

Best Tall Buildings 2011

CTBUH International Award Winning Projects






Edited by Antony Wood

Council on Tall Buildings and Urban Habitat

ROUTLEDGE

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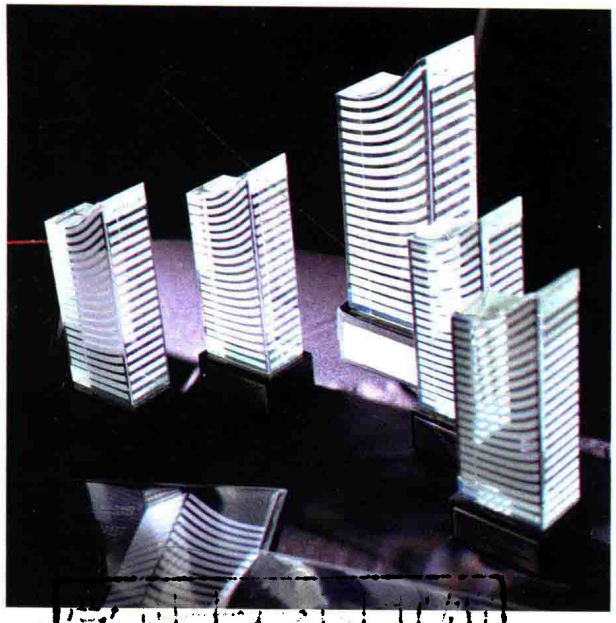

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Council on Tall Buildings and Urban Habitat
S.R. Crown Hall
Illinois Institute of Technology
3360 South State Street
Chicago, IL 60616
Phone: +1 (312) 567-3487
Fax: +1 (312) 567-3820
Email: info@ctbuh.org
http://www.ctbuh.org

Contents

Best Tall Building Europe

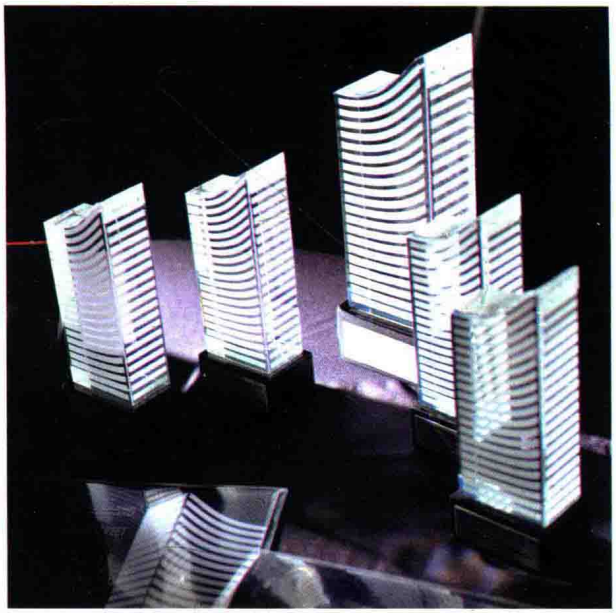
Best Tall Building Middle East & Africa

Lifetime Achievement Awards

Awards & CTBUH Information

Best TALL Buildings 2011:

CTBUH International Award Winning Projects



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The CTBUH would like to thank all the organizations who submitted their projects for consideration in the 2011 awards program.

We would also like to thank our 2011 Awards Committee for volunteering their time and efforts in deliberating this year's winners.

Contents

Best Tall Building Europe

Best Tall Building Middle East & Africa

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Awards & CTBUH Information

Foreword

I am honored to be the invited 2011 Awards Chair and, with a record-breaking number of submissions, feel encouraged by the depth and variety of projects that were submitted this year. The jury considered the quality of design ideas and execution of every submission in detail. However, projects that respond to their cultural and environmental context were, with a notable consensus, at the forefront of our evaluation.

