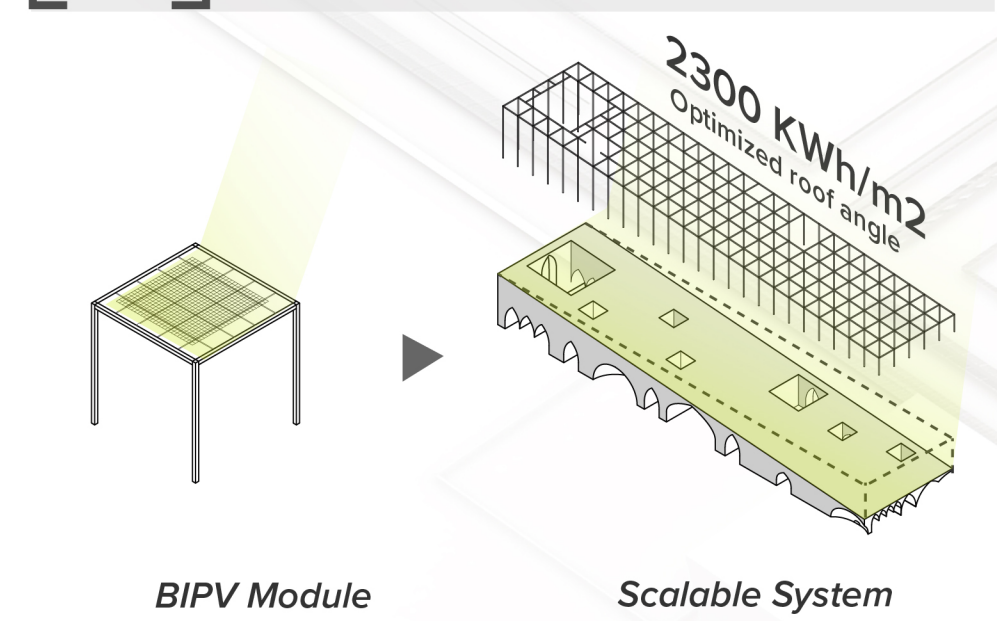


1750 MWh

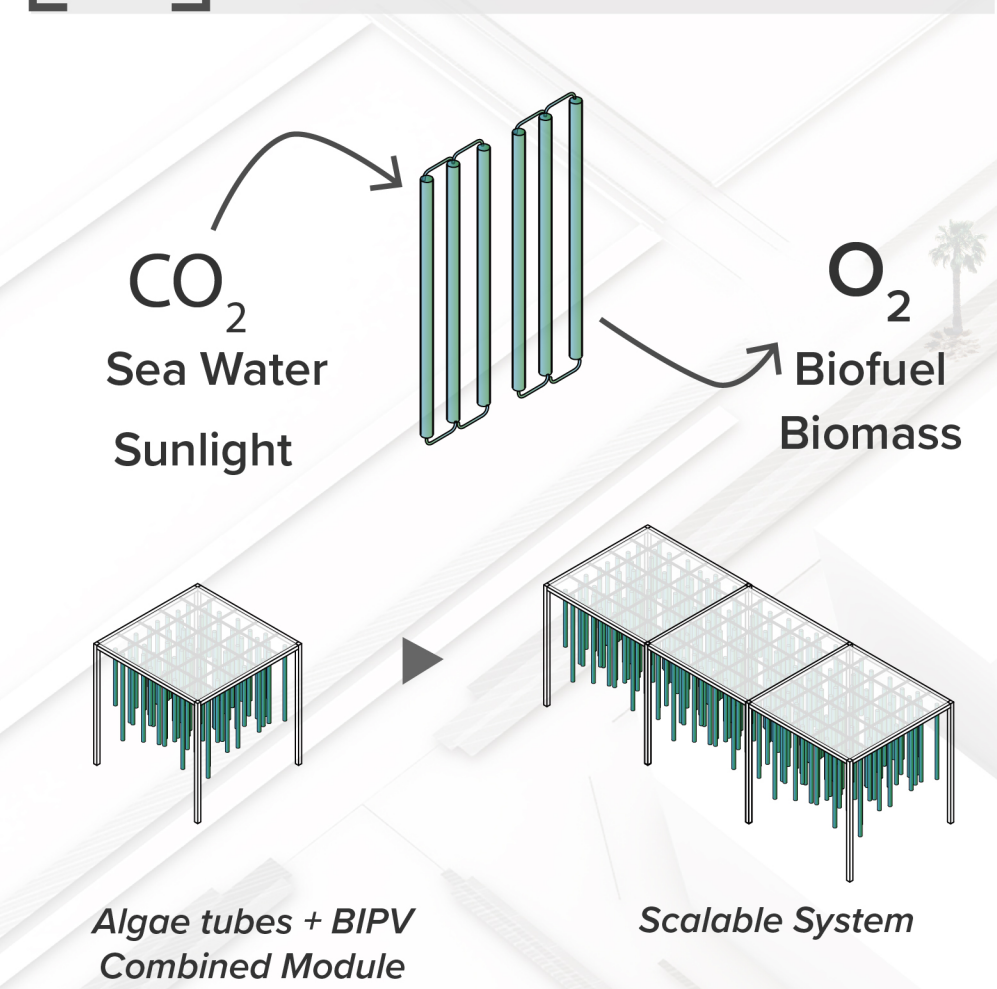
Annual Solar Energy Generation



In order to maximize the PV output from our installation, solar path, context shadow and solar radiation analyses were conducted to find the optimum angle of roof tilt as well as a completely unshaded direct solar access region. Building integrated solar PV (BIPV) were used with an efficiency of 18% and cost of \$5 /W. A total of 45% of the entire roof area is considered for PV generation which captures the 2300 kWh/m² solar irradiation per year to produce 1750MWh of clean energy annually. This can power approximately 214 houses annually at a peak rated capacity of 1,073 kWp.

