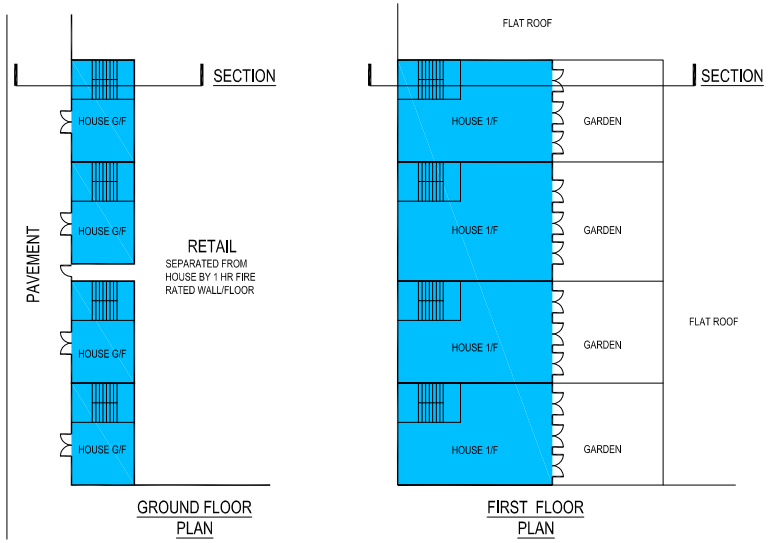
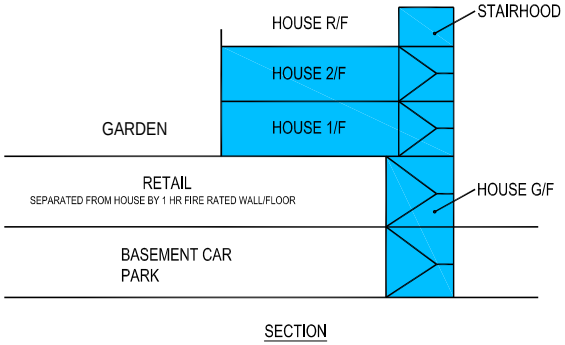
Summary of Items Discussed in 5/2015 APSEC Discussion Forum on 13 November 2015

	Items proposed by Convenors for Discussion	Summary of Discussion and BD's Responses
	Items raised by HKIA	
1.	Code of Practice for Fire Safety in Buildings (FS Code) – Clause B3.1 The sketches below show single-family houses not more than 3 main domestic storeys with highest floor not more than 13m above ground level, sitting on one floor of retail accommodation above ground. The residential portion is completely separated from the retail portion by 1-hr FRR walls and floors. Please advise whether these single-family houses are considered as those specified under clause B3.1 of the FS Code, and are thus exempted from the requirement of MoE.	As the carpark was communal and not just ancillary to a 3-storey single family house, the residential portion (the houses) and the remaining portions (RP, i.e. communal carpark or communal carpark and retail) were required to be designed as different buildings under FS Code Clause B3.1, C5.1 and 5.2 rather than different uses. In the subject layout, the smoke and fire could rise from the RP to the houses. The staircases for the house and RP should therefore be designed as separate staircases such that access from the house to the RP or vice versa would go through open air at the lowest floor of the house to prevent spread of fire and smoke between buildings. As an alternative but less desirable design, the staircase for the house could continue to the RP as shown provided that: a) the part of the staircase in the RP were for circulation only and not for the MOE of the RP; b) the staircase and the house as well as the carpark or RP were designed as different buildings and connection was through a protected lobby with appropriate FRR; c) the staircase for the house should be able to discharge at the lowest





