

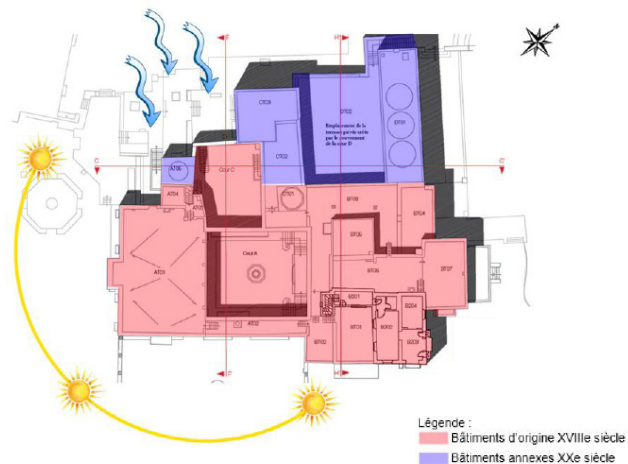
eco-refurbishment of the French ambassador's residence in La marsa (tunisia)

PUBLIC BUILDING, HQE® APPROACH : energetic refurbishment, interior layout, landscaping design

client French Ministry of European and Foreign Affairs
LOCATION La Marsa (Tunisia)
Project Refurbishment of the French ambassador's residence

mission consultant SUD ARCHITECTES, AR ARCHITECTES, MOHAMED MACHTA ARCHITECTE, TEM PARTNERS, STREM INGENIERIE

area 1 600 m²
cost 3 900 000 Euros
Date Competition in 2023



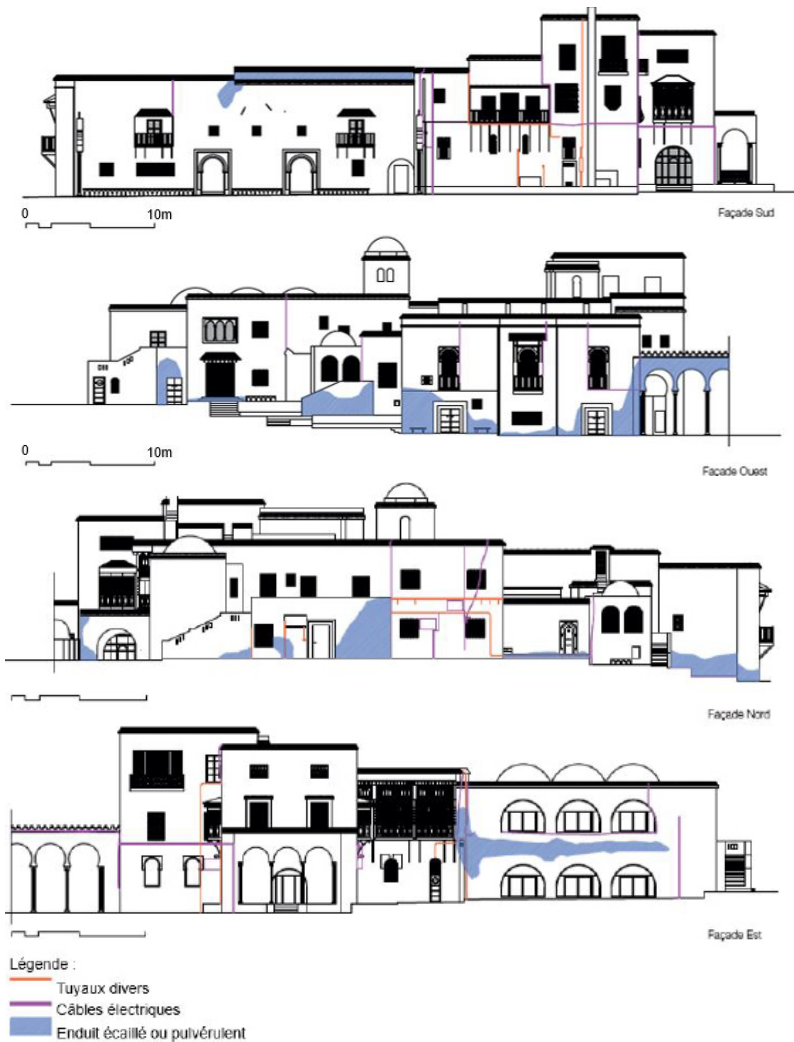
Bioclimatic mass plan



View of the French ambassador's residence and its gardens (source : diagnostic du cabinet RL&associés)

This project consists in refurbishing and **improving the summer and winter comfort** of the users of the French ambassador's residence in La Marsa. The refurbishment of the building uses **bioclimatic design** by taking advantage of the site and its surroundings. In addition, the objective is to reduce the environmental and the financial impacts of the building on its surroundings. Therefore, the layout is designed to **reduce energy consumption** and **improve energy performance**.

