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Fair Stand Catalogue
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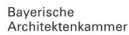
PROJECT PARTNERS:

Handwerkskammer für München und Oberbayern
(Leadpartner)

BAUakademie Lehrbauhof Salzburg

Bayerische Architektenkammer,
mit Technische Universität München

Chambre de Commerce et d'Industrie de la Drôme,
avec Neopolis

Energieinstitut Vorarlberg

ERSAF Ente Regionale per i Servizi all'Agricoltura e alle
Foreste, Regione Lombardia

Région Autonome Vallée d'Aoste – Regione Autonoma
Valle d'Aosta avec - con COA Energia Finaosta

Regione del Veneto,
Direzione Urbanistica e Paesaggio

Research Studios Austria ForschungsgesmbH,
Studio iSpace

ALPHOUSE FAIR STAND CATALOGUE
Alpine Building Culture and Energy Efficiency

THE ALPHOUSE PROJECT

The AlpHouse Fair Stand informs about the transnational project AlpHouse, running from 2009 – 2012. The stand focuses on the analysis work of the project partners in 9 Alpine regions that aims at identifying challenges and chances for a new combination of Alpine building culture and energy efficiency.

Further project steps of AlpHouse in view of communication and training will be implemented during the tour of our stand throughout the regions of the project partners and on fair trades; the stand itself will accompany a number of events.

An overview of the activities of AlpHouse can be found on the internet site www.alphouse.eu, also containing an interactive database with GIS tools.

AlpHouse is lead by the Chamber of Crafts for Munich and Upper Bavaria; it is funded by the Alpine Space Programme of the European Union (EU) and by the working group of Alpine Regions (ArgeAlp).

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Project Aims

The Alpine Space comprises unique natural and cultural landscapes. These have produced a wide range of characteristic building types, which emerged out of a long-term adaption to climatic and geographic conditions. Today they form an important element of the attractiveness of the Alps as a space for living and recreation. If we want to preserve and use this cultural heritage, we must bring it into alignment with the challenges and needs of today. We should try to understand the principles of traditional alpine architecture, integrate them in present-day construction, and develop them further. In this way traditional architecture can also be combined with modern technologies and requirements for energy efficiency.

AlpHouse aims at promoting such a farseeing approach to renovations in the Alpine Space. The project explores and collects knowledge and skills in the various regions and passes them on to craftsmen, architects, planners, and decision makers – so that they can develop individual local solutions oriented towards a common understanding of quality.

Target group local enterprises –
competence and closeness to customers

The project AlpHouse aims at stimulating the competitiveness of small and medium sized enterprises (SME) in the Alpine Space by customized information and qualification offers. It supports local enterprises in the sectors of crafts, architecture, and planning so that they can meet the rising demand for adequate renovations of alpine buildings. These have to measure up to present requirements regarding energy efficiency and appropriateness of building culture according to the individual cultural areas of the Alpine Space. AlpHouse strives to equip these enterprises and their employees with the competencies necessary to perform house renovations at the highest technical, architectural and ecological level, simultaneously taking into account cost effectiveness and customer service. In this way the local enterprises can capitalize on their traditional strengths and increase their innovative energy.

Target group broader public and house builders –
efficient interaction of well informed partners

For the target groups general public, house builders, and decisions makers in local and regional bodies AlpHouse provides information and tools that will help them to orient on the market, to determine their planning goals and to come to skilled decisions. Thus well informed partners will meet at renovations and interact in an efficient way. Additionally impulses for regional and national coordination and public funding will be given.

In order to facilitate the exchange of knowledge on renovations AlpHouse fosters the implementation of networks – e.g. of crafts enterprises, architects, and research institutes – and performs public events centred on practical questions. By these activities fundamental research findings, traditional techniques, and current experience can be circulated at short distance.

AlpHouse quality –
an optimal linkage of alpine building culture and ecology

Renovations performed according to AlpHouse quality criteria are oriented towards two central aims:

• Preservation and development of the cultural heritage of the Alpine Space, as represented by vernacular architecture, traditional settlement structures, regional materials and crafts techniques.

