

KFAS New Headquarters, Kuwait-City

1st Prize in the international, restricted 2-Phase Design Competition

March 28th, 2019

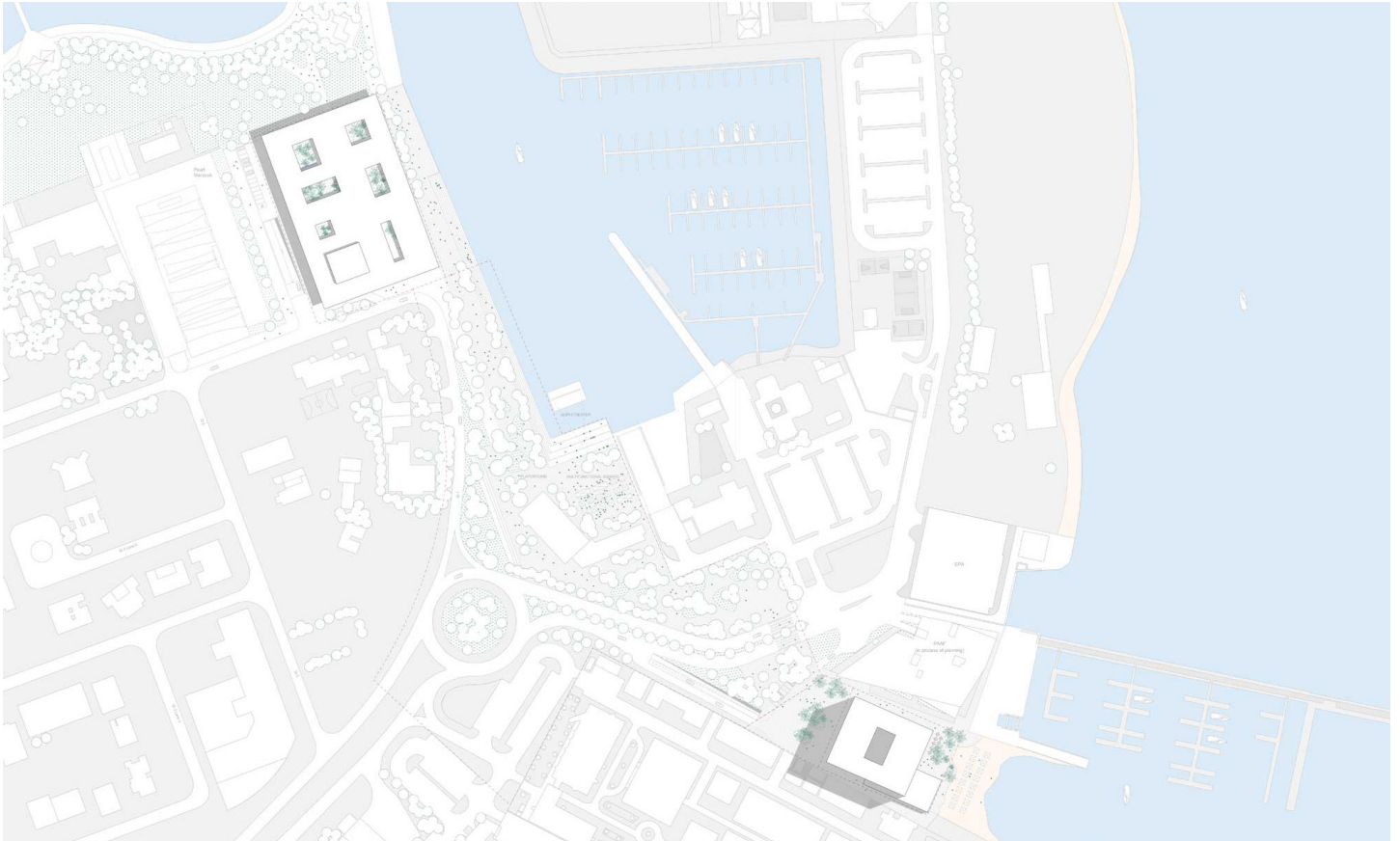


THE KFAS NEW HEADQUARTERS IN KUWAIT

TOPOTEK 1 wins the international, restricted 2-phase design competition for the KFAS - Kuwait Foundation for the Advancement of Science - New Headquarters and Conference Center in Kuwait-City, Kuwait. The winning entry was unanimously selected among 60 first stage entries and 10 second stage finalists. The results of the competition have been officially announced in a press release on March 26th, 2019. An exhibition of all stage 1 and 2 competition entries will follow.