In 2009 the world witnessed a major shift in the history of human population—we became primarily an urban species. Furthermore, the United Nations predicts that by 2050, 80% of the earth's population will live in cities. While concentration of people and amenities can reduce transportation emissions and breed social diversity, there are still significant environmental concerns that need to be considered. Air pollution, temperature rises and a growing demand for natural resources all increasingly require our attention. We are currently exceeding our planet's carrying capacity and must find a way to successfully live and sustainably grow within the earth's resource base. As we design buildings for the future, we have an obligation to address all of these concerns.

The push towards urbanism bodes well for our overall emissions, since supplying basic services, like fresh water and electricity, to a large number of people spread over a smaller area is fundamentally more efficient. Sharing a common infrastructure is the most promising solution; however, we must understand that successful high-density, efficient communities need access to both social and natural resources. As we continue to build dense urban environments, tall buildings will clearly be part of the solution.

Conversely, I believe that tall buildings can also disconnect their inhabitants from the natural world, threatening the occupants' mental, physical, and spiritual health. There is therefore a great need for the design of tall buildings to address people's well-being. Our natural inclination towards environments that embrace nature has spurred a growing body of research that supports the idea of biophilia—a term coined by E.O. Wilson which explains that as a species, humans are still powerfully responsive to nature's forms, processes and patterns. Achieving this objective is, for me, the most compelling challenge for high-rise designers.

Highlighted by the prominence of its beautiful skin, Eight Spruce Street serves as an example of exemplary urban design by attracting a tremendous number of new residents to a largely under-inhabited area of Manhattan. I believe that people are drawn to this façade because it looks like a naturally occurring form—what I would call biomimetic. The way the skin catches light makes it look less like artifice and more like an object shaped by wind or water, i.e., by nature.

Left: Americas Winner Eight Spruce Street, New York City; its organic, rippling façade is reminiscent of a naturally occurring form
Opposite: Europe Winner KfW Westarkade, Frankfurt; its design tackles the widespread effects of excessive energy usage

The bay windows also provide views stretching across river-ways and waterfront landscape, enhancing a connection to the surrounding environment.

Another interesting example is HL23, which evokes themes of biophilia through its design. The building is situated on a tiny footprint interwoven with New York City's newly opened High Line, a culturally important urban park in which industrial pathways have been repurposed with native plantings. The building's elegant, well-conceived design exploits primary views out to this miraculous elevated ribbon park.

Another project of note from this year's Awards is The Hansar Tower in Bangkok. At first glance the tower seems fairly conventional, but with further analysis it is clear that the designers are interested in how the inhabitants of the high rise connect with the natural world—both in the public spaces of the base and in the terraces throughout the tower.

Finally, while the KfW Westarkade in Frankfurt is a beautiful composition, it also tackles the widespread effects of excessive energy usage by using prevailing winds and pressure differentials to induce natural air flow. By incorporating floor-to-ceiling glass, justified by the use of a double layered façade, this building opens itself to an essential relationship with nature. As we design buildings, we need environmental theory to be integrated in built work, producing quantitative results that can be evaluated and improved upon. KfW Westarkade is profoundly important for this accomplishment and proves that thoughtful leadership in environmental design can, in fact, enhance the overall beauty of the architecture.

On behalf of CTBUH I would like to thank His Excellency Mohamed Ali Alabbar, Gordon Gill, Peter Murray, Werner Sobek and Antony Wood for being a part of the 2011 Awards Committee. I would also

like to thank Steven Henry, Publications Coordinator and CTBUH Awards program manager , and Rachel Isacoff, my Awards Committee support within Cook+Fox, for their continued effort organizing the awards process.

It has been a pleasure to take an in-depth look at these projects and work with the Awards Committee. I am encouraged by the extent to which the submissions demonstrate an extraordinary quality of design and a skillful connection to nature. Based on the pressing importance of environmental consideration in architectural design, I am optimistic that future submissions will emphasize technological and aesthetic responses to the constantly changing natural and built environment. While resource management and climate change are pressing concerns, we must also address the health and productivity of city dwellers. My greatest aspiration is that in designing for the significant challenge of a rapidly urbanizing world, we never forget the individual and their health in mind, body and spirit.