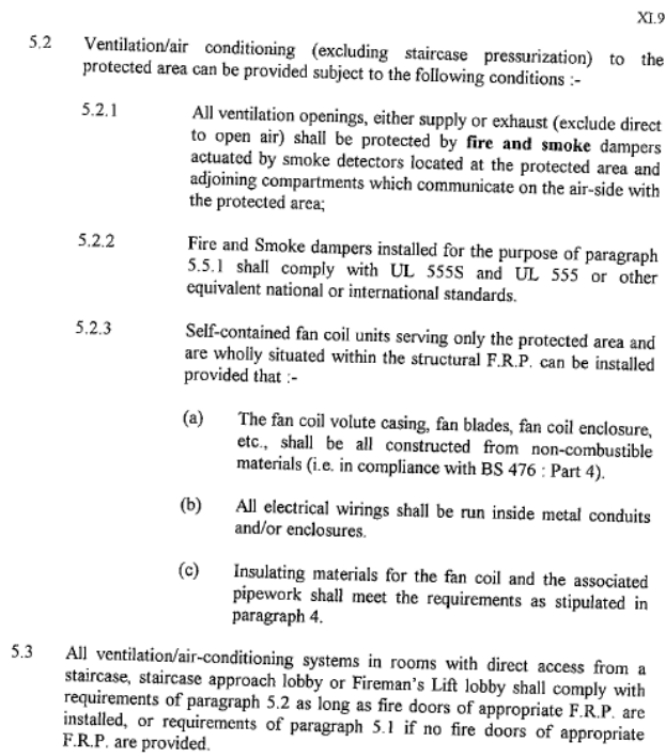
floor level of the house to a temporary safe place leading to street. Adequate signage or suitable design should be provided to avoid evacuees from the house escaping into the RP in case of fire.

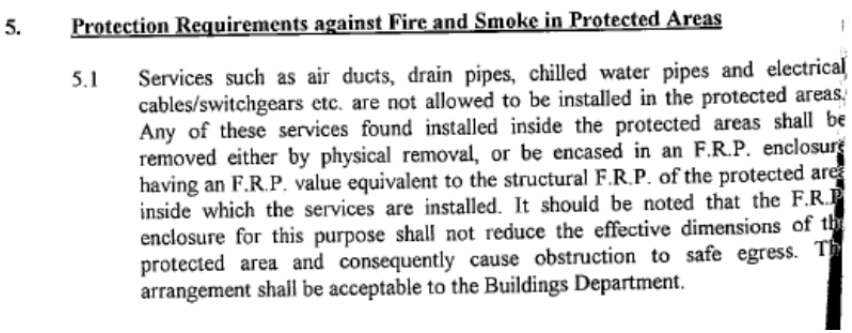
2.	<u>Result of Final BEAM Plus Assessment – PNAP APP-151</u> In the revised PNAP APP-151 (September 2014), paragraph 6(d)(iv), as a pre-requisite for granting GFA concession, the developer/owner needs to undertake to submit to the BD the "result of Final Assessment under BEAM Plus certification conferred/issued by HKGBC, within 18 months of the date of issuance of the OP by the BA". In contrast, in the original version (Ja5nuary 2011), the same is to be submitted within 6 months. Please advise if the period of 18 months can also apply to projects approved prior to the revision of PNAP APP-151 in September 2014.	The BD advised that the period of 18 months for Final Assessment could be applied to projects approved prior to the relevant revision of PNAP APP-151. However, the AP should submit a new Form BA16 with revised undertaking letter prepared by the developer to facilitate the issue of a revised Permit (Form BD106) by the BD to incorporate the above revised condition.
3.	<u>Top Rail for Free-standing Glass Barrier - PNAP APP-110</u> Paragraph 5 of the PNAP states "In case the free-standing glass barrier has a continuous run of 2 panels of glass or more and is designed for area where people may congregate or susceptible to overcrowding, the top rail should be attached to the glass in such a manner, that, should a glass panel fracture, the top rail would bridge over the failed glass, remained stable under yield stress conditions and capable of resisting the designed imposed loads on the barriers applied across the resulting gap without causing structural failure or yielding of the protective barrier system." Please advise if the following are correct: (a) the top rail needs not be structurally fixed into the structure or frames beyond the adjacent panel of glass; (b) the design imposed load on the top rail is only that of the outward horizontal force at 1.1m above the floor level; and	The BD clarified as follows: (a) The top rail was required in case the free-standing glass barrier had a continuous run of 2 panels of glass or more and was designed for area where people might congregate or susceptible to overcrowding; i.e. it was not required for "non-crowd" areas in residential units; (b) The top rail requirement was not applicable for single panel of free-standing glass barrier; (c) The top rail requirement was applicable to free-standing glass barrier not requiring structural supports from the wall or structure beyond the end glass panel on either side of the free-standing glass protective barrier, and top rail was not required to fix onto the aforesaid mentioned wall or structure to suit the AP's design;

