

# Henderson Land Development Co. Ltd.

## Projects:

- The Gloucester
- A Luxurious Boutique Hotel at 388 Jaffe Road

## Location:

- 212 Gloucester Road, Wanchai
- 388 Jaffe Road, Wanchai

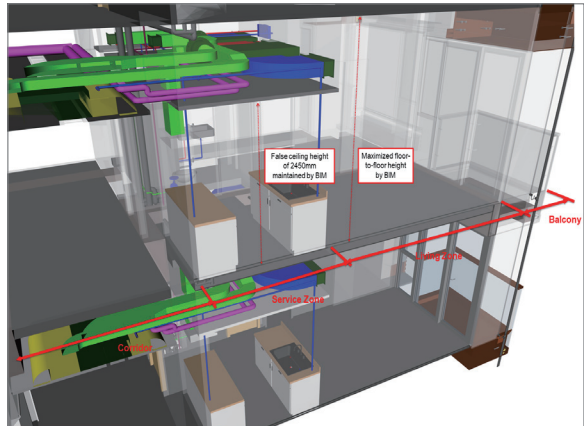
## Types:

- Residential Development
- Hotel

## Scheduled Time of Completion:

- 2012
- 2011

# Optimising Designs for Compact Spaces



Following success with BIM in construction of the World Financial Centre in Beijing – completed in 2009 – Henderson Land Development Company Limited deploys BIM in its Hong Kong projects. Henderson Land is also expanding the ways it uses BIM, notably in two current projects involving an upscale residential property, The Gloucester, and a luxurious boutique hotel at 388 Jaffe Road yet to be officially named.

## The Gloucester

The residential development is The Gloucester, and will be built on Gloucester Road, Wanchai. This will be a 34-storey residential tower on a three-storey car park podium, with an aquarium-style indoor heated skypool on the top floor as the building's iconic feature.

### Iconic Skypool and an Oasis

Derek Leung, Project Manager, Project Management (2) Department, Henderson Land, says the aquarium-style indoor heated skypool design was complex, with the pool located above a filtration plant room. The BIM model helped with planning how to put all necessary equipment and water pipes inside the plant room, and introduce the acrylic parapet-edged pool design.

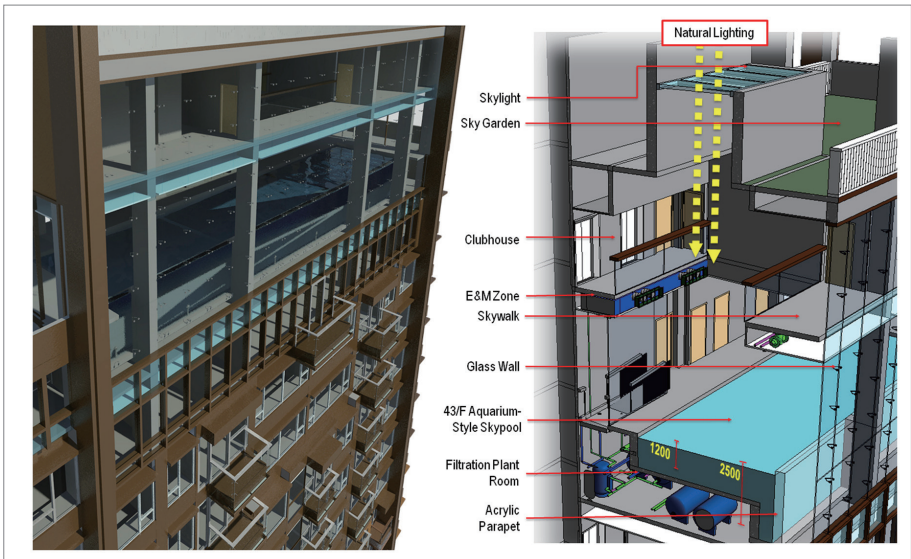
The Gloucester will also have an "oasis floor", a podium garden above the car park podium.

