

## Summary of Items Discussed in 1/2020 APSEC Discussion Forum on 10 January 2020

	Items proposed by Convenors for Discussion	Summary of Discussion and BD's Responses
	<p><b>Items raised by HKIA</b></p>	
<p>1.</p>	<p><b><u>Footbath to Swimming Pool as MOE</u></b></p> <p>Regarding the provision of footbath for giving access to swimming pool as part of the licensing requirements, we would like to enquire if such footbath can form part of the MOE for the swimming pool deck, provided that the level change of such footbath is negotiated with either ramp with gradient not steeper than 1:12 or at least 2 steps with risers not more than 175mm high and treads not less than 225mm wide.</p>	<p>According to item (j) of the guidance on factors to be considered for complying with the Performance Requirements B1 to B7 of Subsection A8 - MOE under Section 2 of the FS Code (p. 12), the MOE should be of suitable construction to prevent slipping and falling. Hence, footbath giving access to swimming pool should not be accepted as part of the MOE for swimming pool deck.</p> <p>Reference should also be made to BD's response to item 2 of ADF 2/2015 held on 20 March 2015.</p>
<p>2.</p>	<p><b><u>AC Platform in Steel Construction</u></b></p> <p>It appears that paragraph 2(a) and Figure 4 of Appendix C to Code of Practice on Design for Safety – External Maintenance 2019 (the “Design for Safety Code”) regarding the projection and width of AC platform are essentially written/illustrated for AC platform in R.C. construction, except for those portions projecting beyond 750mm.</p> <p>We understand that the design criteria for allowing an AC platform to project up to 900mm disregarding the thickness of protective barrier/guard-rail/screen including its supporting structural members will</p>	<p>The requirements stipulated under Appendix C to the Design for Safety Code were also applicable to AC platform wholly in steel construction.</p> <p>BD also advised that paragraph 3(c) of PNAP APP-19 should cover AC platforms complying with Appendices B and C to the Design for Safety Code, whilst paragraph 3(b) was retained for other AC platforms need not be counted for site coverage and plot ratio, e.g. those in existing project under construction.</p>

	<p>equally be applicable to AC platform wholly in steel construction. Please confirm that our understanding is correct.</p> <p>Besides, we also suggest making appropriate amendments to paragraph 3(b) of PNAP APP-19 regarding the maximum allowable projection of AC platform to align with the Design for Safety Code.</p>	
3.	<p><b><u>Repairs to Curtain Wall, Glass Wall and Cladding</u></b></p> <p>Footnote 1 of BD’s circular letter dated 3 October 2019 states that <i>“For replacement of individual components of the curtain wall and glass wall (e.g. glass panes....etc.).....same as the approved design, structural analysis and design calculations for the replacement components.....and the checking on the structural adequacy of the parent structure are not required”</i>.</p> <p>We would like to enquire the following:</p> <p>(i) Whether the above is still applicable if the amount of glass panes to be replaced is substantial, say over 50% of glass panes are to be replaced; and</p> <p>(ii) In case structural analysis and design calculations on item (i) above are considered necessary due to the substantial replacement of glass</p>	<p>(i) BD advised that pursuant to the circular letter issued on 3 October 2019, submission of structural analysis and design calculations would not be required for replacement of individual components of curtain wall, glass wall or cladding panels same as the approved design, unless there was safety concern warranting a need to review the structural design.</p> <p>(ii) BD advised that the pre-2018 Glass Code requirements could be followed for such replacement works under normal circumstances.</p>

	<p>panes, can the replacement works be designed to the pre-2018 Glass Code, when it may not be practicable for the existing curtain wall system to follow the new 2018 Glass Code requirements?</p>	
<p>4.</p>	<p><b><u>Horizontal Area of Staircases, Lift Shafts and Vertical Ducts</u></b></p> <p>According to paragraph 14 of PNAP APP-2, the horizontal area of staircases, lift shafts and vertical ducts should normally be measured for GFA together with the floor through which they pass, except refuge floors; and where these features solely serve floors accepted as not being accountable for GFA, the area of the features may also be discounted.</p> <p>It follows that where these features serving other GFA accountable floors pass through say, M/E floor (or other floor which is non-accountable for GFA), only the horizontal area of the staircases and lift shafts at the M/E floor are to be accountable for GFA. However, there have been quite some cases where in addition to the horizontal area of staircases and lift shafts, the associated staircase lobbies and/or lift lobbies (whether protected or not) at the said M/E floor are also required to be included in GFA calculation. We opine that this may not be the original intention of the said paragraph 14 of PNAP APP-2, as these staircase lobbies/lift lobbies are provided to solely serve the M/E floor (or other similar non-accountable GFA floor). Please advise if our interpretation is correct.</p>	<p>The associated staircase lobbies and/or lift lobbies at the M/E floor, other than those required under FS Code, may be disregarded from GFA calculation provided that these features solely serve the M/E floor which is accepted as not being accountable for GFA.</p>