The proposed design expresses the objectives of KFAS, being a cosmopolitan institution that promotes excellent and future-oriented science. With the design of the Foundation building and the Conference Center, connected by a parkland along the sea port, a place of high technical, sustainable and functional standards will emerge. Carefully integrated into the existing environment, the complex is characterized by a distinctive typology which gives this area a contemporary public character. The project also sets a new architectural highlight along Kuwait's waterfront.

Construction of the two buildings and the park landscape is expected to begin in 2021. The complex is to be completed by 2023.



OUR VISION FOR KFAS FOUNDATION IN KUWAIT CITY

TOPOTEK 1's winning design for the KFAS site envisions a complex where the two buildings of the new Headquarters and the Conference Center are connected to the existing Science Center on a site of 60 hectares.

The proposal creates a comprehensive strategy that introduces two new low rise buildings that will enrich Kuwait's architectural realm, fostering a cohesive visual dialogue that gives the harbor a distinctive profile. Connecting these two structures, a new inviting public space merges seamlessly with the existing coastal promenade. Inspired by notions of the patio and the oasis, the design adapts ancient building strategies to minimize direct sunlight while enjoying the benefits of natural illumination within the built form.

The buildings are perforated by a series of horizontal and vertical geometric voids of different shapes and sizes in the façade, roof, and interior, resulting in dazzling "inner landscapes" that seem to be in a continuous process of unfolding as visitors walk through them. This perforated quality blurs the boundary of inside and outside, strengthening the buildings' connection to their surroundings, at times coalescing directly with the green public space



THE HEADQUARTERS BUILDING

The 3-story slab of the new Headquarters Building is suspended on columns above an open public space that is a continuation of the green corridor. Its façade is perforated by three deeply recessed niches, the largest of which is an expansive glass terrace that overlooks the harbor. The roof is also perforated by six open, sun-protected patios that, when seen from above, resemble windows in a façade, as if the building has been flipped down. Standing at a height of just 18 meters, the new building respectfully leaves room for the adjacent high-rise 1960s building, complementing its form and appeal.

Spreading beneath the built volume is a vast green public space—a modern vision of an oasis—that is integrated seamlessly into the surrounding landscape. This well-shaded space is delightfully cool and features lush vegetation and palm trees as well as soothing mirror pools of 40 cm depth, which are filled with seawater from the Arabian Gulf and generate sensational light reflections. A stainless steel ceiling mirrors the water and plants below, creating the alluring illusion of omnipresent water and greenery. Shielded from direct sun, these expansive water surfaces provide a cooling effect for the public space and the building's interior. Refreshing clouds of water vapor, desalinated by a machine in the basement and vaporized via jets, also serve to cool the air, producing an exceptional atmosphere — indeed, a microclimate for this futuristic water garden.



A CONTEMPORARY CULTURE OF WORKING

Situated like green islands between these mural pools are a number of spacious, sun-protected courtyards that illuminate the public space, basement level facilities, and the spectacular, grotto-like restaurant with its magnificent waterfall, plentiful greenery, and abundant natural light. Above the courtyards, geometric openings within the structure offer a visual connection to the sky, creating dramatic *chia-roscuro* effects that change organically throughout the day. Adjacent to one of the patios is a café, which features shaded seating areas situated within the greenery. Together with the high palm trees, the slim columns that support the suspended building evoke the majesty of a shady forest.

