

## **Building Information Modelling**

The use of Building Information Modelling (BIM) is a relatively new and innovative approach to building design and construction. The Buildings Department (BD) encourages authorized persons (AP), registered structural engineers (RSE) and registered geotechnical engineers (RGE) to consider adopting BIM in their building projects under the Buildings Ordinance. This practice note provides general guidelines on BIM submissions for building proposals as supplementary information to facilitate plan processing by the BD.

### **BIM Submissions**

2. There is a wide range of applications of BIM on new building development and alteration and addition works which are considered useful to facilitate the BD in processing plan submissions. Some examples of BIM applications are given in **Appendix A** and the project AP/RSE/RGE are encouraged to provide the BD with a soft copy of the computer modelling information under the specified format for consideration.

### **Format and Software Version**

3. In addition to the statutory requirement of plan submission in paper format, AP/RSE/RGE are encouraged to present their building and/or building works proposals by the computer aid of BIM information in digital format compatible with BIM viewing software or real-time simulation to enhance illustration of the proposals and/or the construction sequence of the proposed works in the following manner and format:-

- (a) The data files should be stored in non-rewritable CD-ROM in ISO 9660 format (i.e. CD format) or non-rewriteable DVD-ROM in ISO/IEC 13346:1995 format (i.e. DVD format);
- (b) BIM viewing software (but not web based BIM viewer) shall be available for free download from the Internet for viewing the BIM submission. The link to download the viewing software should also be provided by the AP/RSE/RGE. Each individual file for viewing on BIM viewing software should also be limited to the size of 30 MB; and
- (c) The real-time simulation should be in Windows Media Video (wmv) or Audio Video Interleave (avi) format and supported by Windows Media Player 11 or above.

### **BIM Submission as Reference Material**

4. Whilst BIM is submitted as a kind of supplementary information for reference, the BD processes approval of plans under the Buildings Ordinance based on the information contained in the plans. In case of any discrepancy between the plans and BIM submitted, the plans shall prevail. To keep pace with the development of BIM in the building industry, the BD will, from time to time, review the extent of BIM application and evaluate its effectiveness in the plan submission.

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**Examples of application of BIM to supplement Plan Submissions**

Types of Plan Submission	Examples of Building Information to be illustrated by BIM	
	Building Information Model	Real-time Simulation
General Building Plans	<ul style="list-style-type: none"> <li>● innovative building design, irregular/twisted building form;</li> <li>● projecting features on external wall;</li> <li>● relationship between site profiles/street levels and proposed building;</li> <li>● arrangement of means of escape and compartmentation;</li> <li>● spatial arrangement of building;</li> <li>● relationship between existing building and proposed alteration and addition (A&amp;A) works.</li> </ul>	<ul style="list-style-type: none"> <li>● sequence and phasing of various stages<sup>Note 1</sup> of new building development;</li> <li>● sequence and phasing of A&amp;A works.</li> </ul>
Drainage Plans	<ul style="list-style-type: none"> <li>● complex drainage systems and/or connections</li> <li>● relationship between proposed underground drainage works and foundation works/site formation works etc.</li> </ul>	<ul style="list-style-type: none"> <li>● sequence and phasing of various stages<sup>Note 1</sup> of new building development;</li> <li>● sequence and phasing of A&amp;A works.</li> </ul>
Superstructure Plans	<ul style="list-style-type: none"> <li>● complex steel structures and/or connections;</li> <li>● arrangement of transfer structures and illustration of load path;</li> <li>● basement structures supporting adjoining ground and/or existing geotechnical features;</li> <li>● assembly sequence, structural arrangement and/or connection of façade/glass wall/curtain wall/cladding works, etc.;</li> <li>● relationship between existing structures and proposed A&amp;A works;</li> <li>● working space, temporary supports and strengthening in A&amp;A works.</li> </ul>	<ul style="list-style-type: none"> <li>● sequence and phasing of various stages<sup>Note 1</sup> of new building development;</li> <li>● sequence and phasing of A&amp;A works.</li> </ul>
Foundation Plans	<ul style="list-style-type: none"> <li>● relationship between proposed foundations, sub-structures, E&amp;LS works and geological ground profiles, adjoining existing foundations, geotechnical features, sensitive structures, etc.</li> </ul>	<ul style="list-style-type: none"> <li>● sequence and phasing of various stages<sup>Note 1</sup> of new building development;</li> <li>● top-down construction.</li> </ul>
Excavation and Lateral Support (E&LS) Plans		
Site Formation Plans	<ul style="list-style-type: none"> <li>● relationship between site profiles, geological ground profiles and proposed works.</li> </ul>	<ul style="list-style-type: none"> <li>● sequence and phasing of various stages<sup>Note 1</sup> of new building development.</li> </ul>
Demolition Plans	<ul style="list-style-type: none"> <li>● final stage of partial demolished structures.</li> </ul>	<ul style="list-style-type: none"> <li>● sequence and phasing of works, method statements and temporary precautionary measures.</li> </ul>

Notes : Relevant stages of new building development may include demolition, foundation, E&LS, site formation, sub-structure and superstructure construction, as the case may be.