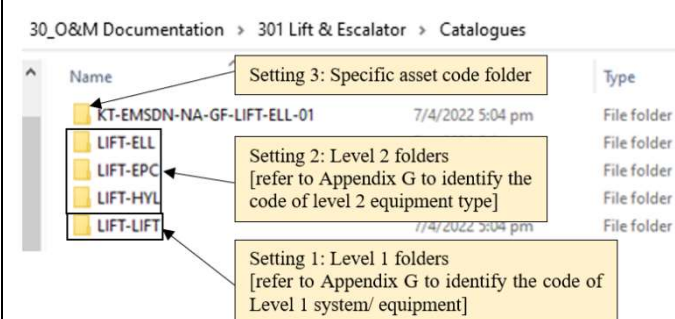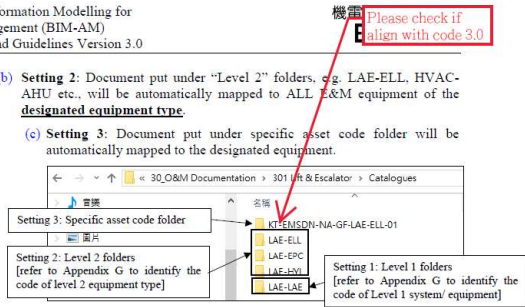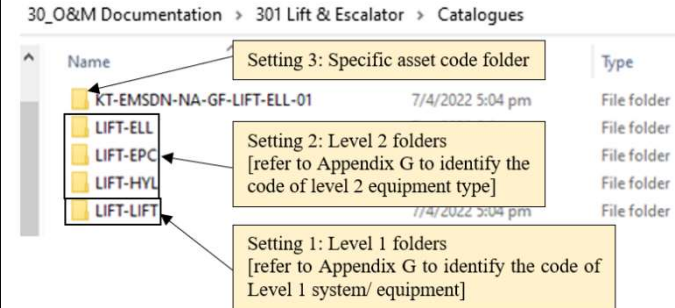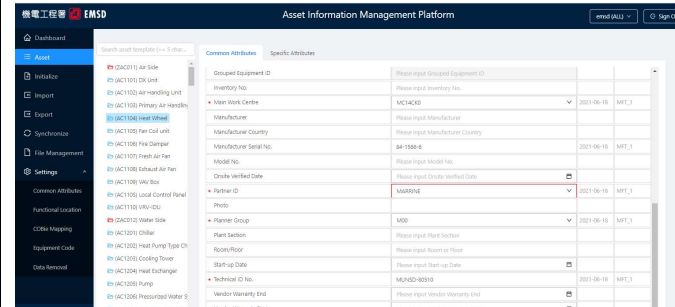Response-to-Comment for BIM-AM Standards and Guidelines

No.	Comment from	Section / Standard	Comments	Responses
Response-to-Comment for BIM-AM Standards and Guidelines				
1.	General Engineering Services Division (named as GESD in this document) of EMSD	Table of Content	Wrong display of reference in table of content	Noted. The content has been updated.
2.	GESD	List of Abbreviations:	Consider to add "BIM-AM SG"	Noted. The content has been updated.
3.	GESD	Section 2.1	Any requirement on the version of software e.g. Navisworks?	This is describing an example to BIM software. No specific version will be specified in the Standards.
4.	GESD	Section 2.2	Avoid short form for H/O Guide	Full name is already mentioned in second paragraph of Section 2.2. The short form serves for simplicity.
5.	Municipal Sector Division (named as MUNSD in this document) of EMSD	BIM-AM SG Section 2.7.1 and 2.7.2	What do the drawback in the file size exceed the MB recommendation? Is it needed to process many workload to maintain the file size requirement during the project progress? It should mention in the guideline reminding the user.	- Models with large file sizes takes longer time to process and may cause the software program to be instable while viewing it if computing resources are not sufficient. (eg. Software crashes while rotating a view). - The proposed file size is a reasonable size that could be maintained in most cases as industry well-known practice, which is also mentioned similarly in public/ private contracts. Heavy and additional workload will not be imposed on SBUs from this task.