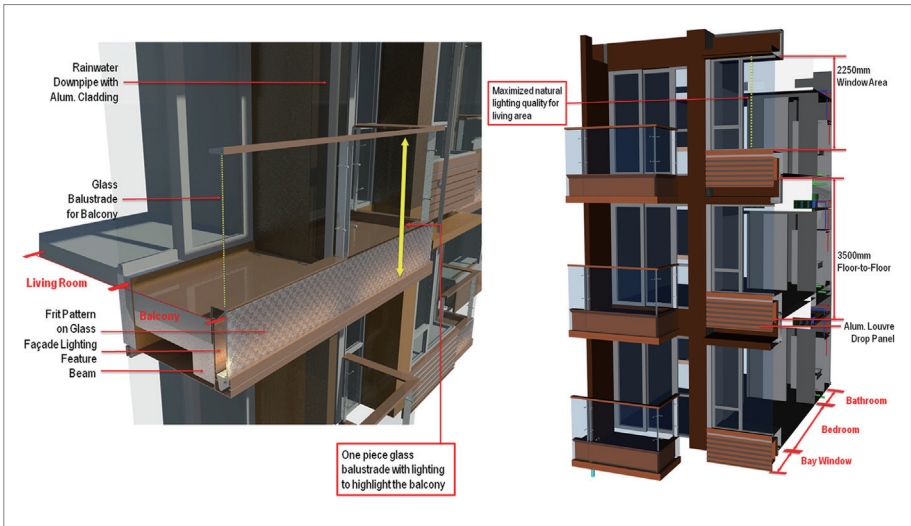
"BIM helped the team with designing the vertical greenery," says Derek. "We could walk through the model, and see where there were opportunities for greenery, as well as explain constraints in the best way we could." This greenery in turn contributed to The Gloucester becoming a BEAM Platinum Provisional Rated Residential Building.

Using BIM, the designers maximised window heights, enhancing the quality of natural lighting within the building. There is an emphasis on glass balustrades, which are combined with drop panel louvres to make the façade appear elegant. These balustrades were again planned using the Revit model, and for coordinating the construction details with other building systems.

### Compact Spaces, Packed Services

"There are a lot of compact units – like a





hotel,” says Derek. Each of these has an open kitchen in the living room, together with a bedroom unit and a bathroom. These proved especially challenging for the design team, particularly as several electrical and mechanical services needed to be fitted into confined spaces. Initially, the architect was working in 2D drawings and try to coordinate services including sprinklers and exhausts required for open kitchens, along with hot water systems, and air conditioning. “It was not easy to visualise these elements,” says Derek.

Adding to the difficulties, the project team wanted as much ceiling height as possible. The BIM model proved a massive help. Using it, everyone involved in the design could visualise how the services were arranged. With the multi-discipline BIM model, they studied

clashes in Navisworks, assigning them red colour coding for easy identification. Over 50 major clashes were identified and resolved in the service zones of accommodation units, and the team succeeded in maintaining a minimum ceiling height of 2.45 metres (locally for bathroom and open kitchen only).

The Gloucester is one of the first few projects for Henderson Land, that BIM is used for the design process rather than just for visualisation. The active participation of a BIM consultant has strengthened communications between project teams from different disciplines, who hold regular BIM review meetings to identify and resolve problems. Efficiency and communication between project teams are greatly improved, and errors and conflicts that could arise during construction have been reduced.

## A Luxurious Boutique Hotel at 388 Jaffe Road

### Compact Services Integration within Confined Services Space

The boutique hotel is also compact, presenting challenges to the design team especially in the well-packed services installations within the ceiling voids. Here, too, BIM proves far better than the traditional method of trying to imagine what the overlapping lines of pipes and ducts will look like, based on 2D plans or sections. With BIM accommodating all the building information 3-dimensionally, the team can optimise use of the ceiling/duct spaces for various services without hassles or abortive site works.

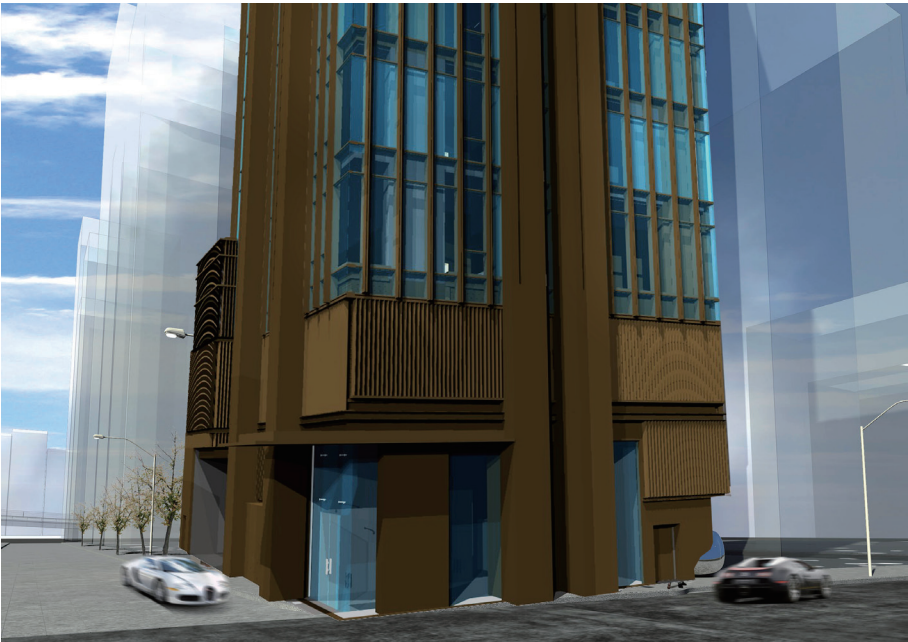
The BIM model also helped in the design process, as 3D images helped members of the senior management team to quickly assess

