CTBUH Journal

Tall buildings: design, construction and operation | 2008 Issue I

CTBUH 8th World Congress

The Race for the Sky: Unbuilt

The "International" Skyscraper

High-Rise Home Technology

Tallest 10 Completed in 2007

Council on Tall Buildings and Urban Habitat

Welcome

Welcome to the *CTBUH Journal*, the publication for the Council on Tall Buildings and Urban Habitat.

Our first issue of 2008 celebrates the tremendous success of the CTBUH 8th World Congress in Dubai. Our authors this quarter present papers on several of the most daring unbuilt tall building projects of the 20th century, trends and shifts relating to building use from North America to Asia, and the evolution of new technologies in high-rise residential buildings in the United States. We hope you enjoy the issue. **Zak Kostura, Editor**

Published by
the Council on Tall Buildings and Urban Habitat

Editor
Zak Kostura
t: +1 212 896 3240
e: zak.kostura@arup.com

Technical Editor
Robert Lau

Design & Layout
Katharina Holzapfel
e: kholzapfel@ctbuh.org

Design Consultant
Thomas Graham

CTBUH Chairman
David Scott

CTBUH Executive Director
Antony Wood

Secretariat
Geri Kery

Council on Tall Buildings
and Urban Habitat
Illinois Institute of Technology
3360 South State Street
Chicago, IL 60616-3793

t: +1 312 909 0253
f: +1 610 419 0014
e: gkery@ctbuh.org

www.ctbuh.org

Print
CTBUH Journal is printed by Source4-Chicago.
www.source4.com

Front cover: Welcome Cocktail Reception, Jumierah Beach Hotel, CTBUH 8th World Congress - Dubai, March 2008 , showing Burj Al Arab in the background.
Photo: MCI Dubai

CTBUH news and events

Council

It has been another momentous quarter for the Council. The 8th World Congress in Dubai in March, with 954 delegates from 43 countries in attendance, was one of the most significant gatherings in the 39-year history of the Council (for more on this, see the Congress report on pages 5-9). In addition the CTBUH Tall Building Seismic Design working group has issued the first draft of its report (see www.ctbuh.org), we are in the process of re-establishing a significant tall building database on the Council website, and the Tallest 10 Buildings constructed during 2007 continue the established trend for realizing super-tall buildings in both the Middle East and Asia (see page 33 and back cover).

We are in what will no doubt be a seminal year for this organization. The 2008 Congress marked only the first of several anticipated milestones for the Council this year. In the coming months, we intend to appoint three new full-time staff members (see advertisement at right) and collaborate with IABSE on their September conference in Chicago. In addition, we are in the process of creating several new publications on topics that include Tall Buildings & Sustainability and The History of the CTBUH, the latter of which will mark the Council's 40th anniversary in 2009. Keep an eye out for news on these and other exciting activities in the CTBUH news column in future issues of the Journal.

CTBUH - New Staff Positions

In line with recent successes and growth, the Council is pleased to announce the creation of 3 new full-time staff positions: a Research Manager, a Communications Manager and a Production Assistant. The deadline for receipt of applications is 30th June 2008. Interviews will take place in late July and it is hoped that the new staff will take up their positions at CTBUH HQ in Chicago in September.

Research Manager

The new Research Manager will initiate and spearhead a new Research Division for the Council, whose aim will be to generate and coordinate much-needed research into multi-disciplinary and cross-disciplinary aspects of tall buildings and the urban habitat internationally. The initial tasks for the new Research Manager will be to analyze areas for research, identify funding opportunities, and to prepare for submission to research funding bodies in order to support funded research under the auspices of CTBUH and IIT, in conjunction with relevant industrial partners from within/without the CTBUH network. Thereafter the Research Manager will be responsible for coordinating the funded research and ensuring the growth of the research division, and the relevance of the research output to the international community. It is anticipated that the Research Manager will be heading a team of 3-4 researchers within 18 months - 2 years of his/her appointment, as a result of the funded research submissions.

Such are the challenges of this role that it is essential that the candidate comes from a research background, with prior experience of compiling and submitting research funding bids, and undertaking funded research. Whilst this candidate can be drawn from any of the building professions – architecture, engineering, construction, financial etc – a prior experience with some aspect of tall buildings would be considered an advantage. The hired candidate would also be expected to contribute to the wider initiatives of the Council beyond the new research division.

This position could be filled through a fixed-term assignment from industry. Salary & benefits would be commensurate with background and experience. Ideally candidates should hold a minimum of a PhD qualification.

Communications Manager

The new Communications Manager will build upon and drive recent initiatives in what and how we communicate with our membership and beyond. His / her tasks will include, but not be limited to: writing, editing and coordinating books, publications and newsletters; overseeing the CTBUH website; coordinating with and soliciting membership; soliciting sponsorship; coordinating working groups; coordinating press releases and media relations; organizing conferences and events; and assisting with the CTBUH Journal, annual awards etc. The Council currently has plans for several new books / publications and the ability to contribute to and coordinate these efforts is key.