6.	MUNSD	BIM-AM SG Section 4.1.2	Is there any workflow control to standardize the origin point in different project works? If it is defined by the contractor and endorsed by the project team, there would has different definition. More information should include in the documents for the user.	It is not required to setup a common origin point in BIM. As long as the model coordinate set aligned the BIM Project Coordinates requirement in Section 4.1.2.
7.	GESD	Section 5.3	Please consider to use EMSTF	Noted. The content has been updated.
8.	GESD	Section 5.5 Table 5-4	Seem to deviate from the code in Appendix G.	Noted. The content has been updated.
9.	GESD	Section 5.5 Table 5-4	Please consider to review the type of items in iBMS naming convention and supplement if appropriate.	The revised code is aligned with iBMS naming convention. For example, common naming in the past such as HVAC-PMP (Pump) is classified into specific usage, including but not limited to CHWP (chilled water pump), CWP (condensing water pump) and CP (circulation pump) etc.
10.	GESD	Section 6.1	Wrong link in content	This is referring to Figure 6-1, the reference link has been updated.
11.	GESD	Section 6.1.3	Please check if align with code 3.0	Noted. The content has been updated. LAE has been revised as LIFT.

12.	GESD	Section 6.1.3	Please check if align with code 3.0	Noted. The content has been updated. LAE has been revised as LIFT.
13.	GESD	Section 6.1.4	Can proceed with invalid data inputted?	AIMP would contain asset data validation function to ensure the completeness and correctness of data upload in terms of data format. Invalid data input should be highlighted as shown below. Also, plugin tools are developed to assist the handover and tools can be download on AIMP. For example, BIM model checker has been developed to assist the checking on attribute setting & naming in models. AIMP has been aligned the pick list requirement for each asset field to facilitate the smooth upload to CCS.

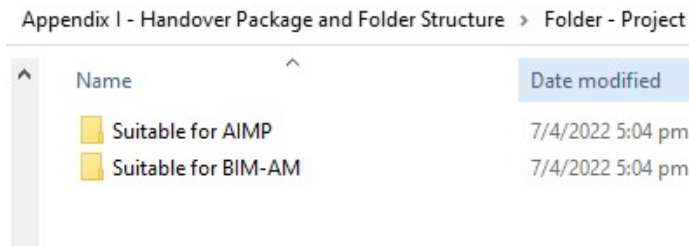| 14.	MUNSD	BIM-AM SG Section 7.1	Is there any standardize guide include in the document to control in the interfacing with the systems via BIM-AM? It stated the BIM would interface to CCMS, RDCC, RTLS, IoT, etc. Some of them launched in the production before the BIM establishment, there may hide the compatible issue due the systems established from different contractor as well. It has an advantage to let user think more about the existing systems enhancement, say API requirement, in this stage preparation to interfacing the BIM in future launch.	- For iBMS, please refer to EMSD Internal Engineering Guideline on Integrated Building Management System (iBMS) which was issued in Jun 2018. - As coordinated among EMSD corporate systems, BIM-AM systems would interface with corporate RDCC to retrieve the operational data instead of individual CCMS on site and such interfacing work is being coordinated. Besides, BIM-AM systems could support to input and access the URL links of CCMS or iBMS if remote access is supported by the monitoring systems. For the interfacing between GWIN and BIM-AM systems, the interfacing work was completed and point lists shall be passed to BIMSD for point mapping and visualisation in BIM models.
15.	GESD	Section 7.1.3	please consider to briefly elaborate requirements / specification / equipment considerations on BIM-AM and GWIN interface?	Refer to response in item #14.
16.	GESD	Section 8.2	EDO refers to?	EDO is the abbreviation of EMSD Drawing Office. Name has been replaced by EMSD SBU in the latest revision.