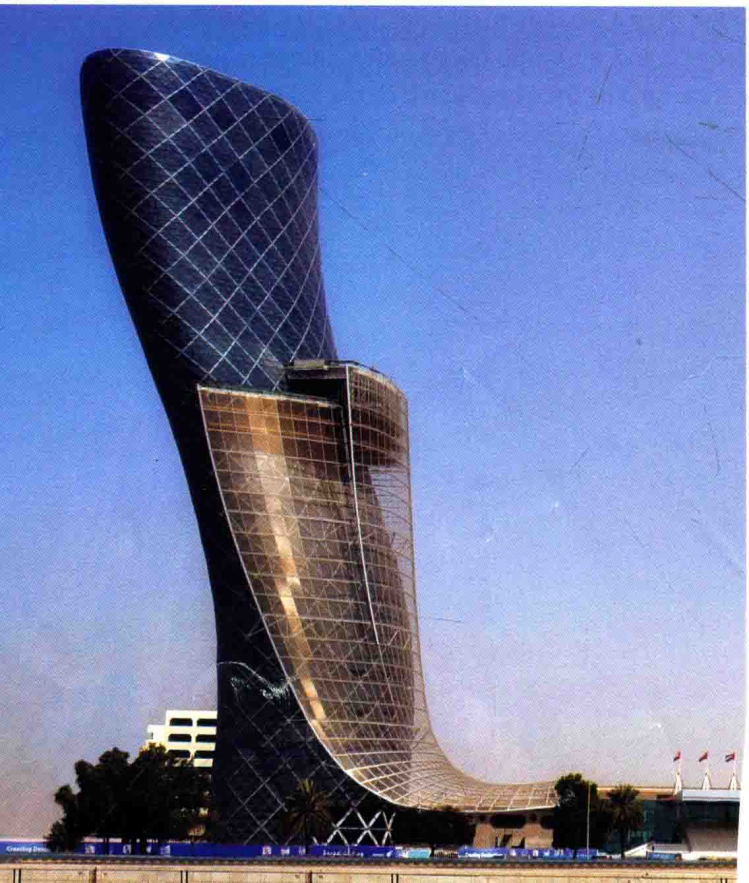
Richard Cook
Awards Committee Chair 2011
Cook+Fox Architects
New York, USA

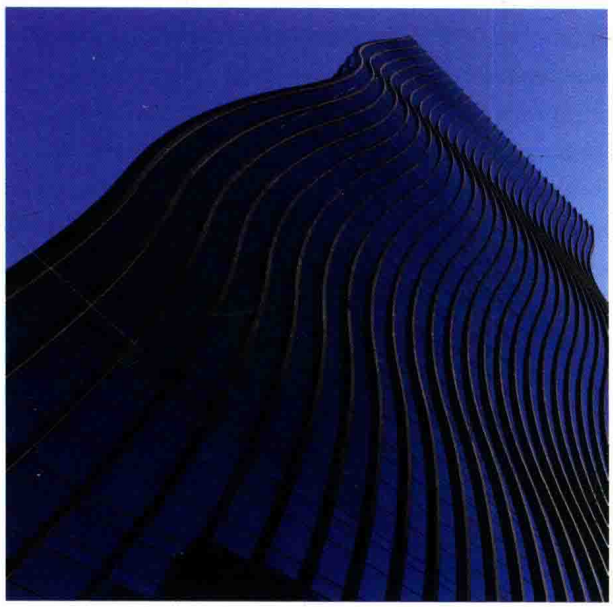
Introduction

Undoubtedly, viewing the projects in this book, it has been another spectacular year for skyscraper design and construction. Perhaps more than any year previous, there is a level of design ingenuity evidenced in these pages that suggests a significant amount of experimentation is taking place within the typology across myriad aspects: form-finding, façade treatment, materiality, internal communal spaces and strategies for natural ventilation to name but a few. Although it may be presumptuous to draw conclusions based solely on the projects submitted for consideration in a single year, there are nonetheless a number of themes evident in these projects which are worthy of notice.