215,000 Gallons

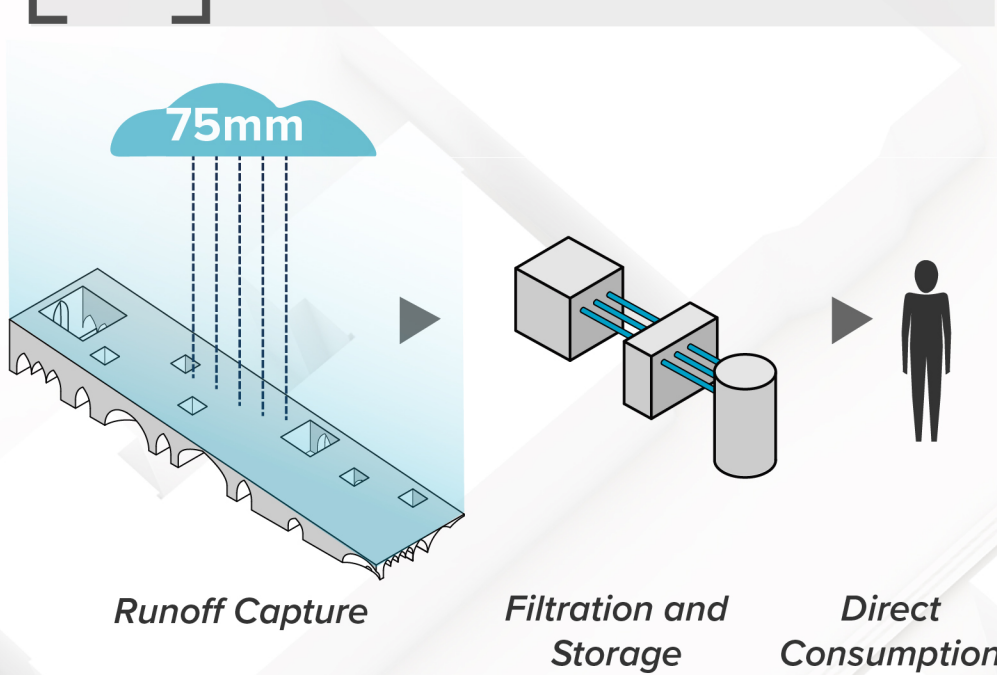
Algae Biofuel Generation



The UAE is uniquely positioned to capitalize on Algae as a renewable resource, particularly because of the way the native algae has evolved to grow under varying salinities and temperatures. An energy intensive desalination plant is not required. We employed the same modular structural system to incorporate 8000 - 6" dia. Algae cultivating tubes. In addition to producing biofuel, the biomass produced can offset the growth of the Aquaculture industry in the region. The designed plant can sequester 1533 Metric Tons of CO₂ annually.

