpunkte und regionale Hintergründe für Baukultur werden darin kombiniert für zukünftige Kommunikationsaktivitäten, Weiterbildung, aber auch für Politikberatung und für das Erarbeiten neuer Projektideen für Alpine Baukultur.

¹ Prof. Dipl.-Ing. Jörg Schröder, Dipl.-Ing. Sarah Hartmann, Dipl.-Ing. Lisa Leitgeb, Dipl.-Ing. Miriam Mlecek, Dipl.-Ing. Kerstin Finkenzeller, Abteilung für Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover. www.staedtebau.uni-hannover.de

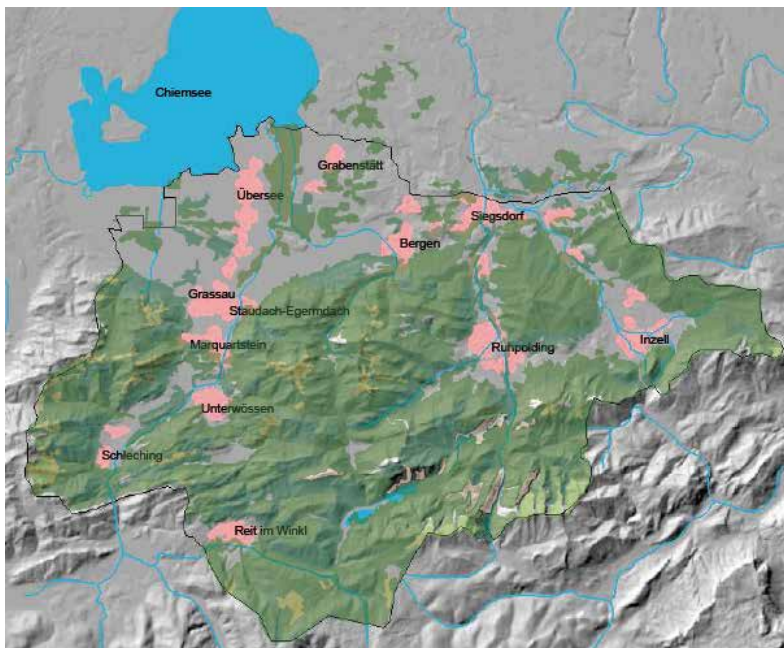
² Im deutschen Pilotgebiet Achental (Landkreis Traunstein) für das Projekt AlpBC hat die Abteilung Regionales Bauen und Siedlungsplanung der Leibniz Universität Hannover mit der Bayerischen Architektenkammer zusammengearbeitet. Wir danken dem Geschäftsführer Oliver Heiss, sowie Nadja Schuh, für großartige Unterstützung in der Arbeit des Projekts. Die Aktivitäten für das Pilotgebiet wurden koordiniert mit den Aktivitäten der Handwerkskammer für München und Oberbayern (Leitpartner von AlpBC) in dem gleichen Pilotgebiet.



Strukturplan Pilotgebiet Achental

Abbildung: LUH Regionales Bauen und Siedlungsplanung,
Daten: Landesamt für Vermessung und Geoinformation Bayern

1	Schleching	7	Markt Grassau
2	Unterwössen	8	Marquartstein
3	Staudach-Egerndach	9	Reit im Winkl
4	Grabenstätt	10	Ruhpolding
5	Bergen	11	Inzell
6	Übersee	12	Siegsdorf



Landnutzung Pilotgebiet Achental, die Bedeutung der Wälder

Abbildung: LUH Regionales Bauen und
Siedlungsplanung, auf Grundlage von CORINE 2006,
Daten: Bayerisches Landesamt für Vermessung und Geoinformation
Bayern, Bundesamt für Kartographie und Geodäsie, 2012.



Luftbild Pilotgebiet Achental
Klaus Leidorf

1.2 Die Konstruktion Alpiner Baukultur Kernelemente von AlpBC

Für die Aktivitäten von AlpBC wurde die Leibniz Universität Hannover, Kooperation mit der Bayerischen Architektenkammer, unterstützt und kofinanziert durch das Bundesprogramm Transnationale Zusammenarbeit des Bundesministeriums für Verkehr und Digitale Infrastruktur. Ein Vielzahl regionaler und lokaler Beobachter konnte in die Entwicklung und Umsetzung von AlpBC einbezogen werden, für die deutsche Pilotregion Traunstein/Achental in besonderem Maß der interkommunale Zusammenschluss Ökomodell Achental.

1. Die Teile verbinden - Felder Regionaler Baukultur

Für die Projektaktivitäten folgte AlpBC einem Verständnis von Baukultur³ in folgenden Punkten:

- ▶ erweitertes Zielfeld: die gebaute Umwelt, mit besonderem Fokus auf Häuser und Siedlungsstrukturen,
- ▶ erweiterte Akteurskonstellationen für Bau- und Planungsprozesse, besonders unter Einfluß von Energie- und Umweltfragen,
- ▶ qualitativer Fokus: Baukultur als Verbindung struktureller, wirtschaftlicher, sozialer und ästhetischer Aspekte,
- ▶ umfassender Ansatz: Neubau und Weiterverwendung von Baubestand als verknüpfte Handlungsfelder, Gebäude- und Ortsmaßstäbe als sich gegenseitig beeinflussende Ebenen von Baukultur.

Der Alpine Charakter des Bauens in den Bergen und im voralpinen Bereich bietet einerseits leicht zugänglich gemeinsame Ansatzpunkte an: umzugehen mit extremen topographischen und klimatischen Bedingungen, mit kleinräumigen und eingeschränkten Siedlungsflächen, und mit engen Abhängigkeiten gegenüber Naturraum und wertvollem Baubestand. Andererseits wurden während der Projektaktivitäten von AlpBC die Unterschiedlichkeiten zwischen den beteiligten Alpen Regionen in kulturellen Haltungen, in rechtlichen und prozessualen Bedingungen für Planen und Bauen, in der Aufstellung von Handwerk und Bauindustrie, von Architekten und Planern, von beruflicher Praxis und Handlungs- und Entscheidungskulturen offensichtlich. Diese Differenzen können als positiver Faktor Alpine Bau-

kultur generell verstanden werden - "Bau-Diversität" ist ein Vorteil für die Alpen, wenn es um die Zukunft der Alpen Siedlungsräume geht.

1.1 Strukturelle Charakteristik des Pilotgebiets

Der Landkreis Traunstein als größerer Referenzraum für das Pilotgebiet Achental kann als überwiegend ländlich beschrieben werden, er enthält ein komplexes Geflecht von zentralen Orten und Punkten (mit dem regionalen Zentrum Traunstein mit seiner bedeutenden historischen Altstadt, kleineren Städten, Märkten und Orten, Dörfern und Streusiedlung mit historischen landwirtschaftlichem Hintergrund). Die Raumstrukturen und die örtlichen Gemeinschaften werden durch vier Faktoren stark beeinflusst: Die Nähe zu München und zu den wirtschaftlichen und gesellschaftlichen Konzentrationsfaktoren der Metropolregion München, durch die internationale Entwicklungsachse München - Salzburg (entlang des TEN-17 Korridors und der Autobahn A 8) und die transalpine Verbindung mit dem TEN-1 Korridor über den Brenner, aber auch durch die Tauern-Verbindung. Damit in Verbindung stehen regionale starke Wirtschaftsfaktoren wie die Chemieindustrie, aber besonders auch das Handwerk, sowie der Bereich Freizeit und Tourismus.

In demographischer Hinsicht unterliegt die Region deutlichen Veränderungen: urbane Konzentrationsprozesse und die Attraktivität der Zentren der Metropolregion, eine wachsende ältere Bevölkerungsgruppe, die durch Zuzug verstärkt wird und zuziehende (kleinere) Gruppen in den Arbeitsbereichen Industrie und Tourismus. Die grundlegenden Strukturwandelprozesse in der Landwirtschaft und auch im Tourismus sind ein wesentlicher Faktor für Perspektiven des Planens und Bauens in der Region. Umwandlungen und Erweiterungen der historischen Siedlungsstrukturen vor allem in den letzten 25 Jahren und auch neue Siedlungs- und Gebäudetypen (wie z.B. Einzelhaussiedlungen, Industrie- und Gewerbegebiete, großmaßstäbliche landwirtschaftliche und touristische Komplexe) beeinflussen Entscheidungen über zukünftige Siedlungsmodelle. In den regionalen Aktivitäten von AlpBC wurden die wichtigsten Handlungsfelder der Zukunft in Analyse und Akteursbeteiligung (siehe auch 3.1) identifiziert.

³ Abteilung für Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover: AlpBC Framework for WP 5, Analysis and Conceptbuilding. 2013; AlpBC comprehensive report WP 5. 2014

Abteilung für Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover: AlpBC Regional Analysis Achental. 2013

AlpBC Expertenkreis								
Gemeinde	Schwerpunkt Thema	Fallbeispiel	Bearbeitungsansatz	Potentielle Partner	Bestehende Beratungen	Kooperationen	Vision/Leitbild	Rahmenbedingungen
Schlechting	Tradition/Moderne Neue Wohnformen Tourismus/Infrastruktur/ Flächenmanage- ment (Nachhaltigkeit) Energetische Gesamtaus- richtung	Denkmalgeschütztes Gasthaus „Edelweiss“ Bestandsgebäude	Polizentrik, Bürgerinfo/ Partizipation	VorarlbergerGestaltungsrat Walseral Energetische Gesamtausrichtung Baubook als ergänzendes Planungsinstrument	Energieberatung Öko- modell, Bauberatung i.R. Dorferneuerungs-verfahren, Seniorenbeauftragter, Behindertenbeauftragte	ArgeAlp, Aida, Ökomodell Achtental	Leitbild im Rahmen der Dorferneuerung erarbeitet und im Hinblick „Schlechting 2020“ analysiert und ergänzt	Gestaltungssatzung zur Holzverwendung, Flächen- nutzungsplan
Unterwössen	Ortszentrum/Einzelhandel, Neue Wohnformen, Energieparks/ Energetische Gesamtausrichtung	Hackschnitzelversorgung Teilbereich Unterwössen, 60/70er Jahre Gebäude sanieren	Flächenmanagement- datenbank Bürgerinfo/Partizipation Umwidmung von Flächen Reaktivierung Dorfkern	Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG Solarpark Blons	Ökomodell Achtental	Aida, ILEG, LEADER ab 2014, Euregio Salzburg, Chiemgau Tourismus, Tourismusverband M – ÖBB Ökomodell Achtental	Leitbild von 2004 unter Leitung von Herrn Prof. Dr. Pietrusky zu Nachhaltigkeit, Tourismus, Infrastruktur und Dorferneuerung, Erweitern und Weiterführen!	keine Gestaltungssatzung/ Baufeldpläne und FNP vorhanden/ Einheimis- chenmodell
Grabenstätt	Gewerbegebiete, Neue Wohnformen	OT Winkl	Flächenmanagement- datenbank Bürgerinfo/Partizipation	Polizentrische Entwicklung Rheintal Mehrgenerationshäuser Langenfelde/ neues Wohnen Tiedlo Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG	keine spezifischen	ArgeAlp, Aida, Ökomodell Achtental	keines	einige Baufeldpläne z.B. Turnhalle mit Fernwärme/ FNP von 1987/ Einhei- mischemmodell/ neue baulandausweisung für 30 Parzellen
Übersee	Neue Wohnformen/ Infrastrukturangepassung, Ortskernerneuerung	Leerstände/Bestand (alt)	Polizentrik, Bürgerinfo/ Partizipation	Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG Fläsch Mountee	keine, bisher auch kein Bedarf/Anfragen	ArgeAlp, Aida, Ökomodell Achtental	keines	selten genutzte Gestaltungssatzung/ Ausweisung neues Bauland/ Bebauungspläne Gewerbe- gebiet, Freiflächengestaltung Chiemseeufer, Ortsmitte/ FNP Einheimischenmodell, Flächenknappheit
Markt Grassau	Gewerbegebiete Neue Wohnformen Ortskernerneuerung/ Entwicklung	ehemalige Schwerlasthalle, Generationswohnen	Polizentrik, Bürgerinfo/ Partizipation Reaktivierung Dorfkern/ Entwicklung	Mehrgenerationshäuser Langenfelde/ neues Wohnen Tiedlo Polizentrische Entwicklung Rheintal Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG Mountee	Ökomodell Achtental	ArgeAlp, Aida, Ökomodell Achtental	Erhält ländl. Erschei- nungsbildes, Sicherung innerörtlicher gewerblicher kleinteiligen Infrastruktur, Einheimischenmodell für junge Familien, Verbes- serung Seniorenangebot+ Fremdenverkehr, autarke Energieversorgung	Ortsstellabhängige Gestaltungssatzungen/ Baufeldpläne vorhanden/ Neuansweisungen gewin- schtl/ Wohnungen kämpf, Ho- tels vorhanden/ Gemeinde versucht durch Ankauf und Teilung von Parzellen Attraktiv für junge Familien preis zu halten
Marquartstein/ Staudach- Egerndach	Gewerbegebiete, Ortskernerneuerung, Infrastruktur, Tourismus	Gebäude der „Neue Heimat“ Gemeindesaal Hotelausbau	Flächenmanagement- datenbank Reaktivierung und Entwick- lung Dorfkern Polizentrik Nachhaltiger Tourismus	TU München/Baubook Fläsch / Mountee Polizentrische Entwicklung Rheintal	Allgemein durch das Bauamt- Bauherren lassen sich jedoch umfangreich extern beraten	Ökomodell Achtental, Aida	Lebenswerte Gemeinde: wie bspw. Schaffung eines vertraglichen Gewerbege- bietes, Verbesserung der Ortsbeschilderung und Schulwegsicherheit, über städtbauliche Maßnahmen, wie Verschönerung des Ortszentrums, Bau einer Fuß- und Radwegebrücke über die Tiroler Ache, Errich- tung eines Erlebnisbereiches Tiroler Ache, Sanierung der Hochplattenbahn und Schaffung eines Bergwälderlebnisweges, Städtebauförderung ganz allgemein, bis hin zu kultu- ren Projekten, wie das Lesedorf Marquartstein.	Gestaltungssatzung Egerndach aus 70er Jahren/ neuer FNP für Wettbewerb/ Förderung von neuen Pro- jekten/ Ex-Einheimischen- modell/ Bebauungsplan Gewerbegebiet
Reit im Winkl	Tourismus und Unterkunft, Tradition/Moderne	Entwicklung von „Gut Stein- bach“ (Baufeldplanung läuft), Wohnhaus als „best practice“ für Moderne/Tradition	Bürgerinfo/Partizipation Nachhaltiger Tourismus	Vor Ort Ideenwerkstatt nonconform architektur vor ort ZT KG Umbauen im Dorf-Ratgeber für belgische Eifel	keine spezifische, allgemeine durch das Bauamt selbst	Ökomodell Achtental, Aida	tourismusorientiert, Grundzüge der Baufeldpla- nung ausgelegt auf erhöhte Attraktivität bei Touristen Steigerung der Übernacht- ungen und des Angebots erwünscht, gesichert durch Satzung	strenge Gestaltungssatzung/ Baufeldpläne vorhanden zB. Für Lebensmittelmarkt und Selbstbahn/ FNP gestaffelt und gebunden an Einheimischen- modell/ Grundstücke frei verkäuflich
Ruhpolding	Ortskernerneuerung, Tourismus und Unterkunft	Umnutzung Bahnhof/ Schloss	Bürgerinfo/Partizipation Nachhaltiger Tourismus	Vor Ort Ideenwerkstatt nonconform / TU München/ Baubook Ballenberg Course Center?	durch ehemaligen Kreis- baumeister, Arbeitskreis Energie	Aida, Leader	Wintersport	Gestaltungssatzung/ qualifizierter Bebauungsplan/ FNP und Landschaftsplan vorhanden
Siegsdorf	Tourismus und Unterkunft, Renovierung	Feriersiedlung	Umwidmung und neuer Nutzungsplan Polizentrik	Mountee	private Anbieter (Kaminkehrer), Interesse an energetischer sonar- Beratung	LEADER, AidaA, Chiemgau Tourismus,	Vision eines Gesundheits- standortes	gestaltungssatzung im OT Eisenärzt (Ensemblechutz) / Baufeldpläne zB für Schule und Gewerbegebiete/ FNP 60/70er Jahre strukturelle Neuplanung / Einheimischen Modell
Bergen	Energieparks/ Energetische Gesamtausrichtung	Fläche ehemalige Deponie	Flächenmanagement- datenbank	TU München/ Baubook Solarpark Blons	Nein	LEADER, Aida, ArgeAlp, Verwaltungsgemeinschaft mit Vachendorf, Über- regionale Konzepte mit Reit im Winkl/Inzell/Siegsdorf/ Ruhpolding	Luftkurort	Gestaltungssatzung zu Sat- teldach, Holzverwendung, Putz und rote Dachziegel/ Baufeldpläne zu Rathaus, Krippe, Gewerbe/ Flächen- nutzung 2/3 Einheimis- chenmodell

Municipalities' focus overview in planning and building
Image: LUH Regionales Bauen und Siedlungsplanung

Generell sind im Bereich Traunstein/Achtental signifikante Chancen für eine vorbildhafte Ausrichtung von Planen und Bauen gegeben, die auch auf den vergleichsweise hervor-
ragenden wirtschaftlichen Möglichkeiten von Hauseigen-
tümern, Firmen und der Region insgesamt beruhen. In der
detaillierten Analyse für die Gemeinden des Pilotgebiets
wurden Bedingungen und Aufgaben für Planen und Bau-
en zusammengefasst (siehe Abbildung). Die untersuchten
Gemeinden sind: Schleching, Bergen, Grabenstätt, Gras-
sau, Inzell, Ruhpolding, Reit im Winkl, Siegsdorf, Staudach-
Egerndach, Übersee, Unterwössen, Marquartstein. Neun
der zwölf Gemeinden sind bereits in der Initiative Ökomodell
Achtental zusammengeschlossen, drei weitere Gemeinden
wurden in das Pilotgebiet von AlpBC mitaufgenommen, um
bereits während des Projekts Transfermöglichkeiten der Ak-
tivitäten zu entwickeln.

1.2 Bau- und Planungsprozesse

Planen und Bauen in der Pilotregion wird von unterschiedli-
chen Rahmenwerken und Finanzierungsmodellen bestimmt,
Verküpfungen zwischen diesen Bedingungen sind in vielen
Fällen formell etabliert, nichtsdestotrotz ist nirgends eine ein-

heitliche strategische und kulturelle Haltung gegenüber der
zukünftigen Entwicklung der gebauten Umwelt vorgesehen
und wird in der Realität vermisst. Eine steuernde Rolle der
Landkreisebene beschränkt sich in landesweit vorwiegend
auf rechtliche Aspekte. Als wesentlicher Faktor des deut-
schen Planungssystems ist die Planungshoheit der Gemein-
den im Innenbereich ein machtvoll Instrument, auch wenn
es oft nicht effektiv genutzt wird und völlig von gemeindlichen
politischen Entscheidungen abhängt. Gleichzeitig ist der Ein-
fluss der Gemeinde höchst begrenzt für die Steuerung des
Bauens im Außenbereich. Als Überblick für die verschie-
denen Organisationsmodelle und Zielfelder der etablierten
Bau- und Planungsprozesse ergibt sich für die Pilotregion:

- Formelle Planwerke der Gemeinden, unterteilt in ein-
zelne Gebiete und meistens ohne Einschluß der Streus-
iedlung, bezogen auf den Innenbereich (Flächennut-
zungsplan, Bebauungspläne, Satzungen),
- davon getrennte Bauprozesse im Außenbereich, Privil-
egierung landwirtschaftlichen Bauens,
- Entscheidungsprozesse über Infrastrukturen für Ener-
gie (Wind, Wasser, Biogas, Transport- und Lagerung-
snetze),

1.2 Die Konstruktion Alpiner Baukultur Kernelemente von AlpBC

- ▶ Bundes- und Landesprogramme mit formellen und informellen Rahmenwerken (z.B. Dorferneuerung, Stadt-sanierung, ISEK, ILEK, Bioenergieregionen, Förderung neuer Wohnmodelle, etc.),
- ▶ Europäische Programme (Sozialfonds, Regionalentwicklungs-fonds, Fonds für Ländliche Entwicklung, GAP usw., für Achantal z.B. die Teilnahme in Projekt MountEE),
- ▶ Bauen öffentlicher Gebäude (Bundes- und Landesprogramme),
- ▶ Großmaßstäbliche Wohnungs- und Gewerbe-/Industriegebäude (Planvorlage durch Architekten),
- ▶ touristisches Bauen (lokale Eigentümer, aber auch große Unternehmen),
- ▶ privates Bauen im Wohnbereich (hauptsächlich geplant durch Handwerker: 95% der Einfamilienhäuser, geringer Anteil Planung durch Architekten, do-it-yourself),
- ▶ Förderprogramme der Gemeinden (Einheimischenmodelle) mit fehlendem Akzent auf Bestandverwendung,
- ▶ Renovierungsprojekte von Baudenkmälern und für Orts- und Landschaftskontexte wichtigen Gebäuden (Ensembles),
- ▶ Einfluss von Energiefragen in Regelwerken und Programmen auf europäischer, Bundes-, Landes- und Gemeindeebene.

Darüberhinaus werden Paradigmen, die hauptsächlich in den 1960-80er Jahren im Rahmen von bildorientierten normativen Rahmenwerken entwickelt wurden, inzwischen als nicht mehr tragfähig im Hinblick auf partizipative und bürgerschaftliche Wünsche und Notwendigkeiten der Entscheidungsfindung betrachtet. Besonders die übergeordneten demographischen und wirtschaftlichen Trends, die sich sehr verschieden und in komplexen Formen lokal in Schrumpfungs- und/oder Wachstumsphänomenen äußern, stellen eine bisherige Charakterisierung ländlicher Räume in Frage und erfordern neue räumliche Konzepte. In einer differenzierten Lagebestimmung von Gemeinden in Mustern der Peripherie, der Entwicklungsachsen, von Talraumkonzentrationen, groß- oder kleinmaßstäblicher Suburbanisierung, touristischer Brennpunkte und touristischer Streusiedlung, sowie Infrastrukturen, scheint der Wunsch nach einer verbindlichen Vision für die Siedlungs-, Infrastruktur- und Landschaftsräume der Alpen und Voralpen zu wachsen. Da Naturschutz, Umgang mit Folgen des Klimawandels, landschaftliche Werte und ihre Bedeutung für Wirtschaft und Gesellschaft als äußerst relevant ver-

standen werden, sollte dieser Faktor effektiv in Planungs- und Bauentscheidungen der Pilotregion integriert werden. Dafür werden neue Verknüpfungen von formeller top-down Planung und von Förderungsregeln mit Initiativen und Bedürfnissen von bottom-up, in Gemeinden und interkommunalen Zusammenschlüssen notwendig sein, um damit umfassende strategische und prozessorientierte Wege zu erfinden, um über die Zukunft der gebauten Umwelt zu entscheiden. Dafür wird von der Leibniz Universität Hannover im Projekt AlpBC die tragende Rolle von baulich-strukturellen Faktoren der Gebäude- und Siedlungskonstellation betont, verbunden mit einer ästhetischen Neuausrichtung regionalen Bauens generell.

1.3 Initiativen und Schnittstellen

Regionale Initiativen und Projekte mit unterschiedlichen Zielen und rechtlichen wie finanziellen Hintergründen wurden in die Akteursbeteiligung von AlpBC eingeschlossen, um ihren möglichen Beitrag zu Regionaler Baukultur zu klären, sowie auch den möglichen Mehrwert für die einzelnen Projekte durch eine übergreifende Kooperation.

Das Ökomodell Achantal als private organisierter Verein z.B. dient als Plattform für eine Reihe von Projekten, die mit der Vorgabe umgesetzt werden, dass die Bereiche erneuerbare Energien, regionale Wirtschaftskraft, Naturschutz und nachhaltiger Tourismus parallel gefördert und unterstützt werden. Die Wissensbasis, die durch und in diesen Projekten erarbeitet wurde, war innerhalb von AlpBC wesentlich für die Diskussion über neue Formen von Beratungsmodellen und Wissenstransfer für Bürger und öffentliche Einrichtungen und Körperschaften. Die Chance, damit die Wirkung des Projekts AlpBC zu stärken und längerfristig zu regionalen Impulsen beitragen zu können, hat sich als effektive Kooperation erwiesen. Projekte innerhalb der Initiative Ökomodell sind z.B.: Biogas-Initiative, Biomassehof, Fernwärmeprojekt Grassau, Holzpelletproduktion, Klimafreundliches Hotel, Märchenpark, Kurzumtriebsanlagen, Nutzung organischer Abfälle, lokale Wärmenetze. AlpBC hat den Wissenstransfer innerhalb des Ökomodells im Hinblick auf Baukultur und Handwerk initiiert und damit Grundlagen für eine verstärkte Abstimmung räumlicher Planungen mit Energiefragen in Effizienz, Produktion erneuerbarer Energie, usw. gelegt; auch mit einem zusätzlichen Fokus auf kleine Blockheizkraftwerke und Innovationen im Speicherbereich. Vor allem aber die Einbeziehung

von Planen und Bauen in den Ziel- wie Handlungskatalog des Ökomodells wurde als wichtiges Ergebnis von AlpBC gesehen. Damit können auch bereits begonnene Ansätze wie Energienutzungsplanung oder -monitoring effektiv in die räumliche Entwicklung einbezogen werden.

Mitgetragen vom Landkreises Traunstein ist die Initiative Sonnenkreis auf Bewußtseinsbildung ausgerichtet: Information für alle Bürger, persönlicher Energie-Check, Reduzieren des Energieverbrauchs, Isolierung, geeignete Heiztechnik, energie- und umweltgerechte Mobilität. Sonnenkreis unterstützt lokale Kooperationen und bezieht lokale Experten ein, bildet eine Wissensplattform für Klimaschutz, organisiert Energiekonferenzen, fördert und verbreitet neue Ideen und Impulse für die regionale Wirtschaft. Ziele sind Klima-, Ressourcen-, Umwelt- und Gesundheitsschutz, kostengünstige Energieeinsparung und -effizienz, sowie Stärkung der regionalen Wirtschaftskraft und Wertschöpfung. Verschiedene Potenziale für weitere Kooperationen wurden auch mit Unterstützung durch AlpBC ermittelt.

2. Vom Weiternutzen des Bestands zum Bauen der Zukunft

2.1 Architektonisches Vorgehen in Konzept und Kontext - das Paradigma des Weiterbaus

Im Projekt AlpBC wurden Konzept für Alpine Bauen weiterverfolgt, die bereits in AlpHouse erforscht und kommuniziert wurden, z.B. mit dem AlpHouse Messestand⁴, der bei 20 Veranstaltungen im gesamten Alpenraum die Projektergebnisse vermittelte und in jeweils lokal spezifische Konferenzen, Fortbildungen und Ausstellungen eingebunden war. Alpines Bauen wird dabei als Bündelung von Aktivitäten gesehen, die von unterschiedlichen professionellen, wissenschaftlichen und politisch-administrativen Hintergründen ausgehen: spezielle Renovierungstechniken aus der Denkmalpflege werden für weitere Bereiche des Alpinen Baubestands adaptiert, neueste Technologien in Energieeffizienz, -speicherung und in haustechnischen Anlagen, im Bereich ökologischer Baustoffe und -prozesse, Innovationen in der Herstellung, Vorfertigung und im

Transport von Baumaterialien werden kombiniert mit erneuerbaren und regionalen wiederentdeckten Baustoffen und mit traditionellen Handwerkstechniken. Diese große Bandbreite an Technologien bezieht sich zunächst entweder auf Renovierung oder Neubau - empirische Ergebnisse bereit des Projekts AlpHouse⁵ legen jedoch nahe, dass für sehr viele Bauprojekte in den Alpen eine Kombination der Technologien notwendig ist. Diese verknüpften Bauaktivitäten zwischen Bestand und Neubau können als Realität und als Fähigkeit des Weiterbaus beschrieben werden, in Form von Erweiterungen, Vergrößerungen, teilweise Ersetzungen, Daneben-Bauen etc. Diese Realität und vor allem zukünftige Bedingung Alpiner Bauen stellt eine Herausforderung für das professionelle Handwerk und für Architekten dar; ganz besonders für die Handwerksausbildung, die nach wie vor strikt separiert in Gewerken organisiert ist.

Zwei spezifisch Alpine Bedingungen beeinflussen darüber hinaus Konzepte des Bauens: der hohe Bedeutung des Baubestands, nicht nur der Baudenkmäler sondern der Ortszusammenhänge, und die hohe Bedeutung der Landschaft, auf die jede bauliche Intervention im Alpenraum einzugehen muss. Zweitens haben sich die programmatischen Anforderungen an die Nutzung von Gebäuden im Alpenraum deutlich differenziert und an Komplexität gewonnen, einhergehend mit immer differenzierteren Alpen gesellschaftlichen und wirtschaftlichen Bedingungen. Es wird eine größere Bandbreite an Wohnformen notwendig, die Haushaltsformen im demographischen Wandel entsprechen; neue räumliche Kombinationsmöglichkeiten von Wohnen und Arbeiten, für kleine innovative Unternehmen, neue adaptive Formen gemeinschaftlicher Infrastruktur, die alle auf veränderte Lebensformen antworten; auch im Freizeit- und Tourismusbereich wird in Gebäuden und Infrastrukturen ein breiteres programmatisches Angebot unterschiedlicher Bauformen notwendig: von hochbeanspruchten und hochkonzentrierten Knotenpunkten zu leichten kleinmaßstäblichen Elementen wie Gästehäusern, B&Bs, Hütten usw. Ähnliche verbreiterte und spezialisierte programmatische Anforderungen entstehen in der Auffächerung zwischen multifunktionaler Agrikultur und spezialisiertem Farming in der Landwirtschaft.

⁴ Jörg Schröder: *The AlpHouse Approach*. In: *Handwerkskammer für München und Oberbayern, Bayerische Architektenkammer* (eds.): *AlpHouse Fair Stand Catalogue*. München 2011

⁵ Jörg Schröder: *The AlpHouse Approach - Framework and Key Topics*. In: *Bayerische Architektenkammer, Technische Universität München, Energieinstitut Vorarlberg, Research Studios Austria - Studio iSpace* (eds.): *AlpHouse. Alpine Building Culture and Energy-efficiency. Joint Synoptic Report of Analysis*. München 2011



Strategieplan Fläsch: Grünverbindungen ins Dorf

Abbildung: LUH Regionales Bauen und Siedlungsplanung. Daten: Gemeinde Fläsch, und Prof. Wagner, HTW Chur

Casa Scura Fläsch. Architekt Hauenstein

Foto: Laura Egger

Überblicksbild Fläsch

Foto: Laura Egger

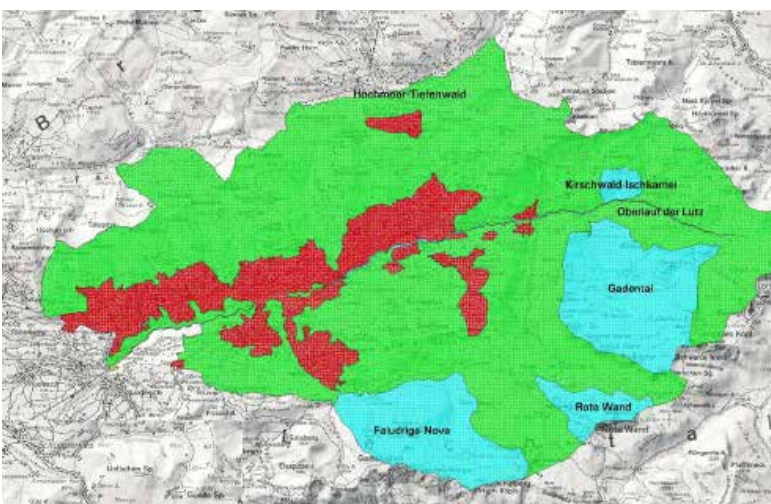




Luftbild Großes Walsertal
Klaus Leidorf



Gemeindehaus St. Gerold.
Architekten Cukrowicz Nachbaur
Foto: Hanspeter Schiess



Strategieplan Großes Walsertal: Zonenplan
(Schutz-, Pflege-, Entwicklungszone)
Abbildung: Biosphärenpark Großes Walsertal

1.2 Die Konstruktion Alpiner Baukultur Kernelemente von AlpBC

Für die beiden Bedingungen der Erhaltung von gebautem und natürlichem Bestand, und für die sozio-ökonomischen Anforderungen nach intelligenten Haus- und Siedlungsmodellen wird architektonisches Wissen für Konzeptbildung und Gestaltung in Zukunft eine entscheidende Rolle spielen. Dafür ist eine Weiterentwicklung und Spezifizierung praktischer wie wissenschaftlicher Kenntnisse und Fähigkeiten für das Bauen in den Alpen notwendig - eine große Herausforderung für die relativ kleine Zahl von Architekturfakultäten in und um die Alpen. Das architektonische Vorgehen wird Kern zukünftigen Alpiner Bauens sein: umfassend zu planen und in räumlichen Strukturen verschiedene Technologien zu verbinden, Grundrisse und Schnitte zu entwickeln die Nutzungswünschen, Bestands- und Landschaftskontexten antworten, eine kulturelle Position zu Tradition, Moderne und Zukunft zu bestimmen, und die auf einem aktualisierten Bewußtsein über Stadt-Land-Beziehungen aufbauen.⁶

Die planerische und interkommunale Ebene wurde im Projekt AlpBC in vielen Aspekten mit dieser zukünftigen Rolle Alpine Architektur verbunden: in der Analyse von Kontextbedingungen für räumliche Entwicklung, in strategischen und maßnahmenorientierten Planungsansätzen, und in Kommunikation und Fortbildung. Eine Kernbotschaft von AlpBC ist daher, dass für die nachhaltige räumliche Entwicklung des Alpenraums der Bereich Bauen die Architektur der Häuser gezielt wiederverbinden muss mit Visionen in größeren Maßstäben, für Dörfer, Orte, Täler. Ähnlich zu den Herausforderungen für die Berufe und Berufsausbildung im Handwerk wird damit eine berufspraktische und akademische Wieder-Verbindung separierter Bereiche zielführend sein, nicht nur zwischen Architektur und Planung, sondern auch zahlreicher Spezialisierungen in Renovierung, High-Tech-Baukonstruktion, touristischem Bauen etc. Ein hiervon ausgehender umfassendes architektonisches Verständnis von Arbeiten an Alpiner gebauter Umwelt wird damit auch ein vertieftes Wissen in Handwerkstechniken, aber auch in regionaler Ökonomie und Ressourcensystemen benötigen.

2.2 Vernakuläre Intelligenz⁷, Tradition und Moderne

Für die dargestellten Herausforderungen für Architektur und Handwerk im Alpenraum ist ein Verständnis und eine Inwertsetzung von Traditionen, und ihre Inbezugsetzung zur Moderne und zur Gegenwart eine wichtige theoretische und vor allem handlungsrelevante Frage. Mit dem Begriff "Tradition" werden im Bauen meistens handwerkliche wie architektonische Fähigkeit bezeichnet in einer einfachen Gegenüberstellung von Vergangenheit vs. Gegenwart: Formen von Baudetails und Häusern, und von Siedlungsstrukturen. Die Unterschiedlichkeit Alpiner Häuser und Siedlungen, ihre Zusammensetzung aus Schichten unterschiedlicher Vergangenheiten, verschiedene Bezüge zu Landschaft, baulicher Dichte, Volumetrie, Fassaden etc. hat im Projekt AlpBC gezeigt, dass diese Bau-Diversität des Alpiner Bestands viel intensiver, bewußter und systematischer verwendet werden kann, um aktuelle Reglements, planerische Strategien und architektonische Konzepte zu bestimmen.⁸

Die Alpen als Raum der Mensch-Natur Interaktion und als kulturell geformte verbunden Sphären traditioneller und aktueller Landschaft und Siedlung,⁹ lassen sich durch eine deutliche Unterschiedlichkeit zwischen Nord und Süd in Landschafts- und Siedlungsstrukturen charakterisieren, die auf kulturelle und klimatische Faktoren zurückgeht. Zahlreiche Unter- und Mischtypen dieser grundlegenden Charakterisierung verstärken eher noch die Klarheit der Unterscheidung und die Notwendigkeit einer systematischen Typisierung alpiner räumlicher Transformationen.¹⁰

Der Unterschied in den Siedlungsstrukturen - zwischen eher konzentrierten Kernen im Süden und einer vertreuteren Organisation im Norden - ist in beiden Fällen eingebunden in differenzierte Netzwerke hierarchischer Siedlungsorganisation von kleinen Einheiten bis zu größeren mit unterschiedlichen gemeinschaftlichen Infrastrukturen; in beiden Fällen habe die traditionellen Strukturen in höchstem Maß die Transformation der Alpiner Siedlungsräume durch Elite- und Massentourismus, durch schleichende und

6 see: the RURBANCE project in the Alpine Space Programme, www.rurbance.eu - Abteilung Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover, und Allgäu GmbH: RURBANCE Broschüre Bayerischer Voralpenbogen. 2015
Direzione Generale Ambiente, Energia, Sviluppo Sostenibile, Regione Lombardia, Leadpartner, for the consortium of RURBANCE (ed.): RURBANCE Final Report. 2015

7 Jörg Schröder, Sarah Hartmann, et.al.: Cross Scale Analysis as Basis for Spatial Strategies. In: Handwerkskammer für München und Oberbayern, Bayerische Architektenkammer, Technische Universität München: AlpHouse Final Project Publication. München 2012

8 Jörg Schröder: Alpine Baukultur der Zukunft. Alpine Building Futures. In: Claudia Miller, Hannes Bäuerle (eds.): AlpenOrte. edition Detail, München 2014 (DE/EN)

9 Jörg Schröder, Kerstin Weigert: Landraum. Jovis, Berlin 2010

10 see note in the next page

oktroierte Urbanisationsprozesse und durch tiefgreifende Strukturwandelprozesse in der Nutzung von Land und Ressourcen seit dem Industriezeitalter beeinflusst. Transalpine Routen haben bereits traditionelle Siedlungsstrukturen mit Handelsrouten und Mobilität von Menschen geprägt, und auch Bautechniken und Innovationen verbreitet. Auch in den traditionellen agrikulturellen Landschaften lässt sich die Unterscheidung zwischen Ackerland/Alm-Typen eher im Süden zu Weiden/Alm (Forst)-Typen eher im Norden treffen.

Das Konzept der Vernakulären Intelligenz wurde für die Verknüpfungen zwischen Siedlungs- und Landschaftsstrukturen formuliert; in einem vertieften Verständnis von Alpinem Baubestand werden damit ältere Häuser und Siedlungskörper nicht nur als Kontext für zukünftiges Bauen verstanden, als Umwelt, die mit Interventionen weiterentwickelt wird, sondern selbst als Quelle für architektonisches, planerisches und handwerkliches Wissen für ihre Veränderung. Mit dem Begriff Vernakulärer Intelligenz werden Modelle für Konzept und Realisation in verschiedenen Maßstäben (Täler, Dörfer, Häuser, Baudetails) zusammengefasst, die auf präzise Weise Alpinen Bedingungen entsprechen: in Klima, Topographie, Umgang mit Naturkräften und -gefahren, Zugänglichkeit, enger Siedlungsraum, Transportschwierigkeiten, generell extreme Situationen, temporäre Nutzungen, hohe kulturelle Ansprüche etc. Gegenüber dem Begriff "Tradition", der gewissermaßen das Bild einer stimmigen und logischen Vergangenheit im Kontrast zu heute zeichnet und normativen Charakter annimmt, bezeichnet Vernakuläre Intelligenz eine Quelle für die Fähigkeit, sich heute verschiedene Zugänge zum Bauen zu eröffnen, zu baulichen Strategien, die in Versuch und Irrtum entwickelt wurden in verschiedenen Alpinen Regionen, die zeitweise Standards wurden und waren, oder außer Gebrauch kamen mit Einführung industrieller Fertigprodukte, die sich veränderten entsprechend inhärenten Logiken von

Architektur und Siedlungsentwicklung, von gesellschaftlichen und ökonomischen Anforderungen; die allerdings selbst immer starken Einfluß hatten auf kulturelle, gesellschaftliche und ökonomische Charaktere und Aufstellungen der verschiedenen Regionen.

Weiternutzen von Bestand, Antworten auf Klima und Landschaft, Bilden von kulturellen Modellen Alpinen Bauens - all dies ist keine Erfindung von heute. Die notwendigen Rahmenwerke für Planen und Bauen, die Kulturen und die Politiken Alpine Bauen können Bezug nehmen auf diesen großen Vorteil des Alpenraum als pro-aktive Sammlung von Bau-Diversität für das Bauen.

2.3 Vorbildprojekte

Für die Entwicklung von Konzepten in der Pilotregion und vor allem für den Wissenstransfer zwischen handelnden Akteuren wurden in AlpBC Beispiele für Modelle örtlicher und regionaler Bau- und Planungskultur untersucht und einbezogen.

Großes Walsertal¹¹ - Biosphärenpark und interkommunale Kooperation (Vorarlberg, AT)

Im Großen Walsertal wird die interkommunale Zusammenarbeit der Gemeinden Thüringerberg, St. Gerold, Blons, Raggal, Sonntag und Fontanella im Verein REGIO mit dem Rahmen des Biosphärenparks Großes Walsertal und mit der Initiative Energiemodellregion im österreichischen e5 Programm (European Energy Award) kombiniert. Die interkommunale Organisation REGIO geht von dem Hintergrund eines ähnlichen Planungssystems wie im deutschen Pilotgebiet Achantal aus, und kann damit leichter als Referenz herangezogen werden. Der Vorstand des Vereins REGIO als Entscheidungsträger für strategische Planung wird dabei unterstützt von technischen Arbeitsgruppen für

10 Eine aktuelle wissenschaftliche Überblicksdarstellung über Alpine Siedlungsstrukturen fehlt; die letzten überblicksartigen Darstellungen aus dem 20ten Jahrhundert konzentrieren sich auf einzelne Länder und sind meist nur in einzelnen Sprachen verfügbar. Zum Beispiel die grundlegende Studie von Helmut Gebhard, Helmut Klein: *Bauernhäuser in Bayern. Band 2 Oberbayern* (1998) gibt es nur auf Deutsch; das Buch von Emilio Sereni: *Storia del paesaggio agrario italiano* (1961) wurde immerhin 2014 auf Englisch übersetzt (auch wenn darin die Alpen kaum vorkommen); Luigi Dematteis: *Alpinia. testimonianze di cultura alpina* (1975) gibt es weder auf Englisch, noch auf Französisch oder Deutsch. Von Paul Guichonnet: *Histoire et Civilisations des Alpes* (1980) wurde 1987 zumindest eine Italienische Übersetzung veröffentlicht. Die einzige Überblicksdarstellung über Alpine Geographie, die auch auf Italienisch und Französisch verfügbar ist: Werner Bätzing: *Die Alpen. Geschichte und Zukunft einer europäischen Kulturlandschaft* (1984, 1991, 2003), mit klaren Bemerkungen zu Siedlung und Architektur u.a. über die Alpen im Agrarzeitalter, und die neuen Formen der Nutzung seit dem 19. Jahrhundert. Bätzing streicht mit einer Reihe von Publikationen die Notwendigkeit einer strategischen und nachhaltigen Vision für die Zukunft der Alpen heraus.

11 Jörg Schröder, Sarah Hartmann: *AlpBC Good practice Grosses Walsertal*. Abteilung Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover. 2013 (DE)

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verschiedene Entwicklungsthemen, er steuert gleichzeitig die Initiative Biosphärenpark. Als Bedingung für die Anerkennung als Biosphärenpark wurde die Flächenwidmungsplanung des Tals adaptiert in ein neues System der Zonierung: Schutzzone, Pflegezone, Entwicklungszone, die jeweils von naturräumlichen Zielvorgaben ausgehen.

Regionales Bauen wird im Walstertal seit längerem gefördert und aktiv entwickelt, mit qualitativ hochwertiger Architektur und lokalen Baumaterialien (Initiative Bergholz). Beratungsmodelle in Energiefragen für Bauherren (unterstützt durch EIV) und besonders für öffentliche Gebäude stellen ein internationales Vorbild dar. Ein interkommunales Bauamt wurde als Teil der Initiative REGIO eingerichtet, um die Planungsaktivitäten der Gemeinden zu koordinieren und die architektonische Qualität der Gebäudemaßnahmen sicherzustellen; besonders die neuen öffentlichen Gebäude im Walsertal sind Modellprojekte für energetische, ökologische und architektonische Qualitäten. In partizipativen Prozessen wurden für die Entwicklung des Talraum Strategien und damit verbundene Maßnahmenkataloge erstellt, sie wurden von Beginn an nicht nur an Zielen der ländlichen Entwicklung und Ökologie, sondern auch an Energiezielen ausgerichtet; dies wurde verstärkt durch die Teilnahme im e5-Programm und die damit obligatorische laufenden evaluierende Beratung der Gemeinden.

Ortsentwicklungsplan Fläsch¹² (Graubünden, CH)

Die kleine Gemeinde Fläsch im Rheintal mit 590 Einwohnern lebt von der Weinherstellung, die Lage zu den guten Mobilitätsanbindungen des Rheintals verursacht Bedarf an Wohn- und Gewerberaum.

Hierfür wurde in einem partizipativen Planungsprozess ein neuer Ortsentwicklungsplan aufgestellt umgesetzt (Entwurf und Beratung Architekt Christian Wagner), der als Modellprojekt einer an kulturelle und ökologischen, aber auch inhärent energetischen Zielen ausgerichteten Ortsentwicklung gilt; die Gemeinde wurde 2010 mit dem Wakkerpreis für nachhaltige Ortsentwicklung ausgezeichnet. Fläsch entschied sich, innerörtliche Weinberge nicht zu bebauen (was eine vorschnelle Maßnahme sog. Innenentwicklung gewesen wäre), um damit Verbindungen in die Landschaft zu verstärken und um die Weinhersteller zu unterstützen, die ihre Produkte zu 90% direkt verkaufen und die damit einen Bezug zu Weinbergen und Natur im Ort und neben den zahlreichen kleinen Produktions- und Verkaufsstätten erhalten. Für Neubebauungen sind konzentrierte Sied-

lungscluster am Rand des Ortes vorgesehen, die sich auf räumliche Qualitäten und die Dichte des alten Ortskerns beziehen. Gleichzeitig werden für die Ortsentwicklung leergefallene landwirtschaftliche Gebäude im Ort als Ziel- und Ersatzbauten v.a. für Wohnzwecke vorgesehen (siehe Abbildung Beispiel Casa Scura). In das örtliche Baugesetz wurden vorgezogene Beratungsformen integriert, die architektonische Qualität und Bewußtsein für örtliche Baukultur verstärken sollen.

3. Beratung und Kommunikation

3.1 Thematische Schwerpunkte für eine regionale Strategie der Baukultur¹³

Für die zwölf Gemeinden des Pilotgebiets Achantal wurden durch die Analyse im Projekt AlpBC und in verschiedenen Workshops und Expertenbeteiligungen thematische Zielfelder für interkommunale Kooperation und für eine Strategie für Baukultur formuliert, die eine Grundlage für zukünftige gemeinsame Projekte und Initiativen bilden. Ausgehend von unterschiedlichen räumlichen Situationen in den Gemeinden, können dabei Kooperationen auch in kleineren Gruppen von Gemeinden sinnvoll sein, abhängig vom jeweiligen thematischen Fokus; oder auch weitergehende Kooperationen über das Pilotgebiet hinaus.

- Postagrarischer Baubestand, Neunutzung von Scheunen, Stallgebäuden und Hofanlagen in der Streusiedlung (Einzelhöfe), wie in dichteren Siedlungsmustern (Weilern, Dörfern), mit dem Sonderthema der Gebäude der Almbewirtschaftung,
- Ortszentren: Weiternutzung von Baubestand, Sicherung von Gemeinschaftseinrichtungen, besonders Nah- und Grundversorgung,
- Touristisches Bauen und Infrastrukturen: Erneuerung und Neubau in Kleinstrukturen, und in größeren Komplexen, Gebäude für Freizeit, Kultur, Sport, Fragen der Gestaltung von Orten als Destinationen und strukturelle wie ästhetische Werte touristischen Bauens,
- Gewerbe- und Industriegebiete: Ziele des Flächensparens und der fehlenden Erweiterungsmöglichkeiten aufgrund von Topographie und Naturschutz legen interkommunale Kooperationen für neue Ausweisungen nahe, gleichzeitig Notwendigkeit der Transformation älterer Gewerbe- und Industriezonen,
- Einzelhausgebiete: Erneuerungsbedarf für den Baube-

¹² Jörg Schröder, Sarah Hartmann: AlpBC Good practice Fläsch. Abteilung Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover. 2013 (DE)

¹³ Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität Hannover, Handwerkskammer für München und Oberbayern (eds.): AlpBC Kooperationsstrategie Achantal. 2014



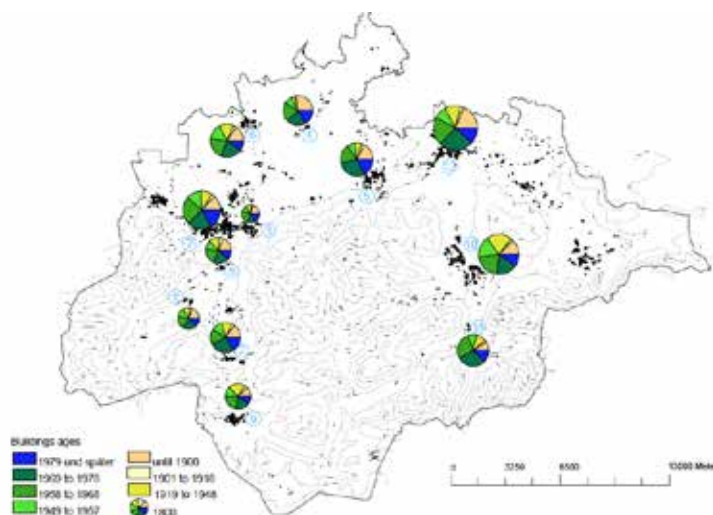
Abhängigkeit der Themenschwerpunkte, Ortszentrum Schleching

Abbildung: LUH Regionales Bauen und Siedlungsplanung, Luftbild Klaus Leidorf



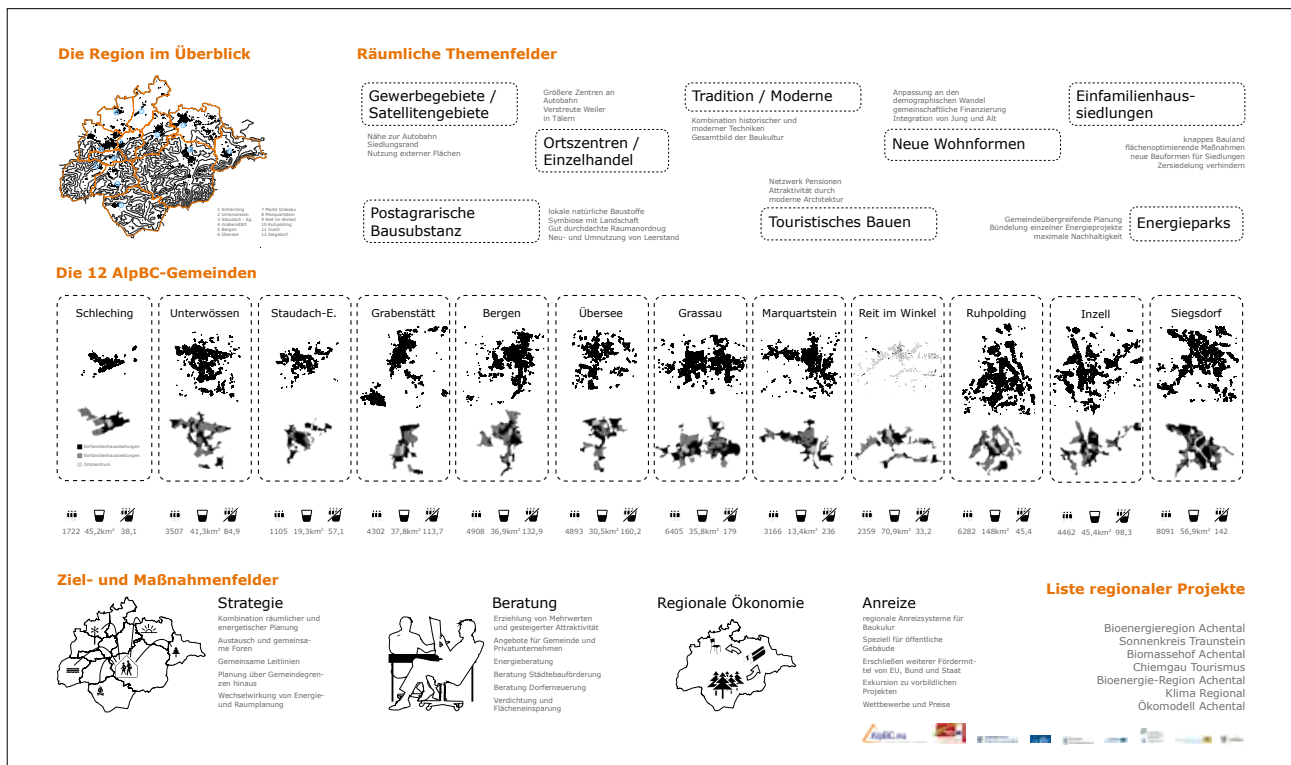
Beispiel Thema Ortszentren und Infrastrukturen: Schleching

Abbildung: LUH Regionales Bauen und Siedlungsplanung, Daten: Landesamt für Vermessung und Geoinformation Bayern, sowie Feldforschung



Beispiel Thema Einzelhaussiedlungen: Baualtersklassen im Pilotgebiet Achenal

Abbildung: LUH Regionales Bauen und Siedlungsplanung, Daten: Landesamt für Vermessung und Geoinformation Bayern



Poster Konzept Kooperation im Achenal
Abbildung: LUH Regionales Bauen und Siedlungsplanung

stand v.a. der 50er-90er Jahre, Anpassung an den demographischen Wandel (Infrastrukturen, Erreichbarkeiten), aber auch Frage der Zweitwohnungen/-häuser und der siedlungsstrukturell damit verbundenen Aspekte,

- ▶ **Neue Wohnformen**: gemeinschaftsorientierte Wohnformen, Mischen von Altersgruppen und Haushaltsformen/-größen; trotz Bedarf sind derartige Modelle in ländlichen Räumen noch nicht etabliert, Organisations- und Finanzierungsformen sind zu entwickeln,
- ▶ **Energetische Aspekte**: Frage der nachhaltig sinnvollen Erreichbarkeit von Energieeffizienz-Zielen im Bau- und Siedlungsbestand, Frage der architektonischen Qualität isolierter Effizienzmaßnahmen nicht nur bei Denkmälern, sondern auch im Siedlungskontext; Fragen der Entscheidungsprozesse über bauliche Maßnahmen für Energiegewinnung, Speicherung, Transport
- ▶ **Als Querschnittsthema**: übergeordnetes Leitbild zum Schutz und der Weiterentwicklung der Werte Alpiner Architektur und Siedlung, mit dem wesentlichen Aspekt Tradition und Moderne zu verbinden.

Das Beispiel des Ortszentrums von Schlechting (siehe Illustration) zeigt darüberhinaus deutlich, dass die definierten thematischen Schwerpunkte sowohl einzelne Gebäude als auch ganze Teile der Siedlungsmuster betreffen: Entscheidungen über Nutzung, Renovierung oder Ersatz einzelner Gebäude hängen ab von Nachbarschaften als gebaute Umgebung und als Perspektive für Wohn- und Arbeitskonzepte. Außerdem zeigen die räumlichen Bezüge in Schlechting auf, wie eng die einzelnen Themenfelder nicht nur inhaltlich, sondern direkt räumlich verknüpft sind:

- ▶ Sicherung von Gemeinschaftsfunktionen im Ortszentrum, Wiederverwendung leerer postagrarischer Gebäude,
- ▶ Streusiedlung als landschaftsbezogene Siedlungsform mit agrarischen/postagratischen Elementen wie Siedlungsflecken,
- ▶ Einzelhausgebiete aus den 50er-90er Jahren als Nachbarschaften, Frage möglicher gemeinsamer Energie/Heizwärmeproduktion.

In der Analyse und in den Diskussionen über Siedlungsentwicklung und Energiefragen wurde die gegenseitige Abhängigkeit dieser beiden Handlungsfelder und der Bedarf nach konzertiertem Vorgehen deutlich. Insbesondere für den Baubestand (postagratische, agrarische und touristische Gebäude, Einzelhäuser) und die damit verbundenen Siedlungsteile kann eine nachhaltig sinnvolle Erfüllung von Zielen der Energiepolitik nur durch Abstimmung mit räumlicher Entwicklung erreicht werden.



Dokumentation Gemeindedialoge
Abbildung: LUH Regionales Bauen und Siedlungsplanung



Dokumentation Fachtagung Planen
und Bauen in den Alpen
Abbildung: LUH Regionales Bauen und Siedlungsplanung

1.2 Die Konstruktion Alpiner Baukultur Kernelemente von AlpBC

3.2 Gemeindedialoge als Beratungstool¹⁴

Mit der Entwicklung des Beratungstools Gemeindedialoge und seiner Testimplementierung für das Achenental wurden regionale KMU des Handwerks und der Architektur in Entwicklungsdiskussion über die Zukunft des Tals einbezogen, mit dem Ziel der Stärkung der regionalen KMU, besonders im Renovierungsbereich, und um regionale ökologische Ressourcensysteme zu initiieren.

Als Teil der regionalen Implementierung von AlpBC mit einem interkommunalen Fokus - Innovation in der Verbindung von energetischen Maßnahmen mit räumlicher Entwicklung - sollen die Gemeindedialoge auch ein Beratungstool zu den Themen Planen und Bauen für die Gemeinden aufzeigen, das regionale Wirtschaftskraft als ein wesentliches Zielfeld formuliert. Beteiligte der Dialoge waren lokale Politiker und Verwaltungsexperten, Architektur- und Handwerksfirmen, Vertreter bürgerschaftlicher Initiativen. Für die Veranstaltung der Gemeindedialoge kooperierte die Abteilung Regionales Bauen und Siedlungsplanung Leibniz Universität Hannover mit der Handwerkskammer für München und Oberbayern und mit dem Ökomodell Achenental, das im Rahmen des EU-Projekts Mountee dafür zusätzlich gefördert wurde. Weitere beteiligte Unterstützer waren der Landkreis Traunstein, die Kreishandwerkerschaft Traunstein, Sonnenkreis Traunstein, und die Bayerische Architektenkammer. Das Ziel der Gemeindedialoge sind sektoral übergreifende Beratung und Wissenstransfer im Planen und Bauen, auf Grundlage bestehender separierter Beratungsformen für Private (Städtebauförderung, Dorferneuerung, Energieberatung), um einheitliche Ansprechpunkte und gemeindegebietsweite Zuständigkeiten zu ermöglichen. Vor allem zielen die Dialoge auf Expertise für Gemeinden in planerischer Hinsicht (Flächennutzung und Bebauungsplanung, Satzungen, Innenentwicklung, Flächensparen); damit sollen die Möglichkeiten zur strategischen Entscheidungsfindung in der räumlichen Entwicklung und Baukultur gestärkt werden. In Form eines neuartigen "Marktes der Ideen" wurden verschiedene Beispiele, Tools und Planungskonzepte aus Praxis und Forschung vorgestellt und diskutiert, um die spezifischen und unterschiedlichen Bedürfnisse an Beratung der einzelnen Gemeinden zu treffen,

ihre Entscheidungs- und Finanzierungsfragestellungen. Das Konzept die Kooperation der Gemeinden des Achenentals zu erweitern und zu vertiefen, indem Planen und Bauen als wichtiges gemeinsames Handlungsfeld für Nachhaltigkeits-, Umweltschutz- und Energieziele formuliert wird, wurde mit der Veranstaltung am 02.07.2014 erreicht. Dazu wurden die Gemeindedialoge organisiert in drei Foren: Nachhaltige und energieeffiziente Strategien der räumlichen Entwicklung; Ortsentwicklung und Landschaft; lokale Baustoffe und innovative Technologien.

3.3 Symposium Fachtagung Planen und Bauen in den Alpen¹⁵

Ziele des Symposiums

Die öffentliche Konferenz Planen und Bauen in den Alpen im Haus der Architektur in München am 10.03.2015 wurde von der Bayerischen Architektenkammer veranstaltet, in Kooperation mit der Abteilung Regionales Bauen und Siedlungsplanung der Leibniz Universität Hannover und der Handwerkskammer für München und Oberbayern. Zielgruppen waren KMU der Architektur und Planung, politische Entscheidungsträger und administrative Experten aus Gemeinden, KMU des Handwerks und Bauherren. Ziel des Symposiums war ein Überblick über das Projekt AlpBC und seine Resultate, ausgehend von der Pilotregion Traunstein/Achenental, und insbesondere der Transfer für einen regionalen und landesweiten Fokus.

Das Symposium wurde unterstützt vom BBSR Bundesinstitut für Bau-, Stadt- und Raumforschung im Bundesministerium für Verkehr und Digitale Infrastruktur, dem Bayerischen Staatsministerium für Umwelt und Verbraucherschutz und dem Landkreis Traunstein (gleichzeitig als Konfinanzierer); darüberhinaus durch das Bayerische Staatsministerium für Wirtschaft und Medien, Energie und Technologie (Fördergeber speziell der Fachtagung), durch das Ökomodell Achenental und den Bayerischen Gemeindetag.

Mit dem Zitat "Es gibt nicht zu erfinden, alles ist wieder zu erfinden" des Schweizer Architekten Luigi Snozzi hat die Fachtagung grundlegende Zugänge zu regionaler Architektur und Siedlungsentwicklung in den Alpen eröffnet, die das Paradigma der "Vernakulären Intelligenz" (siehe Kapitel 2.2) sichtbar und wirksam werden lassen.

¹⁴ Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität Hannover, Handwerkskammer für München und Oberbayern, Ökomodell Achenental (eds.): Gemeindedialoge Dokumentation. 2015

¹⁵ Bayerische Architektenkammer, Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität Hannover, und Handwerkskammer für München und Oberbayern (eds.): Fachtagung Planen und Bauen in den Alpen - Dokumentation Regionales Symposium AlpBC. 2015

Wissenstransfer und Umsetzungshilfen wurden anhand erfolgreicher Beispiele vorgestellt und im Bezug auf gemeindliche, regionale und transnationale Bezüge diskutiert:

Beratungsmodelle

Die Fachtagung war in vier thematische Foren organisiert, eingeführt und moderiert von Eva Herrmann. Das erste Thema - Beratungsmodelle - behandelte Strategien und Beispiele in zwei Richtungen: wie lässt sich Wissenstransfer von der Forschung in die Praxis vor allem im Hinblick auf kleine Gemeinden und private Bauherren organisieren? Und wie können Transfermodelle mit effektiven Formen der Partizipation der Bürger und der Einbeziehung von KMU kombiniert werden, um Bewußtsein für Alpine Baukultur zu stärken?

Beiträge dieses Forums waren: Baukultur als Teil regionaler Identitäten, die Rolle von Entwurf und Experiment in Planungsprozessen (Prof. Ton Matton, Kunstuniversität Linz, Österreich); Beratung als Verbindung von Expertise und Partizipation (Christine Steininger, nonconform architects, Wien, Österreich).

Planen und Architektur

Im zweiten Teil wurde die Rolle von architektonischen Projekten und Entwürfen im Rahmen von Entwicklungsstrategien für Orte und Talräume beleuchtet; und nach den regionalen Hintergründen gefragt, Bauen als Antriebskraft und als Ausdruck regionaler Identitäten zu nutzen und zu verstehen. Als Beispiel wurde dafür der Kanton Graubünden aus mehreren Perspektiven als Beispiel für entwickelte Alpine Baukultur diskutiert. Impulsvorträge in diesem Forum: Tradition und Kontinuität von Regionaler Architektur in Graubünden (Dr. Ulrike Fischer, KIT Universität Karlsruhe); Identität und Architektur (Ramun Capaul, Capaul & Blumenthal Architekten, Ilanz, Schweiz).

Bauen und Planen als Teil regionaler Ökonomie

Wie Planen und Bauen mit allen involvierten Akteuren als wichtiger Teil und möglicher innovativer Faktor für regionale Wirtschaftsentwicklung ausgerichtet werden, und wie regionaler Mehrwert in Produktions- und Wissensketten, ökologischen Systemen von Materialien, Ressourcen und Energie entstehen kann, war Thema der dritten Runde von

Beiträgen: Regionale Produkte Initiative auf Grundlage des Brands Allgäu (Klaus Fischer, Allgäu GmbH); Kreislaufsysteme der Vorholz-Initiative (Kurt Bereuther, Alberschwende, Österreich); Regionale Wirtschaftskreisläufe (Jürg Inderbitzin, Hochschule Luzern, Schweiz).

Förder- und Steuerungsinstrumente

Im vierten Teil der Fachtagung wurde ein Überblick über Beratungsangebote und Förderungen zu Bauen und Energie des Freistaats Bayern gegeben. Beispiele aus Vorarlberg wurden für eine Diskussion über die Wirkung der Maßnahmen und ihre Übertragbarkeit im Alpenraum herangezogen. Beiträge in diesem Forum: , Bestehende und geplante Maßnahmen im Bereich Energieeffizienz von Gebäuden (Ulrich Hach, Bayerisches Staatsministerium für Wirtschaft und Medien, Energie und Technologie); die regionale Zertifizierung von Baubook als Form regionaler Wirtschaftsförderung (Christoph Sutter, Energieinstitut Vorarlberg).

4. Das Transalpine Modell der AlpHouse Zentren

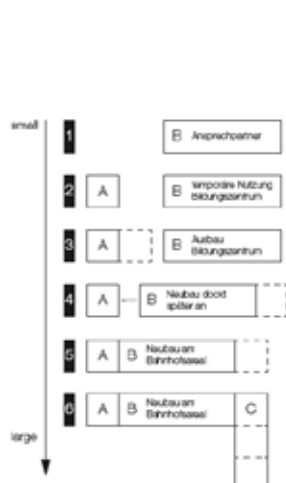
4.1 Realisierungskonzept für das AlpHouse Zentrum Traunstein

Die Idee der AlpHouse Zentren¹⁶ (benannt nach dem Projekt AlpHouse, dem AlpBC in Thematik und Vorgehen nahesteht) ist es die gewonnene Wissensbasis von AlpBC über das Projekt hinaus weiterzutragen, und dafür einen konkreten räumlichen Bezugspunkt zu schaffen. Als regionale Kontaktpunkte für Planen und Bauen in den Alpen zielen die AlpHouse Zentren auf Information, Weiterbildung und Wissenstransfer in den beteiligten Alpen Regionen, gerichtet an Experten und KMU der Architektur und des Handwerks, an eine breite Öffentlichkeit und an Bauherren, und auch an Verwaltungsexperten und Politiker der Gemeinde- und Regionsebene.

Das Konzept und die ersten Implementierungsschritte für das AlpHouse Zentrum Traunstein sollen die Grundlage für Investitionen und längerfristigen Betrieb darstellen, die Realisierungsstudie¹⁷ im Rahmen des Projekts AlpBC

¹⁶ Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität Hannover, Handwerkskammer für München und Oberbayern (eds.): *Arbeitsheft AlpHouse Zentrum Traunstein*. 2013-15

¹⁷ Handwerkskammer für München und Oberbayern / Abteilung für Regionales Bauen und Siedlungsplanung - Leibniz Universität Hannover (eds.): *Konzept und Machbarkeitsanalyse AlpHouse Zentrum Traunstein*. 2015. Autoren: Adriana Bär / Jörg Schröder, Sarah Hartmann, Lisa Leitgeb, Miriam Mlecek, Kerstin Finkenzeller



- A Ausstellungswand / -raum am Bahnhofsweg
 B Althouse Center
 C Jugendherberge, Apartments, usw.
 Werkstätten, Gründerzentrum, Betriebs,
 Showroom, „Bauwerk“, Läden, usw.
 Wohnungsbau



Kernfunktionen Althouse Zentrum Traunstein

Image: Adriana Bär, und LUH Regionales Bauen und Siedlungsplanung

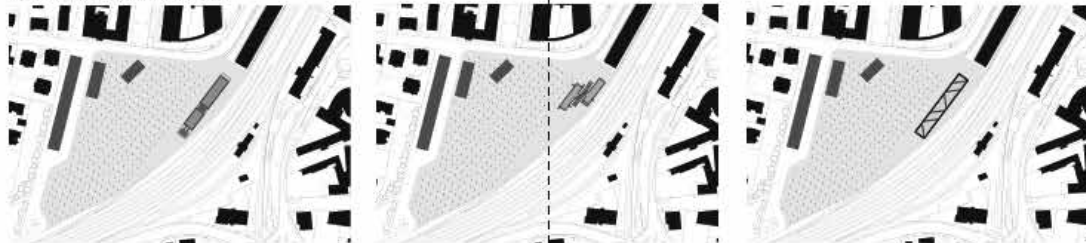
Programmalternativen Althouse Zentrum

Abbildung: LUH Regionales Bauen und Siedlungsplanung

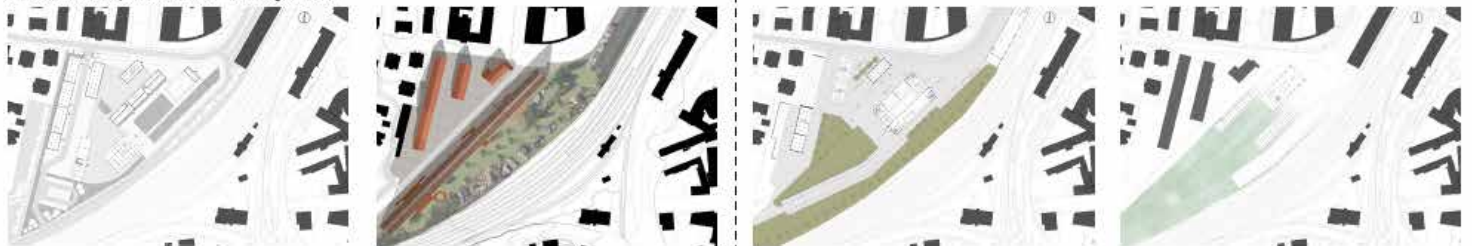
Überblick architektonisch-städtebaulicher Alternativen Althouse Zentrum

Abbildung: LUH Regionales Bauen und Siedlungsplanung, auf Grundlage von Entwurfsprojekten von Jörg Schröder und Lisa Leitgeb für Leibniz Universität Hannover; Entwürfen an der Universität Liechtenstein; und der Diplomarbeit von Sarah Hartmann und Robert Schneider an der Technische Universität München

6.2.3 Varianten Althouse Zentrum



6.3.4 Varianten Althouse Zentrum und Jugendhotel



6.3.5 Variante Stadtbaustein



1.2 Die Konstruktion Alpiner Baukultur Kernelemente von AlpBC

hat hierfür eine Bewertung von Alternativen in Größe und Programm, wie in architektonischen und stadtplanerischen Lösungsmöglichkeiten vorgestellt. Für die Erstellung der Raumprogramme und möglichen Betriebsformen des Zentrums wurden wesentliche regionale und lokale Organisationen einbezogen, eine regionale Strategie für Baukultur wurde in diesem Prozess auch als ökonomisches Alleinstellungsmerkmal für Stadt und Region Traunstein verstanden. Unterstützer hierfür waren u.a. Stadt und Landkreis Traunstein, sowie die Bayerische Architektenkammer. Damit wurde durch AlpBC eine Grundlage für weitere regionale Kooperationen und Initiativen für Planen und Bauen gelegt, das AlpHouse Zentrum vereint regionale Wirtschaftskraft, nachhaltiges Planen und Bauen und Baukultur als gemeinsame Ziele auf neuartige Weise.

Die Kernaktivitäten des AlpHouse Zentrums Traunstein sind (siehe Abbildung):

- ▶ Information und Beratung
- ▶ Spezielle Weiterbildung
- ▶ Netzworkebildung und Wissenstransfer für KMU
- ▶ Öffentlich wirksame Veranstaltungen, Marketing, touristische Angebote

Für den möglichen Standort der baulichen Realisierung des AlpHouse Zentrums in Traunstein wurden zwei Alternativen untersucht, im Hinblick auf organisatorische und finanzielle Machbarkeit, auf möglichen Mehrwert für die Stadtentwicklung, auf Sichtbarkeit und Kooperationsvorteile mit bestehenden Einrichtungen; der eine Standort wäre in zentraler Lage als Teil eines Stadtumbauprojekts nahe des Bahnhofs und der Altstadt, der andere als Erweiterung bestehender Aktivitäten des Bildungszentrum der Handwerkskammer in Traunstein). Architektonische Szenarien für verschiedene Programmkombinationen und Größen, und unterschiedliche Interpretationen Alpinen Bauens für die Gestaltung des Zentrums sind Teil der Realisierungsstudie; hierfür wurde mit mehreren zusätzlichen Partnern kooperiert.