	(c) the top rail is not required for "non-crowd" conditions, i.e. for area where people will not congregate and not susceptible to overcrowding.	and (d) Where top rail was necessary, it should be designed to take line load only when the glass panel below was broken.
4.	<u>Follow up item on the flue aperture provision for apartment with internal bathroom only</u> Based on discussion in previous forum, HKIA representatives met with Towngas representatives on 30 Oct 2015 to review the latest gas water heaters marketed by Towngas for new private residential projects and their market situations. There are mainly two types of gas water heaters marketed by Towngas, they are **superslim types** water heaters (about 20% turnover of the market with a FA requirement of 420mm x 320mm) and **box types water heaters** (about 80% of the market with a FA requirement of 210mm x 210mm), both types are room-sealed water heaters. The superslim type water heater must be mounted on the wall aperture because of its **rigid flue** design. The box type has **extensible flue** so that the water heater can be installed away from the wall aperture. The actual distance between wall aperture and the water heater depends on the water heater flue design. **Point 1.** For internal bathroom with no external wall, it is not feasible to install superslim types as they must have an external wall. Hence, for apartment flat with only internal bathroom and open kitchen, superslim types are not preferred to be installed in habitable locations like bedroom and living room. Box type circulating water heaters, which is become increasing popular, would be a more sensible solution for these types of units when the gas heaters can be installed away from the FA.	The BD advised that they would review the matters concerned and would consult EMSD on the recommendations made by HKIA, mainly on 1. the proposed revision of PNAP APP-57 and 2. the popularity of the proposed fanned-draught model of water heaters. [Post Forum Note: EMSD's advice were received: **Point 1.** ● There was currently only one importer in HK supplying the "box-type" gas water heaters. If para. 3(b) of PNAP APP-27 was amended only under the consideration of "box-type" gas water heaters, it appeared favour the importer, which was undesirable. That said, para. 4 of PNAP APP-27 had already provided flexibility on using non-standard apertures, if necessary. ● Regarding the flue design of flat with only internal bathroom and open kitchen, reference should be made to Gas Safety Ordinance Cap 51C Reg. 24 and 27. For the sake of safety, the distance of the flue aperture and the associated gas water heater should be as short as possible. Therefore, back-flued type gas water heaters were preferred to top-flued type design. "Box-typed" gas water heaters were considered as top-flued type.

	In view of above, it is recommended to **allow for one more option** for FA provision and it is suggested to add the following statement after paragraph 3(b) of PNAP APP-27:- **"(c) 210mm by 210mm when no natural ventilation is provided for the bathroom and only extensible flue is suitable for installation of water heater in that unit"** **Point 2**. The dimension shown in the current PNAP APP 27 was originated from guideline for natural draught type. For the fanned draught type gas water heater, flexibility on the location of FA to deviate from the current PNAP should be allowed as stipulated in appendix B in Code of Practice GU 03 regarding the Installation Requirements for Domestic Gas Water Heaters (rated heat input up to 70kW) with an annotation stated that *"may be reduced for fanned draught models. See manufacturer's instructions."*. To more design flexibility, HKIA and Towngas representatives considered that **paragraphs 5(d), 5(e), 7(a)** might be reviewed for fanned draught models so that they are **in consistence with GU03**.	**Point 2.** ● GU03 focused on the actual installation of a selected gas water heater which might be different from PNAP APP-27, which stated the requirements of apertures for a building. From gas safety point of view, the requirements in para. 5(d), 5(e) and 7(a) in PNAP APP-27 should be specified to allow the public the flexibility to choose a variety of gas water heaters available in the market, and thus minimized the risk of installing an unsuitable gas water heater during replacement.] In view of EMSD's advice, the proposed revision to the PNAP APP-27 were considered not appropriate.
5.	<u>Structural Submission for Vertical Green (VG)</u> Please clarify that the structural submission for VG should be limited to the structural sub-frame only, and details of fixing of the soil/plants holding pots, troughs, etc. (which are normally components of proprietary products) onto such sub-frame are not necessary.	The BD clarified that the structural submission for VG should be limited to the structural sub-frame only. Notwithstanding, the BD advised that the project RSE should check and be satisfied with the details of fixing of such soil/plants holding