262,365 Gallons

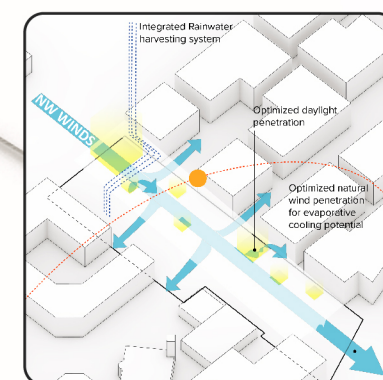
Rainwater harvesting potential



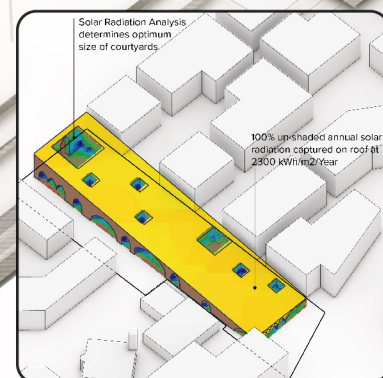
Fresh water is a scarce resource in the UAE and we want to capture every drop that falls on our surface most efficiently. The design of the sloped roof as well as the courtyards has the potential to capture 262,365 gallons of water annually.

-1,502 Metric Tons

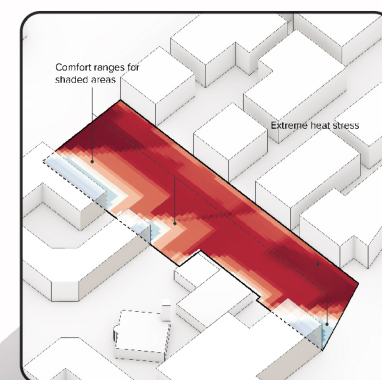
C-sequestration and GHG reduction



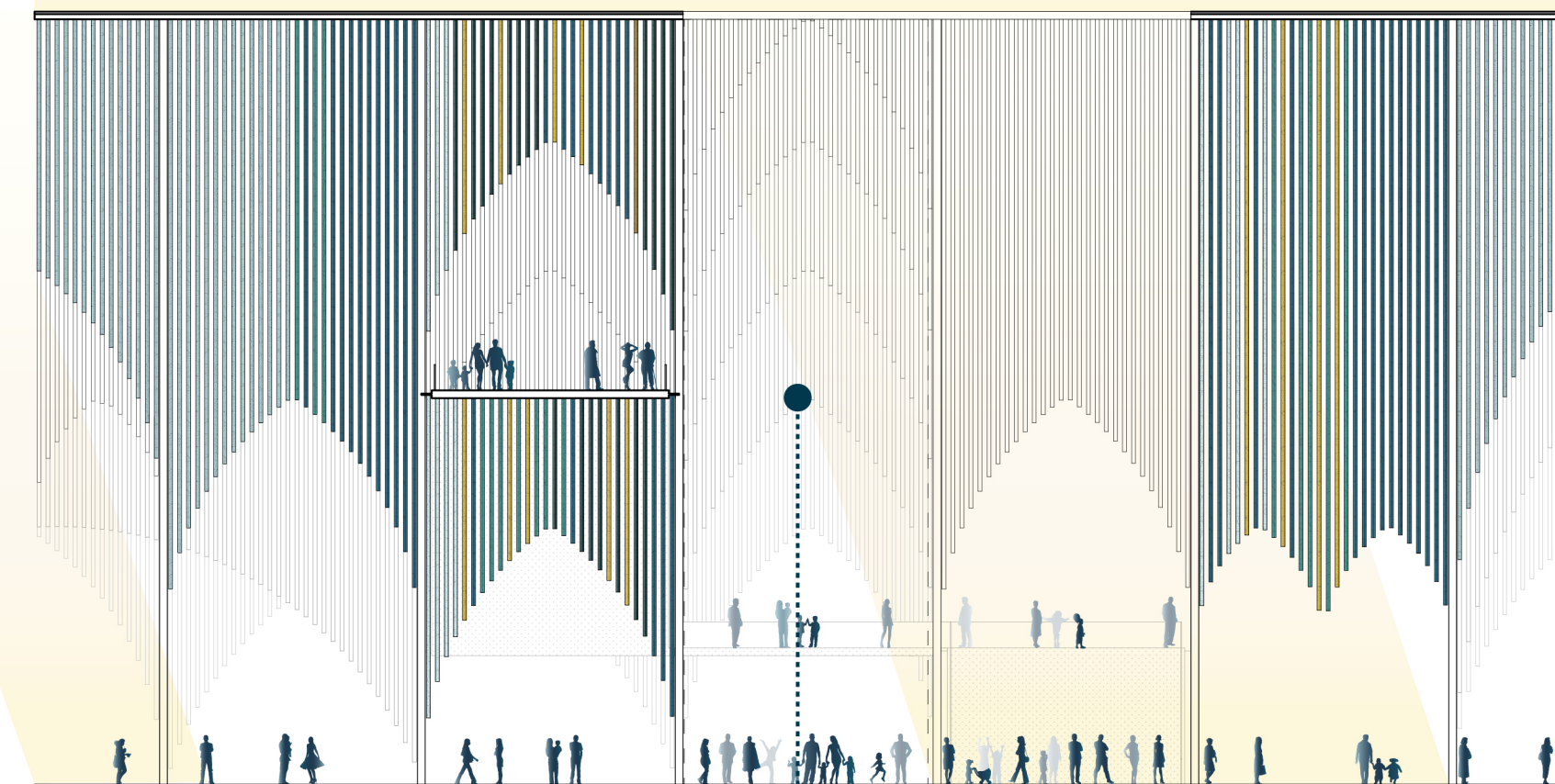
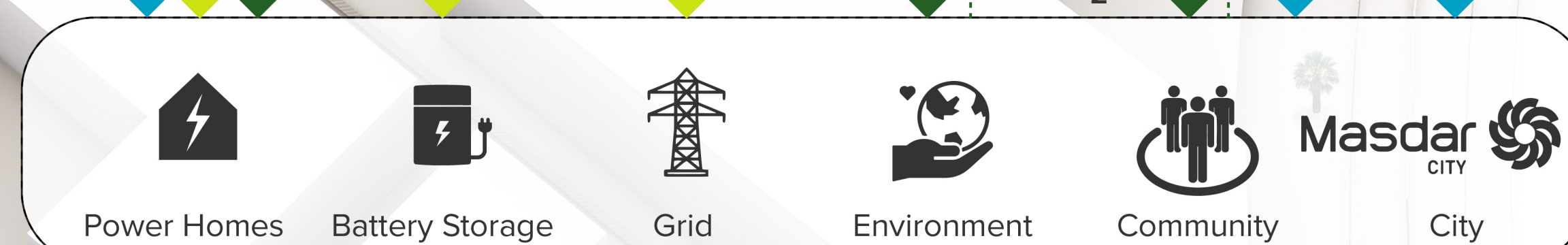
Climate
NW winds run through the strong axial 'souk'. Optimized natural wind penetration is used for evaporative cooling potential. An integrated rainwater harvesting system. Sun path allows for optimized daylight penetration.