Die einzelnen Punkte sind: übergeordnete Konzeptfindung (Leibniz Universität Hannover), Alternativen für das AlpHouse Zentrum (Leibniz Universität Hannover), Alternativen für das AlpHouse Zentrum in Verbindung mit einem Jugendhotel (Universität Liechtenstein), und die Alternative für ein neues Stadtquartier in Verbindung mit dem Zentrum (Diplomarbeit von Sarah Hartmann und Robert Schneider an der Technischen Universität München). Mit der Realisierungsstudie für eine bauliche Maßnahme in Traunstein sind die Voraussetzungen für eine Entscheidungsfindung zur betrieblichen und investiven Umsetzung bereitgestellt.

4.2 Das Netzwerk der AlpHouse Zentren

Wie bereits im Projektantrag für AlpBC geplant, wurden die unterschiedlichen thematischen Kompetenzen der regionalen AlpHouse Zentren während des Projekts zusammen mit jeweils involvierten Kooperationspartnern entwickelt. Die Koordination erfolgte durch die Handwerkskammer für München und Oberbayern und durch TIS Bozen. Dieses transnationale Portfolio der AlpHouse Zentren bietet die Grundlage für weitere Kooperationen im Netzwerk:

- ▶ AlpHouse Zentrum Traunstein (Handwerkskammer für München und Oberbayern, DE): Schwerpunkt Beratungsangebote für Bestandenerneuerung und Energieeffizienz
- ▶ AlpHouse Zentrum Salzburg (Wirtschaftskammer Salzburg, Bauinnung Salzburg, AT): Schwerpunkt Energiespeicherung im Gebäude
- ▶ AlpHouse Zentrum Bozen (TIS Techno Innovation South Tyrol, IT): Schwerpunkt Technologietransfer für ökologische Renovierung
- ▶ AlpHouse Zentrum Belluno (Region Venetien und Architektenkammer Belluno, IT): Schwerpunkt Renovierung, Ortsplanung und Energie
- ▶ AlpHouse Zentrum Dornbirn (Energieinstitut Vorarlberg, AT): Beratung und Planung für "Null-Energie-Gebäude"
- ▶ AlpHouse Zentrum Aosta (Finaosta Energia, IT): Schwerpunkt Verbesserung der Energieeffizienz vernakulärer Gebäude

Das Netzwerk der AlpHouse Zentren stellt ein transferierbares Modell von Kompetenzzentren für Planen und Bauen in den Alpen dar, das regionale Expertise und Kompetenz stärkt, und das eine Plattform für die Vertiefung des Themas Alpine Baukultur darstellt:

- ▶ Kooperation für das Thema und für Kommunikations-/Bildungstools Alpiner Baukultur als Weiterentwicklung traditioneller Stärken des Alpenraums: in Architektur, Planung und Handwerk (Vermittlungsnetzwerk),
- ▶ Kooperation in spezifischen Themenbereichen, Komplementarität von Angeboten ausgehend von verschiedenen Kompetenzen der Zentren; gemeinsame Bildungs-, Kommunikations- und Wissenstransfer-Projekte (z.B. wandernde Bauschule); und internationale Vernetzung der einzelnen regionalen Partner der AlpHouse Zentren (Wissensnetzwerk),
- ▶ gemeinsame Ansprache gegenüber nationalen und europäischen Institutionen und Programmen im Bezug auf die wichtige Rolle von Planen und Bauen für nachhaltige räumliche Entwicklung, auch im Hinblick auf eine Strategie für eine Alpine Makroregion, und gegenüber den Bürgern des Alpenraums und darüberhinaus (Marketingnetzwerk),
- ▶ Zusammenarbeit für weitere Forschungs- und Entwicklungsprojekte zum Thema Alpiner Baukultur (Ideennetzwerk).



2.1 Building Culture, Energy and Local Development

PIE Piedmont Region, Department for strategic programming, spatial planning and housing (IT)

1. Introduction

These notes are one of the outcomes of AlpBC (acronym of Alpine Building Culture), an interregional cooperation project funded under the Alpine Space programme. AlpBC was aimed at defining and implementing strategies and measures for preserving and advancing the Alpine building culture in a broader context of local development and ecological sustainability. The ultimate goal was to enable local operators to capitalise on this exceptional cultural resource as a source of identity and of regional economic development. AlpBC capitalised the results of previous projects on building culture and energy efficiency (for example the project AlpHouse).

Central elements of AlpBC were:

- ▶ the definition of inter-municipal planning concepts;
- ▶ the promotion of regional closed loop economies in the construction industry;
- ▶ the implementation of a network of regional centres and contact points for the transfer of knowledge and technologies in the building sector to SMEs, policy makers and public administrations;
- ▶ the implementation of inclusive governance processes;
- ▶ the definition of guidelines and other tools dedicated to decision makers and regional/local authorities.

In this context, Regione Piemonte has decided to focus its attention on Lanzo Valleys, a rather significant territorial system as it combines some typical features of Piedmont mountain areas with the proximity to Turin metropolitan area and with a good accessibility from the outside.

The pilot project on Lanzo Valleys has dealt with two complementary issues, namely the design of a sustainable development scenario based on locally available material and immaterial resources, and the definition of tools supporting spatial planning processes, pursuing the goals of landscape protection, settlements redevelopment and energy efficiency.

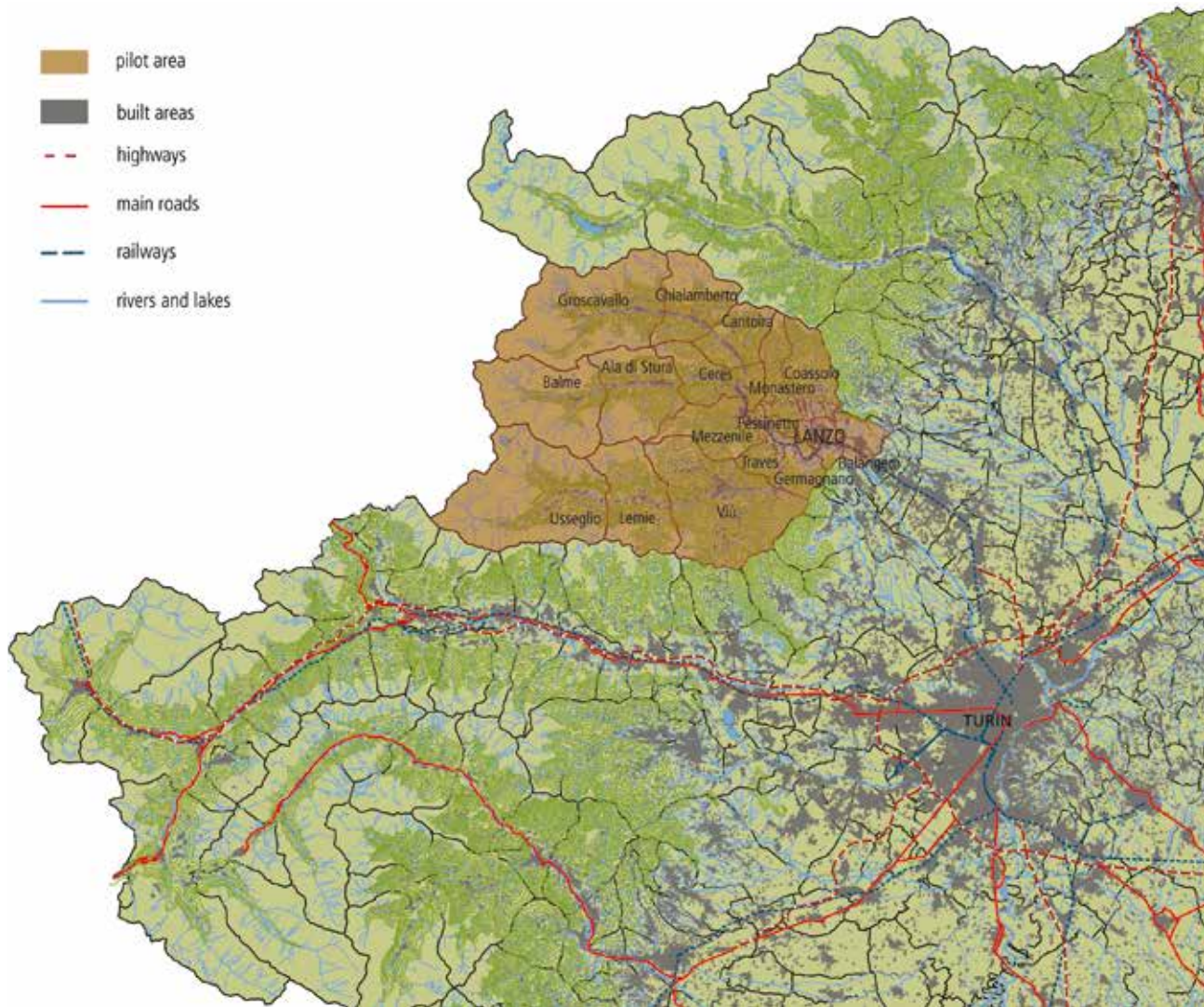
For what the first theme is concerned, the scenario was drawn up on the basis of both statistical / quantitative and perceptual / qualitative data, in close interaction with main local public and private stakeholders. The focus of the scenario is the idea of promoting and strengthening local economic sectors (handicraft, tourism, agro-food), according to the principles of short chain and closed loop economies (that is, using to the greatest possible extent locally available resources, and minimising the waste of both material and energy).

In terms of planning, the project has defined:

- ▶ tools aiming at addressing local planning processes at inter-municipal scale, in strict relation with the contents of the development scenario and with the regional territorial and landscape plans, and by means of discussions with local communities;
- ▶ addresses for local planning transferable to other areas, in particular related to the topic of settlements energy efficiency assessment;
- ▶ guidelines aiming at integrating the enhancement of alpine building culture and the energy efficiency of settlements, to be annexed to municipal urban planning tools.

Project AlpBC in Lanzo Valleys was an opportunity to experiment approaches and methodologies to local development that can be used in other mountain contexts in the region. In order to fully implement the addresses contained in programmes and plans at regional scale (for example the Regional Landscape Plan), local communities have to be actively supported by the Regione.

In this view AlpBC has also been a way for testing an innovative approach to interaction among different territorial level, shaped on local context specificities (tangible and intangible resources available, existing governance networks, institutional capacity, social and economic peculiarities and so on).



The pilot area



View from Sant'Ignazio



Lanzo, via Cibrario

2.1 Building Culture, Energy and Local Development

2. The development scenario

by Paolo Zeppetella

2.1. Why a development scenario?

Regione Piemonte decided to use the occasion of AlpBC to design a development scenario for mainly three reasons:

- ▶ first of all, in line with the needs of the project, it would have been difficult to work on the relationship between the local built heritage, the economic activities in the building sector and the wood sector without analysing the broader context of economic, social and environmental dynamics that cross the area. Any suggested action aiming at developing the timber industry intercepts in fact several issues, connected one with the other: from the management of forest resources to the structure of land ownership, from the quality and consistency of the housing stock to energy policies, up to the role of the building sector as part of the whole local context. Actions aiming at strengthening the timber industry can (do) generate very relevant effects on the whole economic, social and environmental structure of the area, and therefore a comprehensive view of territorial dynamics was required in order to be able to assess the relevance of these effects;
- ▶ a second reason, this too partially related to the contingencies but with longer term implications, has to do with the ongoing processes of redesign of the institutional levels. In fact, in the past years the super-municipal bodies of mountain areas (the so-called Mountain Communities) have been eliminated by National and Regional laws, and have been partially replaced by Municipalities Unions, governmental bodies with slightly different territorial shapes and competences, and at the same time the Provinces too have been reshaped, and their role reformed. These transformations are affecting in a decisive manner territorial governance, with results still largely uncertain since the reform processes are not yet completed. Beside the final form the institutional structure will have at the end of the reform process, it is essential for mountain areas to adopt tools for orientating the decision-making processes at an appropriate territorial scale, and to find formal and informal public arenas where the discussion among local public and private stakeholders can take place. The definition of a development scenario has been a way for shaping and testing one such tool;
- ▶ finally, in recent decades mountain areas were crossed by various dynamics that have gradually accentuated their marginality: dramatic reduction of the population, closure of most of the medium-to-large sized productive activities, aging population, scarcity of services, crisis of the tourism model centred on second houses and so on. This condition is actually not so much a symptom of a lack of resources, but rather of the difficulty in finding development patterns and models that make full use of locally available resources (in terms of environment, culture and landscape, but also of networks of handicraft activities, of small – or niche - industrial activities, of traditional and / or deeply rooted know-how and so on). The design of the scenario was aiming at recomposing all these “fragments”, trying to highlight the opportunities that can arise also from conditions of apparent (or actual) marginality.

The definition of a development scenario for Lanzo Valleys in the context of project AlpBC intended to operate on two levels simultaneously:

- ▶ in terms of vision, resources and needs have been systematised, thus bringing out a strategic framework of the development possibilities for the area. The scenario describes a perspective, and suggests a number of priority action areas. It has been designed in order to define a comprehensive framework in which the actions of each local stakeholders can be placed;
- ▶ in terms of governance, the organization of various moments of public discussion and of workshops with several public and private local actors, has been a way to test a possible model for organising public discussions among local actors. It was undoubtedly an experiment conducted in response to specific needs (the actions foreseen for project AlpBC), but which could be extended to other types of contexts. The need to find ways to compare opinions, to take joint decisions and to mediate potential conflicts at a supra-municipal scale, and with an adequate degree of flexibility, transparency and informality, is a central issue to be addressed for local Administrations.

2.2. Methodological approach

The term development is largely used in public policy, and like all widespread concepts it can easily lead to misunderstandings. Frequently, for example, the idea of development is superimposed to that of growth, or the attention is focused on the quantitative aspects rather than on the qualitative ones, and so on. This is not the place to sketch a precise definition of development; however, in the following paragraphs the meaning of the term that guided the construction of the scenario will be outlined. The methodological assumptions which have lead the entire process can be the theoretical basis for operating in other similar context, both in Piedmont mountain areas and in other parts of the Alps.

Focus on existing resources

The definition of the objectives and lines of action that form the scenario is based on the principle of exploiting first of all locally available resources, being them tangible or intangible. This assumption is a consequence of the fact that a huge portion of the problems that plague mountain areas in general, and Lanzo Valleys in particular, result from the fact that the social, economic and territorial development that has characterized these areas during at least the last century has depended increasingly on models, resources, capitals and “cultures” coming from outside the mountain areas. Local resources (for example water, wood, traditional know-how, landscapes and so on) have very often been exploited for the benefit and profit of enterprises coming from the outside, responding to economic-productive, social logics which found their justification elsewhere.

The model that has governed the development of mountain areas has shown a certain indifference to local specificities, thus generating negative externalities on various domains - environment, society, economy, culture, landscape, employment and so on. The approach adopted by project AlpBC seeks to reverse this setting, starting therefore from the idea that the specific characters of mountain areas have to be interpreted as objective evidence, and only within a broader framework they can be seen as strengths or weaknesses. A good example in this view can be the stagnation of the housing market: on the one hand there is no doubt that is a major problem both for the owners (who see their capital eroded) and for the public administrations (which must still ensure services and urbanisation, even if a relevant portion of the building stock is most of the time empty or underused); on the other hand this situation can

also represent an opportunity, as the remarkable price differences compared to lowland areas may attract investors from outside.

Closed loop economies

Project AlpBC had among its key points the idea that the development of alpine areas should / can be based on so-called closed loop economies, *i.e.* on economic sectors that tend to close their production circle inside the territory, and that reduce to the greatest possible extent their level of dependence on supplies coming from outside.

The concept of closed loop economies has at least three major consequences:

- ▶ in terms of resources, it implies that the use of locally available raw materials should be maximised, both for production itself and for all other connected aspects (from energy to water). The relation with the local level is crucial also for what human resources and skills are concerned, thus involving the world of education and training as much as that of entrepreneurship;
- ▶ in terms of production cycles, a closed loop economy is built around local material, and therefore tends to use it in all its potential, while minimising possible wastes. From this point of view, for example, a timber cluster will be a complex set of different activities that include cultivation and care of the forest, tree cutting and drying, the use of various sizes of material in different production runs (carpentry for the building, construction of door and window frames, artistic handicrafts, furnitures, etc.), the use of processing waste for the realization of byproducts (*e.g.* insulating material), until the burning the unusable wastes for the production of energy or heat;
- ▶ finally, for what knowledge is concerned, the idea behind the concept of a closed loop economies is that the each areas has historic, cultural and technical values that must become active part of the production processes, and this is particularly valid in places like the Lanzo Valleys, where the economic structure is based on small handicraft and family-owned enterprises.

Promote innovative forms of governance and participation

Another idea behind the scenario is to consider it essential to have common strategies throughout the territory, while recognizing the specificities of each valley and each municipality. It is a consideration driven by the need to overcome the parochialism that has often been a self-imposed limit for the development of mountain areas. At the same time this

2.1 Building Culture, Energy and Local Development

idea comes from the simple analysis of the external environment in which public policies move today.

The issue of governance has a central role in defining development policies for mountain areas. In order to adequately and effectively deal with the challenges of the future, it is essential to act on at least three different levels at the same time:

- ▶ the level of inter- and intra-institutional cooperation, imagining innovative and flexible ways for building synergies between the various institutions that operate in different ways on the territory (or whose actions can have a direct impact on the local level). Alongside more formal and institutional tools, such as Municipalities Unions, a relevant role is played by informal networks with variable geometry, designed to meet the requirements of specific programmes, projects and policies;
- ▶ on the level of public-private partnership, it is again necessary to identify ways for integrating the objectives of these two types of actors, with the dual goal of maximizing the public effect of private subjects' actions, and at the same time of facilitating the actions of the latter (of course fully respecting the rules, and maximising transparency);
- ▶ finally, in terms of participation, actively including citizens in decision-making processes, or at least in parts of them. In sparsely populated areas such as the Lanzo Valleys, the activation of social capital, the exploitation of the knowledge that citizens have of their territory and the construction of informed consent on government actions are often prerequisites for public policies to generate positive effects and to fully deploy their potential.

Build shared visions

When a development scenario proves to be effective, *i.e.* an instrument capable of influencing the activities of various economic, political and social living and working in a certain area, it also because it acts on the level of imagery. The analysis of the strengths and weaknesses of the area, the reading of the dynamics that cross it and the identification of objectives for the development, are in fact operations that return an overall image of the area, and because of that may help build a narrative of the area, a way to represent it both to outsiders and insiders.

From the point of view of imagery, a development scenario brings into play the identity of a territory, especially if this is not meant as a set of stable characters, defined once and for all, but as an ongoing process, connected both to physi-

cal characteristics (morphology of the territory, its natural resources, historical, cultural and architectural landscapes etc.) and to the activities that take place in it, or even to the relationship it has with the outside world and so on. In this case too it is a process that develops in two directions: on the one hand the set of specific local identities defines an overall picture of the area, and on the other this image has a feedback on the area itself, redefining its identity.

The temporal dimension of development

A final element in the theoretical basis of this study is the idea that it is necessary to (re) introduce in a decisive manner the temporal dimension in local development policies. At least two elements have contributed in recent years to considerably shorten local policies perspectives: on the one hand the willingness of a part of the political personnel to build consensus around them through short-range objectives and policies, the results of which are to be visible in the short run; on the other hand, the growing uncertainty regarding both the institutional framework (the previously mentioned reorganisation of local the administrative levels in Piedmont) and the possible sources of funding. In this context it is not unusual that policies are built starting from the opportunities arising, for example a public tender, and that only *ex-post* medium-to-long term policy goals are defined. In doing so, however, the real risk is that of policies fragmentation and discontinuity, if not of their inconsistency. The definition of a medium-to-long term development scenario for a territory as the Lanzo Valleys determines the creation of a shared vision in which funding opportunities can be framed, or, the other way round, that can guide the search for funds and other kind of resources. Of course, this option does not exclude the idea of introducing elements of flexibility, that is to transform the scenario's objectives and actions as a result of changing conditions.

Scenario as choice

The design of a development scenario, that is the definition of a strategic vision, implies the fact that choices have to be made. Beyond the current situation of scarcity of financial resources, which is in itself a strong limit to the possibility of supporting public policies that can act simultaneously on all problematic issues, the definition of a scenario is a strategically geared operation, and as such it must be focused on a small number of core key issues. In other words, to pursue sustainable development of an area The "traditional" rationale that has guided local policies until few years ago, which

consisted in distributing financial resources on a wide set of policies and interventions, has proven to be ineffective (and unaffordable) in present situation. What seems to be necessary today is to focus on the one hand on the critical issues that hamper most social, economic and environmental development, and on the other hand on those policies and those interventions that more than others can trigger virtuous dynamics, with positive effects that go beyond the specific scope.

The idea that for fostering development to choices are necessary has several implications:

- ▶ it will be inevitable to introduce a high degree of innovation, both in methodological and content terms. It is necessary to overcome consolidated patterns of action, which often prove inadequate to meet the new challenges posed by a globalized economy;
- ▶ the usual limits of public authorities' action, so strictly connected to administrative boundaries, inevitably become too narrow to handle issues that increasingly transcend the municipal level (from the management of services to mobility policies, from the attraction of external investments to the maintenance of the territory, and so on);
- ▶ finally, it becomes inevitable to shift from an approach centred on institutional competencies to one that has its focus on the problems that from time to time are to be addressed, defining governance networks with variable geometries both among different public authorities, and among them and private stakeholders.

The work done by Regione Piemonte and Ires for project AlpBC has a technical value, but in order to make the scenario work as an instrument of orientation for the action of local stakeholders it is essential to consolidate political consensus around it. Each part of the scenario, and in particular the actions suggested for reaching the the overall objectives, are obviously susceptible of even radical revisions, both because the conditions of the context may change in the future, and because more effective ways of achieving the overall objectives can be identified. What would be an important legacy of the project in the area is the very idea of the need for Lanzo Valley to define tools that can orientate the action of local stakeholders, in which shared objectives and clear priorities are identified, so to strategically concentrate the use of each available resource.

2.3. A scenario for the Valli di Lanzo

The path that led to the definition of the development scenario for Lanzo Valleys was divided into three stages:

- ▶ it was carried out an extensive analysis, based both on quantitative data collection on all major demographic, economic and social aspects of the area, and on qualitative information, obtained through meetings and interviews with public and private stakeholders active in the area, the review of the main projects under way and a number of field visits;
- ▶ starting from the information defined during the analytical phase, and summarized in a SWOT analysis, a first draft of the scenario was prepared. That document, instead of defining goals and formulating strategies and action from scratch, tried to draw a coherent framework around dynamics, policies and relations that are already crossing to some extent the area;
- ▶ finally, the draft scenario has been discussed with the local community, first during a conference organized in Lanzo in June of 2014, then in a workshop held in Lanzo in October 2014, and finally in a meeting with the Majors of all Municipalities of the area in March 2015. During all these meetings there were in-depth discussion around the various objectives set out in the scenario, and on the possible actions to be promoted in order to pursue them.

The scenario is organised around four general objectives, and for each one of them different sets of actions are suggested:

1. to strengthen local economic sectors, and in particular those related to handicraft productions (the wood industry in first place) and agro-food;
2. to support environmental urban and landscape recovery processes, with a special focus on the issues of energy efficiency and of use of local resources;
3. to retrain and redefine tourist offer, trying to characterise it in a new and sustainable, to focus on the enhancement of existing resources and to attract adequate demand;
4. improve the livability and attractiveness of the area, acting in particular on the public service supply system, so to meet in a more effective and efficient way offer and demand.

The four objectives are held together by a transversal action, that is the creation of a brand "Valli di Lanzo" that can at the same time promote the area and its products on outside markets and strengthen the level of internal cohesion.

2.1 Building Culture, Energy and Local Development



A scheme of Lanzo Valleys Development Scenario

For each objective a number of actions are suggested, designed according to three principles:

- ▶ their capacity of generating positive effects on the main critical issues that determine the achievement of the overall scenario objectives;
- ▶ their feasibility in current conditions, with particular reference to possible funding lines that can be activated as part of the 2014-2020 programming of European funds;
- ▶ a certain continuity with what local actors are already doing.

Finally, one last point of the scenario concerns the provision of a range of indicators, both quantitative and qualitative, designed to measure the extent to which the various actions envisaged will transform the current situation, with particular reference to those phenomena that most of all interfere with the growth of prosperity in the area. Thanks to this system of indicators it will also be possible to introduce substantial corrections to the scenario and its actions, improving their efficiency and responsiveness to changing context conditions.

3. Energy, architectural typology and urban forms in alpine territories

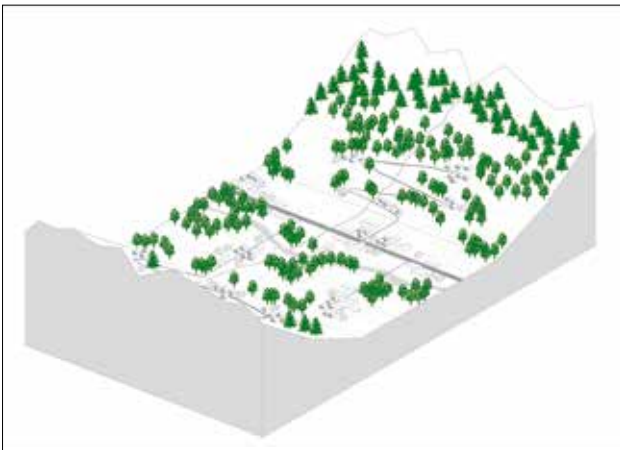
by Mauro Berta, Antonio De Rossi, Roberto Dini
Politecnico di Torino

In the last years spatial planning is asking always more frequently a change of paradigm, as the continuous technological innovations, the green economy, the smart city scenarios and the widespread environmental awareness are setting the bar, pushing for new and alternative development models. The more and more intertwined morphological and energetic issues are becoming a kind of unprecedented testing ground to experiment new models of territorial management and to practice new forms of project. From this point of view alpine spaces – thanks to their particular environmental conditions – represent a paramount *laboratory* where to experiment innovative building models (both in existing and new buildings) characterized by a limited energy consumption and by a sustainable use of renewable energy sources (water, sun, wood etc.). For a long time, during the last century, energy and dwellings have been thought independently from their territorial backdrop, and that leaved a number of clear signals on the ground: energy-eating buildings, assembled with inefficient materials and components coming from afar, and indifferent to solar orientation and to the local weather; progressively abandoned and neglected woods; underused water resources etc.

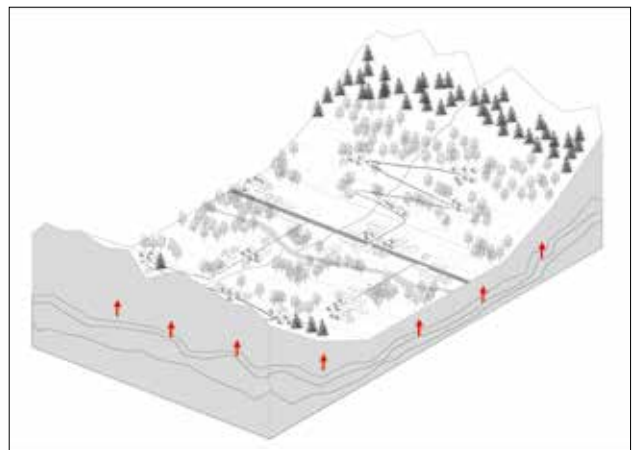
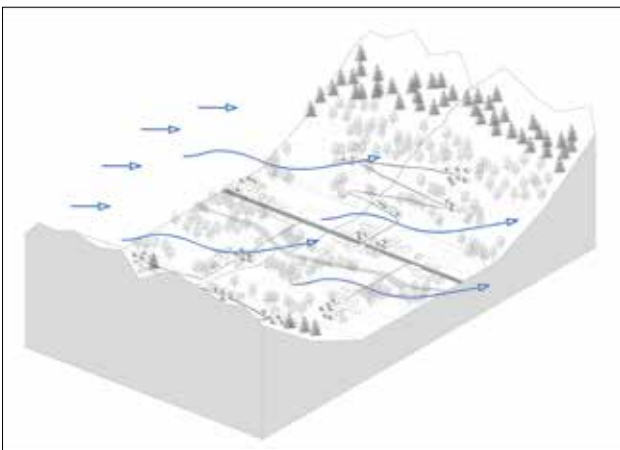
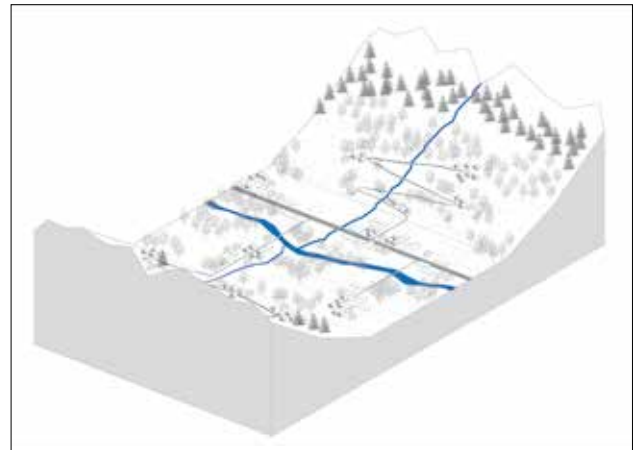
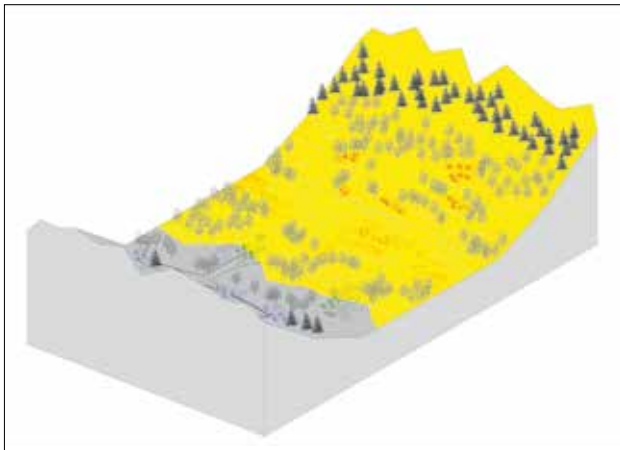
Nowadays the frame of reference is considerably different and the alpine valleys could - and should – become one of the main proving grounds of a new understanding of the rapport between contemporary societies and environment. It is not just a matter of reducing the resource consumption or increasing the energy efficiency. The mountain space allows effectively to prefigure some integrated models of design and territory management, fostering the dialog among subjects that often used to be treated separately: the use of water as an energy source; the employ of wood both as a biomass supply and as a construction material; the waste treatment; the reclamation of the architectural estate (the heritage buildings as well as the recent ones) aimed to energy efficiency and to landscape requalification. Furthermore these topics could be combined with the infrastructural and transportation themes, with agricultural land take, with local climate trends and – finally - with geomorphology seen not only as a constraint but also as an opportunity, as it happened in the former alpine societies.

Aiming at such an integration among these different topics means looking at a *développement durable*, as it is called in French, which is particularly suitable in alpine contexts, where the environmental constraints, and the distance from cities and plains impose a self-sufficiency based scenario (e.g. for what it concerns the waste management). *Integration* of the policies and *self-sufficiency* of the resources are

two key concepts to think to a *Smart Mountain*, that is to say an alpine territory that could perform high surplus value functions in the fields of: renewable energy, sustainable settlements, water resources, agriculture, forest management, rural development and biodiversity. A space able to provide eco-efficient public services to the surrounding territory and to support a network based local development.



The resources of the alpine territory: the availability and the potential of use of forest biomass, the solar gain, the availability of water resources, the action of the winds, the availability of geothermal resources



2.1 Building Culture, Energy and Local Development

The gradual international achievement of the sustainability paradigm – both in scientific and political-administrative fields – with its manifold effects on territorial and architectural transformations, is imposing more and more frequently an in-depth study of the forms and procedures with which the new requirements and the new technologies are combined with the traditional estate, the historical urban fabrics and the local landscape.

Nowadays the quantitative issues of sustainable development, with particular reference to energy efficiency, is largely debated and it is basically grounded on broadly shared positions, consistently supported by a wide offer of case-specific technologies, matching with the most part of the situations. But the relationship among the requirements defined by the regulations, the technical solutions aimed at achieving such performance levels, and the architectural and urban forms is often not clear. First of all with regard to the historical estate; where the integration between energy efficiency technologies and traditional architectural forms is frequently perceived as an unsolved tangle between the opposite demands of performance optimization and heritage protection.

Secondarily in reference to the recent urbanization areas, where the legacy of a barely controlled period of urban growth – during the 2nd half of the XXth century – has left in many alpine territories a widespread estate, often lacking architectural quality, but which could represent the core of an overall requalification of the local landscape.

Finally in the matter of new constructions; where the need for reduction of soil consumption, for reuse of urbanized areas and for energy efficiency, entails the definition of site-specific strategies, also for the requalification of the existing settlements.

3.1. Short supply chains in energy production

Nowadays energy is always more one of the basic components of a territory, mostly because it is the leading driving force of all the processes and services that provide well-being and quality of life to citizens: industrial and urban development, healthcare, trade, agriculture and essential services.

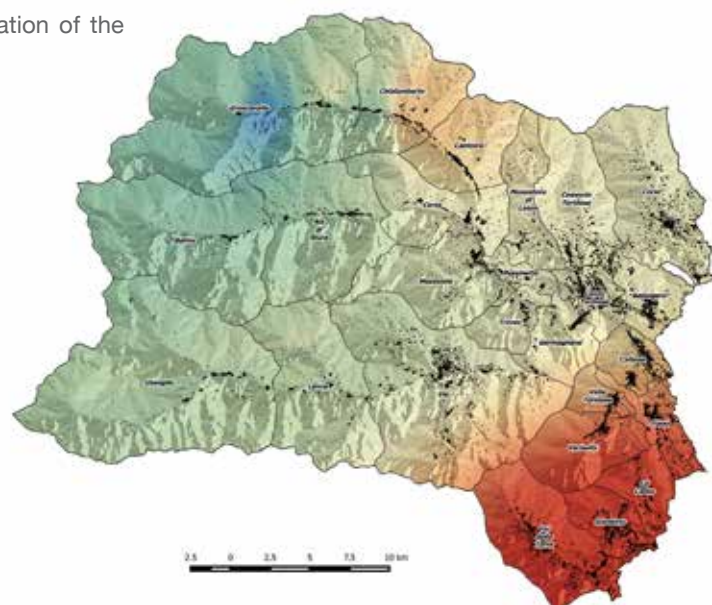
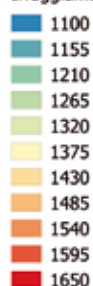
The contemporary panorama of power systems is characterized by both a well-established family of “traditional” power plants and by a series of innovative systems, aimed at the exploitation of renewable sources and the reduction of heat loss; these last ones are progressively integrated with the conventional systems, rising gradually the complexity of the energy networks. A complexity that is further increased in rural and alpine territories, like the Lanzo valleys, where the energy networks show a greater loss of energy than in densely populated areas and where the attention for the landscape quality is a key concept in the construction of new plants.

An energy supply system should be conceived on the strength of three key elements:

- ▶ safety, meant as the protection of the system against accidental or intentional harmful events;
- ▶ reliability, intended as the capability of ensuring the continuity of energy supply and the
- ▶ certification of the associated data;
- ▶ efficiency, meant as the governance optimization of the different elements of production and consumption which are part of the system.

Legenda

Irraggiamento [kWh/mq]

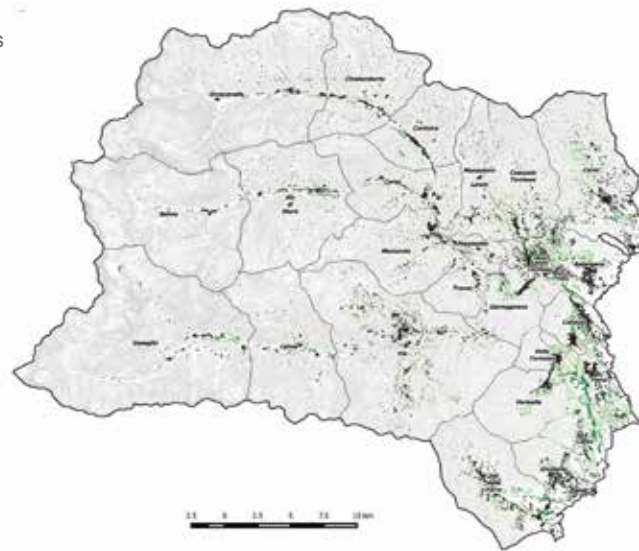


Map of annual solar irradiation of the Lanzo Valleys

Map of the forest biomass available for energy uses (maximum) of the Lanzo Valleys

Legenda

Densità Biomassa [t/ha/anno]



The integration of these three matters is a key concept in the present days, where every building, by means of local individual plants (photovoltaic or hot water solar panels, microwindmills, biomass furnaces etc.) could be seen not only as a single consumer, but as an energy producer as well, giving birth to a new subject: the “prosumer” (from the union of *producer* and *consumer*).

The distributed energy flows, as a whole, represent an actual “Virtual Power Plant” (VPP), whose complex network of interrelations must be consistently managed in order to maximize the stability of the supply-demand ratio, to reduce the peaks of consumption (“peak shaving”) and to guarantee a consistent earning deriving from the auto-consumption increase and the integration of renewable energy sources in the network. By means of a coordinated management of the production profiles it is possible to make the most of the local renewable energy sources, reducing the emissions of greenhouse gases and of other polluting elements. Furthermore the aggregation of a number of small energy producers, like the single buildings, allows to create some collective subjects, able to enter the market with a greater bargaining power and to obtain larger economic benefits in the network energy trading.

As a consequence, it appears crucial - in an experimental action, like this one about the Lanzo valleys – to define a territorial strategy for energy management based on the Virtual Power Plant model, able to answer to the present challenges imposed by the demand of energy self-sufficiency and by the need of local resilience.

3.2. Guidelines for energy and architectural requalification in the framework of the AlpBC project

As it happened in the previous AlpHouse project – which is a methodological and cultural foundation of this research – the AlpBC project is grounded on two key concepts.

The first one is the centrality of the alpine building culture, not only as a fundamental identitarian heritage of the local communities, but also as a depository of a long standing patrimony of resource savings skills; this is a topic which is more and more important in the transformation of the development models, imposed by the sustainable paradigm. The second one is the attempt of deeply grounding the valorization, protection and development politics of the alpine space on the socio-economic and productive local networks, involving in this process the stakeholders (SME, artisans, professionals, administrators etc.) and systematizing their own activities. The aim of this action is to activate local supply chains, able to perform economies of scale and to foster a local competitiveness.

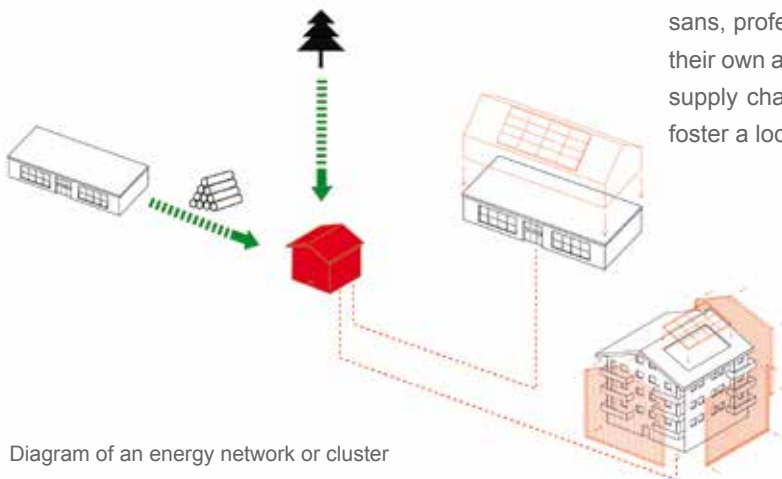


Diagram of an energy network or cluster

2.1 Building Culture, Energy and Local Development

Furthermore the present AlpBC project introduces a third essential issue, that is the will of extending to the territorial scale the rationales of protection, valorization and innovation actions, expanding the design leeway to the intercommunal planning, taking into account the interaction between the urban morphology and the energy planning in the alpine territory.

This interpretation of the topic is nowadays crucial. First of all from a more general point of view, because – against an ever more essential role of energy topics in the territorial and architectural transformations – a strong cultural division still separates the technical and the architectural issues, both in the ordinary transformations and in the research realm.

Secondarily – with a specific reference to the present case study – because the area of the Lanzo valleys is a perfect epitome of a great number of alpine territories concerning the relationship between alpine space and urban forms and it – as an experimental area -could therefore effectively represent more general issues.



Good practices of rehabilitation of buildings in the mountain area:

- a Armando Ruinelli, renovation of a stable in Soglio, Switzerland, 2009;
- b Corrado Binell, Roberto Rosset, renovation of Maison Gerard-Dayné, Cogne (AO), 2009;
- c-d Em2 Architetti, renovation in the Valle Aurina (BZ), 2000-2004;
- e Daniele Marques & Bruno Zurkirchen, renovation in Bergün, Switzerland, 1994-1996.

3.3. The Lanzo valleys as a laboratory for sustainable alpine development

In the 2nd half of the XIXth century the travel guides described this part of the alpine territory as “a little Switzerland near Turin”. This representation is maybe disappeared today, however it tells us about an early bent for the *loisir*, which is confirmed not only by the coeval frequentations of the Turin’s upper class, dating back in this area to the XVIIIth century, but also by the physical traces that have been produced in this part of the territory by this close relationship between mountain and city. The tourist buildings (i.e. the big historical hotels, then supporting the rising alpine activities of the Turin’s section of the Alpine Club of Italy, CAI); the luxury villas; the Turin-Ceres railroad, with its sophisticated architectural experimentation on the stations, inspired by some Swiss typological models; everything tells about a mainly “urban” image of these valleys between mid-nineteenth and mid-twentieth century, with a strong relationship with Turin and with its social and economical *élites*.

This privileged role started to face a downturn since the 30s of the XXth century, mostly by reason of the rising importance of the ski tourism, whose growing demand for high level standards was matching better with the greater *domain skiable* of other alpine territories rather than with the small ski grounds of the Lanzo valleys.

With the end of the great season of alpine long stay holidays the tourism became here more and more sporadic and, after WWII, the success of the automobile as a mass vehicle (whose capital city was Turin) appointed the Lanzo valleys (like many other parts of the Turin’s alpine territories) to the trivial role of an ideal destination for day trips in the country. During the later 70s and 80s, finally, the

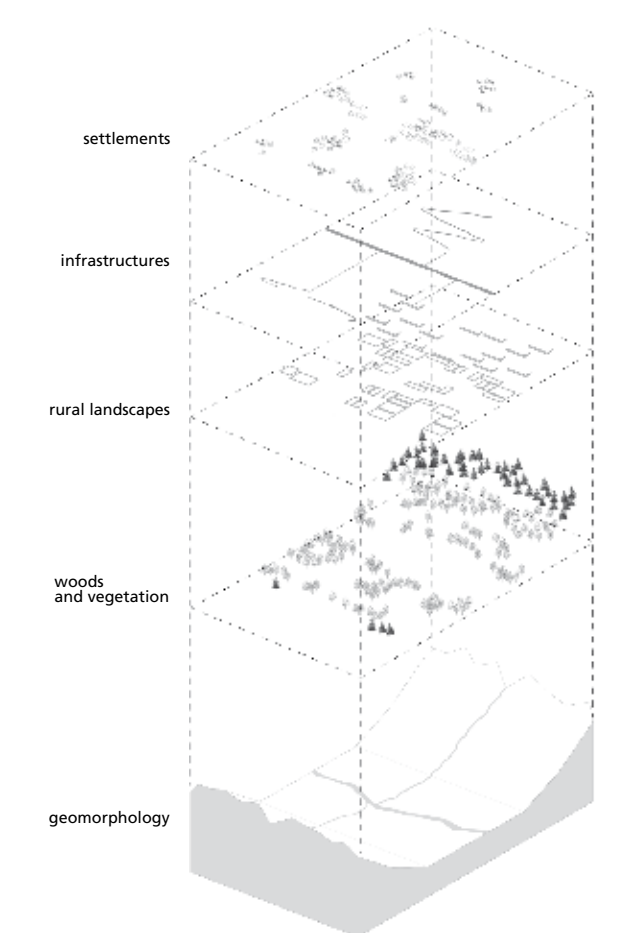
dawning crisis of the local industries, in addition to the other problems, the last act of the territorial decline began, where – besides the lack of clear overall strategies and development models – some individual business ventures tried to take the unfilled demands of the diffused tourism. The present aspect of the Lanzo valleys combines the presence of a diffused historical estate – somehow compromised during the last century, but often in fair conditions – with an outstanding value of the landscape of the three valleys; whose mountains – fully recognizable in the characters of the Southern “Graie” Alps still preserve a great environmental quality, potentially able to house some new forms of dwelling and of sustainable tourism. This potentiality is also fostered by the nearness of Turin and, most of all, by the recent connection between the historical Turin-Ceres railroad with the Metropolitan Railroad System (SFM), which is closely related with the main issue of the sustainable mobility in alpine territories.

The Lanzo valleys are effectively today a territory with a marked “metro-alpine” character, that is to say that the proximity to the Metropolitan Area of Turin and the easy infrastructural connections with it has encouraged the appearance of basically metropolitan urban forms, integrated in a still characterized alpine context.

Therefore the territory of the Lanzo valleys is suitable to represent an effective laboratory, where to experiment innovative forms of combination between energy efficiency and architectural requalification of the existing estate; and most of all where to test new guidelines for the local policies, able to intertwine the typological and morphological characters of existing estate with the energy performances and with exploitation of the local energy sources.



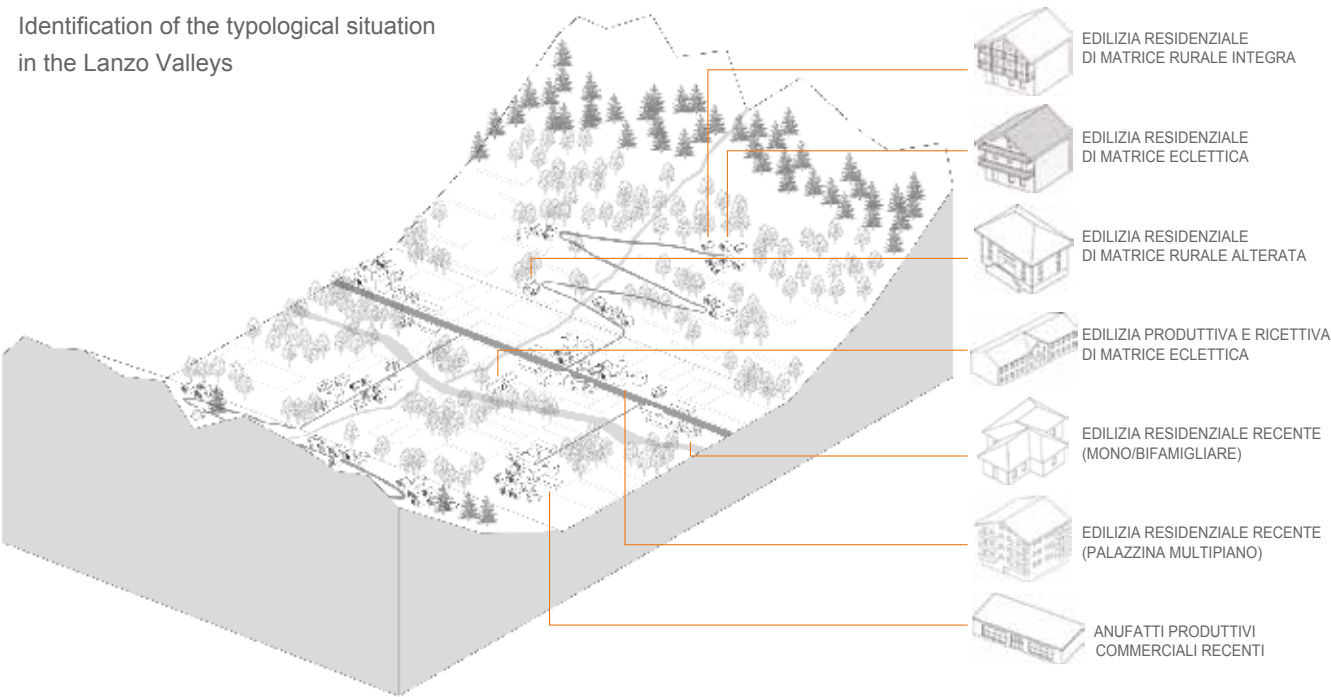
Landscape and settlement situations of the Lanzo Valleys



Building typologies in the Lanzo Valleys: historical and recent buildings.

The physical palimpsest of the valley territory

Identification of the typological situation
in the Lanzo Valleys



Legenda

-  Involucro esterno
-  Involucro interno
-  Copertura
-  Fotovoltaico
-  Solare termico
-  Serramenti
-  Serra
-  Variazione tipologica/
distributiva/geometrica

Identification of the strategies
for energy and architectural
requalification

	Involucro	Coperture	Variazioni volumetriche
Edilizia residenziale di matrice rurale integra			
Edilizia residenziale di matrice rurale alterata			
Edilizia residenziale di matrice eclettica			
Edilizia produttiva e ricettiva di matrice eclettica			
Edilizia residenziale recente (mono/bifamigliare)			
Edilizia residenziale recente (palazzina multipiano)			
Manufatti produttivi e commerciali recenti			

Isolamento a cappotto interno



La realizzazione di un isolamento a cappotto distribuito sulle pareti interne dell'edificio rappresenta in parecchi casi, per questa tipologia di edifici pluripiano sovente organizzati in condominio, l'opzione più facilmente percorribile per il miglioramento dell'involucro, dal momento che essa consente di attivare l'operazione di adeguamento sui singoli appartamenti, anche in assenza di un progetto complessivo su tutto l'edificio. Ciononostante non si tratta della scelta più vantaggiosa, sia a causa dei vincoli intrinseci a tale scelta tecnologica, sia poiché essa – svolgendosi interamente all'interno dell'edificio – impedisce di cogliere le opportunità di riqualificazione architettonica del complesso edilizio.



A parità di altre condizioni essa è pertanto meno consigliabile rispetto alla soluzione dell'involucro esterno.

Serramenti



La sostituzione dei serramenti con tipologie più performanti (a taglio termico) è in linea generale consigliabile su questa tipologia edilizia. Nel caso in cui essa non possa avvenire integralmente su tutto l'edificio è comunque necessario intervenire almeno sull'intera zona termica soggetta ad adeguamento energetico. È opportuno valutare, all'atto della sostituzione, il grado di congruenza tra

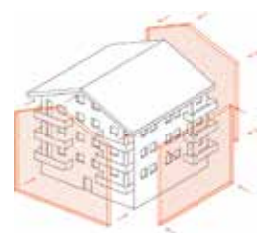
la trasmittanza dei serramenti e quella della restante parte dell'involucro edilizio. Sono da preferirsi serramenti con poche suddivisioni interne e con geometrie semplici; nel caso in cui la dimensione o la forma del serramento siano modificate sono da evitare soluzioni prive di legame con la realtà locale (serramenti ad arco, ad architrave inclinata, ecc.). L'orientamento è generalmente verticale, solo nell'ottica di un ripensamento complessivo di facciata è valutabile l'introduzione di serramenti orizzontali o a nastro.

Il telaio dei serramenti è da preferirsi in legno, sono eventualmente ammissibili serramenti metallici o combinati (legno alluminio); sono in ogni caso da evitare le combinazioni cromatiche particolarmente estranee al luogo (es. alluminio anodizzato), le finiture "camouflage" (vernice finto legno); forte-

mente sconsigliati sono i serramenti in PVC. Sono sempre da evitare vetri specchianti o comunque con colorazioni tali da renderli incongruenti con le vetrate tradizionali.



Isolamento a cappotto esterno



L'introduzione di un nuovo involucro isolante a cappotto sull'esterno della costruzione costituisce per questi edifici un'occasione importante per porre rimedio ad alcuni dei problemi di compatibilità dell'edificio con il contesto e per ripensarne i caratteri architettonici.

Il nuovo involucro, opportunamente differenziato nelle diverse parti dell'edificio, può essere infatti utilizzato a seconda dei casi:

- per scomporre, dal punto di vista percettivo, il volume costruito in una somma di volumi minori gerarchizzati per tipologia, funzione, ecc. riducendo il contrasto con l'edilizia storicamente consolidata.
- per rafforzare, a seconda dei casi, la verticalità o l'orizzontalità dell'oggetto edilizio, accorpendo o separando gli elementi caratterizzanti della facciata (aperture, balconi, logge ecc.).
- per ripensare il linguaggio materico dell'edificio, sostituendo materiali e finiture incongrui o per ridefinirne la composizione con logiche costruttive (basamento, corpo, coronamento ecc.).

Prima dell'intervento



Dopo l'intervento



Examples of adopted strategies

2.1 Cultura edilizia, energia e sviluppo locale

Regione Piemonte, direzione Ambiente, Governo e Tutela del territorio (IT)

1. Introduzione

Il progetto AlpBC

Le note che seguono sono uno degli esiti di AlpBC (acronimo di Alpine Building Culture, cultura edilizia alpina), un progetto di cooperazione interregionale finanziato nell'ambito del programma Alpine Space. Il progetto AlpBC ha avuto lo scopo di definire e implementare strategie e misure per preservare e far progredire la cultura edilizia alpina in un più vasto contesto di sviluppo territoriale e di sostenibilità ecologica. Lo scopo è quello di permettere agli operatori locali di capitalizzare questa eccezionale risorsa culturale come fonte di identità regionale e sviluppo economico. AlpBC capitalizza i risultati di precedenti progetti sulla cultura edilizia e l'efficienza energetica (per esempio il progetto AlpHouse).

Elementi centrali di AlpBC sono stati:

- ▶ l'implementazione di idee di pianificazione intercomunale; la promozione di economie regionali di ciclo chiuso nel settore delle costruzioni;
- ▶ l'implementazione di una rete di centri regionali e di contact point per il trasferimento della conoscenza e delle tecnologie per la ristrutturazione di edifici alle PMI, ai decisori e alle amministrazioni;
- ▶ l'implementazione di processi partecipativi di governance e di strumenti di orientamento dedicati ai decisori e alle autorità regionali.

In questo contesto, la Regione Piemonte ha deciso di concentrare la propria attenzione sull'ambito territoriale delle Valli di Lanzo, un sistema territoriale piuttosto significativo in quanto unisce alcuni caratteri tipici delle aree montane piemontesi con la vicinanza all'area metropolitana torinese e con una buona accessibilità dall'esterno.

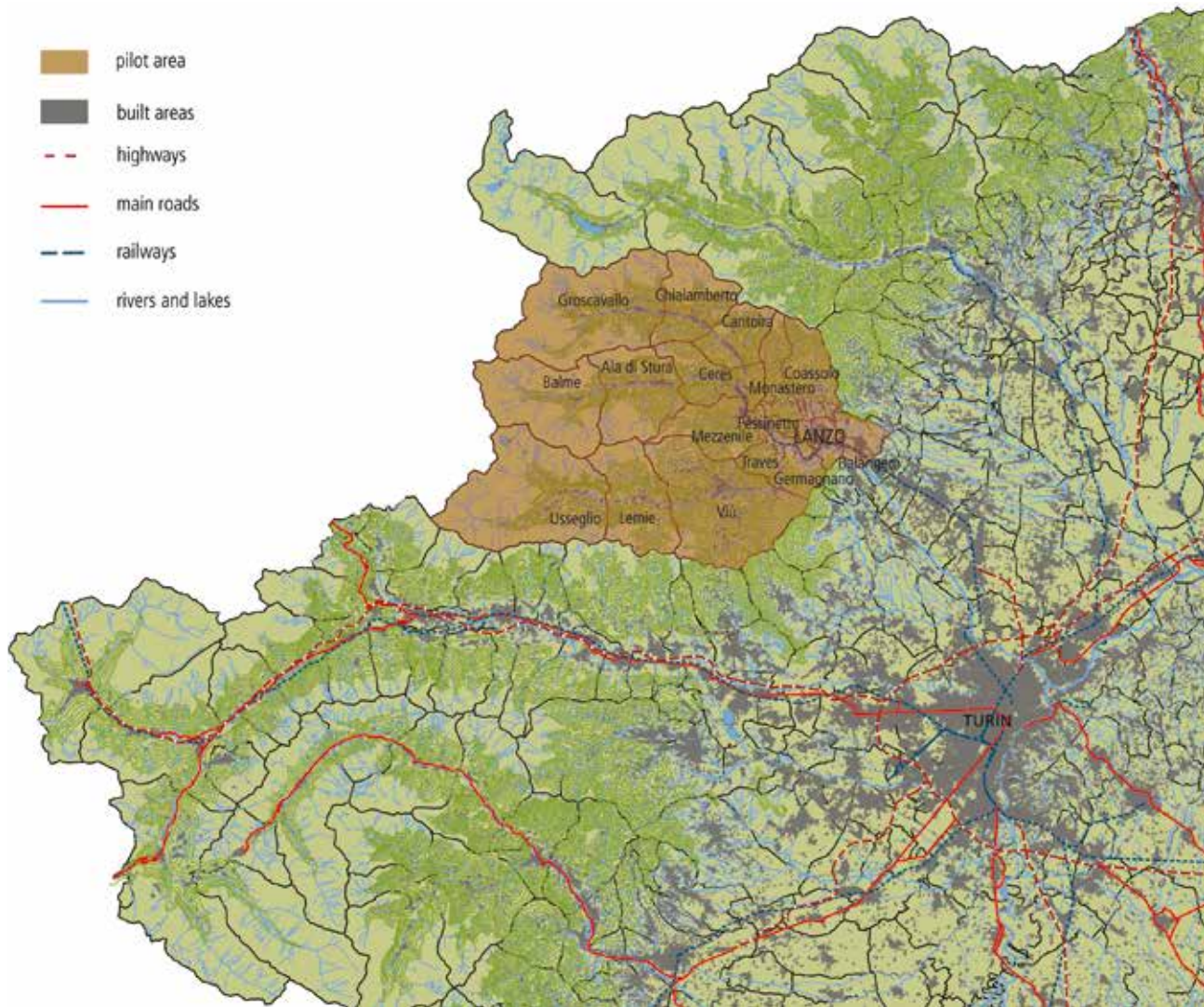
Il progetto sulle Valli di Lanzo si è occupato di due questioni fra di loro complementari, ossia la definizione di uno scenario di sviluppo sostenibile poggiato sulle risorse (materiali e immateriali) disponibili localmente, e la definizione di strumenti

di supporto alla pianificazione urbanistica e territoriale che perseguano gli obiettivi della tutela del paesaggio, della riqualificazione degli insediamenti e dell'efficienza energetica. Per quanto riguarda il primo tema, lo scenario è stato elaborato sulla base di dati sia statistico/quantitativi sia percettivo/qualitativi, in stretta interazione con i principali *stakeholders* pubblici e privati locali. Al centro dello scenario vi è l'idea di promuovere e rafforzare le filiere economiche locali (del legno, del turismo, dell'agro-alimentare), secondo principi di filiera corta e di economie a circuito tendenzialmente chiuso (che utilizzano cioè nella misura maggiore possibile risorse di provenienza locale, e che riducono al minimo lo spreco di materiale e di energia).

Sul piano della pianificazione, il progetto ha definito:

- ▶ strumenti di indirizzo per il processo di pianificazione locale a scala intercomunale, in relazione ai contenuti dello scenario di sviluppo e delle previsioni dei piani regionali territoriale e paesaggistico e anche attraverso momenti di confronto, di formazione/informazione con le comunità locali;
- ▶ linee guida per la pianificazione locale trasferibili ad altri territori, legate in particolar modo al tema della valutazione dell'efficienza energetica degli insediamenti;
- ▶ linee guida finalizzate ad integrare gli aspetti di valorizzazione della cultura edilizia alpina e gli aspetti di riqualificazione energetica, quali allegati alla strumentazione urbanistica comunale.

Il progetto AlpBC nelle Valli di Lanzo è stata l'occasione per sperimentare approcci e metodologie rispetto allo sviluppo locale che possano essere utilizzati anche in altri contesti montani regionali, nella convinzione che per dare piena attuazione degli indirizzi contenuti nei piani Paesaggistico e Territoriale regionali le comunità locali abbiano bisogno di un supporto attivo da parte della Regione, e che sia necessario dunque sperimentare e diffondere forme innovative di interazione con le comunità locali, costruite sulla base dei bisogni e delle specificità di ciascun territorio.



L'area pilota



Panorama delle Valli di Lanzo dal santuario di Sant'Ignazio



Lanzo, via Cibrario

2.1 Cultura edilizia, energia e sviluppo locale

2. Lo scenario di sviluppo

di Paolo Zeppetella

Gli ordini di ragioni che hanno spinto la Regione Piemonte a utilizzare l'occasione di AlpBC per delineare uno scenario di sviluppo sono stati diversi:

- un primo motivo, contingente rispetto alle esigenze del progetto, consiste nel fatto che sarebbe risultato difficile lavorare sulla relazione fra il patrimonio edilizio locale, le attività economiche nel settore e la filiera legno-edilizia senza costruire una cornice di riferimento più ampia, che permettesse di inquadrare il tema nel complesso delle dinamiche economiche, sociali e ambientali che attraversano l'area. Qualsiasi ipotesi di sviluppo della filiera del legno intercetta infatti diverse questioni, una connessa con l'altra: dalla gestione delle risorse forestali alla struttura della proprietà fondiaria, dalla qualità e consistenza del patrimonio edilizio alle politiche energetiche, fino a arrivare al tessuto artigianale e produttivo vero e proprio. Azioni volte a rafforzare la filiera del legno possono generare effetti anche molto rilevanti sul complesso della struttura economica, sociale e ambientale dell'area, e dunque è risultato indispensabile produrre una visione complessiva delle dinamiche territoriali, proprio per poter valutare la consistenza di tali effetti;
- una seconda ragione, anche questa legata in parte alle contingenze ma con implicazioni di più lungo periodo, è connessa ai processi in corso di ridisegno dei livelli istituzionali. La fine della stagione delle Comunità Montane, la nascita di Unioni di Comuni e la contemporanea trasformazione delle Province stanno infatti incidendo in maniera decisa sull'assetto della *governance* territoriale, con esiti ancora in gran parte incerti. Al di là della forma che potranno assumere gli assetti istituzionale al termine dell'attuale processo di riforma, appare indispensabile per le aree di montagna dotarsi di strumenti di orientamento delle decisioni con una scala territoriale adeguata, e di trovare delle sedi (anche informali) sovracomunali per organizzare la discussione fra i diversi *stakeholders* locali;

- infine, nel corso degli ultimi decenni i territori montani sono stati infatti attraversati da dinamiche che ne hanno progressivamente accentuato il carattere di marginalità rispetto alle zone di pianura e di collina: drastica diminuzione della popolazione, dismissione di molte delle attività produttive di medio-grandi dimensioni, invecchiamento della popolazione, rarefazione dei servizi, crisi del modello di turismo centrato sulle seconde case e così via. Questa condizione in realtà non è tanto il sintomo di una mancanza di risorse, quanto piuttosto della difficoltà nel trovare una propria dimensione dello sviluppo che utilizzi appieno le possibilità disponibili localmente (in termini di beni ambientali, culturali e paesaggistici, ma anche di reti di attività artigianali, di piccole filiere produttive, di saperi tradizionali e/o fortemente radicati e così via). La definizione dello scenario ha avuto l'obiettivo di ricomporre tutti questi "frammenti", cercando di mettere in evidenza le opportunità che possono nascere anche da condizioni di apparente (o effettiva) marginalità.

La costruzione di uno scenario di sviluppo portata avanti nell'ambito del progetto AlpBC ha inteso operare su due piani contemporaneamente:

- dal punto di vista della *vision*, l'operazione ha permesso di mettere a sistema le progettualità, le risorse e i bisogni espressi dai diversi attori del territorio, facendo emergere un quadro strategico delle possibilità di sviluppo dell'area. Lo scenario descrive una prospettiva, e suggerisce una serie di campi d'azione prioritari su cui intervenire per muoversi in quella direzione, configurandosi dunque come uno strumento capace di disegnare una cornice complessiva nella quale inserire l'azione dei singoli soggetti;
- sotto il profilo della *governance*, l'organizzazione di una serie di momenti di discussione pubblica e di *workshop* con diversi soggetti, tanto pubblici quanto privati, ha permesso di testare un possibile modello per mettere a confronto i punti di vista, i bisogni e le progettualità locali. Si è trattato senza dubbio di un esperimento condotto per rispondere a esigenze specifiche (le azioni previste dal progetto AlpBC), ma che tuttavia potrebbe essere esteso a altri tipi di contesti. L'esigenza di trovare modi per confrontare le opinioni, per prendere decisioni condivise e per mediare possibili conflitti a una scala territoriale sovra-comunale, e con gradi adeguati di flessibilità, di trasparenza e di informalità, è un nodo centrale da affrontare per le Amministrazioni locali.

2.1 Approccio metodologico

Il termine sviluppo trova larghissimo uso nelle politiche pubbliche, e come tutti i concetti ampiamente diffusi può ingenerare diversi equivoci. Sovente, ad esempio, si tende a sovrapporre l'idea di sviluppo a quella di crescita, o ancora a focalizzare l'attenzione sugli aspetti quantitativi piuttosto che su quelli qualitativi, e così via. Non è questa la sede per tentare una definizione precisa di sviluppo; tuttavia, nei paragrafi che seguono si proverà a delineare quale sia stata l'accezione del termine che ha guidato la costruzione dello scenario, ovvero quali presupposti metodologici abbiano guidato l'intero processo, nella convinzione che possano costituire la base per operare anche su altri territori simili nell'intero arco alpino piemontese (e non solo).

Puntare sulle risorse esistenti

La definizione degli obiettivi e delle linee d'azione è fondata sul principio della valorizzazione delle risorse, materiali e immateriali, di cui già il territorio dispone. Si è infatti ritenuto indispensabile riconoscere il fatto che una parte non secondaria dei problemi che affliggono la montagna in generale, e le Valli di Lanzo nel caso specifico, discendono dal fatto che lo sviluppo sociale, economico e territoriale che ha caratterizzato queste aree nel corso almeno dell'ultimo secolo è dipeso in misura crescente da modelli, risorse, capitali e "culture" esterne alla montagna stessa, che spesso hanno sfruttato parte delle risorse che questa possiede a scapito di altre, rispondendo a logiche (economico-produttive, sociali etc.) che trovavano la propria giustificazione altrove.

Il modello che ha governato lo sviluppo dei territori montani ha denotato una certa indifferenza per le specificità del territorio, con conseguenze anche molto negative su diversi piani – ambientale, sociale, economico, culturale, paesaggistico, occupazionale ecc. L'approccio adottato dal progetto AlpBC cerca di ribaltare questa impostazione, partendo dunque dall'idea che i caratteri propri delle aree montane vadano interpretati come elementi oggettivi, e solo all'interno di un quadro di senso più ampio possano essere letti come punti di forza o criticità. Si prenda come esempio il tema della stagnazione del mercato immobiliare: se da un lato è indubbio che rappresenta un grave problema tanto per i proprietari (che vedono il proprio capitale eroso) quanto per le amministrazioni (che devono garantire comunque servizi e urbanizzazioni, a prescindere dall'utilizzo effettivo degli immobili), dall'altro può rappresentare anche un'opportunità, visto che le notevolissime differenze di prezzo

rispetto a zone di pianura possono costituire un fattore di attrattività rispetto all'esterno, tanto per la residenza quanto per l'insediamento di attività economico-produttive di piccole dimensioni, tanto più in un contesto di crescente indifferenza localizzativa.

Closed loop economies

Il progetto AlpBC ha avuto fra i suoi punti cardine l'idea che lo sviluppo delle aree alpine debba/possa fondarsi sulle cosiddette *closed loop economies* (economie a circuito chiuso), ossia su filiere economiche che tendono a chiudere il proprio circolo produttivo all'interno del territorio, e a ridurre nella misura maggiore possibile tanto la produzione di scarti quanto il proprio grado di dipendenza da forniture di provenienza esterna.

Il concetto di *closed loop economies* ha almeno tre implicazioni importanti:

- sul piano delle *risorse*, un'economia a circuito chiuso dovrà tendere a utilizzare materie prime di provenienza locale, sia per le produzioni in sé sia per quanto concerne tutti gli altri aspetti del ciclo produttivo (dall'energia alle risorse idriche). Anche per quanto riguarda le risorse umane e le competenze da impiegare il rapporto con il livello locale è fondamentale, e coinvolge dunque il mondo della formazione tanto quanto quello del tessuto economico-imprenditoriale;
- sul piano dei *cicli produttivi*, un'economia locale a circuito chiuso è costruita attorno al materiale locale, e dunque tende a utilizzarlo in tutte le sue potenzialità, riducendo al minimo possibile gli scarti. Da questo punto di vista ad esempio una filiera del legno sarà un insieme complesso di attività diverse che comprenderanno la coltivazione e cura del bosco, il taglio degli alberi, l'essiccazione, l'utilizzo delle varie pezzature del materiale in cicli produttivi diversi (carpenteria per l'edilizia, realizzazione di serramenti, artigianato artistico, costruzione di mobili etc.), l'impiego degli scarti di lavorazione per la realizzazione di sottoprodotti (ad esempio materiali isolanti), fino alla combustione a fini energetici;
- infine, sul piano dei *saperi* l'idea che sta alla base del concetto di *closed loop economy* è che i territori abbiano specificità storiche, culturali e tecniche che debbono essere messe a valore nei processi produttivi, e ciò è specialmente valido in luoghi dove la struttura economica è fondata su di una dimensione artigiana del lavoro.

2.1 Cultura edilizia, energia e sviluppo locale

*Favorire forme di **governance** innovativa e partecipazione*

Una ulteriore idea di fondo alla base dello scenario consiste nel ritenere indispensabile avere delle linee comuni per tutto il territorio, pur riconoscendo le specificità di ciascuna Valle e di ciascun Comune. Si tratta di una considerazione di principio, dettata da economie di scala e dalla necessità di superare l'atteggiamento localistico che spesso ha costituito un limite auto-imposto per lo sviluppo delle aree montane. Allo stesso tempo questa idea deriva dalla semplice analisi del contesto esterno nel quale si muovono oggi le politiche pubbliche e territoriali.

Il nodo della *governance* ha un ruolo centrale nella definizione di politiche di sviluppo per le aree montane. Per affrontarlo in maniera adeguata rispetto alle sfide territoriali del futuro occorre agire su almeno tre piani diversi allo stesso tempo:

- ▶ sul piano della cooperazione inter- e intra-istituzionale, immaginando modalità innovative e flessibili per costruire sinergie fra i vari soggetti istituzionali che a diverso titolo operano sul territorio (o le cui azioni possono avere un impatto diretto sul livello locale). Accanto a strumenti più formali e istituzionalizzati, quali ad esempio le Unioni di Comuni, occorre anche pensare a reti informali a geometria variabile, disegnate per rispondere a specifiche esigenze progettuali e/o di politiche;
- ▶ sul piano della cooperazione fra pubblico e privato, cercando anche in questo caso di individuare modalità di relazione capaci di integrare gli obiettivi di queste due tipologie di attori piuttosto, con l'obiettivo duplice di massimizzare l'effetto pubblico dell'azione dei privati, e al contempo di facilitare quest'ultima (ovviamente nel pieno rispetto delle regole, e nella massima trasparenza);
- ▶ infine, sul piano della partecipazione, ovvero dell'inclusione attiva dei cittadini all'interno dei processi decisionali, o almeno in parte di essi. In aree poco densamente abitate come quelle montane l'attivazione delle energie sociali, la messa a valore della conoscenza che i cittadini hanno del proprio territorio e la costruzione di consenso informato attorno alle azioni di governo sono spesso condizioni indispensabili per garantire alle politiche pubbliche la possibilità di generare effetti positivi sul territorio.

Costruire narrazioni condivise

Per far sì che uno scenario di sviluppo risulti uno strumento incisivo, capace di orientare l'azione dei diversi soggetti economici, politici e sociali che vivono e operano in una certa area, è necessario che sappia agire anche sul piano dell'immaginario. L'analisi dei punti di forza e di debolezza del territorio, la lettura delle dinamiche che l'attraversano e l'individuazione di obiettivi da perseguire per lo sviluppo sono infatti operazioni che restituiscono un'immagine complessiva del territorio, e in virtù di ciò possono contribuire a costruire una narrazione dell'area, un modo per raccontarla e per rappresentarla.