	<b>Items raised by HKIE</b>	
5.	<p><b><u>Signature of ELS Plans by RGE</u></b></p> <p>As per item 19 of ADF 1/2016 held on 15.1.2016, BD advised that RGE was not required to sign on ELS plans in accordance with the division of responsibilities between AP, RSE and RGE specified in Task 6 under Appendix B to PNAP APP-141 in dealing with “Excavation and Lateral Support” works.</p> <p>Nevertheless, there is still occasion that BD or GEO officers requesting RGE to sign on those ELS plans with significant depth of excavation. We therefore encourage BD to remind frontline officers of BD and GEO on such arrangement.</p>	<p>BD confirmed that PNAP APP-141 should follow and RGE would not need to sign on ELS plans. BD would remind GEO in their liaison meeting.</p>
6.	<p><b><u>RGE Endorsement on Pre-drilling or Post-installation Drilling</u></b></p> <p>Pursuant to the paragraph 7.1 of Code of Practice for Site Supervision 2009 (Supervision Code), only foundation works falling into the following situation are classified as “Building Works with Significant Geotechnical Content”. Foundation works outside this category do not require RGE stream supervision.</p>	<p>BD confirmed that pre-drilling and post-installation drilling were classified as foundation works. Hence, completion certificate from RGE would not be required.</p>

(f) foundation

- foundation for buildings in Scheduled Area No. 1
- deep foundation for buildings in Scheduled Areas Nos. 2 & 4 and in Designated Area of Northshore Lantau
- foundation that could affect an existing tunnel/cavern or that could be affected by tunnel works

A number of pre-drilling or post-installation drilling would be carried out at different stages of the foundation works. The quality supervision requirement for such drilling is stated in paragraph 6.28 of Supervision Code which also implies no RGE stream supervision would be required for the foundation works not falling into “Building Works with Significant Geotechnical Content” category.

6.28 Pre-drilling, interface core-drilling, post-installation drilling and proof test core-drilling for foundation works must be carried out by a Registered Specialist Contractor in the Ground Investigation Field Works category and be supervised by the site supervisors responsible for the quality supervision of foundation works. There is no need to submit a separate supervision plan for the pre-drilling and post-installation drilling works.

However, many officers might refer to Appendix VIII of Supervision Code for ground investigation field works and demanded a certificate from AS of the Registered Specialist Contractor and a certificate from the RGE.

	<p>6. Submission of ground investigation reports in support of the approval of foundation, site formation, excavation or other proposals or geotechnical assessments</p>	<p>The ground investigation report shall include the following:</p> <ul style="list-style-type: none"> <li>(a) a certificate from the authorized signatory of the RSC (GIFW) confirming that: <ul style="list-style-type: none"> <li>(i) the RSC(GIFW) is responsible for the works stated in the report and that the works have been conducted according to GEOGUIDE 2 and 3;</li> <li>(ii) the works have been carried out under supervision in accordance with the requirements stipulated and the supervision plan submitted;</li> <li>(iii) the logging of samples and preparation of borehole logs in accordance with GEOGUIDE 3 have been carried out by a Competent Person; and</li> <li>(iv) the field density tests and other tests of samples have been conducted by a HOKLAS accredited laboratory.</li> </ul> </li> <li>(b) a certificate from the RGE that he has provided supervision in accordance with the requirements stipulated and the supervision plan submitted.</li> </ul> <p>Since the RGE stream does not involved in the supervision of abovementioned drilling accompanying foundation works, we consider it is inappropriate to request for a certificate from the RGE and would like to seek BD's clarification.</p>	
7.	<p><b><u>Split of ELS Plans Submission</u></b></p> <p>Pursuant to paragraph 6 of PNAP APP-57, BD allows ELS plans to be submitted in two stages.</p>		<p>BD confirmed that Stage 1 submission could be a schematic design of ELS system and the structural details of the lateral support system could be included in Stage 2 submission. In this regard, BD would draw GEO's attention to the details stipulated in PNAP APP-57 in their liaison meeting to</p>

