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1 Dec 2020

See **Distribution**

Dear Sir/Madam

BUILDING INFORMATION MODELLING (BIM) E-SUBMISSION REQUIREMENTS FOR AS-BUILT PLAN SUBMISSIONS TO BCA

Objective

1. This circular is to inform the industry on the enhanced BIM requirements for as-built sub-structure plan submissions on underground structures to BCA, for new developments with Gross Floor Area (GFA) larger than 5,000m², and with underground components.

Background

2. BIM has been identified as a key technology to improve productivity and level of integration across various disciplines throughout the entire construction value chain. Mandatory BIM e-submission has been introduced in phases since 2013, where architectural and engineering plans are required to be submitted in BIM for regulatory approval, in tandem with industry capability.
3. The use of BIM will help to build up a systematic digitised record of underground structures to facilitate better planning and space optimisation of our underground. Accurate data on the as-built location of underground structures is important to build up and support the development of the Underground Master Plan.

BIM Requirement for New Developments

4. To build up better records of underground structures, new developments with GFA more than 5,000m² and with underground components, will need to meet the requirements set out in Table 1 below. Refer to Annex A for examples of the as-built substructure BIM.

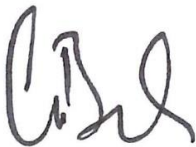
Table 1: BIM Submission Requirements

| Approving Authority | Submission Stage | Submission Requirement |
|----------------------------|-------------------------------------|---|
| BCA | As-built Structural Plan submission | Consolidated as-built BIM model of sub-structure works (Structural Plan Only) |

5. This applies to projects with first application for Provisional Permission (PP) and/or Written Permission (whichever is earlier) under the Planning Act made on or after 1st June 2021.
6. The Structural QP(Design) are to submit a consolidated As-built substructure BIM Model for each of their projects. All BIM models are to be prepared in accordance with BCA's BIM Code of Practice (CoP) and submitted in native BIM format via CORENET. The CoP for Architecture, C&S and MEP may be downloaded from [http://www.corenet.gov.sg/general/building-information-modeling-\(bim\)-e-submission.aspx](http://www.corenet.gov.sg/general/building-information-modeling-(bim)-e-submission.aspx).
7. Should you need any clarification, you may contact the following Authority:

| Clarification On | Contact Authority |
|--|--|
| Type of projects which fall under the ambit of this circular | URA via URA's enquiry form (https://www.ura.gov.sg/feedbackweb/contactus_feedback.jsp) |
| Technical advice relating to Native BIM e-submission | BCA via BCA's Online Feedback Form (https://www.bca.gov.sg/feedbackform/) |

Yours faithfully



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Elements required in as-built sub-structure BIM

- Structural elements (beams, columns, slabs, etc.)
- Knock-Out Panels
- Foundation (exclude piling – Excel Format*)
- Earth retaining structures / Left-in temporary structures (diaphragm wall, sheet pile, rock bolt, ground anchors)
- Individual floor levels
- Vertical circulation cores (staircases, lifts, etc.)

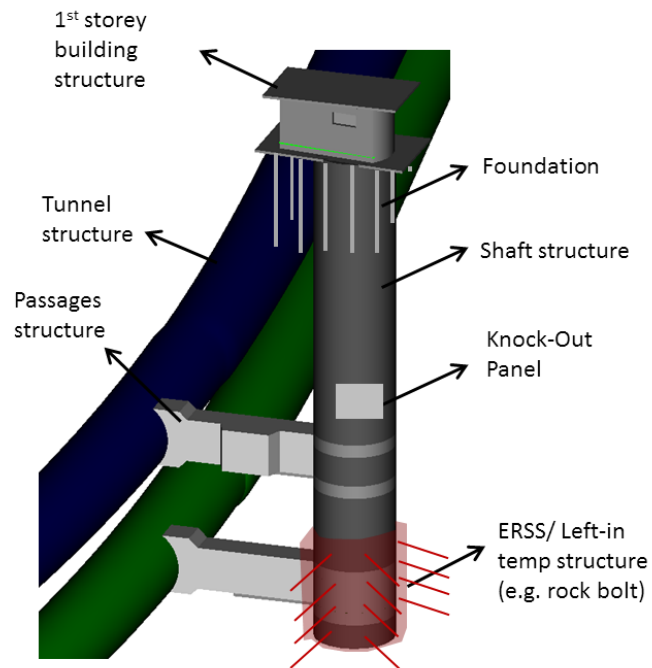


Illustration of elements required in a consolidated BIM of tunnels and shafts

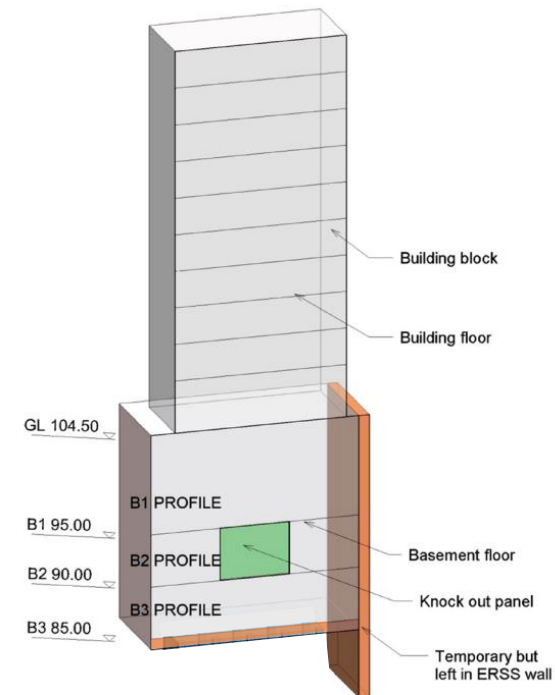


Illustration of elements required in As –Built sub-structure BIM building

**For the excel file format on as-built plans for piling works, please refer to the circular “New requirements for structural plans submission” issued on 1 Nov 2016*