Dal punto di vista dell'immaginario, uno scenario di sviluppo mette in gioco l'identità di un territorio, soprattutto se questa non è pensata come un insieme di caratteri stabili, definiti una volta per tutte, bensì come un processo in continuo divenire, legato tanto a caratteri fisici (la morfologia del territorio, i suoi beni naturali, storico-culturali e architettonici, i paesaggi etc.) quanto alle attività che in esso si svolgono, o ancora alle relazioni che ha con l'esterno e così via. Si tratta di un processo che si sviluppa secondo due direzioni: da un lato l'insieme delle identità locali e specifiche definisce un quadro complessivo del territorio, e dall'altro questa immagine retroagisce sul locale, ridefinendone l'identità stessa.

La dimensione temporale dello sviluppo

Un ultimo elemento teorico alla base del presente lavoro è l'idea che sia necessario (re)introdurre in maniera decisa la dimensione temporale nelle politiche di sviluppo locale. Due elementi almeno hanno concorso negli ultimi anni a accorciare sensibilmente le prospettive delle politiche locali: da un lato la propensione di una parte della classe dirigente a costruire il consenso attorno a sé grazie a obiettivi e politiche di corto raggio, i cui risultati siano verificabili nel breve periodo; dall'altro l'incertezza crescente che riguarda sia il quadro istituzionale (la già ricordata riorganizzazione della macchina amministrativa locale) sia le possibili fonti di finanziamento. In questo quadro non è raro che le politiche vengano costruite a partire dalle occasioni che si presentano, ad esempio un bando pubblico, e che solo *ex-post* si vadano a definire attorno a esse obiettivi di medio-lungo periodo. Così facendo però il rischio concreto è quello della frammentarietà e della discontinuità delle politiche stesse, se non addirittura della loro incoerenza.

Definire scenari di sviluppo di medio-lungo periodo per un territorio come le Valli di Lanzo significa creare una cornice il

più possibile condivisa nella quale inserire le opportunità (di bandi, di finanziamenti, di investimenti) che mano a mano si andranno a presentare (o che, meglio, verranno di volta in volta cercate), avendo chiari gli obiettivi di lungo periodo. Naturalmente questa opzione non esclude affatto l'idea di introdurre elementi di flessibilità, ovvero di trasformare obiettivi e azioni in conseguenza del mutare delle condizioni.

Scenario come scelta

A partire dalle considerazioni illustrate nei paragrafi precedenti risulta evidente come la definizione di uno scenario di sviluppo, dunque il proiettare una visione strategica in là nel tempo, presupponga la necessità di effettuare delle scelte. Al di là della situazione contingente di scarsità di risorse finanziarie, che di per sé costituisce un forte limite alla possibilità di sostenere politiche pubbliche forti e capaci di intervenire simultaneamente su tutti i nodi problematici, la costruzione di uno scenario è un'operazione orientata strategicamente, e in quanto tale richiede di individuare un nucleo relativamente ristretto di questioni cruciali. In altri termini, per perseguire lo sviluppo sostenibile di un territorio è necessario superare la logica della distribuzione "a pioggia" delle risorse (finanziarie, ma non solo), concentrandosi nella misura maggiore possibile da un lato sui nodi critici che frenano maggiormente la crescita del benessere sociale, economico e ambientale del territorio, e dall'altro su quelle politiche e quegli interventi in grado più di altri di innescare dinamiche virtuose, con ricadute positive che vadano al di là dello specifico campo d'azione.

L'idea che orientare lo sviluppo renda necessario effettuare delle scelte ha diverse implicazioni:

- ▶ in primo luogo risulterà inevitabile introdurre un forte grado di innovazione, tanto sul piano metodologico quanto su quello dei contenuti. Anche in un'ottica come quella adottata dal progetto AlpBC, centrata sulla valorizzazione delle risorse esistenti, occorre superare i modelli d'azione consolidati, che spesso si dimostrano inadeguati a rispondere alle sfide sempre nuove poste da un contesto economico globalizzato;
- ▶ in secondo luogo, i confini consueti dell'azione degli enti pubblici, legati ai limiti amministrativi, diventano inevitabilmente troppo stretti per gestire questioni che sempre più travalicano la scala comunale (dalla gestione dei servizi alle politiche sulla mobilità, dalle politiche per la creazione d'impresa a quelle per la manutenzione del territorio, e così via);
- ▶ infine, diventa inevitabile passare da un approccio centrato sulle competenze a uno che ha il proprio fuoco sui problemi che di volta in volta è necessario affrontare, costruendo forme di cooperazione a geometria variabile sia fra i diversi soggetti pubblici territoriali, sia fra questi e i privati.

Il lavoro fatto dalla Regione Piemonte e dall'Ires nell'ambito del progetto AlpBC ha una valenza tecnica, ma perché lo scenario diventi uno strumento di orientamento dell'azione dei soggetti locali è indispensabile che attorno a esso si consolidi un consenso politico, nel senso più ampio possibile del termine. Le singole parti dello scenario, e in particolare le azioni che ne articolano gli obiettivi generali, sono ovviamente suscettibili di revisioni anche radicali, sia perché le condizioni di contesto potranno mutare in futuro, sia perché potranno essere individuate strade più efficaci per raggiungere gli obiettivi generali. Ciò che sarebbe importante invece che rimanesse come lascito del progetto sul territorio è l'idea stessa della necessità per le Valli di Lanzo di dotarsi di strumenti comuni di orientamento dell'azione di ciascuno, nei quali vengano individuati in maniera chiara e condivisa gli obiettivi generali e soprattutto le priorità, così da poter concentrare le risorse di tutti in maniera strategica e non dispersiva.

2.1 Cultura edilizia, energia e sviluppo locale

2.2 Uno scenario per le Valli di Lanzo

Il percorso che ha portato alla definizione dello scenario di sviluppo per le Valli di Lanzo si è articolato in tre tappe:

- ▶ è stata condotta un'ampia indagine conoscitiva, basata sulla raccolta tanto di dati quantitativi su tutti i principali aspetti della situazione demografica, economica e territoriale della zona, quanto di informazioni di tipo qualitativo, grazie specialmente a incontri e interviste con soggetti pubblici e privati attivi sul territorio, alla rassegna delle principali progettualità in corso e a numerose visite sul campo;
- ▶ sulla base degli elementi definiti nel corso della fase analitica, e sintetizzati in una analisi SWOT, l'IRES Piemonte ha elaborato una prima bozza di scenario, nella quale, più che di definire nuovi obiettivi o di elaborare *ex novo* strategie d'azione, sono stati posti in evidenza gli elementi capaci di dare un senso complessivo all'insieme di progetti, politiche e pratiche che già oggi caratterizzano l'azione dei vari soggetti locali attivi sul territorio;
- ▶ infine, la bozza di scenario è stata discussa con la comunità locale, prima nel corso di un convegno organizzato a Lanzo nel giugno del 2014, che è stata anche l'occasione per un confronto con le esperienze di diversi altri partner del progetto AlpBC, e successivamente in un *workshop*, svoltosi a Lanzo nell'ottobre 2014, durante il quale è stata approfondita la discussione attorno ai diversi obiettivi indicati nello scenario e alle possibili azioni da promuovere per perseguirli.

Lo scenario è organizzato attorno a quattro obiettivi generali, per raggiungere ciascuno dei quali sono suggeriti diversi set di azioni:

- ▶ rafforzare le filiere economiche locali, e in particolare quelle legate alle produzioni artigianali (a partire dal settore del legno) e all'agro-alimentare;
- ▶ sostenere un processo di riqualificazione ambientale, urbana e paesaggistica, ponendo una particolare attenzione alle questioni energetiche e all'utilizzo di risorse materiali e immateriali locali;
- ▶ riqualificare e riposizionare l'offerta turistica, cercando di caratterizzarla in maniera nuova e sostenibile, di puntare sulla valorizzazione delle risorse esistenti e di attirare una domanda adeguata;
- ▶ migliorare la vivibilità e l'attrattività del territorio, agendo in particolare sul sistema dei servizi per far incontrare in maniera più efficace e efficiente domanda e offerta.



Schema dello scenario

I quattro obiettivi sono inoltre tenuti assieme da un'azione trasversale che consiste nella creazione di un marchio "Valli di Lanzo", capace allo stesso tempo di promuovere il territorio e i suoi prodotti all'esterno e di rafforzarne il livello di coesione interna.

Per ciascun obiettivo sono state suggerite una serie di azioni, pensate a partire da tre principi:

- ▶ la capacità di "aggredire" i nodi critici principali che determinano il raggiungimento degli obiettivi generali dello scenario;
- ▶ la loro realizzabilità a partire dalle condizioni attuali, con particolare riferimento a possibili linee di finanziamento attivabili nel quadro della programmazione 2014-2020 dei fondi europei;
- ▶ una certa continuità con quanto già i soggetti locali stanno facendo.

Infine, un ultimo punto dello scenario riguarda la previsione di una serie di indicatori, quantitativi e qualitativi, pensati per misurare la capacità che le diverse azioni previste avranno di mutare la situazione attuale, con particolare riferimento a quei fenomeni che più di tutti sono di ostacolo alla crescita della prosperità nelle Valli di Lanzo. Grazie a questo sistema di indicatori sarà possibile introdurre correzioni anche sostanziali allo scenario e alle sue azioni, migliorandone l'efficacia e la rispondenza alle mutate condizioni di contesto.

3. Linee guida per la riqualificazione energetica e insediativa alla scala territoriale

3.1 Insediamenti, energia, montagna

(A. De Rossi)

Le incessanti innovazioni tecnologiche, gli scenari della *Green Economy* e della *Smart City*, la crescente sensibilità ambientale in ampi strati della popolazione – che si traduce nella richiesta di nuovi e alternativi modelli di sviluppo –, impongono, rispetto al tema della pianificazione territoriale, un cambiamento di paradigma.

Sempre di più, il progressivo intrecciarsi dei temi insediativi con quelli energetici viene a configurarsi come uno dei principali “luoghi” dove praticare inedite forme di progetto e gestione del territorio.

Da questo punto di vista gli spazi montani e alpini rappresentano – in virtù delle loro particolari condizioni ambientali e delle loro risorse – un **laboratorio** di primario valore, in cui sperimentare modelli architettonici e costruttivi (si tratti di manufatti *ex novo* o riciclati) caratterizzati da limitati consumi energetici, e dove praticare modalità innovative e sostenibili di utilizzo dei “beni” territoriali (acqua, sole, legno, ecc.).

Per lungo tempo nel corso del secolo passato i temi dell’abitare e dell’energia sono stati anche in montagna pensati in modo autoreferenziale rispetto al “sottofondo” territoriale. Edifici “energivori”, costruiti con materiali a bassa efficienza energetica e provenienti da contesti geografici lontani, indifferenti all’esposizione solare e ai caratteri climatici locali; boschi progressivamente abbandonati e oggetto di ingenti fenomeni di degrado; risorse idriche sottoutilizzate e destinate in primo luogo alle città.

Oggi il quadro è mutato profondamente e le vallate alpine

possono – e devono – diventare uno dei principali terreni di sperimentazione di nuovi modi di pensare il rapporto tra società contemporanee e ambiente.

Non si tratta solamente di un problema di contenimento dei consumi delle risorse, o di efficienza energetica. Lo spazio montano consente infatti la prefigurazione di modelli **integrati** di progetto e gestione del territorio che favorisce il compenetrarsi reciproco di tematiche finora trattate quasi sempre separatamente: l’utilizzo della risorsa acqua nelle sue differenti declinazioni anche energetiche, l’impiego del legno come biomassa ma anche come materiale da opera per il settore delle costruzioni, il trattamento dei rifiuti, il recupero del patrimonio edilizio (quello storico ma anche quello recente) in un’ottica sia di ottimizzazione energetica, sia di riqualificazione del paesaggio insediativo. Temi a cui si potrebbero aggiungere quelli dei trasporti, o di un’urbanistica attenta ai contenimenti di consumo di suolo agricolo, alle dinamiche climatiche del contesto, alla geomorfologia vista non solo come un vincolo ma anche come un’opportunità – come era nelle società storiche alpine – per mettere a punto forme di insediamento maggiormente sostenibili.

Avere come obiettivo questo modello integrato significa porsi nella direzione di un *développement durable*, come dicono i francesi, particolarmente consona alle condizioni del contesto alpino, dove i limiti determinati dall’ambiente, e la lontananza dalle pianure e dalle città (si pensi all’incidenza di questo tema ad esempio sulla questione della gestione dei rifiuti) impongono uno scenario fortemente incentrato sull’**autosufficienza locale**.

Integrazione delle politiche e **autosufficienza** delle risorse sono due concetti chiave per pensare alla *Smart Mountain*, ossia a territori alpini in grado di svolgere funzioni ad alto valore aggiunto nel campo dell’energia rinnovabile, degli in-



Daniele Marques & Bruno Zurkirchen, ristrutturazione a Bergün, Svizzera, 1994-1996

Foto: Ignacio Martinez

2.1 Cultura edilizia, energia e sviluppo locale

sedimenti sostenibili, delle risorse idriche, dell'agricoltura, della forestazione, dello sviluppo rurale, della biodiversità. Uno spazio in grado di offrire servizi ecosistemici ad altri territori e proprio per questo capace di valorizzarli come fonte di sviluppo locale.

Se questo è lo scenario di riferimento, il manuale che qui viene presentato ha l'ambizione di offrire alcuni elementi di primo indirizzo intorno al progetto del territorio alpino soprattutto a partire dall'incrocio tra temi energetici e processi di rivitalizzazione del patrimonio edilizio – storico e recente, come già si è detto – locale, con un occhio di attenzione alla questione della filiera del legno.

Lo spazio reale intorno cui prende corpo questa trattazione è quello delle Valli di Lanzo: territorio dalle grandi valenze storiche e ambientali, che in decenni recenti ha conosciuto il venir meno delle forme di turismo e di economia industriale su cui aveva costruito la sua fortuna durante l'Ottocento e buona parte del Novecento, e che oggi sta definendo nuove traiettorie di sviluppo. Un territorio che in virtù del suo grande potenziale in termini patrimoniali (dalle borgate storiche fino ai paesaggi naturali) può rappresentare l'insieme delle vallate delle Alpi occidentali. Questo insieme di buone pratiche muove nella prima parte, dedicata alla **riqualificazione energetica e insediativa alla scala territoriale**, da un tema sovente sottovalutato – normalmente infatti ci si concentra soltanto sull'oggetto edilizio – quando si parla di insediamenti ed energia: l'influenza della geografia (geomorfologia dei siti, clima, pedologia, ecc.) nella predisposizione di strategie energetiche per il territorio locale. Sovente si dimentica infatti uno dei caratteri principi della montagna: ossia il suo essere uno spazio **tridimensionale e verticale**, in cui fattori come l'altimetria, l'esposizione solare in rapporto al rilievo e

agli angoli di incidenza, il variare della temperatura e delle precipitazioni in relazione alla quota, il substrato geologico, la pendenza del terreno vengono a costituirsi come elementi decisivi, che si riflettono pesantemente sulla diversificazione vegetazionale, sui processi di pedogenesi, sulla distribuzione delle stazioni insediative, determinando una pluralità di situazioni e contesti ambientali differenti, spesso avversi alla presenza dell'uomo.

Diventa quindi importante, oggi che le tecnologie lo consentono, definire il **potenziale energetico** – in termini di irraggiamento solare, di risorse idriche e forestali utilizzabili, di sfruttamento eolico, ecc. – di ogni singolo sito e insediamento. Ovviamente tale potenziale deve essere valutato non solo in termini di presenza quantitativa, ma anche di concreta praticabilità. Tipico il caso delle risorse forestali, dove l'esistenza di grandi quantità di legno viene a scontrarsi con una serie di forti criticità (scarsa qualità del bosco, con poco legname da opera e molta biomassa da cippare; assenza di modelli e di piattaforme di gestione integrati della filiera energetica e della filiera per le costruzioni, ecc.) che rendono l'impiego più teorico che reale.

La costruzione di **mappe del potenziale energetico dei luoghi**, quelle che qui vengono definite **geografie energetiche**, rende immediatamente leggibili le opportunità esistenti a livello locale, configurando linee e scenari per la pianificazione del territorio. Tali opportunità diventano ancora più evidenti se le mappe, oltre ai potenziali energetici, offrono una visione delle diverse tipologie di manufatti edilizi presenti sul territorio: cluster di servizi pubblici, residenze primarie o abitazioni turistiche nel patrimonio storico o recente, strutture per il tempo libero e il turismo, contenitori commerciali o industriali.



Armando Ruinelli, recupero di una stalla a Soglio, Svizzera, 2009

Vi è poi la seconda parte, dedicata alle strategie per la **riqualificazione energetica e architettonica alla scala edilizia**, in cui evitando di entrare nella disamina delle singole soluzioni tecniche, alle quali una letteratura ormai vastissima già fornisce articolate risposte puntuali, si affronta la questione dei possibili approcci al tema dell'efficienza energetica. Il manuale ha infatti un valore innanzitutto divulgativo e orientativo, funzionando da strumento che fornisce indirizzi nell'incrocio tra questioni energetiche e patrimoni specifici. Ogni scelta squisitamente tecnica deve poi essere rimandata al progetto, che rappresenta il momento irrinunciabile e imprescindibile di definizione delle puntuali scelte tecnologiche. Ma prima delle scelte tecniche, è importante comprendere le possibili "filosofie di intervento", in stretta relazione con le problematiche da affrontare e i caratteri del manufatto.

Il tema della riqualificazione energetica dell'edificio è qui posto in stretta relazione con i singoli caratteri delle differenti tipologie edilizie. Per fare un esempio concreto, la realizzazione di un involucro isolante "a cappotto" necessita di strategie diverse a seconda del manufatto. E questo non solo per questioni di efficienza, ma anche per tutelare e conservare le specificità del patrimonio architettonico alpino. Per fare questo si è costruito un semplice strumento di indirizzo che – attraverso una sequenza di **riconoscimento, diagnosi e azioni** – è finalizzato a mettere in rapporto le possibili azioni di riduzione dei consumi o di produzione energetica con le differenti tipologie edilizie riscontrabili sul territorio.

Proprio per questi suoi caratteri metodologici e di generalità, tale pubblicazione può essere utilizzata anche in luoghi diversi da quelli del territorio di esemplificazione. La definizione di politiche e progettualità diffuse sul tema dell'energia e del patrimonio d'altronde costituisce oggi uno dei nodi fondamentali per ripensare modelli di sviluppo dei contesti locali davvero capaci di essere sostenibili e al contempo territorialmente competitivi.

La terza parte di questo volume, riporta il tema alla scala territoriale, inquadrandone le potenzialità e gli sviluppi a medio e lungo termine nell'ottica di un'**azione strategica**. L'idea che muove questa necessaria parte del lavoro è che un reale progetto di riqualificazione energetica e insediata del territorio montano non possa prescindere dall'esame dei reali scenari di sviluppo del territorio locale, in termini pianificatori, demografici, economici e turistico-ricettivi.

La premessa indispensabile di questa parte del lavoro è una lettura comparata degli strumenti pianificatori e progettuali attualmente attivi sull'area delle Valli di Lanzo, che consente di definire un quadro di coerenza a cui riportare ogni azione di sviluppo prevista per il territorio; ad essa si associano quindi le analisi di carattere più fenomenologico dei principali indicatori legati alle dinamiche territoriali e della percezione del territorio a livello qualitativo.

Il tutto si riassume in un quadro di sintesi, il cui scopo è veicolare, a livello strategico, un modello di *governance* capace di costruire una visione unitaria e integrata delle politiche di sviluppo del territorio locale.

Questo volume è stato ideato e realizzato specificamente per il territorio delle Valli di Lanzo, area pilota del progetto europeo AlpBC, e a tale contesto fanno riferimento i contenuti delle analisi condotte e degli indirizzi specifici in esso definiti. Al tempo stesso il metodo utilizzato per costruire questo contributo, e l'impostazione concettuale su cui esso si fonda, hanno valenza di carattere più generale e riguardano in senso più ampio gli scenari di sviluppo dei territori alpini. L'ambizione è dunque quella di offrire uno strumento utile non soltanto a fornire indirizzi specifici per il territorio locale, ma anche a costruire confronti e sinergie tra realtà diverse, ma accomunate dalle problematiche e dalle opportunità legate al territorio montano.

2.1 Cultura edilizia, energia e sviluppo locale

3.2 Le ragioni di questo manuale

di Mauro Berta

Riqualificazione energetica e forme insediative in territorio alpino

La progressiva affermazione internazionale, sia in campo scientifico, sia in ambito politico ed amministrativo, del paradigma della sostenibilità dello sviluppo, con le numerose ricadute che esso comporta a livello delle trasformazioni edilizie e territoriali, pone oggi con urgenza crescente – soprattutto nei territori particolarmente delicati dal punto di vista paesaggistico, come i contesti alpini – una necessità di approfondimento delle forme e delle modalità con cui i nuovi requisiti prestazionali e le nuove tecnologie disponibili si coniugano con il patrimonio edilizio e insediativo e con il paesaggio locale.

La dimensione quantitativa delle attenzioni alla sostenibilità, con riferimento particolare agli aspetti energetici, appare oggi ampiamente indagata e tendenzialmente convergente su posizioni in larga parte condivise, sostenute a livello generale da un'offerta di soluzioni tecnologiche ampiamente articolata e differenziata in base alle esigenze specifiche. Tuttavia il rapporto tra gli standard quantitativi fissati dalle normative, i dispositivi e le soluzioni tecniche finalizzati a raggiungerli, e le forme architettoniche e insediative che caratterizzano il territorio, resta tuttora in numerosi casi non del tutto chiarito. In primo luogo nei confronti del patrimonio architettonico storicamente consolidato; laddove l'integrazione tra i dispositivi tecnologici per il contenimento e la generazione di energia,

da un lato e, dall'altro, degli elementi morfologici e tipologici provenienti dalla tradizione è sovente ancora percepito come un nodo irrisolto, una perdurante aporia tra le esigenze contrapposte di ottimizzazione prestazionale e di salvaguardia dell'integrità architettonica del patrimonio storico.

In secondo luogo con riferimento al costruito di recente formazione; laddove gli esiti delle stagioni di crescita edilizia scarsamente controllata, tipicamente nella seconda metà del XX secolo, hanno depositato in numerose zone del territorio alpino un patrimonio immobiliare ingente, sovente di basso valore architettonico, rispetto al quale la riqualificazione energetica potrebbe rappresentare un volano importante per un'operazione complessiva di ridefinizione dell'immagine architettonica.

Infine riguardo alle nuove costruzioni; laddove gli imperativi del contenimento di suolo, del riuso prioritario di aree già urbanizzate e dello sfruttamento di fonti energetiche sostenibili, presuppone declinazioni specifiche sul territorio e costituisce un'occasione di riorganizzazione dei nuclei esistenti.

Energia e tradizioni costruttive locali

La Direttiva 2010/31/UE del Consiglio e del Parlamento Europeo, volta a migliorare la prestazione energetica degli edifici nell'ambito dei Paesi membri, ha introdotto il concetto di "edifici a energia quasi zero", definiti come edifici "ad altissima prestazione energetica", per i quali "il fabbisogno energetico molto basso o quasi nullo dovrebbe essere coperto in misura molto significativa da energia da fonti rinnovabili", stabilendo inoltre che – entro il 31 dicembre 2020 - tutti gli edifici di nuova costruzione dovranno obbligatoriamente rientrare all'interno di questa casistica.

Questa norma, che diviene l'orizzonte di riferimento in ambito comunitario per il futuro dell'attività edilizia, non si limita però a fissare requisiti quantitativi, ma introduce parallelamente, una specifica attenzione alle caratteristiche tipologiche e morfologiche dell'edificio, alle peculiarità del lotto e alle modalità di occupazione di esso, all'orientamento, ai fattori climatici locali ecc. Tale strumento ribadisce cioè, anche a livello normativo, il principio secondo il quale la sostenibilità dello sviluppo urbano non va misurata esclusivamente sui dati quantitativi ristretti al solo campo del bilancio energetico dell'edificio, ma discende viceversa in modo più ampio dai materiali impiegati e dalle modalità stesse di costruzione e di occupazione del suolo, coinvolgendo pertanto un'inevitabile necessità di



Bruno Spagolla, Scuola a Marul, Austria, 1995-1997
Foto Bruno Klomfar

ripensamento degli stessi modelli insediativi, anche e soprattutto in rapporto alle specificità del territorio ed alle tradizioni costruttive locali. Un'attenzione per la storia costruttiva del luogo che trova riscontro anche nei diversi protocolli e nella dichiarazione "Popolazione e cultura" della *Convenzione delle Alpi*.

Si tratta di un mutamento significativo, il quale – estendendo l'ambito di interesse agli aspetti insediativi e morfologici – lega di fatto in modo molto stretto la sostenibilità dello sviluppo al contesto culturale e paesaggistico del territorio. I protocolli di certificazione energetica ormai condivisi, acquisiscono pertanto – alla luce di ciò – un corrispettivo complementare, dato dalla valutazione della pertinenza dell'edificio stesso rispetto ad un determinato contesto, evidenziando la necessità di approntare nuovi repertori tipologici in grado di coniugare le esigenze, spesso contrapposte:

- a) dell'ottimizzazione del bilancio energetico;
- b) della sostenibilità di filiera dei combustibili utilizzati nella produzione di energia;
- c) della compatibilità con i caratteri del paesaggio locale;
- d) dell'innovazione tecnologica e di processo.

Questo manuale si colloca dunque nell'alveo del radicale mutamento di paradigma determinato dalle scelte strategiche della politica energetica comunitaria, le quali hanno ricadute estremamente significative sulle realtà locali. L'ampia diffusione di interventi di costruzione di nuovi edifici "a energia quasi zero" e la riqualificazione degli edifici esistenti, siano essi a destinazione d'uso residenziale, industriale, terziario o ricettivo, può portare, nel lungo periodo, alla necessità di rivedere gli scenari di utilizzo dell'energia a scala territoriale, rispetto ai quali la disponibilità di biomassa ad usi energetici può e deve essere quindi utilmente valorizzata sul territorio locale.

Un ruolo importante all'interno di questo processo – soprattutto nei contesti alpini – è giocato dall'utilizzo della risorsa legno, il cui impiego esteso, sia nell'edilizia, sia nella produzione energetica, consente diversi vantaggi, quali:

- contenimento dei consumi energetici per riscaldamento: risoluzione di nodi progettuali significativi e minimizzazione dei principali ponti termici; aspetti rilevanti non solo nella realizzazione di edifici nuovi, ma soprattutto nei retrofit energetici dell'esistente;

- maggiore compatibilità con le tradizioni costruttive montane;
- riduzione dell'energia e delle emissioni di CO₂ associate al processo edilizio: minore energia richiesta per la produzione e installazione dei manufatti legnosi da filiera corta a confronto con i materiali ad alta intensità di energia fossile utilizzati di norma nella costruzione degli edifici;
- produzione energetica rinnovabile. Recupero degli scarti del processo di produzione per la generazione di energia termica e/o elettrica, e ottimizzazione del bilancio energetico di processo, grazie al recupero del contenuto energetico del materiale di scarto.

Queste problematiche – presenti in modo generalizzato all'interno del mondo della produzione edilizia ordinaria – acquisiscono inoltre una particolare evidenza nel campo della realizzazione degli edifici produttivi (capannoni produttivi, artigianali, strutture per l'agricoltura e l'allevamento ecc.), degli edifici ad uso commerciale e ricettivo e dei manufatti di servizio (pensiline, volumi tecnici ecc.); laddove cioè la prassi corrente vede l'impiego diffuso di procedimenti costruttivi standardizzati, che guardano con scarsa attenzione ai temi della qualità architettonica, della sostenibilità, del consumo di suolo, della difesa della qualità e della riconoscibilità del paesaggio locale; questioni queste molto sentite all'interno dei contesti montani e rispetto alle quali risulta oggi particolarmente interessante esplorare le potenzialità della filiera del legno, materiale che unisce agli alti livelli di performance tecnica la possibilità di dialogare con l'eredità culturale delle tradizioni costruttive locali.

In questa logica l'utilizzo del legno di origine forestale per la realizzazione di materiali da costruzione (serramenti, rivestimenti ecc.), si coniuga con il tema più ampio della produzione energetica tramite biomassa, alla quale contribuisce attraverso la produzione di legno di scarto proveniente dall'esbosco (ramaglie, cippato) e dalla lavorazione (cortecce, refili, trucioli, segatura); materiale questo che può trovare adeguata valorizzazione nell'impiego energetico, in impianti domestici, industriali e di teleriscaldamento, per alimentare generatori di calore o sistemi cogenerativi.

2.1 Cultura edilizia, energia e sviluppo locale

Filiere corte nella produzione energetica

L'energia rappresenta oggi una delle componenti fondamentali di un territorio, in quanto costituisce il motore primario di tutti i processi e i servizi che garantiscono il benessere e la qualità di vita dei cittadini: lo sviluppo industriale e urbano, la sanità, il commercio, l'agricoltura, i servizi essenziali. Lo scenario dei sistemi energetici moderni mostra una realtà in continua evoluzione, caratterizzata dalla presenza di impianti di produzione di natura ormai "consolidata" e di strutture innovative, finalizzate allo sfruttamento delle fonti rinnovabili ed alla riduzione della dispersione energetica, che vengono progressivamente integrate aumentando il livello di complessità gestionale delle reti.

Tale complessità è ulteriormente incrementata nei territori di tipologia rurale/montana, come nello specifico quello delle Valli di Lanzo, dove le reti energetiche presentano un maggiore livello di dispersione rispetto ad un agglomerato urbano ad alta concentrazione demografica, e dove il rispetto del patrimonio ambientale e paesaggistico assume un ruolo di primaria importanza nella realizzazione di nuovi impianti. La Commissione Europea riconosce l'esigenza di costruire strategie adeguate per lo sviluppo degli ambienti rurali, integrando tale elemento nelle proprie linee guida 2014-2020¹.

Un sistema di approvvigionamento dell'energia deve essere realizzato sulla base di tre elementi cardine:

- sicurezza, intesa come protezione del sistema da eventi accidentali e deliberati che ne possono alterare la funzionalità.
- affidabilità, intesa come capacità di garantire la stabilità dell'approvvigionamento energetico e la certificazione dei dati associati.



- efficienza, intesa come ottimizzazione della *governance* dei diversi elementi di produzione e consumo messi a sistema.

L'integrazione di questi tre aspetti assume un ruolo particolarmente critico nello scenario moderno, in cui ogni edificio, attraverso l'installazione di impianti locali (pannelli fotovoltaici, generatori di micro-eolico, bruciatori a biomassa, ecc.), non rappresenta più solo un soggetto consumatore ma diventa anche produttore di energia, dando origine al concetto di "*prosumer*" (dall'unione di *producer* e *consumer*).

L'insieme dei flussi di generazione distribuita costituisce una vera e propria centrale energetica virtuale ("Virtual Power Plant", VPP), la cui complessa maglia di interrelazioni deve essere adeguatamente governata al fine di massimizzare la stabilità del rapporto domanda-offerta, contenere i picchi di consumo ("*peak shaving*") e garantire un efficace ritorno economico derivante dall'incremento dell'autoconsumo e dall'integrazione nella rete di fonti rinnovabili. Tramite una gestione coordinata dei profili di produzione è infatti possibile ottimizzare lo sfruttamento delle fonti rinnovabili sul territorio, con positive ricadute sulle emissioni di gas ad effetto serra ed altri inquinanti e sulla redditività. Inoltre l'aggregazione di piccoli produttori energetici, quali possono essere gli edifici, consentono di definire soggetti in grado di entrare sul mercato energetico con maggiore potere rispetto a entità singole, ottenendo maggiori benefici economici nel processo di compravendita dell'energia sulla rete.

Alla luce di ciò, appare quindi fondamentale nel territorio oggetto di un'azione pilota di carattere innovativo, come quello delle Valli di Lanzo, costruire una strategia energetica territoriale basata sul concetto di *Virtual Power Plant*, capace di rispondere alle attuali sfide legate al raggiungimento dell'autosufficienza energetica e al rafforzamento della resilienza demografica, economica ed ecologica di aree rurali divise da confini amministrativi ma unite da ragioni geografiche e culturali.

Em2 Architetti, risanamento di una casa in Valle Aurina (BZ), 2000-2004

¹ Approccio "CLLD", Community-Led Local Development (sviluppo locale guidato dalle comunità)

Il manuale nel contesto del Progetto AlpBC

Come già avveniva per il precedente progetto AlpHouse – che ne costituisce il fondamento metodologico e culturale – anche il progetto AlpBC individua i presupposti della propria azione sostanzialmente in due aspetti fondamentali.

Il primo di essi è la centralità della cultura costruttiva alpina, non soltanto in quanto irrinunciabile patrimonio identitario delle comunità locali e componente primario della qualità del paesaggio montano, ma anche in quanto depositario, nel suo complesso, di un patrimonio di lunga data di conoscenze legate all'ottimizzazione delle risorse (energetiche, territoriali, idriche ecc.), tema questo che ritrova oggi una rinnovata importanza nella profonda trasformazione dei modelli di sviluppo consolidati, determinata dalla progressiva introduzione, a tutti i livelli, delle logiche e degli orientamenti legati a vario titolo al paradigma della sostenibilità. Il secondo aspetto è la precisa volontà di radicare profondamente la sfera politica delle grandi strategie di valorizzazione, salvaguardia e sviluppo dello spazio alpino ai tessuti socioeconomici e produttivi locali, coinvolgendo nel processo gli attori (piccole e medie imprese, artigiani, professionisti, amministratori ecc.) e mettendone soprattutto a sistema le relative attività; con l'obiettivo di innescare logiche di filiera locale, in grado di operare economie di scala, indurre crescita occupazionale e favorire una competitività locale fondata anche e soprattutto sulle specificità delle culture materiali e sui relativi rapporti con l'immagine e la riconoscibilità del territorio.



Accanto a ciò l'attuale progetto AlpBC introduce un terzo aspetto fondamentale, consistente nella volontà di estendere alla scala territoriale le logiche di tutela, valorizzazione e innovazione, ampliando il campo di operatività del progetto al livello della pianificazione intercomunale, valutandone i possibili apporti ai processi decisionali e di *governance* e individuando soprattutto con precisione il tema dell'integrazione (particolarmente delicata in ambito alpino) tra gli aspetti morfologici dei sistemi insediativi e la pianificazione energetica del territorio locale.

Una declinazione, questa, che ad oggi risulta quanto mai centrale. In primo luogo, da un punto di vista più generale, poiché – a fronte di un ruolo sempre più determinante degli aspetti energetici all'interno delle trasformazioni edilizie – nei contesti attuativi così come nel settore della ricerca si ravvisa ancora sovente una marcata separazione disciplinare e culturale che tende a confinare sistemi e tecnologie in un campo parallelo, ma di fatto autonomo rispetto all'architettura; fenomeno questo che rende nei fatti estremamente difficile una reale integrazione tra aspetti formali e funzionali del costruito, non soltanto alla scala dell'edificio ma anche e soprattutto a quella dell'insediamento, con speciale rilevanza nei contesti particolarmente delicati dal punto di vista paesaggistico come quelli alpini.

In secondo luogo con riferimento al caso specifico, poiché il territorio delle Valli di Lanzo costituisce in questo senso – dal punto di vista del rapporto tra spazio alpino e sviluppo insediativo – un'efficace epitome di numerosi destini dei territori montani nell'epoca contemporanea, prestandosi pertanto utilmente alle possibili generalizzazioni a cui un progetto pilota è necessariamente orientato.

Personeni Raffaele SchärerArchitectes, recupero edificio rurale in Val d'Hérens, Svizzera, 2007-2008

2.1 Cultura edilizia, energia e sviluppo locale

Le Valli di Lanzo come laboratorio di sperimentazione

Nella seconda metà dell'Ottocento, le guide dell'epoca non esitavano a definire questa parte del territorio una "piccola Svizzera alle porte di Torino"; un'immagine oggi forse smarrita, ma che dà conto in realtà di una precoce vocazione al *loisir*, confermata non soltanto dalle allora abituali frequentazioni dell'"upper class" torinese, che risalgono in questa zona addirittura al XVIII secolo, ma anche e soprattutto dagli esiti fisici che questo stretto rapporto tra montagna e città ha generato nel tempo. Dall'edilizia turistica (i grandi hotel di villeggiatura, che fornivano tra l'altro l'appoggio alle nascenti attività alpinistiche del CAI torinese), ai villini di lusso, alla ferrovia Torino-Ceres, che proprio nelle stazioni della tratta montana accolse una raffinata sperimentazione architettonica sui modelli tipologici di derivazione svizzera; tutto converge, di fatto, a descrivere tra '800 e '900 l'immagine di una valle eminentemente "urbana", che coltiva cioè stabilmente rapporti solidi con Torino e con le sue élite sociali ed economiche.

Questo ruolo privilegiato inizia però ad entrare in crisi già a partire dagli anni '30 del secolo scorso, anche e soprattutto in relazione alla crescente importanza del turismo sciistico, rispetto al quale il territorio delle Valli, pur provvisto di stazioni sciistiche, ma di rango completamente diverso rispetto ai grandi *domain skiable*, si trova presto a competere con difficoltà. Con l'esaurirsi della grande stagione delle villeggiature alpine il turismo diviene qui gradualmente più sporadico e nel secondo Dopoguerra l'affermazione dell'automobile come mezzo di trasporto di massa (fenomeno di cui la Torino della FIAT è il fulcro) consacrerà di fatto le Valli di Lanzo (come del resto molte altre parti dell'arco alpino torinese) nel ruolo marginale di meta ideale per gite fuori porta.

Tra i successivi anni '70 e '80 infine, con la crisi del sistema industriale locale, inevitabilmente sommata alle altre problematiche, inizia a maturare l'ultimo atto del declino del territorio, segnato – oltre che dalla mancanza di strategie e chiari modelli di sviluppo – dalla contemporanea comparsa di iniziative imprenditoriali individuali, spesso orientate a raccogliere le domande inevase del turismo diffuso, le quali faticano però ad inserirsi in logiche integrate di sviluppo. Il volto attuale delle Valli di Lanzo associa la presenza di un patrimonio edilizio residuale fortemente compromesso nella seconda metà del secolo scorso (ma ancora in buona parte integro) ad uno straordinario valore paesaggistico del territorio

delle tre valli, le cui montagne, pienamente riconoscibili nei caratteri paesaggistici delle Alpi Graie Meridionali, restano luoghi di grandissima qualità ambientale, potenzialmente in grado di ospitare nuove forme di residenzialità o di turismo sostenibile. Una potenzialità questa che si alimenta anche della vicinanza con Torino e soprattutto della prossima connessione della linea storica Torino-Ceres al Sistema Ferroviario Metropolitano (SFM), che introduce – ovviamente – il tema fondamentale della mobilità sostenibile in contesto alpino.

Le Valli di Lanzo si presentano oggi a tutti gli effetti come un territorio con spiccate caratteristiche metromontane; un territorio cioè in cui la prossimità all'Area Metropolitana Torinese, e la relativa facilità di connessione infrastrutturale ad essa, ha favorito la comparsa di logiche insediative di carattere prettamente metropolitano, inserite in un contesto alpino ancora fortemente caratterizzato.

L'ambito territoriale delle Valli di Lanzo si presta pertanto ad assumere efficacemente un ruolo di vero e proprio laboratorio ove sperimentare percorsi di riqualificazione al tempo stesso energetica, architettonica e insediativa del patrimonio presente sul territorio e soprattutto ove testare la validità di strumenti di indirizzo per le politiche locali che siano in grado di intrecciare i caratteri tipologici e morfologici del costruito e le relative *performance* energetiche con processi di ottimizzazione dei cicli di produzione e consumo locali.

A chi è rivolto questo manuale

Questa raccolta di linee guida ha finalità prettamente operative ed è finalizzata ad offrire uno strumento in grado di interagire in modo dialogico con le pratiche correnti; essa è indirizzata prioritariamente a quattro tipologie di interlocutori:

- ▶ ai tecnici responsabili della pianificazione locale, ai quali si intende offrire un repertorio di temi emergenti e soluzioni conformi dal punto di vista dell'integrazione tra riqualificazione energetica e caratteri architettonici e insediativi, utili ad essere inseriti all'interno degli strumenti di governo del territorio (piani comunali e intercomunali, PAES ecc.);
- ▶ ai tecnici delle amministrazioni locali ed ai componenti degli organi autorizzativi delle trasformazioni (commissioni edilizie, commissioni locali paesaggio ecc.), ai quali questa raccolta intende fornire una serie di attenzioni in grado di agevolare il processo di esame e valutazione delle pratiche autorizzative;
- ▶ ai progettisti ed ai privati interessati a realizzare trasformazioni edilizie, rispetto i quali le linee guida sono da intendersi come strumento divulgativo, in grado di favorire una più ampia consapevolezza delle opportunità di riqualificazione energetica e delle relative ricadute fisiche;
- ▶ agli esperti chiamati a valutare le iniziative candidate all'erogazione di finanziamenti pubblici, ai quali questo manuale può fornire un supporto utile alla gerarchizzazione dei temi ed all'individuazione di priorità tra le istanze presentate.

3.3. Elementi per una geografia energetica del territorio montano

di Roberto Dini

Da sempre le modalità insediative del territorio montano si sono poste in diretta relazione con il contesto geografico e climatico delle valli.

Uno sguardo attento al palinsesto dei contesti alpini mette in luce lo stretto rapporto che unisce il territorio abitato con il substrato geomorfologico e con le caratteristiche climatiche dei diversi luoghi: acqua, sole, venti, sono gli elementi che storicamente hanno guidato le popolazioni alpine nei loro processi di antropizzazione del territorio svolgendo una importante azione di indirizzo nella messa a punto dei modelli insediativi e architettonici.

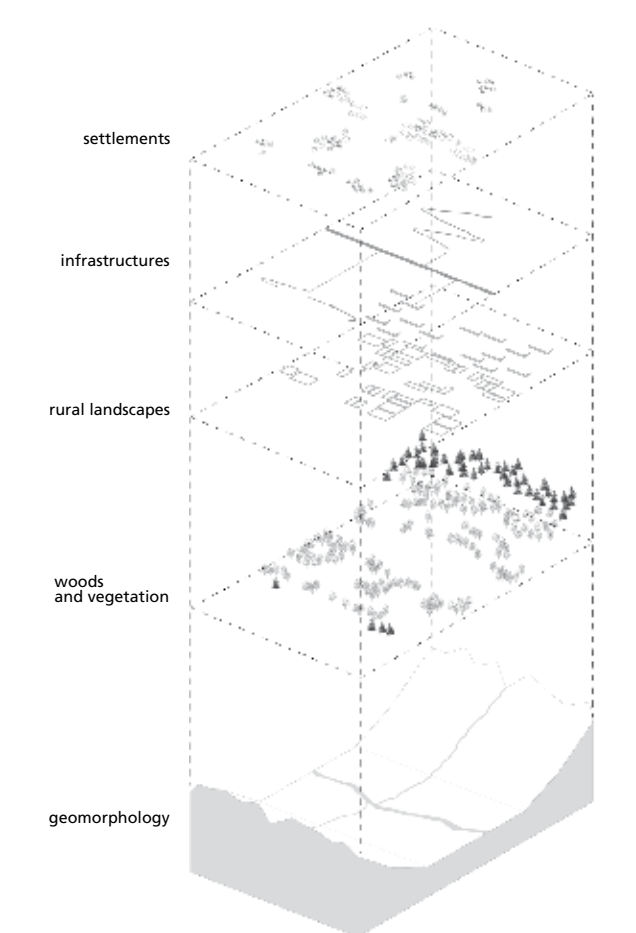
Tali elementi, in relazione agli specifici aspetti geomorfologici del territorio (fondovalle alluvionali, fondovalle stretti, versanti, conche, crinali, ecc.), hanno costituito punti di riferimento imprescindibili nella definizione delle differenti configurazioni dell'edificato.

Già soltanto l'evidente distinzione tra versanti a solatio e all'inverso è significativa per comprendere come le differenti configurazioni geografiche e climatiche giochino un ruolo fondamentale all'interno dei processi di sviluppo dei sistemi infrastrutturali, abitativi e di sfruttamento del suolo. Oggi, nell'ottica di una riqualificazione del territorio, questi elementi tornano ad essere punti cardine attorno a cui mettere a punto delle corrette strategie di recupero del patrimonio edilizio ed insediativo in chiave energetica.

È dunque necessario *in primis* mettere a fuoco le differenti geografie energetiche che coesistono in ambito montano e che sono il frutto dell'azione combinata di parametri come la morfologia del suolo, l'apporto solare, la disponibilità della risorsa idrica, l'azione dei venti, la disponibilità di biomassa forestale, l'accessibilità alle risorse geotermiche, ecc.

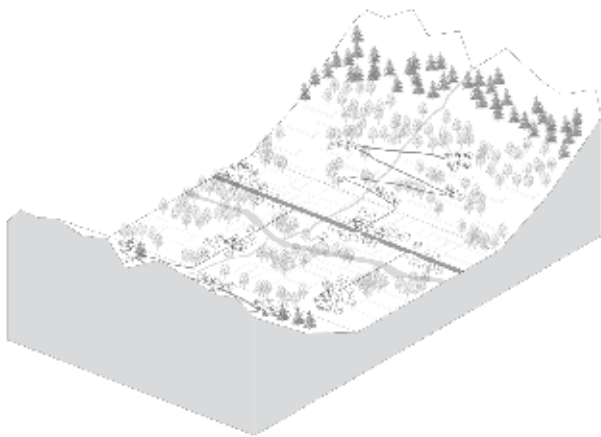
Tali geografie, intrecciate con la localizzazione dei principali consumi energetici e la tipologia degli insediamenti, costituiscono il principale punto di riferimento che può guidare una corretta azione strategica di riqualificazione del patrimonio costruito.

Ciò comporta una "selezione" di aree significative del territorio che presentano delle potenzialità dal punto di vista energetico in relazione al contesto geografico di riferimento ed in considerazione degli elementi di seguito descritti.



Tipologie costruttive nelle Valli di Lanzo: edifici storici e contemporanei

Il palinsesto fisico del territorio vallivo



Ricomposizione del palinsesto fisico del territorio vallivo

L'**apporto solare** sulle aree insediate varia in funzione dell'esposizione dei versanti (nord, sud, est ed ovest) e deve essere oggetto di una attenta analisi nel caso di vallate, come quelle di Lanzo, che si sviluppano secondo un orientamento est-ovest e che dunque presentano versanti esposti a solatio ed altri all'inverso, con conseguenti condizioni qualitative e apporti quantitativi molto differenti a seconda della localizzazione. Altre caratteristiche legate all'apporto solare su determinate aree insediate sono costituite dall'acclività del suolo che influenza l'incidenza dei raggi solari e dall'ombreggiamento prodotto sia dai rilievi prospicienti che dagli altri edifici.

L'**azione dei venti** è significativa nelle aree di fondovalle particolarmente soggette a tale fenomeno in tutte le stagioni dell'anno. Questo elemento, oltre a garantire un generale stato di salubrità dell'aria dovuto alla costante ventilazione, costituisce, attraverso opportuni interventi di imbrigliamento (impianti di micro-eolico, ecc.), una possibile fonte di energia rinnovabile.

La **disponibilità di risorsa idrica** costituisce dal punto di vista energetico una delle principali caratteristiche del territorio alpino in generale e delle Valli di Lanzo in particolare. Al di là dei grandi bacini imbriferi e delle centrali già realizzate per la produzione di energia elettrica nel secolo scorso, i moderni impianti di micro-idroelettrico permettono lo sfruttamento della risorsa idrica derivante dai corsi d'acqua minori, necessitano di opere di captazione idrica meno impattanti e possono garantire l'autosufficienza energetica di piccoli insediamenti.

La **disponibilità e potenzialità di impiego di biomassa forestale** è un parametro valutabile a partire dalla quantità e dalla tipologia della materia (boschi e foreste) disponibile in relazione soprattutto alla localizzazione e all'accessibilità.

L'**accessibilità alle risorse geotermiche** può garantire l'alimentazione di un sistema geotermico a bassa entalpia che, sfruttando il naturale calore del terreno attraverso la pompa di calore può produrre energia termica.

La ricomposizione di tali informazioni può essere dunque

finalizzata ad operare una selezione di aree territoriali potenzialmente più operabili dal punto di vista energetico e dunque ottimali dal punto di vista insediativo. Questa lettura può essere incrociata con il dato del patrimonio costruito esistente (caratteristiche edilizie, operabilità, stato di conservazione, ecc.) intercettando ad esempio la localizzazione dei principali consumi energetici con lo scopo di valutare la fattibilità di reti (o cluster) di realtà ad autosufficienza energetica (insediamenti pubblici o ad uso pubblico, strutture ricettive, micro residenzialità, ecc.) e dare vita così a vere e proprie operazioni di riqualificazione territoriale. In questa ricerca sono stati analizzati in modo particolare i due parametri (apporto solare e disponibilità di biomassa forestale) che maggiormente caratterizzano le Valli di Lanzo e che si presentano come due risorse rinnovabili sulle quali può essere strategicamente proficuo avviare una riflessione che li metta in relazione con le possibilità di riqualificazione insediativa ed edilizia del territorio. Il presente studio si è dunque focalizzato sull'analisi delle potenzialità relative all'energia solare e alla biomassa forestale tralasciando gli altri aspetti in quanto nel caso specifico non sono direttamente connessi con gli aspetti di riqualificazione edilizia ed insediativa del patrimonio. Va altresì ricordato che la realizzazione di tali impianti (micro-eolico, micro-idroelettrico, ecc.), pur basandosi sullo sfruttamento delle risorse rinnovabili non è di per sé esente da impatti che possono inficiare la sostenibilità in senso più generale di tali operazioni. Queste strutture possono infatti generare criticità dal punto di vista ambientale, naturalistico e paesaggistico, ecc. e la loro effettiva efficacia va attentamente valutata di volta in volta attraverso un progetto specifico che metta in relazione vantaggi e svantaggi prodotti.

Apporto solare in relazione alle aree insediate

La prima risorsa rinnovabile su cui appare proficuo investire per la riqualificazione energetica del territorio delle Valli di Lanzo è quella solare, nello specifico legata alla produzione di energia termica.

Com'è noto, la reale efficacia dei collettori termici è influenzata da diversi parametri a livello puntuale (orientamento e inclinazione dei pannelli, eventuali ombre portate da altri volumi edilizi, ecc.) e a livello territoriale (condizioni meteorologiche prevalenti sulla zona considerata, orizzonte solare caratteristico ecc.).

I calcoli eseguiti sulla base del *database* PVGIS consentono di valutare quantitativamente in modo preciso la reale efficienza di un impianto solare termico collocato in un

2.1 Cultura edilizia, energia e sviluppo locale

determinato punto del territorio; questo modello di calcolo parte cioè da una richiesta specifica già individuata sul territorio e ne valuta quantitativamente l'efficienza, ma non consente di eseguire un'analisi punto per punto sull'intero territorio al fine di individuare le collocazioni più vantaggiose. Si propone qui pertanto di associare a questa metodologia quantitativa un primo passaggio di natura più qualitativa, finalizzato ad individuare quali parti del territorio delle Valli di Lanzo siano maggiormente candidabili allo sfruttamento della risorsa solare.

Questo primo passaggio consiste in un'analisi complessiva delle caratteristiche di irraggiamento solare sull'orografia del territorio, basato in sostanza su due possibili aspetti:

- ▶ analisi delle ombre proprie dei versanti. Si tratta di un'analisi, condotta con lo strumento GIS e di cui si riporta una bozza in corso di definizione, che incrocia il dato locale dell'acclività del versante con quello della sua esposizione, definendo un gradiente di esposizione ottimale, idealmente compreso tra un massimo ed un minimo. Tale dato viene incrociato con la morfologia insediativa, al fine di evidenziare quali centri siano esposti in modo più vantaggioso;
- ▶ analisi delle ombre portate ed autoportate dei rilievi. Si tratta di un'analisi che riporta, per una determinata porzione di territorio, l'involuppo delle ombre portate al suolo durante lo scorrere del tempo, determinate dagli ostacoli verticali (edifici o – come nel nostro caso – creste, vette, rilievi), incrociando ancora questo dato con la distribuzione dell'insediato. Questo secondo elaborato consente di tener conto dell'effetto di singole specificità orografiche, che l'analisi delle ombre proprie non è in grado di restituire.

Questi due aspetti di analisi costituiscono pertanto un primo passaggio che – a livello qualitativo – consente di indivi-

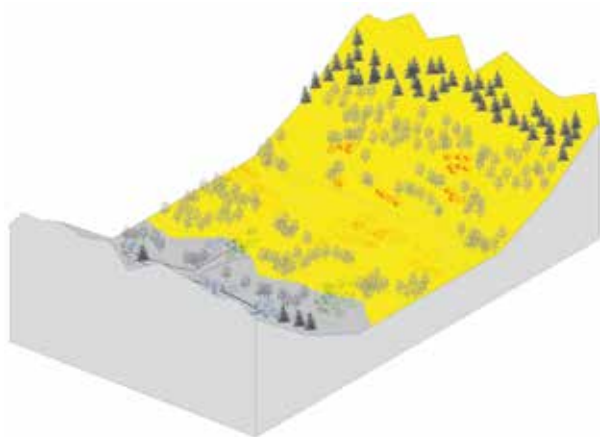
duare quali parti del territorio prendere strategicamente in considerazione per una più efficace azione di riqualificazione energetica.

Disponibilità e potenzialità di impiego di risorse di biomassa in relazione alle aree insediate

Un altro aspetto che è necessario valutare, a partire dai dati disponibili sul territorio, è quello della quantità di biomassa forestale (legno) effettivamente presente nell'area delle Valli di Lanzo e in una seconda fase di stimare quale frazione di tale biomassa legnosa sia effettivamente impiegabile per fini energetici. Questo dato è determinato in primo luogo dalle caratteristiche intrinseche alla risorsa in sé (tipologia di bosco, modello di gestione, tasso medio di crescita, ecc.), che possono essere opportunamente valutate. Esso è anche influenzato però in modo rilevante da condizioni esogene – geomorfologiche, infrastrutturali, insediative ecc. – che ne definiscono nel complesso – a parità di qualità intrinseca della risorsa – l'effettiva vantaggiosità di impiego sul territorio locale.

Tra queste seconde condizioni figurano in particolare:

- ▶ l'accessibilità alla risorsa, data dalla presenza di strade veicolari adeguate al trasporto e dall'acclività dei versanti boscati. Per poter essere impiegata come risorsa la biomassa deve cioè essere in primo luogo raggiungibile da macchine utensili e mezzi di trasporto, che ne consentano il prelievo con tempi e costi economicamente sostenibili;
- ▶ la prossimità a nuclei abitati in cui si rileva una forte concentrazione di domanda energetica. L'uso del legno come fonte di energia termica, proprio poiché basato su di un materiale il cui costo di trasporto influenza significativamente la redditività della risorsa, si adatta bene alla filiera estremamente corta dell'uso locale. L'utilizzo di tale fonte energetica per la produzione termica centralizzata (centraline a biomassa), inoltre, a causa dei decadimenti a cui l'energia termica va incontro durante il trasporto, è particolarmente indicato a servizio di adensamenti di attività antropiche, pubbliche e private, caratterizzati da una consistente domanda localizzata di energia.



L'apporto solare

- le condizioni degli assetti proprietari delle risorse boschive; le attività di sfruttamento della risorsa legno non sono cioè indifferenti rispetto alla concentrazione o alla frammentazione della proprietà boschiva, suggerendo – nel caso di proprietà molto frammentate – l'eventuale ricorso a modelli di gestione cooperativi.

La finalità dell'analisi svolta all'interno di questa parte è pertanto quella di incrociare i dati derivanti dalla pura valutazione della qualità delle risorse energetiche con le caratteristiche geomorfologiche, infrastrutturali e insediative del territorio, al fine di:

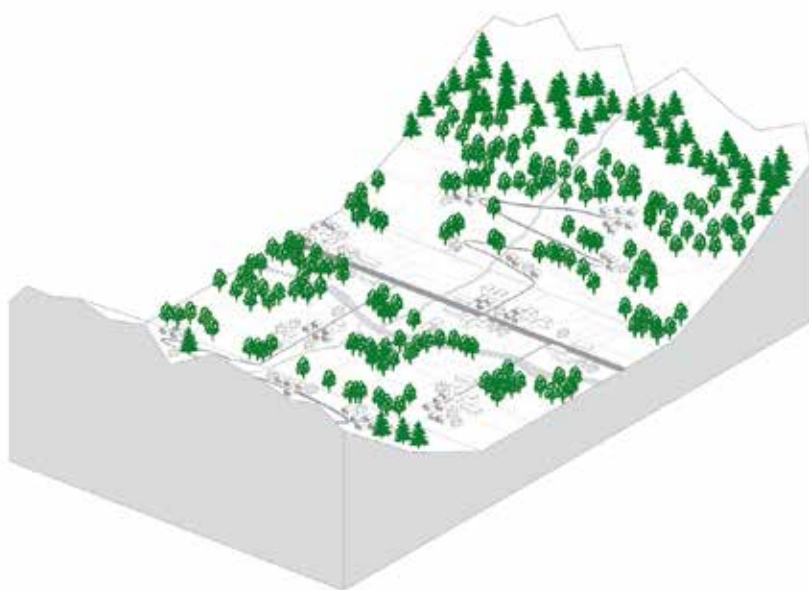
- individuare luoghi e modalità di possibile sfruttamento della biomassa a fini energetici (selezionare cioè quali parti del territorio siano potenzialmente indirizzabili in questa direzione);
- suggerire possibili modelli di gestione pubblico/privata della risorsa legno come fonte di energia termica;
- definire, anche attraverso la successiva parte dedicata alla lettura delle tipologie insediative, eventuali azioni di ristrutturazione urbanistica e riconversione del patrimonio edilizio degradato, localizzate in coincidenza con i fulcri di produzione e distribuzione di energia termica derivante da biomassa.

Strategie di riqualificazione energetica ed insediativa

Come si è detto in precedenza lo studio si è dunque concentrato principalmente sul settore termico dal momento che esso:

- è in primo luogo in maggior misura incidente sugli aspetti economici di gestione del patrimonio immobiliare, influenzando pertanto in modo rilevante le reali possibilità di riqualificazione o riconversione dell'esistente;
- è in secondo luogo maggiormente legato a criteri di prossimità tra produzione e consumo (a causa del rapido decadimento dell'energia termica sulla distanza) e incide pertanto direttamente sulle politiche di riconcentrazione e compattamento dell'insediato;
- è infine direttamente legato alla qualità architettonica degli edifici, dal momento che le operazioni di retrofit dell'esistente (realizzazione di coibentazioni esterne o interne, ecc.) costituiscono non soltanto un intervento di miglioramento prestazionale dell'edificio, ma anche un'occasione di ridefinizione degli aspetti architettonici e tipologici del volume edilizio.

Il settore termico potrebbe costituire dunque la base di partenza per la creazione di **reti** o **cluster** ad autosufficienza energetica per il soddisfacimento innanzitutto dei consumi derivanti da attività di carattere collettivo: pubbliche innanzitutto (scuole, edifici comunali ecc.), ma anche private, laddove esse costituiscano un'importante concentrazione di consumi (attività ricettive ecc.). A tal fine si può ipotizzare un sistema virtuoso di gestione delle risorse energetiche sopra citate che muove innanzitutto dalle risorse disponibili in loco o nelle immediate vicinanze.



La disponibilità e potenzialità d'impiego di biomassa forestale

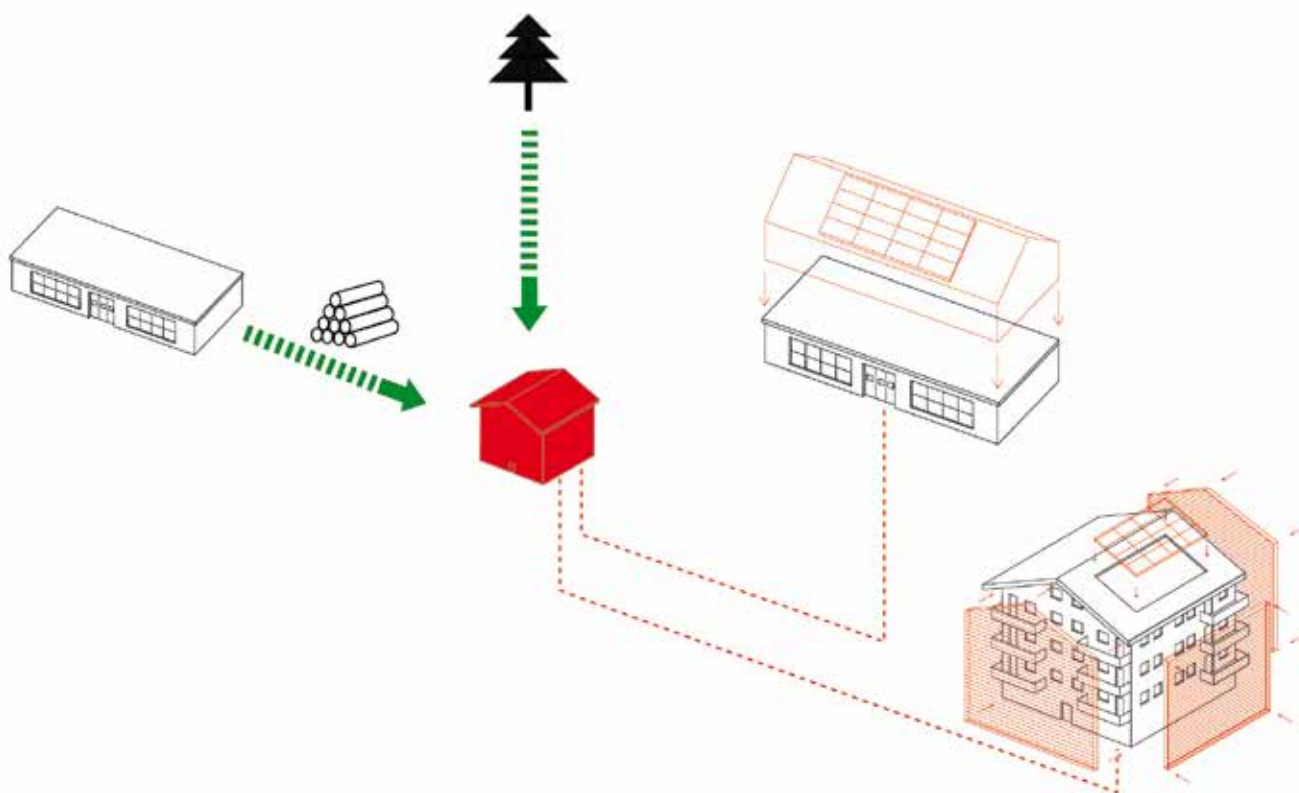
2.1 Cultura edilizia, energia e sviluppo locale

Si tratterebbe in sostanza di dare avvio ad una filiera energetica per il teleriscaldamento che a partire dal bosco, attraverso la realizzazione di una centrale per la produzione di energia termica, permetta di mettere in rete una serie di edifici al fine di garantirne l'autosufficienza dal punto di vista termico. Questo tipo di impianto va naturalmente commisurato sia con la disponibilità di biomassa forestale locale, tenendo conto della produzione di legno di scarto proveniente dall'esbosco (ramaglie, cippato) e dalla lavorazione (cortecce, refili, trucioli, segatura), sia del fabbisogno energetico necessario. La creazione di reti energetiche sta in questi ultimi anni diffondendosi a macchia d'olio nel contesto alpino e sempre più numerosi sono gli esempi virtuosi in Italia e all'estero che attraverso piccoli impianti a cippato riescono a valorizzare materiali altrimenti sottoutilizzati e che trovano una loro collocazione nell'impiego energetico per alimentare generatori di calore o sistemi cogenerativi per impianti di teleriscaldamento.

Si ricordano a tal proposito gli impianti già realizzati nelle alpi austriache, svizzere e anche in Italia come ad esempio quelli nei comuni di Forni di Sopra (Udine), di Sesto Pusteria (Bolzano) o ancora di Mattie in Valle di Susa (Torino).

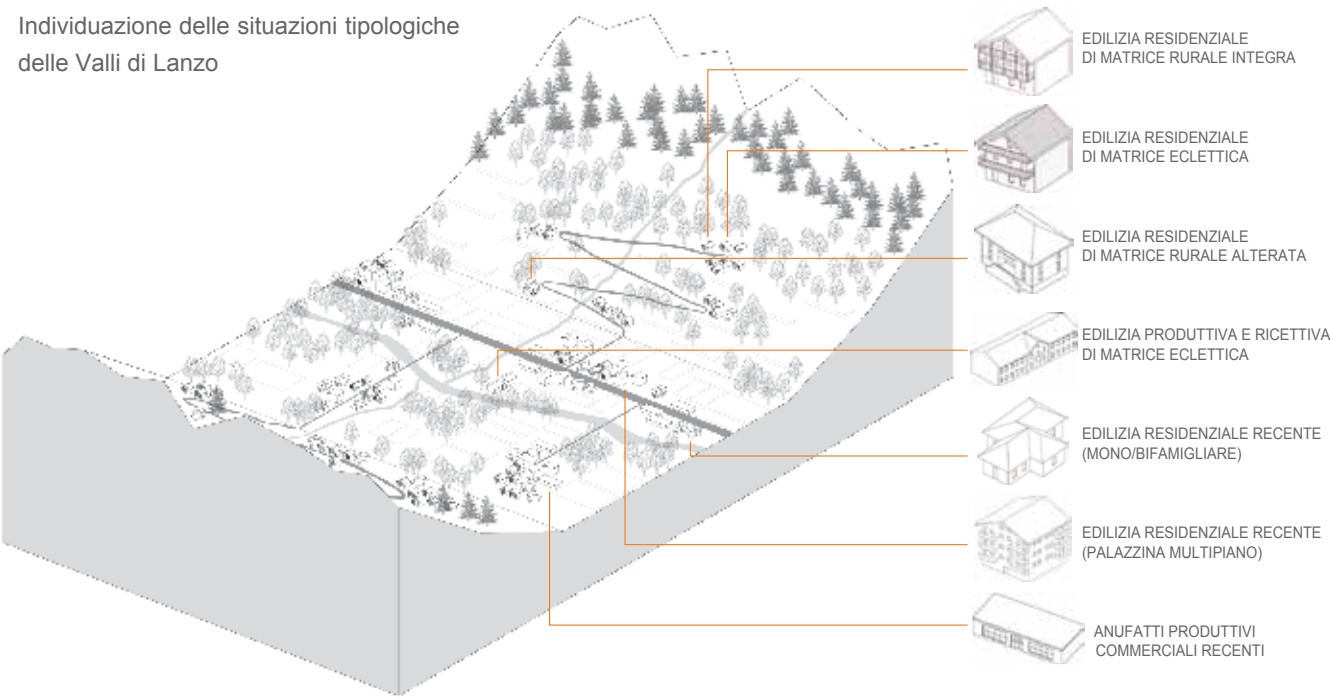
In questi casi, grazie alla creazione di piccole reti di teleriscaldamento, viene soddisfatto il fabbisogno energetico degli edifici e delle strutture comunali utilizzando gli scarti legnosi provenienti dalle attività produttive limitrofe (fallegnamerie e segherie) ed integrandole con la biomassa forestale disponibile sul territorio incentivando così anche le attività legate alla gestione dei boschi. Questa strategia di riqualificazione energetica troverebbe un suo completamento se per gli edifici messi in rete venissero anche previsti interventi di riqualificazione architettonico/edilizia e di dotazione impiantistica al fine di migliorarne le prestazioni energetiche.

Al fine di limitare i consumi energetici sarebbe infatti auspicabile prevedere azioni coordinate per il miglioramento della coibentazione ed integrare la disponibilità di energia termica e/o elettrica attraverso l'utilizzo di impianti di solare termico o fotovoltaico. In questo modo l'abbattimento dei consumi, l'autosufficienza energetica e le istanze di riqualificazione edilizia ed insediativa troverebbero un proficuo momento di sinergia volto a migliorare nel complesso la qualità ambientale e paesaggistica dei territori montani.



Schema di funzionamento di una rete o cluster

Individuazione delle situazioni tipologiche
delle Valli di Lanzo



Legenda

-  Involucro esterno
-  Involucro interno
-  Copertura
-  Fotovoltaico
-  Solare termico
-  Serramenti
-  Serra
-  Variazione tipologica/
distributiva/geometrica

Individuazione delle strategie
di riqualificazione energetica
e architettonica

	Involucro	Coperture	Variazioni volumetriche
Edilizia residenziale di matrice rurale integra			
Edilizia residenziale di matrice rurale alterata			
Edilizia residenziale di matrice eclettica			
Edilizia produttiva e ricettiva di matrice eclettica			
Edilizia residenziale recente (mono/bifamigliare)			
Edilizia residenziale recente (palazzina multipiano)			
Manufatti produttivi e commerciali recenti			

Isolamento a cappotto interno



La realizzazione di un isolamento a cappotto distribuito sulle pareti interne dell'edificio rappresenta in parecchi casi, per questa tipologia di edifici pluripiano sovente organizzati in condominio, l'opzione più facilmente percorribile per il miglioramento dell'involucro, dal momento che essa consente di attivare l'operazione di adeguamento sui singoli appartamenti, anche in assenza di un progetto complessivo su tutto l'edificio. Ciononostante non si tratta della scelta più vantaggiosa, sia a causa dei vincoli intrinseci a tale scelta tecnologica, sia poiché essa – svolgendosi interamente all'interno dell'edificio – impedisce di cogliere le opportunità di riqualificazione architettonica del complesso edilizio.



A parità di altre condizioni essa è pertanto meno consigliabile rispetto alla soluzione dell'involucro esterno.

Serramenti



La sostituzione dei serramenti con tipologie più performanti (a taglio termico) è in linea generale consigliabile su questa tipologia edilizia. Nel caso in cui essa non possa avvenire integralmente su tutto l'edificio è comunque necessario intervenire almeno sull'intera zona termica soggetta ad adeguamento energetico. È opportuno valutare, all'atto della sostituzione, il grado di congruenza tra

la trasmittanza dei serramenti e quella della restante parte dell'involucro edilizio. Sono da preferirsi serramenti con poche suddivisioni interne e con geometrie semplici; nel caso in cui la dimensione o la forma del serramento siano modificate sono da evitare soluzioni prive di legame con la realtà locale (serramenti ad arco, ad architrave inclinata, ecc.). L'orientamento è generalmente verticale, solo nell'ottica di un ripensamento complessivo di facciata è valutabile l'introduzione di serramenti orizzontali o a nastro.

Il telaio dei serramenti è da preferirsi in legno, sono eventualmente ammissibili serramenti metallici o combinati (legno alluminio); sono in ogni caso da evitare le combinazioni cromatiche particolarmente estranee al luogo (es. alluminio anodizzato), le finiture "camouflage" (vernice finto legno); forte-

mente sconsigliati sono i serramenti in PVC. Sono sempre da evitare vetri specchianti o comunque con colorazioni tali da renderli incongruenti con le vetrate tradizionali.



Isolamento a cappotto esterno



L'introduzione di un nuovo involucro isolante a cappotto sull'esterno della costruzione costituisce per questi edifici un'occasione importante per porre rimedio ad alcuni dei problemi di compatibilità dell'edificio con il contesto e per ripensarne i caratteri architettonici.

Il nuovo involucro, opportunamente differenziato nelle diverse parti dell'edificio, può essere infatti utilizzato a seconda dei casi:

- per scomporre, dal punto di vista percettivo, il volume costruito in una somma di volumi minori gerarchizzati per tipologia, funzione, ecc. riducendo il contrasto con l'edilizia storicamente consolidata.
- per rafforzare, a seconda dei casi, la verticalità o l'orizzontalità dell'oggetto edilizio, accorpendo o separando gli elementi caratterizzanti della facciata (aperture, balconi, logge ecc.).
- per ripensare il linguaggio materico dell'edificio, sostituendo materiali e finiture incongrui o per ridefinirne la composizione con logiche costruttive (basamento, corpo, coronamento ecc.).

