

Project Location:

Municipality of Adeje, Tenerife. Total land area 27,232m² .

Object:

The Arquideas Grant competition seeks to recycle the pre-existing structures of an developed project , transform into a thalassotherapy center .To challenge this project within a recover part to the whole of existing modules , incorporating architectural quality , and a new use .given the ecological diversity of the area a social and culture nature of the project .

Life cycle environmental impact assessment :**Assessment and recommendations :**

1. This complex construction for 2000 years , is located in the suburb of South Tenerife , bases close to the rectangle 200m x150m plains area 27232m², Flat Incline decline 15.5M. Shuhong, after the base straight back along the terrain ,. The special-purpose Environmental impact and life cycle assessment and actually fairly close to turn off Xie .
2. Using existing structures update repairs , Recycled building materials in everyday use the actual evaluation results become preconditions of green building design, construction and construction of note.
3. Due to the global warming factors , Released after surface absorbs the sun heat infrared light is absorbed by greenhouse gases , And radiation to the surface to make the temperature rise , CO₂ Levels promote warming global temperatures set to rise , So the use of energy , Improving energy efficiency
To save energy , Reducing energy consumption for energy-saving purpose , In a more natural , Healthy green energy alternative . For example hydraulic , Wind , Sun , Geothermal is a good choice .
4. To prevent the ozone layer is damaged , Reduce the use of halide products , To substitute other items of low environmental impact .
5. With a life cycle perspective describes methods for reducing construction waste , In building materials in the production and transport stages should be more use of green building materials , Reducing the use of metallic materials , Reducing the use of concrete , More use of natural , Recycled materials , As stone , The plank , Sugarcane plates , Standardization of materials used . Consider loading for transport .
Construction planning and design of construction stage model moments , Composite chemical method , Reduce waste increase efficiency . Using precast method of chemical reduction of supplies and transport , Using the unified template method , Reduce waste and increase conversion template .

6. Daily stages should consider building facilities demand reasonable system, use of high efficiency equipment control equipment and regular maintenance.
7. Recycling building materials stage, disintegration of the recycling construction materials steel, bone material re-use, regeneration of members to switch to other buildings, disintegration of the mechanized increment component reuse opportunities.

Infrastructure system design

1. Soil bearing capacity of shallow Foundation
2. Part structure under the most commonly referred to as Foundation , A function passes the load bearing structure of Foundation soil . Pass required by their design load of no more than can withstand the stress of the soil itself . If soil subjected to excessive stress will cause a lot of subsidence or damage reduction , Structure damage . For safety reasons , Based upon the load must adhere to the following two principles: 1 produced by heavy soil subsidence of needs such limits. 2 supporting Foundation of soil shear damage cannot happen.

3. Of compensated Foundation design:

Buildings constructed on deep and soft soils with high compressibility, compensation based on such soils (such as lacustrine or marine base) reduction in force strength and allowable bearing capacity is very small, and therefore must be carefully controlled during construction of its magnitude reduced force strength of subsidence.

Basic theory: If the building's basement excavation to remove heavy soil and water and exactly equal to the weight of the building itself, then it is just floating on the soil, using this feature, buildings can be built on very soft soil, using this feature, buildings with soil and water reopened the way to offset the weight of the building is not compensated basis.

Applicability of raft Foundation knows:

- Basic bearing capacity is very low.
- Underground soil is soft or uneven Division of the hard rock cavities exist.
- Need to support the Foundation for highly sensitive machinery.

- Groundwater below the basement, enclosed type base is required to waterproof.
- Column load is big to require independent, plinth area exceeds the area of 50% above.
- Acts as a floating raft Foundation to control stress and reduce profit amount of subsidence.

Security of base-floating:

Building foundations in the ground below the water level, groundwater buoyancy on the building and for the Accounting role. If the British consider groundwater conditions of the most disadvantaged. Including the impact of seasonal variations and other environmental factors. Shi built buildings in particular at any time to check the gross weight is greater than the buoyant force to prevent floating. Building Foundation will go up a masterpiece takes , its anti-floating safety factor for anti-floating capacity building as a whole and the bottom is the water pressure on the basis of the ratio . Design analysis , Should look at nature , Hydrogeology and environmental variation , Careful assessment of anti-floating security .

