

CTBUH 8th World Congress 2008



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Robert M. Lau received his Bachelor of Architecture degree from the Illinois Institute of Technology and his Master of Business Administration at the Chicago School of Real Estate at Roosevelt University.

He has worked with Myron Goldsmith and Lucien Lagrange at Skidmore, Owings, and Merrill and with Helmut Jahn and Jim Goettsch at Murphy/Jahn in Chicago. He is an advocate of the Chicago School of Architecture, beginning with William LeBaron Jenny, John Root, and Louis Sullivan and continuing through Fazlur Khan and Myron Goldsmith.

He presented the paper 'A Platonistic Program for Block 37 in Chicago's Loop' at the December 2001 conference Building for the 21st Century in London and the paper 'Financial Aspects That Drive Design Decisions' at the October 2005 conference in New York City. He was also a member of the NY conference's committee that reviewed the papers to be presented.

In addition to practicing architecture in Chicago, he is a Construction Committee member with the Windy City Habitat for Humanity.

Foreword by Zak Kostura.

The 2008 CTBUH World Congress was a time to explore the broad diversity inherent in every aspect of the Building Industry. Cruising the broad Sheikh Zayed strip in a wood paneled Lexus taxi, the out-of-town attendees of the Congress absorbed a visual landscape marked by vast megaprojects and impressively tall buildings with often non-rectilinear geometry beset in an expansive desert. For most, what they saw in Dubai was a city unlike any they have seen before, but one that increasingly impacts the nature of their work back home.

The themes and topics of the 2008 Congress embraced these vibrant contrasts. The seminars and workshops conveyed the wealth of diverse approaches to the technologies, techniques and philosophies inherent in the realization of tall buildings and mega projects around the world. Honored guests spoke of varied approaches to sustainable design that ranged from the conventional to the cutting edge. Those interested in the latter were treated with renderings and visuals of dynamic, motor-driven floor plates that rotate about a central core to optimize daylighting and passive heat gain. Still more experts discussed ways of increasing the effectiveness of age-old phenomena such as internal convection and the stack effect, the very techniques that helped keep the Bedouin cool during the steamy summer nights in the Arabian desert.

Far-reaching tours of other Gulf region cities served as bookends to the Congress. Robert Lau, CTBUH Coordination Committee Member and Technical Editor of the Journal, was in attendance for the tours, the Congress, and numerous networking events. His experiences, logged in daily chronicles and presented below, reflect the wealth of insights and experiences offered to those who participated.

Sunday

It is the day before the formal opening of the 2008 CTBUH World Congress. We left Manama over the flat Bahrain desert toward the southern tip of the island. Our destination was the new resort project of Durrat Al Bahrain (Figure 1). Our guide was Martin



Figure 1. Durrat Al Bahrain, www.durratbahrain.com

Knights, Marketing Analyst of Atkins Northern Gulf Region. Peter Land, Marilyn Denzer and I have been looking forward to this site tour of the island nation of Bahrain for some time. The Durrat project entails a necklace of islands connected to the mainland for a new resort community. Dredging is creating these islands where there had been only desert sand.

The scale and magnitude of the project is astounding. Not just homes are being built but an entire community for 30,000 people. Besides the resort element, the project also includes schools, retail, and office towers. The dredging of the islands and the construction of the towers will continue until 2025. This is an example of the 'typical' Mideast mega-project in the 21st Century!

Upon our return to Manama we saw our best views of the Bahrain World Trade Center. Prominent as a focal point to the city's skyline, the twin towers are unique in their shape. They are designed to funnel and force the gulf breezes through their gap to power the

triple horizontal wind turbines suspended between them (Figure 2). Innovative in approach, this project will begin producing electricity from wind power. Not only is it a first for large—scale wind power, it will also provide performance data in the coming years for the wind industry regarding building-induced wind velocities (Figures 3 and 4). This is an example of the progressive thinking of the gulf region’s projects. What others do not even consider at the design stage the gulf region’s leadership not only proposes but also provides the resources to make it happen in ‘fast track’ time.

We left Manama on an evening Emirates Air flight for the Dubai Congress. We arrived in Dubai refreshed and anticipating the events of the next few days.



Figure 2. North elevation of Bahrain World Trade Center



Figure 3. Wind Turbine and Bridge between towers



Figure 4. Viewing Wind Turbine from exterior balcony

Monday

We awoke to fog that had engulfed the Grand Hyatt Hotel, the venue for the Council’s banner event. Chairman David Scott opened the Congress of over 900 international delegates by introducing Sadhu Johnston, Chief Environmental Officer for the City of Chicago; Peter Rees, City Planning Officer for the Corporation of London, and our host HE Hussain Nasser Lootah of Dubai Municipality (Figure 5). Each of the prominent panelists spoke of a starkly different urban context; yet each underscored the importance of promoting environmental sustainability through management and

development of his city. The occasionally contrasting philosophies conveyed by these speakers set the stage for the diverse and progressive discourse that unfolded in each session of the 2008 Congress.

