CASE STUDY:
Hong Kong 3D Digital City Model

OVERVIEW

AAM was commissioned to acquire, produce and deploy a 3D Digital City Model of a dense urban area of Hong Kong. The scope called for spatially correct and photorealistic models, deployed in a versatile and functional 3D GIS.

Planning, acquisition, processing and deployment were completed within the defined 27 week schedule, starting February 2011.

Street View -3D Digital City Model Hong Kong

SITUATION

Hong Kong experiences extreme pressure on its urban space, with extremely high population density, tightly-knit highrise buildings, complex architecture and a rapidly changing cityscape … all existing with a growing public awareness of community consultation, public planning involvement and complex planning legislation.

Hong Kong's planning authorities required a 3D digital citymodel with the spatial accuracy to support legal scrutiny, the photorealism to engage public consultation and functionality to analyse and present complex planning scenarios.

ACTION

AAM captured Pictometry® Oblique Imagery over the project area and constructed spatially-correct building geometry. These high resolution Pictometry images were used to texture every building façade to provide the photorealism.

Key thoroughfares were further enhanced with street-level imagery adding photorealism to streetscapes.

The textured building models were combined with AAM-captured orthophotography to build a digital citymodel. The model was deployed using AAM's K2Vi software to provide 3D analysis, presentation and linkages to the client's ESRI-based data layers.

User sessions provided client training on the software. Stakeholder workshops reviewed the various survey methods available to roll out a structured city model over HKSAR.

OpenStreetMap and SRTM Water Bodies.

RESULT

The client now has a realistic 3D city model of the project area with which he can analyse and present development scenarios. The model has the spatial rigour to support shadow analysis, viewshed and interaction with planning zones, plus the realism to encourage community consultation.

The model and software provides quicker ways to find responses to various planning options. The client has a tool which avoids past experiences where a planning proposal is noble, but poor presentation undermines the consultation process.

AAM's consultancy provided the client with direct exposure to the benefits and limitations of compiling an urban city model. Workshops detailed the suitability of numerous technologies available to prove geometry and to add various levels of realism. Our consultancy provided a blueprint to roll out a structured, relevant and affordable city model across HKSAR.