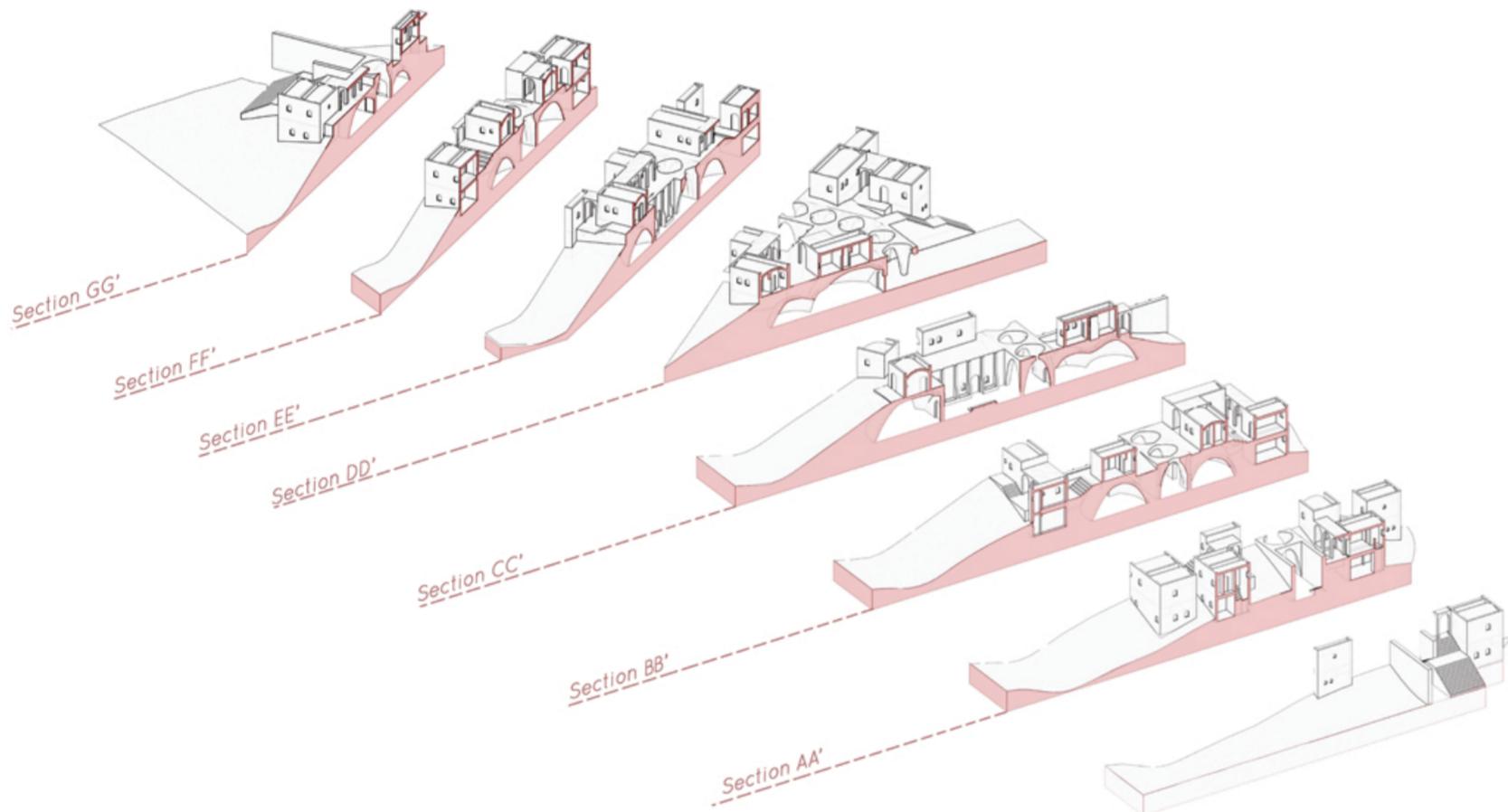


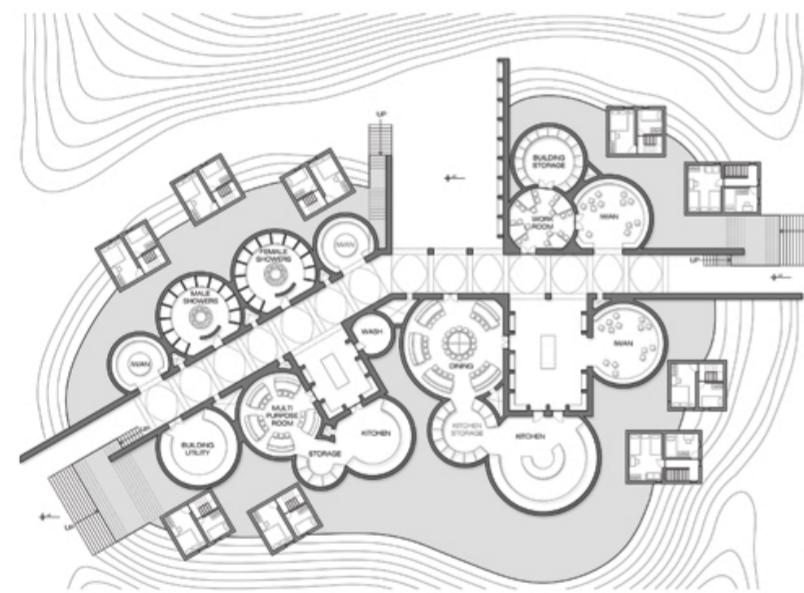
COMMUNAL HOUSING



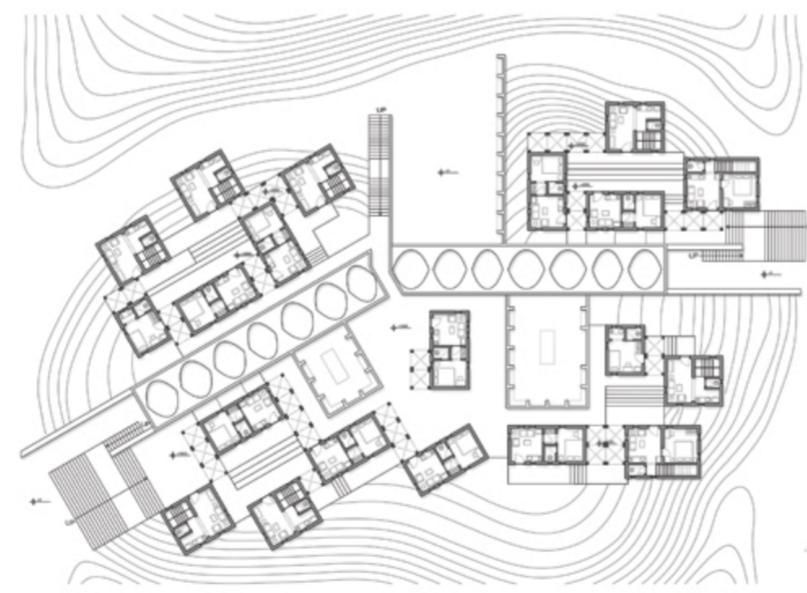
The Zaatari Refugee Camp in Jordan has developed rapidly since 2013, with a large influx of Syrian refugees fleeing the civil war. Now home to approximately 80,000 refugees, the camp has transformed into a city and is anticipated to remain for a prolonged period of time. Many refugees are living with exacerbated challenges due to the separation of families, resulting in broken social networks. Children suffer from the lack of structured space to play outdoors and many refugees feel unsafe and lack privacy. There are also infrastructural problems; the camp was built in a desert, subject to heavy rainfall and sandstorms at certain times of the year. To improve the health and wellbeing of refugees, more permanent forms of housing that respond to social and cultural needs should be developed.



