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МНОГОСЛОЙНАЯ ШКАТУЛКА

Чанша расположен в центральной части Китая, на берегах реки Сянцзян и служит административным центром провинции Хунань. Он считается одним из древнейших городов страны. Сегодня – это крупный промышленный центр с национальным индустриально-технологическим парком, привлекающий огромное количество иностранных инвестиций. Все это приводит к необходимости возведения жилых и офисных зданий. Недавно архитектурное бюро RRC Studio, главный офис которого находится в Милане, разработало проект многофункционального высотного комплекса Xiang River Tower, который расположится на западном берегу реки Сянцзян.

Материалы предоставлены архитектурным бюро RRC Studio

Фасад Xiang River Tower

За последние годы восточный берег реки Сянцзян претерпел значительные изменения: здесь было построено несколько современных зданий различного функционального назначения, которые фундаментально изменили его облик. Западный же берег, где на прибрежной части планируется разбить линейный городской парк, напротив, до сих пор не получал никакого развития. Поэтому участок для застройки, площадью примерно 2137 квадратных метров, был отведен именно здесь. Он находится у начала второго моста через реку, на пересечении двух широких магистралей Юэлю Авеню (Yuelu Avenue) и Зянгью Роуд (Xiangyue Road), и играет первостепенную роль в развитии западной части города. Расположенный здесь, в центральной части, комплекс Xiang River Tower должен стать новым ориентиром и главным высотным элементом будущего района.

Идея внешнего облика небоскреба возникла из концепции китайских коробочек, вложенных одна в другую: каждый из его элементов, расположенный поверх другого, несет в себе определенную функцию. Декорированная облицовка фасада скрывает само здание, возведенное вокруг центрального ядра, и его этажи-блоки – «коробочки», выполняющие разные функции. Внешний фасад – это самый большой контейнер, внутри которого находится множество других. Они, в свою очередь, могут перекрывать друг друга, тем самым создавая внутреннюю объемность, и различаться по размеру и сложности структуры.

С точки зрения городского развития проект представляет собой большой участок, заполненный различными элементами, которые создают разнообразный ландшафт и разбивают территорию вокруг здания на несколько частей. Они и определяют степень взаимодействия комплекса с составными частями города, а именно: с дорогами, рекой и зелеными зонами.

Площадь перед башней со стороны реки вымощена местным камнем и визуально состоит из двух больших участков. Первый выходит на реку – это территория, оборудованная лавочками, засаженная местными видами деревьев разной высоты, цветущих розовыми цветами. В определенных местах эти элементы позволяют установить связь с рекой и в то же время обособить площадь от шума перегруженной магистрали Зянгью Роуд. Второй участок – это большое водное пространство, которое должно не только приносить эстетическое удовольствие, но и служить резервуаром для сбора дождевой воды для ее повторного использования в самом комплексе.

У северного входа располагается «сад с деревьями»: мощеная территория с большим количеством зеленых насаждений. Они должны создать на участке тень, чтобы, согласно китайской традиции, посетители могли заниматься национальной гимнастикой на открытом воздухе.

Композиционная концепция проекта заключается в совмещении двух разных элементов: основания и башни. Основание, образующее жесткий «корень» небоскреба, имеет четкое деление на различные участки с открытым пространством между ними, способные легко разместить и распределить многочисленные объекты внутри себя.

Массив же самой башни, в противовес ее основанию, имеет четкие очертания, обладающие гармоничными пропорциями, главным элементом которого становится фасад. Его золотой дизайн стал результатом исследований и смешений ряда четких традиционных китайских геометрических принципов, которые переосмыслены и воспроизведены в структурном элементе стеклянных поверхностей.

Первые 3 этажа 73-этажного 272-метрового небоскреба относятся к основанию здания и отводятся для размещения части квартир, офисов, отеля, торговых и развлекательных объектов.

С площади около башни, которая будет аккумулировать и направлять людей, можно попасть и в главный вестибюль здания – сердце высотного комплекса и основной элемент распределения потоков посетителей. Вестибюль – это двухцветное помещение, которое отличается теплотой и яркостью красок внутреннего оформления. Главным его элементом является ограждающая стена, изготовленная из местной древесины и сочетающая в себе современность и традиционность. При выборе материалов и дизайнерских решений вообще прослеживается постоянная взаимосвязь с местной историей; в качестве примера можно привести современную интерпретацию традиционных элементов китайской культуры – фонарей и стоек, – используемых в украшении интерьеров.

Кроме того, что в основании комплекса расположатся главный вестибюль, различные залы и многочисленные службы для жилых и офисных помещений, здесь разместятся коммерческие объекты и конгресс-центр. На крыше подиума устроят «городской бельведер» – большую обо-

Подиум Xiang River Tower

Вид на башню с реки

Поэтажный план башни

рудованную территорию для проведения различных развлекательных и оздоровительных мероприятий, откуда также будет открываться вид на реку.

Между главным вестибюлем и малыми залами, предназначенными для различных видов использования, размещаются просторные лифты. В зависимости от своего расположения они останавливаются на разных этажах, но также могут доставить посетителей на уровни с общественными помещениями: зоной отдыха, ресторанами, оздоровительными комплексами и зимними садами.