It is hoped that this person will join us from a professional building background, preferably with some prior experience of tall buildings, but with a keen aptitude and track record for communications and production.

A proven track record as an author with previously published material would also be an advantage. Salary & benefits would be commensurate with background and experience. Ideally candidates should hold a minimum of a Masters degree qualification.

Production Assistant

The Production Assistant would assist across all CTBUH initiatives, including but not limited to: publications; website; events; communications; membership etc. A recent graduate from one of the building/design disciplines (architecture, engineering etc) with strong graphic-design skills would be a bonus. Salary & benefits would be commensurate with background and experience. Ideally candidates should hold a minimum of a Masters degree qualification.

Further Information

The formal job submission procedure will be posted on the CTBUH website (www.ctbuh.org) by end of April. For further information or an informal discussion on these opportunities in advance, please contact CTBUH Executive Director, Antony Wood, at the contact details below:

Antony Wood
Executive Director, CTBUH (Council on Tall Buildings and Urban Habitat)

Illinois Institute of Technology
S.R. Crown Hall
3360 South State Street
Chicago, IL 60616-3793

awood@ctbuh.org
www.ctbuh.org

The Race for the Sky: Unbuilt Skyscrapers

Unbuilt skyscraper designs are noted by many architecture critics as the best in the genre of tall buildings. This paper provides an exposition of various iconic and "unbuilt" skyscraper design proposals that have inspired architects and engineers to build ever-taller buildings and continue to fuel the twenty-first century race for the sky. The study identifies two categories of unbuilt skyscrapers. The first group includes skyscraper visions that were mainly proposed as part of a comprehensive urban development theory. Skyscraper proposals of the second group were aborted due to various conflicts that ranged from popular opposition to economic crises or hurdles. The paper concludes with a discussion of the current most daring skyscraper projects and the potential for revisiting some unbuilt skyscraper dreams.

Author
Mohamad Kashef, PhD

East Carolina University,
A 213 Brewster Building
Greenville,
NC 27858
United States
t: 252 367-1284
f: 252 737-1527

Mohamad Kashef practiced architecture, urban planning, and project management with multinational consulting firms and construction companies in the United States, Canada, Egypt, and Saudi Arabia. Taught courses, seminars, and studios in urban design, history and theory of architecture and urbanism, and historic preservation. Assisted various cities and communities in the United States in the preparation of downtown development plans and urban design guidelines. Research is focused on introducing a balanced physical planning and design agenda that integrates both architectural and planning knowledge with an emphasis on sustainable practices. A special research interest in tall buildings and multi-use structures that integrate unique architectural configurations with innovative technologies and green solutions. Other design and research concerns include heritage and urban conservation within a global context. Participated in the revitalization and restoration efforts of the Historic Citadel District in Cairo, Egypt.

The skyscraper was mainly an American invention that thrived and was propagated by the work of architects from the Chicago School, such as Sullivan, Burnham, Holabird, and Roche William Le Baron Jenny, regarded as the father of the Chicago School, designed the Home Insurance Building of 1883, which was a mere ten stories high, but considered the world's first steel skeleton skyscraper. It was iterated upon by the designers of the Woolworth, Empire State, and Chrysler buildings in New York City, following the institution of the 1916 Zoning Ordinance. The technique of building skyscrapers was subsequently refined by SOM (Skidmore, Owings, and Merrill) and transferred worldwide. Many of SOM's designs have become icons of modern American architecture, including the Lever House (1952) in New York City and the John Hancock Center (1969) and the Sears Tower (1973) in Chicago. Their work has laid the ground for a revolution in building heights that have currently exceeded 1,670 feet with the Taipei 101 Tower in Taiwan. In excess of 2000 feet, Burj Dubai in the United Arab Emirates, which is scheduled for completion in 2009, will probably break all previous records.

Advancements in structural systems, building materials and computer-aided design technologies are driving today's skyscraper design to a new horizon. Form and function are no longer complementary or tied together in a linear equation. From helicoidal and spiral designs to sail-shaped, cantilevered configurations, the tall structure is regaining its status as an icon and asserting itself as a symbol of culture and civilization. Unbuilt skyscraper designs are noted by many architecture critics as the best in the genre of tall buildings. This paper provides an exposition of various iconic and "unbuilt" skyscraper design proposals that have inspired architects and engineers to build ever-taller buildings and continue to fuel the twenty-first century race for the sky. This study identifies two categories of unbuilt skyscrapers. The first group includes skyscraper visions that were mainly proposed as part of a comprehensive urban theory. Skyscraper proposals of the second group were aborted due to various conflicts that ranged from popular opposition to economic crises or hurdles.

