Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences
**Personal information**

<table>
<thead>
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**Studio**

<table>
<thead>
<tr>
<th>Name / Theme</th>
<th>Flowscapes</th>
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<tbody>
<tr>
<td>Teachers / tutors</td>
<td>Inge Bobbink (L.A), Henri van Bennekom (Architecture)</td>
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<td>Argumentation of choice of the studio</td>
<td>Landscape architecture studio</td>
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**Graduation project**

| Title of the graduation project | Rising out of the Wrath: The Post-Disaster Religious landscape of Kedarnath valley, Uttarakhand, India |

**Goal**

<table>
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<th>Location:</th>
<th>Uttarakhand, India</th>
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| The posed problem, | We are all aware about the climatic changes taking place in the world. Higher populations and lesser resources leaves the global south at the most vulnerable spot on the map. If we talk about the case of India, climatic change has been affecting many parts of the country with either landslides, earthquakes or floods. The most affected is the Northern part of the country, where maximum inundation usually takes place along the course of the River Ganges. The Ganges is one of the most sacred rivers to Hindus and is the embodiment of all sacred waters in Hindu mythology as well. Near its source, in northern state of Uttarakhand, it flows through one of the four spots of the Hindu pilgrim circuit, ‘The Char Dham’, (“four abodes”). It is considered highly sacred by Hindus to visit the Char Dham during one’s lifetime as it is believed could cleanse people of their sins. Revered by many Hindus in the country, The Char Dham attracts many pilgrims to the four temple sites in Uttarakhand. Situated in the lap of the majestic Himalayas, the pilgrimage leads to the pristine valley of the 3000-year-old Kedarnath Temple (one of the four spots).

In June 2013, Uttarakhand faced unusual heavy rainfall, series of cloud bursts and glacial lake outbursts all within 4 days leaving the sacred valley of Kedarnath completely ravaged. The flooded Ganges swept with it pilgrims, inhabitants, houses and flora/fauna creating a havoc in the valley. For days many people were stranded in forests without food, water and inappropriate clothing. The 3000-year-old Temple shrine at Kedarnath survived the major event without any damage. The unchecked tourism and unregulated urban sprawl of the valley aggravated the calamity to an apocalypse causing severe damage to infrastructure and the religious landscape of the valley. The Genius loci of the place was so affected that the pristine aura of the valley was transformed into a construction site with silt, boulders, and dilapidated... |
structures. Therefore, the effects of the disaster leaves; the nature, the pilgrimage, and the landscape on its Last Legs.

The Char Dham is considered as the state’s biggest employment generating industry with over 50,000 people involved in small scale and large-scale businesses operating from various nearby villages and cities. The deluge not only affected the victims but also snatched away the bread and butter of half the state’s population. However, the faith of god keeps bringing the pilgrims back to the valley and the numbers keep increasing by the day. Hence, the fragile Post-disaster landscape is a challenge for physical reconstruction in order to appropriate for the growing number of pilgrims. India has a major population with different religions, beliefs, and cultures and due to the strong spiritual, social and political identity of the site, the project will aim to have a sensitive approach towards the holy river and the religious landscape.

This project seeks to mitigate the effects of natural disasters by designing and implementing a projective approach to a disaster-based landscape architectural design as opposed to strategies that are based in reaction. The test-bed selected for this thesis application is the sacred Kedarnath valley itself situated in Uttarakhand, India. Acknowledging the region as a sacred landscape and wanting to not only preserve, but reinvigorate the religious connection that cultures present in the area share with the land, the overall organization of the infrastructural formwork is to be predicated on the architectural components of traditional vernacular structures and materials. The idea of providing spaces in order to make places in such a landscape would be the challenge in order to respect yet prevent the recurring of the event. The project aims to provide the opportunity for local villagers and seasonal workers to indulge within the economic system while simultaneously providing flood resilience structure and stability to the landscape.

| design assignment in which these result. | Context, theoretical framework, site analysis, regional plan/strategy, detail design, reflection. |
_Process_

_Method description_

**Problem Analyses**
- Theoretical Framework
  - Climate change
  - Pre-disaster aspects
  - Physical vulnerability
  - Social vulnerability
  - Resilience
- Mapping
  - Historic landscape formation
  - Sequence of events or timeline
  - Geomorphology
  - Urban trends & developments
  - Vulnerable regions
  - Infrastructure
  - Routing
  - Background concept study
  - Urban planning in India
  - Sustainable growth
  - Religion and faith

**Evaluate Potentials**
- Opportunities
  - Flood risk management
  - Sacred landscapes
  - Memory landscapes
  - Socio-economic spatial development
  - Socio-economic spatial development
- Operation
  - Site Visits
  - Interviews
  - Study Models

**Possible Design Proposals**
- Opportunities
  - Regional vision
  - Spatial intervention
  - Re-structuring landscape
  - Prototype of landscape
  - Architectonic element for flood risk management
  - Programmatic rejuvenation
  - Landscape systems for high altitude terrains
  - Material and technique innovation

**Reflection**

**Literature and general practical preference**


*Trapped in Kedarnath*, series 1, episode 1, National Geographic Channel, 29 Apr. 2010.


Reflection

Relevance
Social relevance: The 2013 flash floods in Kedarnath devastated the landscape of the valley claiming over 1000 lives and paralyzed the religious town for nearly two years. With infrastructure failing and lack of access to resources, the town undoubtedly faced one of the worst disasters in history. Responding to this urgent need for physical reconstruction and psychological rebuilding, the strategy and spatial design for Kedarnath valley will ensure resilience towards climatic events and enhance it spatially. The socio-economic structure was also severely affected by the deluge and hence the plausible propositions will also take this in consideration.

Scientific relevance: Climatic change and its impacts are increasingly being studied especially in the global south. Spatial interventions for sensitive regions (in this case religious, social and political sensitivity) is a concept that needs to be delved deeper into in order to understand potentials and opportunities. Furthermore, material and technique research are comparatively less explored hence suggesting a pressing need to explore these design possibilities in more depth.

In addition, the graduation project aims to research the potential of landscape design along with providing flood resilience strategies which can enhance the spatial quality of the Kedarnath valley for following aspects:

a. Spatial contributions
b. Ecological contributions
c. Economic contributions

Time planning

- Motivation
- Theoretical framework
- Problem statement
- Background concepts
- Mapping
- Fieldwork
- Formulation spatial strategy and framework
- Final spatial design principles and tools
- Design and testing - Regional vision and strategy formulation
- Reflection and conclusions
- Visualization of design strategies
- Public presentation