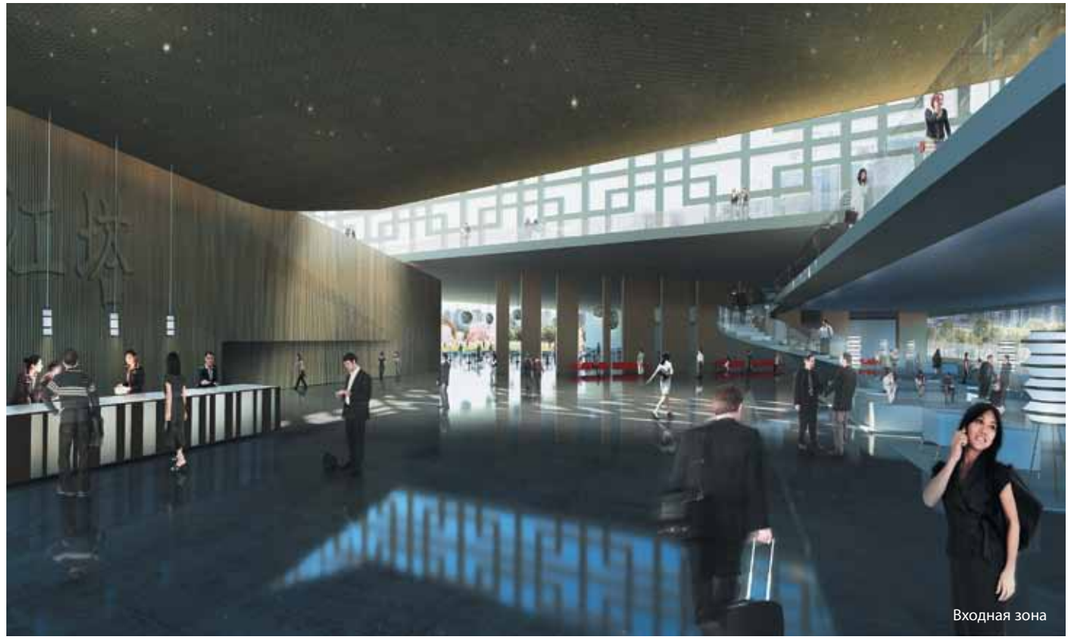
На первых двадцати этажах откроется принадлежащий одной из самых известных сетей в городе отель класса люкс. В нем будет обеспечен уровень комфорта высшей категории, способный удовлетворить вкусы разных клиентов за счет широкого выбора номеров.

Центральная часть башни отведена под офисы. Эти уровни задуманы как большие открытые пространства, своеобразные «фильтры», которые могут продемонстрировать всю ее «толщину». Помещения занимают несколько этажей и предназначены для проведения переговоров и конференций.

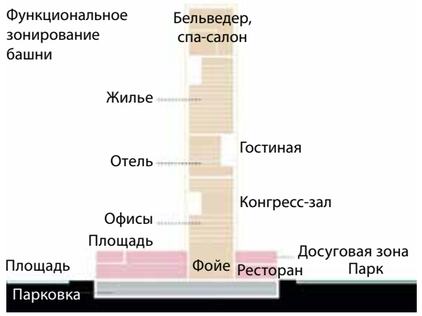
Жилье находится на верхних уровнях небоскреба, откуда открывается панорамный вид на город, и представляет собой квартиры класса люкс, отличающиеся уникальностью и непохожестью. Все они имеют большие площади, хотя могут слегка отличаться по размеру. Самые верхние этажи займут помещения для обслуживания здания и жильцов башни. Здесь разместятся комната отдыха и спа-салон, а на озелененной крыше дополнительно устроят бассейн, павильон и бельведер.

XIANG RIVER TOWER
Расположение: Чанша, Китай
Заказчик: информация засекречена
Тип: офисы, отель, жилье
Площадь застройки: 60 000 кв. м
Стадия: проектное предложение
Дата: 2013

Вертикальные схемы башни



Входная зона



Как и все современные небоскребы, Xiang River Tower проектируется с учетом экологических требований. Благодаря значительной высоте, внутри башни будет наблюдаться естественный перепад температуры, что создаст более высокую скорость прохождения потока воздуха, позволяя снизить потребность в искусственном охлаждении. Именно поэтому это здание можно считать примером устойчивого строительства. Такая стратегия схожа с принципом использования анемометрических вышек для охлаждения зданий – способом, позволяющим решать экологические проблемы. Кроме этого, в дополнение к явным признакам проектирования экологически чистого здания, таким как двойная фасадная система и применение естественной вентиляции, башня будет оснащена передовым комплексом систем инженерного оборудования, позволяющим существенно повысить его энергоэффективность. ■