Prima dell'intervento



Dopo l'intervento



Esempi di strategie adottate

2.2 Local strategies: Energy planning at municipal and inter-municipal level and the role of administrators

COA energia Service, Finaosta S.p.a. Aosta Valley Regional Financing Company (IT)

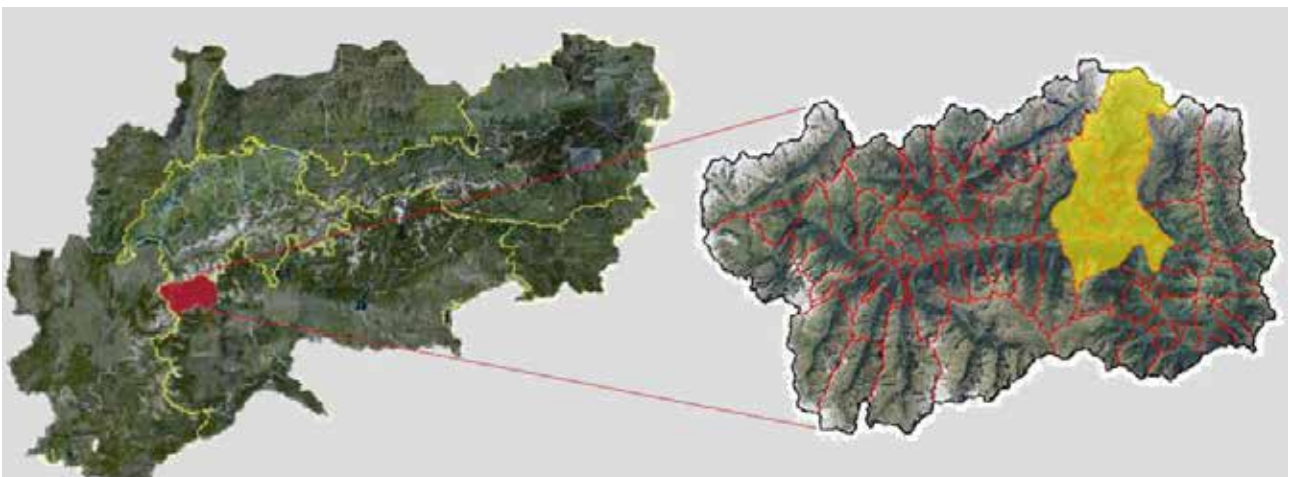
COA energia, in the context of the European project AlpBC, undertook a study aimed at supplying indications on how a local process of sustainable energy planning should be and can be built, developed and monitored. More in detail, COA Energia has developed for the Valle d'Aosta **tools and guidelines for energy and territorial planning at municipal and inter-municipal level**, with special reference to the integration of energy saving measures and energy efficiency. The guidelines elaborated have the objective of supplying tools adequate for the regional territorial reality offering a support to Municipalities that:

- ▶ want to contribute to achieving the 20-20-20 objectives in the field of energy saving and development of renewable energy sources, reduction of CO2 emissions through proposing an energy planning tool on their territories;
- ▶ have already heard of the "Patto dei Sindaci" (Covenant of Mayors) and of PAES- Piano d'azione per l'energia sostenibile (Action plan for sustainable energy) and who want to understand more clearly what it means to join, as well as to have some guidelines to understand the path to follow;



The Pilot Area Mountain Community Monte Cervino

- ▶ want to promote energy efficiency through the development of its own urban planning tools.



Transnational, regional and inter-municipal territorial level: the Aosta Valley and the Pilot Area Mountain Community Monte Cervino

In particular, COA energia has developed the following activities and has achieved these results:

- ▶ **Cognitive analysis:** a study undertaken at regional level and on the pilot area of the “Comunità Montana Monte Cervino” for an in depth interpretation of the current state from a socio-economic and territorial perspective and an analysis of the energy system.
- ▶ **Best practices:** a collection of best practices at transnational, national and regional level in the field of planning and energy efficiency at territorial as well as at building level.
- ▶ **Recommendations and guidelines for energy planning at municipal and inter-municipal level:** drafting of a document, aimed at local administrators of the Valle d’Aosta, containing the Indications regarding methods for the construction, development and monitoring of a local process of sustainable energy planning. In particular, the document aims to raise awareness within the local administrations of the potential of their own territory and on the importance of equipping themselves with tools for energy planning at municipal or groups of municipalities level, thus contributing, with appropriate planning, to



View of the Municipality of La Magdeleine in the Mountain Community Monte Cervino



View of the Municipality of Verrayes in the Mountain Community Monte Cervino

the achievement of targets in the field of energy saving, in the development of renewable energy sources and in the reduction of CO2 emissions.

- ▶ **Guidelines for drafting the Energy Attachment to the Municipal Building Regulations:** a guiding document that acts as a support tool for local administrations and for the professionals involved in the building process, in order to achieve a built environment that guarantees high levels of efficiency and quality, through the diffusion of sustainable building from an energy point of view, with the rational use of resources and the development of renewable energy sources.
- ▶ The tools developed in the study were used in the real case of the pilot area “Comunità Montana Monte Cervino” with the involvement of local players. This allowed the drafting of an **energy planning tool at inter-municipal level** that takes into consideration the peculiarities of the territory.
- ▶ Through the fruitful collaboration of the Municipalities and the “Comunità Montana” numerous data at municipal level have been collected, which have been integrated with the collection of energy data already in the hands of COA Energia; the elaboration of this information has led to the definition of the **Energy Balance** and the **Basic Inventory of Emissions of the single Municipalities**. From the energy audit of the current state, **actions of energy efficiency** have been identified that are to be implemented in the main sectors (residential, public service and private etc.). The identification of these actions allows the local authority to undertake a concrete **role through direct interventions or through promotion and raising awareness among citizens**, in order to reduce energy requirements and to achieve the targets set for the reduction of emissions across the territory.



View of the Municipality of Torgnon in the Mountain Community Monte Cervino

2.2 Local strategies: Energy planning at municipal and inter-municipal level and the role of administrators

The context in which the AlpBC project is framed

In recent years the problems regarding the management of energy resources have assumed a central position in the context of sustainable development, even at the level of European policies and strategies: firstly because energy is an essential component of development; secondly because the energy system is responsible for an important part of the negative effects of human activities on the environment (at local, regional and global level) and on climate stability. Greenhouse gas emissions are already considered an environmental impact indicator of the transformation system and of energy use and the various European and international policies regarding energy organisation refer mostly to them. In the discussion on energy and environmental issues, the role of the European Union has been fundamental, showing leadership at international level. Currently one of the most pressing problems of the EU is the mitigation of climate change, with the aim of limiting the increase in temperature, with respect to pre-industrial levels, to no more than 2 °C in the next two centuries.

In general, in the context of European strategies for the struggle against climate change, there is consensus on the fact that in order to move towards a sustainable energy system it will be necessary to proceed in three main directions:

- ▶ a more efficient and rational final use of energy;
- ▶ innovative, cleaner and more efficient methods of using and transforming fossil fuels, the most prevalent energy source;
- ▶ an increasing uptake of renewable energy sources.

This push towards a more sustainable energy model comes in a moment in which the very manner of making energy policies is changing rapidly, both at international and national levels. The core of energy policy is in **territorial government**, in the growing importance given to the link between **where and how energy is produced and used** and in the search for solutions that involve more and more the **local sphere**.

In consideration of the fact that over 80% of energy consumption and of CO₂ emissions in Europe is associated with urban activities, it is evident that local governments can, or rather must, undertake a decisive role in the mitigation of the effects consequent to climate change and this role is necessary in evaluating which actions and tools can be implemented in order to demonstrate their incisiveness in directing and making choices in the energy field of their own territory. **Energy planning at local level** is thus framed against this backdrop and the drafting of a planning document - "*Piano*

Energetico" (Energy Plan) – finalised at defining, sanctioning and planning a territorial intervention strategy able to guarantee the development of an efficient and sustainable local energy system that:

- ▶ gives priority to energy saving and renewable energy sources in order to reduce fossil fuel consumption and CO₂ emissions as well as for a greater level of environmental protection;
- ▶ is coherent with the main socio-economic and local territorial variables.

In order to concretely involve Municipalities and local territories in the struggle against climate change and to incentivize energy planning at local level, in 2008 the European Commission, following the adoption of the climate and energy package, promoted the "**Patto dei Sindaci**" (**Covenant of Mayors**) initiative.

This initiative is a voluntary programme and commits the participants to reducing their CO₂ emissions by at least 20% by 2020, through the development of local policies that increase the use of renewable energy sources and which stimulate energy saving in final uses. In order to translate their political commitment into concrete measures and projects, the signatories of the Covenant commit themselves to preparing and presenting, within a year of their adhesion, a **Sustainable Energy Action Plan (PAES)**, an energy planning document which outlines the main actions that they intend to implement in order to meet the targets, identifying the implementation tools to be used.

The energy planning document

In general, in order for an energy planning document to become a tool useful for achieving the targets in increased energy efficiency and use of local renewable energy sources it must have some fundamental components, which are briefly described below:

- ▶ analysis of the local energy system and the drafting of an energy balance which includes an evaluation of environmental effects, in terms of greenhouse gas emissions, associated to the various sectors of activity, to the final uses and to the different energy sources used;
- ▶ evaluation of the potential of saving achievable according to the local demand for energy;
- ▶ evaluation of the increase in the local supply of energy coming from renewable energy sources or from other sources with low environmental impact;

- ▶ identification of the priority areas of intervention and of the actions aimed at achieving energy efficiency and reduced environmental impact targets;
- ▶ identification of the most suitable tools for the implementation of the chosen actions;
- ▶ predisposition of a monitoring system that allows, on a defined timescale, the verification of the development of the an energy strategy and which periodically registers the results achieved.

An energy planning document should be drafted according to the concept of **integrated planning with a holistic approach to local energy systems**, with the aim of reducing energy demand in various key sectors of activity and of using locally available energy sources. The fundamental point of such an approach lies in the necessity of **basing the planning of the activities on the supply side according to energy demand**, both present and future, after having acted in these areas and reducing the size. In fact, by reducing the energy requirements two main advantages emerge:

- ▶ a considerable amount of what is spent today for energy is saved and these savings can be used to offset the investment costs necessary to implement energy requalification and efficiency measures;
- ▶ alternative energy sources become sufficient to satisfy a significant quota of the local energy requirements.

The reduction of energy consumption through the elimination of waste, an increase in efficiency and the abolition of improper use are therefore essential preconditions to support the development of alternative energy sources, so as to optimise the relative cost/benefit ratio with respect of fossil fuels.

The general tendency to follow for a reduction in **energy demand** must be taking into consideration the best techniques and technologies available. On the basis of this concept, every time it is necessary to proceed with new installations or with retrofits or substitution of components, they must be guided to use the best that the market can offer from a sustainable energy point of view.

From an **energy supply** perspective it is necessary to give priority to the development of renewable energy sources mainly from widespread sources and to the eventual possibility of simultaneous production of combined heat and power. In consideration of the fact that the development of renewable energy sources is generally strongly affected by territorial, environmental and social conditions, the analyses will be directed to the choice of interventions able

to combine energy, ecological, environmental and socio-economic aspects thereby guaranteeing an excellent cost/benefit balance for their use, as well as offering a concrete support to the local economy.

The energy planning document must also refer to those sectors of activity (public and private) in which the local government can adopt a concrete and specific role in planning, promotion, supervision and incentive or where it has the opportunity of direct intervention .

Even the role of the local authority as building manager must find a role within the action plan: notwithstanding the fact that consumption that is attributable to public buildings counts only as a few percentage points in the global territorial consumption, it is important that the local Administration follows a virtuous behaviour model which acts both as a good example and as a method of dissemination, thus making the activities of raising awareness and increasing motivation of all the local players easier.

The joint strategy

A local Administration, especially if small in size, can evaluate the possibility and the opportunity of developing its own energy planning document in collaboration with other neighbouring local Administrations, through a **supramunicipal approach**. Such an approach is based on a close collaboration between governing bodies, that could become concrete with the constitution of a inter-sectorial and inter-municipal work group, with the aim of formalising what has already been achieved or what is planned in the energy field, by exchanging experiences and best practices, by sharing problems and obstacles, by discussing opportunities and targets, so as to identify the margins for development of plans and intervention programmes on a vast scale and to outline shared implementation tools.

A joint energy planning document implies the commitment of more than one Administration in the construction of a common vision and in the definition of a series of actions to implement both singularly and jointly in the interested territory. The joint Plan aims to promote institutional cooperation and a common approach among local authorities that operate in the same territorial area.

In view of the greater effort necessary to guarantee an efficient coordination between the Administrations, there are numerous benefits that emerge from acting jointly. A joint approach to energy planning allows achieving more effective results with respect to an isolated case, because

2.2 Local strategies: Energy planning at municipal and inter-municipal level and the role of administrators

in some circumstances the opportunities for high-impact actions can be identified more easily within the administrative boundaries of an aggregation of small neighbouring municipalities. This can be applied, for example, to the measures associated with public transport, to the local production of energy or to the supply of information services for the general public. The Municipalities involved in the joint implementation of measures can benefit from economies of scale, as for example in the sector of public tenders, and can also deal with the problem of the persistent lack of finance and personnel. In this way it becomes easier for them to join forces in the preparation, implementation and monitoring of Energy Plans.

Territorial consultation and involvement

For the definition of objectives in energy policy and the identification of strategic lines for intervention, an Administration cannot disregard the involvement of various players who to a varying degree and on different levels are involved or can be involved in territorial energy management, so as to inform and, at the same time, receive indications that allow full understanding of the most opportune and effective way of proceeding at local level. It is therefore necessary to foresee the activation of a consultation process across the territory, that can be structured in thematic work groups or public meetings, the frequency of which should concur with key moments of advancement in the drafting of the document.

In general, the programme of each meeting should foresee the setting up of a discussion and a debate among and between the participants in order to:

- ▶ analyse and discuss possible or necessary requalification measures/actions and/or energy efficiency interventions across the territory;
- ▶ share information regarding the main qualitative and quantitative aspects of the trends underway across the territory in the energy field, more precisely through collecting considerations on the main criticalities, the main obstacles and the main opportunities regarding the implementation of measures;
- ▶ share possible tools necessary for a concrete diffusion of interventions in the energy field, identifying the key players and evaluating the possibility and/or the difficulty for application across the territory.

In parallel to the consultation activities, the development of the Energy Plan must be accompanied by the implementation of “transversal” activities of information, communication and raising awareness, aimed at the general public, and finalised mainly to support the energy programme both in the phase of predisposition and layout, so as to guarantee a broad-spectrum sharing of the themes and objectives, as well as in the implementation phase, in order to guarantee a continuous updating of developments, results achieved and on the eventual obstacles encountered.

Drafting the energy planning document: methodological approach and development phase

The methodological approach for the development of Municipal Energy Plan or of a PAES and the specific objectives to be achieved can be summarised in the following descriptions of the various points:

- ▶ Analysis of the local energy system and reconstruction of the Basic Inventory of CO₂ emissions;
- ▶ Evaluation of the potential for intervention at local level on energy demand side as well as energy supply side, through the reconstruction of possible scenarios regarding the evolution of the energy system;
- ▶ Planning and programming of intervention strategy on a local scale:
 - Identification of priority areas of intervention and corresponding quantitative efficiency targets;
 - Selection of strategic lines of intervention aimed at achieving the targets outlined and definition of actions to be undertaken with various levels of priority;
 - Definition of the tools necessary for the implementation and diffusion of the chosen actions (programming and supervision tools, incentivisation and financial support tools, management and control tools, etc.);
 - Definition of the Action Plan (*Roadmap*).
- ▶ Planning a monitoring system for the intervention strategy.

The first phase of the work programme regarding the predisposition of the energy planning document regards, therefore, the analysis of the local energy system.

This analysis represents an operative support tool for municipal energy planning, not limiting itself to “photograph” the current energy situation, but supplying analytical and interpretive tools of the same, highlighting its historic evolution, its configuration at territorial and sectorial levels. From this analysis emerges the possibility of appropriately directing the

actions and initiatives finalised in increased sustainability of the energy system as a whole. In fact, it allows the:

- ▶ evaluation of the level of energy efficiency;
- ▶ highlighting of ongoing trends and support of short and medium-term forecasts ;
- ▶ identification of sectors for strategic intervention.

The methodological approach for the analysis described above can be summarised in the following points:

- ▶ analysis of the territorial and socio-economic context;
- ▶ reconstruction of the energy balance and analysis of the local energy supply;
- ▶ reconstruction of the inventory of greenhouse gas emissions.

The second phase of activity deals with the **analysis of the potential for the reduction of final energy consumption in the various activity sectors and the potential for the increase in local energy production from renewable sources** or from other low-impact sources.

This analysis, starting from the surveys undertaken on the municipal energy system and on the ongoing trends within it, must lead to the quantification of the margins for intervention in local policy, both from an energy demand point of view as well as from an energy supply perspective and also it must allow the successive identification of priority elements on which to set up the Plan's strategy. Initially the possible **evolution scenarios** of the local energy system are reconstructed within a timescale defined by the Plan itself; these scenarios take into account the identification and the evaluation of project initiatives concerning energy which have already been proposed, or are being defined even by private subjects.

These initiatives are analysed for two reasons:

- ▶ in the reconstruction of the scenarios it is possible to refer to the ongoing trends and evaluate their effects in the overall territorial context;
- ▶ it is possible to evaluate their replicability in other spheres and contexts or evaluate eventual margins for improvement.

From the results of the analysis of the evolution trend of the energy system (a scenario in which it is assumed that no particular actions are implemented which are able to significantly modify the energy scenario, speculating that the evolution of the energy system comes about according to mechanisms defined by socio-economic and market trends and perhaps by eventual legislation laid down from above) and recalling

the information developed in the detailed sectorial analyses, the margins for energy efficiency are evaluated with the aim of defining, for each sector and context, a "classification" of actions on the basis of the best energy and environmental cost/benefit ratio, from which the priorities for intervention will be selected and these will constitute the Plan's strategy.

The third phase consists of planning and programming the intervention strategy at local level and it foresees the development of an analysis aimed at outlining the **target scenario of the Plan**. This scenario identifies the targets for the increase in renewable energy production, for the reduction in final consumption and in greenhouse gas emissions according to a defined timescale as well as the strategic lines of intervention aimed at achieving them.

The outlined strategy of the Plan must be based on specific development directives of the various actions and of the correlated tools, able to cover all the main sectors of activity (public and private) in which the local authority can play a concrete and specific role in planning, promotion, supervision and incentivisation or where it has the possibility of direct intervention.

Once the energy strategy has been defined and planned, it needs to be appropriately planned through the predisposition of an Action Plan (*Roadmap* of the planning process) in which each action and/or tool is analysed in detail and the main characteristics summarised in a worksheet.

The sum of the reduction in consumption and climate changing gas emissions linked to each single action defines quantitatively the Plan's targets according to the target reference timescale at various moments in time.

The development directives of the strategy

The general aim that a Plan's strategy should set itself is that it should exceed the approach characterised by sporadic and uncoordinated actions, however worthy they may be, and it should pass on to a phase of systematization of some of the actions. This stems from the awareness that the evolution of the municipal energy system towards ever higher levels of consumption and the emission of climate altering substances, cannot be stopped unless broad levels of intervention are introduced which involve in an integrated manner as many players and technologies as possible.

The selection and the planning of the actions cannot therefore disregard the identification and the definition of appro-

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appropriate **implementation tools**, able to guarantee true application and diffusion across the territory.

In relation to this general objective, the definition of the plan's strategy must, therefore, base itself on specific development directives of the various actions and correlated tools, identifiable with the **different roles that a Municipal administration can play in the energy field**. More specifically, **three main directives** can be identified, described hereunder which characterise the local authority:



Owner and manager of assets

First and foremost the Plan's strategy must deal with the issue of public assets (building stock, lighting, vehicles) and the improvement of their energy performance and management.

As, from an energy point of view, public assets affect the overall budget of a municipality in a relatively small way (on average no more than 5%), the implementation of efficiency measures on the assets can be extremely effective in the context of an energy strategy at local level.

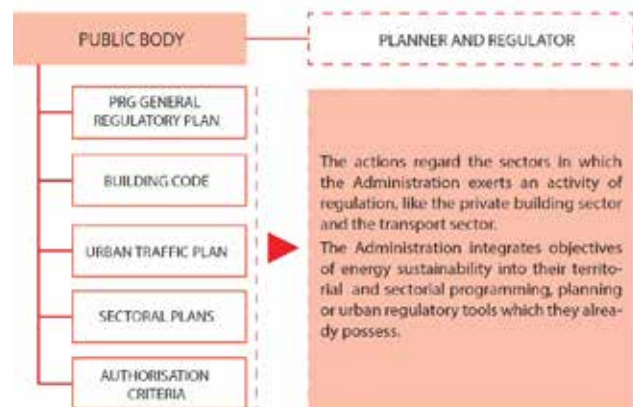
In fact, it allows the achievement of various objectives, such as:

- ▶ improvement of the energy quality of public assets, with significant repercussions also in terms of economic savings, able to create subsidiary activities that can be appropriately re-invested in actions and initiatives useful for the territory;
- ▶ promotion of interventions even in other socio-economic sectors and among private citizens
- ▶ increase in the attractiveness of the territory through the enhancement and improvement in its image.

In parallel to the targeted identification of priority actions for reducing consumption, innovative management methods will also be analysed which will be able to guarantee the necessary financial support for the implementation of the measures (for example, through Energy Performance Contracts), also in consideration of the scarce resources often available to local public administrations.

Planner, organiser, regulator of the territory and its activities.

The plan represents an essential tool for territorial requalification, binding itself directly to the achievement of containment targets and the reduction of emissions into the atmosphere (in particular of climate changing gases), to the improvement in energy efficiency, reduction in energy consumption and of lower energy dependency. It is thus a tool through which the administration can organise an overall development project of the whole energy system, consistent with the socio-economic and productive development of its territory and with its main environmental and ecological variables.



This entails the necessity of an ever greater correlation and interaction between energy planning and the programming, planning and regulatory town planning, territorial and sectorial documents which the Municipality has available. Therefore, a revision of said documents is essential in the light of the Plan's targets, investigating the methods with which to transform the indications contained within it into norms and/or rules.

The Plan's strategy must thus take into consideration the actions applicable to the sectors on which the Municipality governs the regulations, such as the private building sector and transport, proposing the integration of the sustainable energy targets into the above-mentioned tools. Among these, town planning tools appear to be those with the most potential and effect for integration and the greater effort will be directed to make the targets and forecasts of the various plans consistent and integrated.

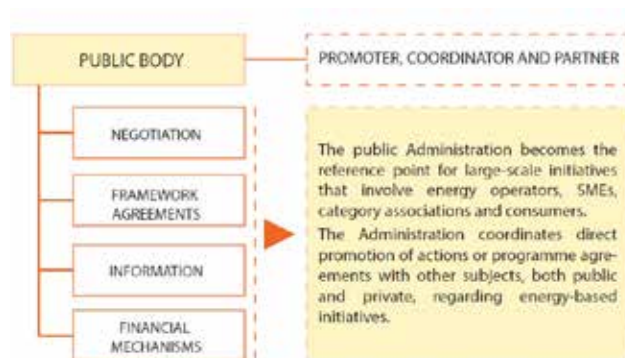
Promoter, coordinator and partner of territorial initiatives

Many actions are difficult to manage by the public administration on its own using the tools that it normally has available: their promotion should come about, therefore, through a joint effort of multiple subjects. The importance of determining how the economic costs of the actions in the energy field can be distributed among various players and operators both public and private is very evident.

The **participated action** is one of the planning tools that is currently considered to be one of the most effective available to the public administration to start initiatives in the energy sector.

A programme of coordinated campaigns can represent an important opportunity for innovation for enterprises and for the market, it can be the occasion for the promotion of new forms of partnerships in the elaboration of operative projects or for the sponsoring of various intervention programmes .

A broad involvement of subjects able to create the conditions for the technical-economic feasibility of interventions in the energy field can supply the conditions necessary to redeem their implementation from the dependence on public resources and to guarantee diffusion on a wider scale.



In the context of the Plan the Municipality will investigate and outline the possibilities of establishing itself as a contact point for the promotion of the **work groups** and/or **programme agreements** with public and private bodies that, directly or indirectly and at various levels, take part in territorial energy management for the various spheres of intervention chosen. Furthermore, methods for the creation of public-private operative partnerships will be analysed aimed at the activation of innovative financial mechanisms able to enhance local resources and professional techniques such as, for example:

- ▶ the creation of purchasing groups;
- ▶ as a link to credit institutions for the opening of favourable credit terms for final users;
- ▶ the creation of diffuse ownership mechanisms;
- ▶ collaboration with ESCos.

Following the definition of the strategic lines of action, of the targets and the tools for implementation, the priority actions that the Municipality intends to follow in the short-term will be identified and **the Action Plan (Roadmap)** will be defined which will give concreteness to the Plan's strategy.

2.2 Local strategies: Energy planning at municipal and inter-municipal level and the role of administrators

Development of a local strategy: implementation tools

Strengthening energy skills within the administration

A consistent and organic development of the Plan demands, in parallel, the planning and implementation of training courses aimed at creating and strengthening the energy-based skills of the officials and technical personnel within the Administrations.

These training activities should be finalised in deepening knowledge regarding:

Tali attività di formazione dovranno essere finalizzate ad approfondire:

- ▶ the subject of energy in the context of the main policies and community, national and regional norms and regulations;
- ▶ the possible measures to increase energy efficiency in final uses and the use of energy resources with a lower environmental impact;
- ▶ the main tools and strategies for management, supervision, incentivisation and financial support able to guarantee the implementation and diffusion of energy rationalisation measures.

Training on energy issues can therefore be structured as an accompanying process of the Plan: in this way, the issues dealt with in the training activity must make reference, as much as possible, to the phases of development of the Plan.

Efficient energy management programmes for public assets

Seeing as the need of Municipal administrations to reduce economic and energy costs of their own assets is often constrained by limited understanding of the performance of these assets, the strategy finalised at optimising energy management should foresee the setting up of specific tools aimed at:

- ▶ structuring and implementing a programme of “long-term” management and requalification, based on the intervention priority identified through the activities of analysis and preliminary energy audits;
- ▶ setting up specific financial tools for the implementation of measures, also based on public-private operative partnerships.

In the case of **owned buildings**, the action of the Municipality must, firstly, develop along two consequential directives and foresee the implementation of:

- ▶ a dynamic census and monitoring system;
- ▶ energy audit campaigns.

First and foremost it is necessary to organise disaggregated data and information divided up among the various sectors of the Administration, according to well-structured criteria of analysis on a broad scale and a collection system in a single system which is easy to read. This will lead to the development of a **databank of buildings** that will allow:

- ▶ to systematize data and information regarding the main structural and plant characteristics of buildings;
- ▶ to highlight the trend in energy consumption registered in each building;
- ▶ to estimate the theoretical energy requirements of the whole building stock and of each single building (after having detailed as much as possible the characteristics);
- ▶ to identify the “criticalities” in energy performance of buildings through the introduction of energy performance indices;
- ▶ to monitor the energy performance in buildings after the requalification measures.

The result of this procedure could lead to a classification table on the energy quality of buildings (that also takes into account the ways in which buildings are used), thus allowing the identification of priority suppositions for requalification of the building stock, both in terms of the building envelope and the plant systems.

For the definition of parameters able to define possible measures containing costs/benefits analysis, it is necessary to undertake more in-depth analyses using **energy audits**.

The energy audit, starts with real data on energy consumption, through an energy and economic analysis, is able to evaluate and “classify” the possible and necessary energy requalification measures.

In the case of **public lighting**, the energy analysis at urban level should be based on a description of the important characteristics of the lighting equipment and its distribution across the territory.

From the data recovered the Municipality will be able to proceed in the drafting of the “**Piano Comunale dell'Illuminazione Pubblica**” (Municipality Plan of Public Lighting), that is a set of criteria and technical-procedural

dispositions aimed at regulating and rationalising the modification or extension measures on the plant systems. In this way it will be possible to build an optimisation model for the Public Lighting system able to guarantee savings and energy efficiency while providing the same quality service. The main objectives of the Plan must, therefore, cover various levels: environmental, safety, energy, aesthetic. In the case of the energy aspects, more specifically, the Plan will have to fix saving and energy efficiency targets while providing the same quality service, eliminating waste, regulating the operating hours of the service, reducing the power earmarked and rationalising the management.

The path outlined, makes it necessary to identify and define the possible **economic support tools** as well as the methods for implementing the measures, also in consideration of the necessity of economic optimisation of the financial resources available to the Public Administrations.

In this context the Administration will have to recognise as a priority the need to define **tender specifications** linked to the management of the efficiency measures on its own assets and, more specifically, to evaluate the possibility of using funding, purchasing groups or defining **energy performance contracts** with the same management companies of the buildings or the public lighting systems rather than with the ESCOs, may be more interested in this kind of project because of the possibility of maturing energy efficiency certificates.

Integration of energy efficiency criteria in the programming and planning building and urban planning tools.

An overall energy strategy regarding the residential sector must include the definition and implementation of specific tools for the promotion, incentivisation and regulation of the intervention programme aimed at:

- ▶ optimising energy and environmental performance of buildings and the built environment;
- ▶ disseminating building practices aimed at the creation of “nearly zero energy” buildings;
- ▶ improving the energy efficiency of the building-plant system;
- ▶ using renewable energy sources to cover thermal and electrical energy requirements in buildings;
- ▶ disseminating behavioural practices for a correct use of plants systems and technologies as well as for a reduction in energy waste.

The quality of the measures, the degree of dissemination, the binding nature of some requisites, the construction of financial mechanisms dedicated to actions of energy saving are among the main operative tools that allow a reduction in the energy requirements and in emissions in the municipal residential sector.

One of the fundamental points for a local Administration is that to elaborate, acquire or implement tools and methods for planning, guiding and supervising the energy saving intervention strategies in the building sector.

Among the most effective tools available, more specifically, is the integration in the relevant legislative apparatus for urban and building planning (“Piano Urbanistico Generale” (General Urban Plan), “Regolamento Edilizio” (Building regulations), special technical application norms for specific plans on a small scale), **standards relating to building criteria and/or requalification standards able to guaranteed the containment of the energy requirement in buildings and the achievement of appropriate efficiency standards**. It is, in fact, a matter of standards that prolong their effect over a long period of time, that includes the whole life-cycle of the building, both in the case of new buildings and renovated existing buildings.

It will be, therefore, important to evaluate the opportunity to define and introduce into the **Building Regulations**, through the development of an Energy Attachment, prescriptions and binding minimum performance levels for energy quality that are stricter than those imposed by national legislation. These requisites will be applied to new buildings as well as to existing buildings undergoing renovation and also to ordinary and extra-ordinary maintenance works and they will take into account, in accordance with the above-ordered norms, of local external climatic conditions, and the efficacy from a technical-economic profile also in consideration of the incentive mechanisms in force at national and/or regional level (for example, systems for tax deduction or incentive mechanisms established by the “Conto Energia Termico”).

The objective of the adoption of stricter binding requisites is to guarantee greater energy saving in the management phase and a more rapid economic return tied to the energy efficiency measures in buildings, thus guaranteeing the possibility of implementing energy requalification measures with the maximum technological level achievable at the time in which the measure is implemented.

In order to be able to monitor the building activity across the territory and to supervise the effective achievement of the

2.2 Local strategies: Energy planning at municipal and inter-municipal level and the role of administrators

performance levels taken on in legislation and in planning, it will be useful to adopt a specific **procedure for the registration and classification of building interventions**.

Negotiation and consultation initiatives

For the definition of energy policy objectives and the identification of the strategic lines for intervention, a local Administration cannot overlook the **involvement of the different subjects that to various degrees and at different levels are involved or are likely to be involved in energy management across the territory**, so as to inform and, at the same time, receive indications that allow understanding of the most appropriate and effective way to proceed at local level.

An activity of consultation and negotiation will have to be implemented through the organisation of **themed work groups** related to sectors and/or intervention contexts considered priority and which will be coordinated and managed through participative planning techniques.

In general, the programme of each meeting must foresee the activation of a group for discussion and consultation with the participants with the aim of:

- ▶ analysing and discussing the possible or necessary interventions/ requalification actions and/or energy efficiency measures across the territory;
- ▶ sharing information regarding the main qualitative and quantitative aspects of the ongoing trends across the territory in the energy field as well as collecting indications and considerations regarding criticalities, obstacles and opportunities regarding the implementation of measures;
- ▶ sharing possible tools (management, supervision, programming, incentivizing or those for financial support, information and raising awareness) necessary for a concrete dissemination of the measures in the energy field, identifying key players and evaluating possibilities and/or difficulties for implementation across the territory.

Generally, the various players that will be involved in this context are linked to the following sectors:

- ▶ professional associations
- ▶ social and economic players from across the territory;
- ▶ category associations;
- ▶ energy operators;
- ▶ citizens.

“Cooperative financial models”

An effective local energy strategy must take into consideration actions and initiatives able to activate **integrated supply chains** with the local economy, environment and territory, identifying at the same time the possible tools and mechanisms of financial incentives able to guarantee the overall long-term sustainability.

It will be, therefore, important to verify eventual methods for building operative public-private partnerships, aimed at the activation of innovative financial mechanisms also able to enhance local resources and professional techniques, for example:

- ▶ purchasing groups for plant systems, equipment, technologies, technical consultancy through agreements with manufacturers, dealers or instalment technicians and professionals;
- ▶ diffused ownership mechanisms to finance the plant systems.

To develop these initiatives it is important for there to be an adequate legislative framework, eventual guarantee collateral and initial availability of revolving funds: making the role of the Public Administration central to their promotion.

Negotiated economic processes such as purchasing groups or diffused ownership, especially if supported by institutional and market players able to guarantee solidity and maturity of technologies, allow the broad-scale dissemination of efficient technologies and plant systems, which could otherwise be guided by much more complex strategies linked to various marked factors.

The aggregation of more than one subject in **forms of association**, guarantees a greater bargaining power in discussions with plant and equipment suppliers, providing at the same time a sort of “support” in the choice of purchase. With the simultaneous involvement of other players, such as credit and banking institutions for financial support and the local public administration, it is possible to guarantee the optimisation of results in terms of a price reduction for each unit of product as well as speed and dependability in the implementation of the measures. The companies and the credit institutions, in turn, obtain interesting economic returns.

Training, information and awareness campaigns

As well as the legal requirements, the prescriptions or the financial support tools, it is essential to establish other initiatives that stimulate the wide application of measures and technologies, highlighting their potential. The first important step is the organisation and implementation of **integrated campaigns to inform and raise awareness** regarding supply and demand, through initiatives of:

- ▶ **social marketing** aimed at the final users covering the themes of energy, renewable energy sources, efficient technology, active financial support mechanisms, energy saving methods and the appropriate use of equipment and plant systems;
- ▶ **specialist training** for technicians and professionals that act directly as consultants for the final users and who therefore play a key role in kick-starting the market.

The information campaigns and the training can be multimedial in nature and can be structured on two distinct levels:

- ▶ an **interactive on-line level**, based on the development and updating of a **web platform**;
- ▶ an **interactive face-to-face level**, based on the organisation of territorial events such as:
 - educational workshops in schools (for students and/or teachers);
 - workshops for the general public;
 - in-depth technical seminars and/or training courses for local operators and professionals.

Development of a monitoring system for the energy strategy

It is fundamental to develop a monitoring process for the Plan, so as to:

- ▶ characterise and follow the energy dynamics of one's own territory;
- ▶ verify the development of one's own energy strategy to to periodically register the results achieved;
- ▶ periodically evaluate the effectiveness of the strategy and to foresee modifications or integrations.

Monitoring the Plan is made up of the following three phases:

- ▶ verification of the state of implementation of the single actions proposed;
- ▶ quantification of the effects of the single actions implemented in terms of reduction in energy consumption and CO₂ emissions;
- ▶ updating the energy balance as well as the inventory of CO₂ emissions.

Monitoring the implementation of the Plan and updating the data of the energy balance implies a necessity for collecting, in an organic and continuative manner, a notable quantity of data. Therefore the Administration has to set up a path for interjection, survey and discussion across the territory and with the territory to collect information and indications, both quantitative and qualitative, regarding the measures and initiatives in the energy field already implemented or planned. In parallel informative channels and sources at national and regional level need to be activated, these can supply energy consumption statistics continuously at municipal level. The timescale for monitoring the Plan must be defined in line with the reference timescale chosen, the phases of development hypothesised for the various actions and according to the medium and long-term objectives taken on.

2.2 La pianificazione energetica a scala comunale e intercomunale e il ruolo degli amministratori: lo sviluppo di una strategia locale

Finaosta S.p.A. - Finanziaria Regionale della Valle d'Aosta – Direzione Studi e Assistenza alle Imprese
Servizio COA energia (IT)

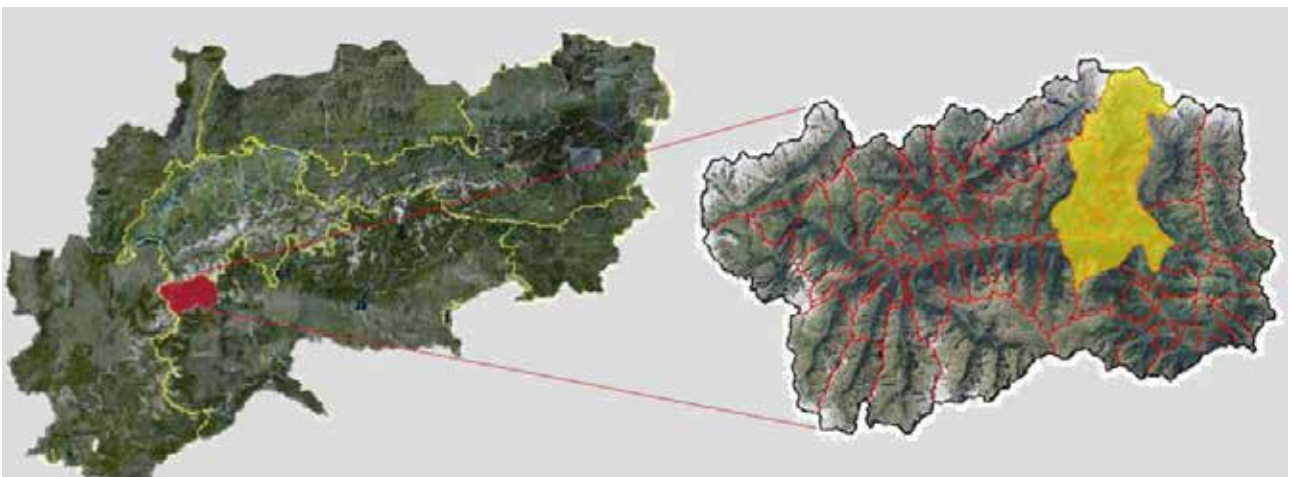
Il COA energia nell'ambito del progetto europeo AlpBC ha effettuato uno studio che intende fornire indicazioni su come un processo locale di pianificazione energetica sostenibile debba e possa essere costruito, sviluppato e monitorato. In particolare il COA energia ha sviluppato per la valle d'Aosta **strumenti e linee guida per la pianificazione energetica e territoriale a livello comunale e intercomunale**, con particolare riferimento all'integrazione delle misure per il risparmio e l'efficienza energetica. Le linee guida elaborate hanno l'obiettivo di fornire strumenti adeguati alla realtà territoriale regionale offrendo un supporto ai Comuni che:

- ▶ Vogliano contribuire al raggiungimento degli obiettivi 20 20 20 in materia di risparmio energetico e sviluppo delle fonti energetiche rinnovabili, riduzione della CO2 proponendo uno strumento di pianificazione energetica sul proprio territorio;
- ▶ Abbiano già sentito parlare del Patto dei Sindaci e dei PAES (Piano d'azione per l'energia sostenibile) e vogliano capire maggiormente cosa significa aderire, nonché avere una linea guida per capire il percorso da intraprendere;



L'area pilota della Comunità Montana Monte Cervino

- ▶ Vogliano promuovere l'efficienza energetica attraverso lo sviluppo dei propri strumenti urbanistici.



Scala territoriale transnazionale, regionale e sovra comunale: la Valle d'Aosta e l'area pilota della Comunità Montana Monte Cervino

In particolare, il COA energia ha sviluppato le seguenti attività e raggiunto i seguenti risultati:

- **Analisi conoscitiva:** studio condotto a livello regionale e sull'area pilota della Comunità Montana Monte Cervino per una lettura approfondita dello stato di fatto dal punto di vista socio-economico, territoriale e di analisi del sistema energetico.
- **Buone pratiche:** raccolta di buone pratiche a livello transnazionale, nazionale e regionale sui temi della pianificazione e dell'efficienza energetica a scala territoriale e a scala di edificio.
- **Raccomandazioni e linee guida per la pianificazione energetica a scala comunale e intercomunale:** redazione di un documento, rivolto agli Amministratori locali della Valle d'Aosta, riportante le indicazioni relative alle modalità per la costruzione, lo sviluppo e il monitoraggio di un processo locale di pianificazione energetica sostenibile. In particolare, il documento intende sensibilizzare le Amministrazioni locali sulle potenzialità del proprio territorio e sull'importanza di dotarsi di strumenti di pianificazione energetica comunali o a livello di aggregazione di Comuni, contribuendo, con un'ideale programmazione,



Vista del Comune di La Magdeleine nella Comunità Montana Monte Cervinola Valle d'Aosta e l'area pilota della Comunità Montana Monte Cervino



Vista del Comune di Verrayes nella Comunità Montana Monte Cervino

al raggiungimento degli obiettivi in materia di risparmio energetico, di sviluppo delle fonti energetiche rinnovabili e di riduzione delle emissioni di CO₂.

- **Linee guida per la redazione dell'Allegato Energetico al Regolamenti Edilizio Comunale:** documento di indirizzo che si pone come strumento di supporto per le Amministrazioni locali e i professionisti coinvolti nel processo edilizio, al fine di ottenere un ambiente costruito che garantisca alta efficienza e qualità, mediante la diffusione di un'edilizia sostenibile dal punto di vista energetico, l'uso razionale delle risorse e lo sviluppo delle fonti energetiche rinnovabili.
- Gli strumenti sviluppati nello studio sono stati applicati al caso reale dell'area pilota della Comunità Montana Monte Cervino con l'attivo coinvolgimento degli attori locali. Ciò ha consentito di redigere uno **strumento di pianificazione energetica a scala intercomunale** che prende in considerazione le peculiarità del territorio.
- Attraverso la proficua collaborazione dei Comuni e della Comunità Montana sono stati raccolti numerosi dati a livello comunale che sono stati integrati con la raccolta dei dati energetici già in possesso del COA energia; l'elaborazione di tali informazioni ha portato alla definizione del **Bilancio energetico** e dell'**Inventario Base delle Emissioni dei singoli Comuni**.
- A partire dall'analisi energetica dello stato di fatto sono quindi state individuate le **azioni di efficientamento energetico** da attuare nei principali settori (settore residenziale, settore terziario pubblico e privato, ecc.). L'individuazione di queste azioni consente all'autorità locale di giocare un ruolo concreto **mediante interventi diretti o di promozione e sensibilizzazione tra i cittadini**, al fine di ridurre il fabbisogno energetico e di raggiungere gli obiettivi di riduzione delle emissioni del territorio.



Vista del Comune di Torgnon nella Comunità Montana Monte Cervino

2.2 La pianificazione energetica a scala comunale e intercomunale e il ruolo degli amministratori: lo sviluppo di una strategia locale

Il contesto in cui si inserisce l'attività del progetto AlpBC

Negli ultimi anni le problematiche riguardanti la gestione delle risorse energetiche hanno assunto una posizione centrale in merito allo sviluppo sostenibile anche a livello di politiche e strategie europee: prima di tutto perché l'energia è una componente essenziale dello sviluppo; in secondo luogo perché il sistema energetico è responsabile di una parte importante degli effetti negativi delle attività umane sull'ambiente (a scala locale, regionale e globale) e sulla stabilità del clima.

Le emissioni di gas climalteranti sono ormai considerate un indicatore d'impatto ambientale del sistema di trasformazione e uso dell'energia e le varie politiche europee e internazionali concernenti l'organizzazione energetica fanno in gran parte riferimento a esse.

Nella discussione sulle tematiche energetiche e ambientali, il ruolo dell'Unione Europea è stato fondamentale, dimostrando una leadership a livello internazionale. Attualmente uno dei problemi più pressanti per la politica dell'UE è quello della mitigazione del cambiamento climatico, con l'obiettivo di limitare l'incremento delle temperature, rispetto ai livelli preindustriali, a non oltre 2 °C nei prossimi due secoli.

In generale, nell'ambito delle strategie europee per la lotta ai cambiamenti climatici, vi è consenso sul fatto che per andare verso un sistema energetico sostenibile sia necessario procedere lungo tre direzioni principali:

- ▶ una maggiore efficienza e razionalità negli usi finali dell'energia;
- ▶ modi innovativi, più puliti e più efficienti, di utilizzo e trasformazione dei combustibili fossili, la fonte energetica ancora prevalente;
- ▶ un crescente ricorso alle fonti rinnovabili di energia.

Questa spinta verso un modello energetico più sostenibile avviene in un momento nel quale il modo stesso con cui si fa politica energetica sta rapidamente cambiando, sia a livello internazionale sia a livello nazionale. I punti centrali della politica energetica stanno nel **governo del territorio**, nella crescente importanza che viene ad assumere il collegamento tra **dove e come l'energia è prodotta e utilizzata** e nella ricerca di soluzioni che coinvolgano sempre di più la **sfera locale**.

In considerazione del fatto che oltre l'80 % dei consumi energetici e delle emissioni di CO₂ in Europa è associato ad attività in aree urbane, è evidente che i governi locali possono, anzi devono, svolgere un ruolo decisivo nella mitigazione degli effetti conseguenti al cambiamento climatico e che è necessario valutare attraverso quali azioni e quali strumenti il loro ruolo può esplicitarsi e dimostrarsi incisivo per orientare e selezionare le scelte in campo energetico sul proprio territorio.

In questo contesto si inserisce la pianificazione energetica a livello locale e la redazione di un documento di programmazione - Piano Energetico - finalizzato a definire, codificare e programmare una strategia di intervento sul territorio in grado di garantire lo sviluppo di un sistema energetico locale efficiente e sostenibile che:

- ▶ dia priorità al risparmio energetico e alle fonti energetiche rinnovabili per la riduzione dei consumi di fonti fossili e delle emissioni di CO₂ e per una maggiore tutela ambientale;
- ▶ risulti coerente con le principali variabili socio-economiche e territoriali locali.

Al fine di coinvolgere concretamente i Comuni e i territori locali nella lotta ai cambiamenti climatici e incentivare la pianificazione energetica a livello locale, la Commissione Europea nel 2008, dopo l'adozione del pacchetto su clima e energia, ha promosso l'iniziativa "**Patto dei Sindaci**".

Tale iniziativa è di tipo volontario e impegna gli aderenti a ridurre le proprie emissioni di CO₂ di almeno il 20% entro il 2020, attraverso lo sviluppo di politiche locali che aumentino il ricorso alle fonti di energia rinnovabile e stimolino il risparmio energetico negli usi finali. Al fine di tradurre il loro impegno politico in misure e progetti concreti, i firmatari del Patto si impegnano a preparare e a presentare, entro l'anno successivo alla firma, un **Piano d'Azione per l'Energia Sostenibile** (PAES), un documento di programmazione energetica nel quale sono delineate le azioni principali che essi intendono realizzare per raggiungere gli obiettivi, individuando gli strumenti di attuazione delle stesse.

Il documento di pianificazione energetica

In linea generale, perché un documento di pianificazione energetica diventi uno strumento utile per il raggiungimento degli obiettivi di aumento dell'efficienza energetica e dell'uso delle risorse energetiche rinnovabili locali deve essere costituito da alcune componenti fondamentali, che vengono qui brevemente descritte:

- ▶ l'analisi del sistema energetico locale e la predisposizione di un bilancio energetico, comprensivo della valutazione degli effetti ambientali, in termini di emissioni di gas serra, associati ai differenti settori di attività, agli usi finali e alle diverse fonti energetiche utilizzate;
- ▶ la valutazione del potenziale di risparmio ottenibile sul versante della domanda locale di energia;
- ▶ la valutazione dell'incremento dell'offerta locale di energia da fonti energetiche rinnovabili o altre fonti a basso impatto ambientale;
- ▶ l'individuazione degli ambiti prioritari di intervento e delle azioni atte a conseguire obiettivi di efficientamento energetico e di riduzione dell'impatto ambientale;
- ▶ l'identificazione degli strumenti più idonei per la realizzazione delle azioni selezionate;
- ▶ la predisposizione di un sistema di monitoraggio che permetta, a scadenze definite, di verificare lo sviluppo della strategia energetica e registrare periodicamente i risultati raggiunti.

Un documento di pianificazione e programmazione energetica deve essere costruito secondo il concetto di **pianificazione integrata e di approccio olistico ai sistemi energetici locali**, con l'obiettivo di ridurre la domanda di energia in vari settori chiave di attività e di usare le fonti energetiche rinnovabili disponibili localmente. Il punto fondamentale di tale approccio riguarda la necessità di **basare la progettazione delle attività sul lato dell'offerta di energia in funzione della domanda di energia**, presente e futura, dopo aver agito su quest'ultima riducendone la dimensione. Infatti, riducendo il fabbisogno energetico si ottengono due vantaggi principali:

- ▶ si risparmia una parte significativa di quanto si spende oggi per l'energia e i risparmi possono essere utilizzati per ammortizzare i costi d'investimento necessari a effettuare interventi di riqualificazione ed efficientamento energetici;

- ▶ le fonti energetiche alternative diventano sufficienti per soddisfare una quota significativa del fabbisogno locale di energia.

La riduzione dei consumi energetici mediante l'eliminazione degli sprechi, la crescita dell'efficienza, l'abolizione degli usi impropri, sono quindi la premessa indispensabile per favorire lo sviluppo delle fonti energetiche alternative, in modo da ottimizzarne il relativo rapporto costi/benefici rispetto alle fonti fossili.

L'orientamento generale da seguire per la riduzione della **domanda di energia** dovrà essere quello di prendere in considerazione le migliori tecniche e tecnologie disponibili. In base a tale concetto, ogni qual volta sia necessario procedere verso installazioni ex novo oppure verso retrofit o sostituzioni di componenti, ci si deve orientare a utilizzare ciò che di meglio il mercato può offrire da un punto di vista di sostenibilità energetica.

Sul lato dell'**offerta di energia** occorre dare priorità allo sviluppo delle fonti energetiche rinnovabili prevalentemente a livello diffuso e all'eventuale possibilità di produzione contemporanea di energia termica ed elettrica. In considerazione del fatto che lo sviluppo delle fonti energetiche rinnovabili è in genere fortemente condizionato dalle condizioni territoriali, ambientali e sociali, le analisi andranno, in particolare, orientate alla selezione di interventi in grado di combinare aspetti energetici, ecologici, ambientali e socio-economici e quindi di garantire un bilancio costi/benefici ottimale per il loro utilizzo, oltre che un concreto supporto all'economia locale.

Il documento di programmazione energetica dovrà altresì riferirsi a quei settori di attività (pubblici e privati) in cui l'autorità locale può giocare un ruolo concreto e specifico di pianificazione, promozione, controllo, incentivo o sui quali ha la possibilità diretta di intervento.

Anche il ruolo dell'Ente Locale come gestore di edifici deve trovare una sua collocazione all'interno del piano d'azione: nonostante i consumi riconducibili agli edifici pubblici pesino solo alcuni punti percentuali sul consumo globale del territorio, è importante che l'Amministrazione locale dimostri un comportamento virtuoso che avrà la funzione sia di divulgazione, sia di buon esempio, in modo da rendere più facili le attività di sensibilizzazione e di motivazione di tutti gli attori locali.

2.2 La pianificazione energetica a scala comunale e intercomunale e il ruolo degli amministratori: lo sviluppo di una strategia locale

La strategia congiunta

Un'Amministrazione locale, soprattutto se di piccole dimensioni, può valutare la possibilità e l'opportunità di sviluppare il proprio documento di programmazione energetica in collaborazione con altre Amministrazioni locali limitrofe, attraverso un **approccio sovracomunale**. Tale approccio si basa su una stretta collaborazione tra enti, che potrebbe concretizzarsi con la costituzione di un gruppo di lavoro intersettoriale e intercomunale, con lo scopo di mettere a sistema quanto già realizzato o in programma in campo energetico, di scambiare le esperienze e le buone pratiche, di condividere problematiche e ostacoli, di confrontarsi sulle opportunità e gli obiettivi, così da individuare i margini per lo sviluppo di piani e programmi d'intervento su scala vasta e delineare strumenti condivisi di implementazione degli stessi.

Un documento di pianificazione e programmazione energetica congiunto implica l'impegno di più Amministrazioni nella costruzione di una visione comune e nella definizione di una serie di azioni da attuare sia singolarmente sia congiuntamente nel territorio interessato. Il Piano congiunto mira a promuovere la cooperazione istituzionale e approcci comuni tra Enti locali che operano nella stessa area territoriale.

A fronte di un maggiore sforzo necessario a garantire un efficiente coordinamento tra gli Enti, i benefici che possono scaturire dall'agire congiuntamente risultano molteplici. Un approccio congiunto alla pianificazione energetica permette di ottenere risultati più efficaci rispetto a un caso isolato, poiché in alcune circostanze le opportunità per le azioni ad alto impatto possono essere individuate più facilmente all'interno dei confini amministrativi di un aggregazione di piccoli Enti locali limitrofi. Questo può applicarsi, ad esempio, alle misure destinate al trasporto pubblico, alla produzione locale di energia o alla prestazione di servizi di consulenza ai cittadini. I Comuni coinvolti nell'attuazione congiunta di misure possono beneficiare di economie di scala, come ad esempio nel settore degli appalti pubblici, e far fronte, inoltre, al problema della cronica mancanza di risorse umane e finanziarie. In questo modo diventa più facile per loro unire le proprie forze nella preparazione, attuazione e monitoraggio dei Piani energetici.

La consultazione e il coinvolgimento del territorio

Per la definizione degli obiettivi di politica energetica e l'individuazione delle linee strategiche di intervento, un'Amministrazione non può prescindere dal coinvolgimento dei diversi soggetti che a vario titolo e a diversi livelli risultano coinvolti o coinvolgibili nella gestione dell'energia sul territorio, in modo da informare e, nello stesso tempo, ricevere indicazioni che consentano di capire il modo più opportuno ed efficace di procedere a livello locale. Deve quindi essere prevista l'attivazione di un processo di consultazione sul territorio, che può strutturarsi in tavoli di lavoro tematici o incontri pubblici, la cui frequenza di svolgimento deve avvenire in concomitanza con momenti chiave dell'avanzamento della redazione del documento.

In generale, il programma di ogni incontro deve prevedere l'attivazione di una discussione e di un confronto con i partecipanti al fine di:

- ▶ analizzare e discutere i possibili o necessari interventi/azioni di riqualificazione e/o efficientamento energetico del territorio;
- ▶ condividere informazioni relative ai principali aspetti qualitativi e quantitativi delle tendenze in atto sul territorio in campo energetico, ovvero raccogliere considerazioni sulle principali criticità, i principali ostacoli, le principali opportunità relativi alla realizzazione di interventi;
- ▶ condividere i possibili strumenti necessari a una concreta diffusione degli interventi in campo energetico, individuandone gli attori chiave e valutandone le possibilità e/o difficoltà di attivazione sul territorio.

Parallelamente all'attività di consultazione, lo sviluppo del Piano energetico deve essere accompagnato dalla realizzazione di un'attività "trasversale" di informazione, comunicazione e sensibilizzazione, rivolta alla cittadinanza, e finalizzata principalmente ad accompagnare il programma energetico sia nella sua fase di predisposizione e di impostazione, per garantire una condivisione ampia dei temi e degli obiettivi, sia nella sua fase di implementazione, per garantire un aggiornamento continuo sugli sviluppi, sui risultati conseguiti e sugli eventuali ostacoli incontrati.

La redazione del documento di pianificazione energetica: approccio metodologico e fasi di sviluppo

L'approccio metodologico per lo sviluppo di un Piano Energetico Comunale o di un PAES e gli obiettivi specifici da raggiungere possono essere sintetizzati attraverso i punti di seguito descritti:

- ▶ Analisi del sistema energetico locale e ricostruzione dell'Inventario Base delle Emissioni di CO₂;
- ▶ Valutazione dei potenziali di intervento a scala locale sul lato domanda e offerta di energia, attraverso la ricostruzione dei possibili scenari di evoluzione del sistema energetico;
- ▶ Pianificazione e programmazione della strategia d'intervento a scala locale:
 - Individuazione degli ambiti prioritari di intervento e dei corrispondenti obiettivi quantitativi di efficientamento;
 - Selezione delle linee strategiche di intervento atte a conseguire gli obiettivi delineati e definizione delle azioni da intraprendere con diversi livelli di priorità;
 - Definizione degli strumenti necessari per la realizzazione e la diffusione delle azioni selezionate (strumenti di programmazione e controllo, d'incentivazione e supporto finanziario, di gestione e verifica, ecc.);
 - Definizione del Piano d'Azione (*Roadmap*).
- ▶ Progettazione del sistema di monitoraggio della strategia d'intervento.

La prima fase del programma di lavoro per la predisposizione del documento di pianificazione energetica riguarda, pertanto, l'analisi del sistema energetico locale.

Tale analisi rappresenta uno strumento di supporto operativo per la pianificazione energetica comunale, non limitandosi a "fotografare" la situazione energetica attuale, ma fornendo strumenti analitici e interpretativi della stessa, della sua evoluzione storica, della sua configurazione a livello territoriale e settoriale. Da ciò deriva la possibilità di individuare opportunamente le azioni e le iniziative finalizzate all'incremento della sostenibilità del sistema energetico nel suo complesso. Essa permette, infatti, di:

- ▶ valutare il livello di efficienza energetica;
- ▶ evidenziare le tendenze in atto e supportare previsioni di breve e medio termine;
- ▶ individuare i settori di intervento strategici.

L'approccio metodologico per l'analisi suddetta può essere sinteticamente riassunto nei punti seguenti:

- ▶ analisi del contesto territoriale e socio-economico;
- ▶ ricostruzione del bilancio energetico e analisi dell'offerta locale di energia;
- ▶ ricostruzione dell'inventario delle emissioni di gas serra.

La seconda fase di attività riguarda l'**analisi del potenziale di riduzione dei consumi energetici finali nei diversi settori di attività e del potenziale di incremento della produzione locale di energia da fonti rinnovabili** o altre fonti a basso impatto.

Tale analisi, partendo dalle indagini svolte sul sistema energetico comunale e sulle tendenze in atto al suo interno, deve portare alla quantificazione dei margini di intervento di una politica locale, sia sul lato domanda sia sul lato offerta di energia e permettere successivamente di individuare gli elementi prioritari sui quali impostare la strategia di Piano. Inizialmente vengono ricostruiti i possibili **scenari di evoluzione** del sistema energetico locale all'orizzonte temporale definito per il Piano stesso; questi scenari tengono conto dell'individuazione e della valutazione di iniziative progettuali di carattere energetico eventualmente già proposte, o in via di definizione anche da parte di soggetti privati.

Tali iniziative vengono analizzate per due motivi:

- ▶ nella ricostruzione degli scenari è così possibile fare riferimento a tendenze già in atto e valutarne l'effetto nel contesto territoriale complessivo;
- ▶ è possibile valutare la loro ripetibilità in altri ambiti e contesti oppure valutare eventuali margini di miglioramento.

Partendo dai risultati dell'analisi dell'evoluzione tendenziale del sistema energetico (scenario in cui si presuppone che non vengano messe in atto particolari azioni in grado di variare in modo significativo lo scenario energetico, ipotizzando che l'evoluzione del sistema avvenga secondo meccanismi definiti dalle tendenze socio-economiche e di mercato e da eventuali normative sovraordinate) e riprendendo quanto sviluppato nelle analisi settoriali di dettaglio, vengono valutati i margini di efficientamento energetico con l'obiettivo di definire, per ogni settore e ambito, una "classifica" di azioni in base al miglior rapporto costi/benefici energetici e ambientali, dalla quale selezionare le priorità di intervento che vanno a costituire la strategia di Piano.

Si passa quindi alla terza fase che consiste nella pianificazione e programmazione della strategia d'intervento a scala locale e che prevede lo sviluppo di un'analisi finalizzata

2.2 La pianificazione energetica a scala comunale e intercomunale e il ruolo degli amministratori: lo sviluppo di una strategia locale

a delineare **lo scenario obiettivo del Piano**. Tale scenario individua gli obiettivi di incremento della produzione da fonti rinnovabili, di riduzione dei consumi finali e delle emissioni di gas serra all'orizzonte temporale definito e le linee strategiche di intervento atte a conseguirli. La strategia di Piano delineata si deve basare su specifiche direttrici di sviluppo delle diverse azioni e degli strumenti correlati, in grado di coprire tutti i principali settori di attività (pubblici e privati) in cui l'autorità locale può giocare un ruolo concreto e specifico di pianificazione, promozione, controllo, incentivo o sui quali ha la possibilità diretta di intervento.

Definita e pianificata la strategia energetica, essa deve essere opportunamente programmata attraverso la predisposizione di un Piano di Azione (*Roadmap* del processo di pianificazione) nel quale ogni azione e/o strumento viene analizzata nel dettaglio e le principali caratteristiche riassunte in una scheda.

La somma delle riduzioni di consumi ed emissioni di gas climalteranti annettibili a ogni singola azione definisce quantitativamente gli obiettivi del Piano all'obiettivo temporale di riferimento a diversi intervalli temporali.

Le direttrici di sviluppo della strategia

L'obiettivo generale che una strategia di Piano deve porsi è quello di superare l'approccio caratterizzato da azioni sporadiche e scoordinate, per quanto meritevoli, e di passare a una fase di sistematizzazione di alcune azioni. Ciò discende dalla consapevolezza che l'evoluzione del sistema energetico comunale verso livelli sempre più elevati di consumo ed emissione di sostanze climalteranti, non può essere fermata se non introducendo degli ampi livelli di intervento che coinvolgano in modo integrato il maggior numero di attori e di tecnologie possibili.

La selezione e la pianificazione delle azioni non possono quindi prescindere anche dall'individuazione e dalla definizione di opportuni **strumenti di attuazione** delle stesse, in grado di garantirne una reale implementazione e diffusione sul territorio.

In relazione a tale obiettivo generale, la definizione della strategia di Piano deve, quindi, basarsi su specifiche direttrici di sviluppo delle diverse azioni e degli strumenti correlati, identificabili con i **diversi ruoli che un'Amministrazione comunale può giocare in campo energetico**.

Si possono, nello specifico, identificare **tre direttrici** principali, di seguito descritte che individuano l'Ente Locale come:



Proprietario e gestore di un patrimonio

Prima di tutto la strategia di Piano dovrà affrontare il tema del patrimonio pubblico (edilizia, illuminazione, veicoli) e del miglioramento delle sue performance energetiche e della sua gestione.

Benché, dal punto di vista energetico, il patrimonio pubblico incida relativamente poco sul bilancio complessivo di un Comune (in media non più del 5%), l'attivazione di interventi di efficientamento su di esso può risultare un'azione estremamente efficace nell'ambito di una strategia energetica a scala locale. Essa infatti consente di raggiungere diversi obiettivi, quali:

- ▶ il miglioramento della qualità energetica del patrimonio pubblico, con significative ricadute anche in termini di risparmio economico, in grado di creare indotti che potranno essere opportunamente reinvestiti in azioni e iniziative a favore del territorio;
- ▶ la promozione degli interventi anche in altri settori socio-economici e tra gli utenti privati;
- ▶ l'incremento dell'attrattività del territorio attraverso la valorizzazione e il miglioramento della sua immagine.

In parallelo all'individuazione mirata delle azioni prioritarie per ridurre i consumi, saranno successivamente analizzate le modalità di gestione innovative in grado di garantire il necessario supporto finanziario per l'esecuzione degli interventi (ad esempio, attraverso Energy Performance Contract), anche in considerazione delle scarse risorse spesso a disposizione degli enti pubblici locali.

Pianificatore, programmatore, regolatore del territorio e delle attività che insistono su di esso

Il piano rappresenta uno strumento indispensabile nella riqualificazione del territorio, legandosi direttamente al conseguimento degli obiettivi di contenimento e riduzione delle emissioni in atmosfera (in particolare dei gas climateranti), di miglioramento dell'efficienza energetica, di riduzione dei consumi energetici e di minor dipendenza energetica. Esso è dunque uno strumento attraverso il quale l'amministrazione può predisporre un progetto complessivo di sviluppo dell'intero sistema energetico, coerente con lo sviluppo socio-economico e produttivo del suo territorio e con le sue principali variabili ambientali ed ecologiche.



Ciò comporta la necessità di una sempre maggiore correlazione e interazione tra la pianificazione energetica e i documenti di programmazione, pianificazione o regolamentazione urbanistica, territoriale e di settore di cui il Comune già dispone. Risulta quindi indispensabile una rilettura di tali documenti alla luce degli obiettivi del Piano, indagando le modalità con cui trasformare le indicazioni in esso contenute in norme e/o indicazioni.

La strategia di Piano dovrà quindi prendere in considerazione le azioni inerenti i settori sui quali il Comune esercita un'attività di regolamentazione, come il settore edilizio privato e la mobilità, proponendo l'integrazione degli obiettivi di sostenibilità energetica all'interno dei suddetti strumenti. Tra questi, gli strumenti urbanistici appaiono quelli con le maggiori potenzialità ed efficacia di integrazione e i maggiori sforzi andranno indirizzati a rendere coerenti ed integrati gli obiettivi e le previsioni delle diverse pianificazioni.

Promotore, coordinatore e partner di iniziative sul territorio

Molte azioni sono difficilmente gestibili dalla sola pubblica amministrazione attraverso gli strumenti di cui normalmente dispone: la loro promozione deve avvenire, dunque, mediante uno sforzo congiunto da parte di più soggetti. E' evidente, in particolare, l'importanza di determinare come i costi economici delle azioni in campo energetico possano essere distribuiti su diversi attori ed operatori sia pubblici che privati.

L'**azione partecipata** è uno degli strumenti di programmazione che attualmente viene considerato tra i mezzi più efficaci, a disposizione di una Amministrazione Pubblica, per avviare iniziative nel settore energetico.

Un programma di campagne coordinate può rappresentare un'importante opportunità di innovazione per le imprese e per il mercato, può essere la sede per la promozione di nuove forme di partnership nell'elaborazione di progetti operativi o per la sponsorizzazione di vari programmi di intervento.

Un coinvolgimento esteso di soggetti in grado di creare le condizioni di fattibilità tecnico-economica di interventi in campo energetico può fornire le condizioni necessarie per svincolare la loro realizzazione dalla dipendenza dalle risorse pubbliche e per garantirne una diffusione su ampia scala.



2.2 La pianificazione energetica a scala comunale e intercomunale e il ruolo degli amministratori: lo sviluppo di una strategia locale

Nell'ambito del Piano andranno pertanto indagate e delineate, per i diversi ambiti di intervento selezionati, le possibilità per il Comune di porsi come referente per la promozione di **tavoli di lavoro** e/o **accordi di programma** con i soggetti pubblici o privati che, direttamente o indirettamente e a vari livelli, partecipano alla gestione dell'energia sul territorio. Inoltre, andranno analizzate le modalità di costruzione di partnership operative pubblico-private, finalizzate all'attivazione di **meccanismi finanziari innovativi** in grado anche di valorizzare risorse e professionalità tecniche locali come, ad esempio:

- ▶ creazione di gruppi di acquisto;
- ▶ collegamento con istituti di credito per l'apertura di canali di prestiti agevolati agli utenti finali;
- ▶ creazione di meccanismi di azionariato diffuso;
- ▶ collaborazioni con ESCO.

A seguito della definizione delle linee strategiche d'azione, degli obiettivi e degli strumenti di attuazione, vengono identificate le azioni prioritarie che il Comune intende perseguire nel breve periodo e viene definito il **Piano d'Azione (Road-map)** che consentirà di dare concretezza alla strategia del Piano.

Lo sviluppo di una strategia locale: strumenti d'attuazione

Rafforzamento delle competenze energetiche all'interno dell'amministrazione

Un coerente e organico sviluppo del Piano richiede, in parallelo, la progettazione e la realizzazione di momenti formativi volti a creare e a rafforzare le competenze in ambito energetico dei funzionari e del personale tecnico interno alle Amministrazioni.

Tali attività di formazione dovranno essere finalizzate ad approfondire:

- ▶ il tema dell'energia nell'ambito delle principali politiche, norme e regolamenti comunitari, nazionali e regionali;
- ▶ i possibili interventi per l'incremento dell'efficienza energetica negli usi finali e l'impiego di risorse energetiche a più basso impatto ambientale;
- ▶ i principali strumenti e strategie di gestione, controllo, incentivo e supporto finanziario in grado di garantire la realizzazione e la diffusione di interventi di razionalizzazione energetica.

La formazione sulle tematiche energetiche potrà quindi strutturarsi anche come un processo di accompagnamento allo sviluppo del Piano: in tal senso, gli argomenti trattati nell'attività formativa dovranno fare riferimento, per quanto possibile, alle fasi di sviluppo del Piano stesso.

Programmi di gestione efficiente dell'energia nel patrimonio pubblico

Dal momento che l'esigenza dell'Amministrazione comunale di ridurre i costi economici ed energetici del proprio patrimonio è spesso ostacolata da una limitata conoscenza delle prestazioni dello stesso, la strategia finalizzata ad ottimizzare la gestione energetica dovrà prevedere l'attivazione di specifici strumenti finalizzati a:

- ▶ strutturare e implementare un programma di gestione e riqualificazione "a lungo termine", basato su priorità di intervento individuate attraverso attività di analisi e diagnosi energetiche preliminari;
- ▶ attivare specifici meccanismi finanziari per la realizzazione degli interventi, anche basati su partnership operative pubblico-private.

Per quanto riguarda gli **edifici di proprietà**, l'azione del Comune dovrà, prioritariamente, svilupparsi lungo due direttrici consequenziali e prevedere la realizzazione di:

- ▶ un sistema dinamico di censimento e monitoraggio;
- ▶ campagne di audit energetici.

Risulta innanzitutto necessaria l'organizzazione di dati e informazioni spesso disaggregati e suddivisi tra i diversi settori dell'Amministrazione, secondo criteri ben strutturati di analisi su ampia scala ed un sistema di raccolta in un sistema unitario e di facile lettura. Ciò si traduce nella realizzazione di una **banca dati degli edifici** che consentirà di:

- ▶ sistematizzare dati e informazioni relative alle principali caratteristiche strutturali e impiantistiche degli edifici;
- ▶ evidenziare l'andamento dei consumi energetici registrati di ogni fabbricato;
- ▶ stimare il fabbisogno energetico teorico dell'intero parco edilizio e di ogni singolo edificio (dopo averne dettagliato il più possibile le caratteristiche);
- ▶ individuare le "criticità" nelle prestazioni energetiche degli edifici attraverso l'introduzione di indici della qualità energetico-prestazionale;
- ▶ monitorare le prestazioni energetiche degli edifici a valle di interventi di riqualificazione.

Il risultato di questa procedura potrà portare ad una graduatoria sulla qualità energetica degli edifici (che tenga conto anche delle modalità di utilizzo), permettendo quindi di individuare ipotesi prioritarie di riqualificazione del parco edilizio, sia in termini di involucro che di impianti.

Per la definizione di parametri in grado di definire ipotesi di intervento corredate da analisi costi-benefici, si rendono necessarie analisi più approfondite da realizzarsi attraverso **diagnosi energetiche**.

La diagnosi energetica, partendo dai dati reali sul consumo di energia, attraverso un'analisi energetica ed economica, è in grado di valutare e "classificare" i possibili e necessari interventi di riqualificazione energetica.

Per quanto riguarda l'**illuminazione pubblica**, l'analisi energetica a scala urbana si dovrà basare su una descrizione delle caratteristiche salienti degli apparati di illuminazione e della loro distribuzione sul territorio.

Dai dati ottenuti il Comune potrà procedere alla redazione del **Piano Comunale dell'Illuminazione Pubblica**, ovvero un complesso di criteri e disposizioni tecnico-procedurali destinati a regolamentare e razionalizzare gli interventi di modifica o estensione degli impianti. In tal modo sarà possibile costruire un modello di ottimizzazione del sistema di Illuminazione Pubblica in grado di garantire risparmio ed efficienza energetica a parità di servizio reso. I principali obiettivi del Piano dovranno, quindi, comprendere necessariamente diversi livelli: ambientale, della sicurezza, energetico, estetico. Per quanto riguarda il livello energetico, in particolare, il Piano dovrà fissare obiettivi di risparmio ed efficienza energetica a parità di servizio reso, eliminando gli sprechi, rimodulando gli orari del servizio, riducendo le potenze impegnate e razionalizzando la gestione.

Il percorso delineato, rende necessario individuare e definire anche i possibili **strumenti di supporto economico** e le modalità di esecuzione degli interventi, anche in considerazione della necessità di ottimizzazione economica delle risorse finanziarie a disposizione dell'Ente Pubblico.

In tale contesto l'Amministrazione dovrà riconoscere come prioritaria la necessità di definire **capitolati d'appalto** legati alla gestione di interventi di efficientamento del proprio patrimonio e, in particolare, valutare la possibilità di avvalersi di finanziamenti, gruppi d'acquisto o di definire **contratti di rendimento energetico** con le stesse società gestrici degli edifici o del sistema di illuminazione pubblica piuttosto che con ESCO, che potranno trovare in questo progetto un elevato interesse ai fini della maturazione di titoli di efficienza energetica.

Integrazione di criteri di efficienza energetica negli strumenti di programmazione e pianificazione urbanistica ed edilizia

Una strategia energetica complessiva relativa al settore residenziale deve prevedere la definizione e l'attivazione di specifici strumenti per la promozione, l'incentivazione e la regolamentazione di programmi di intervento volti a:

- ▶ ottimizzare le prestazioni energetiche e ambientali dell'edificato e dell'ambiente costruito;
- ▶ diffondere prassi costruttive finalizzate alla realizzazione di edifici "a energia quasi zero";
- ▶ migliorare l'efficienza energetica del sistema edificio-impianti;
- ▶ utilizzare fonti rinnovabili di energia per la copertura dei fabbisogni termici ed elettrici degli edifici;
- ▶ diffondere prassi comportamentali per un corretto uso di impianti e tecnologie e per la riduzione degli sprechi.