First Group: Skyscraper Urban Theories

Various twentieth-century skyscraper visions incorporated solutions to urban development problems, especially overcrowding and unhealthy living conditions. Three schemes were selected because of their comprehensive scope and profound impact on the development of modern architecture and urbanism. These include Le Corbusier's Contemporary City (Figure 1), Wright's Broadacre City (Figure 2), and Sant'Elia's Citta Nova (Figure 3).

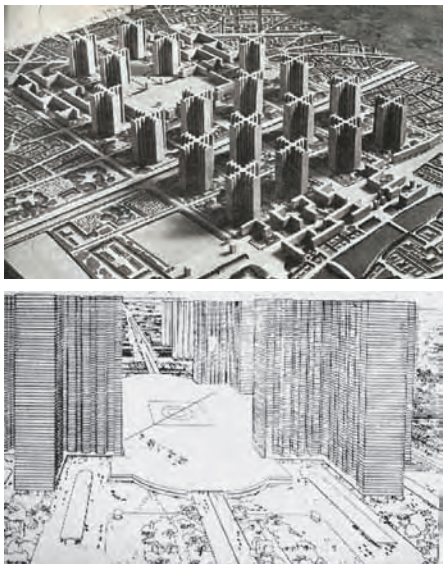
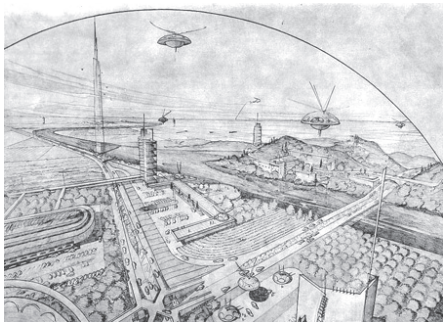


Figure 1. Le Corbusier's Contemporary City: Towers in Parks; the heart of the Contemporary City included 60-story skyscrapers and an airplane landing platform (Boesiger et al. 2006)



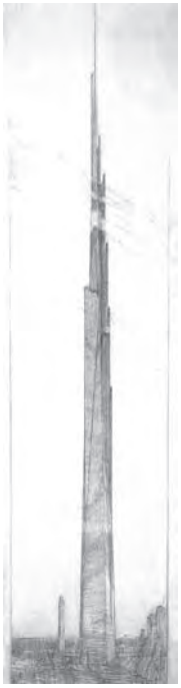


Figure 2. Images from Wright's Broadacre City (Wright 1958), the Mile High skyscraper and its most recent inspiration: "Burj Dubai," The actual building height as of February 2008 has exceeded 2000 feet.

Le Corbusier's Contemporary City

Le Corbusier wanted to literally dismantle all forms of pre-modern urbanism and replace them with a scheme of towers and highways. He believed that cities needed to have high population densities to function properly. Nevertheless, Le Corbusier was appalled by the congestion of 1920s cities, which he attributed to the inefficient road network and building configurations that did not match the spirit of the machine age. The key was the famous paradox, "We must decongest the centers of our cities by increasing their density" (Hall 1996, 207). He called for the demolition of congested urban centers and their replacement with soaring towers interspersed by super highways and green spaces (Sewel 1993, 32). Le Corbusier envisioned a "Contemporary City" (1923) for millions of people housed in skyscrapers that would cover little more than five percent of the land. Buildings would be elevated on "pilotis" (stilts) to allow park space to flow right underneath (Benevolo 1980; Boesiger et al. 2006). His planning schemes departed dramatically from those of then-existing cities, and generally aimed to avail of the technological innovations of the 20th century. Almost all of his schemes remained on paper except for Chandigarah and few single-block buildings that he built in Paris and Berlin (Hall 1996, 212). However, Le Corbusier had an immense influence on modern architecture and planning. The idea of a "tower in a park" that currently pervades most cities was mainly derived from his urban vision (Figure 1).

Frank Lloyd Wright's Broadacre City

Frank Lloyd Wright wanted to fuse the city and the country so that the urban-rural distinction would no longer exist. The individual house, built within a one-acre farm, became the center of the human settlement in which everything from living and recreational patterns to means of transport was flexible and configured according to personal imperatives (Wright 1958). Wright's Broadacre City was highly progressive in the sense that it afforded its inhabitants in the 1950s a kind of technological and transportation gadgetry yet to be achieved today. Forward-looking helicopter flying crafts were portrayed throughout the design proposal as the primary mode of transportation in the city. Wright envisioned a very low-density settlement that comprised every building type he previously designed (Lang 1994) (Figure 2).