17.	MUNSD	BIM-AM SG Appendix D	EMSD Shared Parameters 3.3_PQM.txt - the usage is not clear	This is a parameter file and can be loaded to Revit for the standard parameters of each E&M equipment type as stated in Appendix G. Reference procedures can be found via the official link below: https://knowledge.autodesk.com/support/revit/learn-explore/caas/CloudHelp/cloudhelp/2018/ENU/Revit-Model/files/GUID-94EA2B8E-2C00-4D29-8D5A-C7C6664DE9CE-htm.html
18.	MUNSD	BIM-AM SG Appendix E	Appendix E-Best Practices for BIM Modelling - is not Electronics system related	Noted. Reference contents have been supplemented to Appendix E Section 4.1.8.
19.	Health Sector Division (named as HSD in this document) of EMSD	--	The current design of Asset Information Management Platform (AIMP) is not user-friendly enough to allow efficient BIM-AM data submission, viewing, and checking.	User interface design meeting of AIMP with stakeholders will be arranged for CDE phase 2 development in Q4 2022.
20.	Assistant Director/3 of EMSD	--	General term of SBU should be adopted in three standards and those terminology of DBT, SBU project team, SBU O&M team should be avoided.	Those terminologies including the diagram have been revised by general term of SBU.
21.	Digitalization and Technology Division (named as DTD in this document) of EMSD	Appendix B	Wrong templates of LV switchboard are used for ACB, MCB etc. Please use Switchgear templates	Noted and the content has been revised for correct template for ACB and MCCB under LV switch board.

22.	DTD	General	The system and equipment abbreviations quoted do not tally with Appendix G.	Noted and revised.
23.	DTD	Appendix G	System name shall be aligned with the level 1 asset (LAE should be revised to LIFT). All related parts in Standards should be revised	Noted and revised.
24.	DTD	Folder Structure	CCTVI-NVR is missing	Noted and revised.
25.	DTD	Appendix G	System name shall be aligned with the latest changes (PABX should be revised to PX). All related parts in Standards should be revised	Noted and revised.
26.	DTD	Folder Structure	Similarly , correct system name shall be applied to folder structure.	Noted and revised.
27.	DTD	Folder Structure	First digit of sub-folders shall refer to its main folder. E.g. Lift and Escalator in 60 CCS Spreadsheet should be 601 instead of copying 301 from 30 O&M Documentation A1 should be 6A1	Noted and revised.

28.	DTD	Folder Structure	Relocate PV to Electrical Distribution. Please amend all relevant part accordingly.	Noted and revised.
29.	DTD	Folder Structure	Change "Suitable for CDE" to "Suitable for BIM-AM"	Noted and revised.
30.	DTD	Appendix B ADT	Align the asset name with Appendix G.	Noted and revised. Microsoft Excel does not support worksheet name with more than 31 characters. Therefore "fire services intermediate booster pump" should be shortened.
31.	DTD	Appendix B ADT	Power distribution board and power distribution unit (PDU) are two different things. Please align the asset name with Appendix G. This apply to all document. Please check carefully.	Noted and revised.
32.	DTD	Appendix B ADT	Align system naming PABX to PX	Noted and revised.

| 33. | Francis LEUNG, BIMSONS | The 2nd last bullet of Section 4.1.2 in BIM-AM SG | For the paragraph 4.1.2, I do not agree with the description of the setting of "model based on true north" and "project north can only apply for identified sheet views". The wordings confuse me that the model is developed with their local axis following True North Easting and Northing.

The industry practice, for building projects, Project North setting should follow the local axis of the structure, say, for example, for an rectangular structure, the Project North should be set at the edge direction. True North is then set when the structure is located and oriented to the location. Of course, for civil projects such as tunnel or highways, the Project North should follow the True North as there is no specific axis for the structure to follow. | Paragraph 4.1.2 is revised for clarity. Agreed with the industry practice. The proposed setting would facilitate the correct setup for EMSD's BIM viewer in BIM-AM Systems which require such setting. |

| 34. | Nigut Nabgal, British Standards Institution (BSI) | Appendix G and Appendix F | My name is Mohit MANGAL and I am a colleague of Dr. Calvin KAM and Mr. Dickson MAK at Strategic Building Innovation (SBI). Our team is currently reviewing the "Equipment Codes" from EMSD "BIM-AM Standards and Guidelines v3.0_draft" (URL below) for implementation on client projects. As per Section 1.1.3, the EMSD guidelines have been developed in alignment with the CIC BIM Standards & Guides. Accordingly, we have also reviewed CIC BIM Standards – Version 2.1, which does not contain equipment codes/abbreviations.