The speakers that participated in the day’s sessions painted a vivid portrait of the tall buildings of the future; one that embraces technologies and design techniques that run the gamut from the conventional to the far fetched. David Fischer of Dynamic Architecture Group set a futuristic precedent early in the day with an introduction to high-rise buildings with independently rotating floor plates. Luke Leung and Peter

Weismantle of SOM (Figure 6) took an alternative approach to forward thinking design by studying the past, and presented on naturally-occurring environmental phenomena that are intensified by the height of modern tall buildings. Leung and Weismantle discussed the great potential for utilizing these phenomena to either generate energy or reduce the demand of the building’s systems.

It is clear that there is much to be learned from the projects currently under development around the world. Roy Denoon of CPP Wind Engineering and Air Quality Consultants discussed essential



Figure 5. From left to right: David Scott, CTBUH Chairman; HE Hussain Nasser Lootah, Dubai Municipality; Sadhu Johnston, Chief Environmental Officer for the City of Chicago; Peter Rees, Chief Planning Officer for the Corporation of London



Figure 6. Luke Leung and Peter Weismantle, Skidmore Owings & Merrill LLP

considerations involved in the design of tall buildings with wind energy turbines. He presented findings from existing cases and eluded to numerous buildings under development with unprecedented amounts of wind energy generation equipment included in their current schemes. From this new fleet of high-tech skyscrapers, we stand to learn many lessons.

We broke for lunch to the outdoor oasis of the Grand Hyatt. The blazing desert sun greeted us as we consumed scrumptious feasts sponsored by Autodesk, Gale International, and Hyder Consulting. Mideast hospitality was evident in these lunches. The diversity of the foods and their presentations made this international gathering feel welcome, no matter where one was from. These informal times reacquainted many of us who had not seen each other since the New York conference in 2005. For others, it was a time to understand the many cultures that had simultaneously converged on this part of the world. We came together from the far corners of the earth with the universal objective of participating in a showcase of diverse contemporary thought on the issues related to building and urban sustainability.

In the evening we traveled to the Jumeirah Beach Hotel for a Welcome Reception sponsored by AECOM. Again, the Mideast hospitality was evident with fresh juices and first-class hors d'oeuvres that were exceptional.

The view from the beach was the best part of the evening. The Burj Al Arab Hotel, sitting on its own island, was the star of the evening. Shaun Killa of Atkins and I discussed his design of the Bahrain World Trade Center into the night as we gazed at the billowing-sail profile of the Burj Al Arab (Figure 7).



Figure 7. Welcome Reception at the Jumeirah Beach Hotel viewing the Burj Al Arab Hotel

Tuesday

This was the day that everyone had been waiting for. All talk had been about the world's newest tallest building. While not officially the record holder, all of us know it is only a matter of time.

Executive Director Antony Wood introduced Mark Amirault, Emaar; HE Mohamed Ali Alabbar, Emaar; Adrian Smith, Adrian Smith + Gordon Gill; and William Baker, Skidmore Owings & Merrill (Figure 8), who presented the design input and direction for their soaring tower. The progressive drive of this Mideast municipality again revealed itself with this presentation. All involved know how significant this project is. HE Mohammed Ali Alabbar of Emaar represented the developer in this presentation. At its conclusion, we all anticipated the question on everyone's mind. Sworn to secrecy, the designers have been asked the same fundamental question so many times they have lost count. Now it is the developer's turn to field the question that everyone wants to know. From the audience, which knew full well that any conventional approach to the hackneyed inquiry would yield no answer, comes an augmentation:



Figure 8. From left to right: HE Mohamed Ali Alabbar, Emaar; Adrian Smith, Adrian Smith + Gordon Gill; and William Baker, Skidmore Owings & Merrill



Figure 9. Ken Yeang, Llewelyn Davies Yeang, "Ecoskyscrapers & Ecomimesis: Typologies"

"When will you announce the final height of the Burj Dubai tower?"

The answer: Why ask the question?

The boldness of the Burj Dubai project was aligned with the grandeur of Songdo City (Figure 10), the development of which filled the following morning session and assumed the ponderous title of "Instant Cities". Jamie von Klemperer of KPF represented the master planning team and gave insight into the daunting question of where one might start in the design of a brand new urban cityscape. The architect was accompanied by Charles Reid of the Songdo City developer Gale International and several sustainability and structural engineering consultants.