6. It is permissible to have the ELS plans submitted in two stages, provided that the first stage submission demonstrates the feasibility of the entire scheme. Plans submitted at the first stage should show the lateral support system, for example sheet piles or a diaphragm wall, together with a strutting layout and the construction sequence. The supporting geotechnical documentation should also be provided. Calculations submitted at the first stage should include realistic ground movement estimates for the entire works. The second stage submission normally would include the structural details of the lateral support system, including detailing of the struts for each stage of excavation according to the approved first stage submission.

The Stage 1 submission typically contains wall elements and grouting (if any) with pumping test (if required). Under the current arrangement, the design assumptions on the strut stiffness and pre-loading requirement are stated in the plans submitted for approval but the strutting layout and construction sequence are included into the submission package as “For Information” to demonstrate the feasibility of the entire scheme. Obviously, the accompanied design analyses should tally with the construction sequence and supporting arrangement.

However, some officers interpreted from the wording of paragraph 6 of PNAP APP-57 that approval of strutting layout and the construction sequence should be part of the Stage 1 submission and imposed a condition that approval of these two elements (normally in Stage 2 submission) should be obtained prior to the consent application for the pile wall.

We opine that such condition is against the original intention of PNAP APP-57 to facilitate the ELS submission and would therefore like to seek BD’s clarification.

avoid ambiguity in the interpretation.

8.

**Requirement of Stipulating FoS on Cone Weight for R<sub>a</sub> Check**

Clause 5.3.3 (1)(a) of Code of Practice for Foundations 2017 (Foundation Code) stipulated the need in deriving anchorage resistance under unfactored and factored loading conditions. Clause 5.3.3 (1)(b) further provided guidance that the ultimate anchorage resistance is capped by the effective weight of soil mass and rock cone.

(b) Anchorage resistance limited by effective weight of soil mass/rock cone

The anchorage resistance against uplifting force would be limited by the effective weight of the soil mass and rock cone that can be mobilised by the piles. The ultimate anchorage resistance of a pile or a pile group, R<sub>u</sub>,

therefore should not exceed the effective weight of the soil mass and rock cone as derived from sub-clauses (2)(b) and (3)(c) below such that:

$$R_u - W_p' \leq W_1' + W_2'$$

where W<sub>1</sub>' is the effective weight of the rock or soil cone;  
W<sub>2</sub>' is the effective weight of the soil column above the rock or soil cone; and  
W<sub>p</sub>' is the effective self weight of the pile.

Some officers might require a factor be applied to reduce the cone weight for unfactored load case (R<sub>a</sub>) check for which we opine that a FoS on cone weight is inappropriate and performing a cone weight check under R<sub>a</sub> case should be unnecessary.

When deriving the effective soil mass and rock cone, the unit weight of materials would have been obtained from GI results and the angle of cone

BD confirmed that cone weight need not be checked under R<sub>a</sub> case.