		pots, troughs, etc onto the sub-frame to have achieved the required performance and safety standards in particular for the wind load effect on the VG; and the BD required that the RSE should incorporate a note to the above effect on the VG structural submission.
6.	<u>External Architectural Features for Screening of External Pipes in Single Family Houses</u> Para. 7 of PNAP APP-93 states that if architectural features are proposed to enclose external drainage pipes, the access for inspections and maintenance should be from the common parts of the building. As there is, de facto, no "common parts" for a single family house, we understand that the above access requirement for external pipe-ducts of a single family house through common parts of the building is NOT applicable, subject to that an effective arrangement for visual inspection of the pipes is provided to enable the detection or inspection of any defect, leakage or insanitary condition of the pipes in a convenient and safe manner as referred to in the same paragraph of the said PNAP.	The BD advised that HKIA's understanding was correct. The access arrangement through "common parts" of the building for such external architectural features for screening external pipes of a single family house was not applicable. Accordingly, the requirement for designating the access and working space for operating the CCTV imaging device as "common parts" of the building as per Para. 2, Appendix B of PNAP APP-93 was also not applicable to the undertaking letter to be prepared by the owner/developer for such houses.
	Items raised by HKIS	
7.	<u>GFA Calculation for False Ceiling Works to Height Headroom Area</u> For high headroom area without double count of GFA in the approved plan, please clarify false ceiling work (not serving as storage function above ceiling void) to such area shall not require to compensate in GFA for the false ceiling void created higher than 2m.	False ceiling not designed to take loading would not be accountable for GFA calculation even in situation with high headroom between the false ceiling and the underside of the structural slab.

8.	<u>FRR Enclosure to AC System inside Protected Area</u> Please clarify if FRR enclosure as per Clause C9.3 of FS code 2011 is not required provided the AC system comply the requirements stipulated in the FSD circular letter (No. 4/96) dated 22 Oct 1996(para 5.2).  XI.9 5.2 Ventilation/air conditioning (excluding staircase pressurization) to the protected area can be provided subject to the following conditions :- 5.2.1 All ventilation openings, either supply or exhaust (exclude direct to open air) shall be protected by **fire and smoke** dampers actuated by smoke detectors located at the protected area and adjoining compartments which communicate on the air-side with the protected area; 5.2.2 Fire and Smoke dampers installed for the purpose of paragraph 5.5.1 shall comply with UL 555S and UL 555 or other equivalent national or international standards. 5.2.3 Self-contained fan coil units serving only the protected area and are wholly situated within the structural F.R.P. can be installed provided that :- (a) The fan coil volute casing, fan blades, fan coil enclosure, etc., shall be all constructed from non-combustible materials (i.e. in compliance with BS 476 : Part 4). (b) All electrical wirings shall be run inside metal conduits and/or enclosures. (c) Insulating materials for the fan coil and the associated pipework shall meet the requirements as stipulated in paragraph 4. 5.3 All ventilation/air-conditioning systems in rooms with direct access from a staircase, staircase approach lobby or Fireman's Lift lobby shall comply with requirements of paragraph 5.2 as long as fire doors of appropriate F.R.P. are installed, or requirements of paragraph 5.1 if no fire doors of appropriate F.R.P. are provided.	It was noted that FSD allowed self-contained fan coil units serving only the protected areas to be installed subject to conditions in para. 5.2.3(a), (b) and (c). BD considered that it would be difficult for electrical appliances with motors to meet relevant non-combustible standards, members should supply information on the availability of non-combustible fan-coil meeting BS:476 Part 4 or equivalent new BSEN standards with HOKLAS test certificates for BD's consideration to see if there was a need for the revision of the relevant clause in the FS Code. Alternatively, members could consider:- i) installing the fan-coil units in another adequately FRR protected room not opening off directly to the required staircase at G/F level and providing ventilation to the lobby area via ventilation ducts protected with dampers in accordance with Clause C8.2 of the FS Code 2011 or ii) designing the required staircases not to discharge via the G/F lobby area.

	 **5. Protection Requirements against Fire and Smoke in Protected Areas** 5.1 Services such as air ducts, drain pipes, chilled water pipes and electrical cables/switchgears etc. are not allowed to be installed in the protected areas. Any of these services found installed inside the protected areas shall be removed either by physical removal, or be encased in an F.R.P. enclosure having an F.R.P. value equivalent to the structural F.R.P. of the protected area inside which the services are installed. It should be noted that the F.R.P. enclosure for this purpose shall not reduce the effective dimensions of the protected area and consequently cause obstruction to safe egress. The arrangement shall be acceptable to the Buildings Department.	
9.	<u>FRR for Door at Protected Lobby for MOE Staircase</u> Please clarify the FRR doors to protect lobby to MOE staircase serving as compartment wall are accepted of having FRR of not less than half of the fire barrier of the lobby as per Clause C16.5 FS code 2011.	Clause 16.5 clearly stated if two doors were to be provided, the FRR of the two doors could each be half of the FRR of the FRR wall, or one with the same FRR as the wall and the other without FRR. But in any case, both doors were required to be provided with smoke seals.
10.	<u>Surface Channel Connected on G/F Entrance under Canopy Cover</u> Please clarify the surface channel aiming to prevent the ingress of rainwater for granting the exemption of level different between external ground and the internal area as per APP-125 shall be connected to storm water system instead of waste water system.	Yes, in principle, it should be connected to storm water system.
	Item raised by AAP	
11.	<u>Use of Glass in Curtain Wall</u> It is noted the BD requires a reduction factor for the strength of heat strengthened or tempered glass if the glass is applied with surface treatment, for	Reduction factors for the strength of glass with surface treatment accepted by BD were as follows:

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<td>e.g. frit (enamel coated pattern), sand blasting or etching.
We wish to know the reduction factor that must be applied in the structural calculation.
We also wish to know whether BD would accept testing of samples of surface treated glass to prove that its actual strength is actually higher than the calculated strength after applying the reduction factor.</td>
<td>
<table>
<tr><th>Type of surface treatment</th><th>Strength reduction factor</th><th>Recognized standard</th></tr>
<tr><td>Fritting</td><td>0.625</td><td>BS EN 14179-1
BS EN 1863-1</td></tr>
<tr><td>Sand blasting/Acid etching</td><td>0.5</td><td>ASTM E2751/ E2751M-13</td></tr>
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According to discussions in relevant technical publications, surface treatment process did have an impact on the tension capacity of the glass and could reduce it up to 40%. APs/RSEs were therefore recommended to adopt the strength reduction factors as shown in the above table in the design of surface treated glass. Testing of samples of surface treated glass would usually be imposed by BD as an approval condition for verification of the strength of surface treated glass. Higher strength obtained from testing, instead of the reduced strength according to the above standards, should not be used for design of surface treated glass.

BD advised that the “Code of Practice for Structural Use of Glass” was being prepared and consultation with the industry would be conducted in due course.</td>
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<td>12.</td>
<td><u>AC Fins and architectural features at prefabricated external RC façade</u>

In recent discussion with BD officers, the concern that AC fins and architectural feature should not be 'supported' by the prefabricated external façade was raised.
We understand your comments that the prefabricated external facade should</td>
<td>BD confirmed that Sketch SK-02 was acceptable.

