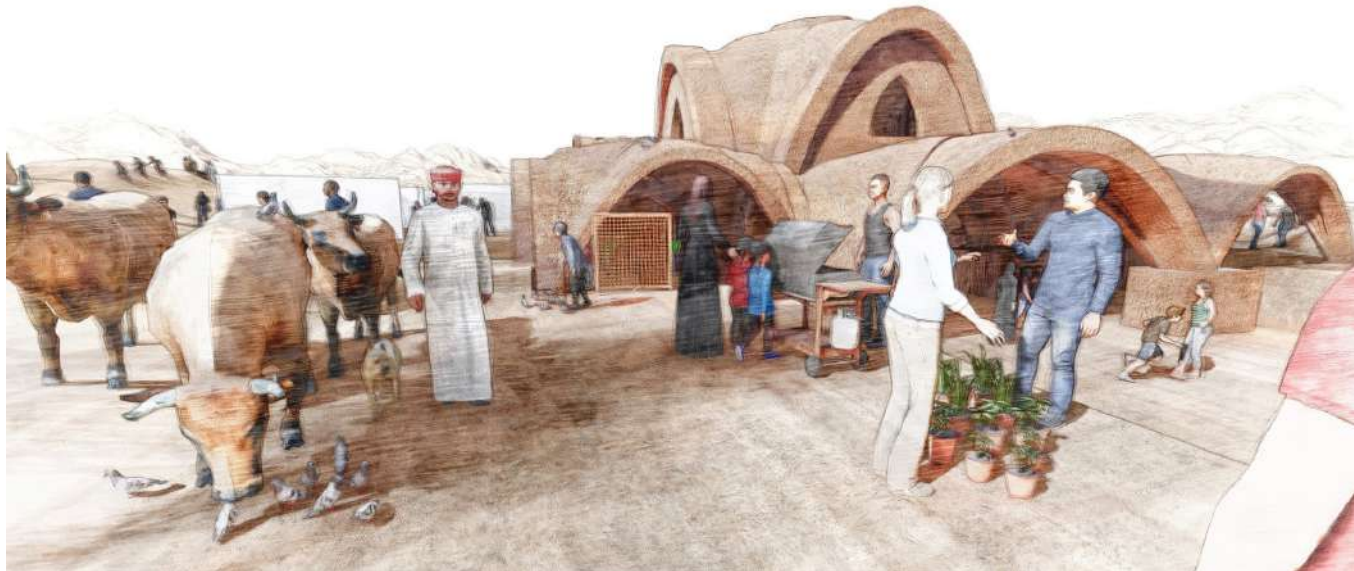


BAZAARS FOR REFUGEE CAMPS

A solution for more than only Zataari

A steadily growing number of people are moving into refugee camps. At the moment, almost 80.000 Syrian refugees live in camp Zataari. The emphasis of refugee camps is on establishing temporary solutions. In reality, these camps exist for years and years. As it looks now, the people living in refugee camps will not move back soon. We would like to give these people an urban object which reinstate the values the refugees lost in their past, in this case the bazaar. For this we propose **a modular computational method** instead of a design, which can be used in any refugee camps.

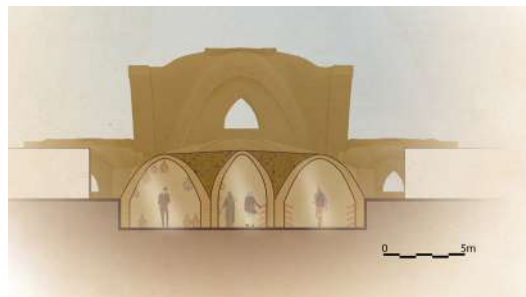
For the construction of the bazaar, an inflatable structure is chosen. The idea is to use a modular system for the bazaar. The pro of this system is that the mould is compact for transport, framework and structural support in one and reducing the change on mistakes as it is a 3D shape which is followed. Due to the modular approach of the design 9 different types of inflatable mould are needed to make the bazaar. The construction will be completely in adobe and shape will meet the tension requirement in both principal directions.



