

Bahrain / 2015

JW Marriott Hotel



groupe 6

PRESS CONTACT

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In 2015, Groupe-6 won the tender for the construction of the high-rise JW Marriott Hotel in Bahrain. Groupe-6 designed the hotel to stand as a signal on the Bahrain Bay skyline, with its outline reflected in the water, preserving the magic of the island experience.

Between land and sea

Located between Qatar and Saudi Arabia, the Kingdom of Bahrain is an archipelago comprised of several islands. Inherited from an age-old tradition of island-based urban development, the expansion of the Kingdom of Bahrain now focuses on its main island, with the creation of inhabitable areas reclaimed from the sea. The JW Marriott tower stands on one of these artificial islands, which extends the city north of Manama. It overlooks the magnificent panorama of Bahrain Bay and marks the entrance to the island. The tower's outline, emerging from a park at its base, forms a major feature on the bay's skyline. Offering panoramic views of the sea and the bay, the building takes full advantage of the characteristics of its location between land and sea.



The magnificent panorama of Bahrain Bay

A “vertical oasis” & a “pleated façade”

Three key concepts have determined the structure of the building:

- The vertical oasis: made up of a series of welcoming common areas, this forms a cooling landscape at the heart of the tower that stretches from the ground to the roof. Visitors walk along the mirror pool in which the tower is reflected, pass through the “hanging gardens”, and finally reach the relaxing roof terrace at the top.
- Continuity with respect to public space: the lobby is directly accessible from street level thanks to the location of a service hub in the basement. It includes the reception areas and the main common areas. The main entrance is highlighted by the pleated façade, with its upturned lower edge revealing the main doors; once inside, visitors discover the remarkable, dizzying atrium. A majestic staircase that leads from the reception and meeting areas forms an extension of the pathway that leads from the public area to the heart of the tower.
- The pleated façade: inspired by pleated textiles, the façade elegantly drapes the tower and offers panoramic views from the interior. Its shape creates diagonal views that preserve guest privacy and showcase the exceptional landscape. At its extremities, it becomes a protective barrier: it forms a shield against the wind on the roof terrace and a sunshield over the main entrance. Its ultra-high-performance glass makes it possible to limit heat transmission: despite the local climate which usually makes it necessary to protect oneself by drawing the curtains, the comfort standards for all JW Marriott hotels have been met, while preserving the outstanding views that form an integral part of the surroundings and add to the prestige of the building.



Pleated façade & vertical oasis



Pools around the tower help to create a welcoming atmosphere for visitors.
(Site plan)