RRC STUDIO
Архитектурное бюро RRC Studio активно работает во многих областях и создает проекты различного масштаба как внутри страны, так и за ее пределами. Спектр работ бюро включает в себя генеральное планирование городов, обустройство территорий, общественных и жилых зданий и т. д.
В 2007 году RRC заняло первое место в конкурсе «Жилье и офисы» (Viviendas y Oficinas), проводившемся в Сарагосе (Испания) в рамках «Экспо 2008». В 2008 году RRC Studio было упомянуто в международном конкурсе среди проектов планирования экологически устойчивого города, рассчитанного на 40 000 жителей и 40 000 рабочих мест, в Нордхавне, Копенгаген (Дания).
В 2012 году компания выиграла 1-й приз за проект средней школы в Берлинго (Италия).
В настоящее время RRC Studio работает над различными объектами недвижимости на Ближнем Востоке и в Юго-Восточной Азии, в частности разрабатывает масштабный многофункциональный проект с коммерческими и жилыми помещениями.
Руководитель студии – Ромоло Калабрезе (Милан, 1966 г. р.) окончил Политехнический университет Милана в 1998 году. Во время учебы проходил стажировку в архитектурной студии Aldo Rossi (Милан, Италия и Мюнхен, Германия) (1995–1997).
С 1997 по 1999 работал ассистентом профессора архитектурного проектирования в Политехническом университете Милана. В 1999 году основал бюро RRC Studio Architects в Милане (Италия).
Ромоло Калабрезе участвовал в нескольких архитектурных тендерах на проектирование и строительство общественных и частных зданий, жилых, коммерческих и спортивных центров.
Его работы были опубликованы в архитектурных журналах и большинстве газет. В 2008 году он создал площадку для офисных дебатов. Вдохновившись этим опытом, в 2011 году основал журнал STUDIO Architecture and Urbanism Magazine, который расширил границы дебатов до темы «Архитектура и современный город».
Работает и строит в национальных и международных масштабах, живет в Италии и Франции.

Process captured the industry's attention when Broad Group constructed T30, a 30-story hotel building in 15 days in Changsha, China, using pre-assembled components.

KONE UltraRope is a new carbon-fiber hoisting technology, the weight and bending advantages of which effectively double the distance an elevator can travel in a single shaft – to 1000m (1km).

The Bow, winner of the Best Tall Buildings Americas award, is both stunning as a form and functions well from an environmental and urban standpoint, especially in the context of a harsh northern climate. It serves as a rare example of an iconic design resulting from the most practical, yet creative, response to site constraints. The resolution of wind loading, light access, thermal comfort, and public space objectives has resulted in a solution that embodies synthesis but bears no hint of compromise.

The developers of The Shard, winner of the Best Tall Building Europe award, showed remarkable tenacity in bringing it to fruition. The level of determination to wring economic success and poetics out of the project while still supporting public life at street level was remarkable. Through more than a decade of design revisions and public inquiries, the project team was unwavering in its determination to do more than impose a tall building on a neglected but architecturally rich neighborhood. Their determination was to secure the future of the London Bridge Quarter district itself.

Sowwah Square, winner of the Best Tall Building Middle East & Africa award, stands out as consciously sustainable and warmly inviting, yet a formally disciplined project in a region where achieving such aims have historically proven difficult. The interdependent elements work together such that the project functions as an integrated machine. From sun-tracking shading devices to elevated lobbies with views of cool roofs and the sweep of the harbor, little seems to have been left out of the calculations. That a building in this climate could support as much glass as it does is a testament to the possibilities of well-orchestrated design. ■

HABITAT

Green8

(p. 74)

MATERIALS PROVIDED BY AGNIESZKA PREIBISZ, ARCHITECT AND PETER SANDHAUS, ARTIST-ARCHITECT

German architects Agnieszka Preibisz and Peter Sandhaus have unveiled a conceptual skyscraper project for Berlin with a twisted figure-of-eight structure that curves around elevated gardens and is held up by cables. Agnieszka Preibisz and Peter Sandhaus, who are both based in Berlin, developed this design to contribute to a new masterplan being put together for the eastern quarter of the city.

HARMONY WITH NATURE

While trying to answer the query of how and where to house, many modern families today are torn between the desire for a pulsating urban life and the craving for a lifestyle in harmony with nature.

Our identification with and our desire for a free and urban life style defined by short distances to work, excellent public transportation, and proximity to cultural and commercial amenities, does not need to end with the decision to start a family or with retirement from active professional life.

The unease with the global imperative of continued growth propagated by financial markets seems to be spreading. Confidence in industrial food production finds itself nowadays significantly eroded. At the same time also the mass production of organic and healthier food has its limits and fails to appease growing groups of customers. The longing for self-sustaining gardening and for knowing about the origins of what one is eating, are the most important reasons for the current boom in urban gardening.

As an integrative solution to this dilemma, the architects Agnieszka Preibisz and Peter Sandhaus are proposing project Green8 for a vertical garden city on Alexanderplatz in Berlin.Proposal for a vertical Garden City, a residential cooperative on Alexanderplatz, with apartments, working places and amenities for all generations: kindergarden, sport studios and senior care center. The cooperative is organized around the concept of vertical farming, with vegetarian food production taking place in the central atrium and the lung of the structure, enclosed in a transparent membrane instead of glass. Each family and apartment has their own garden at the door step, while enjoying the breathtaking view of the city.

"The state of society in the twenty-first century requires that we develop new visions for living in densely populated inner cities," explained Preibisz. "This process inherently triggers an essential confrontation of material and social values, and so there is a nascent yearning for an architecture that offers a high degree of potential for community." Describing the building as a "vertical garden city", the architects have planned a network of gardens and greenhouses that would slot into the two hollows of the figure-of-eight, intended to serve a growing desire among city dwellers for self-sustaining gardening.

Residences would be arranged to encourage neighbours to interact with one another, fostering a sense of community that the architects compare to social networks.

Current trends towards a 'sharing-spirit' and a new participation in the community life counteract the anonymity and isolation in the metropolis. While in social networking, the border between the public and the private spheres is being renegotiated, architecture and urban planning of cities such as Berlin lags behind these significant social and demographic changes.

