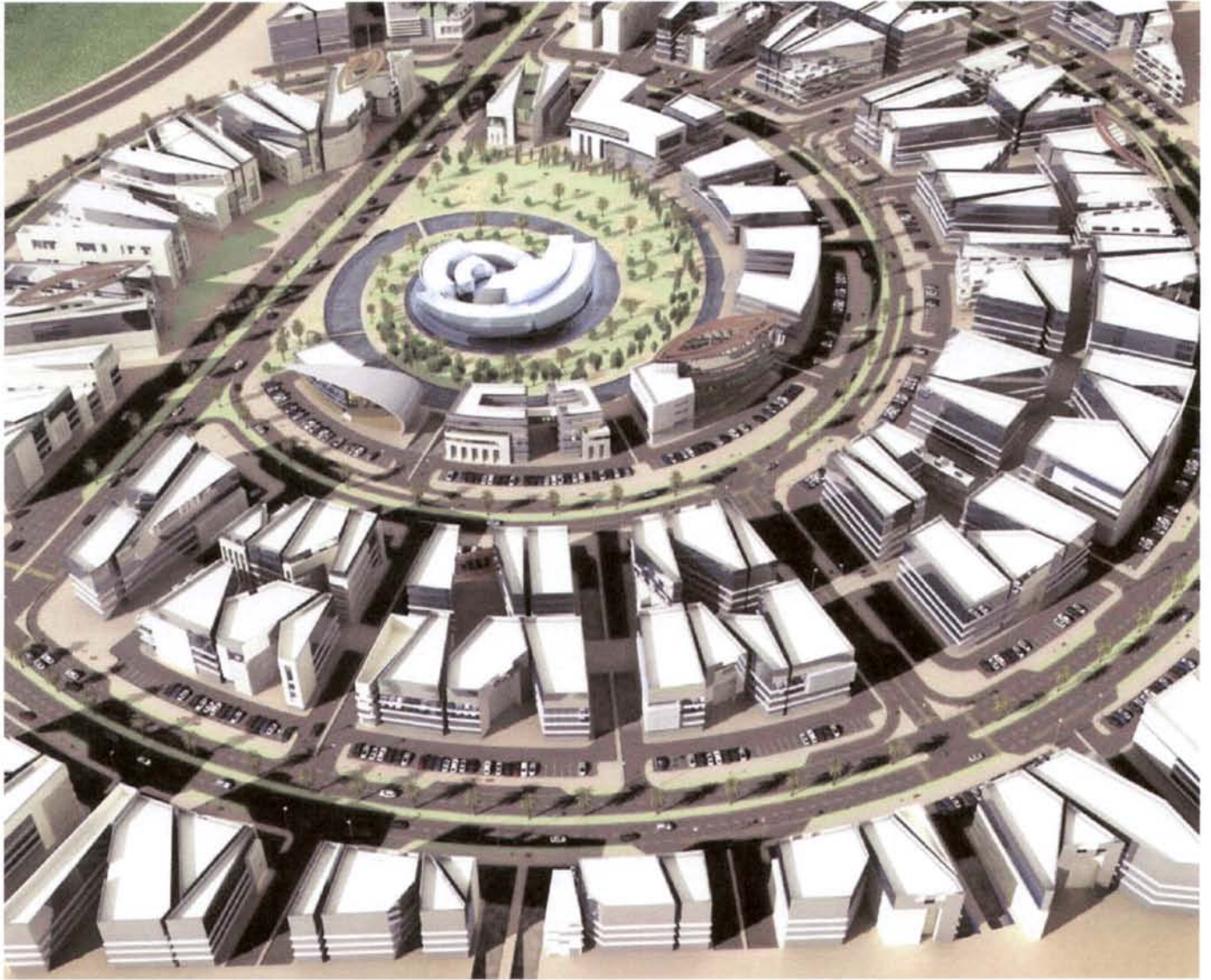


THE

BIG PROJECT

CONSTRUCTION: CONNECTING THE DOTS

ISSUE 4



Smart and green ENERGY CITY QATAR

DOHA SOUKS
A MINI OASIS

TECH+ BUILD
SMART BUILDINGS

EXCLUSIVE!
URBAN PLANNING
RASEM BADRAN



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INDUSTRY



A Mini-Oasis — Doha Souks

ext: As told to Sona Nambiar | Images: Nabil Gholam Architecture and Planning



An artist's impression of Doha Souks

project two



Light impression

Qatar is going through a major revival, after a lull in its development in the '90s. As it takes on a leading position in the regional economy, some urbanised areas of the capital Doha are in urgent need for regeneration to keep up with the incredible social, industrial and urban restructuring affecting the whole country.