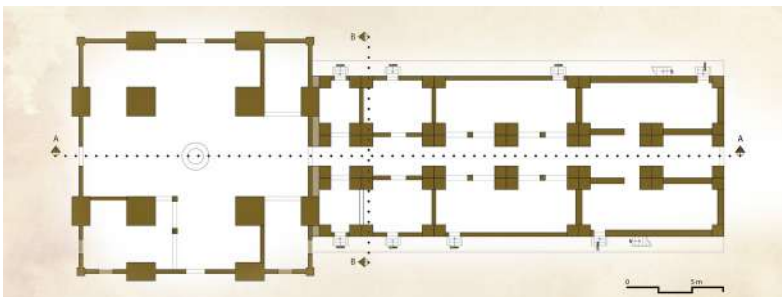
Junction Entrance



Interior View Junction



Section BB

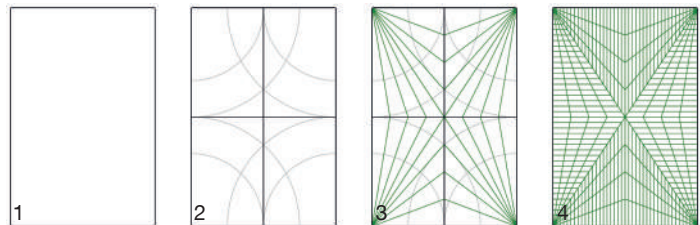


Floor Plan : Junction & Street, A Scenario

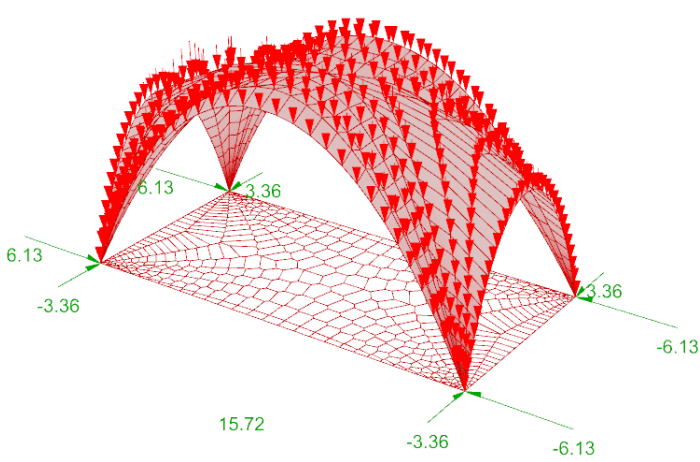


Section AA

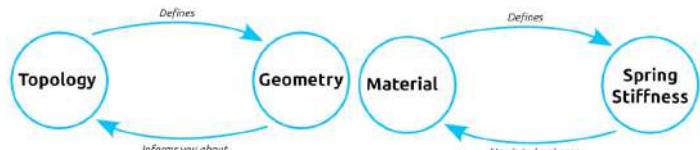
Form Finding



1. Input shape with four corner supports, 2. Finding medial axis support points, 3. Generating closest lines to supports 4. Final mesh design meeting the three aspects.