• Optimization of energy efficiency and overall life-cycle costs of buildings and settlements, achieved by applying state-of-the-art technologies and detailed knowledge on ecology and specific local conditions.

The linkage of these two aims is a challenging task: According to the type of building, its usage and location, individual solutions have to be found.

Project implementation

The project starts with research activities which assess and concretise the demand of the target groups (crafts enterprises, architects/planners and decision makers). These activities are focused on the pilot regions and aim at a transferable and communicable methodology for renovating the building stock.

The findings will be audited and optimised in cross-sectoral networks of research institutes, educational service providers and decision makers on regional, national and transnational level regarding their practical relevance and suitability for sustained implementation. Thereby the user groups are being integrated into the development of the project's outputs from the beginning. The development of (initially informal) quality standards in the networks of planners and craft enterprises will be supported. Subsequently the findings will be made available in a database optimised for the individual target groups by application specific IT-tools.

Simultaneously the research findings will be edited for qualification modules and flanking information services, which procure practical knowledge that raises the competencies of the target groups. The qualification modules encompass target group specific training sequences (for SMEs and decision makers), practical units on building sites (for SMEs) and auxiliary train the trainer programmes (for educational service providers).

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A continuous public relation work disseminates the outcomes of the project, coordinated with and supported by communal, regional and national institutions in the countries involved.

THE ALPHOUSE FAIR STAND

Alpine Building Culture and Energy Efficiency

- *Creating Awareness of Alpine Building Culture p. 8*
- *Working with Spatial Strategies p. 14*
- *Utilisation of Vernacular Intelligence p. 18*
- *Combining Material Culture and Technology p. 22*

With these four main fields of work the AlpHouse Fair Stand represents the AlpHouse approach in Alpine building culture and energy efficiency on the basis of joint analyses of all project partners. The stand consists of a column, ten presentation tables, a book table with analysis documents and publications of the partners as well as a projection of photos.

An interactive area (*live construction site*) with artisans aims at linking local craftsmanship and innovative technologies with the focus on local construction materials. The stand can be supplemented with further parts by the project partners in their regions, such as, for example, posters or models of regional architecture.

Aside from its use for fairs, the stand serves as starting point for lectures, discussions, films, site visits and training courses during its tour through the regions of the project partners.
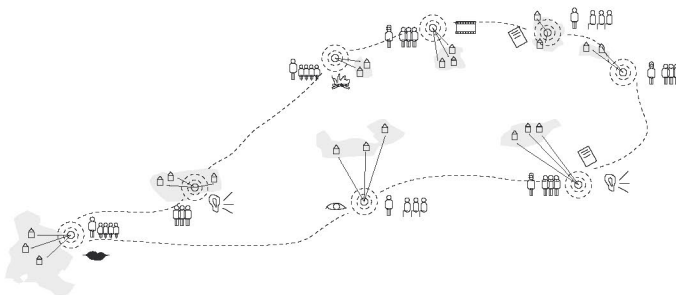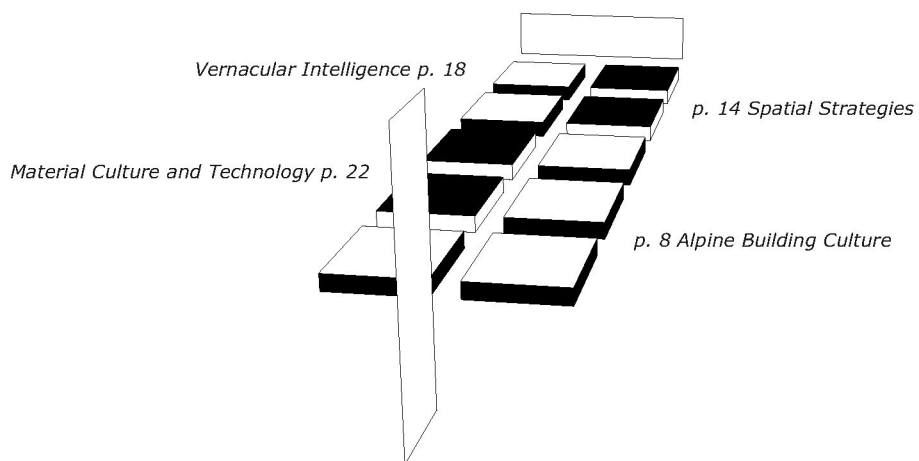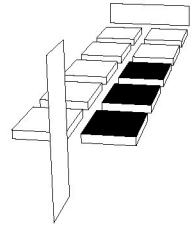
Creating Awareness of Alpine Building Culture

