



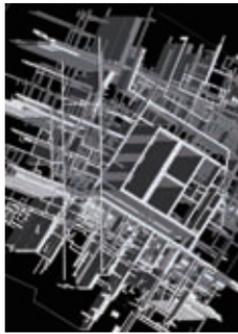
Courtesy from Aedas and Andrew Bromberg

Founded in 1982, **Aedas** is a global force in the built environment in a variety of Architectural, Design, Property and Surveying services. It employs over 1,600 professionals working in 20 offices spanning across Europe, Central Europe, Asia and the UAE. Aedas is the fourth largest* architectural design company in the world and it is truly a global player in architectural practices.

Aedas has involved in a number of International projects including Tate Gallery at London, the Government headquarter at Bahrain, Legend Palace Hotel at Beijing, The Peninsula at Shanghai, Dancing Tower at Abu Dhabi, Emaar Tower and Ocean Height Towers at Dubai, Avia Park at Moscow, Venetian Hotel in Macau, Hong Kong International Airport Terminal 2 in Hong Kong etc.

* P. 12, January 2007, BD World Architecture

<http://www.aedas.com>



Courtesy from Aedas and Andrew Bromberg

PROJECT USING BIM:

Project: Ocean Heights One

Location: Dubai, UAE

Type: Residential

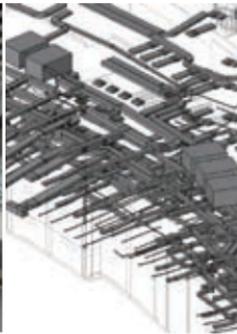
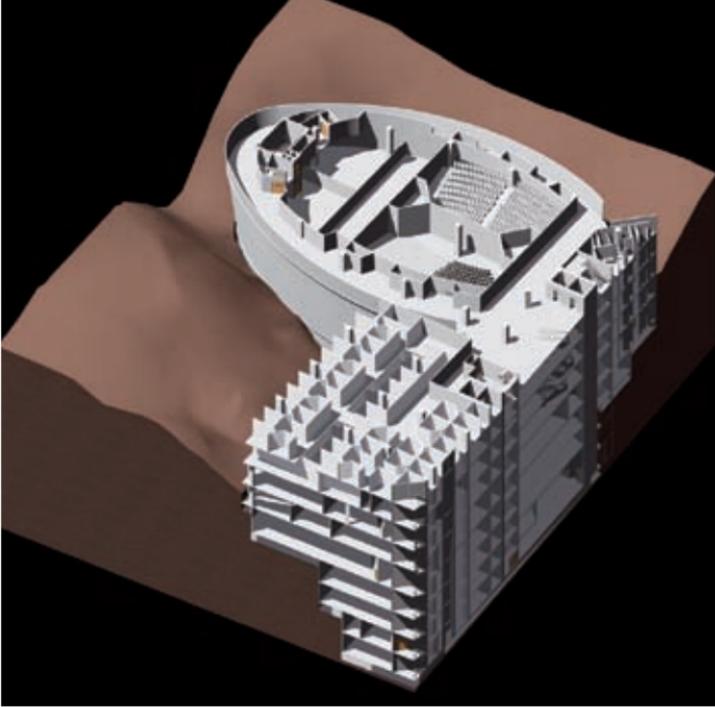
DESCRIPTION OF THE PROJECT:

Ocean Heights 1, Dubai, UAE

Ocean Heights, located in Dubai Marina, in United Arab Emirates, is a 310-meter residential tower. The design evolved to maximize views toward the ocean with a deliberate twist on three of its faces. This allows the units, even in the back, a view toward the water beyond. The 82 storey tower is planned for completion in 2008. The building immediately starts its twist of its three faces at the base. As it rises, the tower's floor plates reduce in size, allowing the rotation to become even more pronounced. At fifty stories, the building rises over its neighbors. This movement allows two faces of the building, unobstructed views to the ocean. The tower breaks away from the orthogonal grid and re-oriens the project toward one of Dubai's Palm Islands to the north.

CHALLENGES:

- A challenging aspect of the design was accommodating the client's strict requirement of unit layouts within a changing envelope. What resulted was a rational 4-meter module, which tracks its way down through the entire building and only changes at the façade. This also considerably simplified the structural system of the project.
- The shear walls were placed perpendicular to the mean of the two most extreme angles of the façade. This was done to soften the relationship between façade and partitions, minimizing how "off-perpendicular" the relationship becomes.
- The shifts in geometry were taken as soft gradual moves over the 310 meters of height resulting in a sculpted and dynamic object. It is essential to design with a rationalized structural system and modularized façade to facilitate the viability of common sized residential units for Dubai's market. Aedas is Lead Consultant and Architect for this project.



Courtesy, City University and Aedas

PROJECT USING BIM:

Project: Community College City University Building (CCCUB)

Location: Hong Kong

Type: Institutional

DESCRIPTION OF THE PROJECT:

City University Community College

Community College City University Building is a BIM Project that Aedas adopted BIM technology to its full extent. The project involves the design of a 7 storeys, 40,000 sq.m teaching facilities at the existing hilly campus site.

CHALLENGES:

- In the project, BIM was used during all phases include Preliminary Design, Client Presentation, Government Submission and Coordination with consultant and contractors. As the project requires different involvement with different third parties, the data involved is just in huge amount. The target is to ensure the data's consistency and accuracy throughout all parties and at all stages. Since all the information is stored in the single database, wherever making changes, the whole model will get updated. This can ensure the best coordination among different parties and also to minimize the errors.

HOW BIM HELP

For Ocean Heights 1:

"The geometry of this project is extremely complicated; the external façade is twisting at different angles. Whether the external wall panels are curved or straight? Given that most building materials are either flat or straight, how many panel modules is needed to make the building envelope look smooth? If we use traditional CAD package, we need to alter each one of the 10,000 curtain wall panels manually – this procedure is very tedious and time-consuming, and worst of all, inaccurate. But now with BIM's powerful parametric change capability, the outlook of the building can be completed in a few minutes. In addition, we can make changes at different stages without worrying about the consistency. It certainly greatly improves the efficiency and accuracy." David Fung, Senior Associate and Head of BIM Division, Aedas said.

For City University of Hong Kong:

1. Design Visualization

BIM model is 3D (in fact more than 3D), which facilitate communication and visualization. The project was design in perspectives rather than traditional 2D.

2. Co-ordinated drawing Production

Automatic production necessary 2D plans, elevations, sections, perspectives, call outs, schedules. Change in once place, changes everywhere in the documentation.

3. Services Co-ordination and Clash detection with other disciplines

Identify design clashes and fix before construction. This will reduce time avoid wastage on site.

4. Quantity taking and Preparation of Tender Document

Assist in cost estimation and reflect changes as model changes. Automatic extraction of quantities and specifications assist in preparation of Bills of Quantity.

5. Automated Statutory Submission

Statutory submissions are automatically calculated and reported according to the Hong Kong regulations, including areas, means of escapes, staircases, toilet provisions etc.

6. Scientific Analysis of different Environment aspects

Sightline analysis, Shadow analysis etc helps to design the building in the most effective way.

7. Supply Chain Integration with manufacturing and production

Information was passed on from the consultants to contractors and manufactures in which data can be recycled and reused.

SIGNIFICANT IMPROVEMENTS

- Increase productivity with shorten design cycle over 50%
- Ensure data accuracy: change once, change everything
- Increase company's competence
- Facilitate design options