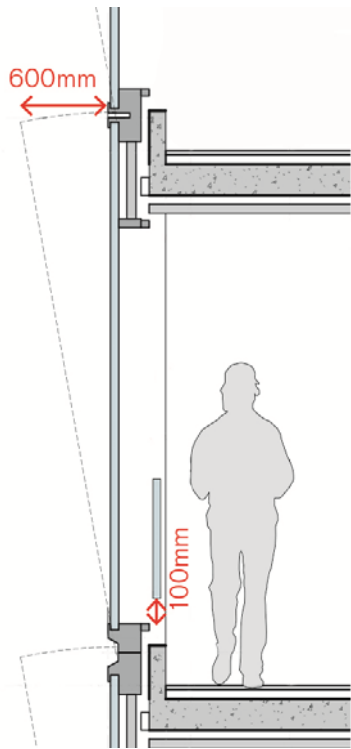


	<p>stipulated in the Foundation Code is already very conservative (assumed to be heavily fractured rock according to Tomlinson M.J. (1994) “Pile Design and Construction Practice (4th edition)”). Given the cone weight being self-weight which is in similar nature as pile self-weight, there is no difference between the <math>R_u</math> and <math>R_a</math> cases, further applying a FoS is considered too onerous and unnecessary.</p> <p>Given the cone weight has been checked in <math>R_u</math> case and abovementioned reason, checking cone weight in <math>R_a</math> case becomes redundant and we recommend such check to be omitted.</p>	
9.	<p><b><u>Joining Column Main Bars by Welding/Weld Lap Joint</u></b></p> <p>According to Clause 8.7.1 of Code of Practice for Structural Use of Concrete 2013 (Concrete Code), welding is allowed for joining the reinforcement bars unless the imposed loading is predominantly cyclical.</p> <p>Whilst the definition of cyclical loads has not been given in the Concrete Code, it is common understanding that such cyclical loads should refer to loads induced by machinery; but not wind other than oscillations due to aerodynamic instability such as flag post. Hence, welding should also be allowed for joining reinforcement bars of the wind frame structure.</p> <p>Would BD please clarify whether the above is correct.</p>	<p>BD confirmed that wind load on buildings would normally not be classified as “Predominantly Cyclical” load. Hence, welding could be adopted in wind frame members.</p>

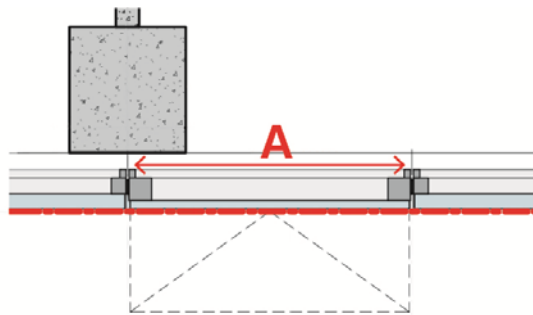
10.	<p><b><u>Lengthy Process of Structural Engineering Committee (SEC) Cases</u></b></p> <p>The industry was told that submissions requiring SEC endorsement would be processed within the statutory processing time.</p> <p>Nevertheless, it is noted from recent SEC cases that the processing time after the corresponding SEC meetings has been dragged for a substantial period of time. We would therefore enquire whether BD could review and streamline the process wherever possible.</p>	<p>BD noted that it normally took time for RSE/RGE to prepare supplementary information in addressing the queries/requirements of the SEC Meeting. To facilitate approval process, BD would review the time frame on confirmation of minutes after the SEC Meeting.</p>
11.	<p><b><u>Audit Check to Precast Concrete Factory</u></b></p> <p>Paragraph 10 of PNAP APP-143 requires the “RSE and the Authorized Signatory of the Registered Contractor should inspect and conduct audit checks to precast concrete factory at least once every month” as one of the quality control measures. While precast elements have been widely applied in local industry, precast construction is no longer complicated as compared with daily reinforced concrete works on sites. In this regard, it is proposed to replace monthly RSE factory inspection with monthly RSE Stream T-5 factory inspection.</p>	<p>BD advised that RSE have the responsibilities under the Buildings Ordinance (BO) to ensure that the precast concrete works comply with the provisions and standards of the BO and the approved plans. Without prejudice to the statutory duties under the BO, BD would review the requirements of audit by RSE with a view to facilitating audit inspection by RSE.</p>
	<p><b>Items raised by AAP</b></p>	
12.	<p><b><u>Smoke Seal Lobby for Lift Doors at Basement</u></b></p> <p>In response to item 5 of ADF 4/2019, we would like to seek BD’s further clarification on the case where the basement and ground storey are two separate fire compartments and a non-fireman lift connects basement with</p>	<p>BD noted that items (i) and (ii) were in compliance with Clause C9.1(c) and C9.1(d) of FS Code 2011 respectively.</p>