From the main entrance foyer, visitors encounter a microcosm of the building's interior: the grand staircase, mural pools, restaurant and waterfall, vibrant plant life, and geometric light and shadow effects on the walls and ceiling produce a complex visual landscape that is both beautiful and practical. Navigation on the office levels is easy due to a broad central walkway along the longest axis and to the fact that stairwells are always located adjacent to the patios — if you want to go to another floor, simply walk toward the trees and natural light. The building's open plan has a loft-like character with modular spatial identities, including glass-enclosed "islands" for diverse, customizable uses and various "zones" demarcated by subtle yet clear variations in the floor design. In addition to the main entrance, there is a second workers' entrance in the building's western wing as well as two emergency staircases.



THE CONFERENCE CENTER

The new KFAS Conference Center is a simple yet elegant 12-story cube with a surprisingly intricate, multifaceted interior designed to accommodate the modular and flexible workplace of tomorrow. Like the Headquarters, an open space passes beneath the built structure, but this time it is a glass-encased foyer that provides a breathtaking view of the beach and sea. Echoing the Headquarters' elaborate patios and cutouts, deep geometric alcoves in the façade serve to filter the sunlight, creating a captivating interplay of light and shadow.

The ground floor is partitioned into three sections, with the central foyer in the middle running roughly west to east and flanked by the northern core (with elevators for the public) and the southern core (with elevators for staff and logistics). Walking in the main entrance to the center of the foyer, the atrium and skylight will be directly above, the beach and sea directly in front. Also located on the ground floor are the exhibition hall and the stunning auditorium, with its modular technical floor and tremendous views of the sea through the rear glass wall behind the stage. The heart of the Conference Center is an open atrium that extends up through the entire structure, offering a lively and pleasant atmosphere. Gently lit by a sun-protected skylight, the interior space that encircles the atrium is characterized by a complex, Tetris-like design with various horizontal shifts that articulate single- and double-story galleries. These act as a lounge and foyer overlooking the atrium, combining to form a rich, multilayered inner landscape of mutually enfolded open spaces — a dynamic and appealing environment for visitors as well as KFAS guests and staff. Located within the Conference Center is also a sleek bistro café with a generous view of the sea.



THE GREEN CORRIDOR

A lush green corridor originates at the KFAS Science Center, runs along the existing seaside promenade, passes beneath the Headquarters building, and continues along the harbor, extending past the Conference Center to the beach in the east. Conceived as a harmonious extension of the northern coastal promenade, the concept continues the existing landscape design's rhythm of palm trees and of small hills, or "green lenses." This sculpted park corridor is a welcoming and pleasant public space with copious shade and seating facilities and features an amphitheater, multifunctional plaza, and adjoining playground area — all of which invites visitors to enjoy various leisure and recreational activities.

The main purpose of the green corridor is to embed the new buildings — hybrid objects that merge inside and outside—in an attractive park landscape, highlighting the open areas in the shade of the built volumes in a natural way. Like a priceless necklace that unites three glistening gemstones, the corridor serves to accentuate the two new landmark buildings, enhancing their appeal and connection to the KFAS Science Center. It also encourages easy, comfortable movement between the buildings, while strengthening the bond between architecture, landscape design, and the sea.