The first of these trends is that, clearly, the exploration of the sculptural-iconic skyscraper form is far from dead. This is perhaps most spectacularly evidenced by the leaning, daring, organically-bulging form that is Capital Gate in Abu Dhabi, but it is also evident in the HL23 Building, New York; the GT Tower, Seoul; and the Bella Sky Towers, Copenhagen. The quest for ever-more expressive building shapes, enabled partly through increased connectivity between computer-modeling software and the building element fabrication process, is still with us. In the case of Americas Award winner Eight Spruce Street, the organic, rippling effect is confined to the façade zone rather than the overall building form, but creates a spectacular effect nonetheless.

On the other hand we have a set of projects which, partly through their significant height, are no less iconic in presence, but rely more on a subtle consistency of a single, elemental form rather than a changing organic differentiation. Supreme among them is the Asia & Australasia award winner Guangzhou International Finance Center; closely followed by



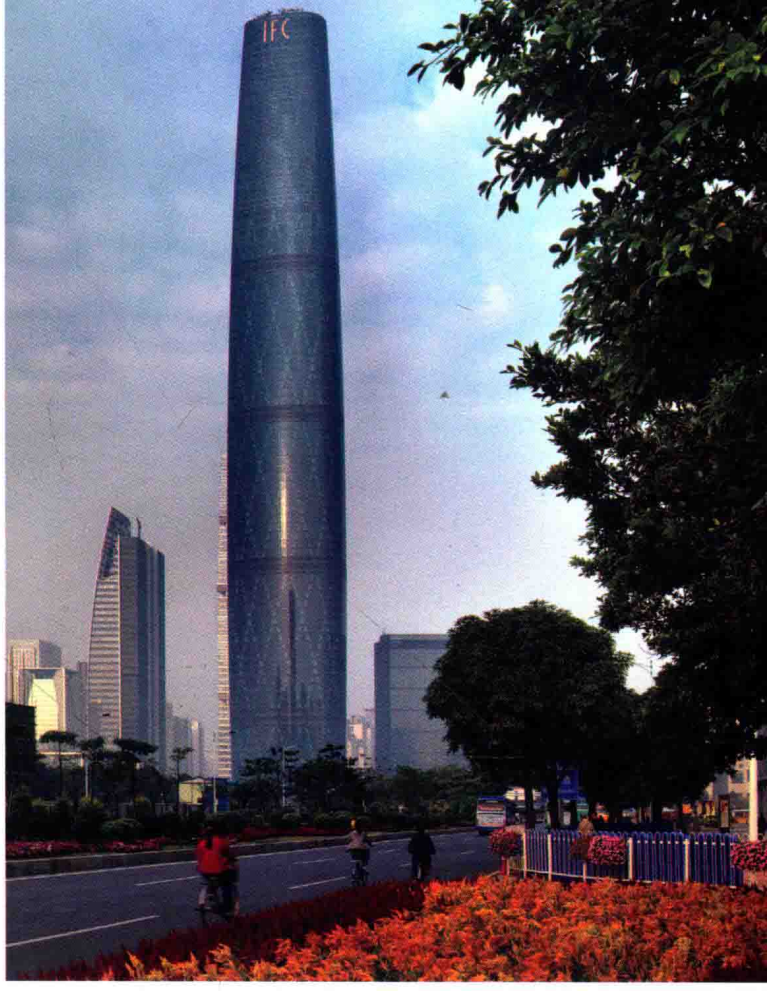


Left: Middle East & Africa Nominee Capital Gate, Abu Dhabi; its leaning, daring form suggests that the quest for the sculptural-iconic tall building is far from dead
Right: Asia & Australasia Nominee GT Tower, Seoul; another example of experimentation with sculptural-iconic skyscraper form

