

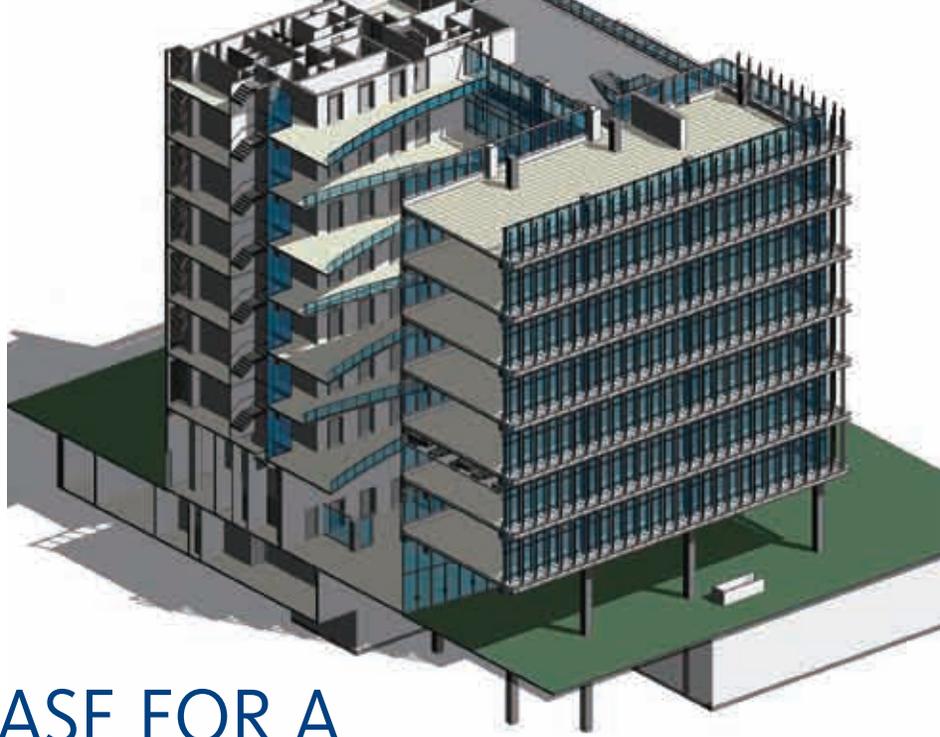


Hong Kong 香港科技園
Science & Technology Parks

“ BIM can help people visualise
what we want to build – before
we build it. ”

Ir. Stewart Wan, Project Manager,
Hong Kong Science and Technology Parks Corporation

Artist impression



SHOWCASE FOR A SUSTAINABLE FUTURE

Project: Building 20
Location: Hong Kong Science Park,
New Territories, Hong Kong
Type: R&D office building
Scheduled for completion: 2010

Even before piling work began on the newest building in Hong Kong Science Park, Ir. Stewart Wan, Project Manager of Hong Kong Science and Technology Parks Corporation, felt he had often been inside the building, and seen it during various stages of completion.

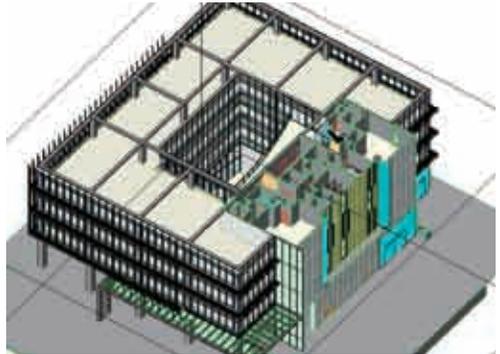
He and other members of the design team had explored the Revit 3D model – “Like a paper plane flying inside” – to witness construction phases from only beams in place, to lighting added, through addition of further structures, as well as fire, water and other services, until the façade was in place.



Ambitious, Futuristic Objectives

The new building – referred to as “Building 20” during design stages – is to enhance Hong Kong Science Park's role as a hub for innovation and technology development. Although energy saving technology had already been adopted in the park, Building 20 is designed to embrace green and sustainable technologies – and demonstrate these can be viable in commercial buildings.

As well as having a unique identity whilst harmonising with the other futuristic buildings in the Science Park, Building 20 was from the outset required to be operationally efficient, sustainable, user friendly, environment friendly, and cost efficient. Plus, there was a tight deadline for construction.

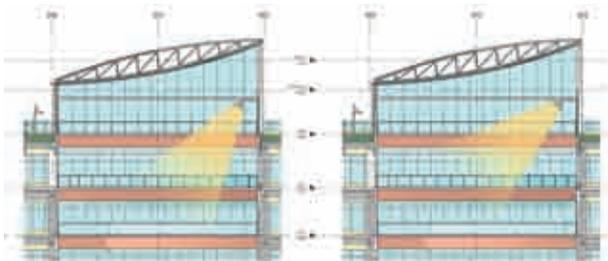


Visualising Building 20 before it's built

Though the Hong Kong Science and Technology Parks Corporation was already using Autodesk's Buzzsaw project management solution, to enhance communications between members of building design teams, Building 20 is its first project using BIM.

