**Graduation Plan: Architecture**

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<th>Personal information</th>
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<th>Studio</th>
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<tr>
<td>Name / Theme</td>
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<td>Teachers / tutors</td>
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<tr>
<td>Design Tutor: Roel Van de Pas - AE</td>
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<td>Research Tutor: Nelson Mota - Global Housing</td>
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<td>BT Tutor: Hubert van der Meel</td>
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<th>Argumentation of choice of the studio</th>
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<td>In the previous semester I attended the Msc2 design studio “Housing under the Himalaya. During the experience I discovered my interest in the link between affordable construction in developing countries and the world of vernacular architecture. I've been fascinated by the sense of deep truth and honesty that spontaneous &quot;architecture-without-architects“ emanates and at the same time by the almost-accidental holistic approach that it embodies. It boasts the incredible feature that its value is generally determined by its non-value in term of materials and construction process – and that this simple characteristic determines a revolutionary quality in terms of sustainability. I decided to continue the research that I started during the Msc2 studio as graduation project and I joined Explore Lab because no other chair at the faculty offered a Msc3 program specifically linked to the theme.</td>
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<th>Graduation project</th>
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<td>Title of the graduation project</td>
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<td><strong>Goal</strong></td>
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<td><strong>Location:</strong></td>
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<td><strong>The posed problem</strong></td>
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One of the main consequences on the built environment is that climate-responsive traditional architecture, based on locally available materials has been gradually and rapidly replaced by more dense urban fabrics, mainly composed of generic reinforced concrete and burnt brick masonries. The shifts linked to the universal civilization are dramatically fast in the area as well as in the whole region.

The ongoing process is lowering the quality of buildings both from the cultural (loss of regional identity and landscape specificity) but also environmental (namely from the sustainable and bioclimatic) points of view.

The modern, but still vernacular, architecture meets tastes and accommodate lifestyles of contemporary users but it’s more and more unsuitable to ensure safety and comfort to them. The harmonic relation between natural landscape and man-made alterations is gradually being substituted by a sort of arbitrary super-imposition of structures.

As researchers from the School of planning and architecture of New Delhi - referring to some modern interventions - asserted: “It is not uncommon to find buildings in the mountains that are similar to their counterparts in the plains and have almost nothing to do with an appropriate design for the mountains. Often technology and materials from the plains are used in the mountains, resulting in poorer buildings.” (Gupta & Singh, 1987)

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<th>research questions and design assignment in which these result.</th>
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<td>To which extent the archetypical qualities of the Himalayan vernacular architecture should be embodied in new sustainable designs?</td>
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The goal of the research project is to demonstrate that the methods to adapt the current trend of construction to climate change are already part of the regional culture - and more precisely, that the ancient knowledge can provide both theoretical inspirations and practical solutions to contemporary (and future) problems.

The main hypothesis is that an integration of traditional with modern typologies will have the power to generate an new trend of architecture that is more affordable, safe, feasible and sustainable than the present one.

The principles of critical regionalism, namely the strive for an equilibrium between universal techniques and local identity-giving factors (Frampton, 1987), will be both inspiring background and constant theme through the research process.
The outcome of the research will be translated into the intervention of re-design of the Dagpo Monastery. Despite it has been recently built, it embodies the main issues and missed opportunities that are common within the modern local built environment, especially in relation to climate design, use of materials, sustainability, spatial organization and language. The monastery compound can be interpreted as a micro-cosmos, namely an enclosed environment whose components and internal organization resemble the ones of a local village. In other words, a sample urban environment can be synthesized by its structure. It will be considered as a laboratory where the architect has the chance to explore and test the new design strategies that can be used elsewhere within the mid-Himalayan altitudes nearby Kullu-Manali.

The two main concerns are both the definition of a new contemporary architecture as well as the renovation of existing structures. Each intervention must be intended not only as a punctual solution to a specific problem but also as a showcase action that must inspire local people to reproduce it.