Subsidence volume

Building base subsidence phenomenon arising from following formation of the basis weight , Changes of groundwater level , Underground cavities or due to environmental changes, which affect . Under normal conditions , Base amount of subsidence due to withstand the load of the building , According to moderate base conditions taking into account .

Design highlights

Arquideas Grants 2013 Conference proceeding to open for review , A few design elements in the consideration of the General Assembly members reference , Pursuant to this case push the sentence case in tropical islands on the sea , Conveniently

located in the tropics around so the climate was relatively warm, humid , On the physical survival of the most suitable clothing-free , Ancient people living without housing . This proved the case application of environmental , climate , and geographical element set to pass under in accordance with heat and humidity . Interpreting climate to temperatures as pointers , To understand changes in climate must first master the temperature . Heat capacity for material research houses capacity to store heat , Designer compound wall is a high thermal capacity of water mold material , Composite wall with calcium silicate Board , Glass fiber , Thermal insulation material , Adjust the room temperature changes of buffer , To synchronize a natural room temperature and outdoor temperature indoor temperature change and adjustment . To maintain temperature in the comfort of warm in winter and cool in summer . In hot and humid climate control to comfortable conditions are not suitable , Since ancient times human beings have been in ventilation methods to adapt to hot and humid environment . But natural ventilation does not completely solve the humidity stress , To resolve thermal design of high temperature hot climates need to rely on the quality of leather and adjusting the temperature of air conditioning equipment which makes for a comfortable environment .

Tropical climates are often used in the case of dry-preferred model is suitable for thermal environment design , Except for purposes of ventilation , Controlling the temperature and climate change to reach the thermal resistance to heat , Ventilation purposes of shading . Building materials used were summer heat materials used , Plus structures adjacent spacing increased the evacuation of heat , Adjust the temperature is suitable This case design focus .

1. Building Green pointer – Promotion of plants greening design for quality , to mitigate the impact of climate change and thus mitigate climate phenomenon of high temperature . Improvement of ecological environment , Landscaping , To

enhance the overall quality of the living environment , To quantify the value assessment of building green . Designated provisions of building green and all kinds of plant carbon dioxide fixation of carbon dioxide reference value approximated to a variety of green plants . Designers must consider spatial planning needs with different types of plants , In addition to can increase design flexibility , And may enter into effect on biological diversity .

2. Building water pointer

In the building development process using large amounts of impervious pavements deprive the Earth of sound absorbent , Penetration , Water retention capacity , Soil microbial activities in space , Weakening the Earth's ability to nourish plants , Loss of functions of regulating climate and water evaporation capacity , Even living environment to build the heat island effect of high temperature For maintaining natural ecological environment in the building base balance , thus naturally regulate the Earth's climate to play feature , orbits of updated standards from qualified judge pointer base water , conservation of original base and flow permeability rain water removal capacity .

3. Pointer to building energy conservation

Method of building envelope design for energy conservation purposes , To maintain the comfort of indoor thermal environment , Shell energy (Indoor adjacent Windows , walls , roofs and openings substandard weeks risk heat load of the unit floor area , should be consistent with the approved baseline . Shell equivalent Windows that open rates , Shell opaque part of average heat transfer rate , Average rate of heat transfer through the roof , Building life miscellaneous drainage and rainwater recycling pointers .

4. The inductive dimension of ecological properties similar to those of the context pointer integration ECOLOGY (includes biological diversity , Green house , base

and water three-pointers), Energy-saving , Waste reduction , Four main areas,
such as health . Interior pointers and standard , Divided into **1.and 2**
environmental assessment **3**ventilation **4**. Indoor decoration building
materials .**indicated as** design blueprint for building plan for long turn elements
support .