

HKIA / ARB Professional Assessment 2021
Paper 1: Statutory Controls in Building Works
Examiners' Report

STRUCTURE OF PAPER

Paper 1 comprised two sections, one for multiple-choice (MC) questions and the other for essay questions.

The MC section had 40 questions. Each MC question carried 2 marks. The passing mark was set at 65%.

For the essay question section, candidates were required to answer 1 compulsory essay question and 2 out of 3 other essay questions. The compulsory question carried 30 marks and the other two questions carried 15 marks each. The passing mark was set at 50%.

Set on topics detailed in the syllabus of PA Handbook, the questions tested candidates' knowledge, skills and maturity to handle their day-to-day work as an Architect.

ASSESSMENT OBSERVATIONS

FOR WHOLE PAPER

361 candidates took Paper 1 and 225 candidates (62.33%) passed.

FOR MULTIPLE-CHOICE QUESTIONS

217 candidates passed (60.11%) and the mean mark was 65.85 marks out of 100.

Whereas the standard deviation was comparable to those of the previous years, the mean mark and standard deviation were higher than that of the last year.

FOR ESSAY QUESTIONS

228 candidates passed (63.16%). The passing rates of the essay questions were as follows:

Q1 – 81.11% (292 out of 360 candidates)

Q2 – 26.80% (93 out of 347 candidates)

Q3 – 74.70% (62 out of 83 candidates)

Q4 – 34.46% (92 out of 287 candidates)

Question 1 (Compulsory)

Question 1a

This question required rudimentary understanding of how domestic units in HK must be designed to score full mark. The topic – subdivision of units – was on the news a few months before the examination. Candidates were expected to understand why subdivision of flats into small units in old buildings may result in non-compliance of the B(P)R and COP FS and be able to give the reasons in a professional manner.

Answers that would score include

Very simple and direct

- Unit D is not provided with any window facing external air
- Toilets of Units D and E are not provided with windows facing open air
- Kitchen is not provided with any window facing external air

- Kitchen is not enclosed by fire barrier / Open kitchen is not provided with 600mm FRR wall to separate from the exit.

Other acceptable answers

- Each unit is not provided with its own kitchen
- FRR is not provided at the separating wall between the units
- Kitchen is provided along the exit route

Answers that were not acceptable

- Open space is not provided – Open space is not related to the subdivision. Also, open space is provided if one examines the typical floor record plan provided.
- No protected lobby is provided to the staircase – unless candidate states the assumption that the existing 4-storey building exceeds 13m from ground level.
- Subdivision will increase population and cause staircase width to be inadequate – though some correctly pointed out that the scale factor after subdivision is 4.5m² per person as compared to 9m² per person in the original layout, there is no UFA available for candidate to prove that there is any deficiency.
- Non-provision of temporary refuge area – unless candidate states that the floor area exceeds 200m².
- Units A, B or C are not complying with B(P)R29 – it is possible that the windows of these three units faced prescribed plane – they actually did.
- Unit E not complying with B(P)R29 – but Unit E faces a street more than 4.5m
- Toilet opens into room for food preparation – all toilets are part of the ensuite – they could not be open directly to kitchen.

OBSERVATIONS

While most candidates were able to score over 4 out of 6 for this sub-question,

- 1/3 of the candidates included f. as the answer. These candidates were either too nervous or they were unable to read plans.
- About 1/10 included g. as the answer. These candidates were either too nervous or they did not know what “ensuite” meant.

Question 1c (i) and 1c(ii)

1c(i) was a straight forward question – candidate were expected to know what is domestic and non-domestic use, the PR and SC limits in the First Schedule and that the more stringent control among BO and Planning (lease was not involved in the question) must apply. Most candidate were able to score 4 out of 6.

Although the question suggested candidates to present the answer in a table form, less than 30% did. Most of them just wrote paragraphs. As long as the argument was clear, no marks were deducted.

1c(ii) involved the application of composite formula. Surprisingly more than 50% candidates were not able to calculate.

The ability to understand and apply the composite formula is one of the most fundamental skill HK architects should possess. The result of Q1cii revealed a very serious deficiency.