STRUCTURE

The residential high-rise structure is based on a business model of a cooperative collective. It envisions a self-determined community encompassing all generations. The building will have 42 floors and a height of 150 m About 15 thousand m^2 planned to take on residential premises and objects of social and domestic purposes. Office and workspaces will take about 5 thousand m^2, and about 7 thousand m^2 will accommodate gardens and greenhouses.

With its generous greenhouse and community spaces Green8 offers to organize not only the food production but also the sport and leisure activities, as well as the care of children and seniors.

Green8 reflects a dream come true: living in the centre of the city with breathtaking panorama views, while having one's own vegetable garden at one's doorstep.

Thanks to its cooperative and integrative principles, this housing concept is economically efficient. This form of home ownership is free from many constraints of real estate or land speculation, and the long term costs are lower than those of conventional homes.

Green8 is not a house. It is a life form. The objective of this conceptual proposal for a residential skyscraper with a vertical garden is to combine the three pillars of Sustainability: the Environmental, the Social and the Economic, and bring them to a new balance.

BUILDING STRUCTURE

The stability of the twisted Figure-of Eight form of Green8 is reinforced with core elements in concrete on its inside, containing the escape staircases and building appliances.

On the outside steel cables additionally support the building.

'These structural measures lead to a reduction of the footprint of the building on the ground' says Peter Sandhaus-'and allow the graceful and weightless almost dancing impression of the building to fully unfold its potential'.

Currently, the architects consult with the engineering experts to assess the viability of the design.

BUILDING FORM

The 8 is a symbol of a never ending metabolic cycle. The resources do not get exhausted but are kept in a permanent cycle.

As an urban sculpture, Green8 is a manifestation of the organic sustainability and of the minimal footprint.

Sunlight simulations show that a rotation of the building would lead to an optimized sun exposure of the gardens throughout the year.

Depending on the selection of the crops to be grown, several harvests could be possible within a year.

FACADE

The facades of apartments in the twisting tube-like elements are conceived as steel-glass facades, with windows opening for ventilation behind an integrated exterior sun- and sound-protection.

The core elements in concrete and the floor slabs will be thermally active. Through these measures, and taking into consideration the climactic conditions in the planned location, the city of Berlin, the wasteful energy consumption through cooling will be eliminated, despite the large panorama glazing.

Shell like frame out of steel mesh elements provides the stability of the light weight construction for the green house facade.

The individual fields of the mesh are conceived out of ETFE-Membrane Cushions.

This Teflon-like material has several advantages as compared to glass:

– highly transparent and UV permeable

– self-cleaning and extremely durable

– high stability: the 5×5 m cushion fields are easy to produce and firmly install

– light weight

– low level of primary energy needed for the production

The areas of the cushion membrane needed to provide shade for the green house will be simply imprinted with a reflecting color tint. An innovative flexible steering system will enable to control the amount of sunlight and shade according to the movement and intensity of the sun, and to the requirements inside of the green house.

The façade of the green house will be ventilated at the edges of the membrane shell.

Through the natural chimney effect the cold air in the green house will be sucked in on the ground level, will absorb the heat inside and escape on the top levels.

At the same time, heat exchange devices will deployed to gain energy from this process. No mechanical ventilation or cooling will be needed.

'The intention of the design is to achieve an optimal level of integration, self-sufficiency and internal equilibrium in the building' – says Agnieszka Preibisz.

Architect Agnieszka Preibisz laid the foundation for the development of her own architectural and project management office with her excellent education at the renowned AAP (Cornell College of Architecture, Art and Planning) in Ithaca, N.Y. USA. 1991–2002 she was employed as an Architect in acclaimed German architectural offices such as Prof. Kleihues, gmp Architekten in Berlin and RKW in Düsseldorf. Ms Preibisz founded Apcon in 2011. Apcon enables Ms. Preibisz an integrative participation in the planning and management of projects combining involvement in all the phases of the development, planning and building process. She works on projects involving a network of experts and cooperation partners.

Peter Sandhaus is an artist-architect and graduated engineer-architect. He studied architecture, art history and philosophy in Germany and India, has a degree in structural engineering of the Technical University of Berlin. Peter Sandhaus founded the bureau of architecture and art SANDHAUS BAUKUNST. He considers himself an architect for 50%, and for 60% – an artist. ■

DESIGN

'Canyon' of Fort Lauderdale

(p.78)

MATERIALS PROVIDED BY BIG

BIG (Bjarke Ingels Group) and Cymbal Development transform a portion of Fort Lauderdale's New River front into a vibrant addition for the local community and future residents of the city. The mixed-use development, Marina Lofts, in downtown Fort Lauderdale seeks to infuse a currently run-down stretch along the New River with a thriving pedestrian friendly public space thereby attracting new residents into its development.

Situated in an industrial gap in Fort Lauderdale's Riverwalk Park, Marina Lofts stitches together the final arm of the currently fragmented public space along the New River. This mixed-use development in downtown Fort Lauderdale seeks to infuse a currently run-down stretch along the New River with a thriving pedestrian friendly public space thereby attracting new residents into its development. This includes a local favorite, the historic Rain Tree, which will be moved to its own brand new park created by the project. Currently, the site is occupied by a 250-boat garage, which allows boats to pull in directly off New River. Totaling 1,000 rental apartments, 10,000 sq ft of restaurants and 25,000 sq ft of retail, the mixed-use development is broken into three phases.

