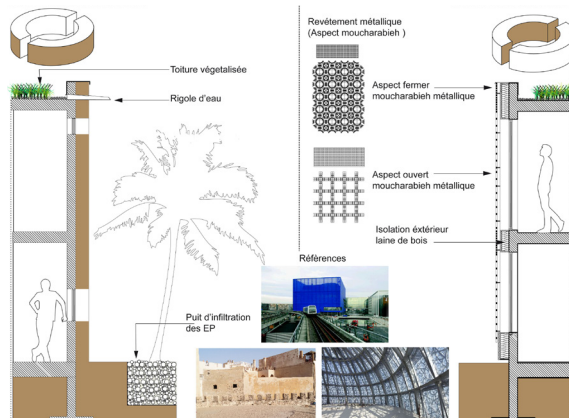


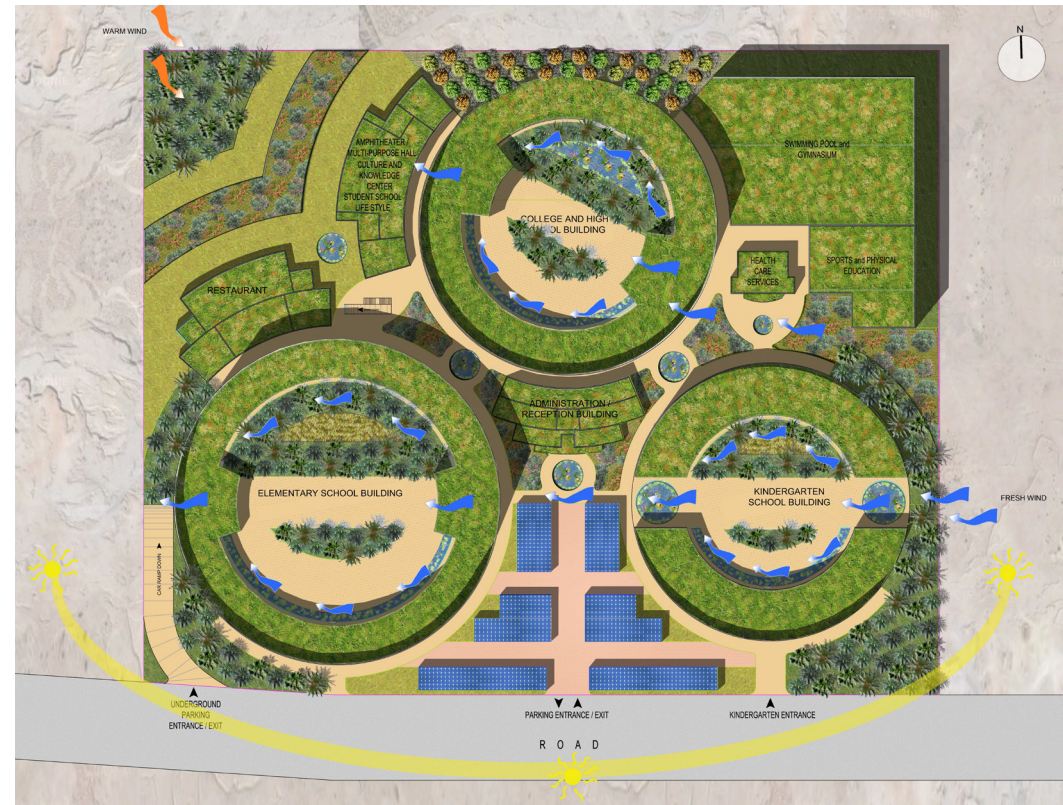
# eco-Design OF THE FRENCH SECONDARY SCHOOL LYCÉE BONAPARTE IN DOHA (QATAR)

**PUBLIC BUILDING** : construction, HQE® certification

**Client** French secondary school, Lycée Bonaparte  
**Location** Doha (Qatar)  
**Project** Construction of the french secondary school  
**Mission** Environmental landscaping design  
**Consultant** AGM ARCHITECTS and AR ARCHITECTES  
**Area** 9 580m<sup>2</sup> - area 28 000m<sup>2</sup>  
**Cost** 25 Million US Dollars  
**Date** Competition 2016



