

P2 GRADUATION PLAN

Research & Design

Davoud Sultani – 4056914

Data

Personal information

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Studio

Theme/Name	Explorelab
Mentors	Aldo Trim (design) – Roel van de Pas (research and BT)
Argumentation of choice of the studio	Initiated by the slim potential of the project being realized I found Explorelab to be the only graduation studio with the freedom and support needed for this kind of graduation project

Title of the project	Non-traditional school for girls of informal Kabul
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Product

Research Project

Location	Afghanistan – rural areas in earthquake high risk zone
Problem statement	<p>Afghanistan is located in a zone of high-seismic activity. There is always a high risk for widespread death and destruction whenever an earthquake occurs.</p> <p>Many of the prevalent construction practices and building typology in rural areas are extremely vulnerable to earthquake hazards. With a considerable portion of population living or working in earthen construction, there's a need for research on ways of improving earthen buildings against earthquakes.</p>
Research question:	How can one modify the existing local building techniques in rural areas of Afghanistan to build better earthquake resistant adobe buildings?
Research goal:	Introduction of locally available, easily transferable design principles and techniques for building earthquake resistant adobe structures in rural Afghanistan.
Research product:	A visually oriented manual aimed at the rural population (rural Afghanistan has a literacy rate of around 20%)

Design Project

Location	Kabul – Afghanistan
Problem statement	<p>The primordial confrontation between forces of change and forces of conservation has been one of the main obstacles in modernization of Afghanistan's education system. The resulting conservatism is observable in the architecture of its schools. More than a century after the introduction of 'western style' education to Afghanistan, even schools built recently reflect almost none of the shifts and innovations common in the western world. This can be partially blamed on the country's almost 40 years of instability but study of the many post-Taliban school buildings shows a fundamental lack of critical approach to the traditional idea of school as the place in which pupils passively receive knowledge from their teachers.</p>
Research question	<p>How can one spatially represent the contemporary non-traditional education theories in a conservative society such as Afghanistan?</p>
Sub questions	<p>What are the relevant educational theories to Kabul's unique post-conflict culturally, ethnically and religiously diverse condition?</p> <p>How to architecturally maneuver the restrictions and demands of an uber-patriarchal society such as Afghanistan to female education?</p>
Design goal	<p>A non-traditional school for girls 6-15 years old (the compulsory part of Afghan education system includes 6 years of elementary education and 3 years of 'middle' education)</p>

Process

Method description – research project

Literature review

- books
- scientific journals
- conference proceedings
- case studies on comparable regions and building techniques

Expert consultation

- Grahame Hunter - British architect involved with such issues in Afghanistan
- Yasmeen Lari - Pakistani architect Heritage Foundation of Pakistan
- Joop Paul - Professor of building technology in arch. faculty TU Delft
- Joop den Uijl - EQ researcher civil engineering faculty TU Delft
- Karel Terwel - Structural engineer CiTG faculty TU Delft
- M. Masood Rafi - Professor & Chairman Department of Earthquake Engineering NED University of Engineering and Technology, Karachi

Criteria application

- general research (summary of current knowledge base)
- building type research (Afghanistan's rural architecture) and choice of dominant type in risk area's (adobe - mudbrick)
- study of research on earthquake and mudbrick in comparable regions (Pakistan, India, China, Peru...)
- application of criteria
- preliminary choices and interpretations
- confirmation of expert advisors
- production of end products (drawings, translating texts to local languages)

Method description – design project

Literature study

- books and scientific journals on educational psychology, relationship of space and learning, etc..
- case studies on comparable typologies and contexts
- precedent analysis of non-traditional schools in Afghanistan (Skateistan, Maria Grazia Cutuli Foundation...)

City, neighborhood, site analysis

- Urban: fabric, density, areas and neighborhoods, public facilities, growth, functions, public spaces
- Environment: climate, topography, parks and green spaces, eco systems, water bodies, pollution, noise, daylight, energy supplies
- Demographic: population, density, age, gender, ethnicity, migration, health
- Culture: religion, identity and image of self, family models, social systems, groups and relations, traditions, leisure and activities
- Architecture: features and icons, trends or tendencies, vernacular styles, most important buildings, housing types, regulations

Design interpretations of research findings

Techniques:

- Sketches: Hand drawings, Tracing, Layering
- Modeling: 3D digital models (Sketchup & Rhino), Physical models
- Drawings: Revit, AutoCAD, Illustrator
- Diagrams: Illustrator, Photoshop

Reflection

Relevance

It is almost a cliché to say education is an important (if not the most important) tool in uplifting a struggling society. Afghanistan has one of the lowest literacy rates (3rd) in general and the lowest literacy rate amongst female population (12.6% – 14%) with 65% of its population being under 21 years old. These numbers alone will suffice as a testimony to the relevance of this graduation project.

(a sample of) Proposed literature

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Time planning

