LANZAROTE MUSIC FACTORY . PRECEDENT STUDIES

DESERT BUILDINGS

KC ECK . EVAN FLEMING. ANDREW LAI . KYLE PLATA . ALEX WEAVER.


ATHENS, GREECE
PHOENIX, AZ
YAZD, IRAN
ABU DHABI, UAE
ARICA, CHILE

PRECEDENT

DESERT BUILDINGS

name: DOLAT ABAD GARDEN PAVILION
architect: unknown
completion: 1750
location: YAZD, IRAN

name: UNIVERSITY OF TARAPACA PHYSICS LABORATORY
architect: MARSINO ARCHITECTURE
completion: 2013
location: ARICA, CHILE

name: LOUVRE ABU DHABI
architect: JEAN NOUVEL
completion: 2017
location: ABU DHABI, UNITED ARAB EMIRATES

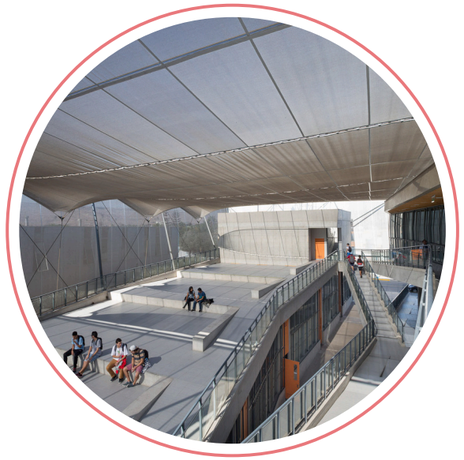
name: PHOENIX CENTRAL LIBRARY
architect: bruderDWLarchitects
completion: 1995
location: PHOENIX, AZ

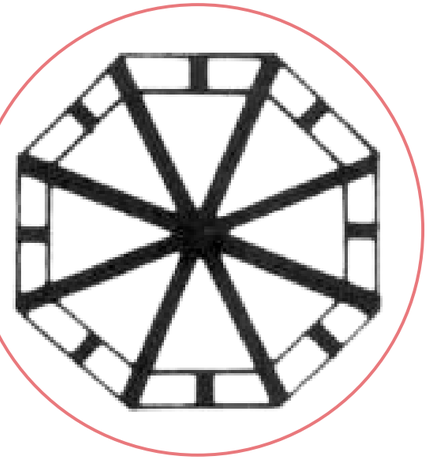
name: STAVROS NIARCHOS FOUNDATION
architect: CULTURAL CENTRE
completion: RENZO PIANO BUILDING WORKSHOP
location: 2016
ATHENS, GREECE