It was further clarified that the distance between the AC fin would be allowed to project not more than 750mm from the outer face of the</td>
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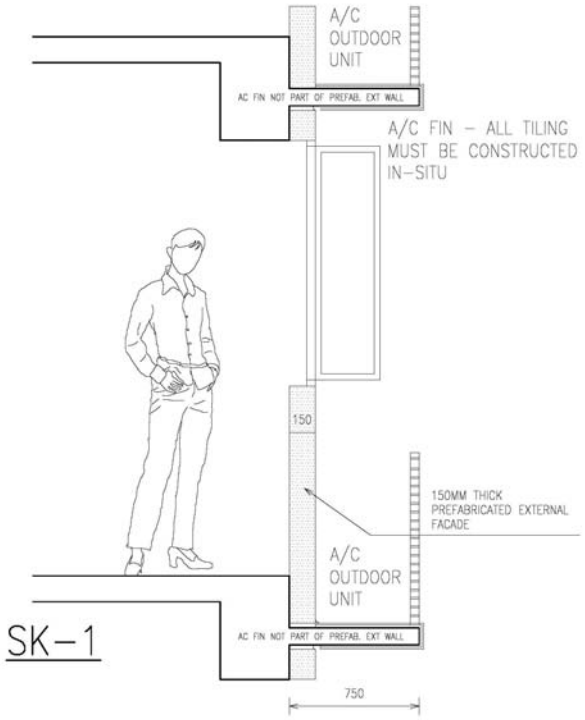
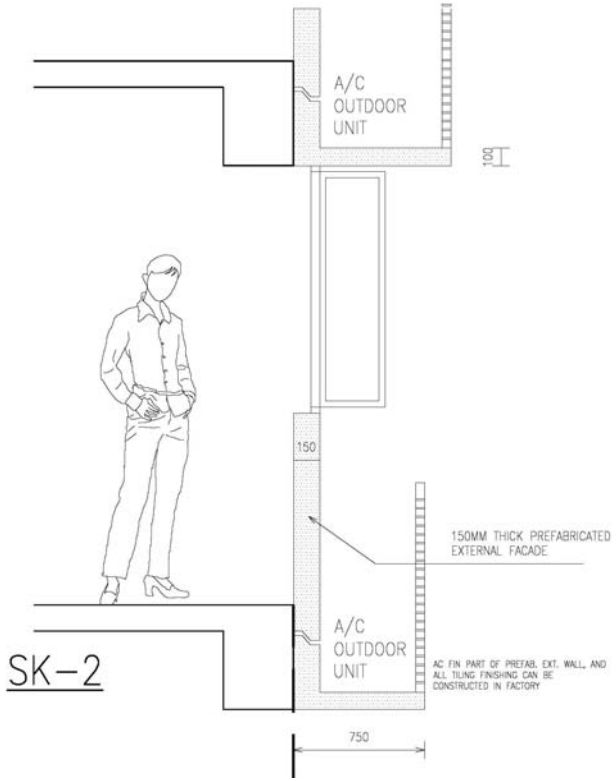
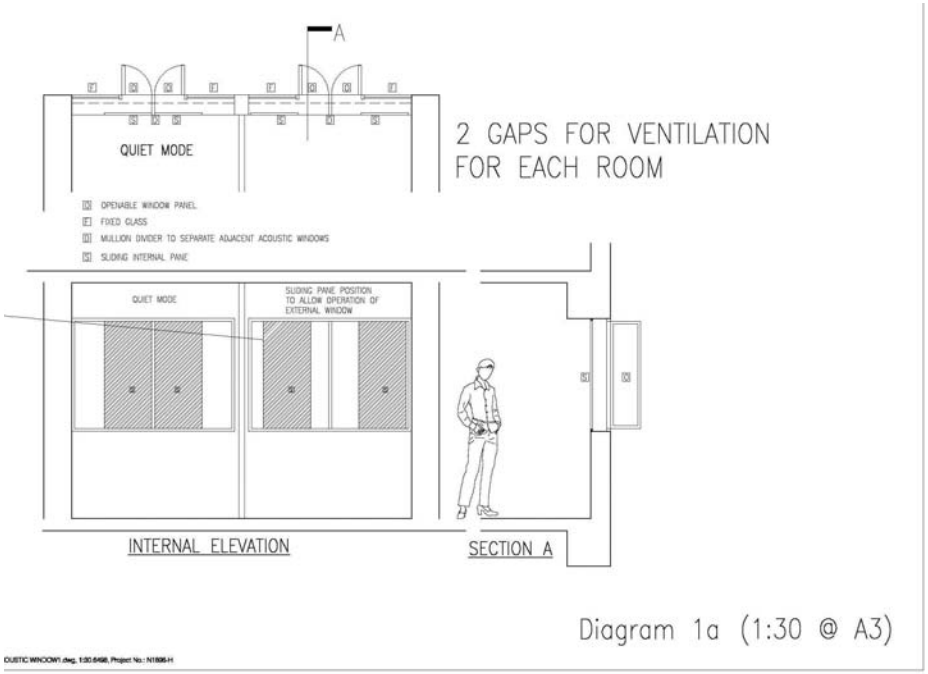
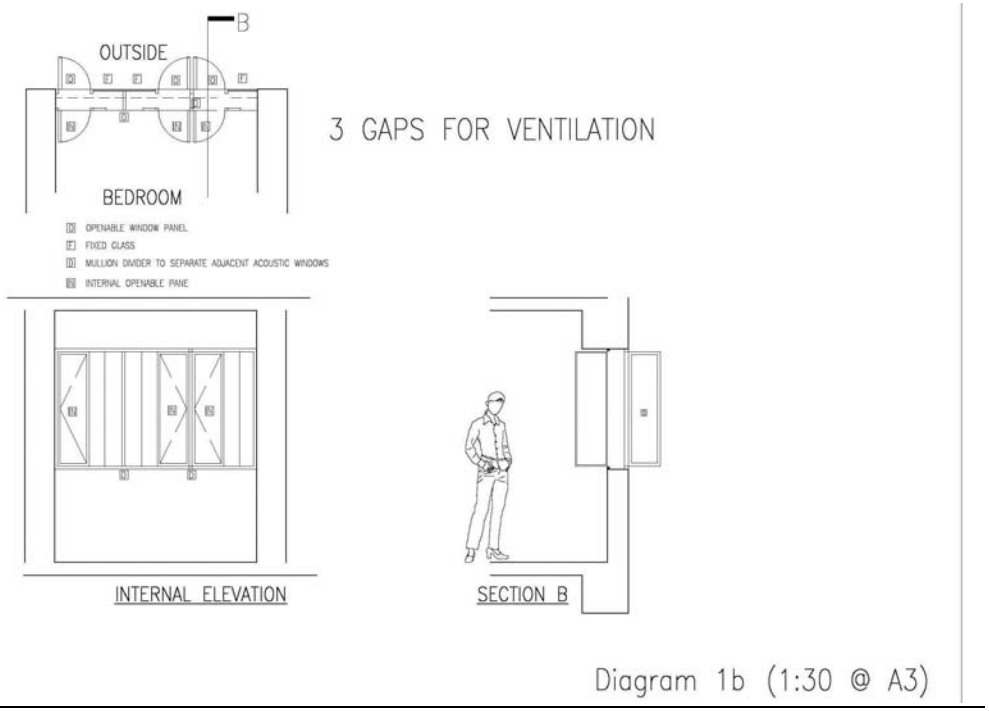
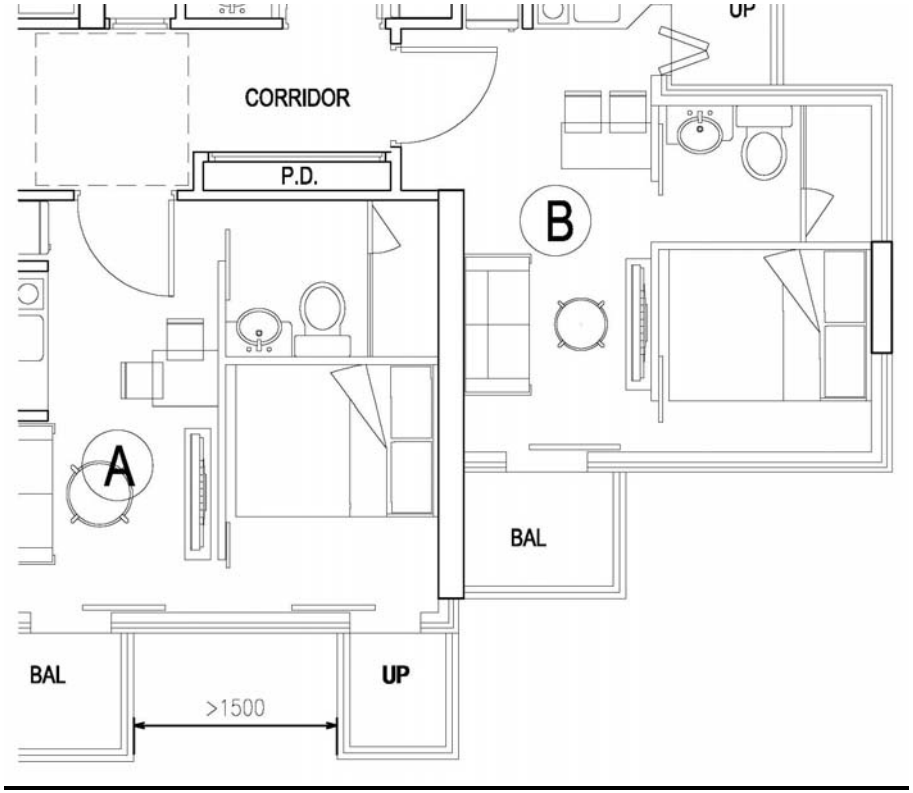
	be non-load bearing, and therefore such features should not be 'supported' by the prefabricated facade. i) We have translated this comment to the wall section shown in SK-1. We find that this arrangement is extremely undesirable in terms of construction, as all finishing to the AC fins will have to be constructed in situ. This seems to defeat the purpose of having prefabricated external wall which can totally eliminate external wall high level tiling works. The long adopted method of construction for prefabricated façade is shown in SK-2 ii)The arrangement as in SK-2 where the AC fin is "part of" the external prefabricated facade. All finishing for the entire façade can be applied in factory and high level scaffold and external works is not necessary.	prefabricated external façade.