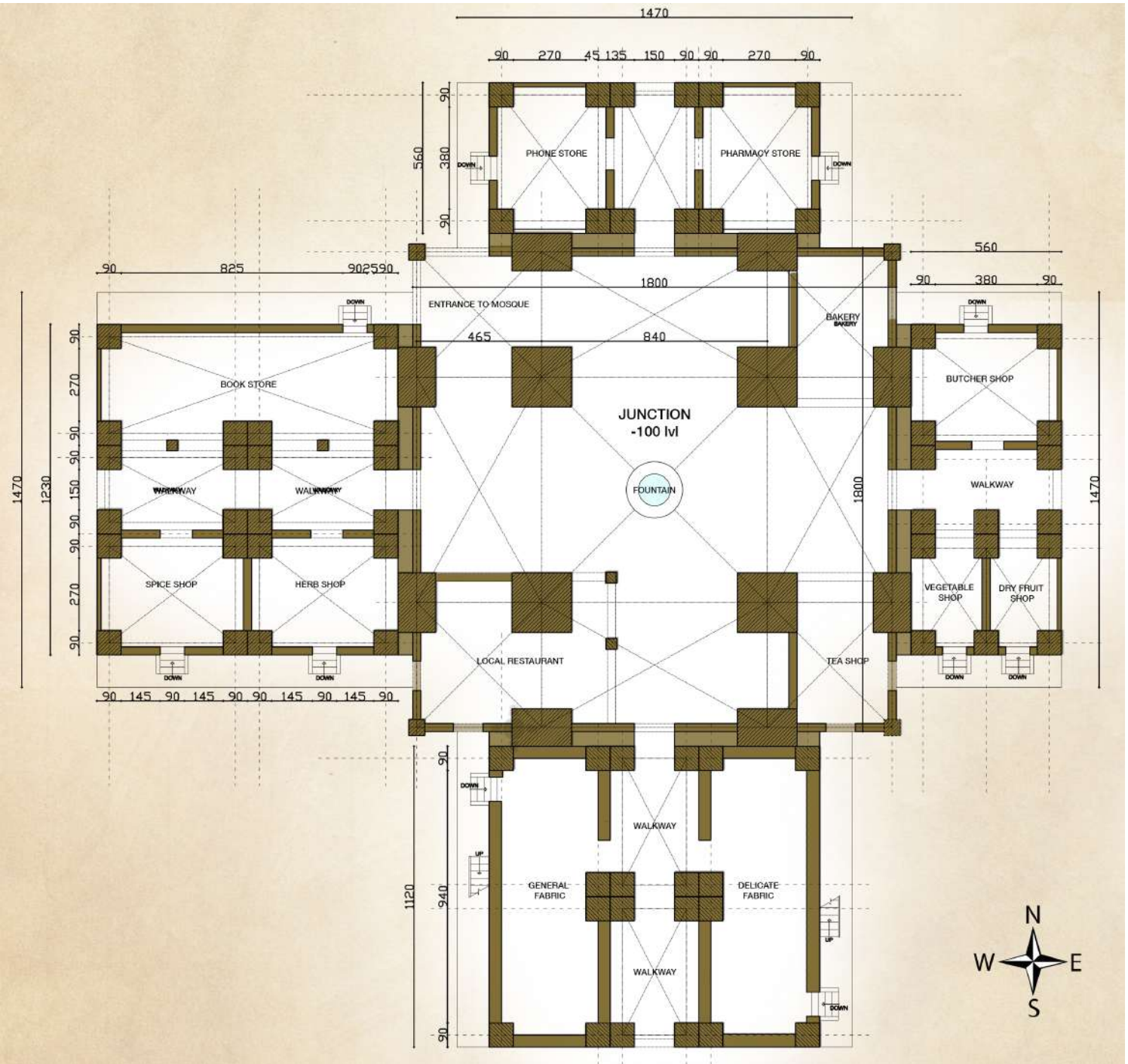
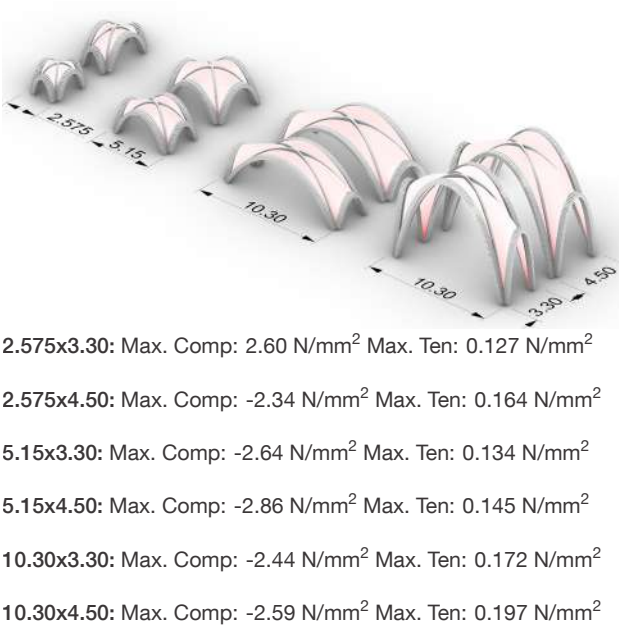
Form Finding Optimization