The alpine space as field of action of alpine building culture is marked by great differences and is formed by buildings, settlements and land use. The term Alpine Building Culture does not dissociate building in the Alps from the adjoining regions; it is about mutual challenges, lying in the geographical escalation of trends and a possible transferability of ideas and procedures.

Similar requirements in extreme climatic and topographic situations and a limited area for settlement have always marked alpine building. Because of cultural factors, micro climates, social and economical conditions, regionally distinct forms of building have arisen: this variety is an essential part of the Alps.

Material and immaterial values are attached to the existing buildings and settlements and are decisive for local identities and economies, for tourism, and for the ecologic conversion of the Alps as settlement area. Given that 90 % of the building stock in the Alps has been erected before the introduction of energetic standards, it plays an important role when it comes to introducing renewable energies, in view of generation of energy and energy savings. Nonetheless, AlpHouse emphasises that old buildings have always been orientated to energy questions; and proposes to rediscover this knowledge.

9 PILOT REGIONS

Transferability and Differences within the Alpine Space

The selected pilot regions illustrate specific local impacts of trans-alpine trends, such as demographic changes, structural changes and reorientation of agriculture and tourism, influences of trans-alpine traffic infrastructure, accessibility with public transport, ecological questions, environmental dangers, adaptation to climate change, energy savings. Economical and social concentration and diffusion processes are further conditions to be found in each of the regions. They question generalising approaches; at the same time we observe a new awareness for towns and cities in rural areas, as well as different legal and cultural backgrounds and mentalities.

Situational conditions of communities and patterns of existing settlements and free spaces, building types and building structures entail the necessity of specific procedures. The interaction of tendencies and situational conditions presents challenges to alpine building culture and defines at the same time locally varying potentials.

The alpine space as topographic and cultural space
with the 9 pilot regions (NUTS 3, ca. 1000 km^2) and 15 pilot villages (LAU 2)
of the AlpHouse project (A, D, F, I)

15 PILOT VILLAGES

Situational challenges and chances for alpine villages

AlpHouse relies on the transferability of methods, not on recipes. However, joint subjects of alpine settlement development are identified which allow comparison:

- the still ongoing suburbanisation in the main valleys and the influence of metropolises bordering the Alps suggest an increased utilisation of the existing settlements and buildings to avoid surface sealing and to harness infrastructure more efficiently;

- rural shrinking and vacant buildings due to demographic changes pose the general question of the future of settlement areas; but are also observed in growing regions;

- rural centres are understood as focus of attention in view of centrality and efficient infrastructure – and as poles of identity;

- buildings and settlements from the 1950s to the 1980s are a promising target for increased energy savings. However, strategic moments for renovation and development have yet to be clarified;

- temporary use and small-scale touristic buildings offer great potential for renewal;

- there is need for locally specific and overall energy concepts as part of spatial settlement development.

Maps of the target areas in the pilot villages (A, D, F, I)

30 PILOT BUILDINGS

Regionally varying focuses of renewal show the differences of the building stock

For a reuse of the existing alpine buildings with respect to building culture and reasonable energy use, the building stock has to be differentiated in its specific parts; that is the so-called vernacular buildings (before 1918 or the introduction of industrial construction materials and technologies) as well as buildings erected in the 20th century. AlpHouse focuses on residential buildings which are not necessarily under preservation order: it concentrates on the broad mass of the building stock. The differences of old alpine buildings and their integration into towns and regions are not seen as a problem in view of utilising generalised industrial applications, but as value that includes energetic aspects. Such a situational approach requires specialised knowledge and competences to analyse and draw concepts.