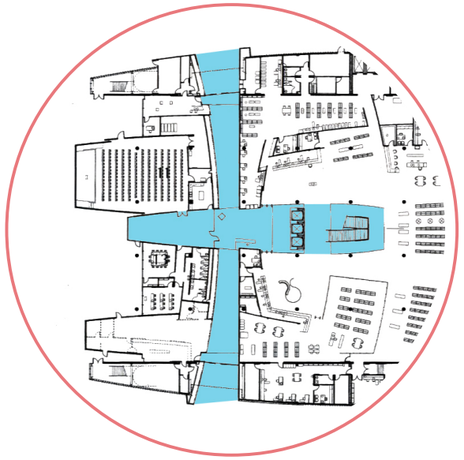
BUILDING FORM

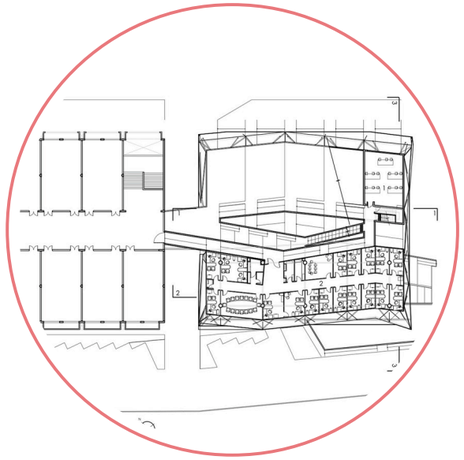
DESERT BUILDINGS

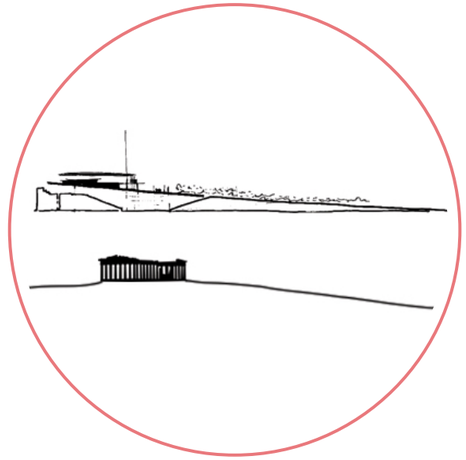
Key Observations: Often located in areas with low skylines and vast areas of land, desert building designs must establish strong contextual connection with its surrounding natural and built environments. From octagonal pavilion to modest institutions and even megastructures on top of hills and water, these building forms demonstrate thorough climate and cultural considerations while evoking a strong sense of presence. As program and functions are often climate-specfic, the greater building form must accommodate optimal sheltering and retreat from the sun, as well as respect for natural vegetations and landscapes









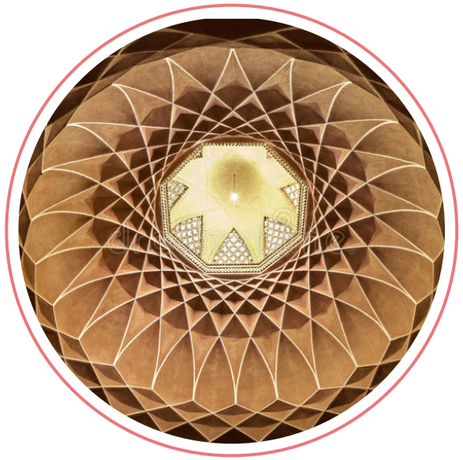


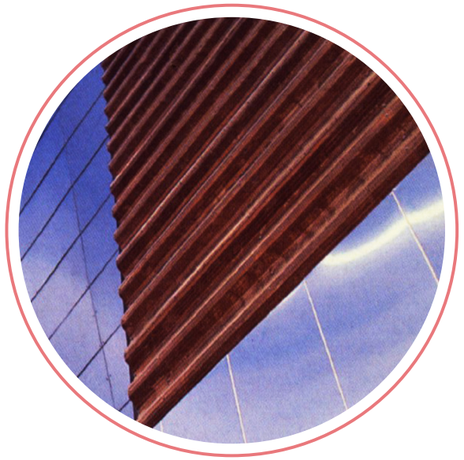
DOLAT ABAD PAVILION	PHOENIX CENTRAL LIBRARY	UNIVERSITY PHYSICS LAB	STAVROS NIARCHOS CENTRE	LOUVRE ABU DHABI