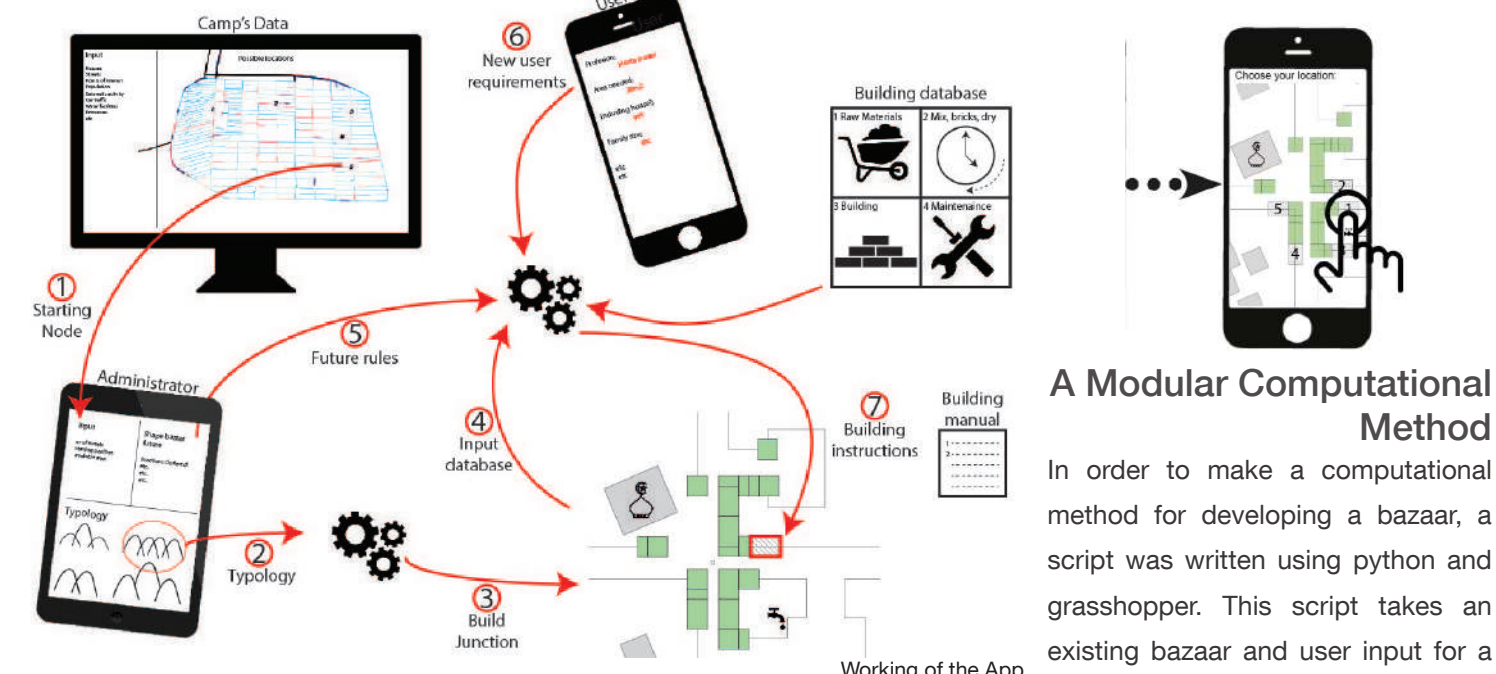
Material parameters

Youngs modulus: 211 N/mm²
Poisson ratio: 0.3 [-]
Shear modulus = Youngs modulus / (2 x (1+Poisson ratio))
Specific weight: 1452 kg/m³
Compressive strength: 3 N/mm²
Distributed vertical load: 2.25 KN/m²

Structure



Floor Plan : A Scenario



A Modular Computational Method

In order to make a computational method for developing a bazaar, a script was written using python and grasshopper. This script takes an existing bazaar and user input for a new shop. Using these, together with implemented guidelines, the script gives 5 good locations for a new shop from which the user gets to choose. This is how the bazaar expands. The output rectangles are the input for the structural form finding and are modular. The script simulates how the program will work, in real life the users would be able to use an app.

Bazaar Generation Using PYTHON



Construction