In such developing contexts - where the majority of interventions are results of vernacular practices (namely designed by non-archsitects, or even non-designed) - the role of the architect is not to directly produce a design for commission of local inhabitants but to develop strategies to indirectly influence and inspire the trend of local builders. The main design challenge becomes then the development of an approach for the definition of a new local “custom”.

The architect can provide knowledge, research, instruments and solutions for future interventions but he cannot apply them directly. What he can introduce are the necessary ingredients that are able to provoke a shift among the common building practice of the area.

The intervention at the monastery is therefore an attempt to research and demonstrate how a new trend of contemporary regional architecture - that is more sustainable, bioclimatic, safe, easy to built and that can solve the problems related to identity and site-specificity - can be designed.
The main focus of the research is the parallel comparison among the two types of architecture that characterize the region:

- *The Ordinary vernacular*, namely the current trend that characterizes the majority of buildings realized in recent times.

- *The Grand vernacular*, namely the traditional Himalayan architecture, typical of the mid-hill part of Himachal Pradesh. It’s the result of a process of development that lasts for centuries. It’s mainly made of local available materials and its techniques has been gradually lost due to shortage of wood and global civilization.

Two meta-cases of typical existing buildings have been designed in detail and then evaluated in parallel on various aspects, mainly by means of analytical drawings. In order to achieve comparable results, the evaluation will be based on a fix structure of features, that are:

- construction process  
  (The realization of each building will be divided into steps that shows methods, tools and actions)

- organization and programmes

- ratio of mass / void in the building

- transition between public / private environments

- seasonal transformations  
  (Different uses of interior and exterior spaces during summer, winter and monsoon)

- amount *(and type)* of materials\components, embodied energy, embodied carbon- emissions, life span of the building

- systems and technology

All the information will be extrapolated from existing literatures (such as articles, books and researches on the theme of urban development in the mid-hill Himalayas) or deduced from direct observations during the site survey and on photographs.

The research will allow the designer to understand critically the benchmarks that the future architectural interventions in the area need to reach. As conclusion, it will be possible to reply the following (main) sub-questions:
How is the Mid-Himalayan vernacular architecture of Himachal Pradesh? Which are the features that make it unique and bound-to-the-specific-place?

Why did the different techniques\typologies become consolidated practices through time? Which are the main reasons of the shift from \textit{grand} to \textit{ordinary} vernacular?

How do local people realize a building? Which is the technical level of builders?

How the uses of space differ during day/night and seasons? Which are the main (spatial) necessities of the users?

Which are the common features between the \textit{ordinary} and \textit{grand} vernacular architecture? Which are the differences? (on the various aspects that concerns architecture, materialization, details, language etc.)

Which characteristics (ideas, solutions, components and parts) can be considered in the definition of a new intervention in the area? Which are the ones that have to be modified because inappropriate, in-convenient or unfeasible anymore?

What should be the role of a (foreign) architect in the process of design and realization of an intervention in such \textit{autonomous} built environment?

\textbf{Literature and general practical preference}


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Reflection

Relevance

The thesis must be considered as the study of a process to achieve a project that can be applicable also in other contexts. It has a value as design approach in itself. The Himalayan valleys of Himachal Pradesh are a valid case study to demonstrate the applicability and validity of the strategy developed.

All over the world, especially in developing countries such as other regions of Asia, South America or Africa, it’s easy to find areas where nowadays the population is facing similar issues related to climate change, migration, shortage of materials, environmental pollution and urban sprawl.

More and more professionals are called to work on the themes and therefore to think which could be the best (architectural) solutions to apply. When this happens, the risk is always that the foreign designer, professionally well prepared but culturally far from the specific context, imports ideas that are locally unknown and that pretend to radically modify the well-established customs - the consequence is often failure.

I wish to explore an approach that doesn’t solve the problem partially (by means for example of a “finished” intervention of architecture that substitutes parts of the slum) but that is, first of all, a method to influence local people to build differently. The trend of the chosen area, as well as of other places, is that the “builders” are often designers and users too. I think that this quality is fundamental and cannot be overlooked among the design process.