La qualità degli interventi, il grado di diffusione sul territorio, la cogenza di alcuni requisiti, la costruzione di meccanismi finanziari dedicati ad azioni per il risparmio di energia sono tra i principali strumenti operativi che permetteranno la riduzione del fabbisogno energetico e delle emissioni nel comparto residenziale comunale.

Uno dei punti fondamentali per un'Amministrazione locale è quello di elaborare, acquisire o implementare strumenti e metodi per la progettazione, la guida e il controllo delle strategie di intervento per il risparmio energetico nel settore edilizio.

Tra gli strumenti di maggiore efficacia si pone, in particolare, l'**integrazione** nell'apparato normativo, di riferimento per la pianificazione urbanistica ed edilizia (Piano Urbanistico Generale, Regolamento Edilizio, norme tecniche di attuazione, norme speciali per i piani specifici a bassa scala), di **norme relative ai criteri costruttivi e/o di riqualificazione in grado di garantire il contenimento del fabbisogno energetico negli edifici e il raggiungimento di opportuni standard di efficienza**. Si tratta, infatti, di norme che protraggono il loro effetto sul lungo periodo, che comprende tutto il ciclo di vita del manufatto edilizio, sia in caso di nuova costruzione, sia di ristrutturazione edilizia.

Sarà, dunque, importante valutare l'opportunità di definire e introdurre nel **Regolamento Edilizio**, attraverso la redazione di un Allegato Energetico, prescrizioni e livelli prestazionali minimi cogenti di qualità energetica più stringenti rispetto a quanto definito dalla normativa vigente. Tali requisiti andranno riferiti sia agli edifici di nuova costruzione, che agli edifici esistenti sottoposti a ristrutturazione edilizia o ad attività di

2.2 La pianificazione energetica a scala comunale e intercomunale e il ruolo degli amministratori: lo sviluppo di una strategia locale

manutenzione ordinaria e straordinaria e terranno conto, in coerenza con le normative sovra-ordinate, delle condizioni locali e climatiche esterne, e dell'efficacia sotto il profilo tecnico-economico anche in considerazione dei meccanismi di incentivazione vigenti a livello nazionale e/o regionale (ad esempio i sistemi di detrazione fiscale o i meccanismi di incentivazione costituiti dal Conto Energia Termico).

L'obiettivo dell'adozione di requisiti vincolanti più forti è quello di garantire un maggiore risparmio energetico in fase di gestione e un più rapido rientro economico legato a interventi di efficientamento energetico dei fabbricati, garantendo la possibilità di realizzare interventi di riqualificazione energetica con il massimo livello tecnologico raggiungibile nel momento in cui l'intervento viene realizzato. Al fine di poter monitorare l'attività edilizia sul territorio e controllare l'effettivo raggiungimento dei livelli prestazionali assunti a livello normativo e di pianificazione risulterà opportuno adottare una specifica **procedura di registrazione e catalogazione degli interventi edilizi**.

Iniziative di concertazione e consultazione

Per la definizione degli obiettivi di politica energetica e l'individuazione delle linee strategiche di intervento, un'Amministrazione locale non può prescindere dal **coinvolgimento dei diversi soggetti che a vario titolo e a diversi livelli risultano coinvolti o coinvolgibili nella gestione dell'energia sul territorio**, in modo da informare e, nello stesso tempo, ricevere indicazioni che consentano di capire qual è il modo più opportuno ed efficace di procedere a livello locale. Andrà quindi realizzata un'attività di consultazione e concertazione attraverso l'organizzazione di **tavoli di lavoro tematici** relativi ai settori e/o ambiti di intervento ritenuti prioritari che saranno coordinati e gestiti anche attraverso tecniche di progettazione partecipata.

In generale, il programma di ogni incontro dovrà prevedere l'attivazione di un tavolo di discussione e confronto con i partecipanti al fine di:

- ▶ analizzare e discutere i possibili o necessari interventi/azioni di riqualificazione e/o efficientamento energetico del territorio;
- ▶ condividere informazioni relative ai principali aspetti qualitativi e quantitativi delle tendenze in atto sul territorio in campo energetico e raccogliere indicazioni e considerazioni su criticità, ostacoli ed opportunità relativi alla realizzazione di interventi;

- ▶ condividere i possibili strumenti (di gestione, controllo, programmazione, incentivazione o supporto finanziario, di informazione e sensibilizzazione) necessari per una concreta diffusione degli interventi in campo energetico, individuandone gli attori chiave e valutandone le possibilità e/o difficoltà di attivazione sul territorio.

In generale, i diversi soggetti che potranno essere coinvolti in questo contesto sono riconducibili ai seguenti ambiti:

- ▶ associazioni professionali;
- ▶ attori della realtà economica e sociale del territorio;
- ▶ associazioni di categoria;
- ▶ operatori energetici;
- ▶ cittadini.

Modelli finanziari "cooperativi"

Una efficace strategia energetica locale deve prendere in considerazione azioni e iniziative in grado di attivare **filiera integrale** con l'economia locale, l'ambiente e il territorio, individuando al contempo i possibili strumenti e meccanismi di leva finanziaria in grado di garantirne la sostenibilità complessiva sul lungo termine.

Sarà, dunque, importante verificare le eventuali modalità di costruzione di partnership operative pubblico-private, finalizzate all'attivazione di meccanismi finanziari innovativi in grado anche di valorizzare risorse e professionalità tecniche locali, quali ad esempio:

- ▶ gruppi di acquisto per impianti, apparecchiature, tecnologie, interventi di consulenza tecnica attraverso accordi con produttori, rivenditori o installatori, professionisti;
- ▶ meccanismi di azionariato diffuso per il finanziamento di impianti.

Per lo sviluppo di queste iniziative è importante che vi sia un apparato legislativo adeguato, eventuali coperture di garanzia, la disponibilità iniziale di fondi di rotazione: risulta quindi centrale il ruolo dell'Ente Pubblico per la loro promozione.

Processi economici concertativi quali i gruppi di acquisto o di azionariato diffuso, in particolare, se affiancati da attori istituzionali e di mercato in grado di garantire solidità e maturità delle tecnologie, permettono la diffusione su ampia scala di tecnologie e sistemi impiantistici efficienti, che altrimenti potrebbero essere guidati da logiche ben più complesse legate a diversi fattori di mercato.

Favorire l'aggregazione di più soggetti in **forme associative**, garantisce un maggior potere contrattuale nei confronti di fornitori di impianti e apparecchiature, fornendo allo stesso tempo una sorta di "affiancamento" nelle scelte di acquisto. Con il contemporaneo coinvolgimento anche di altri attori, quali gli istituti di credito e bancari per il sostegno finanziario e l'amministrazione pubblica locale, si può riuscire a garantire l'ottimizzazione dei risultati in termini di riduzione dei prezzi per unità di prodotto e rapidità e affidabilità nella realizzazione degli interventi. Le aziende e gli istituti di credito ne scaturiscono ricavano, a loro volta, introiti interessanti.

Campagne di formazione, informazione e sensibilizzazione

Oltre agli obblighi di legge, alle prescrizioni o agli strumenti di supporto finanziario, è indispensabile mettere in atto altre iniziative che stimolino l'applicazione diffusa di interventi e tecnologie, evidenziandone le potenzialità. Il primo passo importante è l'organizzazione e la realizzazione di **campagne integrate per informare e sensibilizzare** la domanda e l'offerta, attraverso iniziative di:

- ▶ **marketing sociale** rivolte agli utenti finali sui temi dell'energia, delle fonti rinnovabili, delle tecnologie efficienti, dei meccanismi di sostegno finanziario attivi, delle modalità di risparmio e dell'utilizzo appropriato di apparecchiature e impianti;
- ▶ **formazione specialistica** rivolte a tecnici e professionisti che agiscono come consulenti diretti degli utenti finali e giocano perciò un ruolo chiave per l'avvio del mercato. Le campagne di informazione e formazione potranno avere un carattere multimediale e strutturarsi su due livelli distinti:
 - ▶ un **livello interattivo on-line**, basato sullo sviluppo e l'aggiornamento di una **piattaforma web**;
 - ▶ un **livello interattivo face-to-face**, basato sull'organizzazione di eventi territoriali quali:
 - laboratori didattici nelle scuole (per studenti e/o insegnanti);
 - laboratori per la cittadinanza;
 - seminari di approfondimento tecnico e/o corsi di formazione rivolti a operatori e professionisti locali.

Progettazione del sistema di monitoraggio della strategia energetica

E' fondamentale progettare un processo di monitoraggio del Piano, per:

- ▶ caratterizzare e seguire le dinamiche energetiche del proprio territorio;
- ▶ verificare lo sviluppo della propria strategia energetica e registrare periodicamente i risultati raggiunti;
- ▶ valutare periodicamente l'efficacia effettiva della strategia e prevedere modifiche o integrazioni.

Il monitoraggio del Piano è costituito dalle seguenti tre fasi:

- ▶ verifica dello stato di attuazione delle singole azioni proposte;
- ▶ quantificazione degli effetti delle singole azioni realizzate in termini di riduzione dei consumi energetici e delle emissioni di CO₂;
- ▶ aggiornamento del bilancio energetico e dell'inventario delle emissioni di CO₂.

Tenere monitorata l'attuazione del Piano e aggiornare i dati di bilancio energetico implica la necessità di raccogliere in modo organico e continuativo una notevole quantità di dati. Si profila quindi per l'Amministrazione la necessità di avviare un percorso di interlocuzione, indagine e confronto sul territorio e con il territorio per raccogliere informazioni e indicazioni, sia di tipo quantitativo che qualitativo, circa gli interventi e le iniziative in campo energetico realizzati o in progetto. Parallelamente devono essere attivati canali/fonti informative di livello nazionale o regionale per la fornitura continua delle statistiche di consumo energetico a livello comunale. Le tempistiche per il monitoraggio del Piano devono essere definite in base all'orizzonte temporale di riferimento scelto, alle fasi di sviluppo ipotizzate per le diverse azioni e in base agli obiettivi di medio e lungo termine assunti.

2.3 Innovation Accelerator for materials of Alpine building

TIS Techno Innovation South Tyrol (IT), in cooperation with EURAC European Academy Bolzano/Bozen (IT)

Construction alpine and European projects for the construction market: these are the themes dealt with during the Wake up “Alpine Architecture” organized by the Cluster Construction. The event will also be an opportunity to discuss regional and international research opportunities and to inform professionals on the needs, requirements and certifications necessary to boost construction.

In the afternoon we will continue with the presentation of results Accelerator innovation, the initiative of the Cluster funded by the European project Alpine Space- Alpbc that connects the South Tyrolean companies in the construction industry with professionals and researchers to initiate research projects & development.

At the end of the day there will be a “world café” with the four themes developed by the Innovation Accelerator, the second part of Symposium : the format gives the public the opportunity to participate in several discussions on specific issues that will take place each in a different table; any discussion will be moderated by an experienced technician to a specific theme; each theme will be treated for 20 minutes, giving the participants a chance to participate in multiple threads. A term of respect will take stock of the situation, presenting the results of each table TIS & EURAC bring together researchers and companies to develop product ideas Earthquakes, sanitation, energy efficiency, economy: these are the themes touched by “innovation accelerator” of TIS and EURAC. The initiative, which brings the world of research in enterprise, after three months of operation has led to the development of four concrete project ideas for innovative products or services. Businesses South Tyrolean participants - Röfix, Karl Pichler, Beton Eisack and Tyrol ESCo. - Are already working to develop proposals born in the accelerator of innovation. The twelve scientists who have worked closely with the

companies for two weeks were divided into 4 groups, one for each company; the researchers come from all over Italy and specialize in areas such as architecture, construction engineering and energy efficiency. For Röfix Partschinser, which produces and sells building materials created a plaster for renovations and structural energy in earthquake zones; this product combines two different needs, that so far were met by different products: on one hand the energy rehabilitation of the building secured by a plaster that reduces to the maximum the thermal dispersion, of the other seismic consolidation through the use of special mixtures of materials. The group that worked for Karl Pichler of Bolzano, a company operating in the wood sector, analyzed the energy performance of a multi-layer insulation panel for interior, designed to improve the comfort of the rooms, as it reduces thermal losses the outside and the humidity inside the environments. The team tested the effectiveness of the panel and now the company has a product profile more accurate and detailed market applications. A lightweight concrete with power of thermal insulation was instead the project conceived for the Beton Eisack to Klausen: over traditional outer coats, this product allows you to build buildings with greater design flexibility of building; the product is easily recyclable, and also for the company more profit, since it can produce it themselves without having to rely on external suppliers. The proposal of the Südtirol ESCo., another company participating in the initiative, which makes measures to improve energy taking charge of their cost is: manage energy renovations of schools and other public buildings. The team supporting this company has developed a series of services to simulate scenarios feasibility of a digital platform. The accelerator of innovation - the school of sustainable innovation - is a method developed by EURAC and TIS to facilitate technology transfer and innovation, bringing

research and business. The central theme of 2014-2015 was “practices of sustainability and energy efficiency in buildings subject to renewal”, the product ideas of each working group have been developed on the prescribed schedule for the question of contributions to innovation in the province of Bolzano (Law 14/2006).

Analysis and characterization of new materials for internal insulation with reflective properties:

40% of energy consumption of the European Union are linked to the buildings. To reduce this consumption the Union has issued directives particularly stringent that highlight the need for action on existing buildings for a real impact on national energy consumption. In Italy almost 60% of the housing stock dates from the Second World War, characterized by poor performance in terms of energy. In order to achieve the energy objectives set by the Union, the redevelopment of existing buildings is therefore a critical step. The technological solutions developed to improve the energy performance of the housing, in most cases, have to be applied externally, what often difficult to implement in existing buildings. The package proposed by the company Pichler is instead particularly suitable for application on the interior walls, providing improved energy performance of the housing, the achievement of better living comfort and resolution of problems caused by unbalanced internal moisture management. The aim of this project is the characterization of the physico-technical and sustainability of the proposed package and the creation of a tool that would be of assistance in its use allowing designers to evaluate the effect of the package on the indoor comfort and energy consumption, considering different solutions stratigraphic, climatic conditions and uses. The results of the possible combinations are pre-calculated using a dynamic simulation software.

2) Objectives

Describe the objectives and technical innovation project's general, explaining the motivation behind the project itself.

i. Characterization of the behavior of the proposed package in terms of energy and the effects on indoor comfort.

The proposed package is not configured only as an insulating material capable of reducing the dispersion of heat towards the outside part of the building envelope, but as a system capable of allowing a reduction of en-

ergy consumption through improvement of the conditions of thermal comfort inside. Than the approach that characterizes generally insulating materials, in the case of the proposed package, the reduction of energy consumption is largely based on its ability to significantly change the level of comfort perceived by the occupants. The reduced thickness and the ability to act on the moisture inside and avoid that provide the conditions favorable to the proliferation of mold, makes it particularly suitable for laying on the inner side of the housing. Originally intended as a way to combat the proliferation of mold, property certified by numerous laboratory tests, thanks to a series of interviews conducted following the installation of the system, it was found that the occupants of the apartments where the package had been used, in addition to having completely eliminated the problem of mold and regulation of internal humidity, they have lowered the temperature set-point of the heating system with respect to what set before installation of the package. It is recalled that the temperature actually perceived by the occupants confined inside a room, according to which the environment is perceived as comfortable or less, is the Operating temperature, which depends on both the temperature that the surface temperature of the elements that define the environment. In those circumstances, it can figure out how the system works by reducing heat transfer by radiation between surfaces that delimit the environment, thus resulting in an increase in the surface temperature of the same, thanks to an emissivity smaller than that of the standard building materials, equal to 0.9. A higher temperature of the surfaces that define the environment and its distribution more uniform, can deliver the Operating Temperature of comfort with a lower temperature, resulting in a lower consumption of energy by the plant. As inferred thanks to the empirical measurements must obviously be proved by scientific point of view, by defining a methodology for testing of the material which allows to estimate the thermophysical properties that affect the interior comfort of the occupants and, therefore, on energy saving. In order to achieve this, it is considered necessary:

- ▶ To characterize the properties of thermo-physical properties of materials that make up the system through measures in the laboratory;
- ▶ Monitor the behavior of the system in place in controlled environments;
- ▶ Simulate the behavior of the system through a dynamic simulation software able to assess the conditions of

2.3 Innovation Accelerator for materials of Alpine building

comfort and energy savings achieved through the installation of the system in different conditions (climate, land uses, building systems);

- ▶ Define a characteristic, similar to the thermal conductivity of building materials, making it possible to evaluate the performance of the package by comparing it with similar products on the market;
- Implement a simplified tool for professionals and technicians to assess the performance of the product.

ii Characterization of the package from the point of view of sustainability in order to facilitate the acquisition of new markets

One of the advantages thermal acoustic insulation is to allow to reduce energy consumption determined by the dispersion of opaque vertical walls, with a consequent reduction of energy costs and CO₂ emissions into the environment. In addition, however, the assessment of the energy performance and comfort products, is increasingly in demand by the market attention to the sustainability of materials that are installed in buildings, not only considering what effects they can have on the health of the occupants when installed, but also considering as the product is manufactured in the factory, with which impacts on the environment, and how, at the end of life, the product should be treated. Use, for example, thermal insulation boards with a percentage of recycled content can help to conserve natural resources and reduce impacts from the extraction and processing of raw materials. The conscious use of sustainable products is therefore not only an element of quality but also of efficiency and respect for the environment in which we live. More and more the market demands products of companies that can demonstrate and quantify the impacts that the product has had on the environment during its production and that it will have on human health throughout its life cycle. In order to make the product competitive in the market and make it attractive against the owners and operators who wish to certify their building following a standard of sustainability and seeking products that meet certain requirements, it is appropriate to subject the product to depth analysis that includes at least the following steps:

- ▶ The evaluation of the degree of sustainability in the production of the raw materials that make up the package;
- ▶ evaluation of the content of recycled raw materials;
- ▶ assessing the recyclability at the end of life;
- ▶ quantification of waste generated during production and after the installation;

- ▶ verification of the absence of dangerous substances in the composition of the products and the issue contained in the environment once installed;
- ▶ assessment of the environmental pollution in the different phases of the life cycle through to recycling and re-use of the product.

During the symposium it was showed the results of RCL, SWOT analysis, that Tis have done in the natural stone chain. The market have a difficult for a strength completion by China Market.

Strengths

First of all, there is the presence of an Association, motivated to develop the culture and the market related to natural stone in South Tyrol.

The Association and the persons involved in this topic want to exploit the commercial possibilities granted by this natural source and, at the same time, they want to avoid the loss of skills and ancient competences and also to plan a sustainable exploitation of the environment.

This can be possible why the characteristics of south Tyrolean stones can be easily compared with foreign ones, and locals are equal or better as in structural as in aesthetics skills. Furthermore, exploitation topics can be also compared with foreign conditions (child labour above all in some competitors' region); this topic could have a relevant weight in an area (South Tyrol) that is labelled as green or sustainable.

Moreover, environmental regulations are clearly and deepened defined. Regulations involve not only what is necessary to start exploitation, but also what should be to at the end to sites renaturation. This involve an efficient use of the environment and strategic planning (as made in some European countries, i.e. Germany or Austria).

Weaknesses

To summarize in two words the weaknesses of the system, we can use price and network.

The price is the first great weakness, because quality, regulations, respect of the environment, respect of work make the price increasing three times the price of foreign (we can also read "exotic") products (from India or China, i.e.).

This led to another problem: public customers at the moment address almost totally their buying choices according

to price politics, with low attention to quality or maintenance topics, thus disadvantaging local enterprises. To solve this problem, the resistance to change of public actors should be solved, maybe using “economically advantageous offers” in tendering, that may led to a balance between price and quality (and lower prices in a long term view).

This consideration led to second great weakness of this scope. The lack of a network between enterprises and public actors, the integration with Association or Consortium, a lack of information, this topics let this market laying in the underground.

Opportunities

The opportunities to develop the market have been analysed.

Local products can be monitored and measured to grant high quality, through available documentation and direct monitoring. This aspect it's not so easy to achieve with foreign ones. This also means a chance to increase and diffuse knowledge to public actors, designers, technician, thus permitting a best addressing in design choices, an easy management in building construction, and the development of satellite activities (training, research and so on)

All this aspects can improve local market, but it would be easier if related to a change in public tendering regulations. To promote the use of local resources is required to better balance price and quality of products, for example introducing “maintenance” in tendering and regulations. Has to be noticed that, nowadays, public price lists covers the effective price of local natural stone products.

Maintenance can help to lower long term costs, above all in construction categories that can be solved through the use of local natural stone, i.e. CAT S12A (pedestrian area or islands), that can also be spin off from larger contracts.

As maintenance, other topics can be added to tendering and regulations: technical characteristics (mechanical and endurance), briefness of local chain, guaranties in post-selling, aesthetical coherence, social aspects i.e. against child labour. Aspects useful to increase or grant sustainability of the products and land labelling.

To do that, an Evaluation Net can be developed, rewarding quality, environmental price (not only economic), maintenance.

The weight of this opportunities (plus the strengths) has to be pushed by consortium and associations towards public actors, also to taking advantage of local skills and competences that should be maintained on the territory.

Last but not least, research should shepherd local chain (LCA evaluation, strategic land management, long term planned exploitation), and the CasaClima Nature tool should be integrated with the information provided, towards measured sustainability.

Threats

To avoid the most dangerous threat, higher price confronting foreign products, due to greater dimension of foreign producer (China and India above all), the lack of a local strong network should be faced up. This concerns the effectiveness of consortium actions. From 2011 to present day, a very poor interest can be observed.

This can led to the loss of local skills.

Another great threat to be analysed in deep, according to long term planning, is the environmental management, i.e. in the fields of aesthetical preservation of natural environment, the weight of transports and related pollution, waste management, over-exploitation of territory. The example of Val Susa (Piemonte - Italy) should be analysed and taken as a reference.

There is also another risk, related to long term planning. This planning can be political exploited, so it should be paid attention to different outlooks.

To finish, related to territory management, related to social aspects, related to sustainability labelling, a life style coherence should pursue. Sustainability should be real and measured. Public customers or actors couldn't promote local and buy foreign products.

In detail the output that SMEs, technician and whole participants can have seen.

PRESENT	STRENGTHS	WEAKNESSES	PRESENT
	Presence of an Association, since 3 years, promoting the culture of stone Presence of active Consortium managing the land There's a wide variety of local raw materials, and a wide variety of applications Local skills and competences ▶ There's a will in preventing the loss of local skills The presence of local market grants: ▶ Measurable quality ▶ Short chain (higher economic return for actors) ▶ Less Transport problems Different sectors' development shows that economic return for public investment is higher than investment itself *1 There is already the CE certification for products *2 Local materials can be easily compared to foreign ones *4 ▶ Same process easiness ▶ Same or better mechanical characteristics ▶ Same or better aesthetic characteristics Differentiation in resource finding - A wide number of extraction sites Presence of high quality materials Environmental regulations are clearly and deepened defined ▶ A wide range of docs are necessary ▶ Hydro and geotechnical documentation ▶ Plan of exploitation ▶ Plan of renaturation of sites People involved in territory managements (woods managements, recycling methodologies, responsible choices in buying products....) Efficient use of energy sources Best practices in sustainable productions There's market potential ▶ Possibility of exploration of Fair Trade	There isn't availability of local chains of products Difficult of local actors to change their traditional way-of-doing: ▶ Public customer meets difficult in changing rules and tender docs ▶ Public customer has constrained regulatory choices – This prevent from “strong” technical choices. There's a lack of something pushing in this direction ▶ Private customer follows trends and status symbols Difficult of citizens' to change their usual behaviour Related with rules and tender docs: ▶ Public customer isn't “free to choose” best products ▶ Rules allows only “lower-price” politics and buying ▶ This prevent the use of “economically advantageous offers” that may balance the weight of price and quality Regulations not clearly defined *2: isn't requested by designers or customers There's a lack of nerve from professionals and designers to impose “strong” technical choices Mistrust of local actors *3: resistance from local operators The greatest problem is the COST, higher than foreign products – Public actors play with this. Presence of strong economic agreement already assessed and difficult to ‘change’ for political reasons The second greatest problem is the lack of NETWORK between companies themselves, designers, public customer Local companies: a few small enterprises interested in developing the market, big ones aren't, thanks to their foreign markets ▶ This cause another problem: small companies appears only willing to sell products, losing all the aspects related to land development and management Critical condition of local SMEs and difficulties in changing / improving situation There's a lack of culture and feeling in public customer and designers	

OPPORTUNITIES

1* Possibility to measure the quality. Documentation

Chance to develop deeper information

- ▶ To public actors: best addressing of choices
- ▶ To designers: new design possibilities
- ▶ To technician: easy management in construction

Possibility to create satellite activities (training, supporting, cooperation with research & development sectors...)

To improve local market:

- ▶ Including maintenance in offers and tendering rules and regulations
- ▶ Quality can balance price

Possibility to promote the use of local resources

To be noticed: public price lists cover the effective price of stone products

It's possible to identify categories of constructions that can be easily realized with stone products.

- ▶ i.e. CAT S12A (pedestrian areas or islands); can be spin off from larger contracts *3

*4 Quality can be promoted also in social aspects (i.e. against child labour)

There's a chance to improve land marketing

Local chain development – towards public customers and tendering

- ▶ winning technical characteristics
- ▶ brief local chain
- ▶ guarantees post-selling
- ▶ aesthetical coherence and maintenance

THIS TOPIC SHOULD BE INCLUDED IN TENDERING AND REGULATIONS

Increasing sustainability of production and distribution

Development of an Evaluation Net

rewarding quality

rewarding environmental price (not only economic)

rewarding maintenance

Consortium and associations should auto-promote with public actors *6

Taking advantages of local skills and competences

Keeping local skills and competences on the territory

Foreign European markets are increasing, and including R&D in their fields (LCA evaluation, strategic land management, long term planned exploitation) *7

CASACLIMA Nature as a possible strong tool to be integrated by stone's topic – towards measured sustainability

THREATS

Foreign markets and price politics are the greatest threats (India, China)

Local market too small

The most dangerous threat is the PRICE

Market changed demands

*5 there's the lack of it, actually

There's the lack of a planned development path

- ▶ By a network of local actors

*6 Auto-promotion will help the networking

There's the lack of NETWORK – above all with public actors – No interest

- ▶ From 2011 to present day, a strong stillness can be observed
- ▶ Consortium or association work?

Loss of local skills and competences

Environmental problems due to increasing market:

- ▶ Aesthetical preservation of natural environment
- ▶ Transports
- ▶ Waste management

(Take Val Susa –Piemonte as an example to observe)

Over-exploitation of territory

Predominance of big management companies / lobbies (wasting management or resources extraction)

*7 Political exploitation can be a problem

Life style coherence

- ▶ Public customers or actors can't promote local and buy foreign ones
- ▶ Environmental sustainability should be real

2.3 Innovation Accelerator per prodotti di edilizia Alpina

TIS Techno Innovation South Tyrol (IT), in collaborazione con EURAC European Academy Bolzano/Bozen (IT)

Edilizia Alpina e progetti europei per il mercato delle costruzioni: questi i temi affrontati durante il simposio Wake up "Architettura alpina" organizzato dal Cluster Edilizia. L'evento sarà anche l'occasione per discutere le opportunità di ricerca regionali e internazionali e per informare gli operatori sulle esigenze, i requisiti e le certificazioni necessarie per aumentare la costruzione.

Nel pomeriggio si proseguirà con la presentazione dei risultati dell'innovazione Accelerator, l'iniziativa del Cluster finanziata dal progetto europeo Alpine Space-Alpbc che collega le aziende altoatesine nel settore delle costruzioni con professionisti e ai ricercatori di avviare progetti di ricerca e sviluppo.

Alla fine della giornata ci sarà un "café mondo" con i quattro temi sviluppati dal Innovation Accelerator, la seconda parte del simposio: il formato dà al pubblico la possibilità di partecipare a diverse discussioni su questioni specifiche che si svolgeranno ogni in una tabella diversa; ogni discussione sarà moderata da un tecnico esperto di un tema specifico; ogni tema sarà trattato per 20 minuti, dando ai partecipanti la possibilità di partecipare a più thread. Un termine di rispetto sarà fare il punto della situazione, presentando i risultati di ogni tabella TIS e EURAC riunire ricercatori e alle aziende di sviluppare idee di prodotto Terremoti, servizi igienico-sanitari, l'efficienza energetica, l'economia: sono questi i temi toccati da "innovazione acceleratore" del TIS e EURAC. L'iniziativa, che porta il mondo della ricerca nelle imprese, dopo tre mesi di attività ha portato allo sviluppo di quattro idee progettuali concrete per prodotti o servizi innovativi. Le imprese partecipanti altoatesine - RÖFIX, Karl Pichler, Beton Isarco e Adige ESCo. - Sono già al lavoro per sviluppare proposte nate nell'acceleratore di innovazione.

I dodici scienziati che hanno lavorato a stretto contatto con le aziende per due settimane sono stati divisi in 4 gruppi, uno per ogni azienda; i ricercatori provenienti da tutta Italia

e sono specializzati in settori quali l'architettura, ingegneria edile e l'efficienza energetica.

Per Röfix Parcines, che produce e vende materiali da costruzione hanno creato un intonaco per lavori di ristrutturazione e di energia strutturale nelle zone sismiche; questo prodotto combina due diverse esigenze, che finora erano soddisfatte da prodotti differenti: da un lato la riabilitazione energetica dell'edificio garantito da un intonaco che riduce al massimo la dispersione termica, dall'altra consolidamento sismico attraverso l'utilizzo di speciali miscele di materiali.

Il gruppo che ha lavorato per Karl Pichler di Bolzano, società operante nel settore del legno, ha analizzato la prestazione energetica di un pannello isolante multistrato per interno, progettato per migliorare il comfort delle camere, in quanto riduce le perdite termiche l'esterno e la umidità all'interno degli ambienti. Il team ha testato l'efficacia del pannello e ora l'azienda ha un profilo prodotto altre applicazioni di mercato accurate e dettagliate.

Un calcestruzzo leggero con potere di isolamento termico è stato invece il progetto ideato per la Beton Isarco a Chiavenna: camici tradizionali esterne, questo prodotto permette di costruire edifici con maggiore flessibilità di progettazione di costruzione; il prodotto è facilmente riciclabile, e anche per la società più profitto, dal momento che può produrre da soli, senza dover ricorrere a fornitori esterni.

La proposta della Südtirol ESCo, un'altra società che aderisce all'iniziativa, il che rende le misure volte a migliorare l'assunzione di energia responsabile del loro costo è: Gestire ristrutturazioni energetiche di scuole e altri edifici pubblici. Il team di supporto questa azienda ha sviluppato una serie di servizi per simulare scenari fattibilità di una piattaforma digitale.

L'acceleratore di innovazione - della scuola di innovazione sostenibile - è un metodo sviluppato da EURAC e TIS per facilitare il trasferimento di tecnologia e innovazione,

portando ricerca e imprese. Il tema centrale del 2014-2015 era “pratiche di sostenibilità ed efficienza energetica degli edifici soggetti a rinnovo”, le idee di prodotto di ogni gruppo di lavoro sono stati sviluppati secondo lo schema previsto per la domanda di contributo all'innovazione in provincia di Bolzano (legge 14/2006).

Analisi e caratterizzazione di nuovi materiali per isolamento interno con proprietà riflettenti

Il 40% del consumo energetico dell'Unione Europea è legato agli edifici. Per ridurre questo consumo l'Unione ha emanato direttive particolarmente severe che mettono in risalto la necessità di un'azione su edifici esistenti per un reale impatto sul consumo energetico nazionale. In Italia quasi il 60% delle date di abitazioni immagini dal la seconda guerra mondiale, caratterizzate da scarso rendimento in termini di energia. Al fine di raggiungere gli obiettivi energetici fissati dall'Unione, la riqualificazione degli edifici esistenti è quindi un passo fondamentale. Le soluzioni tecnologiche per migliorare il rendimento energetico del contenitore, in molti casi, devono essere applicato esternamente, cosa spesso difficile da implementare in edifici esistenti. Il pacchetto proposto dalla ditta Pichler è invece particolarmente adatta per l'applicazione sulle pareti interne, fornendo una migliore rendimento energetico della custodia, il raggiungimento della migliore comfort abitativo e la risoluzione dei problemi causati da sbilanciato gestione dell'umidità interna. Lo scopo di questo progetto è la caratterizzazione della sostenibilità fisico-tecnico e del pacchetto proposto e la creazione di uno strumento che coadiuvi nel suo uso consentendo ai progettisti di valutare l'effetto del pacchetto sul comfort ambientale e il consumo di energia, considerando diverse soluzioni, le condizioni e gli usi climatiche stratigrafiche. I risultati delle combinazioni possibili sono pre-calcolato utilizzando un software di simulazione dinamica.

Obiettivi

Descrivere gli obiettivi e tecnica generale del progetto di innovazione, che spiega le motivazioni alla base del progetto stesso.

i. Caratterizzazione del comportamento del pacchetto proposto in termini di energia e gli effetti sul comfort interno.

Il pacchetto proposto non è configurato solo come un ma-

teriale isolante in grado di ridurre la dispersione di calore verso la parte esterna dell'involucro dell'edificio, ma come un sistema in grado di consentire una riduzione del consumo di energia attraverso il miglioramento delle condizioni di comfort termico all'interno. Rispetto all'approccio che caratterizza materiali isolanti generalmente, nel caso del pacchetto proposto, la riduzione del consumo energetico si basa principalmente sulla sua capacità di modificare significativamente il livello di comfort percepito dagli occupanti. Lo spessore ridotto e la capacità di agire sulla umidità all'interno ed evitare che forniscano le condizioni favorevoli alla proliferazione di muffe, lo rende particolarmente adatto per la posa sul lato interno dell'alloggiamento.

Originariamente inteso come un modo per combattere la proliferazione di muffe, struttura certificata da numerosi test di laboratorio, grazie ad una serie di interviste realizzate dopo l'installazione del sistema, si è constatato che gli occupanti degli appartamenti dove era stato utilizzato il pacchetto, in oltre ad aver eliminato completamente i problemi di muffe e regolazione dell'umidità interna, hanno abbassato la temperatura di set-point del sistema di riscaldamento rispetto a quanto impostato prima dell'installazione del pacchetto. Si ricorda che la temperatura effettivamente percepita dagli occupanti confinati all'interno di una stanza, secondo cui l'ambiente è percepito come comodo o meno, è la temperatura di esercizio, che dipende sia la temperatura che la temperatura superficiale degli elementi che definiscono l'ambiente. In tali circostanze, si può capire come funziona il sistema riducendo il trasferimento di calore per irraggiamento tra superfici che delimitano l'ambiente, così determinando un aumento della temperatura della superficie dello stesso, grazie ad una emissività inferiore a quella dei materiali da costruzione standard, pari a 0,9. Una temperatura più elevata delle superfici che definiscono l'ambiente e la sua distribuzione più uniforme, in grado di fornire la temperatura di funzionamento di comfort con una temperatura più bassa, con conseguente minor consumo di energia da parte della pianta. Come si evince grazie alle misurazioni empiriche devono ovviamente essere provate dal punto di vista scientifico, definendo una metodologia per la prova del materiale che permette di valutare le proprietà termofisiche che influiscono sul comfort interno degli occupanti e, quindi, sul risparmio energetico. Per raggiungere questo obiettivo, si ritiene necessario:

- ▶ Per caratterizzare le proprietà di proprietà termofisiche dei materiali che compongono il sistema mediante misure in laboratorio;

2.3 Innovation Accelerator per prodotti di edilizia Alpina

- ▶ Monitorare il comportamento del sistema in luogo in ambienti controllati;
- ▶ Simulare il comportamento del sistema attraverso un software di simulazione dinamica in grado di valutare le condizioni di comfort e risparmio energetico conseguito attraverso l'installazione del sistema in diverse condizioni (clima, usi del suolo, sistemi di costruzione);
- ▶ Definire una caratteristica, simile alla conducibilità termica dei materiali da costruzione, consentendo di valutare le prestazioni del pacchetto confrontandola con prodotti simili sul mercato;
- ▶ Attuare uno strumento semplificato per i professionisti e tecnici per valutare la prestazione del prodotto.
- ▶ La valutazione del grado di sostenibilità nella produzione delle materie prime che compongono il pacchetto;
- ▶ valutazione del contenuto di materie prime riciclate;
- ▶ valutare la riciclabilità a fine vita;
- ▶ quantificazione dei rifiuti generati durante la produzione e dopo l'installazione;
- ▶ verifica dell'assenza di sostanze pericolose nella composizione dei prodotti e la questione contenuto nell'ambiente una volta installato;
- ▶ la valutazione dell'inquinamento ambientale nelle diverse fasi del ciclo di vita al riciclaggio e il riutilizzo del prodotto.

ii. Caratterizzazione del pacchetto dal punto di vista della sostenibilità per facilitare l'acquisizione di nuovi mercati

Uno dei vantaggi di isolamento termoacustico è quello di consentire di ridurre il consumo di energia determinata dalla dispersione delle pareti verticali opache, con una conseguente riduzione dei costi energetici ed emissioni di CO₂ nell'ambiente. Inoltre, tuttavia, la valutazione dei prodotti di rendimento energetico e comfort, è sempre più richiesto dal mercato l'attenzione alla sostenibilità dei materiali che vengono installati negli edifici, non solo considerando quali effetti possono avere sulla salute degli occupanti una volta installato, ma anche considerare come il prodotto è fabbricato in fabbrica, con cui impatto sull'ambiente, e come, alla fine della vita, il prodotto deve essere trattato.

Negli Usa, per esempio, i pannelli isolanti realizzati con una percentuale di materiale riciclato può aiutare a preservare le risorse naturali e ridurre gli impatti derivanti dall'estrazione e lavorazione delle materie prime. L'uso consapevole di prodotti sostenibili è quindi non solo un elemento di qualità, ma anche di efficienza e rispetto per l'ambiente in cui viviamo. Sempre più il mercato richiede prodotti di aziende che possono dimostrare e quantificare gli impatti che il prodotto ha avuto sull'ambiente durante la sua produzione e che essa avrà sulla salute umana tutto il suo ciclo di vita.

Al fine di rendere il prodotto competitivo sul mercato e renderlo attraente contro i proprietari e gli operatori che desiderano certificare il loro edificio a seguito di una serie di sostenibilità e alla ricerca di prodotti che rispondono a determinati requisiti, è opportuno sottoporre il prodotto a un'analisi approfondita che comprende almeno le seguenti operazioni:

Punti di forza

Prima di tutto, vi è la presenza di una Associazione sul territorio (Naturstein), motivata a sviluppare la cultura e il mercato relativo alla pietra naturale in Alto Adige.

L'Associazione e le persone coinvolte in questo argomento vogliono sfruttare le possibilità commerciali concessi da questa fonte naturale e, allo stesso tempo, vogliono evitare la perdita di capacità e competenze antiche e anche per pianificare uno sfruttamento sostenibile dell'ambiente.

Questo può essere possibile perché le caratteristiche di pietre a sud tirolesi possono essere facilmente comparati con quelli stranieri, e gli abitanti sono uguali o meglio come in strutturale come in estetica competenze. Inoltre, gli argomenti di sfruttamento possono essere confrontati con le condizioni di stranieri (lavoro minorile, soprattutto nella regione di alcuni concorrenti); questo argomento potrebbe avere un peso rilevante in un settore (Alto Adige), che viene etichettato come verde o sostenibile.

Inoltre, le normative ambientali sono chiaramente definiti e approfonditi. Regolamento coinvolgono non solo ciò che è necessario per iniziare lo sfruttamento, ma anche quello che dovrebbe essere quello alla fine per siti "ri-naturazione". Ciò comporta un uso efficiente dell'ambiente e la pianificazione strategica (come ha fatto in alcuni paesi europei, vale a dire Germania e Austria).

Punti di debolezza

Per riassumere in due parole i punti deboli del sistema, possiamo usare il prezzo e la rete.

Il prezzo è la prima grande debolezza, perché la qualità, i regolamenti, il rispetto dell'ambiente, il rispetto del lavoro rendono l'aumento del prezzo tre volte il prezzo di stranieri (possiamo anche leggere "esotici"), prodotti (provenienti da India o la Cina, ad esempio).

Ciò ha portato a un altro problema: i clienti pubblici presso l'indirizzo momento quasi del tutto le loro scelte di acquisto in base alla politica dei prezzi, con una bassa attenzione alle tematiche di qualità o di manutenzione, svantaggiando così le imprese locali. Per risolvere questo problema, la resistenza al cambiamento di attori pubblici dovrebbe essere risolto, magari usando "offerte economicamente vantaggiose" in gara, che possono portare ad un equilibrio tra prezzo e qualità (e prezzi più bassi in una visione a lungo termine).

Questa considerazione ha portato alla seconda grande debolezza di questo ambito. La mancanza di una rete tra le imprese e gli attori pubblici, l'integrazione con associazione o consorzio, la mancanza di informazioni, questi temi lasciate che questo mercato, che nel sottosuolo.

Opportunità

Sono state analizzate le opportunità per sviluppare il mercato. I prodotti locali possono essere monitorati e misurati per garantire alta qualità, attraverso la documentazione disponibile e il monitoraggio diretto. Questo aspetto non è così facile da raggiungere con quelli stranieri. Questo significa anche la possibilità di aumentare e diffondere la conoscenza di soggetti pubblici, progettisti, tecnici, permettendo così un migliore indirizzamento nelle scelte progettuali, la gestione semplice nella costruzione di edifici, e lo sviluppo delle attività satellitari (formazione, ricerca e così via)

Tutti questi aspetti possono migliorare mercato locale, ma sarebbe più facile se relative a un cambiamento della normativa di appalti pubblici. Per promuovere l'uso delle risorse locali è necessario per una migliore prezzo equilibrio e qualità dei prodotti, ad esempio l'introduzione di "manutenzione" in gara e regolamenti. Deve essere notato che, al giorno d'oggi, listini prezzi pubblici copre il prezzo effettivo dei prodotti in pietra naturale locale.

La manutenzione può aiutare a ridurre i costi a lungo termine, soprattutto in categorie di costruzione che può essere risolto attraverso l'uso della pietra naturale locale, cioè CAT

S12A (area pedonale o isole), che può anche essere spin off da contratti più grandi. Come manutenzione, altri argomenti possono essere aggiunti alla gara e regolamenti: caratteristiche tecniche (meccaniche e di resistenza), brevità della catena locale, garantisce in post-vendita, la coerenza estetica, aspetti sociali, vale a dire contro il lavoro minorile. Aspetti utili per aumentare o concedere la sostenibilità dei prodotti e l'etichettatura terra. Per fare questo, una Rete di valutazione può essere sviluppato, premiare la qualità, prezzo ambientale (non solo economica), la manutenzione.

Il peso di questo opportunità (più i punti di forza) deve essere spinto da consorzio e associazioni verso soggetti pubblici, anche sfruttando competenze locali e delle competenze che devono essere mantenuti sul territorio.

Ultimo ma non meno importante, la ricerca deve comprendere catena locale (valutazione LCA, gestione strategica territorio, a lungo termine lo sfruttamento programmato), e lo strumento di CasaClima Nature dovrebbe essere integrata con le informazioni fornite, verso la sostenibilità misurata.

Minacce

Per evitare la minaccia più pericolosa, prezzo più elevato confronto prodotti stranieri, a causa della maggiore dimensione di produttore straniero (Cina e India in testa), la mancanza di una rete forte locale deve essere affrontato. Ciò riguarda l'efficacia delle azioni del consorzio. Dal 2011 al oggi, un pessimo interesse può essere osservato.

Questo può portare alla perdita di competenze locali.

Un altro grande minaccia da analizzare in profondità, secondo la pianificazione a lungo termine, è la gestione ambientale, vale a dire nel campo della tutela estetica dell'ambiente naturale, il peso dei trasporti e inquinamento collegate, la gestione dei rifiuti, l'eccessivo sfruttamento del territorio. L'esempio della Val Susa (Piemonte - Italia) dovrebbe essere analizzato e preso come riferimento.

C'è anche un altro rischio, relativi alla pianificazione a lungo termine. Questa pianificazione può essere politica sfruttato, quindi dovrebbe essere fatto attenzione a diverse prospettive. Per finire, relativi alla gestione del territorio, in relazione agli aspetti sociali, in materia di etichettatura di sostenibilità, una coerenza di stile di vita dovrebbe perseguire. La sostenibilità dovrebbe essere reale e misurato. Clienti pubblici o attori non potrebbero promuovere locali e acquistare prodotti stranieri.

Nel dettaglio la produzione che le PMI, tecnico e interi partecipanti possono hanno visto.

PUNTI DI FORZA

- ▶ Presenza di catene produttive locali
- ▶ Utilizzo di materie prime locali
- ▶ Qualifiche e competenze locali
- ▶ Presenza di distretti locali
- ▶ Presenza di distribuzione locale
- ▶ Alto tasso di riciclo / riuso
- ▶ Buon comportamento dei cittadini (COSA SI INTENDE?)
- ▶ Best Practices nelle produzioni sostenibili
- ▶ Attori coinvolti nella gestione del territorio (gestione della risorsa legno, metodologie di riciclaggio, scelte responsabili nell'acquisto di prodotti ...)
- ▶ Uso efficiente delle fonti energetiche
- ▶ Differenziazione nella ricerca delle risorse
- ▶ Presenza attiva di Ordini e Associazioni professionali, coinvolgendo le aziende
- ▶ Presenza attiva di un Consorzio di gestione del territorio (legno)
- ▶ Presenza di settori già sviluppati che utilizzano sottoprodotti
- ▶ Disponibilità di buoni esempi al di fuori
- ▶ Presenza di materiali di alta qualità
- ▶ Ottimizzazione della raccolta dei rifiuti
- ▶ Set di incentivi dedicati
- ▶ ...

PUNTI DEBOLI

- ▶ Assenza di catene locali di prodotti
- ▶ Scarsa disponibilità di materiali locali
- ▶ Mancanza di qualifiche e competenze locali
- ▶ Nessun distretto specifico presente
- ▶ Nessuna evidenza di una riduzione dei costi tramite un approccio di economia lineare (nessuna internalizzazione dei costi esterni)
- ▶ Difficile applicazione di un procedimento efficiente per il riciclaggio dei rifiuti
- ▶ Difficoltà per gli attori locali a cambiare il modo di fare tradizionale
- ▶ Difficoltà per i cittadini a cambiare il comportamento abituale
- ▶ Presenza di forte accordo economico già valutato e difficoltà ad un "cambiamento" per ragioni politiche
- ▶ Nessuna disponibilità di materiali locali con conseguente dipendenza da forniture esterne
- ▶ Scarsa applicazione di cicli di risparmio energetico nella filiera
- ▶ Assenza di una specifica tipologia di produzione per il riutilizzo dei sottoprodotti
- ▶ Nessuna presenza Associazioni Professionali o difficile rapporto con loro
- ▶ Difficoltà di coinvolgimento di cittadini privati, ad es. proprietari, agricoltori, ...
- ▶ Difficoltà a parlare con grandi imprese che si occupano di gestione dei rifiuti
- ▶ Difficile aprire a mentoring esterno (da un approccio "sistema locale/bottom-up" ad un approccio "place-based")
- ▶ Condizione critica delle PMI locali e difficoltà nel cambiare/migliorare
- ▶ Condizioni obsolete dei processi tecnologici disponibili
- ▶ Risultati a lungo termine che scoraggiano gli investimenti
- ▶ Sfiducia degli attori locali
- ▶ Normativa non chiaramente definita

OPPORTUNITÀ

- ▶ Possibilità di migliorare la produzione localmente
- ▶ Possibilità di sviluppare diversi settori produttivi per una singola materia prima
- ▶ Avvantaggiarsi tramite qualifiche e competenze locali
- ▶ Mantenere qualifiche e competenze locali sul territorio
- ▶ Creazione di posti di lavoro
- ▶ Riduzione della estrazione di materie prime
- ▶ Riduzione della produzione di rifiuti e dei costi di gestione
- ▶ Sensibilità locale (cittadini, politici, decisori, ...)
- ▶ Aumento della sostenibilità nella produzione e nella distribuzione
- ▶ Riduzione delle spese per il trasporto
- ▶ Indipendenza da costi esterni
- ▶ Specializzazione delle competenze e condivisione di risorse (distretti)
- ▶ Possibilità di condividere con le regioni confinanti sottoprodotti non utilizzati localmente (distretti sovra-locali)
- ▶ Possibilità di promuovere l'uso delle risorse locali
- ▶ Possibilità di creare attività satellitari (di formazione, di supporto, di cooperazione con i settori di ricerca e sviluppo ...)
- ▶ Innovazione
- ▶ Reale sviluppo locale (approccio place-based)
- ▶ Diminuzione dei costi sociali per lavoratori e cittadini
- ▶ Nuova normativa dedicata

MINACCE

- ▶ Sfruttamento non ragionato delle risorse locali
- ▶ Sfruttamento eccessivo di territorio
- ▶ Prevalenza di grandi società di gestione/lobbies (gestione dei rifiuti o estrazione delle risorse)
- ▶ Nessun vantaggio ai livelli locale e, di conseguenza, insoddisfazione
- ▶ Investimenti non remunerativi
- ▶ Risultati solo a lungo periodo
- ▶ Mutazioni nelle richieste del mercato
- ▶ Mercato locale troppo piccolo
- ▶ Mercato sovra locale molto concorrenziale

3 Involvement and Interfaces as core of Building Culture



3.1 The Participative Symposium: model for knowledge transfer

Research Studios Austria – Studio iSPACE (AT), WKS Salzburg Economic Chamber (AT) and the Chamber of Crafts for Munich and Upper Bavaria (DE)

The first symposium “Focus Alpine Building” is dedicated to four priorities of the construction industry. With a construction volume of around € 1 billion per year, the construction industry is an important value creation and one of the largest economic activities in Salzburg. Specific challenges such as extreme weather conditions, different altitudes or - mountain conditions - lack of space are preparing the ground for extraordinary expertise in the construction in Austria. To exchange views within the sector and with scientific institutions, launched on October 2, 2014 at the Fachhochschule Salzburg in Urstein the first symposium “Focus Alpine Building”. At the start the former EU Agriculture Commissioner Franz Fischler, President of the European Forum Alpbach, and Doris Österreichischer from the Austrian Institute of Technology (AIT) talked about the future of the Alpine region and sustainable building solutions. The afternoon is dedicated to four sub-fields that could be visited by the participants of choice: Tourism and construction, high-tech versus low-tech, redensification and hybrid buildings.

Tourism and construction

Tourism, one of the main pillars of Salzburg's economy is related in many ways to the subject of building. “Touristic establishments must always be up to date, so that they stay competitive. It also economy is important, which can be achieved, for example, on energy efficiency and cost-conscious building “, explains Werner Taurer from the Fachhochschule Salzburg.

“The building has to be not only beautiful but also functional, both for the operator as well as for the guest. In addition, the embedding of the building in the village or the surrounding countryside plays a significant role. Because of their designs both the townscape and the accommodation or a tourist attraction could be travel occasion.

This applies not only for - in our view - extraordinary architectural design. Tourists also come with certain expectations how an Alpine region has to look like “ supplemented Taurer. As architecture is perceived by tourists as compared to locals, is also part of an ongoing research project of the University of Applied Sciences. With a pair of glasses, that can track the eye movements (eye tracking), the researchers were able to determine, what attracts and how long the attention. “It is interesting for us to know, what is actually perceived what is seen. If we know the relationship between views and perceptions, concepts for directing visitors, designs of public spaces, etc. can be optimized in terms of tourists and locals, “says Mario Jooss from the FH.

Building and Health

The possibilities of buildings, both in architecture and building materials and interior design go far beyond visual impressions. Approximately 80% of the time people spend in enclosed spaces - at home, at work, at the hotel or in the restaurant. No wonder that structural conditions can both negatively and positively impact on health. Arnulf Hartl from the Paracelsus Medical University Salzburg (PMU) has investigated such effects. The results are already in Hohe Tauern Health and related allergic hotels application. “The reduction of particulate matter alone causes quite a deep breath in the truest sense of the word. For allergy sufferers Hotels also contribute allergenic minimized materials for health”, says Hartl.

But not only allergy sufferers can help to stay in “healthy” buildings. Other symptoms such as stress and burnout, depression or even orthopedic diseases can be positively influenced by health-optimized construction. Because, as Hartl stressed “everything we perceive, see, smell, taste - whether consciously or unconsciously - affects our health.”



Architecture and high-quality materials are used in Ritzenhof in Saalfelden. Man and his “fire of life” is here the focus.

Photo: Ritzenhof – Hotel & Spa am See

Better use of available space

With around 23,000 employees in more than 2,000 companies, primarily in small and medium sized field, is the construction industry in the province of Salzburg one of the largest sectors of the economy. The construction industry achieved in Austria together with the before and after located branches of the construction industry, planners, developers and the construction-related services over one-tenth of the total national economic output.

Redensification instead urban sprawl

Especially in the Alps available and buildable areas are severely limited by the topographical conditions. The gentle handling of the resource “space” therefore has priority. Instead of new open space consumption allow the danger of urban sprawl should be better utilized within existing settlement areas when increasing the density of the space. Places and cities are infrastructure and transport connections most well developed, therefore a redensification makes sense.

The settlement pressure is high: higher life expectancy, more single households and higher demands on their living space create, together with limited space availability major challenges. Policy, planning and executing the business are called upon to find solutions. Because this concerns the whole Alpine region, the project “AlpBC” is engaged (funded by the Alpine Space Programme) with the development of technical and cross-border concepts. Thomas Prinz, operations manager of Studio iSPACE of Research Studios Austria and project partners in AlpBC,

deals in Salzburg with redensification potential: “We analyzed based on zoning plans, analysis of aerial photographs and height information about building new possibilities for use.

It was found that in the province of Salzburg, the potential for use of non-built-up residential or mixed use is very high. We’re talking about more than 900 hectares alone for residential buildings. “ The department for spatial planning of the country Salzburg therefore currently working on an appropriate spatial planning novella.

“The mobilization of dedicated unused land will be a focus of the novella. The landowners have signed with the dedication that they use their land within ten years. There will be in future more stringent penalties for non-compliance. The analysis of aerial photographs provides information about which areas are concerned. But they also help to show other potential uses, rather than dedicate additional new faces,” says department manager Friedrich Mair.

For example, a redensification project is currently planned by the diocese Mattsee a non-profit developer at Tassilo way in the center of Mattsee. Here subsidized rental apartments are being built. Innovation field for the construction industry architect Paul Schweizer deals intensively with the “internal development” of existing space reserves: “In Central Europe from 1930 to 1970 in addition to many single-family settlements and urban multi-storey housing estates have emerged to a high proportion in an open design. Research projects such as the project ‘land profit without extension’ of the research program House-of-Future show, that many places are often not recognized quality change of use- and redensification potentials in itself,” said Mr. Schweizer.

Innovations for the construction industry result, according to the architects of the development of new prefabricated facades as building systems that minimize the intervention in the stock and thus increase the acceptance of residents for construction projects. At the same time as well as shortcomings such as noise- and pollutant emissions are corrected.

When in the construction wood and concrete meet each other

In Salzburg increasingly reality projects with regional materials that provide an active contribution to the energy revolution.

Whether EU directives or national legislation, the requirements for buildings are becoming more stringent. They should be energy efficient or even energy-autonomous, but

3.1 The Participative Symposium: model for knowledge transfer



By analyzing aerial photographs - as here in Mattsee - spaces for redensification can be identified.

Photo: SAGIS

they should also be built mostly with local materials. But can you fulfill these requirements or needs it to new concepts? "You have the requirements and qualities from materials well know in order to use it properly and efficiently", Prof. Alexander Petutschnigg from the Fachhochschule Salzburg is convinced: "It may be that a material would indeed be well suited by the properties, but the cost is so high that it can't be used for economic reasons. Unfortunately, we are often faced with this problem in the construction industry and have to find good, but also affordable approaches."

Material versus cost factor

To find new models for the future, you have to see the bigger picture and leave usual thought patterns, only then you can create something new. So the FH Salzburg has engaged in with bark, a traditional waste product in the timber industry, and could it produce a record that although it has a low thermal conductivity, but at the same time a high heat storage capacity. The material has been used very successfully at the Solar Decathlon, a kind of World Championship for energy-efficient construction. Last year won the

FH Salzburg in cooperation with the Technical University of Vienna, the AIT - Austrian Institute of Technology and the University of FH St. Pölten.

All year round comfort

But in practice, there are now many successful projects that combine the advantages of wood and concrete cleverly. So buildings were built as the climbing center in Saalfelden or the training workshops of agricultural schools in Bruck an der Glocknerstrasse and Klessheim, which are one hundred percent solar heated and built with local materials. But it is no longer just about the heating in buildings. Even in summer the building must be comfortable and there plays a decisive role, the mass of the building materials. Mastermind behind the power engineering concepts is Harald Kuster, one of the pioneers in the field of so-called component or concrete core activation. "Without energy storage no energy revolution will be possible," says Kuster. "If we do not manage to store energy when it is available, and to recall with delays, in any form whatsoever, we will have difficulties with the achievement of the required energy goals."

In the first part of “hybrid structures” after the lectures by Prof. Petutschnigg and energy expert Kuster discuss local experts about the pros and cons of materials and where they think the future of the materials going and where they see the markets of tomorrow.

Afterwards, the participants can experience at the study visit the intelligent combination between wood and concrete itself: The community center and church in Rif is a wooden structure with floorboards and ceilings made of concrete, which are component activated and can be used for solar heating of the building.



A smart combination of wood and concrete: The Church in Rif is largely energy self-sufficient.

Photo: Andrew Phelps

How much technology need building?

New approaches of building deal again with the old: buildings without heating, ventilation and cooling

Last year in Lustenau Vorarlberg the office building “2226” has been completed. This is a so-called low-tech building, that achieved with a minimum of technical units an excellent energy performance. The construction materials for the project: brick. Due to the construction and the architecture a temperature of 22 to 26 degrees is in the building received - therefore the name 2226. Low-tech means the combination of integrated planning, traditional knowledge, historical building technologies, local resources, and above all a minimum of equipment. The advantages of such solution are lower investment and maintenance costs without compromising on comfort for the user. When high-tech approach modern materials and a sophisticated automated building technology be used. The technology allows users individual settings according to their needs. Ideally, this set without any action. The boundary between low-tech and high-tech, however is disappearing.



Last year, the LISI House won the Solar Decathlon, a university competition for sustainable construction.

Photo: www.solardecathlon.at

Student project provided for attention

One of the projects presented at the symposium is the Plus-Energy House LISI. LISI stands for “Living Inspired by Sustainable Innovation” and is a student project of the Vienna University of Technology in cooperation with the FH St. Pölten, the FH Salzburg and the AIT - Austrian Institute of Technology. The technical director of the project, Sabrina Novalin of the Vienna University of Technology, sees as a basic low-tech content to energy-plus standard the passive, solar design that can be seen at LISI not at first sight as such. These include the size and placement of windows, the compact design with the smallest possible outer surfaces and shading elements. More towards the use of high-tech moves the photovoltaic to produce electricity, heat pumps for heating, cooling and hot water or controlled ventilation, which provides heat and moisture exchange between used and fresh air. “There are proven and affordable devices that are even more efficient by clever synergies in the system,” says Novalin. “So no high-tech in terms of new technologies” Additional technology comes with the controller into the game: “All units, so for example, consumer electronics, lighting or temperature control in the home are networked together and can be controlled via tablet. “ At the Solar Decathlon, the university competition for sustainable construction, won the LISI house last year took first place, beating American elite universities like Stanford or Caltech. From October, the house can be seen at the Blue Lagoon in SCS south of Vienna. The world’s highest passive house additional construction is an office building on the Danube Canal opposite the Schwedenplatz in Vienna and was planned by Vasko + Partner Ingenieure (Architecture: Atelier Hayde architects and masons).

3.1 The Participative Symposium: model for knowledge transfer

Whether it is high or low tech, says Christian Steininger, responsible for the building at Vasko + Partner, is a matter of perspective: “For many house owners a ventilation system is already high-tech. However, from the perspective of the passive house experts such investment is necessary standard. “But what is common already in passive technology for smaller buildings, with large office and industrial buildings is still a new approach. In addition to the elaborate planning, says Steininger, it was a major challenge to bring all the parties in the common understanding of a passive house: The technology is not yet available for all routine. Alone for monitoring the measures taken a very extensive monitoring system was used, which consists among other things of about 500 meters for heating, cooling and electrical energy.



The world's highest passive house additional construction is on the Danube Canal in Vienna.

Photo: Franz Ertl

3.1 Fachsymposium: Modell für Wissenstransfer

Research Studios Austria – Studio iSPACE (AT), WKS Wirtschaftskammer Salzburg (AT)
und Handwerkskammer für München und Oberbayern (DE)

Das erste Fachsymposium „Brennpunkt Alpines BAUEN“ widmet sich am vier Schwerpunkten der Bauwirtschaft. Mit einem Bauvolumen von rund 1 Mrd. € im Jahr stellt die Bauwirtschaft eine wichtige Wertschöpfung und einen der größten Wirtschaftszweige in Salzburg dar.

Spezifische Herausforderungen wie Wetterextreme, unterschiedliche Höhenlagen oder – bergbedingt – Platzmangel bereiten in Österreich den Boden für außergewöhnliches Knowhow am Bau. Um sich innerhalb der Branche und mit wissenschaftlichen Einrichtungen auszutauschen, startete am 2. Oktober 2014 an der Fachhochschule Salzburg in Urstein das erste Fachsymposium „Brennpunkt Alpines BAUEN“. Zum Auftakt sprachen der ehemalige EUAgrarkommissar Franz Fischler, Präsident des Europäischen Forums Alpbach, und Doris Österreicher vom Austrian Institute of Technology (AIT) über die Zukunft des Alpenraums und nachhaltige Baulösungen. Der Nachmittag widmet sich vier Teilbereichen, die von den Teilnehmern nach Wahl besucht werden können: Tourismus und Bauen, High-Tech versus LowTech, Nachverdichtung und Hybridbauten. In den kommenden Ausgaben der Salzburger Wirtschaft wird jeweils ein Thema vorgestellt.

Tourismus und Bauen

Der Tourismus, einer der wichtigsten Standbeine der Salzburger Wirtschaft, hängt auf vielfältige Art mit dem Thema Bauen zusammen. „Touristische Betriebe müssen immer auf dem neuesten Stand sein, damit sie wettbewerbsfähig bleiben. Dabei ist aber auch Wirtschaftlichkeit wichtig, die zum Beispiel über Energieeffizienz und kostenbewusstes Bauen erreicht werden kann“, erklärt Werner Taurer von der Fachhochschule Salzburg.

„Das Gebäude muss nicht nur schön, sondern auch funktionell sein, sowohl für den Betreiber als auch für den Gast.

Darüber hinaus spielt die Einbettung der Gebäude in den Ort oder die umliegende Landschaft eine bedeutende Rolle. Denn sowohl das Ortsbild als auch die Unterkunft oder eine touristische Attraktion können wegen ihres Designs Reiseanlass sein. Das gilt aber nicht nur für – aus unserer Sicht – außergewöhnliche architektonische Gestaltung. Touristen kommen auch mit bestimmten Erwartungen, wie eine Alpenregion auszusehen hat“, ergänzt Taurer. Wie Architektur von Touristen im Vergleich mit Einheimischen wahrgenommen wird, ist auch Teil eines aktuellen Forschungsprojekts der FH. Mit einer Brille, die Augenbewegungen verfolgen kann (Eyetracking), können die Forscher feststellen, was wie lange Aufmerksamkeit auf sich zieht. „Interessant ist es für uns zu wissen, was vom Gesehenen wirklich wahrgenommen wird. Wenn wir den Zusammenhang zwischen Blicken und Wahrnehmungen kennen, können Konzepte zur Lenkung von Besuchern, Gestaltungen von öffentlichen Räumen etc. im Sinne von Touristen und Einheimischen optimiert werden“, sagt Mario Jooss von der FH.

Bauen und Gesundheit

Die Möglichkeiten von Gebäuden, sowohl bei Architektur als auch Baumaterial und Innenausstattung, gehen jedoch weit über optische Eindrücke hinaus. Etwa 80% ihrer Zeit verbringen Menschen in geschlossenen Räumen – zuhause, am Arbeitsplatz, im Hotel oder im Restaurant. Kein Wunder also, dass sich bauliche Gegebenheiten sowohl negativ als auch positiv auf die Gesundheit auswirken können. Arnulf Hartl von der Paracelsus Medizinischen Privatuniversität Salzburg (PMU) hat solche Auswirkungen untersucht. Die Ergebnisse finden bereits heute bei Hohe Tauern Health und den dazugehörigen AllergikerHotels Anwendung. „Die Reduktion von Feinstaub allein bewirkt schon ein Aufatmen im wahrsten Sinne des Wortes. Bei den Allergikerhotels

tragen außerdem allergenminimierte Materialien zur Gesundheit bei“, sagt Hartl. Doch nicht nur Allergikern kann der Aufenthalt in „gesunden“ Gebäuden helfen. Auch andere Beschwerden wie Stress und Burnout, Depressionen oder sogar orthopädische Erkrankungen können durch gesundheitsoptimierte Bauweisen positiv beeinflusst werden. Denn, wie Hartl betont, „alles, was wir wahrnehmen, sehen, riechen, schmecken – ob bewusst oder unbewusst – beeinflusst unsere Gesundheit.“



Architektur und hochwertige Materialien kommen beim Ritzenhof in Saalfelden zum Einsatz. Der Mensch und sein „Lebensfeuer“ stehen hier im Mittelpunkt.

Foto: Ritzenhof – Hotel & Spa am See

Vorhandenen Raum besser nutzen

Mit rund 23.000 Beschäftigten in mehr als 2.000 Unternehmen, vorwiegend im kleinen und mittelständischen Bereich, ist das Bauwesen im Bundesland Salzburg einer der größten Wirtschaftszweige. Die Bauwirtschaft erreicht in Österreich zusammen mit den vor- und nachgelagerten Branchen der Bauprodukte Industrie, der Planer und Bauträger sowie der baubezogenen Dienstleistungen gut ein Zehntel der gesamten nationalen Wirtschaftsleistung. Einer der vier wählbaren Schwerpunkte ist das Thema „Nachverdichtung“.

Nachverdichtung statt Zersiedelung

Besonders im Alpenraum sind verfügbare und bebaubare Flächen durch die topografischen Gegebenheiten stark beschränkt. Der schonende Umgang mit der Ressource „Raum“ hat deshalb Priorität. Statt neuen Freiflächenverbrauch mit der Gefahr der Zersiedelung zuzulassen, soll bei der Nachverdichtung der Raum innerhalb von existierenden Siedlungsgebieten besser genutzt werden. Orte und

Städte sind infrastrukturell und verkehrstechnisch meist gut erschlossen, daher ist eine Nachverdichtung sinnvoll.

Der Siedlungsdruck ist hoch: Höhere Lebenserwartung, mehr Singlehaushalte und höhere Ansprüche an die eigene Wohnfläche schaffen zusammen mit begrenzter Raumverfügbarkeit große Herausforderungen. Politik, Planung und die ausführende Wirtschaft sind gleichermaßen gefordert, Lösungen dafür zu finden. Da dies den gesamten Alpenraum betrifft, beschäftigt sich das Projekt „AlpBC“ (gefördert aus dem Programm Alpine Space) mit der Entwicklung von fach- und grenzübergreifenden Konzepten.

Thomas Prinz, operativer Leiter des Studio iSPACE der Research Studios Austria und Projektpartner bei AlpBC, beschäftigt sich in Salzburg mit Nachverdichtungspotenzialen: „Wir haben auf Basis von Flächenwidmungsplänen, Luftbildauswertungen und Höheninformationen über Gebäude neue Nutzungsmöglichkeiten ausgewertet. Es zeigte sich, dass im Land Salzburg das Potenzial für eine Nutzung von nicht bebautem Wohn- oder Mischgebiet sehr hoch ist. Wirsprechen hier von mehr als 900 Hektar allein für den Wohnbau.“ Die Abteilung für Raumplanung des Landes Salzburg arbeitet deshalb derzeit an einer entsprechenden Raumordnungsnovelle.

„Die Mobilisierung von gewidmetem ungenutztem Bauland wird ein Schwerpunkt der Novelle. Die Grundeigentümer haben bei der Widmung unterschrieben, dass sie ihr Bauland innerhalb von zehn Jahren nutzen. Bei Nichteinhaltung wird es in Zukunft strengere Sanktionen geben. Die Luftbildauswertungen liefern die Information, welche Flächen betroffen sind. Aber sie helfen auch weitere Nutzungspotenziale aufzuzeigen, anstatt zusätzlich neue Flächen zu widmen“, sagt Abteilungsleiter Friedrich Mair. Ein Nachverdichtungsprojekt plant derzeit beispielsweise das Stift Mattsee mit einem gemeinnützigen Bauträger am Tassiloweg im Zentrum von Mattsee. Hier werden geförderte Mietwohnungen gebaut. Innovationsfeld für die Bauwirtschaft Architekt Paul Schweizer beschäftigt sich intensiv mit der „Innenentwicklung“ bestehender Raumreserven: „In Mitteleuropa sind von 1930 bis 1970 neben vielen Einfamilienhaus-Siedlungen auch urbane Mehrgeschossige Wohnsiedlungen zu einem hohen Anteil in offener Bauweise entstanden.

Forschungsprojekte wie das Projekt ‚Baulandgewinn ohne Erweiterung‘ des Forschungsprogramms Haus-der-Zukunft zeigen auf, dass viele Orte häufig nicht erkannte hochwertige Umnutzungs- und auch Nachverdichtungspotenziale in sich bergen“, erklärt Schweizer. Innovationen für die Bauwirtschaft ergeben sich laut dem Architekten aus der En-

3.1 Fachsymposium: Modell für Wissenstransfer



Durch die Analyse von Luftaufnahmen können – wie hier in Mattsee – Räume für Nachverdichtung identifiziert werden.

Foto: SAGIS

twicklung von neuen vorgefertigten Fassaden- wie Bausystemen, welche den Eingriff im Bestand minimieren und so die Akzeptanz der Bewohner für Baumaßnahmen erhöhen. Gleichzeitig können so auch Mängel wie z.B. Schall- und Schadstoffimmissionen korrigiert werden.

Wenn beim Bau Holz und Beton aufeinandertreffen

In Salzburg immer öfter Realität: Projekte mit regionalen Materialien, die einen aktiven Beitrag zur Energiewende liefern. Ob EU-Richtlinien oder Landesgesetzgebung, die Anforderungen an Gebäude werden immer strenger. Sie sollen energieeffizient oder sogar schon energieautonom sein, sie sollen aber auch überwiegend mit regionalen Materialien gebaut sein. Doch kann man diesen Anforderungen gerecht werden oder braucht es dazu neue Konzepte? „Man muss die Anforderungen und die Qualitäten von Materialien gut kennen, um sie richtig und effizient einsetzen zu können“, ist Prof. Alexander Petutschnigg von der Fachhochschule Salzburg überzeugt: „So kann es sein, dass ein Material von den Eigenschaften her zwar bestens geeignet wäre, aber die Kosten so hoch sind, dass es aus wirtschaftlichen

Gründen nicht Verwendung finden kann. Vor diesem Problem stehen wir in der Bauwirtschaft leider häufig und müssen dann gute, aber auch leistbare Ansätze finden.“

Material versus Kostenfaktor

Um neue Modelle für die Zukunft zu finden, muss man über den Tellerrand sehen und gewohnte Denkmuster verlassen, nur dann kann Neues entstehen. So hat sich die FH Salzburg z.B. mit Rinde, einem klassischen Abfallprodukt in der Holzwirtschaft, beschäftigt und konnte daraus eine Platte fertigen, die zwar eine geringe Wärmeleitfähigkeit, aber gleichzeitig auch eine hohe Wärmespeicherkapazität aufweist. Eingesetzt wurde das Material schon sehr erfolgreich beim Solar Decathlon, einer Art Weltmeisterschaft für energieeffizientes Bauen. Dabei hat die FH Salzburg gemeinsam mit der Technischen Universität Wien, dem AIT – Austrian Institute of Technology und der FH Sankt Pölten im vergangenen Jahr gewonnen.

Ganzjährige Behaglichkeit

Doch auch in der Praxis gibt es mittlerweile viele erfolgreiche Projekte, die die Vorteile von Holz und Beton geschickt kombinieren. So konnten mit der Kletterhalle in Saalfelden oder mit den Lehrwerkstätten der Landwirtschaftsschulen in Bruck an der Glocknerstraße und Klessheim Gebäude errichtet werden, die zu hundert Prozent solar geheizt werden und mit regionalen Materialien errichtet wurden. Doch geht es bei Gebäuden längst nicht mehr nur um das Heizen. Auch im Sommer müssen Gebäude behaglich sein und da spielt die Masse der Baustoffe eine entscheidende Rolle.