Question 1d

Candidates were asked about their knowledge of the general building plans. The importance of GBP was emphasized in my lectures. Candidates were able to answer this part generally well.

Question 2

This question tests candidates' understanding of the Building (Planning) Regulations, in particular its application in hotel design.

Parts (a) and (b) proved not being difficult for candidates. For part (a), most candidates were able to point out the accommodation items in a hotel which could be exempted from inclusion into gross floor area calculation under 'hotel concessions', though some of them wrongly included administration office and loading and unloading bay in their answers. Some other candidates gave imperfect answers by direct copy of Building (Planning) Regulation 23A(3)(b)(i), (ii) and (iii) without omitting those irrelevant items (e.g. carpentry workshop, staff canteen etc.).

For part (b), most candidates could correctly identify two out of many non-compliances of the Design Manual: Barrier Free Access 2008 from the plans provided, which included non-provision of accessible guestrooms, an accessible carpark, a ramp in initial site access and insufficient manoeuvring space in the typical lift lobby etc.

Parts (c) and (d) were harder parts of the question. Not many candidates could find out that the width of ground floor corridor was insufficient as far as MOE and MOA were concerned. No candidate could identify that the windows within 900mm from the site boundary of adjoining site were unprotected. A few candidates misunderstood the EVA major façade calculation methodology and wrongly thought that the major facade was less than one-fourth of the total length of all the perimeter walls of the building. Some other common misconceptions included that a fire control centre must be at the main entrance, the number of risers for the fire escape staircases from the ground floor to the first floor could not be 28.

Part (d) asked candidates whether the change of some areas having granted with hotel concessions to a café could be approvable under the Buildings Ordinance. Some candidates could recognize that the maximum permissible plot ratio might be exceeded because of the additional GFA incurred by the café. However, very few candidates were aware that the areas may be basic facilities for operation of a hotel. Their omission may make the building not a bona fide hotel.

Question 3

Candidates were tested on their knowledge of "quality supervision" carried out by an architectural graduate, acting as "Technically Competent Person" Grade T-3 under the AP stream, during a particular stage of the building works. The question also lists out certain observations made by the TCP on site, and candidates were asked to comment on them and describe what actions the TCP should take to comply with the requirements under "Code of Practice for Site supervision 2009" and PNAP APP-158.

The question was attempted by 88 candidates. Most of those who managed to provide complete answers did reasonably well and, overall, close to 70% attained over 15 marks out of 30. They demonstrated good understanding of the duties of a TCP and suggested appropriate actions to be taken to require the contractor to remedy the irregularities. The satisfactory answers suggest that the candidates either have read up thoroughly on the subject or have gained good experience through acting as TCP in their practical training.

Most of the under-performers either submitted incomplete answers or left the answer sheet blank. A few of them had no knowledge of quality supervision and gave irrelevant answers.

Question 4

This question includes 4 parts and each of them was a specific situation related to a demolition project: UBW, canopy, asbestos and party wall. The candidates were expected to elaborate how to deal with each of them under the Buildings Ordinance/Regulations and related legislations, including but not limited to Minor Works Control System, COP for Demolition of Buildings, Environment ordinance...etc.

It was noted that more than half from all candidates had attempted this selective question and it may imply that these candidates were confident to handle this question well and score higher marks.

Unfortunately, only a few candidates (less than 20) could answer the whole question precisely and scored high marks. More than half of the candidates had simply specified the typical hoarding requirements for demolitions works; and listed out the procedures for submission of Demolition Plans (including all BA forms), which shall be directly copied from the "COP for Demolition of Buildings". However, the gist to the questions (e.g. MWCS, pedestrian safety, protection to adjoining building, choice of demolition method...etc.) had not been touched, not to mention those candidates who had provided obvious inadequate answers.

As a result, quite a large number of candidates failed this question. It was recommended to educate the future candidates that the exam questions were not always general and straight forward but sometimes site/situation specific, so does the real life practice of a registered architect.