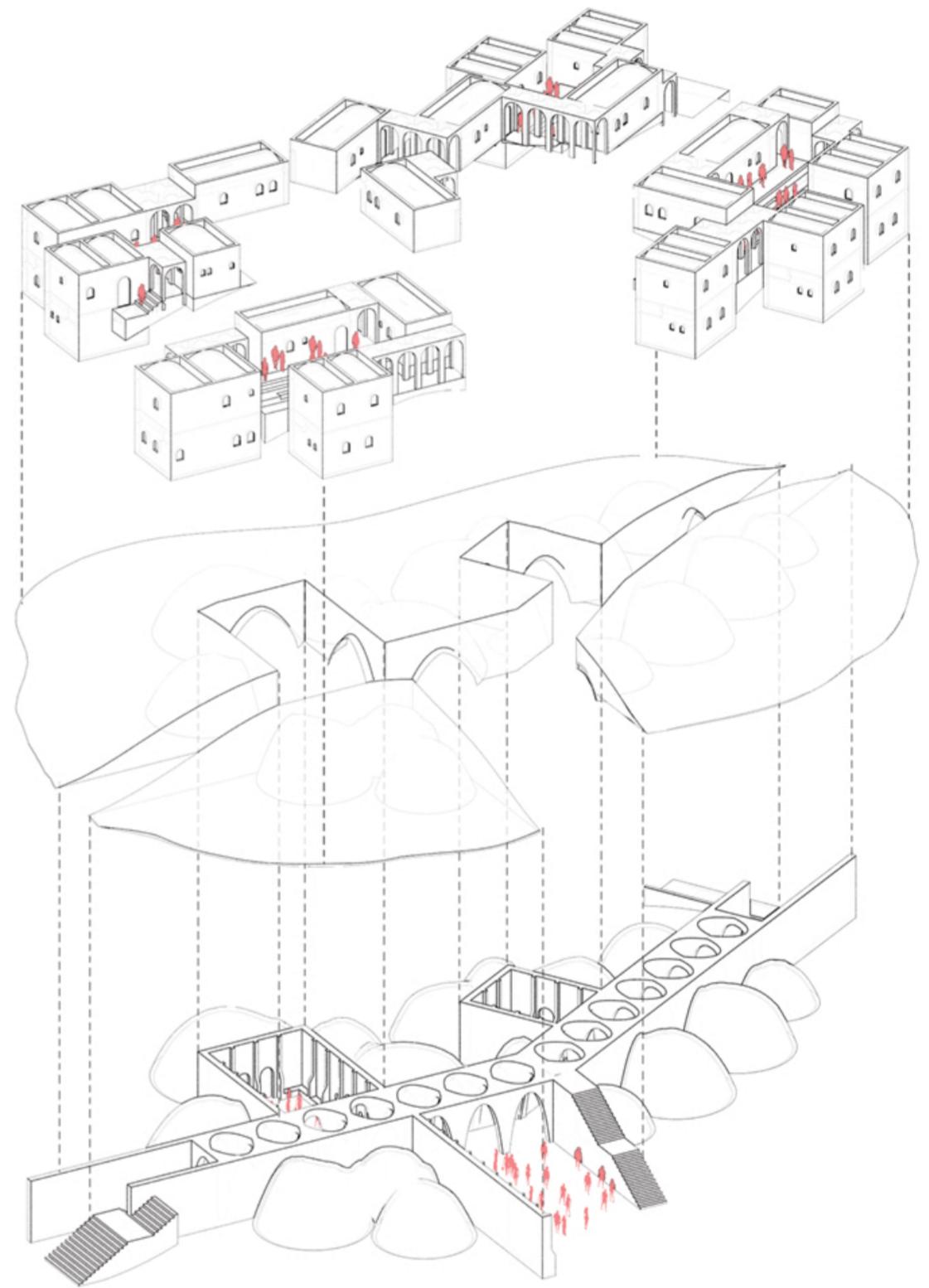
A communal home is proposed for families in need of additional support. The home brings together individuals and small families to share facilities and build a social support network. The communal facilities are located on the ground floor of the building and include safe play areas for children, space for single parents to work at home while caring for children, kitchen and dining facilities for group meals, wash facilities and a mix of spaces for gathering. On the first floor, dwelling units provide private areas for individual families. The design strategy is largely landscape driven, with the goal of managing water on the site to prevent deterioration of adobe structures due to stagnant stormwater. The landscape includes planted swales and retention basins to absorb excess stormwater and wastewater.