Mastermind hinter den energietechnischen Konzepten ist Harald Kuster, einer der Pioniere im Bereich der Bauteil- oder Betonkernaktivierung. „Ohne Energiespeicher wird keine Energiewende möglich sein“, betont Kuster. „Wenn wir es nicht schaffen, Energie dann, wenn sie zur Verfügung steht, abzuspeichern und sie verzögert, in welcher Form auch immer, wieder abrufen zu können, werden wir uns mit dem Erreichen der geforderten Energieziele schwertun.“ Im Zuge des ersten Teils von „Hybridbauten“ diskutieren nach den Vorträgen von Prof. Petutschnigg und Energieexperte Kuster lokale Experten über Vor- und Nachteile von Materialien und wohin ihrer Meinung nach die Zukunft der Materialien geht und wo sie die Märkte von morgen sehen. Im Anschluss können die Teilnehmer bei der Fachexkursion die intelligente Kombination zwischen Holz und Beton selbst erleben: Das Gemeindezentrum und die Kirche in Rif sind ein Holzbau mit Bodenplatten und Decken aus Beton, die bauteilaktiviert sind und zur solaren Heizung des Gebäudes verwendet werden.



Eine intelligente Kombination von Holz und Beton: Die Kirche in Rif ist weitgehend energieautark.

Foto: Andrew Phelps

Wie viel Technik brauchen Gebäude?

Neue Ansätze des Bauens beschäftigen sich wieder mit Altem: Gebäude ohne Heizung, Lüftung und Kühlung. In Lustenau wurde im vergangenen Jahr das Bürogebäude „2226“ fertiggestellt. Dabei handelt es sich um ein sogenanntes Lowtech-Gebäude, das mit einem Minimum an technischen Einheiten eine ausgezeichnete energetische Performance erzielt. Der Baustoff für das Projekt: Ziegel. Durch die Bauweise und die Architektur wird im Gebäude eine Temperatur von 22 bis 26 Grad erhalten – daher auch der Name 2226. Lowtech bedeutet die Verbindung von integraler Planung, traditionellem Wissen, historischen Bautechnologien, lokalen Ressourcen und vor allem einem Minimum an Technik. Die Vorteile einer derartigen Lösung sind geringere Investitions- und Wartungskosten, ohne dass der Komfort für die Nutzer verloren geht. Beim Hightech-Ansatz werden moderne Materialien und eine ausgeklügelte automatisierte Gebäudetechnik verwendet. Die Technik erlaubt den Nutzern individuelle Einstellungen nach ihren Bedürfnissen. Im Idealfall stellen sich diese ohne ihr Zutun ein. Die Grenze zwischen Lowtech und Hightech ist allerdings verschwindend.



Das LISI-Haus gewann im vergangenen Jahr den Solar Decathlon, einen universitären Wettbewerb für nachhaltiges Bauen.

Foto: www.solardecathlon.at

3.1 Fachsymposium: Modell für Wissenstransfer

Studentenprojekt sorgte für Aufmerksamkeit

Eines der vorgestellten Projekte beim Symposium ist das Plus-Energie-Haus LISI. LISI steht für „Living Inspired by Sustainable Innovation“ und ist ein Studentenprojekt der TU Wien in Kooperation mit der FH St. Pölten, der FH Salzburg und dem AIT – Austrian Institute of Technology. Die technische Leiterin des Projekts, Sabrina Novalin von der TU Wien, sieht als grundlegenden Lowtech-Anteil zum Plus-Energie-Standard das passive, solare Design, das bei LISI nicht auf den ersten Blick als solches erkennbar ist. Dazu gehören zum Beispiel die Größe und Anordnung von Fensterflächen, die kompakte Bauweise mit möglichst kleinen Außenflächen und Verschattungselemente. Eher in Richtung Hightech geht der Einsatz von Photovoltaik zur Stromerzeugung, Wärmepumpen zum Heizen, Kühlen und für Warmwasser oder die kontrollierte Wohnraumlüftung, die für Wärme- und Feuchteausaustausch zwischen verbrauchter und frischer Luft sorgt. „Dabei handelt es sich um ausgereifte und leistbare Geräte, die durch geschickte Synergien im System noch effizienter werden“, sagt Novalin. „Also kein Hightech im Sinne neuartiger Technologien.“ Zusätzliche Technik kommt mit der Steuerung ins Spiel: „Alle Geräte, also z. B. Unterhaltungselektronik, Licht oder Temperaturregelung im Haus sind miteinander vernetzt und können über Tablet gesteuert werden.“ Beim Solar Decathlon, dem universitären Wettbewerb für nachhaltiges Bauen, holte das LISI-Haus im vergangenen Jahr den ersten Platz und schlug damit amerikanische Elite-Unis wie Stanford oder Caltech. Ab Oktober ist das Haus in der Blauen Lagune bei der SCS südlich von Wien zu sehen. Der weltweit höchste Passivhaus-Zubau ist ein Bürogebäude am Donaukanal gegenüber dem Schwedenplatz in Wien und wurde von Vasko+Partner Ingenieure geplant (Architektur: Atelier Hayde Architekten und Architektur Maurer).

Ob es sich um High- oder Lowtech handelt, ist laut Christian Steininger, verantwortlich für den Bereich Gebäudetechnik bei Vasko+Partner, eine Frage des Standpunkts: „Für viele Wohnhausbetreiber ist eine Lüftungsanlage bereits Hightech. Aus der Sicht von Passivhaus-Kennern ist eine solche Anlage jedoch notwendiger Standard.“ Was in Passivtechnologie bei kleineren Gebäuden aber schon längst üblich ist, ist bei großen Büro- und Industriegebäuden noch ein neuer Zugang. Neben der aufwändigen Planung war es laut Steininger eine der größten Herausforderungen, sämtliche beteiligten Unternehmen auf das gemeinsame Verständnis eines Passivhauses zu bringen: Auch die Technik ist noch nicht für alle Routine. Alleine zur Überwachung der gesetzten Maßnahmen wurde ein sehr umfangreiches Monitoring-System eingesetzt, das unter anderem aus etwa 500 Zählern für Wärme, Kälte und elektrische Energie besteht.



Der weltweit höchste PassivhausZubau steht am Donaukanal in Wien.

Foto: Franz Ertl

3.2 Mayors' Interviews: What small municipalities need

EIV Energy Institute Vorarlberg (AT)

Auszug aus der Veröffentlichung "Vorarlberger Vorbilder"

1. Interview: Bürgermeister als Bauherren

Im Gespräch mit den Bürgermeistern der drei Vorbildgebäude wollen wir die Rolle der Bauherren im öffentlichen Bauen, ihre Erlebnisse und Erfahrungen mit den konkreten Projekten und ihre Haltung zum energieeffizienten Bauen diskutieren.

Die meisten Mitbürger sind nur einmal in ihrem Leben Bauherr. Meistens würden sie beim zweiten Mal vieles anders machen. Wir wollen gerne wissen, ob das beim Bauen für Gemeinden ähnlich ist. Wie viele Male waren Sie schon Bauherr für Ihre Gemeinde?

Arnold Hirschbühl, Bürgermeister von Krumbach

Ich bin schon 19 Jahre Bürgermeister und bei Hochbauten wohl zum 5. oder 6. Mal Bauherr. Man ist Bauherr bei Neubauten, aber auch bei einer Generalsanierung. Bauherr ist man als Bürgermeister am laufenden Band: bei Gemeindestraßen, Gehsteig, Straßenbeleuchtung usw., bei Forstwegen und auch bei Wanderwegen. Alle drei bis vier Jahre kommt ein größeres Projekt.

Kilian Tschabrun, Bürgermeister von Zwischenwasser

Da ich erst seit 1. Juli 2013 als Bürgermeister tätig bin, ist noch kein Gebäude unter meiner Leitung entstanden. Ich habe das Projekt Kindergarten Muntlix aber von Anfang an als Vizebürgermeister, Gemeindevertreter, Gemeindevorstand und Mitwirkender bei der Projektgruppe mitgestaltet und mitentschieden.

Helmut Zimmermann, Bürgermeister a.D. von Bürs

Das erste große Projekt für die Gemeinde Bürs war ein So-

zialzentrum, eine Pflegeeinrichtung mit Betreutem Wohnen. Wir hatten ein Altersheim, das in der Jahrhundertwende gebaut wurde und nicht mehr dem Standard entsprach. Es hatte keinen barrierefreien Zugang und war nicht rollstuhlgerecht. Bei diesem Projekt haben wir auch versucht Einrichtungen, wie die Krankenpflege, Betreutes Wohnen und auch eine Kleinkinderspielgruppe in dem Haus unterzubringen. Die nächsten Projekte waren dann im Bereich Sportzentrum. Ein größeres Projekt war natürlich das interkommunale Betriebsgebiet Quadrella. Das ist eigentlich ein Flurname, Quadrella heißt eigentlich Viereck. Es ist entstanden zwischen der Autobahn A14 und der Ill und umfasst die Gemeinden Nüziders, Bludenz und Bürs. Mit der Neuzufahrt von der Autobahn wurden insgesamt 45.000 m² Betriebsgebiet erschlossen. Die Gemeinde Bürs hat hier einen neuen Recycling-Bauhof und ein Biomasseheizwerk gebaut. Alle Betriebe sowie das Pfarrzentrum, das Schulzentrum und das Sozialzentrum mit vier privaten Wohneinheiten wurden an dieses Biomasseheizwerk angeschlossen.

Was haben Sie schon an Erfahrungen als Bauherr mitgebracht? Welche Erfahrungen waren besonders wichtig?

Arnold Hirschbühl

An Erfahrung habe ich mitgebracht, dass der Schlüssel zu einem guten Projekt eine gute Planung ist. Schon seit langer Zeit sparen wir in Krumbach nie bei der Planung und bedienen uns immer guter Architekten. Das ist das ganz, ganz Entscheidende. Hier hat die Öffentliche Hand eine große Verantwortung, weil sie Vorbild geben muss. In der Folge ist es bei uns auch inzwischen so, dass fast jeder einen Architekten beauftragt, der ein Einfamilienhaus baut. Früher war das nicht so. Heute denkt jeder: ich muss dazu passen, ich darf nicht komplett ausscheren.

Kilian Tschabrun

Für mich und für die meisten der Projektgruppe war es sehr wichtig, einen Architektenwettbewerb durchzuführen, damit mehrere Ideen eingeholt werden und eine fachkundige Jury einzusetzen, die dann das beste Projekt auswählen kann. Ich war selbst mit zwei anderen aus unserer Projektgruppe in der Jury, neben den Architekten, als Fachjuroren und natürlich auch den Nutzern, unsere Kindergartenleiterin. Das war ein sehr guter Prozess und es gab bis zuletzt zwei Projekte, die zur Auswahl standen. Und dann hat man sich einstimmig für das jetzt realisierte Projekt entschieden.

Helmut Zimmermann

Wir waren eine der ersten e5 Gemeinden und das war ein großes Thema, weil in diesem e5-Ausschuss nicht nur Gemeinde-Mandatare, sondern auch Fachleute aus der Bevölkerung waren, die sich zur Verfügung gestellt haben. Dadurch wurden neue Themen in die Ausschüsse eingebracht. Vor allem auch zur Unterstützung der Gemeindevertretung, weil der Mandatar eher die politische Seite sieht und der Außenstehende andere Anhaltspunkte einbringt. Diese Impulse sind für die Entscheidungsträger sehr wichtig.

Wie entstand überhaupt der Bedarf, ein neues Gebäude für die Gemeinde zu bauen?

Arnold Hirschbühl

Wir haben über zwanzig Vereine in Krumbach, und die Bedürfnisse aller Vereine wurden erhoben. Was gibt's für räumliche Bedürfnisse? Oft müssen sie ihre Utensilien zu Hause lagern bei den Vereinsfunktionären. Ein paar Dinge haben wir schon gewusst. Wir haben gewusst, dass die Bücherei oder die Bildung vom Keller ans Tageslicht muss. Wir haben gewusst, dass das Musikprobelokal mit mittlerweile vierzig Musikanten und nicht wie früher zwanzig aus dem Keller in eine entsprechende Lokalität muss. Und wir haben auch gewusst, dass wir einen Kommunalraum brauchen. Dieser Raum wurde Pfarrsaal getauft, obwohl die kirchliche Nutzung nur noch einen geringen Teil einnimmt. Aber das Pfarrhaus stand immer an diesem Ort, es ist wichtig in der Zuordnung zur Kirche und wurde darum wieder Pfarrhaus getauft. Der Pfarrsaal wird als Seminarraum der Gemeinde verwendet, als Veranstaltungslokal und auch als Probelokal des Chors, der aus Langeneggern und Krumbachern besteht. Der Planung des Hauses vorausgegangen ist eine Ortskernbetrachtung. Wir haben eine Dorfentwick-

lungsstudie oder Ortskernstudie gemacht mit den Architekten Hermann Kaufmann, Bernardo Bader und Rene Bechter. Hermann Kaufmann ist schon länger Partner der Gemeinde, Bernardo Bader und Rene Bechter sind junge Architekten aus Krumbach. Wir haben diese drei Architekten zusammengespannt und sie haben den gesamten Ortskern betrachtet, bevor wir Einzelobjekte oder Einzelprojekte umgesetzt haben. Wo kann was stattfinden? Wo findet mehr Geschäftliches und Wohnen statt? Wo finden die Aktivitäten der Vereine statt? Der Standort des Pfarrhauses wurde ganz klar dazu auserkoren die Vereinsbedürfnisse abzudecken. Die Musik, die Bücherei und die anderen Vereine im Pfarrsaal, sowie die Räumlichkeiten der Pfarre, weil eine Gemeinde mit tausend Einwohnern davon lebt, dass der Ortskern lebt. Wir haben für eine kleine Gemeinde sehr viel am Ortskern angesiedelt. Wir haben den Frisör, das Café, die Bank, das Lebensmittelgeschäft und die Räumlichkeiten der Vereine, das Gemeindeamt, das Postamt, die Volksschule, Kindergarten alles hier am Dorfplatz situiert, und das gibt auch Leben im Dorf. Ein kleines Dorf lebt von jedem dieser Mosaiksteine.

Kilian Tschabrun

Der Bedarf für den Neubau entstand dadurch, dass die Kindergartengruppenräume im bestehenden Gemeindeamt und im Nebengebäude angesiedelt waren. Zwei Gruppen im Gemeindeamt und eine Gruppe im Jugendhaus, ohne Ausweichräume, die ja laut Kindergartengesetz vorgesehen sind. Darum haben wir uns entschlossen, neben dem Gemeindeamt einen neuen Kindergarten zu bauen und anschließend das Gemeindeamt für die Verwaltung umzubauen und zu sanieren.

Helmut Zimmermann

Wir haben vor 15 Jahren einen neuen fünfgruppigen Kindergarten gebaut, der damals dem neuesten Stand der Technik entsprochen hat. Daraufhin hat man der Schule angemerkt, dass das Gebäude, welches im Jahre 1966 gebaut worden ist, eigentlich von der Technik her veraltet war. Es konnte aber vor allem die schulischen Bedürfnisse nicht mehr abdecken. Das Gebäude war als Volksschule gebaut worden und wies mittlerweile als Volks- und Mittelschule räumliche Defizite auf. Das Architekturbüro Walser+Werle erstellte dann eine Nutzungsstudie in Zusammenarbeit mit der Lehrerschaft und den Vereinen. Dann kam die Entwicklung nochmals zum Stillstand, weil mittlerweile eigentlich eine neue Schule gewünscht wurde, mit den neuen

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Bedürfnissen der Lernlandschaft in der Schule. Somit hat man sich dann nach einer Pause des Nachdenkens durchgerungen, einen nicht offenen Architekturwettbewerb mit EU-weiter Bekanntmachung auszuschreiben. In diesem Wettbewerb sind ganz neue Ideen entwickelt worden. Bei der Entscheidung wurden die Direktoren, das Schulkollegium, aber natürlich auch die Gemeinden unseres Schulpflichtsprengels Brand und Bürserberg mit eingebunden. Die Jury hat mit großem Vorsprung das Projekt des Architekten Gerhard Gruber an den ersten Platz gereiht.

Die Gebäude wurden durch das Servicepaket Nachhaltig:Bauen begleitet und wurden mit dem kommunalen Gebäudeausweis beurteilt. Wie entstand der Impuls, in Ihren Gemeinden diesen Beratungsservice zu beauftragen?

Arnold Hirschbühl

Das war von Anfang an klar, weil ich Mitglied des Vorstands des Vorarlberger Umweltverbandes bin. Ich weiß genau, was das Paket bedeutet. Ich weiß von den Erfahrungen, die andere Gemeinden mit dem Paket gemacht haben und für mich war es selbstverständlich das in Anspruch zu nehmen. Als kleine Gemeinde sind wir völlig überfordert, auf Sachen zu achten, die ökologisch wichtig und wertvoll sind. Uns geht's dabei nicht um einen Wettbewerb, in dem wir die Besten sind. Uns geht's darum, dass wir der Umwelt gegenüber verantwortungsvoll handeln und das ist über diese Beratung gesichert. Das Zweite war die Begleitung im Rahmen dieses Pakets für die entsprechenden Vergaben. Da wären wir völlig überfordert gewesen und haben eine ganz wertvolle Unterstützung erhalten, die die unkomplizierte Abwicklung des Projekts garantiert hat.

Kilian Tschabrun

Der Impuls entstand in der Projektgruppe und wurde dann in die Gemeindevertretung und in die Entscheidungsgremien weitergetragen. Diese haben dann nach dem Vorschlag der Projektgruppe entschieden.

Helmut Zimmermann

Der Impuls ist gekommen, da dieses Servicepaket immer mehr Akzeptanz in den Gemeinden gefunden hat. Die große Gruppe aus e5-Ausschuss und Bauausschuss ist dieser Entwicklung sehr freundlich entgegengestanden und hat dieses Servicepaket beauftragt und wir sind auch gut beraten worden.

Wie lang war der Planungszeitraum für das Gebäude ab der ersten Idee bis zum Baubeginn?

Arnold Hirschbühl

Der Planungszeitraum war bei diesem Gebäude ein sehr langer und wurde eigentlich dadurch verlängert, dass das alte Pfarrhaus dann unter Denkmalschutz gestellt wurde. Wir haben dagegen berufen, weil wir der Meinung waren, dass das Gebäude nicht schützenswert war. Man hat es vor 40 Jahren generalsaniert und hat dabei viel kaputt gemacht. So war es damals üblich, ich will da niemand eine Schuld zuschieben. Der Planungszeitraum ist auch deshalb so lang geworden, weil es finanziell eine sehr große Herausforderung war. Jetzt war es auch einwandfrei finanzierbar. „Lange planen, kurz bauen“ ist sowieso ein altes Sprichwort und das hat sich hier ganz gut bewahrheitet. Durch die lange Planungsphase ist es auch ein sehr qualitätsvolles Produkt geworden. Das ist auch etwas, was ich jedem privaten Bauherrn sage. Nimm dir Zeit zu Planen. Oft kommen Bauherrschaften zur Gemeinde mit einer Planung und sagen der Baumeister hätte gerade frei, der Bagger sollte kommen. Das ist eine ganz fatale Fehlentwicklung. Man muss die Leute immer wieder darauf aufmerksam machen, lange zu planen, lange zu überlegen und dann kommt was Gescheites heraus. Ein Bauwerk ist nicht wie ein Auto, das ich in fünf oder sieben Jahren wieder verkaufe, weil es mir nicht passt. Das ist etwas für Generationen.

Kilian Tschabrun

Der Planungszeitraum war zirka eineinhalb Jahre inklusive Wettbewerb.

Helmut Zimmermann

Man kann sagen 15 Jahre. In dieser Zeit haben sich die schulischen Anforderungen gewaltig geändert. Wir waren froh, dass unsere Nutzungsstudie nach dem Stillstand nicht umgesetzt wurde, weil wir schon sehen konnten, wie stark sich die schulische Landschaft ändert. Jetzt haben wir erstens natürlich Räumlichkeiten für die Schüler, aber auch Lehrerarbeitsplätze, Mittagstisch und eine neue Aula mit Bühne für Schulveranstaltungen, die alle Möglichkeiten bietet.

2. Der Entstehungsprozess öffentlicher Gebäude, Erfahrungen aus den Pilotgemeinden

Vom ersten Raumbedürfnis bis zu der Fertigstellung eines nachhaltigen Gebäudes ist es im Allgemeinen ein langer Weg. Wie dieser Weg begangen werden kann, wollen wir im folgenden Abschnitt an Hand der Pilotgebäude erläutern.

Bedarf nach etwas Neuem

Zu Beginn entsteht immer ein Bedarf nach Raum. Räumlichkeiten können in einer Schule fehlen und der Bedarf über den Direktor an die Gemeinde getragen werden oder es fehlen Flächen bei den ortsansässigen Vereinen, die keinen Platz haben zu üben und ihre Materialien zu lagern. Diese Bedürfnisse müssen in den Gemeinderat getragen, angehört und ernstgenommen werden. Da die Wunschzettel immer länger als die Finanzkraft der Gemeinden sind, müssen die Gemeindemandatare entscheiden, mit welcher Begründung eine Bauaufgabe vorgezogen, die andere nach hinten gereiht und noch eine andere überhaupt nicht umgesetzt werden kann. Nach dem Beschluss in der Gemeindevertretung folgt die Beauftragung der Planer und danach die eigentliche Planungszeit. Aber auch im Vorfeld der eigentlichen Planung benötigt die Standortfindung, Dorfentwicklung und Nutzungsstudien genügend Zeit. In dieser Phase hat der Bauherr den größten Einfluss auf Kosten und die spätere Qualität des Gebäudes.



Baufortschritt Kindergarten Muntlix



Baufortschritt Kindergarten Muntlix



Baufortschritt Mittelschule Bürs



Baufortschritt Mittelschule Bürs

3.2 Mayors' Interviews: What small municipalities need

Anpassung des Raumprogramms

In Bürs dauerte der Planungszeitraum der Mittelschule länger als 15 Jahre. Die Nutzungsstudie vom Architekturbüro Walser+Werle wurde nach einem Stillstand in der Planungsphase nicht umgesetzt, da sich in dieser Zeit die schulischen Anforderungen stark geändert hatten. Das neue Raumprogramm bot dann die notwendigen Räumlichkeiten für Schüler, Lehrerarbeitsplätze, Mittagstisch und eine neue Aula mit Bühne für Schulveranstaltungen.

Hürde Denkmalschutz

Beim Pfarrhaus Krumbach war der Planungszeitraum ebenfalls sehr lange. Das alte Pfarrhaus war unter Denkmalschutz gestellt worden. Nach Einspruch der Gemeinde, die der Meinung war, das Gebäude sei durch den schlechten Bauzustand nicht schützenswert, konnte mit dem Abriss begonnen werden. Der lange Zeitraum kam der Gemeinde jedoch zugute, da dadurch die große Investitionssumme einwandfrei finanzierbar war. Außerdem hat sich dadurch ein sehr qualitätsvolles Produkt ergeben.

Kurze Planungszeit

Der Planungszeitraum des Kindergarten Muntlix mit Architektenwettbewerb dauerte nur eineinhalb Jahre. Im Anschluss daran wurde das Gebäude innerhalb von einem Jahr errichtet. Das ist eine sehr kurze Planungszeit für ein öffentliches Gebäude und dadurch zu erklären, dass das Grundstück direkt neben dem alten Kindergarten bebaut werden konnte. Es gab also keine Untersuchung der Standortalternativen, sondern direkt eine Wettbewerbsausschreibung der Architektenleistungen.

Im Allgemeinen gilt noch immer die alte Weisheit „lange Planen-kurz Bauen“ und man könnte auch noch „lange benutzen“ anhängen. Die Zeit, die man benötigt um alle relevanten Gesichtspunkte einzubeziehen, sollte nicht unterschätzt werden. Und sie lohnt sich, weil nach reiflicher Überlegung akzeptierte Entscheidungen gefällt werden können.

Frühe Bürgerbeteiligung gibt Planungssicherheit

Die Bürger von den ersten Entscheidungen an miteinzubeziehen, ist wichtig, um nicht später auf Unverständnis oder Widerstände zu stoßen. Wenn die Bürger einer Gemeinde rätseln, was wohl in die Baugrube gebaut wird und interessiert am Bauschild ablesen, dass ein neuer Kindergarten entsteht, ist schon alles falsch gelaufen. In den Vorarlberger Gemeinden werden die Bürger rechtzeitig informiert und in der Regel auch beteiligt. Dies geschieht meistens in Form von Projektgruppen, die sehr unterschiedlich besetzt sein können. Es können entweder die politischen Parteien des Gemeinderates, Fachleute aus der Gemeinde oder verschiedene Nutzergruppen oder eine Mischung aus allen beteiligt werden. Die Einrichtung und Organisation ist Aufgabe der Gemeinde und damit sehr oft des Bürgermeisters.

Per Volksbefragung zur Akzeptanz

Während der Planungsphase in Bürs entschied sich die Gemeindevertretung für eine Volksbefragung zur damals geplanten unterirdischen Mehrzweck-Sporthalle. Aufgrund der ablehnenden Haltung der Bevölkerung und des hohen finanziellen Aufwands wurde diese große Halle nicht verwirklicht. Der Entwurf der Volks- und Mittelschule wurde nach dem Architekturwettbewerb der Öffentlichkeit präsentiert. Von Seiten der Bürger gab es keinen Widerstand gegen das Gebäude, jedoch waren unterschiedliche Meinungen zum Raumprogramm und zu den Ausführungen der Baustoffe vernehmbar. Daraufhin wurde die Position der Vereinsräumlichkeiten für die Schützenmusik verändert. Die Gemeinde entschied sich aus ökologischen Beweggründen für eine hinterlüftete Fassade und gegen ein Wärmedämmverbundsystem. Da ein im Ort ansässiger Handwerker jedoch solche Isolierfassaden errichtet, stand die Gemeinde unter einem gewissen Druck.

Ausschüsse für verschiedene Planungsbereiche

Beim Planungsprozess der Mittelschule Bürs waren mehrere politische Ausschüsse beteiligt. Der Bau- und Energieausschuss beschäftigte sich mit den baurechtlichen und energierelevanten Entscheidungen. Der Schulausschuss, bestehend aus dem Direktor und dem Lehrpersonal, war für das Raumprogramm zuständig. Der Gemeindevorstand war das Gremium zur Fassung von Beschlüssen zum Bauvorhaben.

In Absprache mit den Nutzern

Das Raumprogramm des Pfarrhofs in Krumbach wurde in Einvernehmen und Absprache mit den Nutzern geplant. Beteiligt waren die Dorfvereine, wie Musikverein und Büchereimitarbeiter. Eine allgemeine Bürgerbeteiligung wurde nicht durchgeführt. Die Information zum Stand des Projekts wurde allerdings kontinuierlich an die Bürger heran getragen. Das Projekt hatte durch den langen Planungszeitraum und die Einbeziehung aller Nutzer die volle Akzeptanz der Bevölkerung. Das bestehende alte Pfarrhaus war für die geplanten Nutzungen aufgrund geringer Raumhöhe und kleiner Raumeinteilung nicht zweckmäßig. Der Abriss wurde im Ort akzeptiert, da auch die Bevölkerung das Gebäude durch den schlechten Bauzustand als nicht schützenswert empfand.

Beteiligung aller Fraktionen

In der Gemeinde Zwischenwasser wurde die Projektgruppe bereits sehr früh eingerichtet. Von Seiten der Gemeinde bestand sie aus dem Bürgermeister und mindestens einem Teilnehmer aus jeder politischen Fraktion mit bautechnischem Hintergrund. Ein großer Vorteil war, dass die Gemeindevertretung dadurch großes Vertrauen in die Projektgruppe hatte und auch mutige Entscheidungen mittrug. Die Gruppe wurde durch den Architekten, der auch als Generalplaner tätig war, und einen externen Bauleiter ergänzt. Der Bauleiter fungierte als Kontrollinstrument für die Gemeinde zum Generalplaner und organisierte die Ausschreibungen nach den Plänen des Architekten. Die Kindergartenleiterin ergänzte die Projektgruppe von der Nutzerseite.



Akzeptanz durch Bürgerbeteiligung

In einer Projektgruppe können schon sehr früh gemeinsam die Wünsche an ein neues Gebäude besprochen werden. Vor allem die Frage eines geeigneten Grundstückes im Ort, die Klärung des Raumprogrammes und die Auswahl des Architekten und der Fachingenieure, müssen im Vorfeld geklärt werden.

Wahl des geeigneten Architekten

Der Architekt oder die Architektin verleiht dem Ortsbild eine veränderte Situation, dem Raumbedürfnis eine Gestalt und dem Äußeren Stofflichkeit und Farbe. Nicht jeder Architekt passt zu jedem Bauherren und es können die unterschiedlichsten Entwürfe aus der gleichen Bauaufgabe entstehen. Deswegen ist es eine sorgfältige Auswahl des passenden Architekten eine der größten Herausforderungen.

Inspiration durch Exkursion

Kleinere Gebäude mit geringeren Honorarkosten (unter 100.000€) können direkt an einen Architekten vergeben werden, mit dem man bereits gute Erfahrungen gemacht hat oder dessen Gebäude den Projektgruppenmitgliedern gut gefallen. Um alle für das neue Gebäude zu begeistern, lohnt es sich, gemeinsam eine Exkursion zu neueren Gebäuden gleicher Art im Land zu unternehmen. Dazu kann die Dokumentation „Servicepaket Nachhaltig:Bauen in der Gemeinde 2005 -2013“ als Exkursionsführer benutzt werden. Das pdf-Dokument steht auf der Homepage www.energieinstitut.at oder www.umweltverband.at zur Verfügung.



Einbeziehung aller Fraktionen schafft Vertrauen

3.2 Mayors' Interviews: What small municipalities need

Architekturwettbewerb

Um die beste Idee für ein bestimmtes Grundstück zu finden, bietet ein Wettbewerb mehr Potential. Entweder bietet sich ein eingeladener Ideenwettbewerb mit einem begrenzten, vorbestimmten Teilnehmerfeld oder ein mehrstufiger, offener Architektenwettbewerb an, bei dem sich alle interessierten Architekten aus dem In- und Ausland beteiligen können. Wichtig sind dabei geeignete Kriterien zur Beurteilung in der ersten Runde. Dazu kann man die Hilfe des Servicepakets „Nachhaltig:Bauen in der Gemeinde“ in Anspruch nehmen. Unsere Pilotprojekte zeigen verschiedene Verfahren zur Auswahl des besten Entwurfes oder Planers.

EU-weite Ausschreibung

Die Auswahl des Architekten für die Mittelschule Bürs wurde durch einen zweistufigen, EU-weiten Wettbewerb getroffen. Nach der ersten Stufe, einer Art Vorbewerbung, wurden dreißig Architekten in die Projektstufe eingeladen, um Entwürfe zu erstellen. In dieser zweiten Stufe wurde Gerhard Gruber vom Büro Gruber Locher Architekten als Architekt ausgewählt.

Dorfentwicklungsstudie

In Krumbach wurde schon Jahre vor dem Bau des neuen Pfarrhauses auf Grund von städtebaulichen Defiziten im Dorfkern eine dorfräumliche Entwicklungsstudie beauftragt, in der die Architekten Hermann Kaufmann sowie Bernardo Bader und Rene Bechter, die beide aus Krumbach stammen, gemeinsam ein Konzept erarbeiteten. Diese Studie beinhaltete die räumliche Entwicklung eines Busterminals, die Positionierung eines Kindergartens und des Kultur-

und Mehrzweckgebäudes, sowie die Stärkung eines Zentrums mit der Platzbildung vor dem Gemeindehaus und der Kirche. Aus dieser Bebauungsstudie hat sich der Auftrag für das neue Pfarrhaus entwickelt, welcher ebenfalls in Kooperation der drei Architekten durchgeführt wurde, der Arge Bader/Bechter/ Kaufmann.

Geladener Wettbewerb

In Muntlix wurde Matthias Hein im Zuge eines geladenen Wettbewerbs mit acht teilnehmenden Büros als Architekt für die Planung des Kindergartens Muntlix beauftragt. Das Ergebnis der Jury war einstimmig.

In unseren Beispielen kann man an der Zufriedenheit der beteiligten Personen in den Interviews ablesen, dass die Zusammenarbeit zwischen Architekten und Bauherren konstruktiv und kreativ verlief. Das spricht für eine geglückte Auswahl der Planenden.

Raumprogramm als wirksamer Kostenhebel

Entwürfe von Architekten setzen das gewünschte Raumprogramm der Bauherren um. Bei einer Direktvergabe kann der Architekt mit seiner Erfahrung an der Erstellung des Raumprogrammes beteiligt werden. In einem Wettbewerbsverfahren wird die beste Lösung für ein bereits aufgestelltes Raumprogramm ausgewählt. Spätere Änderungen führen normalerweise zu Mehrkosten. Es ist also essentiell, dass die Gemeinde klärt, welcher Raumbedarf besteht, wie die Funktionsabläufe idealerweise angeordnet sind, welche Doppelnutzungen möglich sind und wie sich der Raumbedarf in Zukunft entwickeln wird. Ein überdimensioniertes Raumprogramm verursacht nicht nur unnötig hohe Baukos-



Exkursionen helfen bei der Entscheidung



Bebauungsstudie vor Architektenauftrag

ten, sondern verursacht über den gesamten Lebenszyklus auch unnötige Heiz-, Reinigungs- und Renovierungskosten.

Mit Sanierung und Neubau zum passenden Raumprogramm

Bei der Sanierung der Mittelschule Bürs wurde ein großer Teil des Gebäudes aus den 60er und 70er Jahren abgerissen und neu errichtet, da die neue Schulform andere Raumstrukturen verlangte. Das Gebäude besteht jetzt ungefähr aus 40% Bestand und 60% Neubau. Die Lehrer kannten den zukünftigen Flächenbedarf, da sie bereits viele Erfahrungen mit freien Unterrichtsformen gesammelt hatten. So konnte ein schlüssiges Raumprogramm aufgestellt werden.

Vielfältige Nutzungen unter einem Dach

Das Raumprogramm des Pfarrhauses zur Unterbringung des Musikvereins und der Bücherei war klar und sehr gut aufbereitet. Die Abstimmung des benötigten Flächenbedarfs wurde durch die Architekten unterstützt. Die Anforderung der Diözese, eine Wohnung im Gebäude unterzubringen, erschwerte die Umsetzung, da die Anforderungen an Schallschutz und Trittschall für Wohnen und öffentliche Nutzungen in einem Gebäude zu erfüllen waren.

Information der Bürger

Das Raumprogramm des Kindergarten Muntlix wurde in Zusammenarbeit mit den Nutzern in der Projektgruppe festgelegt. Die Bürger der Gemeinde wurden nicht in die Entscheidungen während des Planungsprozesses miteinbezogen. Durch frühzeitige Informationen über den Projektstand war die Akzeptanz in der Gemeinde allerdings sehr hoch, was sich auch in der regen Teilnahme an der Bürgerbeteiligung zur Einbringung des Lehmfußbodens zeigt. Raumprogramme sind die Vorgaben für Entwürfe. Am einfachsten lassen sich bereits hier Flächen und damit Kosten einsparen.

Energieeffizienz als Einschränkungen

Zwischen dem ersten Entwurf des Architekten und der Realität vor Ort gibt es mitunter Diskrepanzen, die durch Einschränkungen der Entwurfsidee gelöst werden. Zum Teil leidet dann die Klarheit des Entwurfes, und es müssen Kompromisse geschlossen werden. Auch die Ansprüche an sehr hohe Energieeffizienz werden von Architekten manchmal als Einschränkung empfunden.

Dichte Bebauung

Die Mittelschule Bürs befindet sich auf einem relativ engen Grundstück, das eine dichte Bebauung erforderte. Bei der Betrachtung des Untergeschossgrundrisses ist ersichtlich, dass der Großteil der Fläche bebaut ist. Aus diesem Grund ergaben sich Schwierigkeiten, die baurechtlich vorgegebenen Höhen und Abstände einzuhalten.

Beim Materialkonzept hat das Architekturbüro einen Vorschlag für alle Oberflächen gemacht. Eine Gebäudeexkursion mit den zuständigen Gemeindevertretern, half die Fragen zum Materialkonzept zu klären. Da die Mittelschule eine wohnliche Schule werden sollte, konnten sich alle Beteiligten bei vielen Detailentscheidungen an dieser Formulierung orientieren. Trotz des Massivbaus sind sehr viele unbehandelte Holzoberflächen und Materialien in ihrer natürlichen Oberfläche, z.B. Beton und Betonestrich, vorhanden.

Freiraum durch Ökologie und Nachhaltigkeit

In Vorarlberg ist es eine Art Konsens, in einer kompakten Gebäudeform zu planen, der Entwurf des Pfarrhauses in Krumbach ist jedoch entstanden, ohne an die energetischen Vorgaben zu denken. Beim Bauprozess sind einige Sonderplaner einbezogen worden, die für die energetischen Besonderheiten zuständig waren, den Entwurf jedoch nicht beeinflusst haben.

In Bezug auf die Materialisierung gab es beim Pfarrhaus von Seiten der Gemeinde keine Einschränkungen. Der ökologische, nachhaltige Aspekt eröffnete laut dem Architekten sogar einen Freiraum, in welchem gewisse Dinge nicht mehr diskutiert werden mussten. Der energetische Standard schränkte das Projekt nicht ein, da er in den Entwurf integrierbar war.

Wunsch nach Regionalität

Da der Kindergarten Muntlix auf einem großen Grundstück errichtet wurde, gab es baurechtlich keine Probleme. Die Ideen zu Material und Form wurden von Seiten der Gemeinde begrüßt. Durch die kleine, aber schlagkräftige Projektgruppe der Gemeinde, bestehend aus vier Personen plus Bürgermeister, und dem allgemeinen Wunsch, mit regionalen Baustoffen, vor allem Holz, zu arbeiten, konnte eine schnelle Einigkeit bei der Materialisierung erreicht werden.

3.2 Mayors' Interviews: What small municipalities need



Regionale Wertschöpfung in Fassade und Innenausbau



Regionale Wertschöpfung in Fassade und Innenausbau

Eindeutige thermische Grenzen

In Hinblick auf den energetischen Standard waren ganz eindeutige thermische Grenzen von vornherein klar. Die Verdrehung zwischen Erd- und Obergeschoss, die Loggien sowie die in zwei Himmelsrichtungen ausgerichteten Gruppeneinheiten ergeben ein räumlich spannendes Projekt, ohne dabei auszusehen wie eine einfache Schachtel, die es thermisch betrachtet eigentlich ist.

Der alte Vorwurf, dass energieeffiziente Gebäude gute Architektur verhindern, scheint hier keine Rolle mehr zu spielen.

Optimaler Verbrauch durch Energieevaluation

Mit der Fertigstellung werden die haustechnischen Anlagen von energieeffizienten Gebäuden von den ausführenden Firmen normgerecht eingeregelt. Berechnet wurden die Gebäude aber meistens nach ihren spezifischen Aufgaben. So wird zum Beispiel die Zuluftmenge für eine Schulklasse auf 25 Schüler eingestellt, obwohl nur 15 SchülerInnen in der Klasse sitzen. Die zu große Luftmenge führt dazu, dass mehr Energie verbraucht wird, als in der Projektierung berechnet wurde und sie führt zu trockener Luft im Winter. Durch eine Evaluierung der Verbrauchsdaten in den ersten ein bis zwei Wintern und einen Abgleich mit den exakt berechneten Energieverbräuchen fallen solche Diskrepanzen auf und können sehr leicht behoben werden. Dazu ist es wichtig, dass die Verbrauchsdaten getrennt nach unterschiedlichen Energieverbräuchen erfasst werden und dass sie mit den Berechnungen abgeglichen werden.

Erfassung der Verbräuche

Als langjährige e5-Gemeinde mit einem e5-Team, bestehend aus Gemeindemandataren und Fachleuten aus der Bevölkerung, hat Bürs schon einige Gebäude im Niedrigstenergie- bzw. Passivhausstandard errichtet. Diese Gebäude werden evaluiert, deren Messdaten erfasst und ausgewertet, um die Verbräuche zu optimieren.

Etablierte Energiebuchhaltung

Der Bürgermeister der Gemeinde Krumbach ist der Meinung, dass dieser energieeffiziente und ökologische Standard eine Selbstverständlichkeit bei der Errichtung öffentlicher Gebäude sein sollte. Aufgrund der zehnjährigen e5-Mitgliedschaft hat die Gemeinde schon lange eine Energiebuchhaltung, in welcher der Verbrauch aller öffentlichen Gebäude aufgezeichnet wird. Durch genaue Beobachtung wird die Lüftungs- und Heizungsanlage des Pfarrhauses in den kommenden ein bis zwei Jahren optimiert.



Gemeinde als Vorbild

Ansporn zum nachhaltigen, öffentlichen Bau

Die Gemeinde Zwischenwasser ist zufrieden mit dem energetischen Standard des Kindergartens und will weitere Gebäude im Niedrigstenergie- bzw. Passivhausstandard und mit dieser ökologischen Bauweise errichten. Da es sich bei dem Ort um eine Ökoprofitgemeinde handelt, wird jedes gemeindeeigene Gebäude und somit auch der Kindergarten energetisch und in Bezug auf den gesamten Materialfluss evaluiert.

Durch das Modul 5 im Servicepaket „Nachhaltig:Bauen in der Gemeinde“ bekommen Gemeinden Unterstützung bei der Evaluation und Nachregelung ihrer Gebäudetechnik. Sehr oft können ohne zusätzliche Investition, sondern durch reinen Vergleich mit der Projektierung und Nachjustierung mehr als ein Viertel des Jahresenergieverbrauchs eingespart werden.

Kostenmanagement öffentlicher Gebäude

Die Kosten eines Gebäudes hängen sehr eng mit den gewünschten Qualitäten zusammen. Je früher eine Gemeinde in der Lage ist, alle Anforderungen an das Gebäude zu benennen, desto früher können realistische Kostenschätzungen von den Architekten aufgestellt werden. Am größten ist die Möglichkeit, auf Kosten Einfluss nehmen zu können, während der Entwurfsphase. Entscheidende Faktoren sind hier Größe und Kubatur des Gebäudes, Fensterflächenanteil und Konstruktionsart. Mit fortlaufenden Planungs- und Bauprozess nimmt die Beeinflussbarkeit der Kosten immer weiter ab. Gegen Ende können nur noch Oberflächenmaterialien ausgetauscht werden. Energieeffiziente, ökologische Gebäude haben höhere Investitionskosten, aber günstigere Betriebskosten. Werden gleich zu Planungsbeginn alle Fachplaner über alle Anforderungen informiert, kann integral gearbeitet werden und ein wirkungsvolles Kostenmanagement durchgeführt werden.

Kosteneinhaltung durch Alternativenprüfung

In der Gemeinde Bürs wurde nach dem Architekturwettbewerb ein Kostenmanager eingesetzt, der die Baukosten während des Planungsprozesses immer wieder an den Baukostenindex angeglichen hat. Dies ist bei einem mehrjährigen Projekt notwendig, da alle Materialien und Honorare der allgemeinen Kostensteigerung unterliegen. Jeder Auftrag wurde vor der Beauftragung auf eine günstigere Alternative geprüft. Durch diese Vorgehensweise konnten die mit der Indexanpassung errechneten Kosten über mehrere Jahre eingehalten werden.

Qualitätsvolle Architektur muss nicht teuer sein

Beim Pfarrhaus Krumbach wurde von den Architekten eine Nettobaukostensumme von 2,9 Millionen Euro prognostiziert. Umso überraschter war die Gemeinde als das Objekt nach Fertigstellung schlussendlich nur 2,6 Millionen gekostet hat. Die guten und bekannten Handwerker aus der Region hatten sehr günstige Preisangebote abgegeben, um an dem renommierten Projekt beteiligt zu werden. Dies kam dem Projekt sehr zugute und zeigt, dass qualitätsvolle Architektur nicht teuer sein muss.

Detaillierte Baukostenaufnahme

Die Baukosten des Kindergarten Muntlix wurden nach der Fertigstellung der Baueingabe nochmals detailliert aufgenommen und nach Gewerken von den Baumeisterarbeiten bis zu den Möbelausbauten detailliert aufgelistet. Dieser Kostenrahmen von zirka 2,4 Millionen Euro wurde vom Gemeinderat abgesegnet. Nach Fertigstellung des Gebäudes konnte dieser jedoch mit endgültigen Baukosten von 2,3 Millionen Euro unterschritten werden.

Die Pilotgebäude zeigen, dass realistische Kostenberechnung und Einhaltung und sogar Unterschreitung der Kosten mit guten Planern möglich ist.

What energy-saving qualities do buildings need to have in order to reach energy autonomy by 2050?

In order to achieve energy independence, all energy consuming sectors, such as buildings, transportation, and commerce, must become efficient enough so that renewable sources can meet the remaining energy demand. This article presents several studies in which potential energy-saving measures in the building sector were examined and shows how the energy-saving standards for new buildings and renovations were derived.

Study 1: R. Vallentin, Building Stock in Germany¹

Questions and Objectives

In 2011, R. Vallentin published a dissertation that examined long-term, climate-protection strategies, which can be achieved in German households. Despite superficial plausibility, some of these proposals were counterproductive. Energy applications that were examined included heating, hot water, as well as auxiliary and household electricity. CO₂ emission, end-use and primary energy demand were used as indicators.

In the study, the necessary criteria required for new constructions and renovations were based on two main concepts:

1. reduction of CO₂ emissions according to national climate protection targets - limitation of fossil primary energy
2. possible potential of renewable energy sources – limitation of renewable primary energy

Using information from (1) and (2) results in the available, sustainable potential of total primary energy, thus the building's necessary energy criteria.

Special importance was given to a careful examination of residential buildings in Germany. The complex activities of individual actors were interpreted as a sequence of steps. In this way, the influence of several different courses of action in relation to the whole system could be understandably and realistically represented. The basis of the study was to compose a detailed, transparent analysis of basic data pertaining to population development, living space development, demolition, renovation, rate of new constructions, renovation standards, and building technology components.

Coupling Principle as an Implementation Strategy

The coupling principle is often applicable when energy modernization of a construction and supply system is implemented. Empirical observations show that energy improvement measures usually take place when a construction or engineering component needs to be repaired, renewed or replaced. It is a cost-effective improvement, because the basic cost of the construction work, e.g. site equipment, scaffolding, plaster renewal, is necessary anyway. The coupling principle is useful due to the practical economic reason that building materials are designed to be durable and last a long time. Early renewal implies economic loss, because the residual value is lost. The actual average life of building components is 30 - 80 years, which is significantly higher than what was assumed in the past.

¹ Rainer Vallentin: *Energy-efficient Urban Design with Passive Houses - Reliable Climate Protection Standards in Housing*, Dissertation TU Munich, Göttingen: Cuvillier Publishing, 2011.

Bauteil/Komponente	Mittlere Nutzungsdauer in Jahren	Sanierungsrate
Außenwände (Putz / sonstige Bekleidungen / Dämmung)	50	2,0%
Dach (Steildachaufbau)	50	2,0%
Dach (Flachdachaufbau)	30	3,3%
Kellerdecke (zugänglich)	40	2,5%
Kellerdecke (Bodenaufbau)	80	1,3%
Fenster (Verglasung)	20	5,0%
Fenster (Rahmen)	40	2,5%
Heizungsanlage	25 - 30	3,3 - 4,0%
Lüftungsanlage	25 - 30	3,3 - 4,0%
Wärmeverteilung	40	2,5%
Wärmespeicher	40	2,5%
Beleuchtung	5 - 10	10 - 20%
Haushaltsgeräte	10 - 20	5 - 10%
Unterhaltungselektronik	5 - 10	10 - 20%
Computer etc.	5 - 10	10 - 20%

An average component lifetime of 50 years results in a renovation rate of about 2% of the total existing building.

Building Stock Models

Step 1:

Scenarios for the development of required heat used for heating and hot water

The residential buildings were catalogued according to age, type of building and type of construction. Overall, a distinction was made between 51 types. The technical and geometric data of German building typology was compiled in the mid-90s and was used as well as was added to by the author [2]. While models of a building during various scenarios was made, the fact that a part of the construction may already have been renovated was taken into consideration.

Using time lapses of 5 years, structural and technical components, such as the roof, top floor ceiling, and ventilation system, was checked for possible renewal, which became a possible starting point for energy-saving improvement.

In the "dependence scenario", various energy-saving standards were used. For the "reference scenario", energy-efficient standards were used, and in the "climate protection scenario", passive house components were used. In the "scenario climate protection plus", a few additional, foreseeable, technical developments were taken into account. Included in the heat demand calculation was the rebound effect, which is the slightly higher room temperatures which occur in high-quality, renovated buildings.

Step 2:

Scenarios for the development of CO₂ emission as well as end and primary energy demand

In addition to reducing heat demand, energy-efficiency improvements on the power supply system and changes in the power supply mix play an important role. Even though there was continued high demand for energy as well as fossil fuel generated electricity and heating in the "reference scenario", the share of renewable energy sources could be significantly increased in the "climate change scenario". Furthermore, the change in implementation structure only makes economic sense in conjunction with renewal processes that are already

Table 1: Average use life

being made. Therefore, the whole procedure takes place over several decades.

Step 3:

Critical examination of the scenario boundaries and assumptions

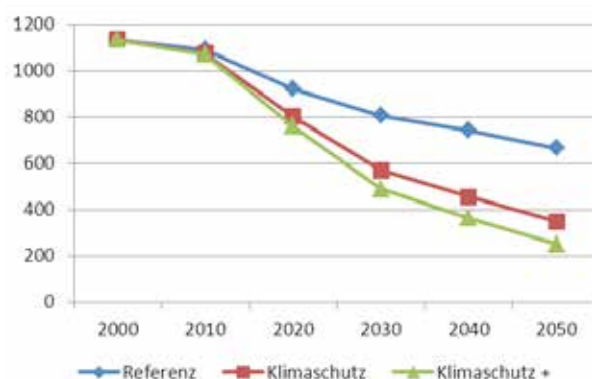
The influence of important boundary conditions and assumptions is examined in sensitivity studies. Variables, such as population growth, residential development and assumptions about energy supply systems, are also examined, i.e. restrictions on protected historic buildings and ensembles as well as how financial stipulations affect achievable energy reduction projects.

Synopsis of Results

Despite clear growth of residential floor space and in comparison to the 2010 baseline, the graphic shows that heat demand of total housing in 2050 could be reduced by 28% in the "reference scenario", 68% in the "climate change scenario" or 77% in the "climate protection plus scenario".

Just as in heating demand, primary energy demand for heating, hot water, auxiliary and household electricity can be greatly reduced by 39 – 77%. The reduction potential for hot water, auxiliary and household electricity is actually lower than for heating. However, total reduction for heating decreases due to increasing building technology systems and the shift to more environmentally friendly energy sources. Depending on the scenario, CO₂ emissions decrease by 43 – to 89%.

By examining economic energy boundary conditions, achievable energy reduction amounts to only 4 – 8%. Changing population and residential zoning variables have only a minor impact. Results show that the current trend in average-quality new housing, i.e. low-energy or



Development of primary energy demand for all energy applications

EnEV standard, is certainly not enough to achieve national climate protection targets in the private household sector. Significantly higher standards are necessary in 2015 – 2020. Furthermore, energy system transformation plays an important role towards the decarbonisation of heating and power generation. A solution to the economic boundary conditions would be to consequently use passive house technology in new constructions and all renovations on existing buildings. The following aspects play an important role:

1. Listed buildings or constructions of cultural importance should be individually assessed as to whether all energy measures can be applied. It is often worth preserving facades by not providing the suggested external heat protection, and in some cases, interior insulation is not feasible due to special interior design, ceilings, and floors. Whether it is a new, full or partial renovation, differentiated levels of energy reducing measures should be provided according to individual application. In these decisions, building culture could be granted precedence over climate protection.
2. To increase the rate of renovations due to environmental reasons is economically questionable. Highly problematic for climate protection is to implement renovations using average-quality construction and engineering components.
3. Therefore, the crucial aspect is to implement high-quality components in all new constructions and renovation projects. Currently, passive house components are the most suitable and economically sensible solution. Essential is the passive house building shell and energy-efficient electrical house technology.
4. The change in the energy supply structure towards a more efficient use of energy, and the development of renewable energy sources is the second pillar of climate protection. In the “climate change scenario”, a reduction of about half of the greenhouse effect gases is achieved. In order to supply the increased number of renewable energy supplied buildings, heat and electricity demand needs to be decreased to a minimal level. This is especially true for the period after 2030, because extensive storage technology will be necessary.

Summary, R. Vallentin

“The Dilemma of Medium Quality”

Current, common, building practice creates a “dilemma of medium quality” by implementing building shells and ventilation concepts, that do not sufficiently lower heating demand of residential buildings enough to achieve climate change objectives. Missed opportunities do not return so quickly. Implementing medium-quality components creates a huge obstacle in climate protection strategy in the building sector. Due to much inactivity of residential building stock, this will become apparent rather late, i.e. high heating and power demand in 2030.

Study 2: A. Müller, Building Stock in Austria ²

Content and Objectives

Content of the study is to investigate the development of heating demand and examine the ability to meet this need in residential as well as non-residential buildings by 2050. The development of household electricity demand is not included in this study.

Building Stock Models

Step 1:

Scenarios for the development of required heat used for heating and hot water

The building stock in Austria is mapped using a model that classifies all residential and non-residential buildings of various ages and types.

Similar to Vallentin's study, the renovation rate was dependent on the lifetime of the building components and resulted in about 1.8 – 2.2%. Future heating demand was calculated using two different scenarios. Included in the heat demand calculation was the rebound effect, which is the slightly higher room temperatures which occur in high-quality, renovated buildings.

In an ancillary scenario, the impact of the predicted climate change on heating and cooling demand was taken into account.

² Andreas Müller et al.: Heat Supply and Air-conditioning Systems in the Austrian Building Stock – Technological Requirements by 2050

Referenzszenario			
	Neubau	Sanierung Gebäude nach 1945	Sanierung Gebäude vor 1945
HWB	kWh/m ² _{BGfA}	kWh/m ² _{BGfA}	kWh/m ² _{BGfA}
bis 2020	35 - 40	55 - 80	90 - 125
2050	10	10 - 15	50 - 55
Sanierungszyklus durchschnittlich 55 Jahre			
Ambitioniertes Sanierungsszenario			
	Neubau	Sanierung Gebäude nach 1945	Sanierung Gebäude vor 1945
HWB	kWh/m ² _{BGfA}	kWh/m ² _{BGfA}	kWh/m ² _{BGfA}
bis 2020	35 - 40	20 - 30	60 - 85
ab 2030	10	10	30 (2050)
Sanierungszyklus durchschnittlich 45 Jahre			

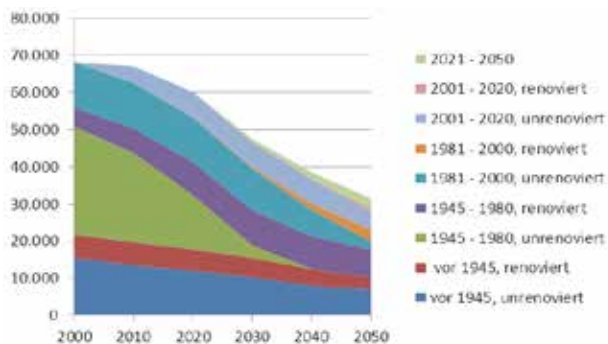
Step 2:

Scenarios of the development of the share of renewable energy
In the second step, the development of the share of renewable energy in the heat supply is investigated in detail. Different technical and funding variables were taken into account, i.e. various heat densities of different buildings.

Synopsis of Results

Despite a strong increase in total living space, heat demand in Austrian residential buildings could be reduced by 53% in 2050 as compared to the reference year of 2010. If the predicted climate changes are taken into account, the savings could be about 8 – 15% higher.

In 2050, the share of renewable energy ranges from about 65 to 90%.



Development of heat demand in Austrian residential buildings by 2050

Table 2: Assumptions on new construction and renovation

Summary, A. Müller

- The central starting point to reduce energy consumption is to renovate buildings. The largest potential exists in constructions built between the years 1945 – 1980.
- When all other energy saving measures are exhausted, “any type of restoration must be done using the best possible thermal quality. Each suboptimal component causes unrealized potential that will not be changed within the next 40 years. In general, freshly renovated buildings are not due for improvements within this period, emphasizing that the lock in effect should absolutely be avoided.”
- In case of lack of funding, it is more constructive to delay the renovation than to use suboptimal components.
- “Short-term to intermediate-term goals can be reached by either significantly improving renovation quality or by increasing the number of renovations using poor to average quality components. A mere increase in the rate of renovations will cause the lock in effect and fail to achieve energy reduction goals. This would be a serious strategic disadvantage for the period after 2020. Long-term goals can only be achieved through the implementation of optimal quality.”

Summary Assessment in Studies

Although both studies were conducted using different focal points and methods, the conclusions about reducing heat demand in buildings came to very similar results:

- Energy reducing qualities of new buildings must be further increased.
- Achievable heating and CO₂ emission reduction largely depend on building renovations
- Relevant factors are renovation rate and quality.
- In order for energy reducing renovations to be performed economically effective, they should be coupled with already pending renewal work. Thus, the renovation rate is derived from the technical lifetime of building and house technology components.

Buildings That Support Energy Autonomy

- ▶ This results in renovation rates of about 1.8 to 2.2% of the total residential building stock
- ▶ The energy-reducing quality of building renovations needs to be greatly increased. Every medium-quality renovation is a missed opportunity, because short-term savings will not be helpful in the long-run costs.
- ▶ Specifications for building renovations need to differentiate between a full or partial renovation, as well as a protected, historical building.

Thusly, the studies support the objectives defined in Vorarlberg's energy autonomy process, the shift of funding from new constructions rather towards renovations, and the further advancement of increasing energy-reducing quality. The derivation of the renovation rate from the expected lifetime of components results in energy-saving upgrades that can be performed cost-efficiently, which will guarantee high numbers of high-quality renovations.

Welche energetische Gebäudequalität brauchen wir, um das Ziel der Energieautonomie 2050 zu erreichen?

Sollen die Ziele der Energieautonomie erreicht werden, so muss in Summe aller Verbrauchssektoren (Gebäude, Mobilität, Industrie...) so viel Energie durch Effizienzsteigerung eingespart werden, dass die erschließbaren Potenziale erneuerbarer Energieträger den verbleibenden Bedarf decken können.

Dieser Artikel stellt verschiedene Studien vor, in denen die Einsparpotenziale im Gebäudesektor untersucht und Anforderungen an die energetische Qualität von Neubauten und Gebäudesanierungen hergeleitet werden.

Studie 1: R. Vallentin für Gebäudebestand Deutschland ¹

Fragestellung und Zielsetzung

In der 2011 veröffentlichten Dissertation untersucht R. Vallentin, mit welchen Strategien die langfristigen Klimaschutzziele Deutschlands im Sektor der privaten Haushalte erreicht werden können und welche Handlungsansätze und Vorschläge - trotz vordergründiger Plausibilität - langfristig kontraproduktiv für den Klimaschutz sind. Betrachtet werden die Energieanwendungen Raumwärme, Warmwasser, Hilfsstrom und Haushaltsstrom. Als Indikatoren werden End- und Primärenergiebedarf sowie die CO_{2eq}-Emissionen verwendet.

In der Studie werden die für Neubau und Sanierung notwendigen Gebäudequalitäten anhand zweier übergeordneten Größen hergeleitet:

1. Reduktion der Emissionen an CO_{2eq} gemäß nationaler Klimaschutzziele und – daraus abgeleitet - Begrenzung der fossilen Primärenergie

2. Erschließbare Potenziale regenerativer Energieträger und -daraus abgeleitet - Begrenzung der erneuerbaren Primärenergie

Aus (1) und (2) ergibt sich das nachhaltig verfügbare Potenzial des Gesamt-Primärenergieumsatzes und damit die notwendige energetische Gebäudequalität.

Besondere Bedeutung wird der sorgfältigen Modellierung des Wohngebäudeparks eingeräumt. Diese erfolgt so, dass das komplexe Handeln der Akteure als Abfolge von Einzelschritten ablesbar wird. Nur so kann der Einfluss unterschiedlicher Handlungsoptionen auf das Gesamtsystem nachvollziehbar und realitätsnah dargestellt werden.

Grundlage der Studie bildet eine detaillierte Analyse der Basis- und Eckdaten: alle Annahmen zu Bevölkerungsentwicklung, Entwicklung der Wohnfläche, Abriss-, Sanierungs- und Neubaurate, Sanierungsqualität und Qualität der eingesetzten Haustechnik-Komponenten werden nachvollziehbar aufbereitet.

Kopplungsprinzip als Umsetzungsstrategie

Für die energetische Modernisierung des Bestands und der Versorgungssysteme wird das sog. Kopplungsprinzip zugrunde gelegt. Empirische Beobachtungen zeigen, dass energetische Maßnahmen i.d.R. immer dann ausgeführt werden, wenn eine Bau- oder Technikkomponente ohnehin instand gesetzt, erneuert oder ausgetauscht werden muss. Eine wirtschaftliche Realisierung der Effizienzverbesserung wird dadurch erheblich erleichtert, weil der Grundaufwand der Baumaßnahme (z.B. Baustelleneinrichtung, Gerüst, Putzerneuerung) ohnehin notwendig ist und nicht der Energieeinsparmaßnahme zuzurechnen ist. Das Kopplungsprinzip folgt der wirtschaftlichen Vernunft:

¹ Rainer Vallentin: *Energieeffizienter Städtebau mit Passivhäusern – Begründung belastbarer Klimaschutzstandards im Wohnungsbau*, Dissertation TU München, Göttingen: Cuvillier Verlag, 2011.

Bauteil/Komponente	Mittlere Nutzungsdauer in Jahren	Sanierungsrate
Aussenwände (Putz / sonstige Bekleidungen / Dämmung)	50	2,0%
Dach (Steildachaufbau)	50	2,0%
Dach (Flachdachaufbau)	30	3,3%
Kellerdecke (zugänglich)	40	2,5%
Kellerdecke (Bodenaufbau)	80	1,3%
Fenster (Verglasung)	20	5,0%
Fenster (Rahmen)	40	2,5%
Heizungsanlage	25 - 30	3,3 - 4,0%
Lüftungsanlage	25 - 30	3,3 - 4,0%
Wärmeverteilung	40	2,5%
Wärmespeicher	40	2,5%
Beleuchtung	5 - 10	10 - 20%
Haushaltsgeräte	10 - 20	5 - 10%
Unterhaltungselektronik	5 - 10	10 - 20%
Computer etc.	5 - 10	10 - 20%

Tabelle 1: Mittlere Nutzungsdauern

Bausubstanz ist immer auf eine lange Lebensdauer konzipiert. Eine vorzeitige Erneuerung bedeutet einen wirtschaftlichen Verlust, weil der Restwert der Konstruktion zerstört wird. Die tatsächliche mittlere Nutzungsdauer der Baukomponenten ist mit 30 – 80 Jahren deutlich höher, als in der Vergangenheit angenommen.

Bei mittleren Nutzungsdauern von ca. 50 Jahren ergeben sich Sanierungsrate von etwa 2% des Gesamt-Gebäudebestandes.

Vorgehensweise zur Modellbildung

Schritt 1:

Szenarien zur Entwicklung des Nutzwärmebedarfs für Raumwärme und Warmwasser

Der Wohngebäudepark wird über ein Kohortenmodell abgebildet, in dem alle Wohngebäude verschiedenen Baualtersklassen, Gebäude- und Konstruktionsarten zugeordnet werden. Insgesamt wird zwischen 51 Typen unterschieden. Die technischen und geometrischen Daten der Gebäude werden der den seit Mitte der 90er Jahre erarbeiteten deutschen Gebäudetypologie [2] entnommen bzw. vom Autor ergänzt. Bei der Modellierung der Gebäude wird berücksichtigt, dass ein Teil des Bestandes bereits (teil) saniert wurde.

In Zeitschritten von 5 Jahre wird überprüft, welche baulich-technische Komponente (Dach, oberste Geschossdecke, Außenwand, Fenster, Verglasung, Kellerdecke, Lüftungsanlage) zur Erneuerung ansteht, die dann Ausgangspunkt für eine mögliche Effizienzverbesserung darstellt.

Szenarioabhängig kommen unterschiedliche energetische Qualitäten zum Einsatz. Im Referenzszenario sind dies Niedrigenergie- und im Klimaschutzszenario Passivhauskomponenten. Im Szenario Klimaschutz plus werden zusätzlich absehbare technische Weiterentwicklungen

berücksichtigt. Bei der Berechnung des Heizwärmebedarfs werden rebound-Effekte, etwa höhere Raumlufttemperaturen in hochwertig sanierten Gebäuden, berücksichtigt.

Schritt 2:

Szenarien zur Entwicklung des End- und Primärenergiebedarfs sowie der CO₂eq-Emissionen

Zusätzlich zur Reduktion des Nutzwärmebedarfs spielen Effizienzverbesserungen an den Energieversorgungssystemen und Veränderungen am Energieträgermix eine große Rolle. Während im Referenzszenario - auch wegen der weiterhin hohen Bedarfswerte - sowohl die Strom- als auch die Wärmeerzeugung noch länger auf fossile Energieträger gestützt bleibt, kann im Klimaschutzszenario der Anteil der erneuerbaren Energieträger deutlich gesteigert werden. Auch der Wandel der Erzeugungsstrukturen kann wirtschaftlich sinnvoll nur in Verbindung mit ohnehin erfolgenden Erneuerungsprozessen stattfinden und dauert daher mehrere Jahrzehnte.

Schritt 3:

kritische Prüfung der Randbedingungen und Annahmen der Szenarien

Der Einfluss wichtiger Randbedingungen und Annahmen wird in Sensitivitätsstudien überprüft. Neben Eingangsgrößen wie der Bevölkerungsentwicklung, der Entwicklung der Wohnflächen und den Annahmen zu den Energieversorgungssystemen wird auch untersucht, wie sich Restriktionen wie Denkmal- und Ensemble-Schutz sowie Wirtschaftlichkeits-Vorbehalte auf die erreichbaren Reduktionen auswirken.

Ergebnisse in Kurzform

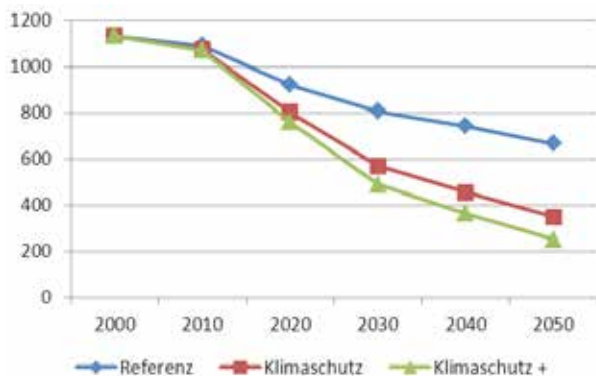
Wie der Grafik zeigt, kann der Heizwärmebedarf des Gesamt-Gebäudebestandes im Jahr 2050 trotz deutlicher Wohnflächenzuwächse im Referenzszenario um 28%, im Szenario Klimaschutz um 68% und im Szenario Klimaschutz plus um 77 % gegenüber dem Ausgangswert von 2010 reduziert werden.

Der Primärenergiebedarf für Heizung, Warmwasser, Hilfsstrom und Haushaltsstrom kann mit 39 bis 77% etwa gleich stark reduziert werden, wie der Heizwärmebedarf. Zwar liegen die Reduktionspotenziale für Warmwasser, Hilfs- und Haushaltsstrom niedriger, als für die Raumwärme, die Gesamt-Reduktion fällt jedoch wegen der steigenden Ef-

Gebäude für die Energieautonomie

fizienz der Haustechniksysteme und des Umstiegs auf umweltfreundlichere Energieträger ebenso hoch aus, wie für den Heizwärmebedarf.

Die Emissionen an CO₂eq verringern sich je nach Szenario um 43 bis 89%.



Entwicklung des Primärenergiebedarfs für alle Energieanwendungen

Die Überprüfung der Randbedingungen zeigt, dass die erreichbaren Reduktionen durch Wirtschaftlichkeits-Vorbehalte nur um etwa 4 bis 8% reduziert werden. Auch veränderte Annahmen zur Bevölkerungs- und Wohnflächenentwicklung haben nur einen geringen Einfluss.

Die Ergebnisse verdeutlichen, dass die heute üblichen mittleren Qualitäten im Wohnungsbau (z.B. Niedrigenergie- bzw. EnEV-Standard) bei weitem nicht ausreichen, um die nationalen Klimaschutzziele Deutschlands im Sektor der privaten Haushalte zu erreichen. Vielmehr sind dafür ab 2015/20 deutlich höhere Qualitäten notwendig. Zusätzlich spielt der Umbau der Energiesysteme in Richtung Dekarbonisierung der Heiz- und Stromerzeugung eine wichtige Rolle.

Ein wirtschaftlicher Lösungsansatz besteht im konsequenten Einsatz von Passivhaustechnologien nicht nur im Neubau, sondern auch bei allen energetischen Sanierungsmaßnahmen im Bestand. Darüber hinaus spielen folgende Aspekte eine wichtige Rolle:

1. Bei denkmalgeschützten Gebäuden oder sonstigen Bestandsbauten mit baukultureller Bedeutung ist in jedem Einzelfall zu prüfen, ob alle Energieeffizienzmaßnahmen zur Anwendung kommen können. Besonders häufig ist hier der Fall erhaltenswerter Fassaden, die nicht mit einem Außenwärmeschutz versehen werden können. In speziellen Fällen, z.B. bei schützenswerten Innenkonstruktionen, Decken und Böden, ist auch eine Innendämmung nicht ausführbar. Je nach Anwendungsfall (Neubau, voll bzw. bedingt

sanierbarer Bestand) sind differenzierte Anforderungsniveaus zu stellen. Der Baukultur kann somit ein Primat gegenüber dem Klimaschutz zugestanden werden.

2. Eine Erhöhung der Sanierungsraten über das ohnehin notwendige Maß (siehe Tabelle 1) ist wirtschaftlich fragwürdig und aus Klimaschutzgründen nicht notwendig. Für den Klimaschutz wäre jedoch hoch problematisch, eine Erhöhung der Sanierungsraten in Verbindung mit einer mittleren Qualität der Bau- und Technikkomponenten durchzuführen.
3. Der entscheidende Aspekt ist somit der Einsatz hoher Qualitäten im Neubau und bei allen Modernisierungsmaßnahmen. Bei dem derzeitigen Stand der Entwicklung sind hierfür vor allem Passivhauskomponenten geeignet und wirtschaftlich sinnvoll. Dabei ist neben der Passivhaus-Gebäudehülle und einer energieeffizienten Haustechnik auch die Stromeffizienz der gesamten Elektroausstattung in den Gebäuden entscheidend.
4. Der Wandel der Energieversorgungsstruktur hin zu einer effizienter Energienutzung und dem Ausbau erneuerbarer Energieträger stellt die zweite Säule der Klimaschutzstrategien dar. Im Klimaschutzszenario wird dadurch ungefähr die Hälfte der Treibhausgasminderungen erreicht. Ein hoher Anteil erneuerbar versorgter Gebäude setzt hierbei immer voraus, dass der Wärme- und Strombedarf insgesamt auf ein sehr niedriges Niveau geführt werden. Das gilt besonders für die Zeitspanne nach 2030, weil dann zusätzlich in hohem Umfang aufwändige Speichertechnologien erforderlich werden.

Resumé R. Vallentin:

„Das Dilemma der mittleren Qualität“

Die heute übliche Baupraxis erzeugt ein „Dilemma der mittleren Qualität“: Die hierbei eingesetzten mittleren energetischen Qualitäten der Gebäudehülle und der Lüftungskonzepte reichen nicht aus, um den Heizwärmebedarf der Wohngebäude in dem für die Klimaschutzziele notwendigen Maße abzusenken. Sie stellen vor allem „verpasste Gelegenheiten“ dar, die so schnell nicht wiederkehren. Die mittleren Qualitäten stellen ein folgenschweres Hemmnis für die Klimaschutzstrategien im Gebäudebereich dar. Aufgrund der großen Trägheit des Wohngebäudeparks wird dies jedoch erst relativ spät, d.h. erst ab 2030 an dem dann zu hohen Heizwärme- und Strombedarf erkennbar werden.

Studie 2: A. Müller für Gebäudebestand Österreich ²

Inhalt und Zielsetzung

Inhalt der Studie ist die Untersuchung der Entwicklung des Wärmebedarfs und der Möglichkeiten zur Deckung des Wärmebedarfs von Wohn- und Nichtwohngebäuden in Österreich bis zum Jahr 2050. Die Entwicklung des Haushaltsstrombedarfs ist nicht Gegenstand der Studie.