The Florida-based developer, Asi Cymbal, expects the project to have a positive long-term economic benefit to the city and local community of Fort Lauderdale."Our intent here is to create a world class project that will serve as a model for architecture, creativity, and energy along the most prime stretch of waterfront in Downtown Fort Lauderdale," says Asi Cymbal, owner of Cymbal Development. Marina Lofts is a dynamic project that will invigorate the long-neglected south side of the New River, as well as provide affordable luxury housing for our growing creative class, while introducing iconic design by world-renowned architect, Bjarke Ingels, to our community.

The architecture is characterized by white modular rectangular units with deep patios that provide daylighting without too much direct light. The two larger towers appear to be split apart from each other with lush hanging gardens growing in between as though the vegetation actually caused the crack.

Mixed retail, restaurants and other entertainment thrive at the base and encourage residents and visitors to walk along the river, use the water taxis or their own boat, which they can park on site in a slip. BIG carefully studied the site and the surrounding neighbors and is working to retain view sheds of the river and ocean.

This 'canyon' is a conceptual response to a compelling urban issue – how to create a dense urban area while opening up the neighborhood to the existing strengths of the site, namely boating activities, greenery and ideal waterscapes. The uneven residential towers with Lego-like pieces built out of each to create an opening that expands public access to the New River are considered by some as an important stamp of innovative design in floundering downtown Fort Lauderdale. The two initial housing towers are treated as one continuous building "breaking" at the center to form an opening which allows maximum pedestrian activity to flow between the buildings and extends the city life out to the waterfront. In order to the keep the privacy of the towers inhabitants, their windows are staggered. The buildings facades are made of white modular rectangular elements with deep jutting balconies which provide natural light indoors without direct sunlight.

The form of the larger of the two towers bends to preserve views of the canal from nearby residential projects. The units themselves are conceived as individual "bricks" that create a running bond pattern across the towers' surfaces. Although they might appear to be structural, the "bricks" don't represent an actual construction technique and will not be prefab.

As both towers ascend, the crack between them allows for flexibility in apartment sizes by liberating the units from the structural grid and enabling living spaces to scale up or down as desired. The solid infill of the void maintains privacy between units by directing the windows in carefully-orchestrated locations.

To further break down the larger tower's massing, certain "bricks" are subtracted at the bend to create a large "crack," permitting public access to the waterfront. The crack also allows the designers to create terraces on the rooftops of some units so "it becomes a very social space, where you can interact across terraces with neighbors," explained Kai-Uwe Bergmann. He mentioned that it echoes a similar design strategy used by BIG for the VM Houses in Copenhagen, which feature jutting triangular balconies. The terraces at Marina Lofts will be planted with lush greenery, but the sides of the units facing into the crack will be solid to maintain privacy. Instead, the units will command views of the canal and the city from the opposite side.

Developer Cymbal explains: "We are reimagining architecture, raising the bar on what is possible, with stunning views in every unit … every unit has a balcony. … The idea is that the building broke apart to allow access to the river, as if pieces of the buildings fell to become the bricks along the riverfront to form a pedestrian bridge along the New River to continue the Riverwalk. It will seem as if some bricks created an opening to allow boats to come out from the water and can traverse the building to the boat storage in the back."

The site of the third tower is currently home to a 250-boat garage which remains intact as the future tower straddles the entrance to the garage door allowing boats to easily pass back and forth beneath its legs. The existing water taxi station is augmented with shading structures and permanent pavilions to further activate the connection across the river. The waterfront will be a lushly landscaped park with ample setbacks from the water to provide more public space for the South Riverwalk. A cafe, retail and commercial spaces will occupy the lower levels of the building, bringing life and activity to the neighborhood. In a city where daily life shifts seamlessly between water and land, Marina Lofts augments both, contributing to the vibrant density and connected public space along the New River.

BIG's design frames the space with a generous public promenade bounded towards south by a 3-phase series of residential towers, creating public life along the riverfront, while maintaining the existing marine activities of Fort Lauderdale. The two initial housing towers are treated as one continuous building "breaking" at the center to form an opening which allows maximum pedestrian activity to flow between the buildings and extends the city life out to the waterfront.

Situated in an industrial gap in Fort Lauderdale's Riverwalk park, Marina Lofts stitches together the final arm of the currently fragmented public space along the New River.

"The project fills the gap in the waterfront of Downtown Fort Lauderdale stitching the existing fragments of promenade together into a new and revitalized river park adding density and life to the scenic setting. The two buildings are torn open to form a cave and a canyon – opening up for the neighborhood to reach the river. A design made through subtraction rather than addition." Bjarke Ingels, Founding Partner, BIG.

Eventually, the complex will house 998 units, most between $1,100 and $2,000 per month, with potential boat storage in the marina area. The project price tag will be in the $130–140 million range, creating about 600 local jobs and generating more than $100 million in revenue to the city and the county. It is founded on affordable luxury, but will bring a 20,000-square-foot pedestrian plaza to the downtown area. Asi is excited: "Imagine hopping on the Water Taxi to jump to Las Olas for work or shopping, catching a show at the Broward Center and then going home."

The buildings of Marina Loft were designed with the goal of balancing development with the local environment. A LEED certified project, Marina Lofts will have green roofs and living walls that will help create additional green space for our downtown.