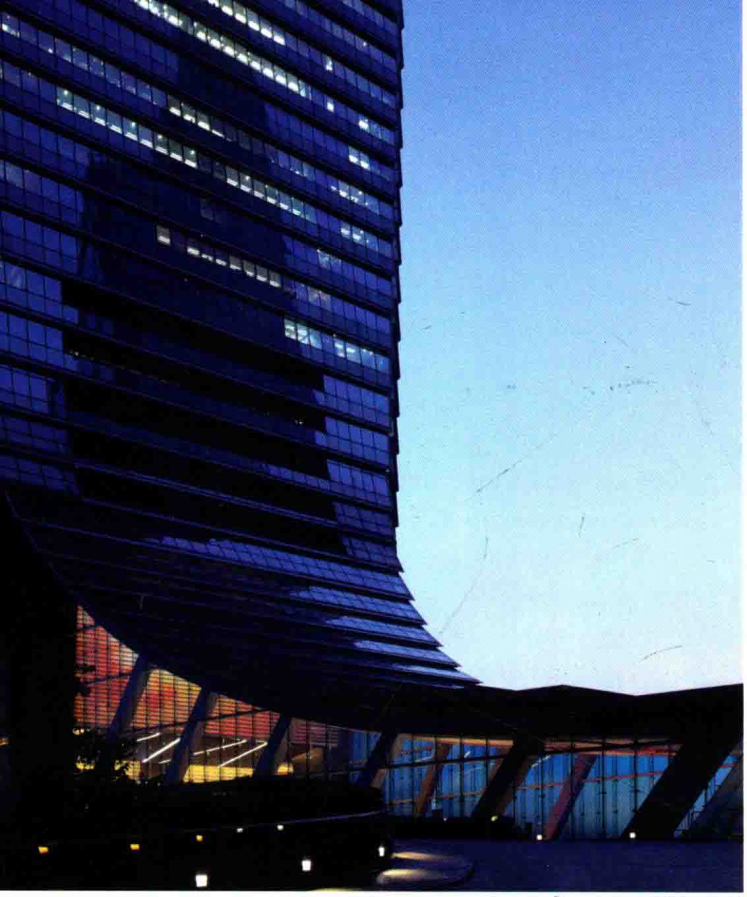
the International Commerce Center, Hong Kong; and Rolex Tower, Dubai.

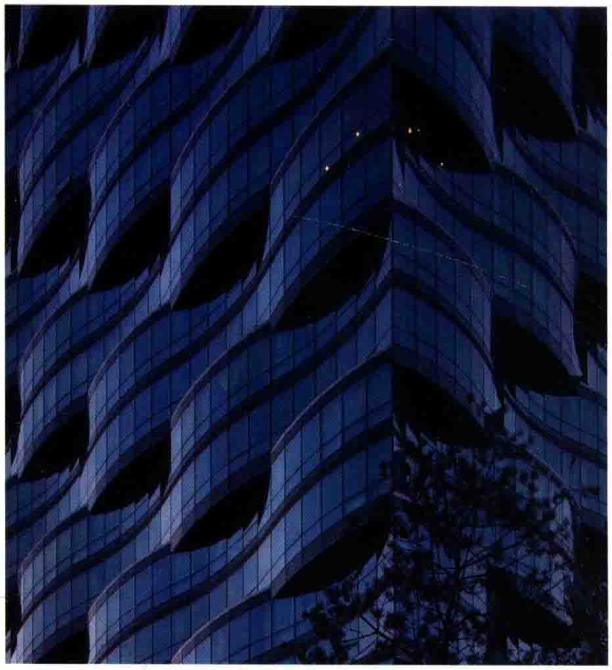
The question of what is inspiring these forms and approaches, and whether they can be justified in energy/carbon terms, is a valid one that needs to become a more essential part of the industry's dialogue. The sustainability discussion in recent years has been focused almost exclusively on operating energy which, while vitally important, has resulted in the neglect of a sufficient discussion on the implications of embodied energy in building construction. Even the very definition of "net zero energy" seems to omit the materials and construction process entirely. As evidenced by European award winner KfW Westarkade Frankfurt, with its predicted operating energy of 90 kWh/m2, great strides are being made in the reduction of operating energy, and Middle East & Africa winner Index Tower, with its solar shading and other sustainable strategies is also worthy of special mention in this regard. However, the energy expended to create building forms in the first place is by no means constant across buildings, with iconic-sculptural forms clearly requiring more material gymnastics (and hence more carbon expenditure) to deliver the same quantity of floor area as a more regular form.