However, there is one Master List published by CIC (CAT_Sub CAT Code Master List) containing the category and sub-category codes. While comparing the CIC's Master List and "Equipment Codes" from EMSD guidelines (Appendix G), some differences have been observed. E.g.,
    Valves – MVA (CIC code) vs VTV (EMSD code)
    Heat Exchanger – MHE (CIC code) vs HEX (EMSD code)
    Control Panel – ECP (CIC code) vs COP (EMSD code)
It will be great to get more clarification/details on the above so that the guidelines can be implemented efficiently on our client projects. | The equipment code as specified under Appendix G is for the asset coding. Asset code is an attribute of a BIM object to facilitate the information exchange between models and EMSD's asset management system, but not for the naming convention of BIM objects. The BIM objects naming for modelling shall follow the requirement of CIC Standards. |

			EMSD's BIM-AM Standards and Guidelines v3.0_draft – https://www.emsd.gov.hk/filemanager/en/content_1148/BIM-AM%20Standards%20and%20Guidelines%20v3.0_draft.zip CIC's CAT_Sub CAT Code Master List - https://www.bim.cic.hk/en/resources/master_list	
35.	Ron Ng, Construction Industry Council (CIC)	Document Revision Tracking	Provide a succinct summary of the updates made in each revision, including Section Nos. of the updates.	Summary table of major changes will be available in EMSD website together with the publication of EMSD's BIM-AM Standards and Guidelines.
36.	Ron Ng, Construction Industry Council (CIC)	Page vi. List of Abbreviations	Thanks for mentioning "For common BIM terminologies, refer to CIC BIM Dictionary", better indicate as "For common BIM terminologies, refer to *the latest* CIC BIM Dictionary".	Noted and revised in List of Abbreviations
37.	Ron Ng, Construction Industry Council (CIC)	Page vi. List of Abbreviations, Definition of 'AIR'	The definition of AIR should be in plural form (i.e. Asset Information *Requirements*) according to ISO19650-1:2028	Noted and revised in List of Abbreviations.

38.	Ron Ng, Construction Industry Council (CIC)	Page vi. List of Abbreviations, Definition of 'Federated Model'	Supplement or replace with its definition (It means a Model that links distinct component Models, tables, analysis and other data sources without losing their identity or integrity by being linked, such that any change to one component Model will not change another component Model.) defined in the CIC BIM Dictionary 2021.	Noted and revised in List of Interpretations
39.	Ron Ng, Construction Industry Council (CIC)	Page 1 Section 1.1	*Original: "Meanwhile, asset information should be gradually built up in the Project Information Model (PIM) so that by the end of the construction stage, the BIM model becomes an Asset Information Model (AIM) for handover to asset management."* Replace with "Meanwhile, asset information should be gradually built up in the Project Information Model (PIM) so that by the end of the construction stage, the BIM model becomes an *as-built BIM with required asset information* for handover to asset management." For reference, according to CIC BIM Standards – General 2021, when verified As-Built Information model (ABIM) is handed over to Appointing Party / Client, it becomes the Asset Information Model (AIM) for operation use. it means AIM should only happen in the O&M stage.	Thank you for the suggestion. However, Asset Information Model (AIM) will be kept because ISO19650 only included AIM and PIM, which keeps the information flow more direct and simpler.

40.	Ron Ng, Construction Industry Council (CIC)	Page 1 Section 1.1.3, "CIC BIM Standards - General Version 2.1 – November 2021"	If it only refers to the title, it should be "CIC BIM Standards - General *Version 2.1 – 2021*", no need to indicate month. For reference, yes, it's published in November 2021 as indicated in the Document Revision Tracking.	Noted and revised in Section 1.1.3
41.	Ron Ng, Construction Industry Council (CIC)	Page 1 Section 1.1.3	*Original: "CIC Production of BIM Objects Guide – General Requirement Version 2 – 2021"* It should be "CIC Production of BIM **Object** Guide – General Requirement Version 2 – 2021".	Noted and revised in Section 1.1.3
42.	Ron Ng, Construction Industry Council (CIC)	Page 2 Section 1.1.3, Additional standards and guidelines have been referenced	Other than 'BS EN ISO 19650', has '*ISO 19650*' been referenced? They are two different sources.	BS EN ISO 19650 and ISO 19650 refer to the same standard document.