The illustrated pilot buildings are categorized in four groups:

- vernacular buildings, intensive use
- buildings of different ages, temporary use
- buildings of different ages, often post-agrarian, partial use of large volumes
- residential buildings from the 1950s to the 1970s, intensive use

Timeline of the pilot buildings:
The built footprint of our culture in its reuse (A, D, F, I)

13

Overview of the pilot regions and pilot villages:
XX pilot region
XXX pilot village

01 Tennengau (A)
011 Kuchl

02 Traunstein (D)
021 Schleching

03 Garmisch-Partenkirchen (D)
031 Murnau

04 Provincia di Belluno, parte settentrionale (I)
041 Selva di Cadore
042 Vodo di Cadore

05 Bregenzerwald (A)
051 Andelsbuch

06 Comunità montana Valtellina di Sondrio (I)
061 Chiesa in Valmalenco
062 Chiuro
063 Ponte in Valtellina

07 Vallée d'Aoste - Valle d'Aosta (I)
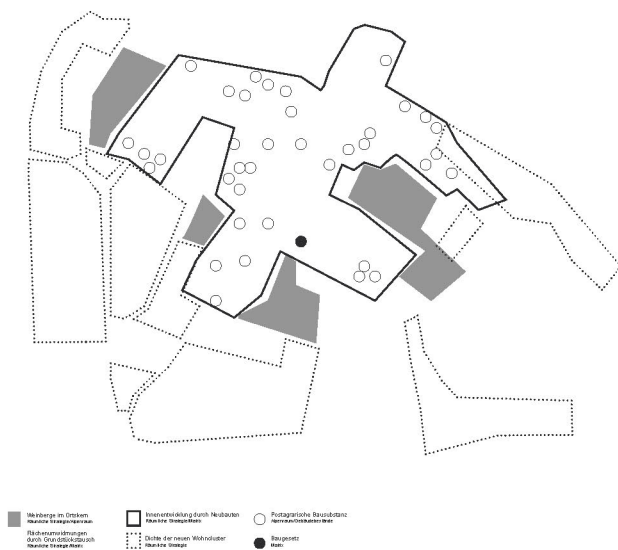*071 Gressony-La-Trinité*
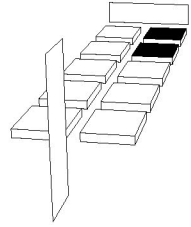*072 Gressony-Saint-Jean*
073 Champorcher
074 Avise

08 Val de Drôme (F)
081 Saou

09 Vercors (F)
091 Vassieux-en-Vercors

Working with Spatial Strategies

Houses and settlements in the Alps are complex bodies, formed by utilisation, design, construction and infrastructure. Frequencies, intensities, types and forms of their use will play a more significant role in the future given the demographic changes. Exposition, orientation and compactness will be identified as main subjects for buildings and settlements. Detecting potentials and limits of the building stock and its context is the basis of spatial concepts on different levels: from construction components and their combination, layouts and sections of buildings to villages and valleys. AlpHouse elaborates spatial strategies as a procedure to harness potentials of the existing buildings and settlements and sees at its basis a planning necessity.

The intersections between planning disciplines, such as architecture, settlement planning, urban and rural development, energy expertise, regional development and also monument preservation have not yet been designed for a coherent operative approach the building stock. The analysed pilots reveal gaps between the procedures on different levels of measures (regions, towns, buildings, and details). AlpHouse proposes to optimise interaction between the actors of building culture as well as a cross-scale planning approach.

SETTLEMENT DEVELOPMENT AND ENERGY

In the village Fläsch a new spatial strategy creates the basis for energy efficiency

General aims of internal development and efficient dealing with the resource soil are adapted to the logic of the current situation in the wine village Fläsch. Free surfaces at the inside remain vineyards and create a direct connection to the landscape. The wine farms, spread out over the whole village, are supported in view of direct marketing. Areas needed for new constructions are planned densely, directly at the village centre, obtained by land exchange in direct cooperation with the population.