Vorgehensweise zur Modellbildung

Schritt 1:

Szenarien zur Entwicklung des Nutzwärmebedarfs für Raumwärme und Warmwasser

Der Gebäudepark Österreichs wird über ein Modell abgebildet, in dem alle Wohngebäude und Nicht-Wohngebäude verschiedenen Baualtersklassen und Gebäudearten zugeordnet werden.

Ähnlich wie in der Studie von Vallentin wird die Sanierungsrate aus der technischen Lebensdauer der Bauteile abgeleitet. Die resultierenden Sanierungsraten liegen bei etwa 1,8 bis 2,2%.

Der zukünftige Heizwärmebedarf wird für zwei Szenarien berechnet. Die wichtigsten Annahmen zu Neubau- und Sanierungsqualität sowie –Sanierungsrate sind in Tabelle 2 zusammengestellt.

Referenzszenario			
	Neubau	Sanierung Gebäude nach 1945	Sanierung Gebäude vor 1945
HWB	kWh/m ² _{BGFA}	kWh/m ² _{BGFA}	kWh/m ² _{BGFA}
bis 2020	35 - 40	55 - 80	90 - 125
2050	10	10 - 15	50 - 55
Sanierungszyklus durchschnittlich 55 Jahre			
Ambitioniertes Sanierungsszenario			
	Neubau	Sanierung Gebäude nach 1945	Sanierung Gebäude vor 1945
	kWh/m ² _{BGFA}	kWh/m ² _{BGFA}	kWh/m ² _{BGFA}
bis 2020	35 - 40	20 - 30	60 - 85
ab 2030	10	10	30 (2050)
Sanierungszyklus durchschnittlich 45 Jahre			

Tabelle 2: Annahmen zu Neubau und Sanierung

Bei der Berechnung des Heizwärmebedarfs werden rebound-Effekte, etwa höhere Raumlufttemperaturen in hochwertig sanierten Gebäuden, berücksichtigt. In einer Subvariante werden die Auswirkungen der prognostizierten Klimaveränderungen auf den Heizwärme- und Kühlbedarf berücksichtigt.

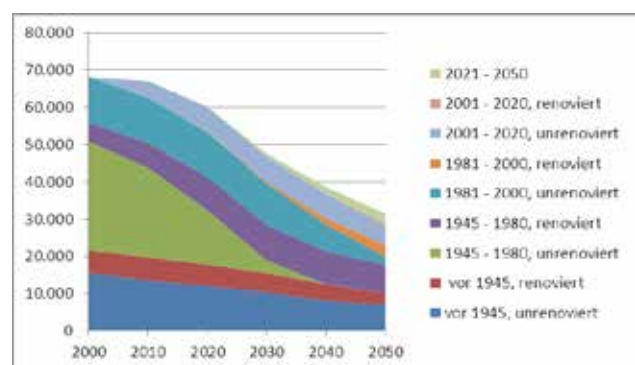
Schritt 2:

Szenarien zur Entwicklung des Anteils erneuerbarer Energieträger

Im zweiten Schritt wird die Entwicklung des Anteils erneuerbarer Energieträger an der Wärmeversorgung detailliert untersucht. Dabei werden verschiedene technische Ansätze und Förderansätze ebenso berücksichtigt, wie die Wärmedichten unterschiedlicher Bebauungsstrukturen.

Ergebnisse in Kurzform

Der Wärmebedarf des österreichischen Wohngebäudebestandes kann trotz starker Zunahme der Gesamt-Wohnfläche bis zum Jahr 2050 um 53% gegenüber dem Referenzjahr 2010 reduziert werden. Werden die prognostizierten Klimaveränderungen berücksichtigt, so liegen die Einsparungen um etwa 8 – 15% höher.



Entwicklung des Wärmebedarfs in österreichischen Wohngebäuden bis 2050

Der Anteil erneuerbarer Energieträger liegt im Jahr 2050 in einem Bereich von 65 bis 90%.

² Andreas Müller et al.: Systeme zur Wärmebereitstellung und Raumklimatisierung im Österreichischen Gebäudebestand: Technologische Anforderungen bis zum Jahr 2050

- ▶ Zentraler Ansatzpunkt zur Reduktion des Energiebedarfs ist die Gebäudesanierung, die größten Potenziale bestehen in Gebäuden der Baujahre 1945 bis 1980
- ▶ Soll das Einsparpotenzial ausgeschöpft werden, „muss jede Sanierung in bestmöglicher thermischer Qualität ausgeführt werden. Jede suboptimale Sanierung bewirkt ein nicht realisiertes Potenzial, das in den nächsten 40 Jahren nicht mehr umgesetzt werden kann, weil ein neu saniertes Gebäude in der Regel in dieser Zeitspanne nicht noch einmal saniert wird. Diesen „Lock in Effekt“ gilt es mit allen Mitteln zu vermeiden“
- ▶ Im Falle mangelnden Kapitals ist es zielführender, eine Sanierung zu verschieben, statt sie in suboptimaler Form umzusetzen
- ▶ „Kurz- bis mittelfristige Ziele ...können prinzipiell entweder durch eine Steigerung der Sanierungsrate bei gleichbleibender (schlechter bis mittelmäßiger) Sanierungsqualität oder durch eine deutliche Verbesserung der Sanierungsqualität erreicht werden. Eine bloße Steigerung der Sanierungsraten bewirkt durch den „Lock in Effekt“ jedoch einen schwerwiegenden strategischen Nachteil für die Zeit nach 2020. Längerfristige Ziele können nur durch die Umsetzung optimaler Sanierungsqualität erreicht werden. Die bloße Steigerung der Sanierungsrate führt hier durch Erhöhung der Sanierungsrate zu einem Verfehlen der Ziele“

Obwohl die Studien mit Unterschiedlichen Schwerpunkten und mit unterschiedlichen Methoden durchgeführt wurden, kommen Sie bezüglich der Möglichkeiten zur Reduktion des Wärmebedarfs im Gebäudebereich zu sehr ähnlichen Ergebnissen und Schlussfolgerungen:

- ▶ Die energetische Qualität des Neubaus muss weiter gesteigert werden
- ▶ Die erreichbare Reduktion des Wärmebedarfs und der CO₂-Emissionen für Raumwärme hängt maßgeblich von der Gebäudesanierung ab
- ▶ Ausschlaggebend sind Sanierungsrate und – qualität
- ▶ Sollen energetische Gebäudesanierungen wirtschaftlich durchgeführt werden, so sollten sie mit ohnehin anstehenden Erneuerungsarbeiten gekoppelt werden. Die Sanierungsrate ist damit aus den technischen Lebensdauern der Bauteile und Haustechnikkomponenten ableitbar.
- ▶ Es ergeben sich Sanierungsraten von etwa 1,8 bis 2,2% des Gesamt-Gebäudebestandes
- ▶ Die energetische Qualität von Gebäudesanierungen muss deutlich gesteigert werden. Jede Sanierung mittlerer Qualität ist eine verlorene Chance, da die tatsächlich vorhandenen Einsparpotenziale für einen langen Zeitraum nicht genutzt werden.
- ▶ Bezüglich der Anforderungen an die Gebäudesanierung muss unterschieden werden zwischen voll sanierbaren und nur teilweise sanierbaren Gebäuden bzw. Gebäuden unter Denkmalschutz.

Die Studien stützen damit die im Vorarlberger Energieautonomieprozess definierten Ziele, Fördergelder von Neubau in Richtung Sanierung zu verlagern und die Progression der Förderung mit zunehmender energetischer Qualität zu verstärken.

Die Herleitung der Sanierungsrate aus den technischen Nutzungsdauern der Bauteile und Elemente führt dazu, dass energetische Sanierungen wirtschaftlich durchgeführt werden können und dass die notwendigen, hohen Zahlen an hochwertigen Sanierungen dauerhaft gewährleistet werden können.



4 AlpBC Symposia Overview

The Participative Symposia in AlpBC

by COA energia Service, Finaosta S.p.A., Aosta Valley Regional Financing Company (IT)

Currently the potential of territorial building culture is not sufficiently recognised by policy makers and stakeholders in the different territories and very often it is not appropriately exploited. Different experiences matured in other European projects, as for example AlpHouse, identify the cause in the lack of integrative planning capacities in the regions at different levels (local, inter-municipal, regional, national and transnational), in the lack of interfaces between stakeholders and of participative governance. One of the AlpBC objectives, as explained in the introduction of this publication, is to sensitise all the main target groups (politicians, administrators, SMEs, professionals, citizens) on the endogenous potential of the territory to develop closed loop economies using local resources, to optimise the existing building heritage through new technologies and the use of renewable energy sources, to integrate energy aspects in the existing territorial planning instruments, and to increase the use of sustainable local building materials. The challenge of the project, to continue also after the project period, is to enhance the competitiveness of the territories, transferring knowledge and technology across regional borders, jointly developing methods and tools.

In this light, among the various activities developed, in the context of the AlpBC project were the “Participative Symposia”. As it has been seen, communication and the involvement of various players is fundamental in a European project; for this very reason, the AlpBC project wanted to place great importance on the organisation of events that were not solely seen as conferences in the context of the project, but as meetings with specific characteristics able to let the project speak and to highlight the experiences matured during the project.

But what is meant by “Participative Symposia”? There are two key words relating to these events organised by the project partner; the term **Participative** highlights the principle of “participation”, actively involving in a concrete manner the stakeholders that, at different levels, are interested in the themes dealt with by the event. Participation is a fundamental requisite in the organisation of a Participative Symposium: giving voice to the participants, letting them exchange views on the differing realities of their own territories, giving them the possibility of bringing their knowledge to the table, to express their doubts and problems so as to try and find solutions through dialogue.

With the term “**Symposium**” intended to highlight the idea of meeting and wide-scale convention, a moment for dialogue and effective discussion.

During the project organisational guidelines of the “Participative Symposium” in the different territories were drawn up by the partners. The guidelines consist of a table entitled “Overview of Participative Symposium”; the structure of the Overview and the advice given and aim to create a common set-up for the event (related to the methodology adopted for its organisation) in the territories involved in the project, to ensure the success of the event securing regional impact, to offer the possibility of exchanging contents, methods, experiences at transnational level, giving a preview of the event. The Overview could be useful before the event as a guide and check-list for the organisation and after the event as a tool to summarise the main results, sharing a kit of information with those interested.

In AlpBC specific requirements were defined that enabled an event to be defined as “Participative Symposium”, with particular reference to the conception and to the promotion of the event.

Conception

- ▶ The event should be organised by a **project partner as leader of the organisation**, in **tandem with another project partner** with the same interest in the topics dealt with in the event. In this way it would be possible to give importance to the transnational value and to an effective transfer of knowledge and experiences.
- ▶ Involve a **moderator** with the role of motivator and with the skill to involve the participants during the different lectures.
- ▶ Involve at least **one lecturer** represented by a **regional/local stakeholder**.
- ▶ Involve at least **one regional expert** giving specific contents on the treated category.
- ▶ Organise **preparatory workshops** (if necessary) on more detailed issues in order to involve the participants before the event, enhancing the participative aspect.
- ▶ Organise **follow-up workshops** on more detailed issues, effective for the transfer of the outputs.
- ▶ Clearly define the **concept of participation** that this event intends (discussion with the participating citizens, the local administrators, the local professionals, etc.).
- ▶ Organisation of **excursions and guided visits to best practices**.
- ▶ Clearly define the **Transfer value exported** describing to the other partners in which way the event could be replicated at a transnational level, transferring the contents (e.g. presentations, best practices, publications, tools, exhibitions, experts, etc.), and/or the methodology adopted.

Moreover, this field should also be filled through a form of post-processing: a post-implementation reflection by the organizers on some guiding questions like:

- Which parts of the programme should be kept for the next time, which parts should be changed (in which way)?
- In which way does the timing need to be changed?
- What has to be observed when briefing lecturers/experts?
- What were critical processes in the discussion during the event, and in which way should one be prepared therefore?
- Clearly define the **Transfer value imported** describing what kind of values (e.g. contents: presentations, best practices, publications, tools, exhibitions, experts; and / or methodology, etc.) have been taken from a Symposia organised by another partner.

Promotion

- ▶ Promote the event with at least **one flyer, one newsletter announcement, two press releases** (one for the promotion and one after the single event).

4 AlpBC Symposia Overview

The Participative Symposia in AlpBC

Moreover, for the Participative Symposia 6 specific categories and sub categories were defined related to topics that could be dealt with in the event.

DESIGN AND PLANNING	▸ Territorial Planning Strategies ▸ Local energy plans ▸ Interfaces between planning processes ▸ Inter-municipal concepts ▸ Micro-networks – smart grids ▸ (Energy) Certification systems ▸ Territorial mobility strategy
REGIONAL CLOSED LOOP ECONOMY	▸ Regional raw material loop systems ▸ Biomass supply ▸ Independency from industrial products ▸ “Vernacular” material: Lime, wood, stone, clay ▸ Re-use of material in the construction sector ▸ Repair
REGIONAL BUILDING CULTURE AND ENERGY RENOVATION	▸ Vernacular Technology ▸ High - Efficiency Technology ▸ Low-Tech Technology ▸ Renovation ▸ Material Analysis and certification ▸ Mobility efficient technologies
ALPBC APPROACH	▸ Dissemination and Promotion of AlpBC Ideas on local, regional and transnational level ▸ Consultancy for politics ▸ Building up Awareness: Building owners, craftsmen, architects, planners, energy consultants ▸ Best practices transfer
EDUCATION AND MARKETING	▸ AlpHouse center and AlpHouse contact points concept ▸ Didactics, scientific background ▸ Contact with Customers ▸ Communication strategies ▸ Networking experts /SMEs ▸ Interfaces between Craftsmen, Architects and Decision Makers
OTHER Including new topics or transversal topics related to the different categories of Participative Symposia	▸ [...]

General information

Category	Fill in the name of one of the categories listed in the attachment A "Categories for Participative Symposia". The filling colour of this cell must be the same colour as the corresponding category
	Fill in the name of one of the categories listed in the attachment A "Categories for Participative Symposia". The filling colour of this cell must be the same colour of the corresponding category
Title	Fill in the title of the event in the local language and with the English translation
Project partner leader	Fill in the Project partner number, the acronym and the official name of the institution
Tandem project partner	Fill in the Project partner number, the acronym and the official name of the institution
Duration	Fill in the number of days and the related number of hours per day. Please specify how many hours are dedicated to the different activities (e.g. public conference, workshops, guided visit to best practices, etc.) E.g. Total days: 2 Total hours: 10 1st day: 3 hours – conference + 4 hours – workshop 2nd day: 3 hours – guided visit
N. lecturers	Fill in the total number of lecturers involved in the PS
N. experts	Fill in the total number of experts involved in the PS
N. participants	Fill in the total number of participants involved in the PS
Target group	Fill in the target groups involved in the PS
Location	Fill in the name of the location and the address
Framework programme	Fill in if during the event particular choices were made or if space was given to other initiatives for the organisation of the event (e.g. stands of regional stakeholders, AlpHouse Fair Stand, exhibition of a related project, regional food (typical products, organic food, short supply chain), etc.)

Characteristics of the Participative Symposium

Profile and aims	Fill in which are the aims of the Participative Symposium.
Methodic approach	Fill in which is the approach you will adopt for the organisation of the PS and why you have chosen it
Participative value	Fill in the way you intend to involve the participants (also specifying before the event, during the event, during the follow-up workshops)
Transfer value exported	Fill in a description on which way the event could be replicated at a transnational level for the organisation of a similar event in another country (e.g. specific contents, presentations, best practices, publications, tools, exhibitions, experts, methodology, etc.)
Transfer value imported	Fill in a description on what kind of values (e.g. specific contents, presentations, best practices, publications, tools, exhibitions, experts, methodology, etc.) have been taken from a Symposia organised by another partner. Please specify the name of the Participative Symposia and the name of the organizer PP
Transnational value	Fill in the elements which could give a transnational value to the PS (e.g. hosting exhibitions of other countries, involving other PPs and experts of other countries, etc.)
Outcomes	Fill in the outcomes of the event (collection of experiences, new networks between different stakeholders, feedback from the participants, etc.)

Public conference

Title	Fill in the title of the public conference in the local language and with the English translation
Description	Fill in a short description of the public conference using some key-words
Language	Fill in the language in which the public conference will be held and specify if there will be a translation service and in which language(s)

Follow-up or preparatory workshops

Serial N.	Fill in the serial number to list the follow-up workshops
Title	Fill in the title of the workshop in the local language and with the English translation
Description	Fill in a short description of the workshop using some key-words and specifying if it is preparatory or follow-up
Language	Fill in the language in which the workshop will be held and specify if there will be a translation service and in which language(s)
Serial N.	[...]
Title	[...]
Description	[...]
Language	[...]

4 AlpBC Symposia Overview

The Participative Symposia in AlpBC

Guided visits to best practices			
Serial N.	Fill in the serial number to list the guided visits to best practices		
Location	Fill in the name of the location(s) and the address(eg)		
Best practice description	Fill in a short description of the best practices using some key-words		
Language	Fill in the language in which the guided visit to the best practices will be held and specify if there will be a translation service and in which language(s)		
Serial N.	[...]		
Location	[...]		
Best practice description	[...]		
Language	[...]		
Reference persons			
PP Leader			
Contact person	Fill in name and surname of the person		
Address			
Phone		Fax	
E-mail		Web	
Tandem PP			
Contact person	Fill in name and surname of the person		
Address			
Phone		Fax	
E-mail		Web	
Involved persons			
Moderator	Fill in qualification, name and surname of the person.	Region/country	Fill in the region/country of provenience
		E-mail	Fill in the e-mail contact of the person
Field of expertise	Fill in a short description of the field of expertise	Role in PS	Fill in the part of the event for which the contribution has been given (e.g. public conference, workshop, guided visit, etc.)
Regional lecturer 1	Fill in qualification, name and surname of the person. This lecture could be treated by regional/local stakeholders (e.g. monument preservation, energy institute, territorial planning/urban planning, architect and/or craftsman, etc.) referring in particular to the local situation	Region/country	Fill in the region/country of provenience
		E-mail	Fill in the e-mail contact of the person
Field of expertise	Fill in a short description of the field of expertise	Role in PS	Fill in the part of the event for which the contribution has been given (e.g. public conference, workshop, guided visit, etc.)
Extra-regional lecturer 1	Fill in qualification, name and surname of the person. This lecture could be treated by an extra-regional stakeholder	Region/country	Fill in the region/country of provenience
		E-mail	Fill in the e-mail contact of the person
Field of expertise	Fill in a short description of the field of expertise	Role in PS	Fill in the part of the event for which the contribution has been given (e.g. public conference, workshop, guided visit, etc.)
Regional expert 1	Fill in qualification, name and surname of the person	Region/country	Fill in the region/country of provenience
		E-mail	Fill in the e-mail contact of the person
Field of expertise	Fill in a short description of the field of expertise	Role in PS	Fill in the part of the event for which the contribution has been given (e.g. public conference, workshop, guided visit, etc.)

Regional expert 2	Fill in qualification, name and surname of the person	Region/country	Fill in the region/country of provenience
		E-mail	Fill in the e-mail contact of the person
Field of expertise	Fill in a short description of the field of expertise	Role in PS	Fill in the part of the event for which the contribution has been given (e.g. public conference, workshop, guided visit, etc.)
Transnational expert 1	Fill in qualification, name and surname of the person	Region/country	Fill in the region/country of provenience
		E-mail	Fill in the e-mail contact of the person
Field of expertise	Fill in a short description of the field of expertise	Role in PS	Fill in the part of the event for which the contribution has been given (e.g. public conference, workshop, guided visit, etc.)
Transnational expert 2	Fill in qualification, name and surname of the person	Region/country	Fill in the region/country of provenience
		E-mail	Fill in the e-mail contact of the person
Field of expertise	Fill in a short description of the field of expertise	Role in PS	Fill in the part of the event for which the contribution has been given (e.g. public conference, workshop, guided visit, etc.)
PP expert 1	Fill in qualification, name and surname of the person	Region/country	Fill in the region/country of provenience
		E-mail	Fill in the e-mail contact of the person
Field of expertise	Fill in a short description of the field of expertise	Role in PS	Fill in the part of the event for which the contribution has been given (e.g. public conference, workshop, guided visit, etc.)
PP expert 2	Fill in qualification, name and surname of the person	Region/country	Fill in the region/country of provenience
		E-mail	Fill in the e-mail contact of the person
Field of expertise	Fill in a short description of the field of expertise	Role in PS	Fill in the part of the event for which the contribution has been given (e.g. public conference, workshop, guided visit, etc.)

Information and publicity	
Promotion material	Fill in the different types of the promotion material produced and specify where this material is published and eventually downloadable (e.g. the website, the newspaper, etc.) TYPES Flyers (PP language and ENG) Posters (PP language) Newsletter announcements (PP language and ENG if necessary)
Press work	Fill in the different types of press work produced and specify where this material is published and eventually downloadable (e.g. the website, the newspaper, etc.) TYPES Press releases before the single event (PP language) Press releases after the single event (PP language)
Support material	Fill in the different types of the support material produced and specify where this material is published and eventually downloadable (e.g. the website, the newspaper, etc.) TYPES Detailed programme (PP language) Registration form (PP language) Presentations of contents (PP language) Certificate of attendance (PP language) Evaluation form (PP language; moreover a summary of the outcomes of the evaluation form could be drawn up in ENG and integrated in the Final Publication) Final publication with a focus on Regional building culture (as foreseen in the AF) (ENG)
Filming	Fill in if there is a video of the event and specify where this material is published and eventually downloadable (e.g. the website, etc.)
Pictures	Fill in at least 5 pictures describing the event and specify if other pictures are published and eventually downloadable (e.g. the website, etc.)

4 AlpBC Symposia Overview

The Participative Symposia in AlpBC

During AlpBC 6 “Participative Symposia” were organised:

WIN 13 - Economise with new energies and resources

Project Partner leader EIV (AT) in tandem with Ballenberg (CH)

29.-30.11.2013 in Bregenz (AT)

Symposium Focus Point Alpine Building

Project Partner leader WKS (AT) in tandem with Project Partner HWK (DE) and RSA (AT)

02.10.2014 in Urstein (Salzburg, AT)

Wake up: Alpine construction

Project Partner leader TIS (IT)

02.02.2015 in Bozen (South Tyrol, IT)

Symposium Planning and Building in the Alps

Project Partner leader LUH (DE) in tandem with Project Partner HWK (DE)

10.03.2015 in Munich (Bavaria, DE)

Alpine Building Culture. Territorial development and ecologic sustainability

Project Partner leader ERS (IT) in tandem with Project Partner PIE (IT)

14.-15.04.2015 in Sondrio (Lombardy, IT)

PlanificACTION énergétique des Communes-Potentials and development in the alpine territories

Project Partner leader COA (IT) in tandem with Project Partner VEN (IT)

29.-30.04.2015 in Châtillon (Aosta Valley, IT)

Target groups and experts involved – The transnational value of the Participative Symposia

The organisation of the Participative Symposia gave the opportunity to involve a great number of different **target groups**. In coherence with the central elements of the project, as a stimulation of the regional closed loop economy, the implementation of inter-municipal planning concepts, the territorial development and ecologic sustainability, the transfer of knowledge and technologies to SMEs, decision makers and the local administrations and the implementation of participative governance processes and consultancy instruments for policy makers and regional authorities, different topics have been analysed deeply involving various stakeholders.

The experts of the sector such as: architects, planners, engineers, surveyors, SMEs, energy consultants, homeowners and the general public were involved together with local administrators, politicians and the staff of Municipal technical offices. A total of 886 participants took part in the events organised in the different countries.

Each Participative Symposium consisted in a **central public conference**. In some cases, the conference was opened by preparatory workshops. For example, in the Symposium Planning and Building in the Alps organised by the Project Partner LUH a preparatory workshop was organised in order to involve different sectoral State ministries to develop the thematic outlines for the project work in the Pilot Area. During the workshop stakeholders of the Pilot Area collaborated with experts of the State ministries with the aim of analysing bottom-up initiatives and their potential to be transferred to regional contexts, defining cooperation for the achievement of the AlpBC objectives such as planning at different scales, rural and urban development, regional and circular economies, energy issues, etc.

Another example of a “**preparatory workshop**” is reported in the PlanificACTION énergétique des Communes-Potentials and development in the alpine territories organised by the Project Partner COA. During the event three panel discussions were organised in order to create a moment of dialogue and comparison between the local stakeholders, with a particular focus on these of the Pilot Area Mountain Community Monte Cervino (local administrators, staff of technical offices), and the hosted stakeholders of the Veneto region (architects, administrators). In each panel, dealing a specific topic, a lecturer

presented a best practice stimulating the following discussion among participants.

The topic discussed during the workshops and the outcomes were presented afterwards in the public conference with a larger public.

In other experiences, partners organised “**following workshops**” with a particular focus on some of the topics dealt with in the previous conferences. In the experience of the Alpine Building Culture. Territorial development and ecological sustainability organised by the Project Partner ERS the following workshop was organised in a different period related to the conference, almost at the end of the project, it was meant as a seminar to spread the results of AlpBC through a discussion organised in three round tables, confronting the experiences of the pilot implementations in the different partner territories.

An interesting aspect of the Participative Symposia was the organisation of the guided visits to best practices. During the WIN 13 - Economise with new energies and resources organised by the Project Partner EIV three guided visits took place to energy efficient buildings. Another interesting experience was the visit to the quarry of stone in Chiesa di Valmalenco organised in the Alpine Building Culture. Territorial development and ecologic sustainability organised by the Project Partner ERS.

In each event **several experts** were involved in the conference and in the workshops bringing their experience from the regional territory and from further realities. A total of 26 lecturers and 79 experts were involved.

For the communication of the Participative Symposium a great campaign of **information and publicity** was undertaken: printing of flyers, posters, publishing of web and press appearances, newsletters and elaboration of specific publications. Some of the documents should be useful as ideas to follow in the organisation of other events and the publications could be used as bearers of contents.

The Participative Symposia could be considered as **an international transfer tool**; in fact from the different experiences the event is seen as a way to exchange methods, process design and management skills, to exchange international expertise and good practices. Not only during the event, but also afterwards, the transfer of knowledge could continue using the published material and the products elaborated thus showing the available experts in specific fields that could be invited for other events dealing with similar topics.

The following pages present in detail the Participative Symposia listed above organised by the different Project Partners. For each event the completed Overviews are presented giving a first presentation of the Symposium; after, a descriptive text presents an abstract of the event, the organising partners and their main activities and the event in detail.



5.1 WIN 13 - Economize with new energies and resources

29.-30.11.2013 in Bregenz (AT)

AlpBC Overview of Participative Symposium	
General information	
Category	DESIGN AND PLANNING
	REGIONAL CLOSED LOOP ECONOMY
Title	WIN 13
Project partner leader	Energy Institute Vorarlberg
Tandem project partner	1. Ballenberg, later CH, international affairs
Duration	29th to 30th of November 2013
N. lecturers	2
N. experts	34
N. participants	320
Target group	• Business owners and professionals from enterprises, industry , tourism and communities • Architects, staff of technical offices, planners, etc. • Employees of construction industry and related trades • Consultants in the areas of energy, ecology and resources
Location	Festspielhaus Bregenz
Framework programme	Economy with new energies and resources in the topics: • Construction and Energy • Tourism • Communities • Industry and Enterprises • Policy and Society
Characteristics of the Participative Symposium	
Profile and aims	The congress gave prospects for successful economic development and showed new, cross-industry concepts, practical solutions and innovative best practice examples for new economies in the areas of construction, trade, industry
Methodic approach	Key lectures in the morning, two rounds of 12 workshops before and after lunch, panel discussion, film; Task: Zero Emission, Factory of the future, Next day: 3 different excursions;
Participative value	Overview about innovations in all areas of economic activity belonging to energy and resources

Transfer value exported	Networking of all actors in the economy and in communities that want to get involved in the following topics: • Energy autonomy / energy transition • Construction and Renovation • Energy efficiency • Renewable energy sources • Climate change • Resource protection • Renewable resources (renewable raw materials) • Growth in Transition • Sustainable management • Participants get a new experience which they can for their daily business
Transfer value imported	Development of issues, ideas and solutions for future concepts and projects in companies, municipalities, public institutions and funding programs such as Interreg V. EIV is seen as a competent partner in Vorarlberg and across the borders in terms of professionalism, organization, cooperative skills.
Transnational value	Exchange of methods, process design and management skills
Outcomes	Dissimination of Servicepackage "Sustainable Buildings in the Community", Concept for House of the Energy Autonomy
Public conference	
Title	House for the Energy Autonomy
Description	Our way to zero energy buildings
Language	German/English
Follow-up or preparatory workshops	
Serial N.	1
Title	Das Energieautonomiehaus
Description	Workshop "House for the Energy Autonomy" with enterprises of the construction industry
Language	German
Serial N.	2
Title	Das Energieautonomiehaus
Description	Workshop "House for the Energy Autonomy" with representatives of the State Government
Language	German
Guided visits to best practices	
Serial N.	Bus 1
Location	Route Unteres Rheintal
Best practice description	Plus energy building Brunn , Hard (Replacement building in wood and straw) • Low energy rowhouse Frühlingsstraße, Wolfurt (Installer Community, High density, low-rise building in wood) • House in load-bearing straw bale construction, Dornbirn • LifeCycle Tower, Dornbirn
Language	German
Serial N.	Bus 2
Location	Route Montafon
Best practice description	Energy-efficient office building Omicron , Klaus • Renovation of passive Middle school, Burs • Illwerke center Montafon Vandans (one of the largest wooden office building Europe , built with the LCT system)
Language	German
Serial N.	Bus 3
Location	Route Vorderwald
Best practice description	Multi-purpose Parish Hall, Krumbach • Passiv house apartment building, Krumbach • Communal photovoltaic installation, Krumbach
Language	English

5.1 WIN 13 - Economize with new energies and resources

Reference persons			
PP Leader	EIV		
Contact person	Sabine Erber		
Address	Stadtstraße 33		
Phone	+43 69913120291	Fax	+43 5572 31202 4
E-mail	sabine.erber@energieinstitut.at	Web	www.energieinstitut.at
Tandem PP	Bildungszentrum Ballenberg		
Contact person	Adrian Knüsel, Cooperation stopped because of missing funding		
Address			
Phone		Fax	
E-mail		Web	
Involved persons			
Moderator	Kurt Hämmerle	Region/country	Vorarlberg
		E-mail	kurt.haemmerle@energieinstitut.at
Field of expertise	Manager of network of craftsmen	Role in PS	Chief organisation
Regional lecturer 1	Erwin Mohr	Region/country	Vorarlberg
		E-mail	mohr.wolfurt@vol.at
Field of expertise	EU Committee of the Regions	Role in PS	Contact to EU, key note
Extra-regional lecturer 1	Christine Ax	Region/country	Germany, Berlin
		E-mail	ax@aha-berlin.com
Field of expertise	Craft as a key to sustainability	Role in PS	Key note speaker
Regional expert 1	Dr. Adi Gross	Region/country	Vorarlberg
		E-mail	adi.gross@gruene.at
Field of expertise	Aims of the Energy Autonomy	Role in PS	workshop leader
Regional expert 2	Dietmar Lenz	Region/country	Vorarlberg
		E-mail	d.lenz@gemeindehaus.at
Field of expertise	sustainable procurement	Role in PS	workshop leader
Transnational expert 1	Rainer Vallentin	Region/country	Germany, Munic
		E-mail	pgph@gmx.de
Field of expertise	Achievement of zero energy standards in existing buildings	Role in PS	workshop leader
Transnational expert 2	Andreas Bitschi	Region/country	Liechtenstein
		E-mail	andreas.bitschi@entechma.com
Field of expertise	Design principles for solar systems	Role in PS	workshop leader
PP expert 1	Martin Ploss	Region/country	Vorarlberg
		E-mail	martin.ploss@energieinstitut.at
Field of expertise	Ways to Zero Energy Buildings	Role in PS	workshop leader
PP expert 2	Christoph Sutter	Region/country	Vorarlberg
		E-mail	christoph.sutter@energieinstitut.at
Field of expertise	Renewable raw materials in industrial buildings	Role in PS	workshop leader
Information and publicity			
Promotion material	Poster A0,A3, Mass Mailing, Web Festspielhaus, Bregenz online		
Press work	Weekend, Wirtschaft, PH Broschüre,		
Support material	Detailed programme (German) Participant list		
Filming	No film		



Morning session
Image: Caroline Begle



Workshop "Regional Cycle Loop Economy"
Image: Dietmar Mathis



Workshop "Regional Cycle Loop Economy"
Image: Caroline Begle



Workshop "Regional Cycle Loop Economy"
Image: Caroline Begle



Exhibition "Constructive Alpes" at WIN 13



Exhibition "Constructive Alpes" at WIN 13



Information



Final discussion

5.1 WIN 13 - Economize with new energies and resources

Abstract

The Participative Symposium WIN 13 - Economize with new energies and resources was held at the Festspielhaus Bregenz the 29 and 30 November 2013. The event carried out a conference, 23 workshops and three insightful excursions with a focus on resource and energy efficiency, renewable energy and renewable raw materials in the building sector.

Short introduction of the involved Project Partners

EIV - Energy Institute Vorarlberg (AT)

EIV is a non-profit organization that offers services to support sustainable energy systems. Its main purpose is to promote sensible and efficient energy consumption by using renewable energy sources, which includes environment-friendly building as well as aspects of mobility. The task is to prepare specialized information and distribute it to target groups. It offers a wide spectrum of consultation and coaching possibilities for various target groups. EIV is responsible for the development of ecological housing subsidies and provides the necessary resources for processing.

Contents, findings and message of the symposium

On Friday, November 29, 2013 there was held a conference with a total of 23 workshops for professionals and interested parties from the fields of construction and energy, trade, tourism, industry, communities, politics and society at the Festspielhaus Bregenz.

The symposium was organized by the Energy Institute Vorarlberg together with 17 renowned partners and demonstrated with renowned speakers prospects for successful economic development. Participants are offered examples of new economization in different areas as well as inter sectoral approaches, practical solutions and innovative best practices.

Symposium with excursions

The energy expenditure is rising steadily, the shortage of resources increases. Energy systems are highly complex and can only be optimized by professionals. Now there is with "win13" the opportunity to experience concentrated problem-solving skills within one day.

Meeting conductor Kurt Hämmerle from Vorarlberg Energy Institute explains: "Who is facing challenges in the fields of energy and resources, will be able to experience an ideal networking with our expanded conference facilities with experts from the tri-border region under the umbrella of the Energy Independence and Vorarlberg".

On Saturday, November 30, also three insightful excursions with a focus on resource and energy efficiency, renewable energy and renewable raw materials in the building sector are carried out.

Craft as a key to sustainability Kurt Hämmerle: "win13" offers numerous possibilities of practical networking and space for exchange and focuses on sustainable planning and decisions.

The Unit start on Friday morning makes former mayor Erwin Mohr, speaking as a member of the EU Committee of the Regions firsthand about the "tension between (EU) regulation and user behavior of consumers". The keynote speaker on the topic "To grow what to grow - craft as the key to sustainability" is Christine Ax. The German philosopher, economist and author is considered one of the most prominent theorists and thinkers of the craft in the German-speaking world.

Professionals and other interested persons as a target group

The meeting package offers many opportunities for networking and information gain for decision-makers from business, politics, municipalities and authorities, planners such as architects, technical offices, planners, performers from the construction industry and related trades, Advisory in the fields of energy, ecology and resources and experts from trade, industry and tourism and interested in the topic. More on: www.energieinstitut.at/win13.

Factbox: Workshop Topics (excerpt)

- ▶ Towards zero energy buildings builders Academy - a new advisory and training services for sustainable building
- ▶ Regional Closed Loop Economy (in English)
- ▶ Industrial process heating in circulation
- ▶ The energy-efficient production hall
- ▶ To grow what to grow - craft as the key to sustainability
- ▶ NAWAROS (regrowing commodities) trends and developments in residential, business and public buildings
- ▶ The common welfare economy as a tool for sustainable business development
- ▶ A reorganization as an opportunity for a better life design principles for solar and PV Integration
- ▶ Sustainable community development through energy planning
- ▶ Energy management ISO 50.001
- ▶ Light and lighting - efficiency and well-being finally united LED streetlights

5.1 WIN 13 - Wirtschaften mit neuen Energien und Ressourcen

29.-30.11.2013 in Bregenz (AT)

The publication "Vorarlberger Vorbilder"

The publication "Vorarlberger Vorbilder" is aimed at people who carry a lot of responsibility through their decision-making power. Local politicians in municipalities decide which public building is to be renovated and what new projects are undertaken. These decisions trigger years of decision-making and planning processes that cost a lot of money.

In the ideal case a building will be developed out of clearly defined standards with high quality architecture that has been created by artisans of the region with regional materials that has consumed little grey energy and consumes little or no energy in use. Ideally, it is good to use, creates identity for the citizens, ages with grace and will last many years without structural damage.

This publication was made possible through the promotion of the "Alpine Space" project "AlpBC". AlpBC, Alpine Building Culture is the abbreviation for alpine architecture. In work package 6, entitled "design and consulting" we had the mandate to carry out a consultation to exemplary projects in our region for local and regional politicians and planners and to document this consultation.

Instead of individual consultation sessions we have published a book, which is distributed to newly elected local politician. The publication explains in short texts and many pictures the creation of 3 example building, introduces the architects and shows the process design of the development by interviews with the majors.

In the middle part of the publication we compare the process design of the projects, publish interviews with users and highlight some specific aspects of each building. At the end, all parties are called to show, that not only the architects, but also the building service engineer, lighting designers, structural engineers all artisans have contributed to the success of the building.

Abstrakt

Das Buch "Vorarlberger Vorbilder"

Unser Buch richtet sich an Menschen, die durch ihre Entscheidungsbefugnisse viel Verantwortung tragen. Kommunalpolitiker in Gemeinden entscheiden darüber, welche öffentlichen Gebäude saniert werden und welche Neubauprojekte in Angriff genommen werden. Mit diesen Entscheidungen lösen sie jahrelange Entscheidungs- und Planungsprozesse aus, die viel Geld kosten. Im Idealfall entsteht aus genau definierten Ansprüchen der Gemeinde ein architektonisch hochwertiges Gebäude, das von Handwerkern der Region aus Materialien der Region geschaffen wurde, das wenig graue Energie verbraucht hat und wenig oder keine Energie in der Nutzung verbraucht. Im Idealfall ist es gut nutzbar, stiftet im Ort Identität, altert in Würde und hält viele Jahre ohne Bauschaden.

Möglich wurde diese Veröffentlichung durch die Förderung des „Alpine Space“ Projektes „AlpBC“. AlpBC, Alpine Building Culture ist die Abkürzung für alpine Baukultur. Im Arbeitspaket 6, mit dem Titel „Planen und Beraten“ hatten wir den Auftrag, eine Beratung zu vorbildlichem Bauen in unserer Region für kommunale und regionale Politiker und Planer durchzuführen und diese zu dokumentieren. Anstelle einzelner Beratungsgespräche liegt nun dieses Buch vor, das nach der Wahl an neu gewählte Kommunalpolitiker verteilt wird. Es erklärt in kurzen Texten und vielen Bildern die Entstehung unserer 3 Beispielgebäude, lässt die Bürgermeister zu Wort kommen und stellt die Architekten vor. Im mittleren Teil des Buches werden die Prozesse der Projekte verglichen, zum Abschluss Gespräche mit den Nutzern geführt und einige besondere Aspekte jedes Gebäudes hervorgehoben. Ganz am Schluss sind alle Beteiligten genannt, um deutlich zu machen, dass nicht nur die Architekten, sondern auch die Haustechnikplaner, Lichtplaner, Statiker, sowie alle Handwerker zum Erfolg beigetragen haben.

Veranstaltende Projektpartner

EIV - Energieinstitut Vorarlberg (AT)

Das EIV ist ein gemeinnütziger Verein, der Dienstleistungen zu nachhaltigen Energiesystemen anbietet.

Die Hauptaufgabe besteht in der Verbreitung eines umsichtigen und effizienten Energieverbrauchs aus erneuerbaren Energien, der sich auch mit ökologischen Bauweisen und Aspekten von sanfter Mobilität befasst.

Dafür bereiten wir Fachwissen aus diesen Themenbereichen auf und verbreiten das Wissen an unsere Zielgruppen. Außerdem bieten wir ein weites Spektrum an Beratungen und Fortbildungen für unsere unterschiedlichen Zielgruppen an. Das EIV ist verantwortlich für die Entwicklung der Wohnbauförderung in Vorarlberg und arbeitet regelmäßig an ihrer Weiterentwicklung.

5.2 Symposium Focus Point Alpine Building

02.10.2014 in Urstein (Salzburg, AT)

AlpBC Overview of Participative Symposium	
General information	
Category	REGIONAL BUILDING CULTURE AND ENERGY RENOVATION
	DESIGN AND PLANNING
Title	1. Fachsymposium Brennpunkt Alpines Bauen - 1. Symposium Focus Point Alpine Building (AlpBC symposium in the morning + follow-up workshop integrated in the innovation workshops of the project Rapid Open Innovation in the afternoon)
Project partner leader	PP4 - WKS - Wirtschaftskammer Salzburg Landesinnung Bau
Tandem project partner	Lead Partner - HWK - Handwerkskammer für München und Oberbayern, PP2 - RSA - Research Studios Austria Forschungsgesellschaft mbH
Duration	0,5 days - 3 hours AlpBC symposium combined with 0,5 days - 3 hours innovations workshops and excursions of a partner project Rapid Open Innovation in which recommended experts for AlpBC topics were included in the program to deepen specific aspects in follow-up workshops
N. lecturers	2
N. experts	2 + 3 experts for the partner project's workshops after the AlpBC symposium
N. participants	Joint number of participants for both projects' events: ~300
Target group	Builders, planners, majors, politicians, energy consultants, architects
Location	Fachhochschule Salzburg, Campus Urstein
Framework programme	Combination of the symposium in the morning with innovation workshops of the project Rapid Open Innovation to transport AlpBC contents and topics to a broader audience
Characteristics of the Participative Symposium	
Profile and aims	The symposium was meant to test and start a new regular event on Alpine Building with all its facets addressing challenges, innovations involving all relevant people.
Methodic approach	After a short introduction speech by a regional representative, first a general overview on the sustainability and the challenges of the Alpine Space should prepare participants for a general discussion followed by more specific inputs on sustainability for buildings and cities and the challenges that arise for education in the field of work. The symposium itself is meant to be plenary with a moderator to motivate and channel questions to the speakers. Additionally a shared lunch after the experts' input brings people together for further discussions in an informal set-up. More detailed follow-up workshops on the AlpBC topics were integrated in an adjacent event which took place right after the symposium and was advertised together as one big event on building topics. The integration of AlpBC topics was implemented by sending experts to the innovation workshops of this event by the Rapid Open Innovation project.
Participative value	The participants are mainly involved through discussions and the possibility to comment and ask questions during the event.
Transfer value exported	The lecture on the overall perspective and future of the Alpine Space by Franz Fischler could easily be transferred to an event in another country as it gives a good basis for discussions. The same goes for the expert contribution of Doris Österreicher on smart buildings and smart regions.
Transfer value imported	The idea to combine events from more than one project and together with additional cooperation partners outside of the project consortium was adopted from the first symposium in Vorarlberg organized by EIV.
Transnational value	The transnational effect was mainly cross-border Germany and Austria as partners from both countries have been involved in organizing and inviting participants.
Outcomes	The participants were very satisfied with the fact that the symposium and the adjacent innovation workshops brought together all the different stakeholders involved in the topic building one way or another including Politicians, Authorities, planners, builders, researchers, experts, craftsmen of different professions. Thus the communication between different parties was stimulated. Due to the success the symposium is meant to be repeated also in the following years to stimulate the dialog on Alpine building and transfer knowledge between the concerned parties.

<i>Public conference</i>	
<i>Title</i>	<i>1. Fachsymposium Brennpunkt Alpines Bauen - 1. Symposium Focus Point Alpine Building</i>
<i>Description</i>	The symposium was meant as a first effort to establish a new regular forum on Alpine Building within the region of Salzburg which deals with the challenges for building in the Alpine Space in general and with potential solutions in all fields of work starting at governance and planning level down to building and components level, with a strong focus on innovative sustainable solutions. The first symposium asked the question whether the Alpine space was future-proof and gave an insight in the development from smart buildings to smart regions as well as the challenges which arise for education and quality management. The adjacent innovation workshops from the Rapid Open Innovation project dealt specifically with the topics tourism and building, high-tech vs. low-tech, densification and hybrid buildings. To bring expertise from the project to these more detailed workshops after the plenary symposium the AlpBC partners supported the organizers of the adjacent workshops by supporting them with connections and expertise in the fields of densification and hybrid buildings.
<i>Language</i>	<i>German, Translation into English only foreseen individually through involved personnel if foreign language participants register, which was not the case.</i>
<i>Follow-up or preparatory workshops</i>	
<i>Serial N.</i>	<i>1</i>
<i>Title</i>	<i>Follow-up - Densification</i>
<i>Description</i>	The AlpBC project partner iSPACE supported the organizers of the adjacent innovation workshops in organizing the densification workshop. To deal with topics specifically interesting also as a follow-up discussion for the AlpBC topics, the relevance of the joint view on planning and energy issues as well as geographical implications to be considered were placed in the foreground especially through the contributions of Thomas Prinz from studio iSPACE itself and Stephan Schott who showed the potential benefits of taking public transport into account for the planning process.
<i>Language</i>	<i>German</i>
<i>Serial N.</i>	<i>2</i>
<i>Title</i>	<i>Follow-up - Hybrid building</i>
<i>Description</i>	The AlpBC project partner WKS supported the organizers of the adjacent innovation workshops in organizing the hybrid building workshop. Especially through organizing Harald Kuster as a speaker and to accompany the excursion a good insight on how benefits can be generated by working together across disciplines could be generated.
<i>Language</i>	<i>German</i>
<i>Guided visits to best practices</i>	
<i>Serial N.</i>	<i>None within the symposium but one integrated in the adjacent innovation workshops of the project Rapid Open Innovation which targeted the exact same audience as the first held AlpBC symposium and was supported by AlpBC project partner WKS.</i>
<i>Location</i>	<i>Municipal center and church of Rif</i>
<i>Best practice description</i>	<i>Energy autarkic church and building with a thermo active system</i>
<i>Language</i>	<i>German</i>

5.2 Symposium Focus Point Alpine Building

Reference persons			
PP Leader	PP4 - WKS - Wirtschaftskammer Salzburg Landesinnung Bau		
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Tandem PP			
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Tandem PP			
Contact person	Thomas Prinz		
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Phone	0043 662 908585 - 213	Fax	0043 662 908585 - 299
E-mail	thomas.prinz@researchstudio.at	Web	ispace.researchstudio.at

Involved persons			
Moderator	Professionelle Moderatorin des Trainingsteam Gansinger Hufnagl OG	Region/country	Österreich
		E-mail	office@trainingsteam.at
Field of expertise	Outside the symposium's subject area	Role in PS	Objective view on the topic and audience / Moderation /steering and stimulating the dis- cussion at public conference
Regional lecturer 1	Hans Scharfetter	Region/country	Österreich
		E-mail	-
Field of expertise	Regional policies	Role in PS	Political representative and policy view at public conference
Extra-regional lecturer 1	Franz Fischler	Region/country	Österreich
		E-mail	-
Field of expertise	European Innovation and Sustain- ability	Role in PS	Luminary at public conference
Regional expert 1	Georg Thor (substitute for Josef Schwaiger)	Region/country	Österreich
		E-mail	georg.thor@salzburg.gv.at
Field of expertise	Energy efficiency and consulting	Role in PS	Speech / Expert for energy efficient renova- tion at public conference
Transnational expert 1	Doris Österreicher	Region/country	Österreich
		E-mail	-
Field of expertise	Smart buildings and cities	Role in PS	Speech / expert for planning issues and com- bination of energy view on buildings and sur- roundings and smart grids at public conference

Information and publicity	
Promotion material	Invitation flyer in German (printed and PDF version) - downloadable: http://www.alphouse.eu/medien/medienpool/Einladung-Brennpunkt-AlpinesBAUEN-web-1.pdf
Press work	For the whole event, meaning the participative symposium of the project AlpBC in the morning and the innovative workshops for the Rapid Open Innovation project in the afternoon a joint press work was provided resulting in the publication of 4 articles in the Salzburger Wirtschaft before the event and one summarizing article after the event in German language.
Support material	Detailed programme and registration form: the flyer mentioned before is not only meant as invitation and promotional material but also included the detailed programme of the event and the registration form
Filming	No professional filming, but intensive photo shoot (the photos are available in the internal project section but can be provided to externals on enquiry)



5.2 Symposium Focus Point Alpine Building

Abstract

The Symposium Focus Point Alpine Building is meant to start a series of events dealing with this topic. It aims to bring together all stakeholder groups dealing with building, energy and planning to start a discourse and exchange experiences and communicate innovations. This new dialogue is meant to help in reaching the goal to make the Alpine Space a sustainable liveable place. Special topics dealt with range from spatial planning issues to building culture, use of different materials and technologies also acknowledging strengths which are already being built within the greater region to have showcases for others at hand striving to start a domino effect within and in the long-term also beyond the region.

Short introduction of the involved Project Partners

WKS - Landesinnung Bau, Wirtschaftskammer Salzburg, Sparte Gewerbe und Handwerk (Landesinnung Bau, Salzburg Economic Chamber, Branche Trade and Craft) (AT)

Mass storage - age appropriateness - structural maintenance - Transferring new technologies through an AlpHouse Center fostering innovation, research and communication.

The Bauinnung Salzburg is the legal representative of the construction industry of the province of Salzburg. This organization is concerned with economic support measures, legal advice and training measures for its members, contractors from Salzburg. It also acts as one contact organization of the social partners in Salzburg.

The focus of Landesinnung Bau in the project “AlpBC” is the installation of an AlpHouse Center for innovation, research and communication. Important topics to be edited are:

- ▶ transfer of new technologies in the renovation of buildings;
- ▶ effective mass storage;
- ▶ demographic change / building for the Ages;
- ▶ building damage reports.

Within the project “AlpBC” Landesinnung Salzburg of the Chamber of Commerce, Division Crafts also focuses on the establishment of the so-called AlpHouse Contact Points and develops together with other project partners, their knowledge about the project themes.

HWK - Handwerkskammer für München und Oberbayern (Chamber of Trade and Crafts for Munich and Upper Bavaria)

Spreading the idea of high quality renovations of alpine buildings.

The Chamber of Trade and Crafts for Munich and Upper Bavaria (HWK) represents and supports around 75.000 small and medium sized enterprises (SMEs), many of them being crafts enterprises in the city of Munich and in rural Upper Bavaria. A main strand of this support is dedicated to helping these SMEs to integrate innovative technologies and to cope with current challenges. This is considered the central task of 7 Education Centres run by HWK in Munich and six other cities in Upper Bavaria, which provide trainings, conferences and counselling.

The aim of HWK is to open up new opportunities for SMEs throughout the alpine space to capitalize on their core competencies and closeness to customers. Regionally HWK focuses on supporting local crafts enterprises, architects and decision makers in planning and performing optimal renovations, offering them training courses, informing them by large events, building networks among them and connecting them to renovation activities in the 2 pilot areas of Upper Bavaria.

RSA iSPACE - Research Studios Austria Forschungsgesellschaft mbH - Studio iSPACE (Research Studios Austria - Studio iSPACE)

Growing together energy and spatial planning.

The studio iSPACE located in Salzburg is part of the Research Studios Austria - a non-profit research institution, and specialized in geo-referenced technologies. Those technologies are utilized to support strategic decisions and operational planning. The spatial approach is used as the key to intelligent linkage of diverse information. Main topics treated in various research projects are sustainable spatial and infrastructure planning, renewable energy usage and standardised geo data infrastructures and on the fly geo data integration, analysis and visualisation.

For iSPACE the implementation of a case study in the region of Salzburg focusing the growing together of energy centred and spatial planning centred methods stands in the foreground. Additionally also the growing together of the building view and the settlement view will be treated. Next to the development of specific indicators and a Web-GIS solution for the pilot region, stakeholder workshops will be carried out. The latter will help to ensure the usefulness of the developed methodologies and strategies for the Authorities.

Contents, findings and message of the symposium

The participative symposium in Puch Urstein asked the question even in its name what recent focal points, recent challenges are arising in the Alpine Space. As this is not a question to be answered by one alone forces were joined with projects and organizers outside the AlpBC project to attract all relevant stakeholders and generate a broad forum to discuss the topics at hand.

To create a common basis for the discussions of all the participants the symposium was opened with the question whether the Alpine Space was actually prepared and ready to play a significant role in the future and create its own success story.

Franz Fischler laid out the facts on population, demographics, environment, resources, climate, working / living conditions etc. and the trends and developments they are undergoing. There is a change going on in the Alpine Space in various ways and to be successful in the future means for all the regions in the Alpine Space to make the right decisions and work together for common goals. In the context of building there is a need to react to all these trends therefore there is also a need to think in a bigger context especially concerning spatial planning concepts. This can contribute a lot to resource efficiency and supports the idea of the project AlpBC to bring together stakeholders across borders and from different resorts and backgrounds especially those concerned with planning and energy specific tasks.

The next keynote was meant to give an insight on the recent trend of Smart Cities, which is very much driven from an energy efficiency tendency and the attempt to bring intelligence to the design of buildings and infrastructures and their interaction. As the speaker Doris Österreicher defines them, smart cities are “liveable, energy efficient and resource-conserving”. Attributes which are highly desirable not only for the cities but the whole Alpine Region. But for making the vision of these smart cities and regions come true not only innovation and technology but also new business models and ways of living are necessary. As an example she gives a roof which is meant to be used for power generation which belongs to a house with several owners who have to find a way to give the area away for rental.

As the energy and resource efficiency was one key element in the symposium the chance was taken to use it as a platform to honour and presented those people who earned their right to consultant others in matters of energy efficiency and building as those people form one major backbone to support and transport knowledge to the broad public.

After these different inputs people got the chance in a big get-together during lunch time to discuss their impressions and opinions on the tackled topics. Due to the big audience and high variety of topics tackled in the afternoon workshops, a very heterogeneous group bringing together people from all relevant stakeholder groups could be gathering in these general discussions sparking new thoughts and showing potential friction points to address and direct attention to.

The afternoon sessions being part of the innovation workshops of the Rapid Open Innovation project formed a good platform for follow-up workshops on special findings of AlpBC relevant topics which is why experts were brought in from the AlpBC consortium to represent the findings and general intention of the AlpBC project and use this innovative environment for dissemination and capitalization.

The workshops brought a large variety of topics, which focused very much on efficient use of energy and all other sorts of resources which showed at some points very well how important cross-border and cross-sector cooperation are. The overall topics were building and tourism, high- versus lowtech, hybrid buildings and densification.

The discussions were at some points very intense and the transfer of knowledge, opinions, ideas and experiences very high. It was clearly visible that difficulties arise when planning and energy / resource efficiency need to be aligned thus showing the need for common concepts, communication of experiences and innovations which is one main intention of the work done in the AlpBC project.

The participants expressed high satisfaction with the event, its format and its high variety of topics and the broad approach to the subject. Some even said it was a bit too dense and regretted that they could not listen to all the speakers as in the follow-up workshop things were going on parallel. This shows very well the high interest and the need to tackle all those different aspects.

Due to the positive feedback and high success of the event the organizers came to the conclusion an event such as this seems to have been missing within the greater region. Thus they decided to rerun and establish this symposium. The successful trail run of the event within the AlpBC project will be financed from other sources in the following years and unlock private and public investments for the organisation and realization of the symposium in the following year. Additional partners expressed their interest in joining the team and the date has been set already, with organization of the event in progress by the end of the AlpBC project.

5.2 Fachsymposium Brennpunkt Alpines Bauen

02.10.2014 in Urstein (Salzburg, AT)

Abstrakt

Das regionale Symposium Brennpunkt Alpines Bauen soll der Beginn einer Serie von Veranstaltungen werden, die sich mit dem Thema auseinandersetzt. Das Ziel ist es die verschiedenen Interessensgruppen, die sich mit dem Thema Bauen, Energie und Planung beschäftigen zusammenzubringen und einen Diskurs zu starten sowie Erfahrungen auszutauschen und Innovationen bekannt zu machen. Der neue Dialog soll dabei helfen den Alpenraum zu einem nachhaltigen Lebensraum zu machen.

Die Themen, die behandelt werden reichen von der Raumplanung, über die Baukultur bis hin zu der Verwendung von unterschiedlichen Materialien und Technologien. Rücksicht wird außerdem darauf genommen, in welchen Bereichen es bereits regionale Stärken, auf denen man aufbauen kann, sodass man auch Demonstrationsprojekte und -objekte hat mit dem Ziel einen Dominoeffekt innerhalb der Region und langfristig auch außerhalb zu generieren.

5.3 Wake up: Alpines Bauen

02.02.2015 in Bozen (South Tyrol, IT)

AlpBC		Overview of Participative Symposium	
General information			
Category	EDUCATION AND MARKETING		
Title	Wake up: Alpines Bauen- edilizia Alpina		
Project partner leader	TIS		
Tandem project partner	Anyone		
Duration	1 day conference+ world café 8hours		
N. lecturers	11		
N. experts	19		
N. participants	40		
Target group	SMES, architect, engineering		
Location	Bolzano- TIS innovation South Tyrol		
Framework programme	World café		
Characteristics of the Participative Symposium			
Profile and aims	CONCEPTION Involve at least one regional expert giving specific contents on the treated category SMEs, architect; all construction sector; Involve at least one lecturer represented by a regional/local stakeholder; Follow-up or preparatory workshops on more detailed issues; Participative value (discussion with the participating citizens, the local administrators, the local professionals, etc.); Involve a moderator with the role of motivator and with the skill to involve the participants during the different lectures. PROMOTION Promote the event with at least one flyer, one newsletter announcement, two press releases (one for the promotion and one after the single event); Final publication with a description of the Participative Symposium (contents, results, outputs, etc.) with a focus on Regional building culture, following the advices reported in the Attachment B "Participative Symposium. Guidance for the Final publications". The redaction of the Final Publication done by every PP organising a PS will be useful for the redaction of the Conclusive Report by COA, HWK, LUH/BYAK (as foreseen in the AF).		
Methodic approach	After each speech a question time and a world café , it's the most important moment. Each participant is involved and can give many inputs also for other European project, innovation project.		
Participative value	The value to involve directly the participants add the value to create a strength network of SMEs.		
Transfer value exported	Values are: contents, presentation and a network of expert . No tandem Partner		
Transfer value imported	No tandem Parnter, because Veneto decided to do qthe Symposium with COA for similar topic		
Transnational value	tandem Parnter, because Veneto decided to do qthe Symposium with COA for similar topic		
Outcomes	Possible to do new innovation project across the regional law 14/2006		
Public conference			
Title	Wake up: Edilizia Alpina-Alpines Bauen		
Description	Innovation- Networking- R&D		
Language	Italian/German		
Reference persons			
PP Leader	TIS Innovation Park		
Contact person	Maria Giulia Faiella		
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E-mail	Giulia.faiella@tis.bz.it	Web	www.tis.bz.it

5.3 Wake up: Alpines Bauen

Involved persons			
Moderator	Maria Giulia Faiella	Region/country	Italy/South Tyrol
		E-mail	Giulia.faiella@tis.bz.it
Field of expertise	Energy efficiency and environmental planning	Role in PS	Moderator and organization and speaker
Regional lecturer 1	South Maria Giulia Faiella	Region/country	Italy
		E-mail	Giulia.faiella@tis.bz.it
Field of expertise	Energy efficiency and environmental planning	Role in PS	Moderator and organization and speaker
Extra-regional lecturer 1	Team Röfix	Region/country	Italy
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Field of expertise	Energy efficiency and environmental planning	Role in PS	Group of speaker
Regional expert 1	Anita Tschigg	Region/country	Italy
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Field of expertise	Green Roof	Role in PS	Speaker
Regional expert 2	Carlo Battisti	Region/country	Italy
		E-mail	Carlo.battisti@tis.bz.it
Field of expertise	Energy efficiency and environmental planning	Role in PS	Speaker and co-moderator
Information and publicity			
Promotion material	Flyer		
Press work	Press release before and after and publication on homepage TIS		
Support material	Registration AlpBC flyer Detaild Programme Evaluation Form		
Filming	No		



5.3 Wake up: Alpines Bauen

Abstract

Alpine constructions and European projects for the construction market: these were the themes dealt during the Wake up “Alpine Architecture” organized by the Cluster Construction. The event was an opportunity to discuss regional and international research opportunities and to inform professionals on the needs, requirements and certifications necessary to boost construction. During the event the results of the Accelerator innovation, the initiative of the Cluster funded by the European project AlpBC that connects the South Tyrolean companies in the construction industry with professionals and researchers to initiate research projects & development were presented.

Target Groups: architects, engineers, companies of the construction sector.

Short introduction of the involved Project Partners

TIS - TIS Techno Innovation South Tyrol (IT), in cooperation with EURAC European Academy Bolzano/Bozen (IT)
<http://tis.bz.it/it>

The Cluster Constructions of the TIS innovation park is a network of innovative South Tyrolean enterprises of the construction sector.

Building Value: the Cluster works together with entrepreneurs, experts and enterprises that are dedicating themselves to the creation of value. That's the way ideas become projects, projects become solutions to problems, which in turn become standards that can be brought to the market successfully.

The Cluster has the vision of a competitive South Tyrol that is able to conquer and to anticipate the global market due to unique competences, pursuing quality, uniqueness, efficiency, reliability and innovativeness.

Focus on Innovation: in order to be the best, one needs to be unique. The mission of the Cluster is to accompany South Tyrolean small and medium - sized enterprises of the construction sector towards a continuous innovation process. Cluster activities have the target to realize new products, to enhance existing products, to optimize the use of resources and to develop new business models.

The Cluster considers innovation the essential instrument in order to create economic value and to achieve competitiveness.

Contents, findings and message of the symposium

Construction alpine and European projects for the construction market: these are the themes dealt with during

the Wake up “Alpine Architecture” organized by the Cluster Construction.

Businesses South Tyrolean participants - Röfix, Karl Pichler, Beton Eisack and Tyrol ESCo. - Are already working to develop in the afternoon we will continue with the presentation of results Accelerator innovation, the initiative of the Cluster funded by the European project Alpine Space-Alpbc that connects the South Tyrolean companies in the construction industry with professionals and researchers to initiate research projects & development on proposals born in the accelerator of innovation.

The twelve scientists who have worked closely with the companies for two weeks were divided into 4 groups, one for each company; the researchers come from all over Italy and specialize in areas such as architecture, construction engineering and energy efficiency. For Röfix Partschinsner, which produces and sells building materials created a plaster for renovations and structural energy in earthquake zones; this product combines two different needs, that so far were met by different products: on one hand the energy rehabilitation of the building secured by a plaster that reduces to the maximum the thermal dispersion, of the other seismic consolidation through the use of special mixtures of materials. The group that worked for Karl Pichler of Bolzano, a company operating in the wood sector, analyzed the energy performance of a multi-layer insulation panel for interior, designed to improve the comfort of the rooms, as it reduces thermal losses the outside and the humidity inside the environments. The team tested the effectiveness of the panel and now the company has a product profile more accurate and detailed market applications.

A lightweight concrete with power of thermal insulation was instead the project conceived for the Beton Eisack to Klausen: over traditional outer coats, this product allows you to build buildings with greater design flexibility of building; the product is easily recyclable, and also for the company more profit, since it can produce it themselves without having to rely on external suppliers. The proposal of the Südtirol ESCo., another company participating in the initiative, which makes measures to improve energy taking charge of their cost is: manage energy renovations of schools and other public buildings. The team supporting this company has developed a series of services to simulate scenarios feasibility of a digital platform. The accelerator of innovation - the school of sustainable innovation - is a method developed by EURAC and TIS to

facilitate technology transfer and innovation, bringing research and business. The central theme of 2014-2015 was “practices of sustainability and energy efficiency in buildings subject to renewal”, the product ideas of each working group have been developed on the prescribed schedule for the question of contributions to innovation in the province of Bolzano (Law 14/2006).

The event will also be an opportunity to discuss regional and international research opportunities and to inform professionals on the needs, requirements and certifications necessary to boost construction.

At the end of the day there will be a “world café” with the four themes developed by the Innovation Accelerator, the second part of Symposium : the format gives the public the opportunity to participate in several discussions on specific issues that will take place each in a different table; any discussion will be moderated by an experienced technician to a specific theme; each theme will be treated for 20 minutes, giving the participants a chance to participate in multiple threads. A term of respect will take stock of the situation, presenting the results of each table.

5.3 Wake up: Edilizia Alpina

02.02.2015 Bolzano (Sud Tirolo, IT)

Abstract

Le costruzioni alpine ed i progetti europei per il mercato edilizio: questi sono stati i temi trattati durante l'evento Wake Up: Architettura Alpina organizzato dal Cluster Construction. L'evento è stata un'opportunità per discutere di ricerca a livello regionale e internazionale e per informare i professionisti sulle esigenze, i requisiti e le certificazioni necessari per stimolare il settore delle costruzioni.

Durante l'evento sono stati presentati i risultati dell'innovazione "Accelerator", l'iniziativa del Cluster, finanziata dal progetto europeo AlpBC, che unisce le aziende costruttrici del Sud Tirolo ai professionisti e ai ricercatori, con l'intento di stimolare l'attivazione di progetti di ricerca e di sviluppo.

Target group: architetti, ingegneri, aziende del settore edilizio.

Breve introduzione dei partner coinvolti

Il Cluster delle costruzioni del TIS Innovation Park è un network di imprese innovative del Sud Tirolo impiegate nel settore delle costruzioni.

Valore nel costruire: il Cluster lavora insieme agli impresari, agli esperti ed alle imprese che dedicano la loro attività nel creare valore. Questo è il modo con cui le idee diventano progetti, i progetti diventano soluzioni ai problemi, diventando a loro volta standard che possono essere immessi con successo nel mercato.

Il Cluster si pone come obiettivo un Sud Tirolo competitivo che è in grado di conquistare e di anticipare il mercato globale grazie alle sue competenze, perseguendo la qualità, l'unicità, l'efficienza, l'affidabilità e l'innovazione.

Focus sull'innovazione: per essere il migliore, occorre essere unico. La missione del Cluster è quello di accompagnare le piccole e medie imprese altoatesine del settore delle costruzioni verso un continuo processo di innovazione. Le attività del Cluster hanno l'obiettivo di realizzare nuovi prodotti, di migliorare i prodotti esistenti, ottimizzando l'uso delle risorse e sviluppando nuovi modelli di business. Il Cluster considera l'innovazione lo strumento indispensabile con il quale creare valore economico ed essere competitivi.

5.4 Symposium Planning and Building in the Alps

10.03.2015 in Munich (Bavaria, DE)

AlpBC Overview of Participative Symposium	
General information	
Category	CATEGORIES 1 - 5 DESIGN AND PLANNING REGIONAL CLOSED LOOP ECONOMIES REGIONAL BUILDING CULTURE AND ENERGY RENOVATION ALPBC APPROACH EDUCATION AND MARKETING
Title	<i>Fachtagung Planen und Bauen in den Alpen, Symposium Planning and Building in the Alps</i>
Project partner leader	<i>LUH Leibniz Universität Hannover, Abteilung Regionales Bauen und Siedlungsplanung, with Bayerische Architektenkammer</i>
Tandem project partner	<i>Handwerkskammer für München und Oberbayern</i>
Duration	10.03.2015 09:30 - 18:30 Public conference, symposium
N. lecturers	1
N. experts	13
N. participants	86
Target group	<i>Architects, Planners, Crafts, Political & administrative experts, House owners, general public</i>
Location	<i>Haus der Architektur, Waisenhausstr. 4, München</i>
Characteristics of the Participative Symposium	
Profile and aims	<i>Architecture and Planning in the Alpine Space - Symposium AlpBC</i> <i>"There is nothing to invent, everything is to re-invent" Luigi Snozzi</i> 10.03.2015, Haus der Architektur, Munich (DE) organized by the Bavarian Chamber of Architects, by the Institute for Regional Architecture and Urban Planning of Leibniz Universität Hannover, and by the Chamber of Crafts for Munich and Upper Bavaria <i>Symposium focus and aims</i> The public conference and workshop AlpBC Symposium Planning and Building in the Alpine Space on March 10th 2015 in Munich is organized by the Bavarian Chamber of Architects, by the Institute for Regional Architecture and Urban Planning of Leibniz Universität Hannover, and by the Chamber of Crafts for Munich and Upper Bavaria (Leadpartner of the project AlpBC). The symposium addresses experts in planning and architecture, administrative experts and public decision makers, as well as general public. The aim of the symposium is to give an overview of the project AlpBC and the addressed themes, starting from a regional focus of the pilot area Traunstein, and offering possible transfer to regional and Bavarian levels. The symposium is supported by the Federal Ministry for Transport and Digital Infrastructure and the Bavarian State Ministry of the Environment and Consumer protection (also co-funding partners), and by the Bavarian State Ministry for Economy and Media, Energy and Technology, as well as by Ökomodell Achental (regional development association), by the District of Traunstein, and by the Bavarian Association of Municipalities. The project AlpBC, funded within the Alpine Space Programme of the European Union, develops strategies and tools to enhance Alpine building culture for sustainable territorial development. The project aims at further developing building culture in cooperations of private and public stakeholders, and to foster its role for regional identities and economic development. With the quotation "There is nothing to invent, everything is to re-invent" by the Swiss architect Luigi Snozzi, the symposium enfolds comprehensive approaches to regional architecture and settlement development in the Alps. Knowledge transfer and implementation advice are discussed with good practices, in regard to municipal, regional and transnational aspects: information and consultancy for citizens, experts and decision makers; participation; management of re-usable areas and buildings; regional identities, sustainable resources, incentives and planning.