A/C
OUTDOOR
UNIT
AC FIN NOT PART OF PREFAB. EXT WALL
A/C FIN – ALL TILING
MUST BE CONSTRUCTED
IN–SITU
150
150MM THICK
PREFABRICATED EXTERNAL
FACADE
A/C
OUTDOOR
UNIT
AC FIN NOT PART OF PREFAB. EXT WALL
SK–1
750

		
13.	<u>Acoustic Window Design under PNAP APP-130</u> Further to earlier joint meeting with BD / EPD / AAP, we would like to include the following as one of the topic for discussion forum for confirmation by BD such the industry can be informed: **Separation of adjacent acoustic windows** – in order to follow PNAP APP-130 prescriptive method for calculating the effective ventilation area, each acoustic window must be separated from one another to ensure a simple passage of air as shown in the PNAP. In the case where 2 acoustic windows	BD stated that as only one scenario of acoustic windows was stated in PNAP APP-130, the divider for matching the as-stated scenario would be necessary to follow suit for direct acceptance. However, whether such divider was actually necessary to serve the desired function in the proposed scenario should be scientifically analysed.

	are provided side by side, a 'divider' must be provided to separate the 2 passages of air. An example is shown in Diagram 1a.  Acoustic Window Design – PNAP APP-130 BUT with Openable Internal Pane (Diagram 1b) – similar prescriptive method for calculating the effective ventilation area following PNAP APP-130 will be acceptable even when the sliding inner pane is changed to inward opening internal pane.	

	 Diagram 1b (1:30 @ A3)	
14.	<u>Horizontal Screen under PNAP APP-42</u> Follow up on AAP's submission on 14-09-2015 as attached.	BD stated that they would consider AAP's proposal to exempt the increased width of Horizontal Screen from GFA. It was discussed and noted that the term 'Horizontal Screen' should be changed to 'Covered Walkway' to better reflect the nature and function of the feature.
15.	<u>Separation between Balcony and UP</u> We wish to know whether the balcony and UP location as shown is considered	The arrangement of UP in Flat A and balcony in Flat B was considered

	to satisfy the Balcony-UP separation requirement under JPN2. And if not, the rationale behind.  	acceptable. BD explained that the JPN requirement of 1.5m separation was for preventing abuses observed in projects completed under the earlier versions of the JPN. In the proposed sketch, the UP and the Balcony were separated from each other and the chance of abuse should be remote and therefore the layout as shown was acceptable. BD also suggested AAP to make reference to the discussion on UP / Balcony separation issue in the May 2015 Forum.
	AOB items	
16.	<u>Dissemination of notes of the Discussion Forum</u> (Item raised by the BD) It had been discussed in the Joint BSC/ APSEC meeting on 9.10.2015 that BD's frontline staff should be notified of issues discussed in BSC and APSEC meetings, the APSEC Discussion Forum, etc. so as to facilitate plan	To effectively deliver the decisions on issues discussed and agreed in ADF, BD would apart from keeping the current practice of posting confirmed ADF minutes in the intranet for staff's information, also

	processing.	raise such discussed items in sectional meetings for officers' attention. As ADF decisions with bearing would be incorporated into circular letters, PNAPs or even codes and regulations as appropriate, it would not be necessary to create another platform in the BD's website to house such transitional information for viewing by the public.
17.	<u>Site Area & Boundaries</u> (Item raised by the BD) In the current draft of PNAP ADM-21, APs would be required to include in their General Building Plan (GBP) Submissions a survey plan prepared by an authorized land surveyor. However, AAP had recently requested BD to amend that requirement in that the survey plan should only be referred to for site boundaries but not the site area. For the latter information, lease entitlement should be referred to.	After the discussion in the last APSEC/BSC, the subject issue was further discussed in the Forum. Discrepancy of such information from different sources should be addressed as early as possible to avoid rectification of completed buildings. While it was generally agreed that the actual area of the land forming the site (under the BO) which the applicant owned or had realistic prospect of control should be referred to for SC and PR, there must also be adequate discussions on how to carry forward such identified discrepancy. [Post forum note: After further discussion in the subsequent joint APSEC/BSC meeting, it was agreed that a working group would be formed to further discuss the different ways to tackle such discrepancy.]
18.	<u>Withdrawal and Resubmission (W&R) of Applications for Occupation Permits (OPs) and Plan Approvals</u> (Item raised by the BD) It was well known that W&R mechanism might be adopted during the	Members from institutes / associations generally acknowledged that

	applications for Occupation Permits (OP) and plan approvals. Members were invited to comment whether the current practice of W&R should be continued as a facilitating measure to the industry.	W&R was a long-established and facilitating practice which allowed flexibility in the processing of applications within the statutory time limits with a view to obtaining approvals/ OP and therefore should be maintained. However, guidelines should be established to prevent misuse. [Post forum notes: It was agreed in the subsequent joint APSEC/BSC that a) in general, W&R should not be more than two times; and b) unless W&R requests were given in written form with reasons stated and submissions were reasonable (i.e. submission of proposals or site conditions for OPs were not seriously substandard), W&R requests might not be entertained.]