The afternoon provided site visits to Dubai's landmarks, including the Burj Dubai itself. On the way, the new rapid transit for the city could be seen under construction (Figure 11). This new form of public transportation should greatly reduce the heavy traffic patterns that Dubai is currently experiencing. We also could see the transformation of this once dusty desert town into a bustling green oasis city, abounding with life.

While observing the Burj Dubai tower from a distance is impressive, looking up at it from the Emaar site is staggering. Not only is it tall, but tall by leaps and bounds. It is so tall that the weather varies from its base to its summit. It is so tall that its interior environment must be segregated from itself. It is so tall that the construction techniques had to be defined because they had never been attempted before (Figures 12 and 13).

And this tower is just one element of the Emaar development. As a 21st Century Mideast megaproject, this development has many components on a grand scale. Dubai, as the 'City of Cranes', is constructing at a torrid pace (Figures 14, 15, and 16).

The day concluded with a sumptuous dinner on the grounds of the Grand Hyatt, sponsored by Emaar. The first-class hospitality continued well into the night. The highlight of my evening was sitting next to Les Robertson at this dinner. As the venue and cuisine were both first-class, so too was the gathering of international delegates that had partaken. ✈



Figures 12. Burj Dubai under construction at Level 160



Figure 10. New Songdo View, Gale International



Figure 13. Base of Burj Dubai



Figure 14. Model of Emaar's Burj Dubai development (retail, office, and residential)



Figure 11. Elevated Rapid Transit line under construction along Sheikh Zayed Road



Figures 15 and 16. Burj Dubai development under construction (retail and office) with Burj Dubai Tower on right



Wednesday

Our final day of the Congress was a discussion of relevant industry issues. David Scott explained the universal push for a transition from LEED (Leadership in Energy and Environmental Design) to LEEP (Leadership in Energy and Environmental Performance). Soon a project will not only be designed as 'green', professed Mr. Scott, projects will likewise be required to perform as 'green' throughout their useful lifetimes. Ole Scheeren followed with presentation on the philosophy of the Office of Metropolitan Architecture, which he dubbed 'Architecture as Experience', as exemplified in their CCTV project. Ken Dalton of AECOM conveyed how his experiences with holistic solutions and team approach to projects produces the best results. Les Robertson stated that most building codes are conservative and outdated compared to computer performance data. While prescriptive building codes are adequate for some projects, computer data provides a better understanding of a structure's performance and operation.

The Chairman marked the closing of the panel sessions with an expression of gratitude to all who were in attendance. As the crowds thinned and corporate sponsors dismantled their booths, the bustling energy of the Congress gave way to a peaceful environment conducive to thought and reflection. We will all remember the drums and horns that called us to gather for each session. We learned much about Arab culture and hospitality. The quality and craftsmanship of the stonework at the Grand Hyatt venue will remain in many of our minds. This event was more than just continuing education credits. This was an event to remember and savor for the rest of our lives.

Thursday

Abu Dhabi was the site for this day's tour, the city to the west of Dubai and also along the Gulf Coast. As the political capital of the UAE, this city is also constructing at a blazing pace comparable with Dubai.

Our first stop was the Sheikh Zayed Bridge as the new entry into Abu Dhabi. From here we had an excellent view of the new Grand Mosque to the west (Figure 17).



Figure 17. Grand Mosque as the entry to Abu Dhabi

Next was the Al Reem Island project by Sorough, featuring the Skytower and the Suntower, among many other towers (Figure 18). As we have learned all week, many projects in this part of the world are megaprojects with construction anticipated for decades to come. This site was followed by the Saadiyat Island project, which will house Mideast versions of the Guggenheim, Louvre, Performing Arts, and Maritime museums. This megaproject is an entire island city with seven distinct districts, expanding the Abu Dhabi metropolitan area to the east.



Figure 18. Suntower and Skytower under construction

We then entered the Abu Dhabi city proper and toured the corniche waterfront. Our destination was the Emirates Palace Hotel for lunch. This five-star hotel is the official host of the Emirates. Like the week we had just experienced, the Emirates Palace Hotel fulfilled our expectations.

Our final site on this tour was the Al Raha megaproject, developed by Aldar. As is the theme of these Mideast megaprojects, this development also is to become an entire planned city with residential, commercial, and retail components. It also will expand Abu Dhabi's metro area to the east. What was once flat desert, or in some cases shallow gulf waters, will now become lush green oases of a bustling urban district.

Conclusion

The New York Conference of 2005 was successful. The Dubai Congress of 2008 has been even more successful: the panels, workshops and technical visits achieved the fundamental mission of the Congress to highlight the theme of sustainability in tall buildings and megaprojects. What was learned transcends mere technical matter. An awakening to Arab culture was learned by those of us who had not been exposed to it before. For those who have been living and working in the Gulf region, this Congress showcased their work. For many of us, we not only will remember this experience but will also anticipate our next visit to this region of the world.