Methodic approach	The symposium is organized in four thematic parts, with introduction and discussion coordinated by Eva Herrmann. Consultancy The first thematic field - Consultancy - explains general strategies and concrete good practices of different consultancy models focussed on two aspects: how to provide knowledge transfer from expertise to practice in regard to small municipalities and privates, and how to combine this transfer with effective forms of citizens' and enterprises' participation and awareness-building for Alpine building culture. Planning and Architecture The focus of the second parts discusses the role of architectural projects and design within overall development concepts for villages and towns, and also stresses a regional background how to conceive building as driving force and expression of regional identities; therefore the geographic focus of the contributions has been concentrated on Canton Graubünden / Grisons in Switzerland, as one of the generally discussed examples of evolved building culture. Construction as part of regional economies The third part of the symposium addresses construction, from planning to realization, with all involved actors, as important part and possible driving force for regional economic development and enhancement of regional added value connected to production and knowledge chains, ecological systems of materials, resources, and energy. Incentive and policy systems and tools Public consultancy tools and incentives in the State of Bavaria, overview of existing and planned measures. The regional certification of Baubook as collection of ecological building materials is based on research and application in many regional built good practice examples, and has been developed as incentive for the economic success of regional SMEs in the construction sector.
Participative value	Stakeholder from the pilot region (District of Traunstein, Ökomodell Achental, Sonnenkreis, with local experts and SME) have been involved in the preparation of the methodology and the thematic focuses of the symposium, also with the manifestation of Gemeindedialoge 02.07.2014. The stakeholders from State level (Ministries, Chambers of Crafts and of Architects) have been involved in constant contacts, also following the innovation workshop on 22.11.2013, that had the general aim of crosssectoral and bottom-up/top-down discussion about strategies and measure collaborations for Building Culture.
Transfer value exported	In the four thematic fields of the symposium, the work of AlpBC in the German Pilot area Traunstein has been reflected and broadened with international expertises and good practices. Therefore the transfer value of the symposium, that in a first step addressed a State-wide focus in Bavaria, with the conference itself became an international transfer tool.
Transfer value imported	With the involvement of international expertise and good practices, other project partners' results and capacities have been integrated in the symposium (e.g. the Vorarlberg examples); furthermore the symposium involved experiences beyond AlpBC in the discussion of the symposium (e.g. Canton Grisons, Switzerland).
Transnational value	In the four thematic fields of the symposium, the work of AlpBC in the German Pilot area Traunstein has been reflected and broadened with international expertises and good practices. Therefore the transfer value of the symposium, that in a first step addressed a State-wide focus in Bavaria, with the conference itself became an international transfer tool.
Outcomes	The symposium Fachtagung Planen und Bauen in den Alpen demonstrated to have been a successful collection of experiences in the four thematic focuses, that in each specific topic's objectives and approaches, and together for interrelations towards an enhanced Building Culture have been discussed and sharpened. With the event stakeholder networks within the pilot area's participants, with State-wide stakeholders and international experts have been strengthened, also feedback for initiatives beyond AlpBC was discussed.
Public conference	
Title	Planen und Bauen in den Alpen Planning and Building in the Alps
Description	The symposium "Planning and Building in the Alpine Space" enfolded comprehensive approaches to regional architecture and settlement development in the Alps. Knowledge transfer and implementation advice are discussed with good practices, in regard to municipal, regional and transnational aspects: information and consultancy for citizens, experts and decision makers; participation; management of reusable areas and buildings; regional identities, sustainable resources, incentives and planning.
Language	German (participants from Germany, Austria, Switzerland)
Follow-up or preparatory workshops	
Serial N.	Preparatory workshop Nr. 1
Title	Innovation workshop, 22.11.2013
Description	As preparation for the regional symposium and specifically in order to involve different sectoral State ministries, the innovation workshop on 22.11.2013 developed the thematic outlines for further work in the pilot area, that finally have been understood as structuring chapters for the symposium. With the aim to analyze bottom-up initiatives for their potential to be transferred to regional contexts, and for defining necessary cooperation and enhancement of interface coordination for the objectives of AlpBC (planning in different scales, building, energy issues, regional and circular economy, tourism, economic development, regional development, rural and urban development), in the workshop stakeholders from the pilot area (District Traunstein, Regional planning board South-East Bavaria, Euregio Berchtesgaden-Salzburg, Chiemsee Tourism board, LEADER initiatives, ecc.) collaborated with experts from several state ministries (State Ministry of the Interior, for Building and Transport; State Ministry of the Environment and Consumer Protection; State Ministry of Economy and Media, Energy and Technology; State Ministry of Agriculture, Food and Forestry).
Language	German

Reference persons			
PP Leader	LUH Leibniz Universität Hannover, Abteilung Regionales Bauen und Siedlungsplanung, with: Bayerische Architektenkammer		
Contact person	Bayerische Architektenkammer, Geschäftsführer Oliver Heiss		
Address	Waisenhausstr. 4, D-80637 München		
Phone	+49 89 13988035	Fax	
E-mail	heiss@byak.de	Web	www.byak.de
Tandem PP	Handwerkskammer für München und Oberbayern, Bildungszentrum Traunstein		
Contact person	Max Stadler		
Address	Mühlwiesen 4, D-83278 Traunstein		
Phone	+49 861 9897724	Fax	
E-mail	max.stadler@hwk-muenchen.de	Web	

Involved persons			
Moderator	Eva Maria Herrmann Kommunikation . Architektur	Region/country	Germany
		E-mail	mail@evaherrmann.de
Field of expertise	Expert in communication of architecture	Role in PS	Moderator: - general introduction, - introduction of 4 panels, - moderation of discussion for 4 panels
Extra-regional lecturer 1	Prof. Ton Matton, Linz University of Arts	Region/country	Austria, AT
		E-mail	ton@mattonoffice.org
Field of expertise	Urban Planner	Role in PS	Key note lecture "Building Culture as factor for regional identity"
Regional expert 1	Dr. Monika Kratzer, Ministerialdirigentin, Bavarian State Ministry of the Environment and Consumer Protection E-mail	Region/country	Bavaria, DE
Field of expertise	Director of the ministry's department for climate protection, technical environment protection, closed circle systems	Role in PS	General contribution
Regional expert 2	Rudolf Escheu, Ministerialdirigent, Bavarian State Ministry of Economy and Media, Energy and Technology E-mail	Region/country	Bavaria, DE
Field of expertise	Director of the ministry's department for renewable energy and energy efficiency	Role in PS	General contribution
Regional expert 3	Dipl.-Ing. Ulrich Hach, Baudirektor, Bavarian State Ministry of Economy and Media, Energy and Technology E-mail	Region/country	Bavaria, DE
		E-mail	Ulrich.Hach@STMWI.BAYERN.DE
Field of expertise	renewable energy and energy efficiency	Role in PS	Contribution Panel 4 Incentives and Tools
PP Expert 1	Dipl.-Ing. Lutz Heese President Bavarian Chamber of Architects	Region/country	Bavaria, DE
		E-mail	
Field of expertise	architecture, urban planning	Role in PS	General contribution

5.4 Symposium Planning and Building in the Alps

PP expert 2	Dipl.-Ing. FH Oliver Heiss Managing director Bavarian Chamber of Architects	Region/country	Bavaria, DE
		E-mail	heiss@byak.de
Field of expertise	Academy for advanced and lifelong education of the Bavarian Chamber of Architects	Role in PS	General contribution
PP expert 3	Prof. Dipl.-Ing. Jörg Schröder Leibniz Universität Hannover, Chair for Regional Building and Urban Planning	Region/country	Germany, DE
		E-mail	schröder@staedtebau.uni-hannover.de
Field of expertise	architecture, urban planning	Role in PS	General contribution
Transnational expert 1	Christina Steininger, nonconform zt GmbH, Wien	Region/country	Wien, AT
		E-mail	steininger@nonconform.at
Field of expertise	Community-based development of spatial future tasks	Role in PS	Contribution Panel 1 Consultancy Models
Transnational expert 2	Prof. Dipl.Arch. ETH M.Arch. Hans Drexler, University of Applied Sciences Oldenburg	Region/country	Germany, DE
		E-mail	
Field of expertise	Management of empty spaces	Role in PS	Contribution Panel 1 Consultancy Models
Transnational expert 3	Dr. des. Ulrike Fischer, KIT Karlsruhe Institute of Technology	Region/country	Germany, DE
		E-mail	ulrike.fischer@kit.edu
Field of expertise	architecture tradition and further development	Role in PS	Contribution Panel 2 Planning and Building
Transnational expert 4	Dipl.Arch. Ramun Capaul capaulblumenthal architects	Region/country	Ilanz, Canton Grisons, CH
		E-mail	capaulblumenthal@kns.ch
Field of expertise	Identities as fields of architecture	Role in PS	Contribution Panel 2 Planning and Building
Transnational expert 5	Klaus Fischer Managing director Allgäu GmbH Regional development agency	Region/country	Allgäu, DE
		E-mail	fischer@allgaeu.de
Field of expertise	Regional products initiative	Role in PS	Contribution Panel 3 Construction as part of regional economies
Transnational expert 6	MMag. Kurt Bereuther Vorholz Institute	Region/country	Alberschwende, AT
		E-mail	
Field of expertise	Material cycle systems, ecology in construction	Role in PS	Contribution Panel 3 Construction as part of regional economies
Transnational expert 7	Dipl.-Geogr. Jürg Inderbitzin University of Applied Sciences Luzern	Region/country	Luzern, CH
		E-mail	juerg.inderbitzin@hslu.ch
Field of expertise	Regional economy and construction	Role in PS	Contribution Panel 3 Construction as part of regional economies
Transnational expert 8	Mag. Christoph Sutter	Region/country	Vorarlberg, AT
		E-mail	christoph.sutter@baubook.at
Field of expertise	Baubook tool	Role in PS	Contribution Panel 4 Incentives and Tools

Information and publicity

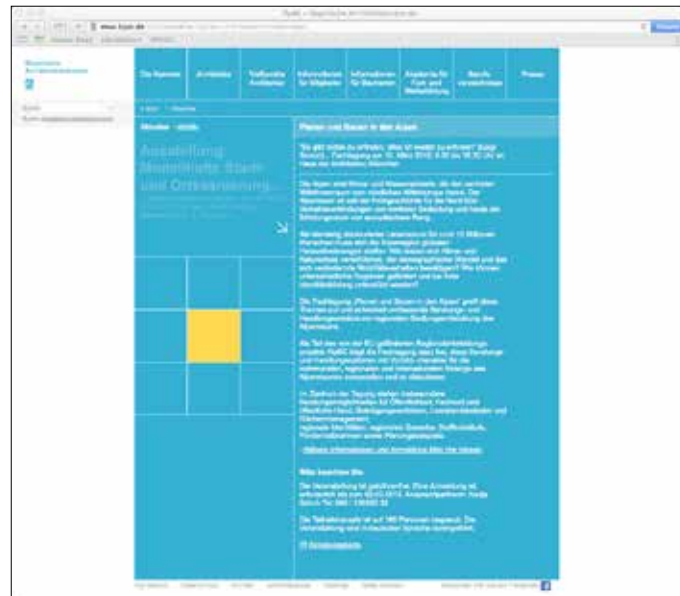
Promotion material

Invitation card and programme, printed and sent out, and digital version sent via mail and for download in internet



Press work

Internet announcement on the webpage of Bayerische Architektenkammer (www.byak.de) presse work by Bayerische Architektenkammer



Support material

Detailed programme and symposium documentation, printed for all participants and for spreading for policy-makers on State level



Filming

Video documentation provided by HWK Chamber of Crafts for Munich and Upper Bavaria

5.4 Symposium Planning and Building in the Alps



Symposium pictures
Image: Bayerische Architektenkammer

Abstract

“There is nothing to invent, everything is to re-invent” Luigi Snozzi 10.03.2015, Haus der Architektur, Munich (DE) organized by the Bavarian Chamber of Architects, by the Institute for Regional Architecture and Urban Planning of Leibniz Universität Hannover, and by the Chamber of Crafts for Munich and Upper Bavaria

The symposium “Planning and Building in the Alpine Space” enfold comprehensive approaches to regional architecture and settlement development in the Alps. Knowledge transfer and implementation advice are discussed with good practices, in regard to municipal, regional and transnational aspects: information and consultancy for citizens, experts and decision makers; participation; management of re-usable areas and buildings; regional identities, sustainable resources, incentives and planning.

Short introduction of the involved Project Partners

BYAK - Bavarian Chamber of Architects (DE)

www.byak.de

The Bavarian Chamber of Architects is a public institution with obligatory membership for all architects, interior and landscape architects in the State of Bavaria. The tasks of the Chamber are defined by law, they comprehend the professional standards and professional organization for architecture, interior and landscape architecture and urban planning, public communication for planning and architecture, advise for policy making, and support for competitions and procurement procedures.

LUH - Institute for Regional Architecture and Urban Planning, Leibniz Universität Hannover (DE)

www.staedtebau.uni-hannover.de

The Institute for Regional Architecture and Urban Planning of Leibniz Universität Hannover concentrates on research and teaching activities on architecture and planning issues within a regional focus. Recent research projects are supported by European, German and Italian funds (Regiobranding, Re-Cycle, Rurbance). The institute is part of the department of Urban Design and Planning of the Faculty of Architecture and Landscape, and of the research initiative TRUST for rural and urban spatial transformation and development.

HWK - Chamber of Crafts for Munich and Upper Bavaria, Education Center Traunstein (DE)

www.hwk-muenchen.de/traunstein

The Chamber of Crafts is a public institution with obligatory membership for all craft businesses in Munich and Upper Bavaria. Tasks of the Chamber are to promote the interests of the crafts, to regulate professional standards and education, to promote the economic interests of crafts businesses, and to enhance design in the crafts. The Education Center in Traunstein offers first and advanced professional education, and life-long-learning programmes for small and medium craft enterprises (SME), as well as communication and marketing support.

Contents, findings and message of the symposium

Symposium focus and aims

The public conference and workshop AlpBC Symposium Planning and Building in the Alpine Space on March 10th 2015 in Munich is organized by the Bavarian Chamber of Architects, by the Institute for Regional Architecture and Urban Planning of Leibniz Universität Hannover, and by the Chamber of Crafts for Munich and Upper Bavaria (Leadpartner of the project AlpBC). The symposium addresses experts in planning and architecture, administrative experts and public decision makers, as well as general public. The aim of the symposium is to give an overview of the project AlpBC and the addressed themes, starting from a regional focus of the pilot area Traunstein, and offering possible transfer to regional and Bavarian levels. The symposium is supported by the Federal Ministry for Transport and Digital Infrastructure and the Bavarian State Ministry of the Environment and Consumer protection (also co-funding partners), and by the Bavarian State Ministry for Economy and Media, Energy and Technology, as well as by Ökomodell Achental (regional development association), by the District of Traunstein, and by the Bavarian Association of Municipalities.

The project AlpBC, funded within the Alpine Space Programme of the European Union, develops strategies and tools to enhance Alpine building culture for sustainable territorial development. The project aims at further developing building culture in cooperations of private and public stakeholders, and to foster its role for regional identities and economic development.

5.4 Symposium Planning and Building in the Alps

With the quotation “There is nothing to invent, everything is to re-invent” by the Swiss architect Luigi Snozzi, the symposium enfoldes comprehensive approaches to regional architecture and settlement development in the Alps. Knowledge transfer and implementation advice are discussed with good practices, in regard to municipal, regional and transnational aspects: information and consultancy for citizens, experts and decision makers; participation; management of re-usable areas and buildings; regional identities, sustainable resources, incentives and planning.

Consultancy

The symposium is organized in four thematic parts, with introduction and discussion coordinated by Eva Herrmann, formulating the key issues for regional and transnational transfer. The first thematic field - Consultancy - explains general strategies and concrete good practices of different consultancy models focussed on two aspects: how to provide knowledge transfer from expertise to practice in regard to small municipalities and privates, and how to combine this transfer with effective forms of citizens' and enterprises' participation and awareness-building for Alpine building culture. The contributions address the role of design and experimentation in planning processes and architectural re-use and innovation (by Prof. Ton Matton, University of Linz, Austria); consultancy as combination of expertise and participation, shared development strategies for architectural and planning projects (by Christine Steininger, office nonconform architects Vienna, Austria); and architectural projects as driving force within management concepts for the re-use of areas and buildings (by Prof. Hans Drexler, Hochschule Oldenburg).

Planning and Architecture

The focus of the second parts discusses the role of architectural projects and design within overall development concepts for villages and towns, and also stresses a regional background how to conceive building as driving force and expression of regional identities; therefore the geographic focus of the contributions has been concentrated on Canton Graubünden in Switzerland, as one of the generally discussed examples of evolved building culture. Contributions are about tradition and continuity of regional architecture (by Dr. Ulrike Fischer, KIT University of Karlsruhe); and identity in various relations as core theme of architectural projects (by Ramun Capaul, Capaul & Blumenthal architects, Ilanz, Switzerland).

Construction as part of regional economies

The third part of the symposium addresses construction, from planning to realization, with all involved actors, as important part and possible driving force for regional economic development and enhancement of regional added value connected to production and knowledge chains, ecological systems of materials, resources, and energy. The contributions are showing a Regional products initiative and certification based on successful regional branding in Allgäu region (by Klaus Fischer, Allgäu GmbH); regional systems of resources, explained with the Vorholz initiative for wood in Vorarlberg (by Kurt Bereuther, Alberschwende, Austria); and regional economy explained in flows and its embedding in larger networks (by Jürg Inderbitzin, Hochschule Luzern, Switzerland).

Incentive and policy systems and tools

The issues is discussed with a contribution about public consultancy tools and incentives in the State of Bavaria, overview of existing and planned measures (by Ulrich Hach, Bavarian State Ministry for Economy and Media, Energy and Technology); and the regional certification system of Baubook as collection of ecological building materials, developed as incentive for the economic success of regional SMEs in the construction sector (by Christoph Sutter, Energy Institute Vorarlberg, Austria).

AlpBC in the Bavarian pilot area

For the pilot area in Bavaria - 12 municipalities in the southern District of Traunstein - with workshops, shared analysis and concept development, and with the innovative consultancy tool of “Gemeindedialoge” (market of knowledge and ideas between experts and municipalities), an intermunicipal dialogue about planning and building has been started. As concrete outputs a framework of thematic issues and correlated strategic approaches has been developed, addressing e.g. development of town and village centers, renovation of detached house areas, use and renovation strategies for post-agricultural building stock, business and craft development areas. Core elements are different possibilities to enhance expertise to practise transfer (for privates, for SMEs and for municipal administrations and politics), and especially the connection and combination of existing consultancy tools (from rural development, energy efficiency, town planning, diverse funding programmes), and their further development in regard to an overall regional concept of building culture. Since 9 of the municipalities form already the regional initiative Ökomod-

ell Achental, they aim to include planning and building as future core issues in this already very successful project for regional development, landscape and agriculture development, and energy, oriented towards strong ecological aims. A second regional element of AlpBC is the concept and test implementation of an AlpHouse Center in the city of Traunstein, as regional competence center for planning and building in the Alpine areas, for architects, planners, crafts, policy-makers and privates, in knowledge transfer, information and education. The center will be part of a transnational network set up by the project AlpBC.

Transnational value

With this four key issues the possible role of building culture for territorial development is addressed in a transferable way - nevertheless also the international set up of the symposium's contributions (from Germany, Austria, Switzerland) highlights the different contextual background, in planning laws and processes, in economic and social frameworks, and in the organization of the systems of regional construction economy. The connection of planning and building with intermunicipal approaches, with an orientation towards building culture, the combination with energy issues, with new forms for involvement and participation, and especially with the installation of the AlpHouse Center network for expertise and communication can be valued as strong and sustainable result of the project AlpBC.

5.4 Fachtagung Planen und Bauen in den Alpen

10.03.2015 in München (Bavaria, DE)

Abstrakt

„Es gibt nichts zu erfinden, alles ist wiederzuerfinden“ Luigi Snozzi 10.03.2015, Haus der Architektur, München veranstaltet von der Bayerischen Architektenkammer, der Abteilung Regionales Bauen und Siedlungsplanung der Leibniz Universität Hannover und der Handwerkskammer für München und Oberbayern

„Planen und Bauen in den Alpen“ entwickelt umfassende Ansätze zu regionalem Bauen und Siedlungsentwicklung im Alpenraum. Expertise, Wissenstransfer, Beratungs- und Handlungsoptionen mit Vorbildcharakter für kommunale, regionale und transnationale Belange werden vorgestellt: Beratungsmöglichkeiten für Öffentlichkeit, Fachwelt und öffentliche Hand, Beteiligungsverfahren, Leerstandskataster und Flächenmanagement, regionale Identitäten, Stoffkreisläufe, Fördermaßnahmen sowie Planungsbeispiele.

HWK - Handwerkskammer für München und Oberbayern, Bildungszentrum Traunstein (DE) - Chamber of Crafts for Munich and Upper Bavaria, Education Center Traunstein (DE)

www.hwk-muenchen.de/traunstein

Die Handwerkskammer ist eine Körperschaft des öffentlichen Rechts, die eine Vielzahl von Leistungen für ihre Mitglieder erbringt. Aufgabe der Handwerkskammer sind u.a. die Interessen des Handwerks zu vertreten, die Berufsausbildung und -ordnung zu regeln, die wirtschaftlichen Interessen des Handwerks zu vertreten, und Formgestaltung im Handwerk zu fördern. Das Bildungszentrum Traunstein der Handwerkskammer für München und Oberbayern bietet überbetriebliche Ausbildung im Handwerk sowie Fort- und Weiterbildungsmaßnahmen für Klein- und Mittelständische Unternehmen (KMU) an.

Veranstaltende Projektpartner

BYAK - Bayerische Architektenkammer (DE)

www.byak.de

Die Bayerische Architektenkammer ist eine Körperschaft des öffentlichen Rechts, der jeder Architekt, Innenarchitekt und Landschaftsarchitekt in Bayern als Pflichtmitglied angehört. Ihre Aufgaben sind im Bayerischen Baukammergesetz festgelegt und umfassen u.a. die Berufsordnung für Architektur, Innenarchitektur, Landschaftsarchitektur und Stadtplanung, die Sicherung von Qualitätsstandards, Öffentlichkeitsarbeit im Bereich Planen und Bauen, Engagement für die Berufspolitik und Förderung des Wettbewerbswesens.

LUH - Abteilung für Regionales Bauen und Siedlungsplanung, Leibniz Universität Hannover (DE) - Institute for Regional Architecture and Urban Planning, Leibniz Universität Hannover (DE)

www.staedtebau.uni-hannover.de

Die Abteilung für Regionales Bauen und Siedlungsplanung der Leibniz Universität Hannover arbeitet in Forschung und Lehre über architektonische und planerische Themen mit regionalem Bezug, insbesondere in ländlichen Räumen, mit europäischem wie globalem Fokus. Die Abteilung ist Teil des Instituts für Entwerfen und Städtebau der Fakultät für Architektur und Landschaft und der transdisziplinären Forschungsinitiative TRUST für rurale und urbane räumliche Transformation.

5.5 Alpine Building Culture. Territorial development and ecologic sustainability

14.-15.04.2015 in Sondrio (Lombardy, IT)

AlpBC Overview of Participative Symposium	
General information	
Category	REGIONAL CLOSED LOOP ECONOMY
	REGIONAL BUILDING CULTURE
Title	Cultura Edilizia Alpina. Sviluppo territoriale e sostenibilità ecologica Alpine Building Culture. Territorial development and ecologic sustainability
Project partner leader	ERSAF - ERS PP7
Tandem project partner	PIEMONTE REGION - PIE PP11
Duration	Total days: 2 1 full day (10.00-17.00) in 2 sessions; front presentations + round table + session on stone with documentary showing ½ day for field trip (8.30-15.00)
N. lecturers	4
N. experts	6
N. participants	50
Target group	Architects, planners, local institutions
Location	Sondrio (IT) - Camera di Commercio, via Piazzzi
Framework programme	The brochure of the Valtellina EcoEnergy Initiative has been distributed with the Symposium handouts

Characteristics of the Participative Symposium	
Profile and aims	CONCEPTION 2 regional experts (AlpBC, Alpine Architecture) 1 local stakeholder (Mountain Community) Preparatory workshop and meetings (through Ersaf, the experts and the Round Table Moderator) Participative value through the round table (session 1) Moderator for the round table PROMOTION: flyer/poster + announcements (web and 4 newspapers) - press release after the event: newspapers article + web news / mailing list of Professional Association involved (engineers, architects, construction site surveyors) Final publication on regional building culture + 1 IT BC territorial version
Methodic approach	The approach chose to use AlpBC project philosophy to merge local points of view, both from Lombardy Region (mainly Valtellina area) and Piemonte Region (session1). The session 2 was a preparation for the field trip, concentrated on the stone chain. A video has been shot.
Participative value	Before: preparation meetings in Sondrio; communication between the lecturers / experts and the moderator and Ersaf staff and Ersaf communication staff - PIE/ERS tandem cooperation in identifying experts During: round table to promote different points of view and room for public discussion; space for local cultural initiative (EcoMuseo Valmalenco); involvement of the AlpStone project dealing with similar issues of landscape and building culture; field trip open to general public After: an IT version of the final publication with a focus on Valtellina building culture will be distributed to the symposium participants that showed interest in it
Transfer value exported	An important moment was the possibility to show the 'Success Story' of the symposium and related field trip at the Valmalenco quarries during the CESBA day in Salzburg for the Final Conference of AlpBC and CABEE projects Interesting local experiences both from Lombardy and Piedmont Regions were presented during the Symposium, and the exchange was really appreciated Both the Symposium and the field trip will be summarized through a short video useful to transfer also visible perception of the experiences
Transfer value imported	The idea of the guided visit has been taken from the WIN13 Symposium in Voralberg (the first, oct2013) - The quotations from the architect Luigi Snozzi used in the Munich Symposium of march 2015 triggered an interest in this architect philosophy - Also the idea of the Booklet produced by LUH/BYAK seems to be very effective and could be adopted to transfer approach and context

5.5 Alpine Building Culture. Territorial development and ecologic sustainability

Transnational value	The field visit was in the programme proposal foreseen in Eng; both video and pictures can be easily transferred to show a glimpse of a really traditional technique in local building culture A good point for the transnational value has been represented by the twinning with the Interreg IT-CH AlpStone project whose results were presented and whose themes are very related with the AlpBC's ones. The proceedings of the event are available on the Ersaf website and we're available for any support in the traslations and transferring, if needed
Outcomes	The proceeding of the events The videos on the field trip and the Symposium Good feedback from the participants and the lecturers/experts (not directly involved in the AlpBC project) Good participation to the field trip thanks to the promotion of the 1st day Very enthusiastic feedback on the (Sondrio Province) newspaper
Public conference	
Title	Cultura Edilizia Alpina. Sviluppo territoriale e sostenibilità ecologica Alpine Building Culture. Territorial development and ecologic sustainability
Description	Alpine building culture, RCLE, wood chain, stone chain, tradition and innovation, archaeometry, Interreg IT-CH AlpStone project, local development strategies
Language	IT
Follow-up or preparatory workshops	
Serial N.1	28.11.2014 Mountain Community Sondrio
Title	AlpBC presentation and discussion with Mountain Community Sondrio
Description	During the meeting the ERS Staff showed the state-of-the-art of the AlpBC activities and invited the Mountain Community to support the organization of the event, in order to focus in particular in the local resources such as wood and stone.
Language	IT
Serial N.2	26.02.2015 Mountain Community Sondrio
Title	Preparatory meeting
Description	During the meeting the round table was defined and the involvement of Ecomuseo Valmalenco was confirmed for the field visit organization. The competences and themes of the lecturers and experts were defined in order to organize the round table session. An article on the province newspaper preannounced the cooperation between Ersaf and the Ecomuseo for the Participative Symposium
Language	IT
Serial N.3	Various mails and phone contacts among ERS/PIE, lecturers, experts and the moderator
Title	Preparation of the round table
Description	All the experts were provided with information and materials on the project AlpBC and were informed that different themes carried out within the project would have been developed during the Participative Symposium in order to give as widest as possible general overview. The moderator contacted each experts invited to the Symposium setting the contents and possible discussion points for the round table.
Language	IT
Serial N.4	15.05.2015 Follow-up seminar in Lanzo
Title	"Valli di Lanzo: prospettive di sviluppo del capitale territoriale e cultura del costruire" "Lanzo Valleys: territorial capital development perspectives and bulding culture"
Description	The seminar was meant to spread the results of project AlpBC through a structured discussion organized in 3 round tables dealing with Local Development and CLE, Energy as an opportunity for restoration and Development scenario and actions for Lanzo Valleys. The seminar was also meant as an occasion for confronting the experiences of pilot implementations of four AlpBC partners: Regione Piemonte, Valle d'Aosta, Ersaf and Regione Veneto.
Language	IT
Guided visits to best practices	
Serial N.	1
Location	Chiesa in Valmalenco (SO) Serpentino d'Italia
Best practice description	Stone chain production - quarry and manufacturing
Language	IT (with possibility to provide ENG translation announced in the project)

Reference persons			
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Involved persons			
Moderator	Prof. Claudio Calvaresi	Region/country	Lombardy Region
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Field of expertise	Architecture and urban planning	Role in PS	Moderator Round table coordinator
Regional lecturer 1	Marco Zerbinatti	Region/country	Piemonte
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Field of expertise	Architecture, AlpStone project	Role in PS	Lecture on Interreg IT-CH AlpStone
Extra-regional lecturer 1	Maria Pia Riccardi	Region/country	Lombardia
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Field of expertise	Geology	Role in PS	Lecture on Archeometry / Stone
Regional expert 1	Albino Gusmeroli	Region/country	Lombardy
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Field of expertise	Sociology	Role in PS	Round table member
Regional expert 2	Cinzia Leusciatti	Region/country	Lombardy
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Field of expertise	Agronomy	Role in PS	Round table member
Regional expert 3	Saveria Masa	Region/country	Lombardy
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Field of expertise	Researcher	Role in PS	field visit / stone chain expert
PP expert 1	Alessandra Gelmini	Region/country	Lombardy
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Field of expertise	Alpine Culture and CLE	Role in PS	AlpBC project introduction
PP expert 2	Giovanna Perino	Region/country	Piemonte
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Field of expertise	CLE Territorial development	Role in PS	AlpBC pilot activities
PP expert 3	Antonio De Rossi	Region/country	Piemonte
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Field of expertise	Alpine Architecture - Territorial development	Role in PS	Building culture expert and round table member

Information and publicity	
Promotion material	Brochure - Programme - Poster (AlpBC Roll up, already available)
Press work	Article: an early announcement on a local newspaper regarding the collaboration between Ecomuseo and Ersaf News (4 announcements on local newspapers, province of Sondrio, Bergamo, Lecco, Como - 1 announcement on Ersaf website - 1 announcement on Lombardy Region website - 1 Announcement on the Ecomuseo Valmalenco website - other announcements on various website Professional Association and Green-Content Press release after La Provincia di Sondrio (newspaper) + website
Support material	Brochure Valli di Lanzo Sviluppo Locale - Valtellina EcoEnergy - Rollup AlpBC already printed
Filming	Video on stone hand cutting - 2 promotional videos on symposium and fieldtrip



Interview to the moderator, Sondrio
Image: Alessandra Gelmini



Participative Symposium Alpine Building Culture.
Territorial development and ecologic sustainability, Sondrio.
Image: Alessandra Gelmini



Participative Symposium Alpine Building Culture. Territorial development and ecologic sustainability, Sondrio.
Image: Marco Brigatti



Guided visit to the Stone chain production - quarry and manufacturing
Image: Maria Pia Riccardi



Working the stone
Image: Filomena Pomilio



“Piode” made of serpentine stone.
Image: Alessandra Gelmini

Abstract

Telling the building culture is telling the history of our regions and telling the transformation of the territories and landscapes. For centuries the man had lived in mountain areas adapting himself and adapting, at the same time, the nature, the terrain morphology and the local resources for his own needs. The alpine building elements tell about a spontaneous architecture that didn't need guidelines or expensive technologies but simply skills and natural intelligence. Teaching today these skills mean to transfer to the professionals a sustainable use of resources, to the institutional level a smart way of implement policies and to the citizens a precious approach to study and appreciate the rich heritage characterizing the alpine areas.

Short introduction of the involved Project Partners

ERSAF - *Regional Agency for Services to Agriculture and Forestry, Lombardy Region (IT)*

A regional agency dedicated to territorial development, through the study and improvement of local resources, local chains and the value of ecosystems.

ERSAF is part of the Lombardy Region system supporting the Regional Committee in reaching the policy objectives listed in the Development Regional Plan with a transversal, multifunctional and integrated approach; ERSAF delivers technical and certified services to the public and private agriculture and forestry sectors as well as supporting the General Directorate for Agriculture in carrying out operational tasks.

PIE - *Regione Piemonte, direzione Ambiente, Governo e Tutela del territorio - Piedmont Region, Department for strategic programming, territorial planning and housing (IT)*

The department is responsible of a wide number of tasks concerning the management of territorial development and the protection of the environment. In particular, the team that worked on AlpBC is responsible of two of the main territorial plans at regional level: the Regional Territorial Plan and the Regional Landscape Plan, which together address and regulate territorial planning tools at sub-regional and local level. For the Piemonte region the participation in the AlpBC project was linked to two main aims:

- on the one hand, defining tools for integrating energy issues both in large scale and local territorial planning tools. To this purpose the consultancy of an external expert (Turin Polytechnic) was activated, and the final output was the publication of guidelines on how to in-

clude energy analysis (in terms of potential production from locally available renewable resources and of settlements' consumption) in territorial plans, and on how to enhance energy efficiency in the existing building stock;

- on the other hand, defining a new model for interaction between different territorial levels, and for treating territorial planning issues and actions on the built environment in a wider reference framework. In this view the regional research institute IRES Piemonte was involved in the project, and the result was the definition of a development scenario for a pilot area (Lanzo Valleys, a mountain area quite close to the Turin metropolitan area), based on concepts such as the use of locally available tangible and intangible resources and the empowerment of closed loop economies.

Contents, findings and message of the symposium

The Symposium organized in Sondrio was meant both to disseminate the main outputs derived from the AlpBC experience and to find connections at a local level with other experiences dealing with local development and the building culture, seen as an element of development and sustainability. The opening of the work session was thought on one hand in order to give the audience an overview about the AlpBC Project and the Symposium philosophy, suggesting in the meanwhile a first list of elements to be deepened and discussed during the following speeches and in the round table, such as the wood and stone chains, the links of the alpine architecture with the territory and energy issues, the new trends of mountain areas re-discovering and so on. The idea was to show that the main core of the project, the building culture and the circular economy approach, are strictly connected and can offer scenario for the further development of mountain valleys.

The introduction to the first session was concentrated on some examples of balance in the adaptation of inhabitants towards the mountain areas and of landscape transformations, remembering that in each building or construction the results is that something goes 'destroyed' and "there's nothing to re-invent but it's all to re-think and re-design".

Starting from these premises the following speech started with a question: can a mountain valley be smart? And the answer was that, yes, there's a new awareness about the territory and the new inhabitants of mountain areas are nowadays introducing innovative visions and new ideas for the entrepreneurial mindset, characterizing therefore the mountain areas as key factor for the green economy.

5.5 Alpine Building Culture. Territorial development and ecologic sustainability

The risk is the lack of really interested representatives and policy / decision-making levels, while other stakeholders are starting to well understand the mountain as a place where, in spite of some limitations, there is a richness of resources that guarantees the vital (ecosystem) services to other regions. Under this approach the present trends to set up and foster eco-villages, smart mountain, sustainability, recycling and reuse, short chain, participation and co-housing are nothing but the re-discovering and the valorisation of the traditional lifestyle in rural and mountain areas, the so called vernacular approach already studied in the framework the AlpHouse project.

The round table was the occasion to deepen some of the abovementioned issues: there was in fact a speech on the forests management, with examples about the possibility of a sustainable use of the woods while preserving their natural features and promoting the use of local resources and competences; a strategy for the local development of the Lanzo Valley was illustrated highlighting the opportunity to know, through a mapping activity, the localization and amount of the local resources: the biomass, but also the sun exposure of the slopes, these information useful to draft addresses for the further energy development; finally the importance to be aware about the value elements to be preserved during the retrofitting of the traditional buildings with aims of energy efficiency.

The afternoon session regarding stone was meant to deepen the stone extraction / manufacturing chain in relation with the traditional architecture and to prepare the field visit of the second day. Through the presentations it was possible to discover the role of the archeometry, a science that by means of microscope analysis of stone products components is able to know information about the context in which these products have been made, regarding social, economical, historic and geographical aspects.

Other hints came from the presentation of the main outputs of the project Interreg Italy Switzerland "AlpStone. Landscape Architecture and People". This project's main aim is the conservation of the historical, artistic and architectural heritage through the promotion of good practices; the project idea started from the awareness about the loss of meaning of the rural landscape due to the abandonment of rural world. Again, in coherence with AlpHouse and AlpBC philosophy, AlpStone describes the traditional architecture as outcome of ancient skills and knowledge that took advantages from the natural conditions of places and weather to build structures and settlements that today are often compromised be-

cause of a shallow interpretation of the built landscape. From this last point the need to understand which elements are really connotative, trying not to loose formal and substantial meanings of these architectures, realized in a constant and sustainable relationship with the territory.

Within AlpStone project there was the idea to provide the administrators, professionals and citizens with some useful tools for the reaching of higher standards in the restoration of the stone buildings. The proposal is, again, to identify, disseminate and valorise the traditional architectural heritage, starting from the knowledge of the peculiar techniques for the built landscape in order to define a catalogue of good practices for the restoration while discovering the cultural value of the stone structures in the mountain context.

The last speech of the afternoon was to present the documentary 'Extracts from stone: men and stones from the Valmalenco', by the local Ecomuseum Association. This short film was realized as an experiment to observe, perhaps for the first time, the Valmalenco local stone from all different points of view: the stone extracted, manufactured, carved or cut, studied and stepped on, through the Mountain Paths in the Valmalenco Mountains. Here the stone has been described as important part of the cultural and social economic heritage of the Valley. The local serpentine and golden stones have been and are already used for flooring, ventilated cladding on building facades, cladding for wood burning stoves; a particular typology of serpentine that can be handy split using a kind of chisel and little hammer is used to cover traditional roofs with split slates called 'piode'. The local soapstone also is manufactured to create saucepans and other art and culinary objects. In the quarries also talc is extracted and nearby there are peculiar precious stones very appreciated since the old times (for instance the demantoide, a very rare kind of turquoise). The interesting point of the stone extraction and manufacturing is that in the quarries, located in the same places of the ancient dig mines, the extraction work is now done through the most modern techniques and inside the laboratories the machines of the past have been took over by modern, numerically controlled machines that make special pieces of any size and shape; but, in the meanwhile, the roof slates are cut and shaped using the very same tools used more than one hundred years ago and some few skilled 'roofers' are the ones who set the slates on the pitched roofs using a handed down technique that provide the traditional feature of buildings witnessing an ancient heritage. Under recommendation of the relevant authorities mitigation work are

nowadays carried out to remedy, even partially, the cuts in the landscape caused by the quarries; moreover, due to the presence in the stone block of imperfections, not all the extracted material can be used and there's a huge amount of stone scraps that must be treated as special wastes. All this considerations, together with the role of the Valmalenco stone in its natural landscape so important for the local mountain tourism economy, highlighted the potential of this material and the related skills in a context that could be potentially fostered by a circular economy approach.

The participative value of the event has been fostered both by the preparation phase that involved the experts and other participants in the identification of the topics, preparation of the presentations and round table issues and the involvement of different experts with several fields of expertise from Lombardy and Piemonte Regions: architects, sociologists, a geologist, a urban planner, an agronomist and a culture expert were involved. Different cooperation and research project and initiatives have been compared and taken into account, taking hints and highlighting links and recurring elements. The field visit completed the work sessions in giving the possibility to observe directly the rough material and the manufacturing phases: the architects involved appreciated a lot the possibility to comprehend more about an element often used in the building restoration,

about its nature and peculiar features.

During the event interviews to some of the invited professionals have been realized, both for the realization of promotional material (video) and for the drafting of articles on the local press. After the event some of the outcomes were presented and discussed in different occasions: during the AlpBC final conference and last project meeting in Salzburg and during a day workshop in Lanzo Valley.

The proceedings of the Participative Symposium will be available, together with the videos regarding the conference and the field visit and a picture gallery, at this address: http://www.ersaf.lombardia.it/servizi/notizie/notizie_fase02.aspx?ID=13174

5.5 Cultura Edilizia Alpina. Sviluppo territoriale e sostenibilità ecologica

14.-15.04.2015 Sondrio (Lombardia, IT)

Abstract

Raccontare la cultura edilizia è raccontare la storia delle nostre regioni e le trasformazioni dei territori e paesaggi. Per secoli l'uomo ha vissuto in aree di montagna adattandosi e adattando, al tempo stesso, la natura, la morfologia del terreno e le risorse locali per i propri bisogni. Gli elementi dell'edilizia alpina narrano di una architettura spontanea che non richiede linee guida o costose tecnologie ma soltanto abilità e intelligenze naturali. Insegnare oggi queste competenze significa trasferire ai professionisti un utilizzo uso delle risorse, ai livelli istituzionali un modo intelligente per implementare le politiche e ai cittadini un approccio prezioso per studiare e apprezzare il ricco patrimonio che caratterizza le aree alpine.

Breve introduzione dei Partner del Progetto coinvolti

ERSAF - Ente Regionale per i Servizi all'Agricoltura e alle Foreste (IT)

Un'agenzia regionale dedicata allo sviluppo territoriale, attraverso lo studio, il miglioramento delle risorse e delle filiere locali e la valorizzazione degli ecosistemi.

ERSAF fa parte del sistema della Regione Lombardia che sostiene il Comitato Regionale nel raggiungere gli obiettivi delle politiche indicate nel Piano Regionale di Sviluppo con un approccio multifunzione, integrato e trasversale; ERSAF fornisce servizi tecnici e certificati per l'agricoltura pubblica e privata, nonché per il settore della silvicoltura e sostiene l'Assessorato dell'Agricoltura nell'implementazione dei suoi compiti.

PIE - Regione Piemonte - Direzione Programmazione strategica, Politiche territoriali ed Edilizia- (IT)

Il dipartimento è responsabile di un ampio numero di attività relative alla gestione dello sviluppo territoriale e alla protezione dell'ambiente. In particolare, il gruppo che ha lavorato sul progetto AlpBC è responsabile di due dei principali piani al livello regionale: il Piano Territoriale Regionale e il Piano Paesaggistico Regionale, che insieme trattano e regolano strumenti di pianificazione territoriale a livello sub-regionale e locale.

Per la Regione Piemonte la partecipazione al progetto AlpBC è legata a due obiettivi principali:

- ▶ la definizione di strumenti per l'integrazione degli aspetti energetici negli strumenti di pianificazione, sia a grande scala che a scala locale. A questo scopo, è stata attivata la consulenza di un esperto esterno (Politecnico di Torino); l'obiettivo è stato quello di redigere una pubblicazione con le linee guida su come includere l'analisi energetica nei Piani territoriali (in termini di produzione potenziale da risorse rinnovabili disponibili localmente e di valutazione dei consumi degli insediamenti) e su come migliorare l'efficienza energetica del patrimonio edilizio esistente.
- ▶ la definizione di un nuovo modello per l'interazione tra i vari livelli territoriali e per trattare in un contesto più ampio gli aspetti della pianificazione territoriale e delle azioni sull'ambiente costruito. In quest'ottica, l'istituto regionale di sviluppo, IRES Piemonte, è stato coinvolto nel progetto, e il risultato è stata la definizione di un scenario di sviluppo per un'area pilota (Le Valli di Lanzo, una zona montana vicina all'area metropolitana Torinese), basato su concetti come l'utilizzo di risorse tangibili e non tangibili disponibili localmente ed il potenziamento delle economie circolari.

5.6 PlanificACTION énergétique des Communes-Potentials and development in the alpine territories

29.-30.04.2015 in Châtillon (Aosta, IT)

AlpBC Overview of Participative Symposium	
General information	
Category	DESIGN AND PLANNING
	REGIONAL BUILDING CULTURE AND ENERGY RENOVATION
Title	"PlanificACTION énergétique des Communes-Potenzialità e sviluppo nei territori alpini" "PlanificACTION énergétique des Communes-Potentials and development in the alpine territories"
Project partner leader	PP8 - COA - Finaosta S.p.A. - Finanziaria Regionale della Valle d'Aosta
Tandem project partner	PP9 - VEN - Regione Veneto - Direzione Urbanistica e Paesaggio
Duration	Total days: 2 Total hours: 8,5 1 st day: 4 hours - Workgroups 2 nd day: 4,5 hours - Final conference
N. lecturers	6 lecturers involved in the PS
N. experts	2 experts involved in the PS
N. participants	Workgroups: 37 participants Final conference: 53 participants
Target group	Local administrators (in particular Mayors), responsible of the technical offices of the Municipalities, professionals.
Location	Biblioteca Comprensoriale Mgr Duc, Châtillon (Valle d'Aosta) - rue Emile Chanoux, 112
Framework programme	In the first day, during the workgroups, has been spread within the participants the "Collection of Best Practices at a Regional, National and Transnational level collecting the best practices related to the integration of energy and spatial planning" collected in the AlpBC project by all the partners.

Characteristics of the Participative Symposium	
Profile and aims	The Participative Symposium has been structured in two parts: First day - workgroups; Second day - final conference. The first day consisted of three panel discussions dealing on different energy topics (building, Municipal and Inter Municipal level); the workgroups involved the local stakeholders of the Aosta Valley (and in particular the Mayors and the technical offices of the Municipalities) and the administrators and professionals of the hosted Regione Veneto. In each group of discussion, important issues raised within the project AlpBC concerning energy renovation of the territory have been addressed to the participants in order to give an opportunity to share their experiences, exchanging best practices throughout the Alpine Space. In particular, the topics of the panel discussions was: <u>Workgroup 1:</u> Energy optimization of public lighting systems and renewable local energy production; <u>Workgroup 2:</u> Public buildings renovation; <u>Workgroup 3:</u> Financing systems and incentives for energy renovation. Each panel discussion has been led by a moderator and by a lecturer bringing his experience and showing a best practice to the other. The best practices presented was the following: <u>Workgroup 1:</u> "A pellet district heating plant for public buildings - Farra d'Alpago (BL)" "Smart light in the Municipality of Roncade (TV) - Energy sustainable renovation of the public municipal lighting system with the implementation of smart city services and of light adaptive management" <u>Workgroup 2:</u> "Architecture and alpine territory. Development scenarios and energy-building renovation of the built heritage. The experience of the Lanzo Valleys". <u>Workgroup 3:</u> "The experience of the Energy Performance Contract". In the workgroups have been involved also some representatives of the Observer "Pianificazione Territoriale - Assessorato Territorio e Ambiente" bringing their knowledge and experience linked to the regional territory. Each group, after the presentation of the lecturer opened a discussion. At the end of the works, the outcomes of each workgroup have been synthesized and presented to the other participants in order to share all the contents. The second day consisted in the Final public Conference: during the event, focused on the energy planning at different levels, have been presented the different experiences held by the partners of the AlpBC project at a transnational level. A particular focus was given to the activity held in Valle d'Aosta with the presentation of the recommendations and the guidelines for energy planning drafted at a Municipal and Inter Municipal level, explaining their application to the case-study of the Mountain Community Monte Cervino. In the same way, were presented the experience of the tandem partner Regione Veneto, showing the study drawn up for the integration of energy issues in urban planning in the Alto Agordino Municipalities. During the conference the involved experts presented the results of the workgroups of the first day, in order to share them with a larger public. The workgroups and the final conference have been promoted by specific flyers, a newsletter, two press releases, the AlpBC website, the regional website and a specific direct involvement of the interested stakeholders.

Methodic approach	Workgroups (preparatory workshop) and final conference. The concept of the PS has been thought with two levels of involvement: the workgroups, for specific stakeholders, have been thought as an activity of real discussion, with the interaction of all the participants, bringing their doubts, their positive or negative experiences, an effective way to deepen a specific topic finding some key aspects. the final conference, for a larger public, dealing the topic of integration of energy in the planning instruments, presenting the results of AlpBC in the Valle d'Aosta, in Veneto and in the other Countries involved in the project. The conference gave the possibility to share with a larger public the specific topics/key aspects discussed in the previous workgroups.		
Participative value	Through the workgroups the participative value has been valorised giving the possibility to each participant to take part to the discussion on the specific topic, with an effective exchange with the stakeholders of other Regions.		
Transfer value exported	The "Collection of Best Practices at a Regional, National and Transnational level collecting the best practices related to the integration of energy and spatial planning" could be used as documentation to use for other events. Moreover, the specific best practices presented in each workgroup and the related experts could be involved to present their experience. The idea on how to organize the workgroups (moderator, experts, participants, etc.) could be replied. The involvement of the local stakeholders and of the stakeholders of other territories is an important opportunity of comparison.		
Transfer value imported	-		
Transnational value	The "Collection of Best Practices at a Regional, National and Transnational level collecting the best practices related to the integration of energy and spatial planning" is presenting the best practices collected at a transnational level. During the Final conference the results of the AlpBC project have been presented to a large public. A particular focus was given to the tandem PP VEN and to their experience held in the Regione Veneto.		
Outcomes	Best practices to present to the regional stakeholders; feedbacks on the needs of the Municipalities and of the local Administrators on the management of the energy topics. It is still difficult the involvement of the Municipalities in this event and in specific study and analysis developed on the territory. From the experience emerged a high need of sensitisation of the Administrations on the energy topics.		
Public conference			
Title	"PlanificACTION énergétique des Communes-Potenzialità e sviluppo nei territori alpini" - Conferenza finale "PlanificACTION énergétique des Communes-Potentials and development in the alpine territories" - Final conference		
Description	Energy planning at an Inter Municipal level		
Language	Italian (no translation service)		
Preparatory workshops			
Serial N.	Workgroup 1		
Title	"Ottimizzazione energetica dell'illuminazione pubblica. Sistemi per la produzione locale di energia da fonti rinnovabili" "Energy optimization of public lighting systems and renewable local energy production"		
Description	Preparatory workshop - Experiences in the energy renovation of the public lighting systems; production of energy at a district level; use of renewable energy sources; energy efficiency and new technologies.		
Language	Italian (no translation service)		
Serial N.	Workgroup 2		
Title	"Riqualificazione energetica degli edifici di proprietà degli Enti Locali" "Public buildings renovation"		
Description	Preparatory workshop - Legal framework, technologies, materials for the energy renovation of buildings, renovation vs conservation;		
Language	Italian (no translation service)		
Serial N.	Workgroup 3		
Title	"Sistemi di finanziamento per interventi di riqualificazione energetica" "Financing systems and incentives for energy renovation"		
Description	Preparatory workshop - Financing systems and incentives to improve energy efficiency		
Language	Italian (no translation service)		
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PP Leader			
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Involved persons			
Moderator	Erika Favre - COA energia Finaosta S.p.A.	Region/country	Italy
		E-mail	favre@finaosta.com
Field of expertise	Energy renovation of traditional buildings	Role in PS	Moderator of the Final Conference Moderator of the Workgroup 2
Moderator	Antonio Siciliano - Ambiente Italia	Region/country	Italy
		E-mail	antonio.siciliano@ambienteitalia.it
Field of expertise	Energy planning	Role in PS	Moderator of the Workgroup 1
Moderator	Chiara Wolter - Ambiente Italia	Region/country	Italy
		E-mail	chiara.wolter@ambienteitalia.it
Field of expertise	Energy planning	Role in PS	Moderator of the Workgroup 3
Regional lecturer 1	Rosalia Guglielminotti - COA energia Finaosta S.p.A.	Region/country	Italy
		E-mail	guglielminotti@finaosta.com
Field of expertise	Energy planning	Role in PS	Final conference - Presentation: Tools for energy planning at a municipal and inter municipal level
Regional lecturer 1	Erika Favre - COA energia Finaosta S.p.A.	Region/country	Italy
		E-mail	favre@finaosta.com
Field of expertise	Energy renovation of traditional buildings	Role in PS	Final conference - Presentation: The project AlpBC and the tools for energy sustainability linked to the territorial development: the experience in Valle d'Aosta
Extra-regional lecturer 1	Mauro Berta - Politecnico di Torino	Region/country	Italy
		E-mail	mauro.bera@alice.it
Field of expertise	Energy renovation of the existing building heritage	Role in PS	Final conference- Presentation: Architecture and Alpine territory Development scenarios and energy renovation of the built heritage
Extra-regional lecturer 2	Nicoletta Gozo - ENEA	Region/country	Italy
		E-mail	nicoletta.gozo@enea.it
Field of expertise	Energy optimisation of public lighting systems	Role in PS	Workgroup 1 - Presentation of the best practice
Extra-regional lecturer 3	Roberto Dini - Politecnico di Torino	Region/country	Italy
		E-mail	d013771@polito.it
Field of expertise	Energy renovation of the existing building heritage	Role in PS	Workgroup 2 - Presentation of the best practice
Extra-regional lecturer 4	Cristina Boaretto - ENEA	Region/country	Italy
		E-mail	Cristina.Boaretto@sinloc.com
Field of expertise	Financing systems for energy renovation interventions	Role in PS	Workgroup 3 - Presentation of the best practice
Regional expert 1	Antonio Siciliano - Ambiente Italia	Region/country	Italy
		E-mail	antonio.siciliano@ambienteitalia.it
Field of expertise	Energy planning	Role in PS	Final conference - Presentation: The case study of the Mountain Community Monte Cervino - Energy Balance, BEI and measures for the energy optimisation of the territory
Regional expert 2	Chiara Wolter - Ambiente Italia	Region/country	Italy
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Field of expertise	Energy planning	Role in PS	Final conference - Presentation: The case study of the Regione Veneto - Tools for the energy assessment of urban development scenarios applied to the Municipalities of Alto Agordino

Information and publicity	
Promotion material	Workgroups and final conference playbills (Italian) (nr. 2) Newsletter announcement (Italian) AlpBC website - News section Regional website - Events section
Press work	Press releases on local newspapers before the event (Italian)
Support material	For the PS has been drafted a flyer on the AlpBC project in the Aosta valley - objectives and results. Moreover, the following material: <u>Workgroups:</u> Programme (Italian) Registration form (Italian) Final Conference: Detailed programme (Italian) Presentations for each contribution (Italian) Download of part of the documentation at the following link: http://www.regione.vda.it/energia/AlpBC/eventi_i.aspx
Filming	TV appearance on the regional television news after the event



"PlanificACTION énergétique des Communes-Potentials and development in the alpine territories", Workgroups.

Image:Chiara Bertolin



"PlanificACTION énergétique des Communes-Potentials and development in the alpine territories", Workgroups.

Image:Chiara Bertolin



"PlanificACTION énergétique des Communes-Potentials and development in the alpine territories", Workgroups.

Image:Filomena Pomilio



"PlanificACTION énergétique des Communes-Potentials and development in the alpine territories"



The experience of the Veneto Region. Model of energy demand

Abstract

Sustainable development of the territory foresees the integration of energy efficiency issues and the rational use of local resources into everyday reality. At all levels, from the physical building itself to territorial level, it is necessary to integrate new indispensable criteria of energy sustainability, through the active involvement of the main players that are more or less directly involved in the process; rendering public the current state and highlighting the possibility for territorial development would allow the local authorities to undertake an important role in policy development, it would also allow professionals to develop a new way of drawing up plans as well as allowing companies to work on their own style of innovative building and allow the general public to implement small energy sustainability measures in their everyday lives.

Short introduction of the involved Project Partners

COA - Finaosta S.p.A. - Aosta Valley Regional Financing Company - Directorate for Studies and Business Assistance - COA energia Service - (IT)

Integration of the energy topics in the territorial planning

COA energia is a support structure of the Regional Department of Productive activities, Energia and employment policies, through different activities it aims to ensure knowledge and analysis in planning as well as project planning in the energy field. The main activities are: support of regional structures responsible for energy saving and the development of renewable energy sources and energy efficiency in the processing of planning documents, assistance to local authorities for the identification of opportunities for energy uses across the territory, management of the regional system of energy certification and organisation of the information desk "Info Energia Chez Nous", as well as spreading technical expertise in the energy field.

In the Valle d'Aosta the AlpBC project foresaw an activity of survey and analysis aimed at developing strategies, tools and guidelines for energy and territorial planning at municipal and inter-municipal level, with special attention paid to the integration of energy saving measures and energy efficiency in mountain territories. The guidelines have been implemented in the case-study of the Mountain Community Monte Cervino, a Pilot Area, through the effective involvement of local authorities. The objective of the activity was to provide tools appropriate for the regional territorial reality offering support to the municipalities that intended to develop their own tools for energy planning.

VEN - Veneto Region - Urban and Landscape Planning Department (IT)

Energy and territorial planning

The Urban Planning Section of the Veneto Region is responsible for the definition of urban and landscape planning policies. The section is currently focusing on urban regeneration and the relationship between energy, urban and territorial planning. Since 2015 it has been a member of the CESBA Network (Association for a Common European Sustainable Built Environment Assessment).

Its aims in the AlpBC project were to investigate the potential for harmonising current energy and urban planning policies and to develop guidelines and a GIS tool for the energy evaluation of urban development scenarios. Guidelines and GIS tool are meant to help planners and technicians in municipalities to integrate energy objectives into current master-plan strategies and implementation tools (intervention plans, building codes etc.).

Contents, findings and message of the symposium

The "Participative Symposium PlanificACTION énergétique des Communes - Potenzialità e sviluppo nei territori alpini" (Participative Symposium Municipal energy planning - Potential and development in alpine territories) was held in Châtillon, in the Valle d'Aosta on the 29 and 30 April 2015. The event was organised by COA energia in collaboration with its project partner "Direzione Urbanistica della Regione Veneto - VEN" (Directorate of urban planning of the Veneto region). More in detail, the event involved in the Valle d'Aosta the Municipalities of the pilot area the "Comunità Montana Monte Cervino" as well as the project observers, namely the "Assessorato Territorio e Ambiente, Pianificazione Territoriale" (Territory and environment department, territorial planning division) and "CELVA" (Corsortium of local administrations of the Valle d'Aosta); for the Veneto region the Order of Architects of Belluno and the Municipalities of the pilot area of the "Alto Agordino" were involved. per il Veneto sono stati, invece, coinvolti l'Ordine degli Architetti di Belluno e i Comuni dell'area pilota dell'Alto Agordino.

The event was structured over two days.

The first day (29 April) was organised around work groups targeting the public administrations (and more specifically the local administrations and the technical office personnel in the Municipalities). The afternoon (14.00-18.00) began with the reception of the participants and with a short presentation of the AlpBC project. Then COA Energia outlined the division of the participants into 3 work groups and the themes to be addressed relating to the energy requalification of the territory were presented:

- WORK GROUP 1: Energy optimisation in public lighting. Systems for local production of energy using renewable sources. Within this group AIEL and the Municipality of Farra d'Alpago presented the best practice "Teleriscaldamento a pellet a servizio degli edifici pubblici" (Pellet-fuelled district heating for public buildings) while ENEA and the Municipality of Roncade presented "Smart light nel Comune di Roncade - TV Riqualificazione integrata ed eco-sostenibile dell'illuminazione pubblica comunale con l'implementazione di servizi smart city e di gestione adattiva della luce" (Smart light in the Municipality of Roncade - TV - Integrated and eco-sustainable requalification of public lighting with the implementation of smart city services and adaptive management of light).
- WORK GROUP 2: Energy requalification of buildings owned by local administrations. In this group the Politecnico of Torino presented the best practice: "Architettura e territorio alpino. Scenari di sviluppo e di riqualificazione energetico-edilizia del patrimonio costruito. L'esperienza delle Valli di Lanzo" (Architecture and alpine territory. Scenarios of development and energy-building requalification of building stock. The experience of the Lanzo Valleys).
- WORK GROUP 3: Funding systems for energy requalification interventions, with the presentation of a best practice of an Energy Performance Contract.

The participants in the work groups were:

- for the Valle d'Aosta: local administrators, representatives of technical personnel from the Municipalities in the Valle d'Aosta, COA energia, representatives of the Department of Territory and Environment, Territorial Planning of the Valle d'Aosta region;
- for the Veneto region: Administrators from the Municipalities of the Alto Agordino, pilot area, as well as representatives of the Order of Architects of Belluno and representatives of the Veneto region-Directorate of Urban planning.

Furthermore, other experts in the field also took part who brought their experience and who presented real cases implemented nationally.

In detail, each work group foresaw: the presence of a moderator to illustrate and coordinate the arguments and interventions; the possibility, for the participants, to join in the discussion chosen, asking questions or presenting their own experience via active participation. The illustration, by the moderator or experts in the field, of best practices currently underway or already carried out in the area of interest being analysed by the work group. Finally, each work group drew up a summary of the best practice and the conclusions that emerged from the discussion which were then shared with all of the participants.

The work groups represented an important opportunity to

exchange views regarding the various experiences (local and extra-regional), to share perspectives and to highlight areas of criticalities present as well as the best practices found across the territory. The results that emerged from the Work group were presented to the general public during the conference held the following day.

The second day, held on the 30 April, was the final conference; the arguments under discussion mainly focused on the potential for the development of energy planning tools at municipal or at consortium of municipalities level, as well as presenting the activities undertaken in the AlpBC project at regional level, the experience of the Veneto region which undertook a survey regarding the integration of energy issues in town planning in the Municipalities of the Alto Agordino.

The various interventions closely related to the fil rouge of energy planning at territorial level were discussed by the 55 participants (local administrators, technical office personnel, professionals and members of the general public). The first intervention, by COA energia, illustrated the energy planning tools: the potential and development prospects at municipal and inter-municipal level; more specifically the legislative frameworks at European, national and regional were presented, with a focus on the significance of energy planning at local level and on the role that local authorities can play in the energy field of their own territory (manager, promoter, regulator). Afterwards COA Energia illustrated the AlpBC European project and the tools identified for energy sustainability bound to territorial development, with special reference to the experiences encountered in the Valle d'Aosta with the elaboration of guidelines to support the municipalities. During the event, ample space was allocated to the presentation of the case study of the "Comunità Montana Monte Cervino" that saw the elaboration of the Energy Balance and the Basic Inventory of Emissions as well as the identification of actions for energy efficiency within the pilot area.

From the regional experience, the conference went on to the extra-regional experiences in the second part of the morning with the illustration of the survey undertaken by the Veneto region as part of the AlpBC project for the energy evaluation of urban planning scenarios in the Municipalities of the Alto Agordino.

Finally, to draw on the work groups of the previous day, the best practices highlighted were presented and the arguments that emerged from the fruitful exchange of perspectives and shared experiences. More specifically, the Politecnico of Torino presented the study undertaken by the Piemonte regione (PIE - partner in AlpBC) in the pilot area of the Lanzo Valleys.

For effective dissemination of the contents elaborated during the European project AlpBC a leaflet containing a

description of the project and the activities undertaken at transnational and regional level has been published. Furthermore, during the Work groups a “Collection of best practices” was distributed to the participants, this highlighted themes of efficiency and energy saving drawn from the various project partners.

The experience of the Participative Symposium was very positive. The participants involved showed interest in the arguments and they outlined a particular need to analyse these subjects in depth. The organisation of the Work Groups which specifically foresaw the active involvement of the various players, was very fruitful; by forcing comparisons between different players on the same argument allowed them to fully examine the strengths and weaknesses, the main criticalities, identifying possible solutions.

Sharing best practices which have already been implemented in other territories is an excellent tool which has been made available by the European project, it allows raising awareness among local players, highlighting concrete actions that can be carried out, starting from experiences that have already been implemented or implementing new ones. The difficulties encountered in the organisation of the event were due mainly to the involvement of local administrators which is still often difficult. In fact, there are only a few administrators that are particularly sensitive to the issue, and very often it is difficult for them to bring together their commitments and those of their offices who have direct experience, linked solidly to energy issues. The action of raising awareness therefore must be very structured and must continue outside the opportunities provided by European projects and single events; a good example, in this case, is seen in the AlpHouse Center which, even after the end of the project, aims to continue disseminating knowledge across the territory, keeping the network created among the partners at transnational level active and giving support to all the stakeholders involved.

5.6 PlanificACTION énergétique des Communes Potenzialità e sviluppo nei territori alpini

29.-30.04.2015 Châtillon (Aosta, IT)

Abstract

Lo sviluppo sostenibile del territorio prevede l'integrazione nella quotidianità dei temi dell'efficienza energetica e dell'uso razionale delle risorse locali. A tutti i livelli, dalla scala dell'edificio alla scala territoriale, occorre integrare nuovi indispensabili criteri di sostenibilità energetica, attraverso un coinvolgimento attivo dei principali attori che più o meno direttamente sono coinvolti nel processo; far conoscere lo stato attuale e mettere in evidenza le possibilità di sviluppo del territorio consentirebbe alle autorità locali di svolgere un ruolo importante nello sviluppo delle policy, ai professionisti di sviluppare una nuova modalità di progettare, alle imprese di far proprio un modo di costruire innovativo, ai cittadini di mettere in atto piccole azioni di sostenibilità energetica nella vita di tutti i giorni.

Breve introduzione dei partner

COA - Finaosta S.p.A. - Finanziaria Regionale della Valle d'Aosta - Direzione Studi e Assistenza alle Imprese - Servizio COA energia (IT)

Integrazione dei temi energetici nella pianificazione del territorio

Il COA energia, struttura di supporto dell'Assessorato Attività produttive, Energia e Politiche del lavoro, attraverso molteplici attività intende garantire l'approfondimento delle conoscenze e lo svolgimento di analisi nella pianificazione e progettazione in ambito energetico. Le principali attività svolte sono le seguenti: supporto alle strutture regionali che si occupano di risparmio energetico, di sviluppo delle fonti energetiche rinnovabili e di efficienza energetica nello sviluppo degli strumenti di programmazione, assistenza alle autorità locali per l'identificazione delle opportunità negli usi energetici sul territorio, gestione del sistema di certificazione energetica regionale e organizzazione dello sportello informativo "Info Energia Chez Nous" volto a diffondere le competenze tecniche in materia di energia.

In Valle d'Aosta il progetto AlpBC ha previsto un'attività di indagine e studio volta a sviluppare strategie, strumenti e

linee guida per la pianificazione energetica e territoriale a livello comunale e intercomunale, con particolare riferimento all'integrazione delle misure per il risparmio e l'efficienza energetica nei territori di montagna. Le linee guida sono state applicate al caso studio della Comunità Montana Monte Cervino, area pilota, attraverso un efficace coinvolgimento delle autorità locali. Obiettivo dell'attività è di fornire strumenti adeguati alla realtà territoriale regionale offrendo un supporto ai Comuni che intendono provvedere alla redazione di propri strumenti di pianificazione energetica.

VEN - Regione Veneto - Direzione Urbanistica e Paesaggio (IT)

Pianificazione energetica e territoriale

La sezione Pianificazione Urbanistica della Regione Veneto è responsabile per la definizione delle politiche di pianificazione urbanistica e paesaggistica. Il dipartimento, attualmente, si sta concentrando sulla rigenerazione urbana e il rapporto tra energia e pianificazione urbana e territoriale. Dal 2015 è membro della rete CESBA (Common European Sustainable Built Environment Assessment).

I principali obiettivi della Regione Veneto in AlpBC sono stati di indagare il potenziale per armonizzare le politiche attuali in materia di energia e pianificazione urbanistica e di sviluppare un insieme di linee guida, nonché uno strumento GIS per la valutazione energetica degli scenari di sviluppo urbano. Le linee guida e lo strumento GIS hanno lo scopo di aiutare i pianificatori e i tecnici dei Comuni nell'integrazione degli obiettivi energetici nei Piani strategici in vigore e negli strumenti di implementazione (piani degli interventi, regolamenti edilizi, ecc.).

Contenuti, risultati e messaggio del symposium

Il "Participative Symposium PlanificACTION énergétique des Communes - Potenzialità e sviluppo nei territori alpini" si è tenuto a Châtillon, in Valle d'Aosta il 29 e 30 aprile 2015. L'evento è stato organizzato dal COA energia in collaborazione con il partner di progetto Direzione Urbanistica della Regione Veneto - VEN. In particolare, all'evento sono stati coinvolti per la Valle d'Aosta i Comuni dell'area pilota

Comunità Montana Monte Cervino, gli Observer del progetto, cioè l'Assessorato Territorio e Ambiente, Pianificazione Territoriale e il CELVA - Consorzio degli enti locali della Valle d'Aosta; per il Veneto sono stati, invece, coinvolti l'Ordine degli Architetti di Belluno e i Comuni dell'area pilota dell'Alto Agordino.

L'evento è stato strutturato su due giornate.

La prima giornata del 29 aprile è stata organizzata in tavoli di lavoro rivolti agli Enti pubblici (ed in particolare agli Amministratori locali e agli uffici tecnici dei Comuni). Il pomeriggio (14.00-18.00) è iniziato con l'accoglienza dei partecipanti e con una breve presentazione del progetto AlpBC. In seguito, è stata illustrata dal COA energia la suddivisione dei partecipanti in 3 tavoli di lavoro e sono state presentate le tematiche da affrontare inerenti la riqualificazione energetica del territorio e in particolare:

- TAVOLO 1: Ottimizzazione energetica dell'illuminazione pubblica. Sistemi per la produzione locale di energia da fonti rinnovabili. All'interno di questo gruppo è stata presentata dall'AIEL e dal Comune di Farra d'Alpago la buona pratica: "Teleriscaldamento a pellet a servizio degli edifici pubblici" e dall'ENEA e dal Comune di Roncade "Smart light nel Comune di Roncade - TV Riqualificazione integrata ed eco-sostenibile dell'illuminazione pubblica comunale con l'implementazione di servizi smart city e di gestione adattiva della luce".
- TAVOLO 2: Riqualificazione energetica degli edifici di proprietà degli Enti Locali. All'interno di questo gruppo è stata presentata dal Politecnico di Torino la buona pratica: "Architettura e territorio alpino. Scenari di sviluppo e di riqualificazione energetico-edilizia del patrimonio costruito. L'esperienza delle Valli di Lanzo".
- TAVOLO 3: Sistemi di finanziamento per interventi di riqualificazione energetica, con la presentazione di una buona pratica sugli Energy Performance Contract.

Ai tavoli hanno preso parte:

- per la Valle d'Aosta: gli Amministratori locali, i rappresentanti degli uffici tecnici dei Comuni valdostani, il COA energia, rappresentanti dell'Assessorato Territorio e Ambiente, Pianificazione Territoriale della Regione Valle d'Aosta;
- per il Veneto: gli Amministratori dei Comuni dell'Alto Agordino, area pilota, rappresentanti dell'Ordine degli Architetti di Belluno, rappresentanti della Regione Veneto-Direzione Urbanistica.

Inoltre, hanno partecipato altri attori esperti del settore che hanno portato la loro esperienza e hanno presentato casi reali realizzati sul territorio nazionale.

In particolare, per ogni tavolo di lavoro è stato previsto: la presenza di un moderatore per l'illustrazione della tematica ed il coordinamento degli interventi; la possibilità, per i partecipanti, di intervenire sull'argomento individuato, ponendo quesiti o presentando la propria esperienza attraverso una

partecipazione attiva, l'illustrazione, da parte del moderatore o di esperti del settore, di buone pratiche in corso di realizzazione o già concluse relative alla tematica oggetto del tavolo di lavoro. In conclusione del lavoro di gruppo è stata redatta una sintesi della buona pratica e di quanto emerso dalla discussione poi condivisi con tutti i partecipanti.

I tavoli di lavoro hanno rappresentato un'importante occasione per mettere a confronto diverse esperienze (locali ed extraregionali), per condividere i propri punti di vista, per mettere in luce le criticità presenti e le buone pratiche diffuse sul territorio. I risultati emersi dai tavoli di lavoro sono stati presentati ad un pubblico più ampio durante il convegno del giorno successivo.

La seconda giornata si è tenuta il 30 Aprile con il convegno conclusivo; le tematiche affrontate hanno riguardato principalmente le potenzialità dello sviluppo degli strumenti di pianificazione energetica a livello comunale e di aggregazione di Comuni e, oltre a presentare le attività realizzate in AlpBC a livello regionale, è stata condivisa l'esperienza della Regione Veneto che ha condotto uno studio per l'integrazione dei temi energetici nella pianificazione urbanistica nei Comuni dell'Alto Agordino.

Alla presenza di circa 55 partecipanti (amministratori locali, tecnici comunali, professionisti e cittadini), sono stati affrontati diversi interventi tutti strettamente legati dal fil rouge della pianificazione energetica a livello territoriale.

Nel primo intervento, effettuato dal COA energia, sono stati esposti gli strumenti di pianificazione energetica: potenzialità e prospettive di sviluppo a livello comunale e intercomunale; in particolare, è stato presentato un inquadramento normativo a livello europeo, nazionale e regionale, con un focus sul significato della pianificazione energetica a livello locale e sul ruolo che le autorità locali possono giocare in campo energetico nel proprio territorio (gestore, promotore, regolatore). In seguito, il COA energia ha illustrato il progetto europeo AlpBC e gli strumenti individuati per la sostenibilità energetica legata allo sviluppo territoriale, con particolare riferimento all'esperienza condotta in Valle d'Aosta con l'elaborazione delle linee guida a supporto dei Comuni. Durante l'evento, poi, è stato dedicato ampio spazio alla presentazione del caso studio della Comunità Montana Monte Cervino che ha visto l'elaborazione del Bilancio Energetico e dell'Inventario Base delle Emissioni e l'individuazione delle azioni per l'efficientamento energetico dell'area pilota.

Dall'esperienza regionale, nella seconda parte della mattinata, si è passati alle esperienze extra regionali con l'illustrazione dello studio condotto dalla Regione Veneto nel progetto europeo AlpBC per la valutazione energetica degli scenari di sviluppo urbano nei Comuni dell'Alto Agordino.

Infine, per richiamare i tavoli di lavoro del giorno precedente sono state presentate le buone pratiche trattate e quanto emerso dallo scambio proficuo dei punti di vista e delle

esperienze condivise. In particolare, il Politecnico di Torino ha presentato il lavoro condotto dalla Regione Piemonte (PIE - partner di AlpBC) nell'area pilota delle Valli di Lanzo. Per un'efficace divulgazione dei contenuti elaborati durante il progetto europeo AlpBC è stato redatto un opuscolo riportante una descrizione del progetto e delle attività condotte a livello transnazionale e regionale. Inoltre, durante i tavoli di lavoro è stata distribuita ai partecipanti una "Raccolta di buone pratiche" sui temi dell'efficienza e del risparmio energetico raccolte dai vari partner del progetto.

L'esperienza condotta con il Participative Symposium è stata molto positiva. I partecipanti coinvolti hanno mostrato interesse al tema e hanno manifestato una particolare esigenza di approfondire queste tematiche. L'organizzazione dei tavoli di lavoro, in particolare, che ha previsto l'attivo coinvolgimento dei diversi attori, è stata molto proficua; mettere a confronto diverse figure su uno stesso tema ha consentito di sviscerarne i punti di forza e di debolezza, le principali criticità, individuando le possibili soluzioni. Condividere le buone pratiche già messe in atto in altri territori è un ottimo strumento messo a disposizione dal progetto europeo, che consente di sensibilizzare gli attori locali, mostrando che qualche cosa di concreto può essere messo in atto, partendo da esperienze già condotte o intraprendendone di nuove. Le difficoltà riscontrate nell'organizzazione dell'evento sono in particolare dovute al coinvolgimento degli amministratori locali che risulta essere ancora molto difficile. Infatti, sono ancora pochi gli amministratori particolarmente sensibili al tema, e molto spesso è difficile coniugare i loro impegni e quelli dei loro uffici con esperienze dirette e concretamente connesse al tema dell'energia. L'azione di sensibilizzazione deve quindi essere molto ben strutturata e continuare al di fuori dell'opportunità data dai progetti europei e dai singoli eventi organizzati; un buon esempio, in tal senso, è dato dall'AlpHouse Center con il quale, anche in seguito alla chiusura del progetto, si cercherà di continuare a diffondere sul territorio le conoscenze, tenendo attivo il network creato tra i partner a livello transnazionale, dando un supporto a tutti gli stakeholder coinvolti.

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