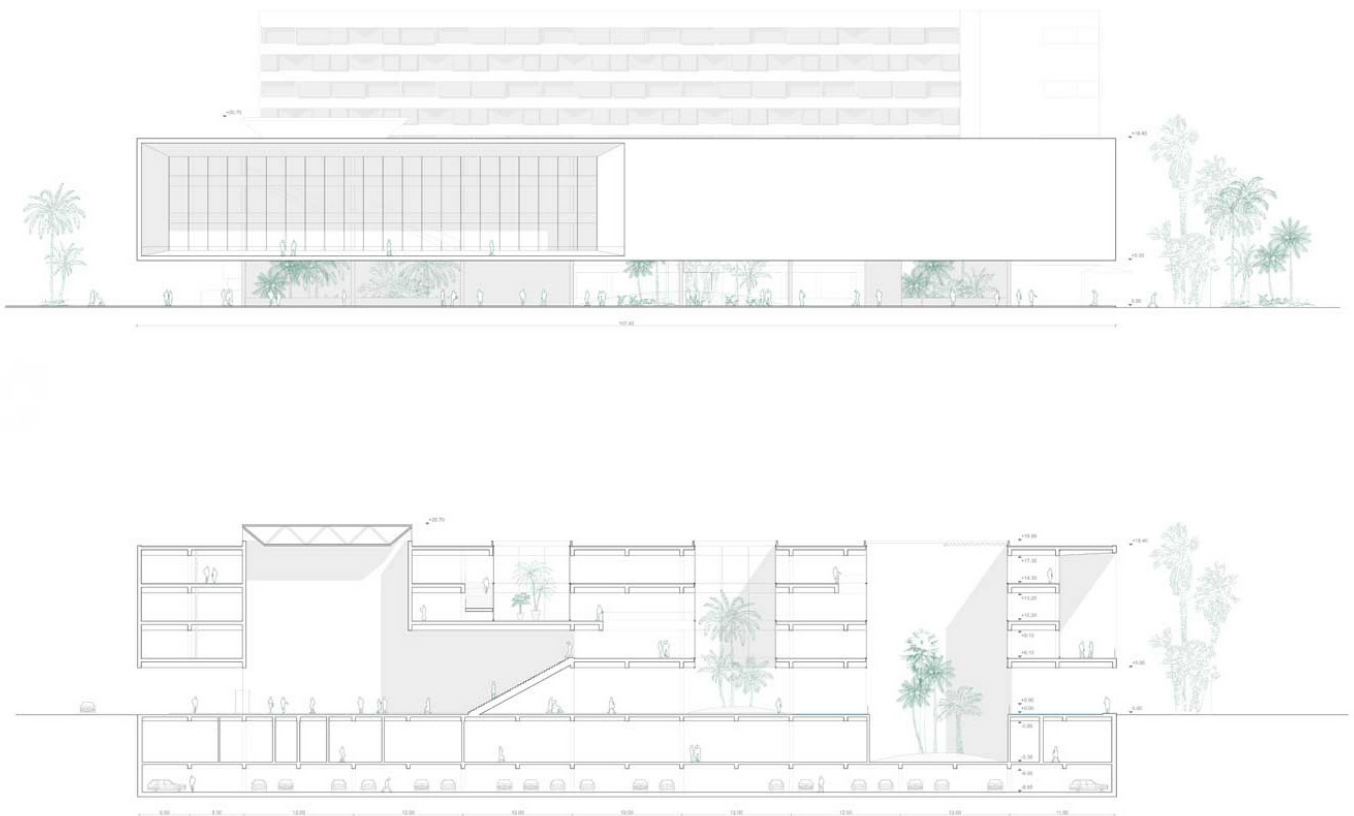
A newly constructed platform establishes a connection to the existing promenade, extending the boardwalk area adjacent to the Headquarters from 8 to 20m. Spacious 1m embankment steps run along the coast, broadening to 3m when they reach the amphitheater, which faces the harbor and an innovative floating stage that occupies its own island. The park also opens onto a wide, shaded plaza for markets and other events with a large fabric tent structure that recalls the existing small tent structures on the seaside promenade, lending a pleasurable consistency to the Salmiya coastal area.

SUSTAINABILITY AS KEY OBJECTIVE

Sustainability is a matter of ensuring that the approaches we use today do not endanger the future. Sustainability is not just about energy but about using local resources responsibly. The design of the buildings and the façades for the new KFAS site have thus been chosen to ensure comfort for users while respecting our interpretation of sustainability. The biggest challenges pertaining to Kuwait's climate of those are high solar radiation and outside temperatures that exceed 40°C in the summer, which are a challenge for natural strategies such as natural ventilation. To reduce the energy demands (and, thereby, the building's carbon footprint) compared to conventional approaches, we have opted for the use of specific building materials coupled with natural approaches to pre-cool the air.