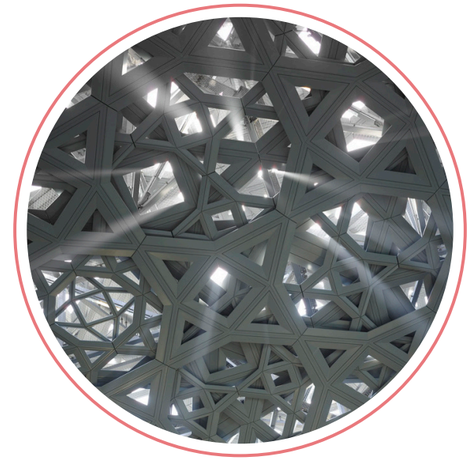
MATERIAL

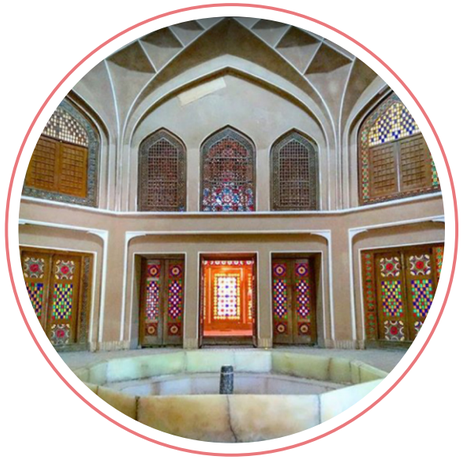
DESERT BUILDINGS

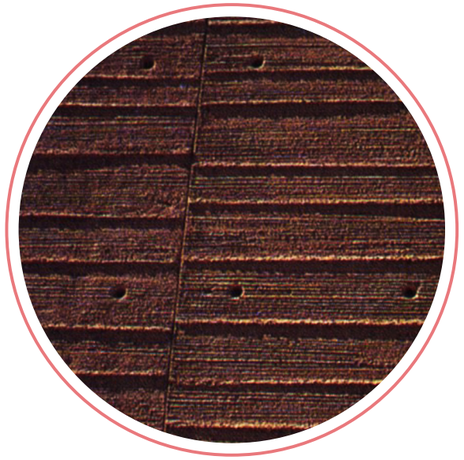
Key Observations: Desert structures tend to be composed of materials that are relatively durable. The natural resources in desert climates are limited so items from below ground are generally used. The projects we found consisted primarily of earth, masonry, concrete, and metals. Solid, dense materials not only stand up well to harsh solar exposure and extreme heat, but also can act as thermal sinks to assist in temperature management. Glass is also common in the more mild deserts where heat loss is not a concern. However, extra care is taken to prevent direct solar access inside the building envelope.











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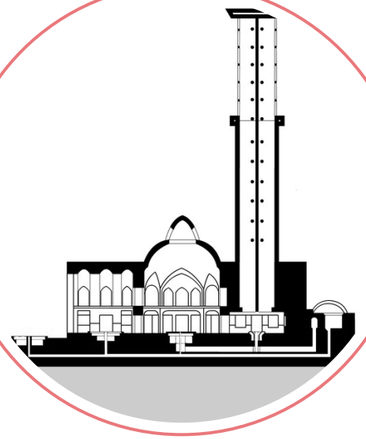
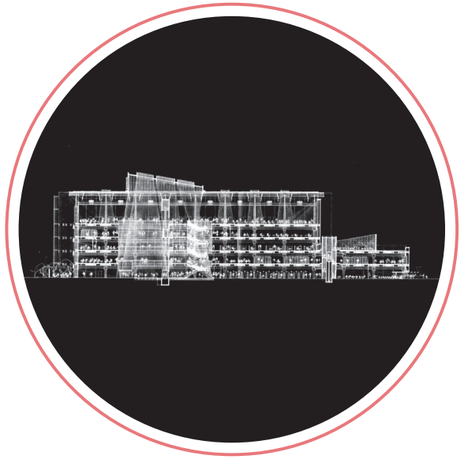
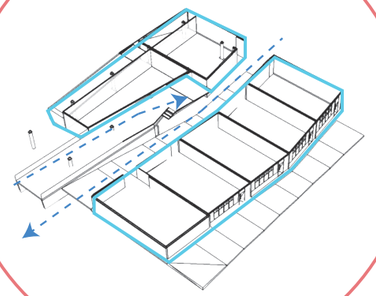
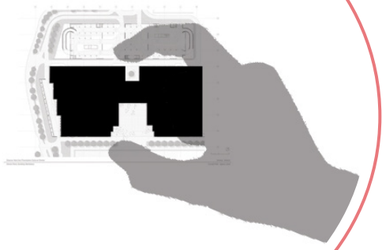
SPATIAL CHARACTERISTIC

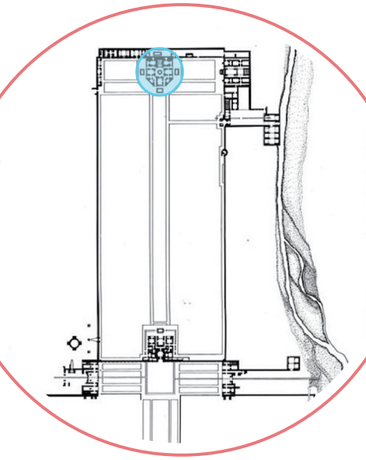
Key Observations: With buildings as environment responsive as those found in the desert, different patterns and characteristics arise depending on the surroundings. Their design is based on more than simply the natural elements, but also on the context of societal needs, cultural norms and relationships to other man-made elements. For example, the physics laboratory found in Chile takes inspiration in form and material from the buildings around it. Its textile element relates to the growing Chilean industry while its circulation design responds to the travel needs on the university campus.











