Cross Scale spatial strategies in the alpine space

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The alpine space as field of action of alpine building culture is marked by great differences formed by buildings, settlements and land use. The term Alpine Building Culture does not dissociate buildings in the Alps from the adjoining regions; it is about mutual challenges, lying in the geographical performance of trends and a possible transferability of ideas and procedures. This challenges prevail on different scales in urban and as well in rural regions. A rising interest for challenges and potentials of the alpine space in general, and its building culture in particular, can be clearly recognized– exemplarily shown by the number of research and development projects dealing with it. But the need of energetic renovations and at the same time the request for maintaining the cultural heritage raises questions.

How can stakeholders understand the complex dynamics of development and shrinking in the spatial change and how can they react to the upcoming challenges and the available potentials?

The alpine territory offers an extreme case of complexity, as it unites eight countries and around 6200 municipalities, and hence highly different political, economical, cultural and climatic conditions.

Renewing the building stock is one of the core issues in the alpine space. But to address this challenge it is fundamental to grasp as well the strings behind. Decisions about the building stock “are directly linked to decisions of locational factors, to the increasing and decreasing contexts, to questions of accessibility and development, to models and regulations of the interior and the exterior as well as to the connections of local and regional development perspectives”.

This essay aims to point out, that a differentiated engagement with a cross scale approach for spatial strategies is essential, in order to develop an awareness for spatial quality and alpine building culture, that goes beyond economical short terms. To meet and handle the changing spatial requirements (eg, new building development, vacancy, changes in use, etc..), the vernacular settlements and construction principles of the alpine regions have to be precisely understood and developed further in an innovative but context sensitive way.

The European regional development project “AlpHouse- alpine building culture and energy efficiency” (2010-2014) was one of the regional development programs, that dealt with the formal counter poles of energy efficiency and building culture. It targeted to develop a renewed understanding for a fruitful and productive relation between alpine building culture and energy efficiency.

Starting from three scales: region, village and building – nine Pilotregions, fifteen Pilotvillages and thirty Pilotbuildings have been investigated exemplary in the project, to trace the opportunities and challenges, that lay in various levels of scales and their interrelation with each other. Within the different scales, trends

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1 Jörg Schröder/Kerstin Weigert (Hg.): Landraum. Beyond Rural Design, Berlin 2010
2 Antonio de Rossi: Architettura alpina moderna in Piemonte e Valle d’Aosta. Torino 2005
4 e.g.: AlpHouse, NURA, AlpBC, Moreco, AlpEnergy, CLISP AdaptAlp, AlpEnMAT, AlpInfoNet, AlpStore, CO2-NeuTrAlp, DEMOCHANGE, etc...
5 AlpHouse - Alpine Building Culture and Energy Efficiency - Final Publication, Cross-Scale Analysis as Basis for Spatial Strategies
6 http://www.alphouse.eu, more information available online, 03.05.2014
7 Handwerkskammer für München und Oberbayern/Bayerische Architektenkammer (Hg.): AlpHouse Fair Stand Catalogue. München 2011, Landraum.
and relations were explored and analysed, in order to delineate a cross-scale transferability for spatial strategies ("the AlpHouse Approach\(^8\)).

15 PILOT VILLAGES
Fifteen AlpHouse pilot villages in Germany, Italy, Austria and France
Image: edited by TUM Landraum; Data sources: Bavarian State Office for Survey and Geoinformation, RSA iSpace, Regione del Veneto, Energieinstitut Vorarlberg, ERSAF Ente Regionale per i Servizi all’Agricoltura e alle Foreste Lombardia, COA Energia Finaosta,

The AlpHouse approach emphasizes that a 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.\(^9\) An intensive study of the regional spatial conditions and trends throughout the boarders of scales, serves as basis. From that point, local specific opportunities can be explored in order to develop further the competitiveness, attractiveness and spatial network of the territory.

Although many common themes of alpine settlement developments can be observed, for example economic and social concentration and diffusion processes, the different regions in the Alps show as well strong differences in their legal and cultural settings. "Due to different situations of communities and individual patterns of existing settlements and open spaces, building and construction types, arises the need for highly differentiated approaches".\(^10\) Diverse conditions are calling generalizing practices in planning and regulation into question. The AlpHouse approach is therefore starting from a transferability of methods - not recipes.\(^11\) But to accomplish those common goals cleverly, an overall frame filled with transferable methods can serve as guideline for future spatial transformations. Spatial strategies are understood in this case as tools, that take full advantage of the existing potential.

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Interdependence of scales

To develop holistic spatial strategies, an investigation that goes beyond the primary effective scale is implicitly required. The dependencies and influences - the strings of cross scale relations to other levels have to be drawn up. This is especially important, to push forward reasonable spatial solutions, ideas and procedures in order to provide them for a possible transfer. The analysis focused in particular on the different regional preconditions and on an exploration of spatial strategies and their coherency throughout the scales.

CROSS SCALE
Interpretation of the Cross Scale Approach based on the AlpHouse pilots’ cross-scale approach
Drawing: Lisa Leitgeb for Studio Landraum

Starting from the idea of a transferability of methods, the two directions of horizontal and vertical transferability were explored. They are denoted as linkage lines, which have a strong interrelation in their scales (see black arrows in the graphic above).

The interrelation of scales in a horizontal direction (eg.: a certain factor that is similar in scale, but spread all over the alps: Compare exposition of building X to building Y to building Z, or from village X to village Z) The matter of the horizontal direction is to explore similarities and potentials throughout similar levels of scales, to extract the core idea, and to transfer them in an adapted version to other contexts. Even tough each of the challenges calls for a contextually differentiated approach, AlpHouse believes that there is huge potential in the transferability of methods and their evaluation.

A second interrelation of scales was formulated in the vertical direction. It was traced, that spatial strategies at a regional scale, can have also impact on the village scale X, and can have also recursive influence on the buildings scale.

To portray different strategies and their relations of scale, a range of good practice examples has been extracted and collected in a toolbox of Strategies:
Starting from a theoretical analysis, spatial strategies have been analysed and compared in good practice examples. Those strategies that were analysed, are mutually dependent and strengthen each other throughout the scales of region, village and buildings. Based on the three categories (region, village, building) the single levels in each case study have thus been explored and it could be determined in which intensity a strategy influences the corresponding level, and how they shape the others. But a coherency of the spatial strategies ranging from the valley scale down to the scale of construction details, could be found only in one example – in the village Vrin in Grisons, Switzerland. Each of the three levels are part of an overall strategy, and can be assigned to a consciously designed spatial strategy - a loop system. This loop, made out of spatial awareness, knowledge and energy, includes even a new mindfulness for the local material of wood. This system adds therefore not only value to quantitative matters, but strengthens also a local identity.

Other case studies have been the Greater Walser Valley in Austria, and the Village of Fläsch in Switzerland. Again here, a coherency of linkages throughout the scales could be explored intensively.

The analysed Case Studies were used as references for the pilots of the project. In the analysis of the various examples it got clear, which interdependencies between the different strategies are prevailing and that these have the potential to characterize the spatial expression of each level strongly. This shows that a planning approach, that goes beyond the boarders of defined scales, is indispensable, to consciously developed further, shape and transform the alpine territory, its settlements and culture. As this is a major task for all discipline dealing with the alpine space, and its implementation is far from completed solutions, it is highly relevant, to get an awareness for applied methods and investigate further the potentials of a cross scale approach.