Ground Floor Plan



First Floor Plan



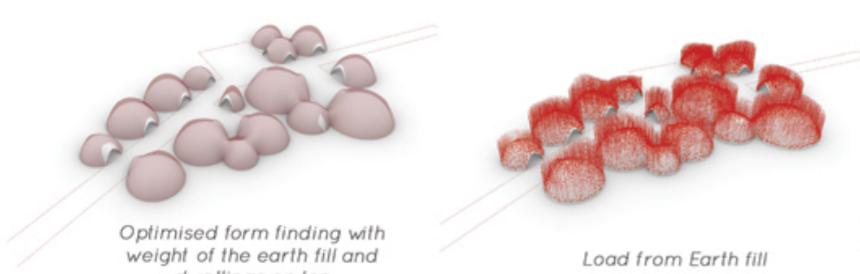
Exploded Isometric



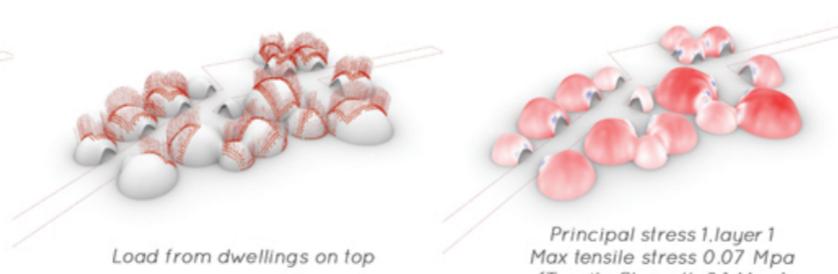
Adjustable 3d Compass Guide for domes



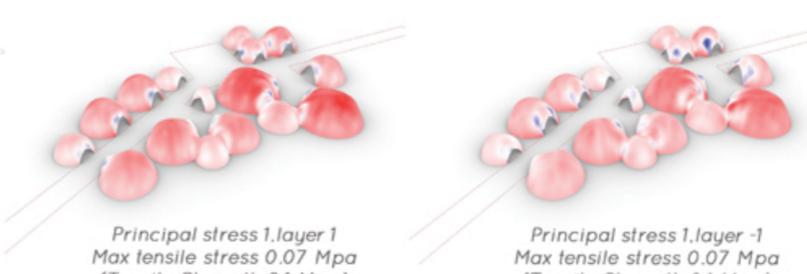
Adjustable Arch Formwork



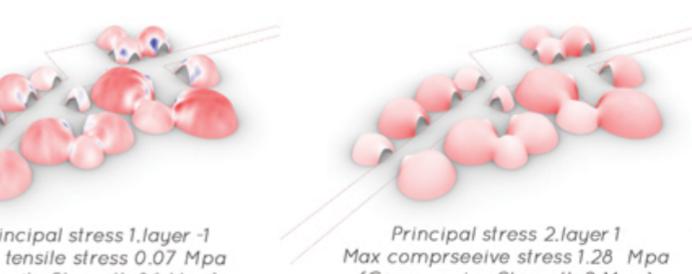
Optimised form finding with weight of the earth fill and dwellings on top



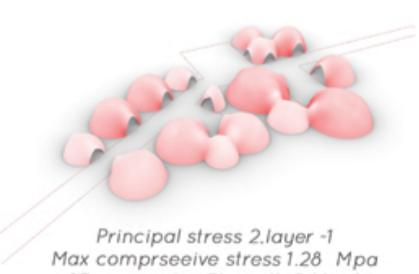
Load from dwellings on top



Principal stress 1.layer 1
Max tensile stress 0.07 Mpa
(Tensile Strength 0.1 Mpa)



Principal stress 2.layer 1
Max compressive stress 1.28 Mpa
(Compressive Strength 2 Mpa)



Principal stress 2.layer 1
Max compressive stress 1.28 Mpa
(Compressive Strength 2 Mpa)