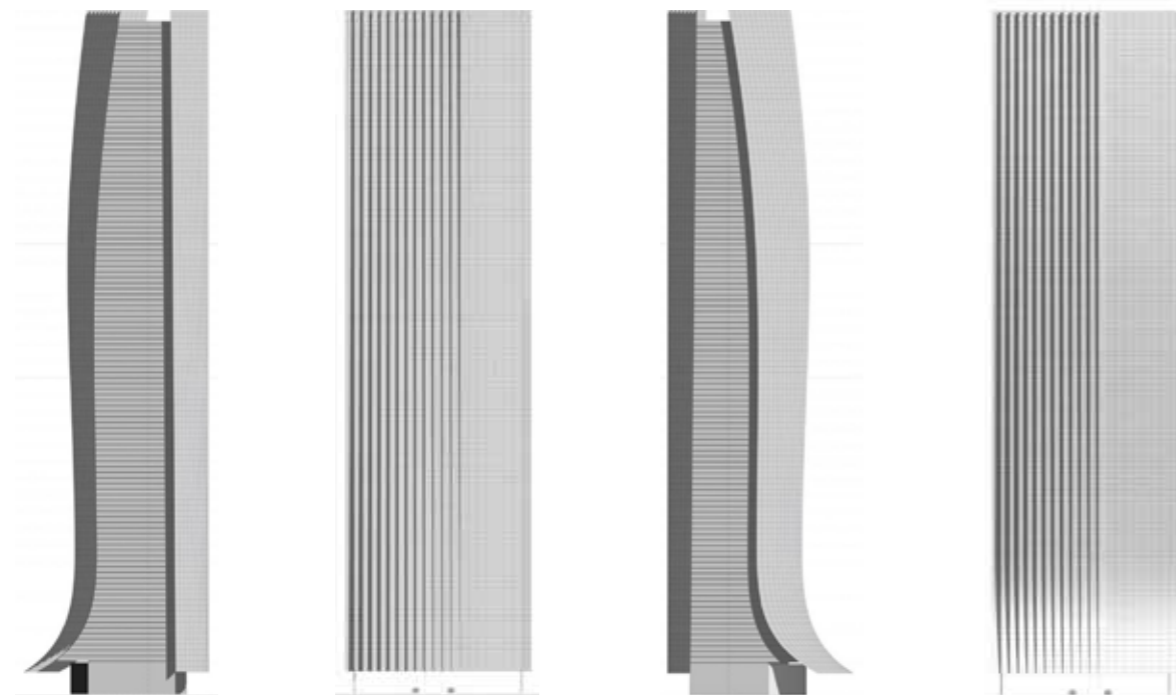


The shape of the outer envelope makes it possible to offer diagonal views that preserve privacy and reveal an exceptional landscape. (Typical floor plan)

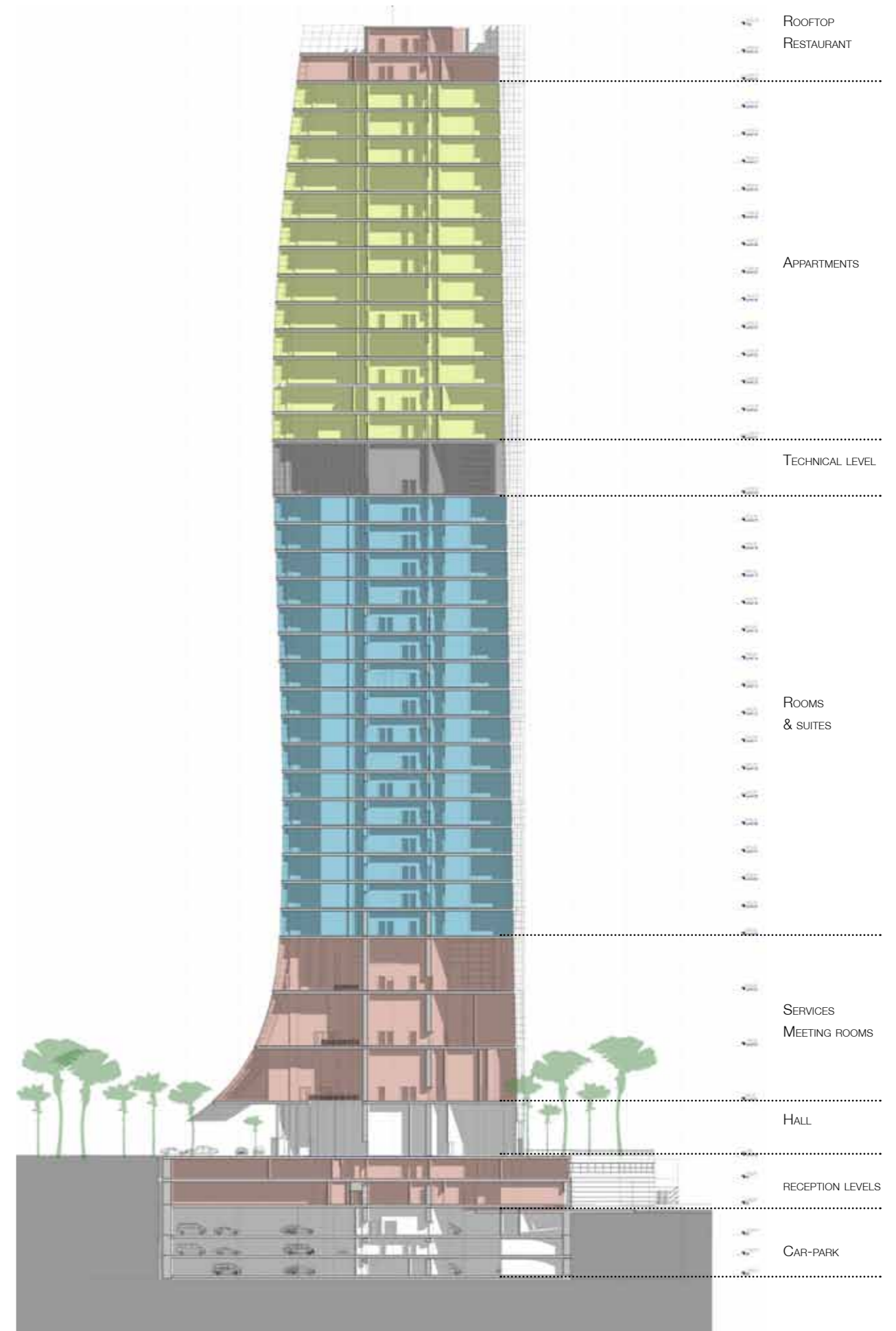
Structured diversity

The different functional areas are distributed over 36 upper storeys and five basement levels built on existing foundations:

- The basement houses some of the machine rooms, the car park, and the ballroom directly accessible from the ground floor.
- The hotel reception is on level 1,
- Levels 2 and 3 are devoted to services (business centre, meeting rooms), which are easily accessible from the main lobby.
- The luxury five-star hotel's 260 rooms / suites and 80 apartments are on levels 4-19 and 21-33 respectively. All have been designed to meet American standards of comfort. The typical floor plan draws inspiration from the shape of an atoll. The rooms and apartments are laid out on either side of a compact vertical core that makes it possible to keep staff and guest circulation areas separate. This layout, combined with the modular design of the façade, offers a great deal of flexibility in terms of interior fit-out.
- Half way up the tower, the 20th floor houses only machine rooms and separates the lower floors occupied by rooms and suites from the upper floors, which feature apartments. The location of this service floor also makes it possible to optimise the distances covered by the networks of cables; because they occupy less space, it has been possible to make the central core more compact while meeting the requirements of a high-rise building.
- The roof terrace, which is free of machinery, features restaurants with outside seating areas affording remarkable views over the bay.



Elevations revealing the building's elegant outline



The optimised functional layout frees up the roof and floor areas for enhanced user comfort.



Pools surrounding the tower provide visual anchor points, while the upturned lower edge of the façade offers protection from the sun. Machine rooms and service areas are in the basement, totally freeing up access to tower.

The “pleated” façade is made up of glass modules set at varying angles. Its elegantly curved envelope plays with reflections in the water and highlights the island setting. >





The lower levels feature reception and leisure areas that help to open up the hotel to the surrounding city and make a genuine contribution to urban life on Bahrain Bay.

“Augmented” BIM design

To simultaneously optimise the plans for the building’s complex massing, its envelope and its surfaces, Groupe-6 defined a specific organisational approach: this includes a BIM Manager working alongside the team of architects to develop a methodology and dedicated software tools.

A BIM process serving the project

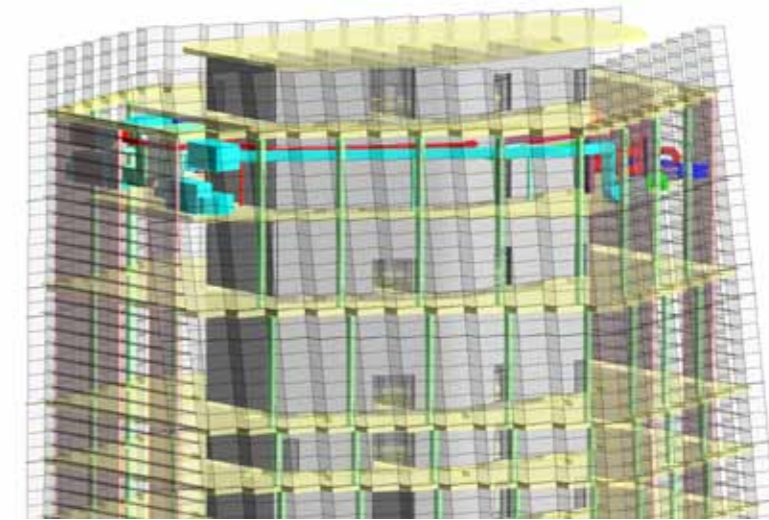
The Level 2 BIM process is structured around a 3D model shared by all the key people involved in the project. This allows trials and checks to be carried out and makes interactions with the engineers easier. In addition to this, the complex project offers the opportunity to develop specific processes and software tools: first, to iteratively and intuitively develop the massing of the building and its curved, pleated façade; and second, to optimise the distribution of the different areas and the floor plans. A dashboard managed by the chief architect makes it possible to monitor all the project parameters in real time.