This new strategy represents a generally new orientation of settlement planning opposed to the diffuse growth and the separation of functions of the last thirty years. Also the aim of intensifying reuse or replacing old barns in the village is based on the fundamental factor of energy efficient settlement development: accessibility, compactness and reuse. Intensive consulting has been initiated for the building projects, in turn, local construction regulations have been simplified.

Model and maps about the settlement development.
In 2010, Fläsch (CH) has been awarded the Wakker Prize for sustainable rural development. The new strategy has been developed by Christian Wagner, Chur.

POSTAGRARIAN BUILDINGS

The subject of dealing with postagrarian structures, which is of great importance for the Alpine Space, requires spatial concepts

Barns and stables have nowadays often lost their role in agriculture and are vacant. Yet, they are not only historic monuments, but also part of the local context from a cultural and economical point of view.

Touristic use, especially as country retreats, is to be evaluated with regard to the towns' identity and their role as living space. Temporary use demands special conditions from the buildings from an architectural and energetic point of view. On the contrary, in growing regions, too intensive use calls into question if replacing a structure would not be more appropriate in some cases.

Especially in outlying areas, because of development measures and infrastructures, it should not be taboo to consider the vanishing of barns. On the other hand, there are new chances of reuse by multifunctional agriculture as well as due to new living and working patterns of the highly efficient societies in the alpine space.

Different demands of use and possible strategies demonstrated with pilot buildings. A range of spatial strategies shows the conscientious decision on intensity of use and extent of the interfering. (A, CH, D, F, I)
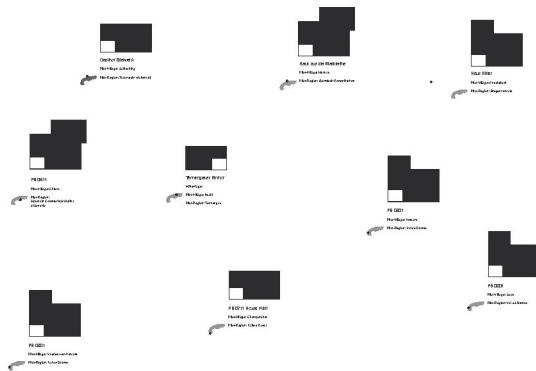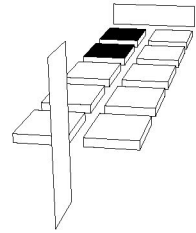
Utilisation of Vernacular Intelligence

AlpHouse considers the buildings and settlements in the Alps as stimulators for cultural and economical aspects of building. This new evaluation concentrates on vernacular buildings and settlements: they can be understood as *database of building culture*. Vernacular construction offers models of how buildings adapt to climate and topography, how they use energy efficiently and how they harness materials efficiently. This vernacular intelligence has at first nothing to do with building styles but with structural factors on all three project levels:

- the regional level with cycle systems and spatial structures,
- the village level with its compactness and exposition,
- the building and detail level with spatial organisation in layouts and sections, with materials and their combination.

The energetic knowledge of vernacular buildings indicates to ask for standards and comfort: it can even stimulate innovations for standardised procedures of energy efficiency.

TOWN CENTRES AND ENERGY

The spatial and energetic model of dense central settlement cores

The market in Murnau is an example of vernacular intelligence of lined-up energetically high-efficient building units, with only minor heat loss at the facades' surfaces. Similar examples are found in other pilot villages, such as Kuchl or Chiesa.

The market reaches far beyond the town limits in its role as room of social and economic centrality. The effort to keep local supply and gastronomy at the market and not to follow the trend to install them outside of town in commercial zones has been successful. A large contribution to this success has been the targeted placing of larger retail surfaces in the centre as well as the commitment of the population, who recognises and uses the market's material and immaterial value. The uniform facade has now importance beyond monument ensemble protection. In view of energetic considerations, wall surfaces, windows and roofs at the market are to be evaluated differently than houses at the back.