Recommendation to candidates in answering long questions:

Candidates are strongly recommended to

Listen to lectures

Keys to answers to all questions were provided during lectures. They will continue to be provided in lectures in the coming year.

Study the general building plans

Study approved general building plans alongside with your notes or the laws and code of practice to understand what the safety, health or density control requirements mean in practice.

Refer to recommendations to candidates in the 2020 examiner's report

Most comments still apply this year.

HKIA / ARB Professional Assessment 2021

Paper 2: Building Contracts, Professional Practice, Professional Conduct, Conditions of Agreement Examiners' Report

STRUCTURE OF PAPER

Paper 2 is an open-book examination comprising multiple-choice and essay questions.

The MC section had 80 multiple-choice questions. Each MC question carries 1 mark. The passing mark was set at 65%.

For the Essay Questions section, candidates needed to answer 1 compulsory question for Part A Professional Practice, Code of Professional Conducts and Conditions of Agreement, and 2 out of 3 questions for Part B Building Contract. Question for Part A carried 15 marks while questions for Part B Building Contract each carried 15 marks. The passing mark was set at 50%.

ASSESSMENT OBSERVATIONS

GENERAL

296 candidates took Paper 2. 213 candidates (71.96%) passed.

FOR MULTIPLE CHOICE QUESTIONS

207 candidates passed (69.93%); the mean is 67.44 marks out of 100.

Whereas the standard deviation is comparable to those of the previous years, the mean mark is higher than that of the last year.

FOR ESSAY QUESTIONS

185 candidates passed (65.83%). Passing rates of the essay questions are as follows:

SQ Part A - Q1 – 83.05% (245 out of 295 candidates)

SQ Part B - Q2 – 71.78% (173 out of 241 candidates)

SQ Part B - Q3 – 50.00% (139 out of 278 candidates)

SQ Part B - Q4 – 72.41% (42 out of 58 candidates)

Part A Question 1

Question 1a

This question was divided into two parts, the first part was focused on the course of action for an Architect to take over the works from another Architect in a particular Work Stage, while the second part was to elaborate the different remuneration methods for preparation of a new General Building Plans submission to test new design scheme when the Architect has already obtained approval of GBP for the original design.

Candidates were expected to discuss the critical procedures and points to note for entering a new Consultancy Agreement with the client and suggest different options of remuneration methods with explanation which will be most appropriate, under the HKIA Standard Form of Agreement.

For the first part, most of the candidates have answered the new Architect shall notify the former Architect in writing for the appointment and seek for the consent and copyright to adopt the materials prepared for the project. However, only a small number of candidates have mentioned the new Architect should form the new Consultancy Agreement with the client for the works to complete the remaining Work Stages.

And for the second part, many candidates managed to provide a recommendation for Fee calculation method with reasons, but failed to list down and discuss the various methods for reaching to the final suggestion.

Question 1b

Candidates were given the case of an architect who recommended the appointment a building contractor for a project without having carried out due diligence in checking the contractor's past performance, which indirectly resulted in the project suffering delays. In administrating the building contract, the architect's project team was allocated insufficient human resources and support, and thus suffered handicap in taking actions. Candidates were asked to comment on the situation by referring to relevant principles and rules of the HKIA Code of Professional Conduct.

Most candidates correctly quoted the provisions under Principle 1, which required the architect to "faithfully carry out the duties which he undertakes" and Rule 1.1.1, "not to undertake or continue with any work" if he was unable to arrange adequate resources. Overall, close to 70% of the candidates attained over 7.5 out of 15 marks. The under-performers either cited the wrong sections of the Code, or provided incomplete answers.

Question 1c

This question was about the possible commitment of Prevention of Bribery Ordinance. Many candidates had listed out the offences committed by Architect F, however, the discussions on Architect G were considered not comprehensive in general. Candidates were advised to elaborate the offences committed by both Architects F and G clearly and in a more systematic approach.

Most of the candidates could answer the four major factors that Architect F should have considered ethically when handling the case, but more elaboration on the application of the four factors would be necessary.