Evaporative Cooling

The dry climate allows for evaporative cooling strategies that facilitate a natural pre-cooling process of the air. The building is suspended in order to catch the winds blowing from below, pre-cool the air with water features such as fountains or pools, and then distribute the pre-cooled and humidified air inside the building, via the façade or the central courtyards. When the pre-cooling effect is not sufficient, the mechanical systems providing hygienic ventilation inside the building kick in, using the evaporative cooling strategies as make-up air, decreasing the delta in between the temperature of the intake air and the air supply temperature for the indoor spaces, hence, decreasing the energy demand for cooling and humidification. Additional cooling to provide thermal comfort will be provided by radiant strategies (such as activated surfaces, floor/ceilings).



The KFAS New Headquarters

Envelope and Façades

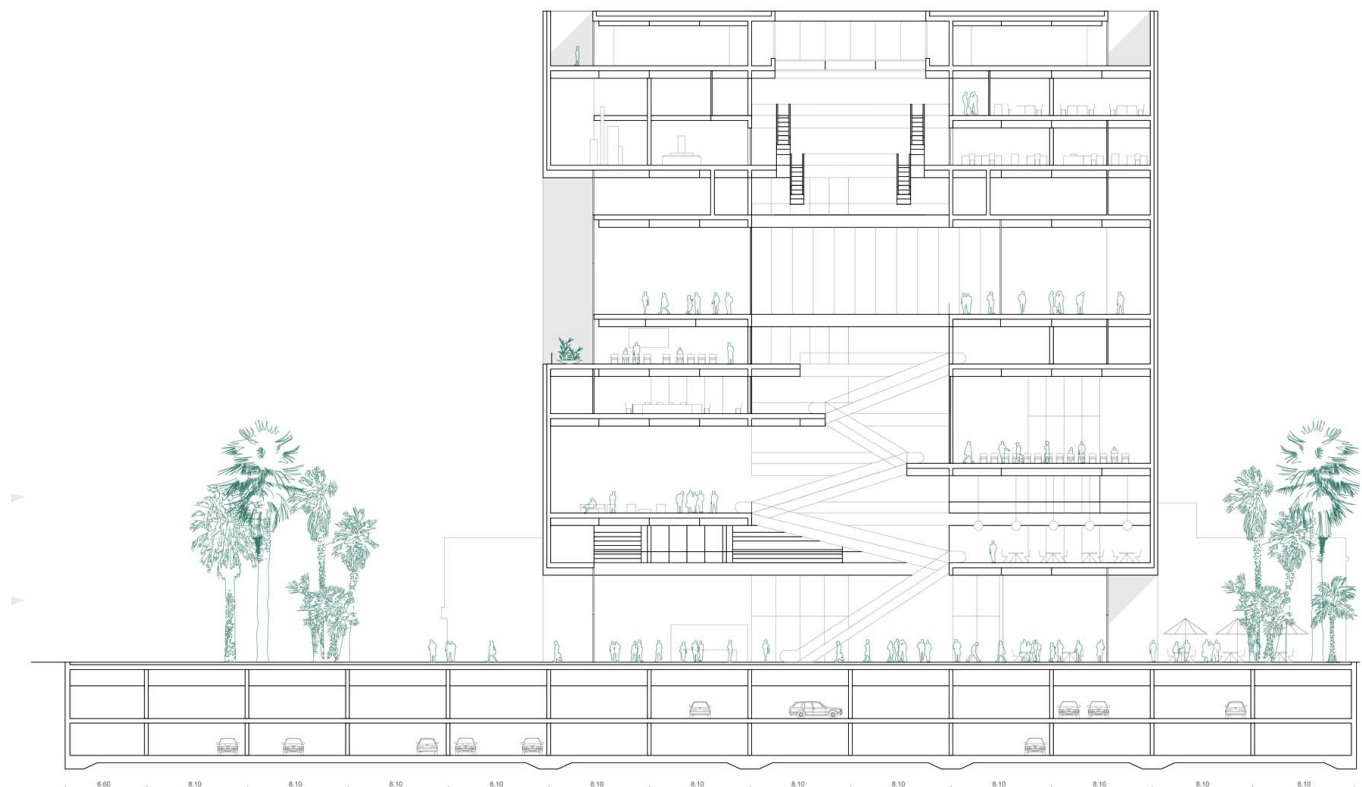
The use of massive and local materials will allow for the use of summer night cooling by natural ventilation due to the high swing between daytime and nighttime temperatures, especially in the summer. This will allow a further reduction to the cooling demands for the building, essentially shifting the cold from the night to the day.