Vernacular buildings in the narrow line at the market are surprisingly robust when it comes to their transformation: they have been converted from residential houses with subsistence farming in the back part to stores with flats on the upper floors.

*Facade at the market in Murnau/Staffelsee (D)*

VERNACULAR BUILDING TYPES

The Alps' vernacular buildings are a database of intelligent behaviour towards surroundings and natural forces

AlpHouse sees the vernacular buildings as valuable stock worth preserving, necessitating adaptations of architecture and craftsmanship procedures; on the other hand, they inspire further development of the alpine building culture because of their inherent knowledge. For reason of technical and social ruptures in the 20th century, we cannot talk about continuing traditions – it is more about lying back on this knowledge and related technologies. Vernacular buildings have been created by try and error, in adaptation to changing economic and social boundary conditions, and based on planning decisions concerning settlement patterns and house types.

The vernacular buildings of all pilot regions combine structural with energetic concepts. The parlor as central area is a phenomenon which can be observed across all regionally different house types. From this core room, heated by a stove, radiate all daily and seasonal uses of the house, from living to working – as well as the heat. The orientation of the parlor to the south to harness solar heat, buffer zones as well as the animals' heat has been part of energy efficient systems.

Plans of vernacular pilot buildings: The parlor as central room (A, D, F, I)
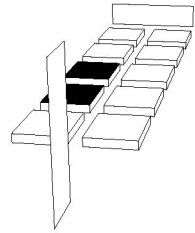
Combining Material Culture and Technology

Not all vernacular technologies have survived industrialisation, they have not been fixed standards but a developing field of knowledge and competences. Nowadays lifestyle, ideas of comfort, of public and private space are very different than they have been before 1918. However, the aim of AlpHouse is to re-appropriate vernacular technologies and to reassess them where they are necessary for the building stock. The *paradigm of repair* is an ecologic process to reduce the use of energy and material – but, what is more, reparation is a cultural value.

The AlpHouse approach can thus be described as *counter stream operation*: it is about adaption and decisions to use technologies and materials from the field of new constructions (e. g. passive house elements, controls, fabrication methods, tools, etc.), but also about rediscovering vernacular materials and technologies and even their transfer to the field of new construction (e.g. solid wood, chalk, clay).

Because of the differentiated nature of the alpine building stock, a wide spectrum of techniques can be collected and developed: in the areas of structural design, expansion, heating and ventilation, calculation and design tools. They have to correspond to the different steps of energy saving, which can be achieved within the building stock with reasonable financial and ecological effort.

THE HOUSE AS SYSTEM

The pilot building Welf in the Aosta Valley demonstrates the importance of joining building elements and spatial complexity

Compared to a procedure aiming solely at the optimisation of building elements, the dealing with building stock necessitates a more complex approach. The three-storey House Welf can only be understood and dealt with as system of space, construction and material. The individual factors influence each other, construction physical and energetic aspects are added.

The model of the house before renovation and conversion shows the intertwining of the materials wood and stone and their individual structural logic. This logic depended on the lifestyle and the requirements to the building: in the winter residents and animals retreated to the heated socle, in the summer the upper floor was used for living and working. Hay and harvest were stored in the attic and on the balconies.

Model pilot building Casa Welf, Gressony-La-Trinité (I)
*Sections of vernacular pilot building: Use of wood and stone*

MATERIAL AND REGION

In Vrin the building material wood motivates regional cycle systems

For cycle systems of material, energy, and also knowledge, wood is interesting in two aspects: as re-growing material and as renewable energy source. By using the forests in Val Lumnezia, the whole valley is integrated into this system. Harvest and processing methods not only enhance regional value in-crease but are also experienceable as identity keeper, and they strengthen knowledge and appreciation of local craftsmanship. New attention is paid to material culture (R. Sennett) and is combined with the focus on differences between villages as places and promotion of places. The experience gained by the ability to change materials motivates a new connection of architecture and craftsmanship.