Part B Question 2

Question 2(i)

This question asked for recommendation in the type and form of contract to be adopted for a 3-storey single-family house. It aimed to test candidate's understanding of different contract types. Candidates were expected to identify the pros and cons of each type of contracts.

Candidates' performance was satisfactory in general, despite some did not give any recommendations as requested in the questions. Candidates should provide more project specific answers instead of generic descriptions.

Question 2(ii)(a) & (b)

The contract had now been awarded but there was discrepancy between the tender drawings and Schedule of Quantities and Rates (SoR). Parts (a) and (b) were about the risk of errors in quantities in Lump Sum Contract with Quantities and without Quantities. They were asked the provisions under contracts when discrepancy was found between drawings and SoR / BQ.

Not many candidates could point out that the quantities in SoR were at the Contractor's risk and the Contract Sum would not be adjusted for error. Some candidates relied on Quantity Surveyor instead of providing professional advice to Client, and this is not a good practice.

Question 2(ii)(c)

Following Parts (b) and (c), Part (c) was straight forward and asked about how to deal with the discrepancy during tender. Some candidates failed to mention the term "tender addendum".

Part B Question 3

This question was about a redevelopment project where the Contractor experienced delay due to diversion of existing underground utilities. Issues for discussion in this question were about granting of extension of time (EOT) during the COVID-19 pandemic, and also the obligations of the Main Contractor to follow the Architect's comments in his submitted Master Programme. Candidates were expected to discuss the factors to be considered in EOT assessment, based on whether the effects of the pandemic were foreseeable to the Contractor at the time of planning for his works.

Part (i) aimed to discuss whether it would be mandatory for the Contractor to follow the comments from the Architect on the Contractor's master programme. Many candidates understood the obligations of the Contractor to organize and plan his works [Clause 2.1(1)], and it would be up to him to reasonably respond to any Architect's comments on a submitted master programme [Clauses 3.2(2) & 25.5]. Before commencement of the pandemic, the utility diversion of underground utilities was not on the critical path of the Works and therefore it was reasonable for the Contractor to act according to his own master programme. Some candidates, however, mistakenly took the comments from the Architect as an instruction and further discussed about implication of non-compliance of Architect's Instruction which should not be the subject of this question. There was also a number of candidates ignoring Clause 3.2(2), considering all Architect's comments should be followed and therefore it was the Contractor's fault simply because he had not listened to the Architect.

The first approach to an EOT claim should always be the assessment of whether the delay was a Contractor's default or not. It was unknown from the question whether the Architect's "repeated reminders" were still made after the pandemic started. As such, candidates should consider different scenarios in answering Part (ii) – the timing of work-from-home arrangement and whether it was reasonable for the Contractor to foresee it when he planned for his works. If the pandemic occurred after the Contractor had started the diversion works – it was unforeseeable and would not be a Contractor's default. It would be considered a listed event under Clause 25.1(3)(t) or (u). On the other hand, if the pandemic occurred well before the diversion works and the Contractor could have foreseen

the delay but chose to ignore the Architect's comments, it would be the Contractor's default. Many candidates only discussed one side of the problem.

Part (iii) was straightforward and asked for criteria for EOT assessment. Most candidates managed to list two factors, e.g. critical path, best endeavours, etc. with elaborations.

Part (iv) was a follow-up of Part (ii) and in fact a hint in considering different scenarios to Part (ii). Around half of the candidates could identify the importance of "foreseeable delay" when assessing EOT claims. Some candidates failed to acknowledge the delay on inspection was on critical path (despite it was stated in the question that it had a knock-on effect on the subsequent site activities), and mistakenly considered the work-from-home arrangement should have no effect on the site works. A few candidates, on the other hand, made an outstanding and thorough discussion on all other factors such as concurrent delays, etc. would also have affected his/her judgment in granting EOT.

EOT assessment has been a popular question among the candidates for the last few years. There has been improvement in the candidates' answers to demonstrate their understanding of the few fundamental criteria for EOT assessment. However, the discussions on contractor's obligations to follow Architect's comments in master programme, and also the element of foreseeable delay in determining whether it is the Contractor's default, need further improvement.