One such neighbourhood surrounds the landmark Ramada Hotel. Our client chose a 15,000 sqm block at the intersection of two major streets to build Doha Souks, a state-of-the-art commercial mall. Al Mirkab Al Jadeed street, lined up with electronics shops, and a residential street lined with densely packed private compounds and villas.

Site solutions

Our (Nabil Gholam Architecture and Planning) response to the site was to avoid the

typically anti-urban mall building typology and instead opt for a low-rise perimeter block type development with active external and internal edges. This means distributing the built-up area over manageable three floor plates broken down into a massing of 32x32x27m² building blocks, each self-contained with its own vertical circulation and services core. The passages between these blocks become the entrances and alleys leading to an internal covered courtyard that is the heart of the project.

The result is a modern mall as a reinterpretation of a traditional *khan*-like souq typology. Among other things the *khan* was used as a night stop on the long path of the caravans, where people, horses and camels would stop for a break. At the *khan*, you could also find goods to be bought and perishable foods to be replaced and so on.

Botanical atrium

We also expanded the concept around the "botanical" atrium, so that all year round, people would be able to enjoy a cool green spot in city where the climate is harsh in

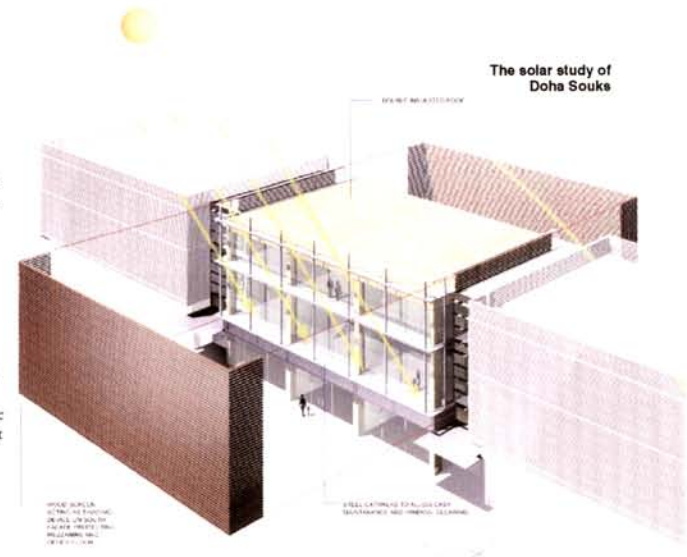
the hot seasons. A sort of indoor piazza, a green urban living room. This urban quality will be enhanced by the fact that the upper floors are occupied by office users whose access is through vertical cores, located also around the atrium. This way, both shoppers/visitors and office workers will be using the central atrium. It is organised around a freed up central space that is lushly landscaped and is designed as a main part of the eco-friendly air conditioning system of the project. It is accessible through a pedestrian avenue cutting through the project and extending to the Mirkab street shoppers promenade. These streets run along and criss-cross the atrium, the shops and restaurants. The porosity of the site is increased by allowing people to transversally cross straight through the souk, and not go around it. It brings them into a cool shaded environment and enhances the shopping event as it combines it with the city experience.

Climatic comfort is achieved through an innovative system combining common

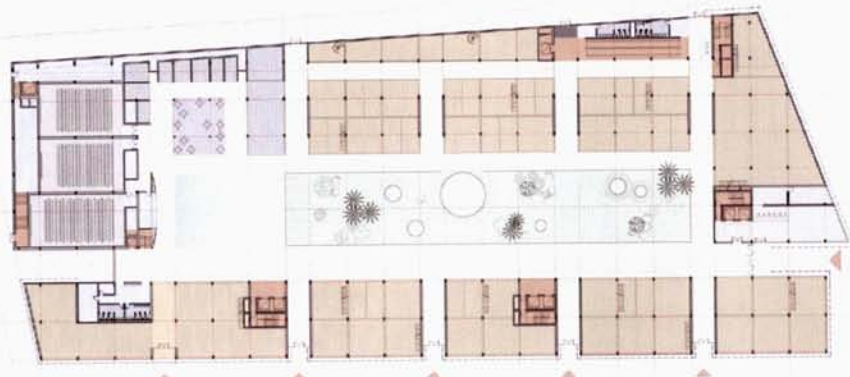
artificial air conditioning with a natural passive system relying on radiative cooling and air stratification: water walls flanking lush greenery facilitate vaporization and condensation, as carefully placed openings channel the strong southern winds into the mall, and help preserve a layer of cooler air close to the shoppers.