The façade is designed in order to block incoming direct solar radiation, while still allowing the diffuse penetration of natural daylight, in order to reduce the internal solar gains together with the internal gains caused by artificial lighting.

On-site Energy Production

Pre-cooling effects, a massing and façade design that is tailored to the climate, and efficient systems (such as heat pumps, coupled with a constant and cooler source than the air, such as the ground) are the first steps towards a low-carbon footprint building. Only on this basis can sustainable on-site energy production strategies be proposed.

Horizontal photovoltaic panels integrated on the roof will convert solar radiation into electricity. With an overall roof area of around 7700m², almost 2 GWh of electricity can be produced at the end of the year, if the whole area is covered by horizontal PV panels.



The Conference Center

COMPETITION KEY DATA

March 28th, 2019 | Topotek 1 has been selected as winner of the international, restricted 2-phase design competition among 60 entries in the stage 1 and 10 finalists in the final stage. An exhibition of all stage 1 and 2 competition entries will follow.

“Overall, the jury values the design as a courageous, consistent contribution whose conceptual and structural approach delivers the implementation of all functional requirements and sensitivity towards traditional context. Within the framework of the scheme’s urban design quality, the jury particularly appreciates the nature of the Headquarters building as an inviting place allowing people to enter from the ground floor, where the park, continuous and different paths, water and shadows are playfully juxtaposed together. The jury welcomes the integrated approach towards public spaces around the existing buildings connecting the two projects. The presence of water and greenery is seen to generate a comfortable environment for daily users and visitors showing a clear and sensitive relationship between tradition and innovation. The entrance and the connected ground floor areas are praised for their unique spatial quality which gives character to the building.” (An extract from the jury remarks).

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OFFICE PROFILE

TOPOTEK 1 was founded in Berlin in 1996 by Martin Rein-Cano. Lorenz Dexler joined as Managing Partner in 1999 and in 2014 Francesca Venier joined Topotek 1 as partner. Topotek 1's office in Zurich was founded in 2017 together with Dan Budik.

The office works around the field of architecture, landscape architecture and urban design and understands itself as a traveller within the fringe areas of typologies and scales, jaunting into architecture, urban design, music and art. The hybridisation of topics and disciplines, the removal, transmission and re-contextualisation of various design features and objects, and the staging and design of scenographic sequences are just some of their key strategies. The alertness and receptivity to the general contemporary discussion is maintained through this working method. The global movement of society and culture continually redefines the broad spectrum of possibilities in relation to the constitution of public space.

TOPOTEK 1 develops concepts through a critical understanding of the given realities and a deep historical knowledge. This provides solutions and designs which fulfil the modern requirements of variability, communication and sensuality. It is a diverse, lively and multidisciplinary office composed of a highly qualified international team of architects, landscape architects, and urban designers. The studio draws upon this wide range of experience during all stages of design and construction processes, resulting in exceptional effective design solutions that produce transparent, efficient, and long-term benefits for clients.

TOPOTEK 1 partakes in a wide variety of international projects and has achieved the first prize in various competitions. Several professional books and articles have been published exclusively on the work of Topotek 1, which has been honoured with many awards and prizes, amongst others the Aga Khan Award for Architecture in 2016.