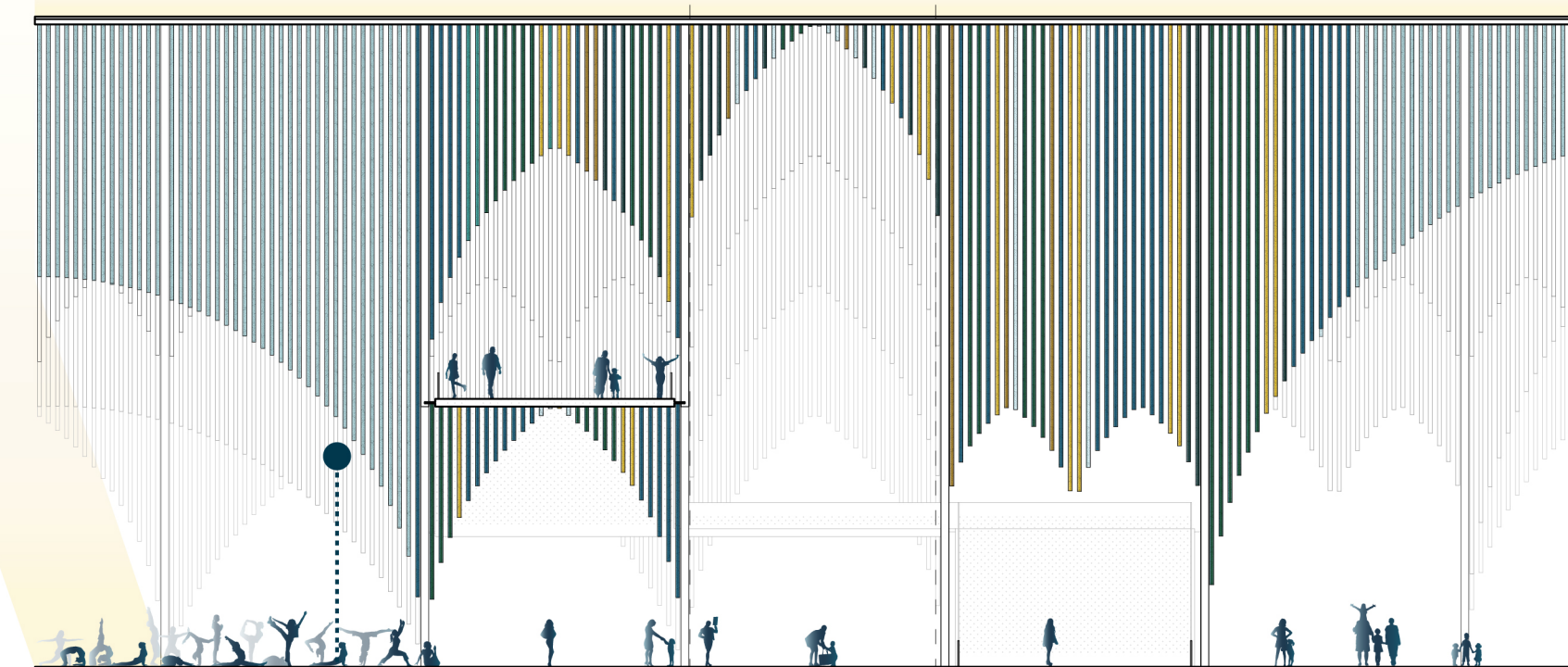
Solar Radiation
Solar Radiation Analysis determines optimum size of courtyards. 100% un-shaded annual solar radiation captured on roof at 2300 kWh/m²/Year