Stormwater will be contained onsite and treated before returning to the water system rather than letting it flow into the adjacent river. The developers are also working with arborists to preserve 75 mature trees through relocation. This includes a local favorite, the historic Rain Tree, which will be moved to its own brand new park created by the project.

Marina Lofts activates the Riverwalk District as an urban center of Broward County, providing a unique South Florida destination that strikes a balance between iconic architecture, the natural environment, urbanism and architecture.

The complex promotes a true multi-user community emphasizing bicyclists, boaters, pedestrians and Water Taxi riders as priority users and aims to further the Downtown's goal of encouraging alternatives to the automobile.

Marina Lofts will act as the special piece of the puzzle that will unite the waterfront, hopefully giving it the kickstart that it really needs and considered by some as an important stamp of innovative design in floundering downtown Fort Lauderdale. ■

PROJECTS

Lacy Carving Box

(p. 84)

MATERIALS PROVIDED BY RRC STUDIO

Changsha is the capital city of Hunan, in south-central China, located on the lower reaches of Xiang River, a branch of the Yangtze River. From very

ancient time Changsha was a highly populated major commercial hub. Under the Qing dynasty, from 1664, it was the capital of Hunan province, and a major rice market. It was a scene of major battles in the Sino-Japanese War of 1937–45 and was significantly destroyed. Rebuilt since 1949, the city is now a major interior port and a commercial and industrial center under fast-growing heavy development.
Its national industrial-technological park also attracts a huge amount of foreign investment. All this caused the necessity of the construction of residential and office buildings. Milan-based RRC Studio's latest undertaking, the Xiang River Tower, which will be an office and residential project in Changsha. Located near the Xiang River in a prime area of the city's downtown, the tower will dominate the city's horizon and bear a strong presence on the skyline.

The east riverbank of the Xiang River has from some time undergone a remarkable transformation with the establishment of several buildings with different functional purpose, which have deeply modified its structure.

The west riverbank, featuring a front towards the water destined to an urban linear park, on the contrary, has not yet had a great expansion.

The development of the plot, 23.000 sqm approximately, located at the edge of the second bridge on the Xiang River, at the crossing between two wide arterial roads, Yuelu Avenue and Xiangyue Road, has a primary role for the urban growth of the west border.

Within this context the Xiang River Tower complex is proposed as a new landmark, representative cornerstone of the future settlement.

The tower comes from the idea of Chinese boxes contained in a single bigger box: each of them, stacked on top of another, include several programs. The decorated skin of the cladding hides within itself a building anchored to its central structural core and its different "boxes" containing various functions. The reference from which the concept has been generated is the one of the Chinese boxes, i.e. the skin is a bigger container within which the other boxes are included overlapping, creating an inner volumetry, variable and complex.

On a urban level the project is set as a broad slab filled with different elements which create diverse landscapes and several places around the building. These spaces define the relationship interface of the complex with the elements composing the city such as the roads, the river and the green areas.

The Tower plaza, open towards the river, is paved with local stone and presents two wide surfaces: the first one, toward the river, is an equipped designed area with benches and local trees of medium high trunks and pink flowers which establish a relation with the river through some high points and at the same time protect the square and its noise system of the crowded Xiangyue Road; the second one is a big stretch of water, aesthetically pleasing and functionally destined to rainwater harvesting in order to its reuse within the complex.

Located at the north end of the complex is the Trees Garden, a paved urban space characterized by a thick arboreal pattern to define shady spaces where pedestrians, as in Chinese custom, can carry out recreative open door activities.

The compositional concept is based on the juxtaposition of two different elements: the base and the tower. The base, forming the solid "root" of the skyscraper, offers an articulated form capable of defining, thanks to its development, different shapes of the outdoor spaces ready to easily accommodate and distributes the numerous functions that are contained within.

The volume of the tower is placed in contrast with its base, posing as a pure and defined volume, of harmonious proportions, where the facade stands out as a protagonist. The golden facade design is the result of the study and contamination of some distinctive geometries of the chinese tradition which are reproduce and reinterpreted as a structural element of the glass surface.

The tower stands 272 meters tall, for a total of 73 floors, of which the first three are included in the base, hosting residences, offices, hotel, retail and leisure spaces.

From the Tower plaza, inviting and accompanying the user to the main entrance with its form, there is access to the hall of the complex, core of the system, main element for the distribution of the visitors' fluxes.

The hall is presented as a double height space, warm and striking, and it is characterized by an important panel wall made of local wood and a measured mix of contemporaneity and tradition.

In the choice of materials and design solutions shines through the continuous reference to place and history, example of this are the reinterpretation in a contemporary key of the traditional elements such as lanterns and counter.

The base, apart from containing the Main hall, the different halls and the several services dedicated to the residences and offices, is mainly destinated to the commercial functions and to a congress centre. The base concludes with a Urban Belvedere on the roof which is configured as a ample equipped square where different activities are present for leisure and relax in a direct visual relationship with the river.

From the Main hall, towards the minor halls destined to the different functions, through wide lifts, different floors are accessed where, depending on the area and the exposition, some common functions are present, such as lounge, restaurants, recreational areas and wintergardens.

The first twenty floors are destined to host a luxury hotel, one among the most renowned of the city, provided with all facilities expected for the highest category hotel capable to satisfy the different tastes of its future users thanks to a wide choice of rooms.