In Vrin, architect Gion Caminada together with local craftsmen has developed fabrication and combination techniques for the old material wood used as raw material for solid construction. Its connection to the valley is visible throughout the village in different refinement steps. The usage of the material is a transfer of vernacular type of log construction, the so-called "Strickbau", to modern building. At the same time a fascinating continuity is achieved for external and intermediate spaces of old and new houses, and houses with a mix of wood and stone elements and the joining of corners.

Projects in Vrin (CH) by architect Gion Caminada and vernacular residential and barn buildings: The material wood
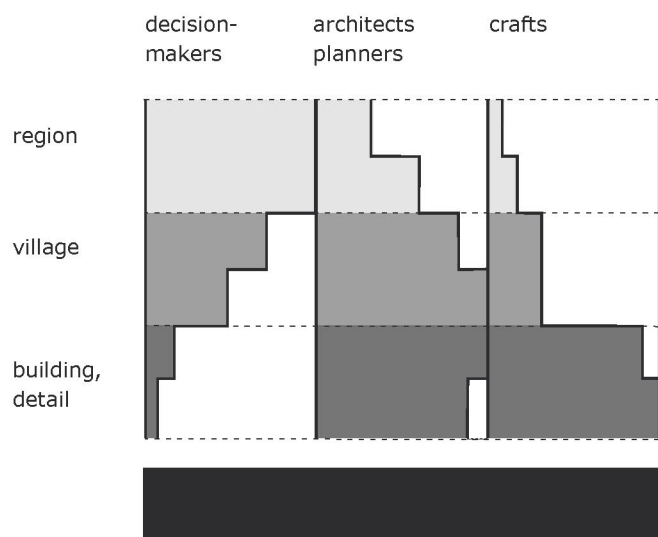
THE ALPHOUSE APPROACH

The AlpHouse approach emphasizes that a cultural and sustainable use of the building stock can only be achieved

- by combining object-related optimisation with settlement and regional development,

- by a new awareness of the values and

- potentials of alpine building culture,

- and by a focus on materiality and detailing.
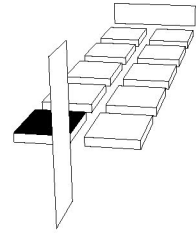
AlpHouse recommends that this combination of different scales in analysis and development of measures should be accompanied by a new culture of interfaces of the different stakeholders in construction processes. The standard procedures of the project's target groups have to be optimised not only for the described cross-scale approach, but also at the points of interaction between the groups. The AlpHouse matrix shows these two dimensions of optimisation and offers a constant tool of design and evaluation of the individual and regionally specific measures of the project and beyond. An actual status of the discussion regarding the project's impact for the target groups can be described as follows:

- For decision makers a stronger focus on regional and local contexts can improve ecological and cultural values of building renewal, instead of highlighting generalized approaches to single buildings, which is, in many cases, misleading funds and incentives and is not effective in terms of energy efficiency.

- For architects and planners the transferable output of AlpHouse lies in the improving of a culture of interfaces between architecture/urbanism, energy expertise, regional development, and heritage preservation. It applies a wide focus – beginning with the analysis of the status quo and the development demands of the building stock – and employing spatial strategies for the implementation.

- For crafts a regional focus on materials and techniques is discovered as a potential strong economic and cultural asset.

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IMAGES CATALOGUE
TUM Landraum

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14 PILOT VILLAGES
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30 PILOT BUILDINGS
Photography: BAUakademie Lehrbauhof Salzburg, Regione del Veneto, Energieinstitut Vorarlberg, ERSAF Ente Regionale per i Servizi all'Agricoltura e alle Foreste Lombardia, COA Energia Finaosta, Neopolis, TUM Landraum

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THE HOUSE AS SYSTEM
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MATERIAL AND REGION
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ALPHOUSE COLUMN
Photography: Klaus Leidorf for Landraum

The AlpHouse Fair Stand
is based on the analysis work of all project partners, as reported in:

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for pilot villages' analysis by TUM Landraum for ByAK,
for pilot regions' analysis by Studio iSpace.

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