Wall sections



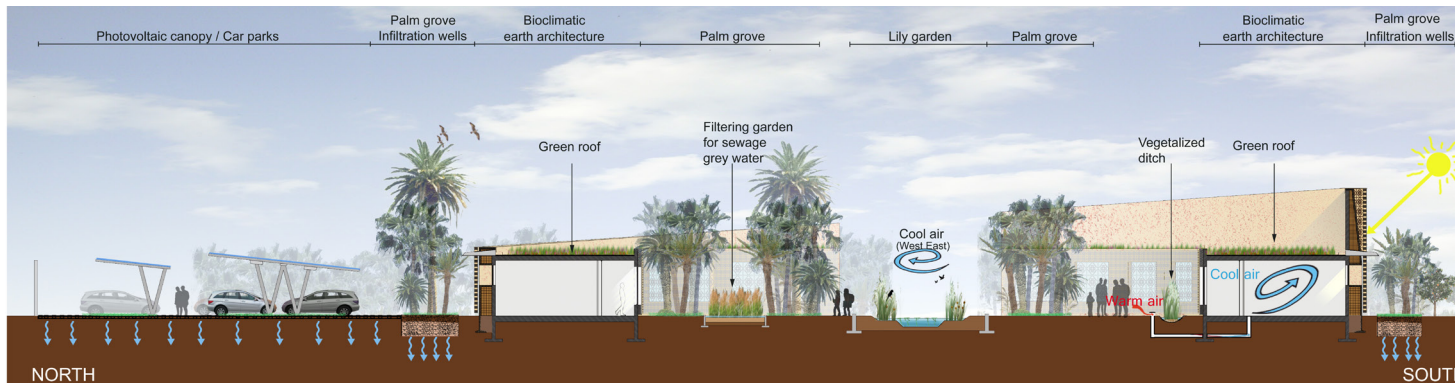
Mass plan

The design concept is to propose circular shaped buildings as “sundials” in the desert. These 3 buildings are constructed with sustainable materials (steel structure insulated with earth insulation). Planted Court wards with local endemic plants cools architecture and outside shaded spaces. Green roof tops refresh the building during hot weather. Sewage water coming out of the buildings is treated by an innovative way through filtering ponds located outside of the buildings. Papyrus plants are used to purify water. Clean water is then recycled inside of the buildings for sanitary use. «Green dials” a sustainable project of Lycée Bonaparte designed with low impact on the environment.





Perspective view of the project



HQE® section

## HQE® targets

### Target 1: Harmonious relationship between the building with its surroundings

- Mass plan: 3 buildings "sundials" with courtyards, parking protected by photovoltaic cells in the entrance of the site
- Recyclable materials : steel and earth wall
- Outdoors area's quality for users : best views on natural areas : planted roofs and thematic gardens, palm groves and citrus trees are planted between the buildings

### Target 2 : Integrated choices for construction procedures

- Earth wall : sustainable material, local and easy to build
- Metallic Moucharabieh: mineral and sustainable materials; long-lasting and with low maintenance.

### Target 4: energy management

- Building orientation, to optimize air circulation and windows with moucharabieh to keep out from the heat when the temperatures are very high.
- Successful woodwork with break of thermal bridges
- Refreshment by a Canadian well, geothermal ventilation trough piping.
- Photovoltaic cells are designed as a canopy for parking . It products of electricity used for the outside lighting.

### Target 5: water management

- Storm water is stored on green roofs
- Hollow-core slabs are designed above the roads letting rain water to be infiltrated into the soil
- green planted ditches are designed to collect exceptional storm water
- Sewage water coming out of the buildings is treated by an innovative way through filtering ponds located outside of the buildings. Papyrus plants are used to purify water. Clean water is then recycled inside of the buildings for sanitary use.