Part B Question 4

This question was about an A&A project in a shopping mall with different drawings showing the various Phases to be completed under the Contract. It aimed to test candidates how a discrepancy between contract drawings should be handled in relation to a contractor's claim and issuance of an architect's instruction.

In Part (i) most candidates could point out that since the replacement of floor tiles was described in the ground floor plan among contract drawings, the contractor's claim was not sound. Among them about a third were thorough enough to mention that it was the characteristic of a building contract without quantities that drawings and specifications described the scope of work. Only a few managed to also state the nature and function of a site possession diagram.

In Part (ii) a good number of candidates correctly stated that the architect was empowered to revise contract drawings. Most of them included some time and cost implications of an architect's instruction and about a third of them cited implications that were specific to the case of the question.

In Part (iii) most candidates wrote about issuance of an architect's instruction. Only some, probably those who had experience in handling clients and quantity surveyors during construction stage, mentioned actions outside the book such as presenting implications to the client and liaison with the quantity surveyor.

Among those who failed Question 4, some did not address the expected key points while others could not complete their answer. Candidates shall be mindful of time management during examinations.

RECOMMENDATIONS TO CANDIDATES

In general, there is an improvement in the candidates' standard in organization and presenting their knowledge in written English.

The passing rate for Section I – Multiple Choice, is promising this year. To better prepare for the multiple-choice paper, candidates should familiarize themselves not only with the contract principles, but also application to real life situations. Generating questions to discuss with study groupmates or colleagues is a good way to start.

Candidates are also advised to practically learn the fundamental principles of important contract mechanisms, such as EOT assessment, procurement strategies, etc., through exploring work opportunities or hypothesizing learnt principles to projects of different scales and natures. Discussing with seniors can help establish an open-minded yet structured mindset in coming up with flexible solutions for the same problems but with different contexts.

Candidates should read and analyze the question carefully, identify the issues and make proper references and applications of the learnt principles. The examiners are looking for discussions and reasoning based on contract principles, instead of direct copying from resources.

Paper 2 Subject Panel Chair

HKIA/ARB Professional Assessment 2021
Paper 3 - Building Structures
Examiner's Report

STRUCTURE OF PAPER

Paper 3 was an open-book examination comprising multiple-choice questions only. The paper consists of 60 multiple-choice questions. The passing mark is set at 65%.

Two assessments were carried out for Paper 3 in March and July in 2021. The paper for each of the two assessments was set in a similar format and structure covering a variety of topics.

Questions covered various aspects of building structures, including general structural principles, different structural forms and systems, foundation systems, excavation and lateral support systems, load paths and force diagrams, practice and construction, and a case study. Diagrams were included as appropriate for better understanding of the questions.

ASSESSMENT OBSERVATIONS

The passing rates for the two assessments were 57.25% and 69.35%. The overall passing rate of Paper 3 in PA2021 was 76.39%, which was similar to that of PA2020.

The “mean mark” for the two assessments this year was 65.33% and 70.70% respectively, with a “standard deviation” ranging from 11.37% to 13.65%

The “mean marks” of the March and July assessment are higher than the passing mark of 65%, which indicates that the average candidates' performance was generally up to the required standard. A reasonable “standard deviation” indicates that the assessment had generated a broad range of marks, and was fair, and effective in differentiating the abilities and depths of knowledge of the candidates.

It was also observed from the results that the candidates had shown weaknesses in certain areas, including the less common and less conventional structural systems (such as trusses, long-span structures, etc), and construction and practice (such as material properties, real-life application of different structural systems, etc). It was also observed that the results and general performance on the questions on the basic structural principles and concepts (such as load path, simple bending moment diagrams, etc) were also not very satisfactory.

ADVICE TO CANDIDATES

On top of the studying the recommended reading list, the candidates are also encouraged to gain more knowledge and exposure by the following means:-

- (a) Candidates are recommended to attend the Professional Assessment Seminar / Lecture Series organised by HKIA, not only for the Professional Assessment but also to broaden their knowledge.
- (b) Candidates are encouraged to get more on-job experience, guidance from office supervisors and seniors, and learn through better communication / coordination with structural engineers at work.
- (c) Sharing of knowledge and experience with fellow colleagues and graduates is also encouraged, and should be helpful if job exposure is limited.