Broadacre City never fully materialized, but in many ways it represented the ultimate American dream of a high level of individualism, much open space, and high mobility. The physical form of Wright's Broadacre City has partly become a reality in the current American urban and suburban landscapes. Ironically, Wright designed a mile-high skyscraper (5,280 feet) to be the focal point of such a very low density and rather horizontal development. The tower was estimated to have 528 stories and a gross area of 18.46 million square feet. He envisioned the tower as the visual anchor of the downtown that would be seen from every corner of Broadacre City. Wright conceived a slender skyscraper with cantilevered floors. Following his organic architecture credo, he likened his tower to a tree trunk with branches (Linn 2004). Wright's tower (Figure 2) was never built, but the concept of a mile-high skyscraper has become engrained in the minds of many architects and designers. It continues to fuel the race for reaching higher altitudes, as evidenced in Burj Dubai, which is somewhat reminiscent of Wright's Mile High. When completed in 2009, Burj Dubai will stand at approximately 2,000 feet.

The Tallest 10 Completed in 2007

Author
Philip Oldfield
Research Coordinator

Council on Tall Buildings and Urban Habitat
3360 S. State Street
Chicago
IL 60616

t: +1 773 691 2022
f: +1 312 567 5820
e: poldfield@ctbuh.org

Philip Oldfield received his Bachelor of Architecture degree and Diploma in Architecture from the University of Nottingham, England, obtaining First Class honours at undergraduate level and a Distinction for his Diploma portfolio. Currently he is studying a PhD in tall buildings entitled "Towards Carbon Neutral", sponsored by Ove Arup Ltd. The aim of this research is to design a hypothetical, carbon neutral tall building through the incorporation of relevant design strategies, material choices, environmental technologies and energy generation techniques. The operational and embodied carbon performance of this design will then be modelled against a 'benchmark' building of the same size, function and location.

Philip is a member of the Tall Buildings Teaching and Research Group (www.tallbuildingstarg.com) and has taught high-rise design studio projects at both the University of Nottingham and Illinois Institute of Technology, Chicago, where he is currently on secondment as part of his PhD studies. In conjunction with this, Philip is also Research Coordinator for the Council on Tall Buildings and Urban Habitat.

Rising 333 meters high, with 72 stories and 480 suites, the Rose Rotana Tower in Dubai heads the list of the tallest ten buildings completed in 2007, (Figure 1). The tower, designed by architects Khatib & Alami and developed by the Bonyan International Investment Group, also becomes the world's tallest single-use hotel building, taking the title from the Shimao International Plaza in Shanghai. Coming in at second on the list is the New York Times Tower at 319 meters high. The building – the third tallest in New York upon completion – was designed by Renzo Piano Building Workshop and FX Fowle Architects and developed by Forest City Ratner Companies. Third on the list is the China International Center Tower B in Guangzhou, whilst fourth is the Naberezhnaya Tower C in Moscow, which at 268 meters high also becomes Europe's tallest building. All ten tallest buildings constructed in 2007 are outlined in the diagram on the right.

Figure 1. Rose Rotana Tower in Dubai

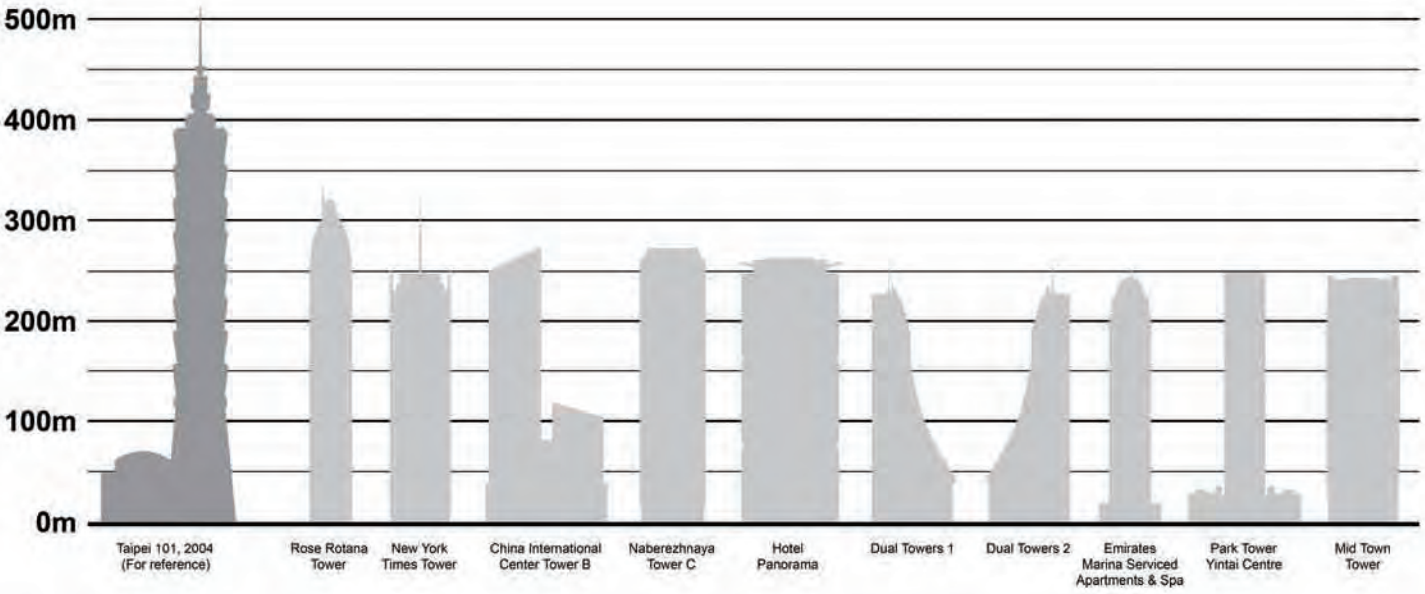
Geographically this list reinforces the current trend of the world's tallest buildings being completed in the Middle East or Asia; four of the list are located in the Middle East, four in Asia, one in North America, and one in Europe. In terms of program, five of the list are office towers, one accommodates solely hotel function and the remaining four are mixed-use buildings. As always, strict criteria have influenced the putting together of this list; buildings are only eligible if they are topped-out, fully-clad and either 'open for business' or at least partially occupied.