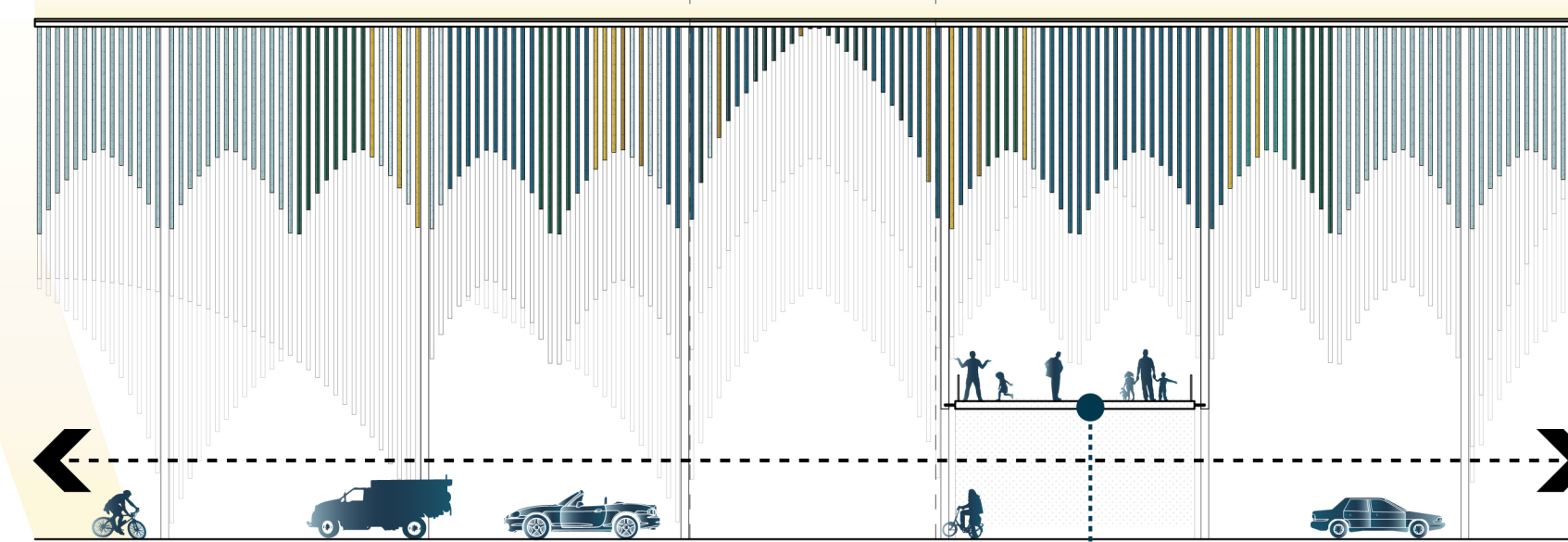
Site UTCI
Analysis shows comfort ranges for shaded areas. Darkest color shows extreme heat stress.



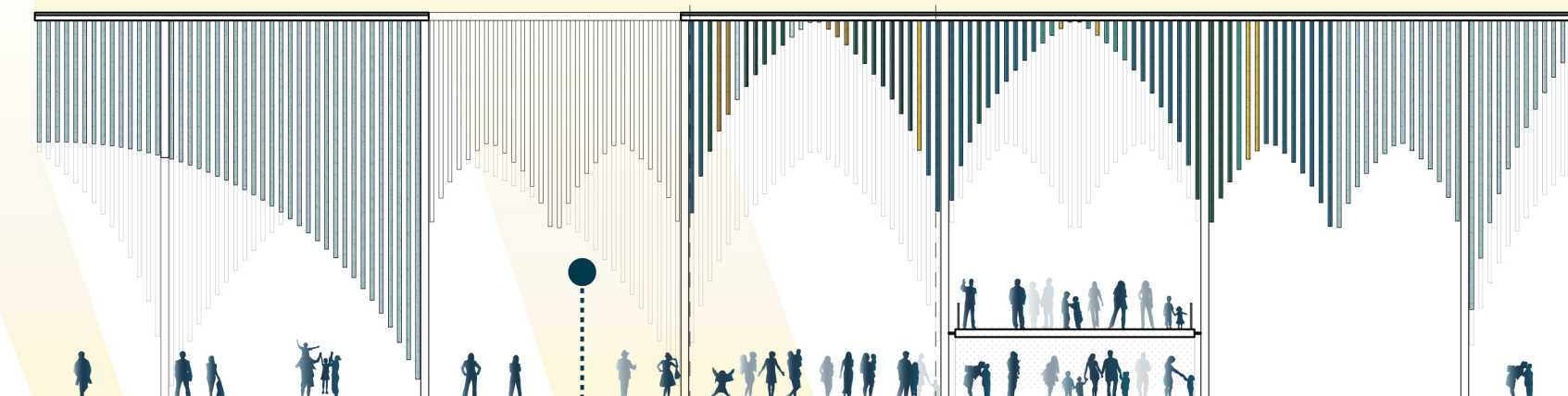
'Souk'.....
The 'Souk' as the primary axial element to bind the two sites and all the secondary elements.



'Arched Niches'.....
'Niches' as edge condition spaces to bring the community together informally



Elevated Catwalk.....
'catwalk' allows for elevated passage and experience. Providing an uninterrupted traffic flow underneath the installation.



'Courtyards'.....
Courtyards allow for lightwells and optimized daylight penetration.