43.	Ron Ng, Construction Industry Council (CIC)	Page 4 Section 2.1, Bullet point "Most current version of Industry Foundation Classes (IFC) file format"	Would it be better to specify the version(s) of IFC instead of "Most current Version"? For reference, according to BH, Section 2.2.2.5. indicated that "For the shareable BIM format, IFC v4 will be used."	Noted and revised in Section 2.1 to align with BH.
44.	Ron Ng, Construction Industry Council (CIC)	Page 6 Section 2.6	*Original: LOIN could either be expressed in the richness of geometric details (LOD-G) or richness of datasets (LOD-I).* Replace with "LOIN could be expressed in the richness of geometric details (LOD-G) **and** richness of datasets (LOD-I)."	Noted and revised to "and/or".
45.	Ron Ng, Construction Industry Council (CIC)	Page 7 Section 2.6.1, Figure 2-2	Is "Project Issue Date" equivalent to "Project Commencement Date"? if yes, better state as "Attribute for Project Issue Date (Project Commencement Date)".	Noted and revised to "Attribute for Project Issue Date (i.e. Project Commencement Date)".
46.	Ron Ng, Construction Industry Council (CIC)	Page 8 Section 3.2, it is encouraged to submit newly developed objects to the CIC BIM Portal	In order to indicate/emphasis there is 'object sheet', suggest to update the statement as "It is encouraged to submit newly developed **BIM** objects **together with object sheets** to the CIC BIM Portal."	Noted and revised to "It is encouraged to submit newly developed BIM objects to the CIC BIM Portal. For the BIM object requirement, including the object sheets format, shall be referred to the CIC BIM. Object Guide for detailed requirement."

47.	Ron Ng, Construction Industry Council (CIC)	Page 8 Section 3.3, for the purpose of asset management, the LOD-G for E&M equipment should be no less than LOD 300	Replace with "For the purpose of asset management, the LOD-G for E&M equipment should be no less than *LOD-G 300*."	Noted and revised.
48.	Ron Ng, Construction Industry Council (CIC)	Page 11 Section 4.1.2, "The information model shall be set up…"	"information model" is only appeared once here, for consistency along the document, suggest to update as "The BIM model shall be set up…" or "BIM models shall be set up…". Similarly, in Section 4.1.1, update as "BIM models shall be modelled in…"	Noted. Wording has been changed to "BIM models shall…"
49.	Ron Ng, Construction Industry Council (CIC)	Page 12 Section 4.1.3, Figure 4-1	Typo, it should be "***Modelling***". Also, there is a label appeared when the cursor is moving over it, better remove the label if it's not purposed.	Noted and revised. The cursor has been removed.
50.	Ron Ng, Construction Industry Council (CIC)	Page 14 Section 4.2.3, Figure 4-7	Suggest to avoid software-specific, for Routing Type 'Trucking', the BIM Category should be 'Trucking' if it's available, use 'Duct' for Revit only because Revit has no 'Trucking'.	Noted and revised.

51.	Ron Ng, Construction Industry Council (CIC)	Page 17 Section 4.2.4, Point 1	Replace "Nested family…" with Nested BIM object…"	Noted and revised.
52.	Ron Ng, Construction Industry Council (CIC)	Page 33 Section 6.2, 1st paragraph	Same comment for the Page 1 Section 1.1 above.	Same as item #39
53.	Ron Ng, Construction Industry Council (CIC)	Page 37 Section 6.5.2, Table 6-1	Should the attributes from "Serial No" to "Weight" under Attributes Type Part 1? If yes, those gridlines under the column 'Attributes Type' of the Table should be removed accordingly.	Noted and revised.
54.	Ron Ng, Construction Industry Council (CIC)	Page 49 Section 8.2, Figure 8-1	Missing indication of 'Yes' from the APT's process "Adopt workflow to transfer…?" to the O&M Team's task "Work with Contractor…".	Noted and revised.
55.	Ron Ng, Construction Industry Council (CIC)	General comment	Just curious, is it both British and US languages acceptable in the document? e.g. both standardise & standardize are used. e.g. both organisation & organization are used.	"Standardized" has been changed to "standardised." For browser "organization," this is a BIM software-specific terminology and would remain unchanged.
56.	Ron Ng, Construction Industry Council (CIC)	General comment Encouraging the industry to adopt CIC BIM Standards	To indicate "CIC BIM Standards for Mechanical, Electrical and Plumbing (Version 2 – 2021)" where appropriate. Is it appropriate to add it in Page 2 Section 1.1.3 under the additional standards and guidelines have been referenced?	Noted and added.