We used several strategies in the atrium:

- Stratification and displacement cooling : where the cold air is supplied from the floor at low level and the heat rises towards the ceiling, keeping the temperature much lower at pedestrian levels (used in large spaces such as airport halls in hot countries, so you do not cool the entire volume). Here, about 100,000 cmts are naturally cooled down from about 45 degrees C to 25 degrees C, at least at the level of the user, instead of using massive air conditioning power for that.
- Cooled slab : where the tempered cold water is circulated in water loops; embedded under the tiling thus



project two



- RETAIL
- VERTICAL CIRCULATION
- FOOD COURT
- MOVIE OR THEATRE SERVICES
- LANDSCAPE AREA
- CIRCULATION
- MAIN LOBBY

Above: Ground floor plan
Below: Leasing flexibility
Right: The cloud formation inside Doha Souks

Alternative A - BASIC MIX

Alternative B - ALL RETAIL

Alternative C - OFFICE DOMINANT



75% RETAIL (100,000 m²)
25% OFFICE (100,000 m²)



100% RETAIL (200,000 m²)



50% RETAIL (100,000 m²)
50% OFFICE (100,000 m²)

keeping the floor temperature at low levels and this increases the comfort level inside the mall.

Water walls: which also play the role of tempering the ambient inside the mall space.

Roof screening: where various mobile shading over the atrium can be closed and retracted depending on the season.

A magical event

The building envelope is made up of a double-skin elevation that filters sun rays and provides a ventilated buffer that exhausts hot air away from the internal spaces. It is a pretty straightforward system - a simple double glazed clear low e-glass inner skin, with a second (outer skin) made of horizontal louvers. In between, a gap has been left with a catwalk at every floor for cleaning and maintenance. It will be built using multilayered plywood, veneered with wood and mounted on extruded aluminium

profiles held by a vertical structure. It offers resistance to the weather, and low maintenance, while allowing the optimal light levels and keeping the sun out.

Mesh panels wrap around each block transparent to light and views but blocking out most direct radiation. This hybrid solution helps combat the desert climate during extreme heat peaks, and opens up the mall to enjoy natural mechanisms during regular temperatures.

Occasionally, these systems come together to create a magical event within the project. As the water evaporates and starts to cool above the green plants, it starts condensing into mist. At certain times, the system generates a real cloud that drizzles and pours with rain, a remarkable phenomenon that transforms the project into an unusual attraction and a talk-of-the-town spectacle contrasting with the desert environment outside.



Project team

Architect: Nabil Gholam Architecture & Planning
Area: 27 205 m² + 31 650 m² Basements
Date: February 2004 - to present
MEP: Fransolar and Barbanel
Structural: Rafic el Khoury & Partners
Landscape: VDLA

The real cloud and rain are achieved by collecting the ambient humidity, which, once it is subjected to a sudden drop of temperature, will condensate into rain. Although the system is fully functional, we are assessing to see if it will be implemented in this project. It would more of an add-on, as the environmental aspects that we wanted there, and that are inherent to the design exist independently from the clouds.

The importance we put on the sustainability of the project goes beyond the environmental dimensions, as we strived to create a mixed programme that would engage the neighbourhood into a mutually enhancing dialogue: the commercial shops on the lower floors of the mall are topped with offices open to rent or sale. These will become part of the neighbourhood's social and functional fabric, offering nearby residents the option of walking to work or leisure, or at least significantly reduce transportation distances.

On the scale of the individual spaces, shops and offices of the project is subdivided into flexible open-

plan units set out on an 8.4x8.4m grid. The shops can profit from additional mezzanine space. A food court is located centrally, common to both executives and shoppers, while underground parking spaces account for the load distribution between day and night, or between office workers and shopping and cinema crowds.

This project creates a unique setting internally that encourages work, shopping, and leisure, without making any concessions to the natural or social environments. Quite the opposite, it is actively designed to minimise environmental impact, and to present an alternative, enlightened way for urban regeneration in a commercially viable package. The Doha Souk, when complete, will be a special place where thermal comfort and urban environment come together. It is a clean straight forward project, both in its aims and how it achieves them.

Yet, the experience will be enriched by it serving as a very hospitable "mini-oasis" in the middle of a hot city mostly traveled by car. ■■■