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Title: **Elements of the Tall Building 2004**

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Subject: Architectural/Design

Keywords: Culture
Design Process

Publication Date: 2004

Original Publication: CTBUH 2004 Seoul Conference

Paper Type:

1. Book chapter/Part chapter
2. Journal paper
3. **Conference proceeding**
4. Unpublished conference paper
5. Magazine article
6. Unpublished

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Elements of the Tall Building 2004

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The design of tall buildings has always centered about desires for maximizing development rights, individual and corporate ego, and civic pride. We also optimistically believe the tall building supports our society's need for face to face interchange in the broad range of human activities. Density enables vibrant opportunities of living, working, exchange, culture, and recreation. With a properly planned and responsive urban infrastructure, the tall building can provide for efficient ways to utilize the vertical space of our cities.

In the ancient cities of Asia, the dialogue between the old and new becomes especially poignant. We have seen a sincere desire to improve the living and working conditions of a people and a nationalistic push to compete in the world's economies. Along with economic growth and modernization, we listen also to misgivings about abandoning the past, erosion of traditional city form, and absence of pedestrian scale.

In this context, we believe the tall building continues to be a viable component in the City. If carefully designed to respect and stimulate urban form, create public places for people, and inspire our society by its art and technology, the tall building can assume a place in the dynamic city. We support the renewal and evolution as well as preservation of culture and heritage.

Our practice has been able to explore ways to make the tall building better performing structures and systems that intently support human physical and social needs. Our clients have been supportive of innovation in several facets of tall building design.

Mixed-use to support vibrant cities for people

Combining varied programs into single structures creates integrated vertical communities. Similar to the iconic Jinmao Tower of Shanghai, *The China World Trade Center of Beijing* and *Jinmao Tower of Nanjing* both contain programs of hotel and office within the tower form to provide compatible uses enriching the development. For the *Jinling Tower of Nanjing*, approximately equal areas of office, apartment, and hotel combine into a single tower which undergoes plan transformations for each program.

An efficient square office plate, a cruciform apartment floor and an atrium hotel plan are stacked and incrementally change yielding a unique twisting tower.

Each of these towers were designed not only as mixed-use structures, but also as part of urban districts encouraging a pedestrian realm of connections to public transit, interrelated ground and sub-level uses, and landscape places of courts and gardens.

Integration of Structural and Architectural form – a reexamination of collaboration

As a multi-disciplinary practice, our office fosters an environment of creative interchange and innovative problem solving. Several recent tall buildings have powerful expressions of a synthesis of architectural and structural inquiry and resolution. The *Jinmao Tower* is a faceted column whose exterior wall becomes a climatic chamber shaped to follow the tower's diagonal structural brace. The *Jinling Tower* twisting form is defined by a structural diagrid which integrates an exterior structural frame and curtain wall system. In Beijing, the *Goldfield Tower* develops a composition of glassy, open faceted forms juxtaposed against an articulated double height braced frame structure that recalls the Capitol as a city of walls and screens.

High performance enclosure and environmental systems for greater sustainability

The high performing environment is ultimately about conserving material, using less energy, and providing for greater comfort, safety, and control for people.

At the *China Poly Guangzhou* office building, a south facing diagonal structural lattice shading the interior spaces, an offset glass core with natural light, and a three story wind-relieving opening that serves as a shaded communal outdoor terrace and area of emergency refuge are examples of new features for the high-rise office tower. The under floor air system is designed to provide better user comfort and control, more efficient air distribution and contaminant removal, and greater ceiling height.

The *Jinao Tower* double wall exterior enclosure system creates a climatic chamber of insulative and shading properties that buffers the interior spaces from the summer extremes. CFD modeling has shown that vented openings in the outermost exterior curtain wall will allow the wind pressure differential on opposable sides of the building to draw any built-up heat out of the cavity and maintain a lower ambient temperature against the inner exterior wall.

Capturing the spirit of the place, culture, and time

Ultimately, the success of the tall building lies in its ability to inspire and become a treasured place in the city.

Our design process continuously tries to understand the essence of the site and context, the behavior and aspirations of the people, and the spirit of this age. Each of the buildings strives to be unique in the way their creative resolutions grow out of the integration of technical innovations and critical thought.