	<p>ground floor and the storeys above, given the followings are provided:</p> <ul style="list-style-type: none"> <li>(i) the lift landing door at basement is provided with an FRR of -/120/-;</li> <li>(ii) a smoke seal lobby is provided at basement; and</li> <li>(iii) the lift shaft at basement is having an FRR of not less than -/240/240.</li> </ul> <p>Is the design be considered satisfying Clause C14.1(a) of FS Code 2011?</p>	<p>For item (iii), BD would further clarify when the lift shaft at basement being non-loadbearing walls, its FRR requirement with respect to item 8 of Table C2 and Clause C9.1(a) of FS Code 2011.</p> <p><i>[Post-meeting note: For non-loadbearing elements separating the lift shaft and the rest of building in the basement, its FRR requirement should be not less than -/240/240, i.e. stability requirement was not applicable. Relevant requirements are provided in item 8 of Table C2 of FS Code 2011.]</i></p>
13.	<p><b><u>Height of AC and Screen</u></b></p> <p>It is not uncommon that alternative AC system is considered for residential development, e.g. VRV AC system with fewer nos. of VRV AC outdoor unit as compared with conventional split-type AC system. In terms of physical size, the VRV AC outdoor unit is usually taller than split-type AC outdoor unit, i.e. about 1.4m to 1.5m high.</p> <p>As specified in paragraph 2(d) of Appendix C to Code of Practice on Design for Safety – External Maintenance 2019, height of the screen shall be not more than 1.1m for single layer AC outdoor unit while 1.6m for double-stack AC outdoor units. For the case of single layer VRV AC outdoor unit, will BD relax the height of the screen to not more than 1.6m?</p>	<p>BD advised that whether the height of screen for single layer VRV AC outdoor unit could be relaxed would be considered on case merits. BD would review the issue in the Technical Committee on the Code of Practice on Design for Safety – External Maintenance.</p>
14.	<p><b><u>PNAP APP-23 Clear Width in Covered Walkway</u></b></p> <p>According to paragraph 9 of PNAP APP-23 and Clause 3.2.2 of Code of Practice for Demolition of Buildings 2004, we understand the width of the</p>	<p>BD noted that this was an individual case where Transport Department required pedestrian flow assessment. BD would liaise with Transport</p>

	<p>covered walkway relates to the width of existing pavement and the minimum clear width of covered walkway on existing pavement over 3m wide is 2m. It is presumed the prescriptive requirements were agreed among government departments.</p> <p>In a recent case, covered walkway with 2m internal clear width was rejected and AP was required to provide pedestrian flow assessment and demonstrate any adverse effect to the pedestrian circulation pattern due to the footings of the covered walkway, The width of the covered walkway was eventually increased to &gt;2m and of cantilever design.</p> <p>We see there is chance that the hoarding permit may be rejected even though the hoarding design conformed to prescriptive requirements and additional traffic assessment may be required as considered necessary by relevant authorities. We hope BD will consider updating the relevant practice notes to reflect the situation so that stakeholders could be aware and allow sufficient time for extra preparation work/traffic studies beforehand in order to secure timely issuance of hoarding permit.</p>	<p>Department and revert in due course.</p>
<p>15.</p>	<p><b><u>Determination of Openable Window Area</u></b></p> <p>Further to item 23 of ADF 5/2019, we would like to further enquire when 600mm clear opening could be provided at the top of sash of the openable window as per the below diagram, its openable window area is to be calculated based on the elevation area of such window:</p>	<p>BD advised the 600mm clear opening should be provided at the lowest point of the spandrel and the area obstructed by the protective barrier should be disregarded. BD also confirmed the window opening obstructed by the column should be disregarded.</p>



When the openable window sash is near to the structural column as per the below diagram, will BD accept Dimension A for calculation of the openable window area?



	AOB Items	
16.	<p><b><u>Supporting Documentations for ELS Plans Submission</u></b> (Item raised by HKIE)</p> <p>It is noticed that GEO sometimes requested the submission of pipe leakage/burst incidents records within the affected area from the relevant government departments (i.e. WSD, DSD, HyD) for assessing the conditions of the surrounding ground in particular for the existence of ground loss and underground cavity to support the ELS submission or before consent application. The causes of the incidents and remedial actions taken by respective departments should also be included. (HKIE - Attachment 1 refers)</p> <div data-bbox="257 738 313 798" data-label="Image"> </div> <p>HKIE - Attachment 1.pdf</p> <p>Would BD advise whether it is a standard requirement or only applicable for some particular site conditions. We found it is difficult to obtain such information from the above departments as they may be reluctant to provide such information to the general public. It is believed that those ground defects, if any, should be duly repaired and reinstated to normal by the respective departments. Then, further assessment would not be necessary.</p>	<p>BD noted the situation and would liaise with GEO/CEDD on such requirement.</p>
17.	<p><b><u>Self-certification System under Restaurant Licensing Regime</u></b> (Item raised by BD)</p>	

