

# Sandcastle - Elementary School

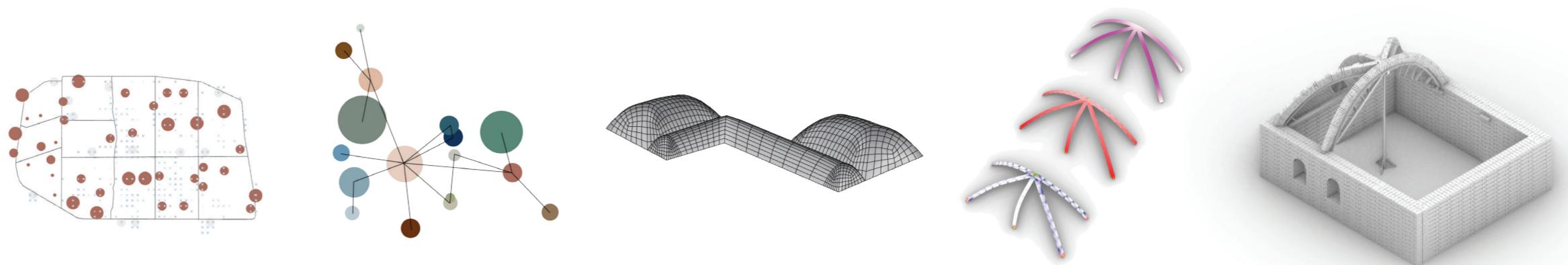
## Abstract

Proposed are urban and architectural solutions for the Syrian refugees in Zaatari Camp, Jordan. An urban master plan of school placements and upgrades was determined based on number of unenrolled children within 400m and proximity to other facilities.

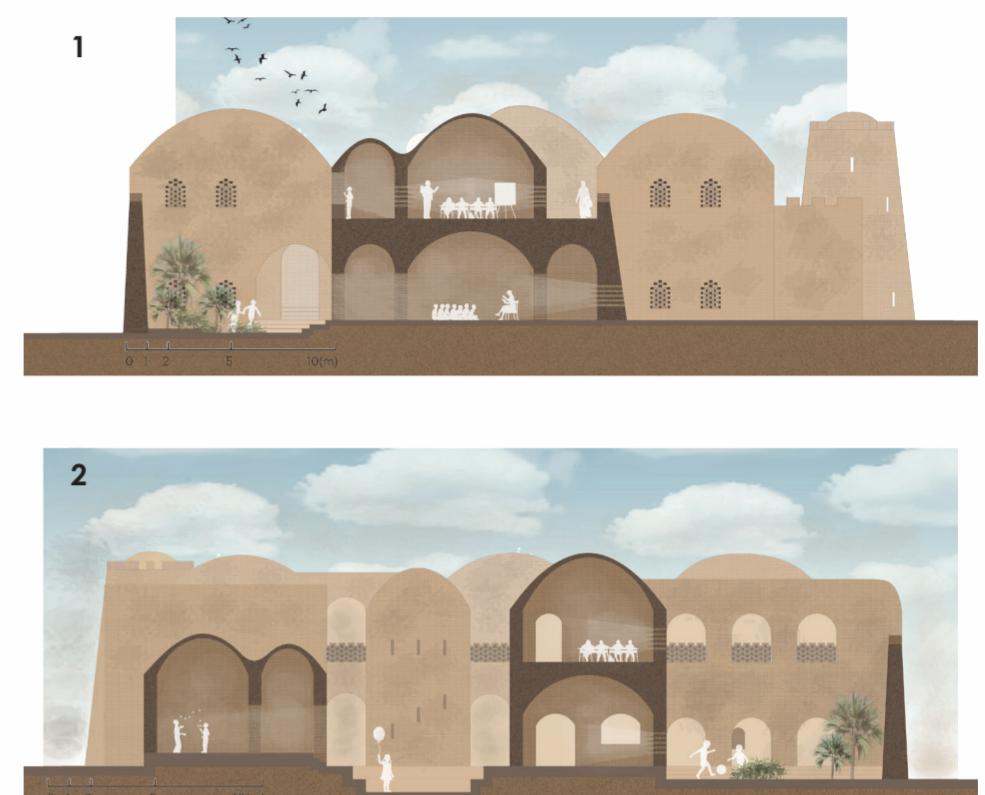
Earthy architecture can provide a high quality solution, and yet a temporary structure since it's "demountable"/destructible and circular. However earth can only be used in compression-only structures.

One school project has been elaborated into a detailed design embracing a castle style typology. The castle design would create a sense of belonging and a safe school environment that kids would be motivated to go to.

The graph theoretical method for the layout of spatial configurations of floor plans was used first. This included REL charts and bubble diagrams. Later meshing, welding, and grasshopper tessellation. Ansys and Karamba 3D structurally verified the dynamically relaxed ceilings by Kangaroo. Python was used for bricklaying patterns.



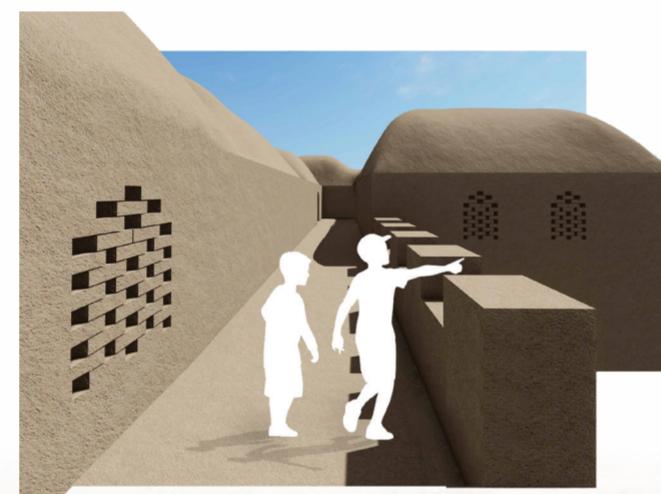
Final - Ground Floor



Final - Sections



Liwan, Central Courtyard



Defensive Wall



Elevated Gallery



Library Courtyard



AR3B011 Earthy, Delft University of Technology

Prof. Dr. Ir. Sevil Sariyildiz  
Dr. Ir. Fred Veer  
Dr. Ir. Pirouz Nourian  
Ir. Hans Hoogenboom  
Ir. Dirk Rinze Visser  
Ir. Shervin Azadi  
Ir. Frank Schnater

Group 04

Students

Bart van Nimwegen	4484770
Daniella Naous	4290038
Konstantina Chouliara	4744292
Maria Dimas	4893344
Ronald Rijsterborgh	4483014
Steven Engels	4813022