The central part of the tower is destined to the offices. These levels are conceived as wide open spaces, filters able to show the "thickness" of the tower in its entirety and presenting several special boardrooms at different heights, as meeting or congress rooms.

The residential floors occupy the higher part of the tower and are conceived as luxury dwellings, each unique and different, with a panoramic view dominating the city's skyline. The residential units vary in their size, but the vocation to luxury of the complex has brought to the development of wide ones. On the top levels, amenity floors joining the three programs will include recreation rooms and a Spa; additional amenities are on the landscaped roof of the tower and include a pool, a pavilion and a Belvedere.

Like all modern skyscrapers the Xiang River Tower is designed taking into consideration ecological requirements.

The Xiang River Tower, due to its considerable height, has a natural temperature gradient and a higher wind speed, which reduce the need for cooling, and thus can be considered an example of sustainable building. This strategy recalls using wind towers to cool buildings, an ecological way to deal with future environmental needs.

Moreover, in addition to visible sustainable design strategies such as the double skin and the use of natural ventilation, the tower will integrate advanced building systems for energy efficiency.

Xiang River Tower
Location: Changsha, China
Client: Private
Type: Office, Hospitality, Residential
Built-up area: 60.000 sqm – 650.000 sqft
Date: 2013

ABOUT RRC STUDIO

RRC Studio Architects is active in many fields of architecture in its various scales, working in national and international projects. Intervention areas concern masterplans, public spaces, public buildings, housing, etc.

In these years RRC has been designing urban plans, waterfronts, institutional buildings, sports facilities, school centers, commercial spaces, housing and other.

In 2007 RRC won the 1st PRIZE of the competition 'Viviendas y Oficinas' in Zaragoza (E) within the Expo '08. In 2008 RRC Studio got mentioned in the international competition for the urban planning of a sustainable city that could host up to 40,000 residents and 40,000 workers in Nordhavnen, Copenhagen (DK).

In 2012 the office won the 1st PRIZE for the design of an secondary school at Berlingo (IT).

Currently RRC Studio is working on different real estate developments in the Middle East and in Southeast Asia. In particular the office is planning large-scale multipurpose interventions with services, commercial and residential functions.

Romolo Calabrese (Milan, 1966) graduated at Politecnico of Milan in 1998.

From 1997 to 1999 he was assistant professor of Architectural Design at Politecnico of Milan. During his studies, he made his apprenticeship at Aldo Rossi Studio, in Milan (IT), Munchen (D) (1995-1997). In 1999 he founded RRC Studio Architects in Milan (IT).

He participated in several architectural competitions for the design and the construction of public and private buildings, residential, commercial and sport centers.

His projects have been published on architectural magazines and major newspapers. In 2008 he created a platform that promotes a cultural debate within the office.

From that experience, in 2011, he launched "STUDIO Architecture and Urbanism magazine" expanding the borders of the debate on the theme of architecture and contemporary city.

He works and builds in national and international contexts.

He lives between Italy and France ■

CONCEPT

Mirages of Sou Fujimoto

(p. *90*)

MATERIALS PROVIDED BY SOU FUJIMOTO ARCHITECTS

Japanese architect Sou Fujimoto has recently released images of a conceptual masterplan for an anonymous Middle Eastern city comprising tapering towers of stacked arches cooled by waterfalls.
Fujimoto's two proposals include a complex at the end of a large avenue in the city made up of multiple towers with waterfalls flowing from top to bottom, and a low-level retail zone interspersed with towers that would be built along the shore.
At an urban scale, the shapes of the buildings are inspired by the harmonious silhouette of traditional Bedouin tents, anchoring the whole site in this city's cultural heritage. From afar, the volumes are perceived as a gateway connecting the Corniche Sea with the mainland while having an overall mirage-like appearance.

SOUK MIRAGE/ PARTICLES OF LIGHT

The proposal, titled Souk Mirage / Particles of Light, would comprise structural arches stacked on top of each other to create an undulating topology incorporating retail, residential and office spaces, exhibition areas, a community centre, and a series of public courtyards and atriums surrounded by a green plaza.

This project for the new retail zone seeks to participate fully within the larger master plan of a City. Located between Education City and Financial Center, the site plays a critical role in the future development of this city.

Reinterpreting the vibrant atmosphere and lively qualities of the traditional market, as well as the inherent beauty of vernacular Islamic architecture, the project is composed of a modular structural system of arches. Different sizes of arch modules (2.5, 5 and 10 meters) are stacked one on top of another depending on the program needs and the kind of space required.

This simple system organizes the entire site, providing unity and coherence, as well as a unique and timeless architectural expression.

OUTLOOK TOWER

This project for an Outlook Tower and water plaza seeks to participate fully within the larger master plan of a City.

In order to activate this grand plan as well as to create a new landmark in the city, the project proposes multiple transparent towers, visible from far around and offering views on the most prominent historical and contemporary landmarks in this city.

Reinterpreting the inherent beauty of vernacular Islamic architecture, the project is composed of a modular structural system of arches. Different sizes of arch modules (3, 6 and 12 meters) are stacked one on top of another depending on the program needs and the kind of space required. The Outlook Tower would create a distinctive presence on the skyline as seen from the adjacent waterfront, with several towers containing a series of waterfalls that descend through the structure to produce a cooling mist. There will be a wide range waterfalls; smaller on the top to prevent any interference from the wind and larger towards the bottom to create evaporative cooling. By incorporating multiple waterfalls, instead of one large, different mountains of water are created feeding the avenue. "This simple system organizes the entire site, providing unity and coherence, as well as a unique and timeless architectural expression," the architects said of the modular construction.