An original parametric design process

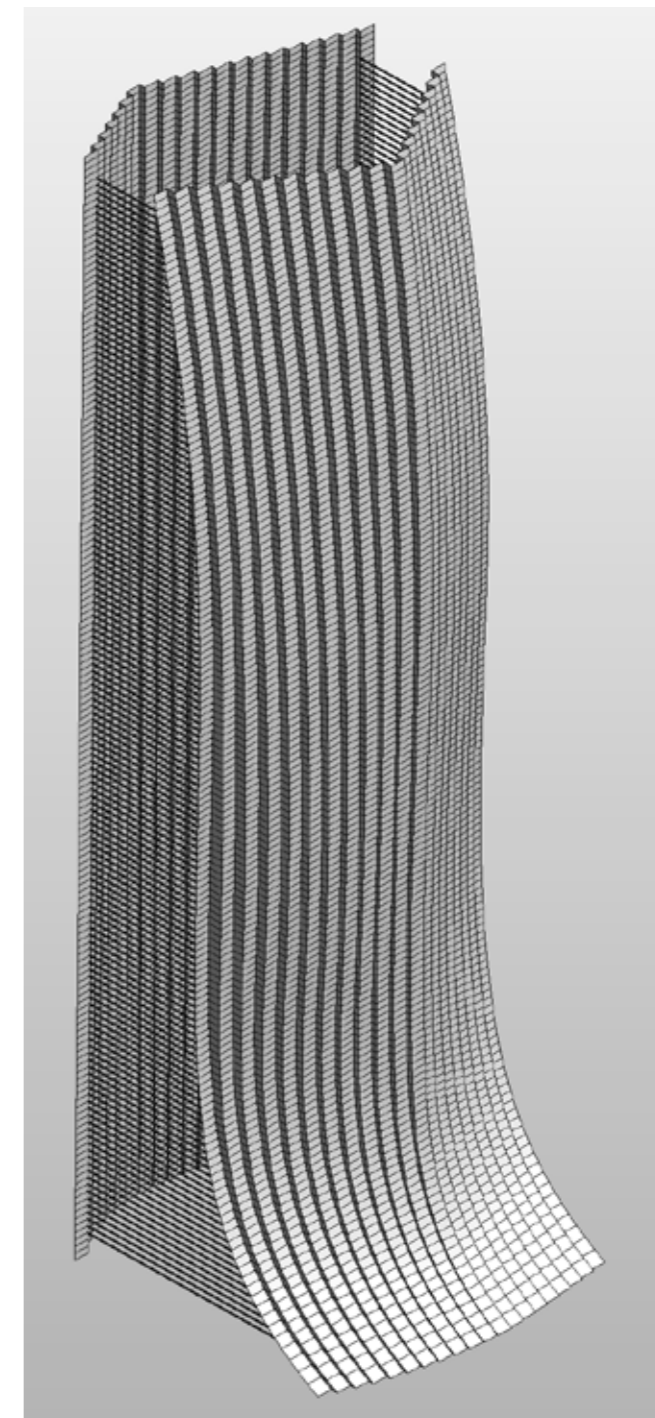
The complex façade was computer-generated using a custom made programme that takes the technical and architectural constraints into account. Based on the initial envelope developed using 3D Max at the competition stage, a conceptual model was developed on Revit and Dynamo (step 1), defined by a large number of parameters. In step 2, 7,000 adaptive components divided into 30 families according to their geometrical characteristics were used, resulting in the final envelope with its 13,650 glazed panels. This parametric approach made it possible to constantly adjust the components as the shape of the façade evolved. The flexibility and responsiveness of the process made it possible to explore a variety of forms. According to their type, the 7,000 modules have 1, 2 or 3 glazed panels. They are all listed in nomenclatures and ordered according to their angles. All the glazed panels are precisely described in terms of their size, angle, weight, materials, orientation, location, etc.

Optimised floor plans and distribution

The exploratory work concerning the massing was carried out in parallel with floor plan optimisation, which involved two aspects: optimising the floor plans in response to the brief, and helping with the distribution of the different areas.



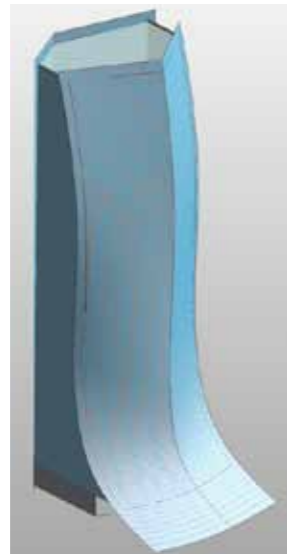
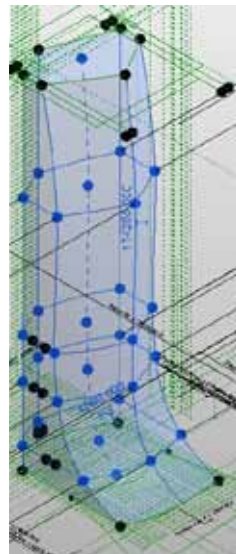
Model (architecture, structure and fluids)