The current year, 2008, also promises to be an exciting time in terms of high-rise construction. With the 331 meter high Minsheng Bank Building already completed in Wuhan, and buildings such as the Shanghai World Financial Center (492m, Shanghai), Bank of America Tower (366m, New York), Almas Tower (360m, Dubai), China World Trade Center Tower III (330m, Beijing), One Island East (308m, Hong Kong) and the Burj Dubai Lake Hotel (306m, Dubai) already topped out, this year's 'tallest 10' is set to include at least seven 'super-tall' buildings (those with a height of 300 meters or more), a feat that is unprecedented in tall building history. However, it is the year 2009 that is expected to be the pinnacle of the current high-rise construction boom, with the CTBUH predicting the completion of some 20 super-tall towers, led by the phenomenal 800m+ Burj Dubai.

With this tall building boom in mind, the CTBUH is delighted to announce the creation of its 'Tall Building Database', which is accessible to all via our website. The database provides over 50 different lists of the world's tallest buildings, based on a variety of categories. These include the historical and future tallest buildings in the world (tallest buildings in 1920, 1960, 2015, etc), the tallest buildings in the world by location (tallest buildings by continent / nation / city), the tallest buildings in the world by structural system (tallest steel / concrete / hybrid buildings), the tallest buildings in the world by usage (tallest office / residential / hotel / mixed-use buildings) and many others. As this database expands to include many more Categories, it is hoped it will become an invaluable source for architects, engineers and enthusiasts alike to keep track with global tall building design and construction. To view the CTBUH Tallest Database, please go to: http://www.ctbuh.org/Resources/WorldsTallest/tabid/123/Default.aspx

An expanded version of the 'Tallest 10 in 2007' is available for download from the CTBUH website at: http://www.ctbuh.org/Portals/0/Tallest/CTBUH_Tallest2007.pdf

The Tallest 10 Buildings Completed in 2007



Note: A completed building can be considered such - and added to the 'tallest' lists - if it fulfills all three of the following criteria: 1) topped out structurally and architecturally, 2) fully-clad, 3) open for business, or at least partially occupied. All heights are measured from sidewalk level of the main entrance to the architectural top of the building, including spires, but not including antennae, signage or flag poles.

1 Rose Rotana Tower

Dubai, UAE
333m (1093ft) / 72 Stories
Hotel

Developer: *Bonyan International Investment Group LLC*
Architect: *Khatib & Alami*

2 New York Times Tower

New York, USA
319m (1046ft) / 52 Stories
Office

Developer: *Forest City Ratner Companies*
Architect: *Renzo Piano Building Workshop / FX Fowle*
Structural: *Thornton Tomasetti*
MEP: *WSP Flack + Kurtz*

3 China International Center Tower B

Guangzhou, China
269m (884ft) / 62 Stories
Office

Developer: *Guangzhou Prosperous Real Estate Development Ltd. Co.*
Architect: *Shantou Construction Design Institute*

4 Naberezhnaya Tower C

Moscow, Russia
268m (881ft) / 59 Stories
Office

Developer: *Enka Insaat ve Sanayi A. S.*
Architect: *RTKL / Natal Ltd / ENKA Design*
Structural: *ENKA Design*

5 Hotel Panorama

Hong Kong, China
261m (856ft) / 64 Stories
Residential / Hotel

Developer: *New World Development*
Architect: *DLN Architects*
Structural: *Arup*
MEP: *Meinhardt*