By combining the transparency of the arches with the stepping waterfalls, a dynamic play with light and shadow is created, while appearing mirage-like.

The towers would become increasingly transparent towards the top as the density of the arches decreases.

Located at the beginning/end of the avenue, Education City and Financial Center in between, the site plays a critical role in the future development of this city.

ECOLOGY

The project provides and the environmental component: the complex will be fitted with solar panels installed on the roof and a vertical funnel helps the descending air into space below. This circulation of air conveys a cooling breeze, which is important in the hot climate of the Middle East. Eaves, as well as ventilated chambers prevent solar radiation coming directly into the building. The area is cooled by water recirculation circuit. Breezes passing through give the building a cooling effect, at the same time cleaning internal air. South facing facades takes indirectly the natural light into indoor spaces as much as possible without being overheated.

Sou Fujimoto is a Japanese architect. Sou Fujimoto was born in Hokkaido, Japan in 1971 and studied architecture at Tokyo University. He established Sou Fujimoto Architects in Tokyo in 2000. The firm has designed many private residences in Japan and Europe, including the Primitive Future House in Basel, Switzerland (2008). In 2010, Fujimoto completed in Tokyo the Musashino Art University Museum and Library, based on the concept of a single spiral bookshelf, and the "1325" store for Issey Miyake. Also in 2010 he designed the exhibition space for the acclaimed exhibition of Japanese fashion "Future Beauty," at the Barbican Gallery in London. Noted for delicate light structures and permeable enclosures, Fujimoto designed several houses, and in 2013, was selected to design the temporary Serpentine Gallery pavilion in London.

The firm has garnered many awards, including the 2010 Rice Design Alliance Prize; the 2009 Wallpaper magazine Design Awards for the Best New Private House (for Final Wooden House, Kamakura, Japan); and the winning award in the 2008 World Architectural Festival, Private House Category (also for Final Wooden House). The work of the firm was represented at the Venice Architecture Biennale in 2010.

Fujimoto is currently Professor at the Illinois Institute of Technology. His 2008 book Primitive Future was the year's best-selling architecture book. ■

BUSINESS CARD

MERO – Best Construction Solutions

(p. *94*)

MATERIALS PROVIDED BY ALUTERRA SK LTD

Buildings constructed by MERO have always been in the public eye.
From the beginnings, the classical MERO Space Frame System, consisting of members and nodes, MERO went on to hybrid constructions incorporating members, nodes and cables and to a progressive integration of the cladding as a supporting element of the building.
Using such systems, have been built many buildings including the Stadium in Split, the Globe Arena in Stockholm, the glazed hall at Leipzig Trade Fair and Berlin Central Station in Germany.

Today there are projects like Ferrari World Abu Dhabi (Yas Island) and the Heydar Aliyev Cultural Center in Baku, Azerbaijan, designed by Zaha Hadid Architects, as well as the Shaktar Stadium in Donetsk and the AFI Mall in Moscow. And now we introduce the company's other bright projects – ION Orchard Shopping Mall in Singapore, the International Trade Center Eurovea in Bratislava.

ION ORCHARD, SINGAPORE

Due to its situation in a top location on Orchard Road, the most prestigious shopping mile in Singapore, and to its unique design, the Orchard Turn project is a landmark of urban development. Covering an area of 125,000 m², it is house shops, an art gallery, and a 218 m apartment tower with luxury condominiums and a leisure center.

On the last free site on Orchard Road, the Orchard Turn building was erected on a floor space of 21.700 m², totally covering over the bustling subway station Orchard Road and providing underground connections between the surrounding buildings.

INTERNATIONAL TRADE CENTER EUROVEA, BRATISLAVA

The facade of the office building was constructed as a free-form geometry. Here, also, the block node system was chosen for the steel substructure. In order to realize the challenging geometry in keeping with the architectural requirements, MERO-TSK used the so-called star node, an innovation developed in-house. The triangular insulated glass panels are 3.5 m high. They are fixed with rotules which were especially designed for this project.

KAIA King Adulaziz Airport in Jeddah, Saudi Arabia and Kaluzhskiy Cement Plant, Russia

MERO-TSK's most spectacular project currently on progress is the new KAIA King Adulaziz Airport in Jeddah, Saudi Arabia.

Most lately MERO-TSK has been awarded the contract by the Russian company KCZ (Kaluzhskiy Cement Plant) for the erection of two storage buildings for the cement plant in Kaluga region. The plant, which is being built in the green-field around 300 km southwest of Moscow, will be the biggest cement plant in Europe, with a capacity of 8,500 tons per day.

Both buildings have together a roof surface of approx. 96,000 sq.m and are erected in the MERO-typical space frame system (KK-System).

MERO-TSK is responsible for the static calculation, the design, the production, and the supervision of the supporting structure, as well as the trapezoidal sheet metal roofing.

Delivery of the first components will be starting already 3 months after signing of the contract. The completion date for both buildings is planned for July 2014.

MERO is also your reliable partner for Airport Technique (Dock Systems), Floor Systems, Exhibit Systems and Metal Ceilings.

Backed by decades of experience and our own production facilities