<p>BD briefed Members that the self-certification system under restaurant licensing regime has been implemented since December 2019 to streamline the procedures for complying with building safety requirements under the restaurant licensing regime.</p> <p>The system is applicable to submission of revised plans at licence application stage and alteration plans of licensed restaurants having exclusive and direct exit(s) to the ultimate places(s) of safety, except for (a) proposed or licensed restaurant served by fire safety constructions based on fire engineering design or (b) proposed changes to the revised layout plan/alteration plan involving change in the boundaries of the proposed or licensed restaurant.</p> <p>For applications meeting the above criteria, applicants may opt for submission of AP's certification to certify that the proposed changes shown in the revised/alteration plans are in compliance with the building safety requirements set out in the Application Guide as an alternative of adopting the extant 3-tier system. An audit system has been implemented to ensure that APs had discharged their duties properly and the licensed premises are up to the building safety standards. Appropriate follow-up actions will be taken by BD and FEHD against any malpractice or irregularities identified.</p>	<p>Members welcomed BD's initiative to streamline the procedures for complying with building safety requirements under the restaurant licensing regime and would encourage practitioners to adopt the self-certification system.</p> <p><i>[Post-meeting note: The PowerPoint presentation on the self-certification was uploaded to the following website for practitioners' reference: <a href="https://www.gov.hk/tc/theme/bf/pdf/FRNR_BLG_27_Annex4.pdf">https://www.gov.hk/tc/theme/bf/pdf/FRNR_BLG_27_Annex4.pdf</a>]</i></p>
<p>18. <b><u>Access Panels of Typhoon-proof Ceiling</u></b> (Item raised by BD)</p> <p>Further to item 8 of ADF 5/2019 held on 22 November 2019, BD advised that repair to approved typhoon-proof ceiling was considered as building</p>	<p>Members noted the clarification and enquired whether access to concealed services inside the false ceiling void via access panels with fixed hinges</p>

	<p>works requiring prior approval and consent. While legislative amendments for new Minor Works items would be proposed for the repair, replacement or removal of cladding at the external wall of a building, BD would explore the feasibility to include repair to typhoon-proof ceiling as Minor Works items.</p>	<p>could be exempted provided that the relevant structural design details had been approved. In response, BD advised that while such details were normally not submitted for approval, BD would further consider the issue with a view to facilitating the repair works to the concealed services inside the false ceiling void.</p>
<p>19.</p>	<p><b><u>Repair/Replacement of Protective Barrier under MWCS</u></b> (Item raised by BD)</p> <p>Further to item 29 of ADF 5/2019 held on 22 November 2019, BD advised that if the repair/replacement of the glass balustrade fulfilled the criteria of the relevant MW items, the works could be carried out under MWCS.</p>	<p>Members noted the clarification and would follow the requirement accordingly.</p>
<p>20.</p>	<p><b><u>Central Data Bank (CDB)</u></b> (Item raised by BD)</p> <p>To provide a web-based point of reference to AP, RSE and other parties concerned in the building industry, BD has maintained a CDB which contains historical information on material acceptance in respect of a completed building development. The acceptance is generally based on tests and assessments carried out by the accredited laboratories and assessed and certified by the AP/RSE as meeting the performance standards stipulated in relevant building regulations and codes of practice at the time of submission to BD. In this connection, the inclusion to CDB is not a prerequisite for adoption of any building material, component or construction system in a building development.</p>	<p>Members noted that the purpose of the CDB is intended to help sharing of information to the industry. In response to members' enquiries, BD would review the process of updating of accepted structural materials, components or construction systems to CDB.</p>



	<p>For enquiries about the adoption of new building materials, components or construction systems, AP and RSE are encouraged to make use of the established mechanism of pre-submission enquiry service mentioned in PNAP ADM-19 to clear with BD at early design stage.</p>	
21.	<p><b><u>Approval of Overhead Supporting Structures for Air-conditioning/ Mechanical Ventilation System and Internal Ventilation Ducts</u></b> (Item raised by BD)</p> <p>BD advised that legislative amendments for new Minor Works items had been scheduled for the first quarter of 2020 for overhead supporting structures for air-conditioning or mechanical ventilation system plant of more than 150kg in weight inside a building, internal metal ventilation ducts with the smallest cross-sectional dimension greater than 900mm and fire damper of ventilation system. Upon enactment of the new legislation, such works should either be carried out under MWCS or the approval and consent regime. For projects in progress which involved the above works, BD would consider to promulgate further information such as the transitional arrangement.</p>	<p>Members noted the proposed legislative amendments and expressed that the implementation details of future submission should be provided to facilitate compliance with the new requirements.</p>