57.	Ron Ng, Construction Industry Council (CIC)	General comment Encouraging the industry to adopt CIC BIM Standards	To indicate "CIC BIM Guide for using BIM in generation of MEP digital drawings for statutory submissions 2021" where appropriate. Is it appropriate to add it in Page 2 Section 1.1.3 under the additional standards and guidelines have been referenced?	This Guide is not applicable for asset management.
58.	Ron Ng, Construction Industry Council (CIC)	General comment MiMEP	It seems that MiMEP is a trend, would EMSD consider to supplement a section / paragraph where appropriate as a way forward or extension of the EMSD BIM-AM Standards and Guidelines in the future?	Noted and the new item related to MiMEP is specified in Section 4.2.4 of the BIM-AM Standards and Guidelines.
59.	Participants in Webinar to trade	--	There are questions about AMIP security: How to ensure data security for AIMP? Will there be third parties involved in the partnership?	The files would store under EMSD network as on-premises level. The AIMP and CDE platform would go through Security Risk Assessment & Audit (SRAA) before the formal launch for trade to submit BIM-AM deliverables.
60.	Participants in Webinar to trade	--	If we have uploaded all the data from our BIM model to EMSD platform, how can we know we have complied EMSD requirements related to BIM-AM? Any feedback from EMSD confirm our compliance?	For the compliance checking which would have some tools like model checker to valid contractor's BIM deliverables. And AIMP would highlight the wrong data input after the data upload.

61.	Participants in Webinar to trade	--	Is there an upper limit for model elements displayed by the maintenance system?	Each model file size should be smaller than 500Mb. Since the model federation shall separate into level and sub-system which should be enough for general E&M assets.
62.	Participants in Webinar to trade	--	It is noted that the BIM-AM will apply to contract sum over HK$30M. Does it mean to apply to the main contractor only? Does it apply to a domestic sub-contractor too?	It is not just applied to main contractor but also other contractors involved in the works project. It is mandatory for all capital works project with project estimate exceeded HK$30M to adopt BIM.
63.	Participants in Webinar to trade	--	Will EMSD to adopt the BIM submission processes for E&M system which related to statutory requirement such as the Form 5 for Lift system or cooling tower CT form submission etc?	Adoption of BIM to facilitate statutory submission is being explored.
64.	Participants in Webinar to trade	--	Model checker available for native BIM model or ifc?	Contactor shall submit native .rvt file to EMSD for checking. Plug-in provided by EMSD shall be used in native model checking.
65.	Participants in Webinar to trade		Will ICT system/ lighting system include in current BIM-AM S&G	Lighting System (LTG) is included in Appendix G. The latest BIM-AM SG is updated to have more than 23 Level 1 systems which based on EMSD's BIM-AM practice. The asset templates have been updated and covered most of the general assets in current E&M trade.

66.	Questions from Online Survey Form	--	A showcase of real project could be more practical.	The shared parameters files have been provided under Appendix B which would facilitate the set up of asset attributes. Portion of sample model would be provided by EMSD as a reference on request.
67.	Questions from Online Survey Form	--	It is not easy to build a high standard model to fulfill the handover requirement	The detailed handover workflow and checklist of handover for BIM-deliverables are stated in the new H/O Guideline.
68.	Questions from Online Survey Form		Will EMSD provide the sample model or revit template for setting up the model?	Same as response in item #66.
69.	Questions from Online Survey Form		Software is too complicated	Same as response in item #67.