6 Dual Towers 1

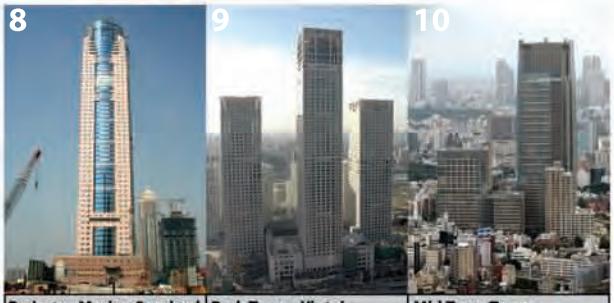
Manama, Bahrain
260m (853ft) / 57 Stories
Office

Developer: *Bahrain Financial Harbour Holding Company*
Architect: *Ahmed Janahi Architects*
Structural: *Van Der Meer Consulting*

7 Dual Towers 2

Manama, Bahrain
260m (853ft) / 57 Stories
Office

Developer: *Bahrain Financial Harbour Holding Company*
Architect: *Ahmed Janahi Architects*
Structural: *Van Der Meer Consulting*



8 Emirates Marina Serviced Apartments & Spa

Dubai, UAE
254m (832ft) / 63 Stories
Residential / Hotel

Developer: *Emaar Properties / Emirates Group*
Architect: *Khatib & Alami*
MEP: *Trans Gulf Electro-Mechanical*

9 Park Tower, Yintai Centre

Beijing, China
250m (820ft) / 63 Stories
Residential / Hotel

Developer: *China Yintai Holdings Co.Ltd.*
Architect: *John Portman & Associates*
Structural: *LeMessurier Consultants*
MEP: *Parsons Brinckerhoff Ltd / Newcomb & Boyd*

10 Mid Town Tower

Tokyo, Japan
248m (813ft) / 54 Stories
Office / Hotel

Developer: *Shimizu House / Meiji Yasuda Seimei / Fukoku Life Insurance / Daido Life Insurance / Mitsui Fudosan Co.Ltd.*
Architect: *SOM / Nikken Sekkei*

Building Locations

High-Rise Home Technology

Residential high-rise is currently witnessing a renaissance of exponential proportion in just about every major city in the world. However, many of these homes are not just a remake of their vertical ancestors. The high-rise homes being built today are much more "alive", with living, breathing technology to enhance the owners' experience of the lifestyle. High-rise developers have had to consider adding technology to keep on par with the competition, but also because the potential buyers are demanding more and more bells and whistles. Whether it is the competition or the buyer's expectations or both, technology is beginning to take root in many new construction buildings. Technology research firm Instat/MDR predicts the global market will grow from its current level of $1.3 billion to nearly $10 billion by 2010.

As of late, it is not uncommon to walk into a sales center for a new residential building to be exposed to a completely high-tech presentation, where the sales agent demonstrates the site plan, floor plans and the rendering of the building on a touch screen monitor. If the developer is offering technology in the homes, the sales agent will demonstrate that system, as well. Rand Arnold, of AVAI, a preferred technology firm for a number of new construction projects, says, "I now equate technology to the level of importance of a refrigerator in a home…it is vital, especially to the luxury market."

Author
Brenda Calvin
The Calvin Group, LLC
Las Vegas, USA

3960 Howard Hughes Parkway, Ste 500
Las Vegas, NV 89169 USA

t: 702 939-5638
f: 866 417-8612
e: Brenda@TheCalvinGroup.com

Brenda Calvin is the Broker/Owner of The Calvin Group, LLC, a boutique real estate brokerage specializing in the sales, marketing and consultancy of luxury residential high-rise properties. Ms. Calvin has sold exclusively high-rise condominiums for the past twenty years in the US; currently in Las Vegas, NV. Her innovative sales programs, tailor-made for each project, have gained much attention, selling out entire buildings well in advance of construction completion. Her consultations with high-rise developers come from her extensive knowledge gleaned over the years, assisting developers in avoiding costly mistakes and maximizing their sales results. Such a consultation recently took her to India with a high-rise developer seeking her guidance. Ms. Calvin is a Certified International Property Specialist. Additionally, she writes a monthly column entitled, "Vertical Update" for a well-respected real estate publication. Ms. Calvin is a distinguished member of The Social Register, Who's Who in Luxury Real Estate and a member of The Council on Tall Buildings and Urban Habitat.

Technology within the home

Technology in high-rise homes has previously been primarily about audio/visual. For example, home theaters with surround sound have been common place for several years, but much of this implementation has been on an individual basis. An individual homeowner hires an individual audio/visual company to retrofit a system after the building construction is complete. However, this is rapidly beginning to change in the US. The Construction Specifications Institute has recently revamped the Master Format divisions to add the category of technology in the architectural drawings, along with HVAC, mechanical, electrical, plumbing, etc.