Stewart Wan had learned of BIM in 2006, and was impressed, realising, “It can help people visualise what we want to build – before we build it. It's very useful for minimising unavailing work on site, and design team members can coordinate among each other.” By reducing abortive work – so clashes are found before structures are built – BIM can cut relevant costs in construction and coordination.





VARYING REFLECTOR ANGLE DURING THE DAY

Assessing sustainable features

BIM has proven a boon for assessing Building 20's sustainable features, such as the use of sunlight for extensively illuminating the interior. Using BIM, the design team have tracked sun paths through the building, from sunrise to sunset.

Every week throughout the design process, Ir. Wan and other design team members sat down to watch BIM simulations of Building 20, to witness progress. "We have been inside many times," says Ir. Wan.

Reducing clashes

After working on environmental issues, such as sun paths, Ir. Wan and his team progressed to assessing clashes, particularly as MEP was added to the structure. Through doing so, they have significantly reduced potential mismatches, so there will be far less need to make changes when construction work is in progress.

Driving architects and consultants to use new technology

The Building 20 project architects had hitherto used computer modelling only rather sparingly. "We're driving them to use new technology," says Ir. Wan. "The architects find Revit interesting, and quite user friendly." Though the building services consultant was already using Revit, the corporation likewise prompted the engineering consultant to adopt BIM.

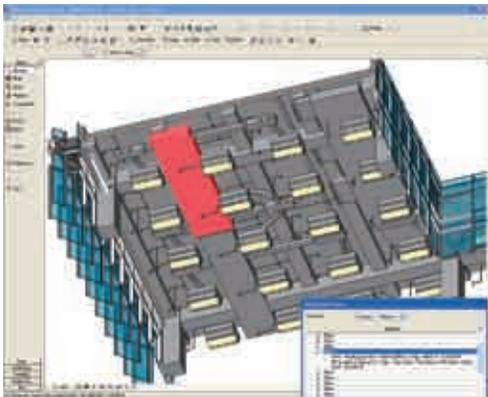
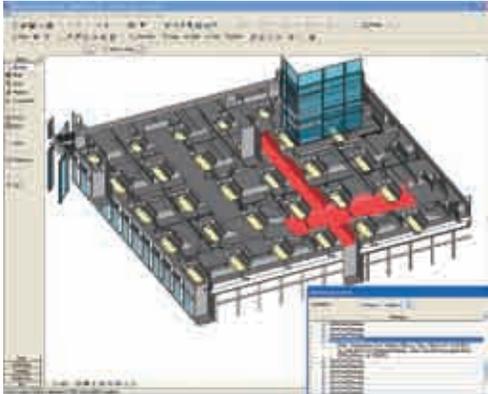
"BIM is an integrated solution," says Ir. Wan. "For example, some of the building performance analysis like lighting calculations, sun paths and wind flow, we can do them all in one go."



WITHOUT REFLECTOR



WITH REFLECTOR



Accelerated design process

“We need to complete construction within two years – we need the sustainable features integrated together, and we need to know it’s buildable,” says Ir. Wan. “If we had adopted a conventional approach, it would take more time to know if construction will be successful.”

Expanding adoption of BIM

If BIM proves successful during construction of Building 20 – even piling began, Ir. Wan anticipated BIM will surpass his initial expectations – it will also be deployed for expansion of the Science Park.

As well as being sustainable, Building 20 will showcase initiatives that are already in place elsewhere in the Science Park, such as adoption of building integrated photovoltaic systems, and solar water heating for a swimming pool. There will be exhibition booths for the public, highlighting integrated green features in buildings, and showing that whilst difficult, it is possible to reduce carbon footprints of commercial buildings.





ABOUT HONG KONG SCIENCE AND TECHNOLOGY PARKS CORPORATION



Hong Kong Science and Technology Parks Corporation ("HKSTPC") is a statutory body set up by the Government of the Hong Kong SAR. HKSTPC provides innovative and technology driven infrastructure and support facilities which include market focused clustered laboratory services enabling Hong Kong industries and services to be more competitive and a full-service incubation programme for technology and design start-ups; and fosters partnerships and collaboration between industry and universities/applied research institutes through consulting, training and research programmes. HKSTPC offers advanced facilities and support services for high technology companies that include an IC Design Centre, an IC Development Support Centre, a Materials Analysis Laboratory, a Wireless Communications Test Laboratory and an Intellectual Property Servicing Centre.