Architects sometimes neglect to consider what is already part of the local culture as starting point of their process of research and development. This fact is one of the causes of global civilization, namely the depersonalization of culture in certain contexts - followed by the gradual loss of traditional specificity and therefore of local identity.

A structured and clear system to generate awareness around the possibilities and solutions that are traceable in traditional patterns is in my opinion a fundamental tool to systematically help professionals in their decision-making process. Every choice will be weighted and confronted firstly with what is already in-place: a way to avoid mismatches and incoherences in the interventions.
**Time planning**

**Week 3.1 – Week 3.5**
- Understanding themes and topics related to the fascination
- Definition of draft research question
- Research of literature
- Choice of mentors

_Elevator Pitches on 7th March + Pitch for the Dean on 15th March_

**Week 3.6 – 3.8**
- Literature review and research, mainly on vernacular (Himalayan) architecture and on the effect of climate change in Himachal Pradesh / India / South Asia.
- First meetings with the research and design mentors
- Writing of draft problem statement and research proposal
- Definition of site of intervention and design task

_P1 presentation on 4th April_

**Week 3.9 – 4.1**
- Correction of problem statement, research proposal and design task
- Initial production of the drawings that will be body of the research material: translation of literature findings into the two _meta cases_ that will be analyzed.
- Development of first ideas/sketches of design

**Week 4.2 – 4.4**
- Production of drawings/texts for the research, getting of first results/conclusions about building processes, spaces and materialization of the meta-cases.
- Analysis of the area of intervention on various scales (Dagpo Monastery / Kullu Valley)
- Definition of design hypothesis
- Study of existing case studies

**Week 4.5 – 4.8**
- Translation of first research findings into design principles
- Finalizing of draft research products
- Development of a design approach: benchmarks and rules that have to be considered during the design process
- Development of a draft masterplan and sketch-visualization of the intervention at a smaller scale

**Week 4.9 – 4.10**
- Clarification of design storyline, strategy and definition of key-components within the design process.
- Development of the first design proposal
- Finalizing of the 75-80% of the research body, achievement of the first conclusion.
- Preparation of material for the P2 presentation

_P2 presentation on 23rd June_
July and August

- Corrections in reaction on comments of the P2 presentation
- Revision and finishing of the body of research
- Gathering results and writing of other conclusions
- Review of the project / development of the strategic approach
- (if possible) practical testing of sustainable building techniques (i.e. rammed earth, earthbags)
- (if possible) attending an hands-on workshop on earth-bag construction

**Week 1.1 – 1.7**

- Draw research conclusions + (if applicable) implement them with the results of practical tests
- Study on local materials and feasible techniques in the area
- Work on detailed supporting drawings for the design on architectural, urban and detail scale
- Develop an architecture that can be comparable, in terms of scale\typology, with the case studies analyzed within the research process. The juxtaposition will allow the designer to demonstrate the validity of his design and test its qualities according to the predetermined criteria and standards developed for the cases studies during the research.

**Week 1.8 – 1.10**

- Finalizing research material
- Finalizing master-plan and design strategies
- Development of complete preliminary design (scale 1:200, 1:100, 1:50, 1:20)
- Preparation of P3 presentation, definitive project storyline and delivery of final research

*Date of P3 presentation: to be determined*

**Week 2.1 – 2.5**

- Corrections in reaction on comments of the P3 presentation
- Engineering of the project in 1:5
- Development of a definitive design with supporting drawings and models
- Deepen down the level of detail and finalization of the prototype
- Preparation of P4 presentation

*Date of P4 presentation: to be determined (between 4th - 14th Dec)*

**Week 2.6 - 2.10**

- Last adjustments to design in reaction to the comments of the P4 presentation
- Improve / finalize drawings and visualizations
- Model making
  - Prepare final P5 presentation products

*Date of P5 presentation: to be determined (between 24th January – 2nd February)*