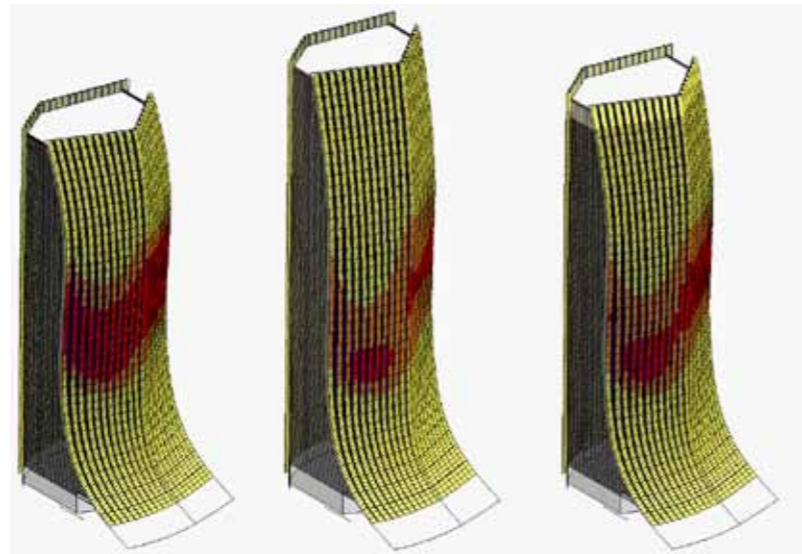
The final pleated façade

AN ORIGINAL PARAMETRIC DESIGN PROCESS

Step 1: developing the conceptual model



Step 2: planning the façade (adaptive components)





The JW Marriott Tower was designed to stand as a signal on the skyline of Bahrain Bay.

Technical specifications

Opération:	Construction of JW Marriott Hotel, Bahrain
Client:	Private client
Architects:	Groupe-6 (Antoine Buisseret, executive architect, associate architect - Alexandre Franc, project manager)
Engineers:	Setec Bâtiment - Setec TPI - RFR (façade) - AES (local contractor)
Floor area:	62 000 m ²
Capacity:	340 keys (rooms, suites & appartments)
Type of tender:	Private compétition (2015)

Groupe-6, a team of architects covering a range of disciplines

France's leading architectural agency, with some 150 employees from 15 different nationalities, Groupe-6 is a multi-disciplinary structure made up of architects, urban planners, interior designers, landscape designers and economists.

For 30 years now, Groupe-6 has been designing complex, large-scale projects that fall in line with their flawless aesthetic approach and optimal functionality, keeping within the budget and deadlines given.

Groupe-6 is a flexible, multi-disciplinary architectural agency, which can adapt to the wide range of requests it receives from its clients and contractors. It has expertise in sectors of activity ranging from business-related urban planning, hospital design, new technologies, research and education, sport and leisure, culture, and finally, urban planning.

In the interests of its client and the end project, Groupe-6 ensures it works with the world's best specialists and opens its teams up to expertise from outside the agency, in the areas of engineering, landscaping, stage design, lighting, acoustics, and more. The agency's teams are run by experienced project leaders able to tackle complex and demanding programs.

Groupe-6 is committed to designing projects that respond to the issues of sustainable development and eco-responsibility. The agency pays particular attention to the quality and sustainability of its architecture and, with respect to its constructions, takes a preventive approach to the ecological and energy-related issues.

For over 10 years, Groupe-6 has been working overseas, accompanying its clients in their real estates ventures and exporting its savoir-faire. Already involved in projects in Europe, the Ukraine, the Middle-East and the Magreb, Groupe-6 competes in the most dynamic geographical areas.

Certified ISO 9001 in 2009, Groupe-6 aims for excellence in what it does, focusing in particular on four key values :

- Consider its clients as real partners, offering permanent, trusting and constructive dialogue about their projects. Respect, attentiveness and dedication are all highly valued by the agency.
- Invest in bold projects that push the agency to be creative, thorough and practical. Groupe-6 values its clients projects, giving them a privileged place among its concerns.
- Ensure a collective mode of operating, striking the right balance between innovation, consultation, methodology, and decision-making priorities.
- Provide clients with architectural solutions that offer the best compromise between functional requirements, flexibility and sustainability: essential conditions for the quality and durability of its projects.

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