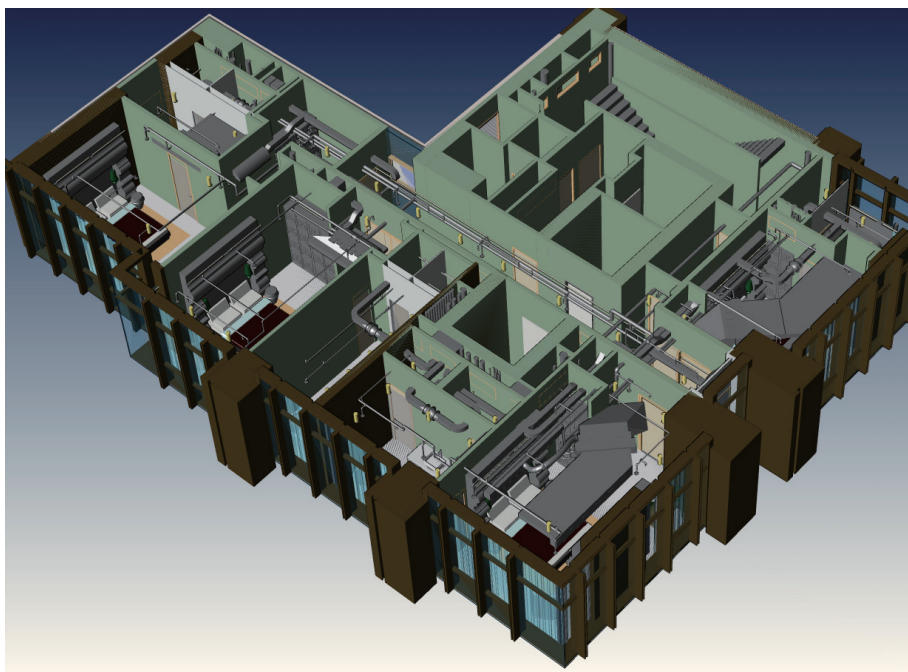
and comment on the latest design ideas. Yet Henderson Land also has long-term plans for using BIM in the hotel project.

### “Quick Fix”

The hotel is a lifespan investment for Henderson Land, which will remain involved throughout the operational phase. “We want to use BIM for facility management,” says Project Manager Catherine Lau. “For example, if a repair is needed for air conditioning or water supplies, a technician can quickly find data and drawings.”

The repair technician might have to find the fault, then return to an office to search for information. Yet the Henderson Land team have realised that the BIM model originally developed for contractors can also be converted to a facility model. They





are working on a digital building portal that will deliver all information necessary for facilities management, and aim to make this accessible through handheld devices such as mobile phones and iPads. Armed with this sophisticated technology, building managers can quickly identify operational problem and provide speedier maintenance services.

### **Managing the Project Graphically**

Henderson Land is now looking at ways to expand use of BIM. "It's a catalyst for project innovation and a tool for speedier design development," says Kevin Ng, Deputy General Manager, Project Management (2) Department, Henderson Land. "We couldn't effectively and efficiently visualize

2-dimensional combined services drawings for complicated projects, but with BIM we can realistically appraise problems and opportunities." In addition to accelerating design production, Henderson Land is considering using 4D BIM to help site management to visualise sequencing of site work. Kevin believes the adoption of BIM can be assisted through the industry practitioners' recognition of its contribution, like the ISO certification, and their expansion of usage scope with the emergence of more skilled BIM consultants.

*\* All images in this article provided by Henderson Land Development Co. Ltd.*