But there is, of course, another side to this equation: the consideration of a building's greater contribution to society beyond delivering floor area and reducing energy expenditure. What do interesting building forms bring to our cities in terms of beauty or impact on the human senses? Do we want to live in a world full of ultra-energy-and cost-efficient but rather dull boxes? What about the impact on social sustainability



Top: Asia & Australasia Winner Guangzhou International Finance Center, Guangzhou; iconic-ness achieved through the subtle consistency of a single, elemental form
Bottom: Middle East & Africa Winner The Index , Dubai; representative of the strides that are being made in creating more environmentally-responsive tall buildings





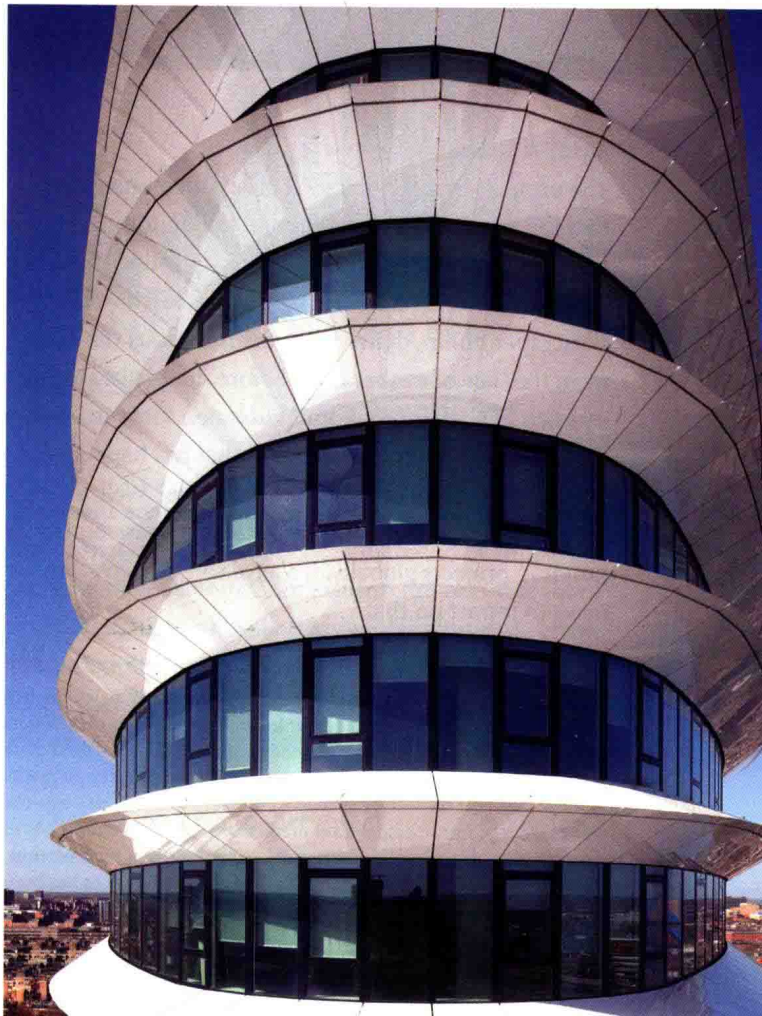
Great design details which are sometimes lost beneath the drama of the overall building form:
Top Left: Asia & Australasia Finalist International Commerce Centre, Hong Kong; detail view of sweeping "dragon-tail canopy"
Top Right: Asia & Australasia Nominee The Sharp (#) Central Park 1, Incheon; detail view of the "basket weave" façade
Bottom Left: Asia & Australasia Nominee The Pano, Bangkok; green space is distributed throughout the tower on cantilevered balconies

and urban diversity and a whole range of other, less-quantifiable aspects of "sustainability"? Like with all things, there will be an optimal balance point in this equation—though we are far from thoroughly understanding it. The debate thus far, perhaps for obvious reasons, has been focused on subjectivity rather than quantifiable metrics.

The aspect of the projects in this book that delights me the most, however, is not necessarily the overall form of the buildings, but some of the smaller design details/solutions that bring spectacular results to a particular aspect of the building and yet tend to get lost beneath the drama of the overall form. Examples include the "dragon-tail" canopy of the International Commerce Centre, Hong Kong; the cantilevering tree platforms of WOHA's Pano and Hansar towers, both in Bangkok; or the "basket weave" façade of the The Sharp (#) Central Park 1, Songdo.