This means that technology is now in a more prominent position with developers and is being planned in advance of the construction process. This also means that technology is spilling over to other aspects beyond audio/visual, such as climate control, lighting, window coverings, communication, security etc. All of which is more difficult and much more costly to add, after the construction is complete. Even more advanced integration or control systems have predetermined "mood settings" which involve the coupling of all of these systems with one touch on a control panel (ie. Sleeping, entertaining, dining, romance) (Figure 1).

However, the audio/visual aspects of technology have advanced as well. There are now high-definition projection screens and complex systems of multi-room, opera-quality audio with acoustic precision. The televisions have gotten larger and flatter; the first 150 inch

Figure 1. Resisdence Control System

Panasonic flat screen was introduced at the Consumer Electronics Show (CES) in January 2008. Flat screens have become visually clearer and more detailed through high definition, televisions are hidden behind mirrors in bathrooms (undetected unless they are turned on) and speakers are even offered in the shower with water-resistant remote controls.

Recently, El-Ad Properties converted The Plaza in New York City to hotel/condominium and private residences. The developer chose systems integration firm, Concierge Direct, to plan and implement the technology and control systems within the building. Once closed on the purchase, a homeowner goes to the Concierge Direct sales center to choose add-ons. Many of the new homeowners own luxury property elsewhere and have an educated palate for what technology they desire in their homes. Some of the brands offered in the Plaza were ADA, Krell, Furman, Meridian, Kaleidescape, Denon, Runco, Snell Acoustics and Lutron (for lighting and shade control). Concierge Direct's owner, Steve Babel, notes, "We were very selective about the brands we're offering, based upon reliability and reputation."

The Plaza offers a one touch, high resolution wireless flat panel, with an array of concierge and security services, as well as the ability to control the interior ambiance of the suites (i.e. wireless contour lighting controls, music, video library access, sophisticated telephone and networking technology) (Figure 2).

Figure 2. "Concierge Direct" in the Plaza hotel

Concierge Direct also worked with AMX to develop their Amenities Solution, which provides the backbone for the entire facility. Technology can be blended quite effectively with the high-rise building amenity package and operation. The building may have a web-based system for the owners to communicate with the building management team. For example, the owner can request a tee time, a spa treatment, a limo, dinner reservations or symphony tickets for a particular evening. For more on-going coordination, an owner may request his/her car be brought to the front Porte-cochere, Monday – Friday at 8 am or request special instructions for dry cleaning left at the front desk. The out-of-town owner can request maid service, climate control adjustments and groceries delivered all prior to their arrival via the owner portal on the building website. The blending of technology with the building amenities is a natural and the opportunities for customer service are endless.

Certainly technology can be used for security applications as well, either to gain access to the building or elevators, camera surveillance, key fobs, finger print readers, retina readers, monitoring of a residence from an off-site location, etc. It makes one wonder if door keys may one day be functionally obsolete.

What about the costs of adding technology? The developer may simply build the cost of the technology into the purchase price of the residence or choose to sell the technology to the prospective homeowner as an "upgrade" to the standard finish. Of course the upgrade pricing varies widely, but in many cases in the US, there are preset technology packages of $25,000, $50,000 or $75,000, with custom pricing for high-end penthouses. A completely customized system for each individual homeowner is simply too difficult and costly to design and implement.

The developer of Habourside, a luxury high-rise in Hong Kong, chose to provide technology in the residences at no additional cost to the purchasers. His technology company, Betrue Limited, describes how they accomplished the task: "Unlike private clients whose loves and hates we can explore during the design process, we have no idea who will be living in Habourside. So we adopted an open system that is compatible with a wide range of audio/visual and control appliances from Bang & Olufsen audio/video gear to Crestron touch screens to iPods."

Challenges

It is extremely important that a general contractor enlist the help of an experienced technology firm, versed in high-rise construction. These technology companies are more advanced than traditional audio/visual companies; they are better defined as engineering firms, specializing in technology for high-rise residential. Their systems should be as integrated as possible with the other systems in the home. Their plans must include systems that are "user friendly", intuitive and effortless to operate. If one has the most advanced systems in the world, but can only operate the "on" button, it is useless.

The technology installation company inherently has many more challenges in a high-rise with the constraints of a concrete structure; they cannot simply run the wiring as freely as they would be able to in a single-family home. They have to consider things such as fire walls between units and common areas and concrete ceilings/floors of the condominium unit. There are, of course, chases running vertically throughout the building, but many times those are packed full with all of the other systems for the building (wiring, cabling, plumbing, etc). Technology integration companies map out every detail while a building is still in the planning stages. Concierge Direct and AMX, the technology firms for the Plaza New York, did just that. They realized that the control system should be the primary system, and the security, lighting, heating and air conditioning – which are typically primary systems to a contractor - should become subsystems.