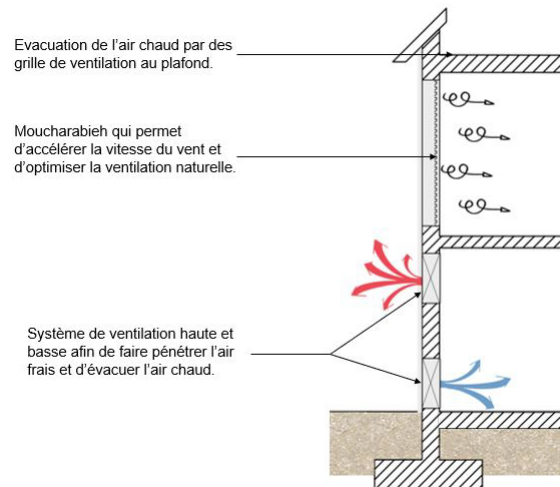
The challenges of this project are also to reorganize several spaces to **create a coherent and functional building** : enhancement of the site's **heritage** and **architectural quality**, accessibility for all disabilities, landscaping design to create shade, protection and a welcoming atmosphere for the users.



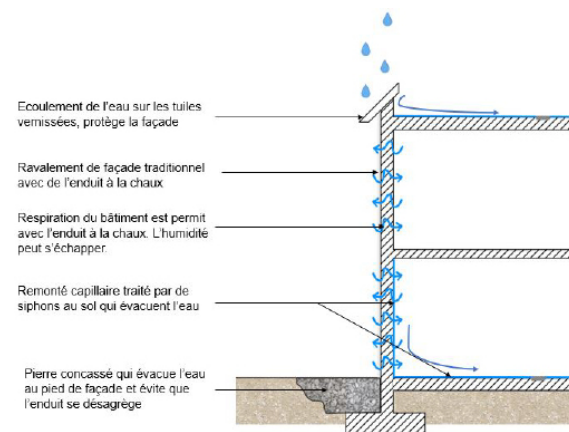
Sanitary condition of the facades



Principle section of a planted pond



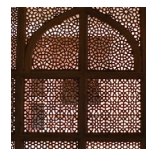
Section showing the air treatment solutions



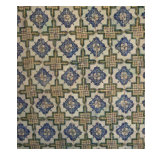
Section showing the water management solutions



Rubble stone



Wooden lattice



Earthenware

Sustainable construction materials

HQE® targets

target 1 : Harmonious relationship Between the Building With its environment

- Unification of all of the facades (by renovation, highpressure cleaning and replacement of all of the windows and doors).
- Refurbishment that is compliant with the Venice Charter : **protection of the existing heritage**.

target 2 : integrated choices For materials and construction Process

- **Constructive choices** : sustainability, adaptability and easy maintenance of the construction materials ; use of **whitewash, rubble stone and wooden lattice**.

target 4 : energy management

- **Bioclimatic architecture** : intelligent use of available solar energy, **solar protection** on the southern facades and reduction of openings on the northern facades.
- **Natural ventilation** : Fresh air comes from the openings created on the low parts of the facades. Warm air is disposed of from the high openings created on the facades.
- **Renewable resources** : photovoltaic panels, solar water heating system.
- **Low energy consumption** for internal and exterior artificial lighting

target 5 : water management

- The run-off water from the facade is drained by placing manholes with crushed stone at the bottom of the facade.
- **Green planted ditches** are designed to collect rain water.

target 10 : visual comfort

- Use of **rustic plants** for the landscaping design of the gardens.

target 7 : maintenance management

- Replacing the windows and the doors by those of the latest generation guarantee the performance of the building when it comes to energy efficiency on the long term, and the blinds (heat-protection systems) proposed also require almost no maintenance at all.