While many of these design strategies are evident on the outside, others are somewhat hidden, or require a deeper understanding of the project to appreciate. Thus, in the case of the EEA and Tax Office, Groningen, understanding that its aerodynamic form and large projecting fins came about as a response to ensuring minimal disruption to wind flows for a local protected bat species adds a certain validity to the project. Similarly, one of the biggest surprises for me in judging these projects was seeing the significant three-story sky gardens that run the length of the slick, glass, seemingly-office façade of the Sapphire Tower, Istanbul. Many people, including myself, have recently bemoaned the lack of movement towards providing significant green space at height in residential high-rise: why can't apartments be based on similar principles to the low-rise terraced block centered around a garden, but simply lifted up into the sky? Sapphire Tower seems to do exactly that.

Another project which deserves special mention, especially in the debate between extravagant or more subtle form, is the Riviera TwinStar Square project in Shanghai. As someone who has devoted much effort as an educator to finding an appropriate vernacular form for the skyscraper in different regions of the world—tall buildings that are inspired by the cultural aspects of place as well as the climatic—it is fantastic to come across a project such as this that speaks volumes in its "Chinese-ness," without resorting to mimicry of local vernacular forms.



Left: Europe Finalist Sapphire Tower, Istanbul; interior view of one of the significant three-story residential sky gardens that run the length of the façade
Right: Europe Nominee EEA and Tax Office, Groningen; detail view of the large projecting fins that are part of the response to ensuring minimal disruption to wind flows for a local protected bat species

Left: Asia & Australasia Finalist Riviera TwinStar Square, Shanghai; clearly grounded as a Chinese building without resorting to mimicry of local vernacular forms

2011: A Global Overview

The projects in this book thus clearly demonstrate that there is still wide variation in tall building design occurring around the globe. The big question now is this: are we currently seeing the last hurrah of the skyscraper boom, delivered with an obvious time lag from the "age of exuberance" before the age of austerity born of a severe economic recession kicks in, or is the expansion and diversification that has happened in the past decade or two set to continue? Well, as the arbiters of the world's most accurate database on tall building projects globally, we have some interesting news to report on that…

As our statistics on the global number of 200m+ (and 300m+) buildings built each year since 1960 shows (see graph opposite), we have heralded each year since 2007 as "the most successful year of skyscraper completion ever" in pure numeric terms. 2011 is certainly no different, with somewhere between 78–94 buildings in the 200m+ range expected to complete this year,[1] making 2011 far and away the most successful year to date.

Also interesting to note, for the past few years we have predicted a drop in the global number of tall building completion from approximately 2012 onwards due to the lag impact of the 2008–09 recession. However, given the huge number of projects that have recently been announced and started in predominantly China and other parts of Asia, we now no longer expect this to be true. As our graph shows, we expect the global number of 200m+ (and 300m+) completions to continue to rise each year for at least the next few years. Additionally, given that markets in North America and Europe are now slowly starting to build again, and given that other markets like South America and perhaps even Africa are increasing activity, it is possible that the global number of 200m+ buildings completed each year could rise year on year for at least the rest of this decade.

These statistics are also visible in the supertall end of the market (300 meters or greater in height). While

[1]Incidentally, the focus on buildings over 200 meters in height is driven by the need to ensure accuracy of data, rather than suggesting that this is the threshold for a tall building. Even projects over 200 meters in height can be difficult to stay abreast of, especially in rapidly developing markets such as China, thus accuracy of data would diminish at height thresholds less than this, though the trends would largely be the same. Readers should also be aware of the difficulties in predicting the number of skyscrapers to complete in a year at the half way point of that year (as is the case while currently writing this), especially given the tendency of building developers and consultant teams to give rather optimistic completion predictions! This is even more evident when predicting completion figures for future years, based on the current status of projects under construction. This year we have thus introduced into our predicted completion numbers an expected range (see graph opposite), rather than a single definitive figure as has been utilized in past years.