The role of the technology contractor (TC) can be confusing. During the construction process, when the TC is installing the technology infrastructure, it makes sense that the TC is considered a subcontractor of the general contractor (GC). This would be required on many levels; the GC's insurance comes to mind, for example.

Beyond the infrastructure, the role varies depending on the building. Some buildings do not offer anything additional. In other words, they design a standardized system, such as Hong Kong's Habourside, previously mentioned. Alternatively, the developer may offer pre-set technology packages as upgrades to the standard finish of a unit. In this case, the TC would still be a contractor of the GC, but implementing the unit purchaser's upgrades prior to construction completion.

In the Plaza's case, they allowed the new owners to make upgraded selections to "add to" the standard offerings. However, this was AFTER the buyer closed, so in this example, the TC would subsequently contract directly with the new owner for the additions.

CTBUH *AWARDS 08

2007 AWARD RECIPIENTS:

Best Sustainable Tall Building:	Hearst Tower, New York
Best Tall Building:	Beetham Hilton Tower, Manchester, UK
Lynn S. Beedle Award:	Lord Norman Foster
Fazlur Rahman Khan Medal:	Dr. Farzad Naeim

?

Best Tall Building:

Beetham Hilton Tower, Manchester, UK

2007 Quote:

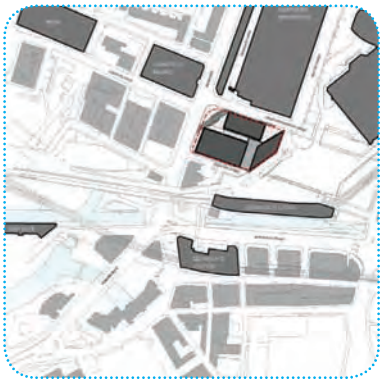
The Beetham Hilton Tower dramatically places itself in the historic context of Manchester. The building is sensitive to its urban surroundings and exudes an honest expression of its various programmatic functions. This is most notable in the powerful cantilever at the shift from hotel to residential.

Timothy Johnson, NBBJ (Awards Chair)

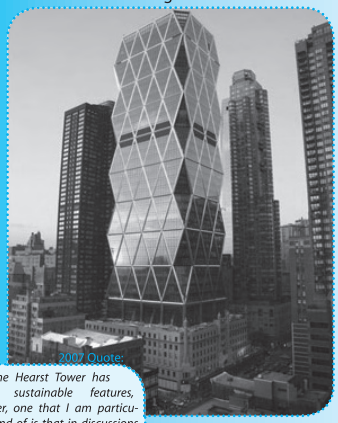
*Call for CTBUH Awards 2008

The CTBUH will issue eight Tall Building awards in 2008 – six recognizing excellence in design and construction in the differing geographical regions of the world and the two established lifetime achievement awards - the Lynn S. Beedle Award and the Fazlur Rahman Khan Medal.

Deadline for receipt of nominations is 6th June 2008



Best Sustainable Tall Building:



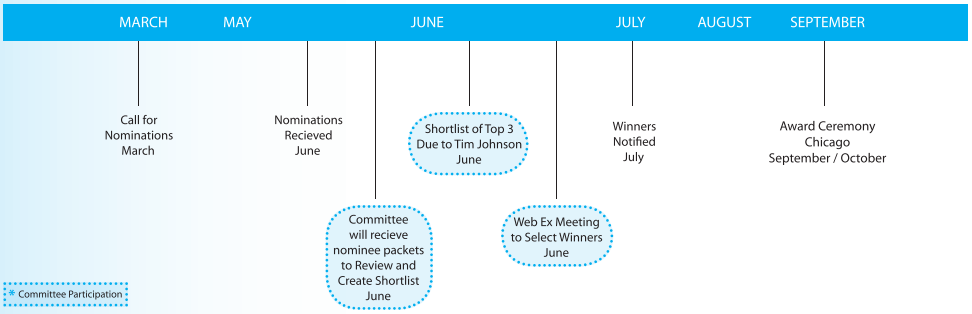
Hearst Tower, New York

2007 Quote:

The Hearst Tower has many sustainable features, however, one that I am particularly fond of is that in discussions with building occupants they all express how they enjoy working in the building. Its air quality and daylighting strategy are major contributors to this.

Vivian Loftness, Professor Carnegie Mellon School of Architecture (Awards Jury Member)

CTBUH Award Schedule



For CTBUH Annual Awards 2008 - Criteria & Submission Criteria please visit the CTBUH website: (http://www.ctbuh.org/Portals/0/Awards/Call_Awards08.pdf)

Council on Tall Buildings and Urban Habitat

Council on Tall Buildings and Urban Habitat, Illinois Institute of Technology, S.R. Crown Hall, 3360 South State Street, Chicago, IL, 60616, Phone: +1 (312) 909 0253, Fax: +1 (610) 419 0014, Email: info@ctbuh.org, http://www.ctbuh.org/