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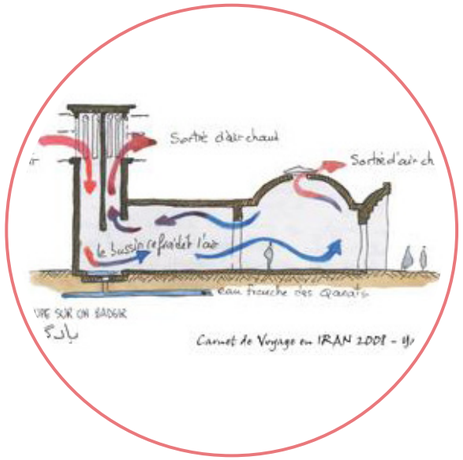
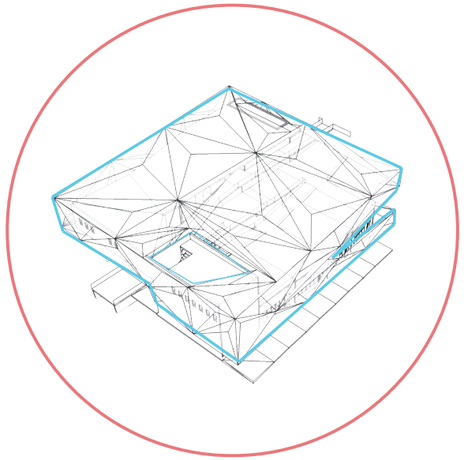
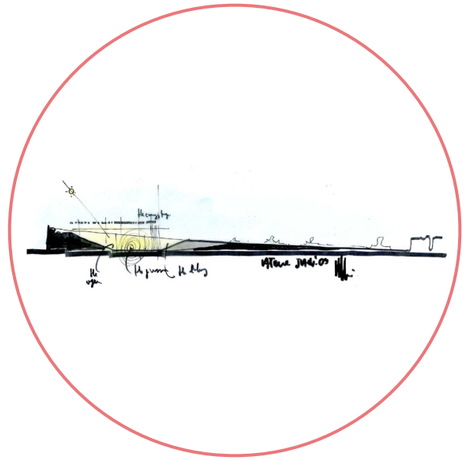
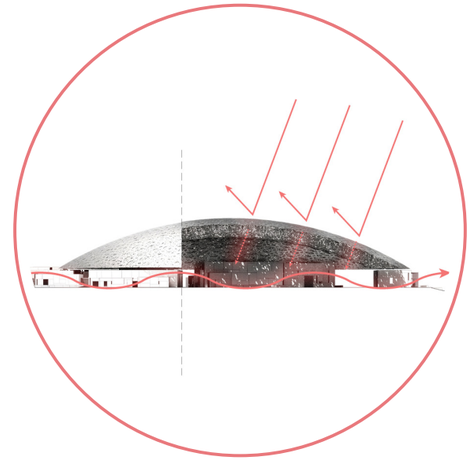
CLIMATE RESPONSE

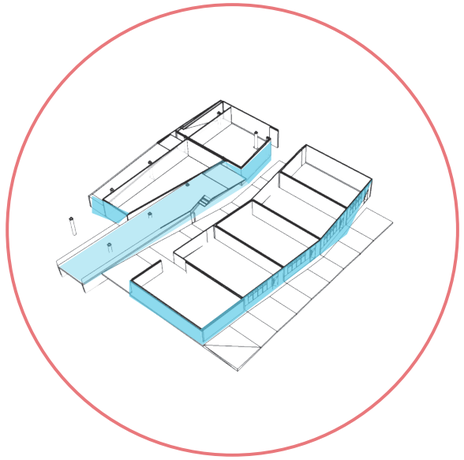
Key Observations: A sensitive climate-response is absolutely required of any successful desert building. A variety of shading systems for glazed surfaces can be employed, from vertical and horizontal louvres and perforated screens to deep overhangs or superstructures that span the full building complex. Thermally massive materials, such as concrete, stone or adobe can be utilized in low humidity, high temperature-swing deserts to contain coolth throughout the day. Vernacular examples, such as the Dolat Abad Garden Pavilion illustrate the potential for venting air across cool surfaces.

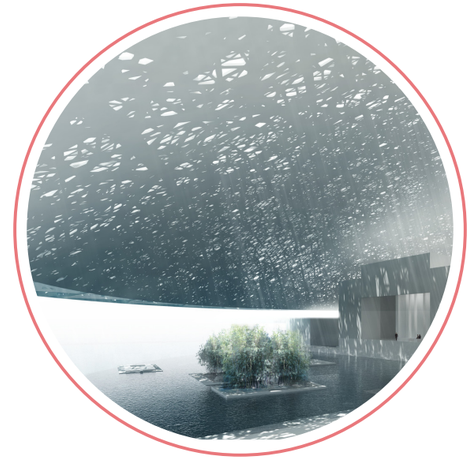












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