Paper 3 Subject Panel Chair

HKIA / ARB Professional Assessment 2021
Paper 4 – Building Services and Environmental Controls
Examiners' Report

STRUCTURE OF PAPER

Paper 4, PA2021, followed the same format as adopted previously: an 'open- book' test with 60 multiple-choice questions. Passing mark was set at 65%.

Questions were worded in clear and straightforward language and answers with a combination of choices were used with discretion. Test topics closely followed the syllabus, viz. basic principles, sustainable design and environment, HVAC, fire services, plumbing and drainage, electrical services, lift and escalators, and acoustics, with emphases as outlined below:

1. Aspects of building services across different disciplines: both fundamental concepts and real-life applications a practising architect encounters daily;
2. Issues concerning safety, hygiene, human comfort and enjoyment;
3. Compliance with requirements of regulations and codes of practice; and
4. Sustainable design and environmental issues that are changing our lifestyles and shaping the future of the planet.

Essentially, questions were designed to test candidates' basic knowledge, skills and maturity in handling day-to-day situations, as leader of the building team.

As in previous years, a significant portion of the paper was sourced from questions that had been asked before. The intention of reusing past questions was to encourage candidates to study those familiar topics in greater depth, so as to enrich their technical knowledge in the respective fields.

ASSESSMENT OBSERVATIONS

Paper 4 tests were conducted twice, in March and July 2021. 'Mean marks' were 62.00% and 57.13%, with corresponding 'standard deviations' at 11.32% and 11.42%, and passing rates at 53.52% and 50.36%, respectively. The overall passing rate, adjusted to the actual number of sittings and successful candidates, was 64.04%, slightly below the 70.53% of 2020, but in keeping with the results of 2018 and 2019.

The seminar series was structured with particular focus on environmental issues, as in previous years, and the recommended reading list included literature on these topics.

Generally, candidates tended to perform better in book-based questions, such as those on theories, fundamentals and basic knowledge, which they had learned through reading, but were generally less competent in answering job-based questions, even though answers could be found in published circular letters, manuals and codes of practice.

ADVICE TO CANDIDATES

Broadening of exposure to the related issues is the key to good performance. In addition to following the recommended reading list, candidates would do well to enhance their knowledge and preparedness by:

- (a) Attending the 'Paper 4' seminars and related public events organised by the HKIA and other professional bodies;
- (b) Getting on-job experience and working in closer collaboration with building services and environmental consultants;
- (c) Getting hands-on experience in complying with OTTV, RTTV, IAQ, BEAM Plus and other environmental assessment criteria;
- (d) Reading through documents and records kept by other members of the project team, if on-job exposure, as mentioned in (b) and (c) above, is either inadequate or unattainable; and
- (e) Taking the initiative to go through specifications, material and equipment submissions, shop drawings, method statements, etc, to obtain a general picture of how things work, even though technical details are normally handled by building services consultants.

Paper 4 Subject Panel Chair

**HKIA / ARB Professional Assessment 2021
Paper 5 Building Materials and Technology
Examiners' Report**

STRUCTURE OF PAPER

Paper 5 was an open-book examination comprising multiple-choice questions only. The paper consisted of 60 multiple-choice questions. The passing mark was set at 65%. The questions were set at a very similar format and variety in each examination. In 2021, the paper was set for two assessments in March and July.

Questions set for this year are consistent with the examination paper of the recent years. The content of this technology paper has a wide scope of professional and technical knowledge and covered the various trades of construction regarding materials and technology, actual practices including working procedures and detailing as well as law related construction questions such as the Building Ordinance and Regulations, PNAP, Codes of Practices, etc. Questions with diagrams were set so that more than one question can be asked out of it. Generally, the questions were quite straight forward and all based on Hong Kong local practices and experience. About half of the questions were paper questions of previous recent years.

ASSESSMENT OBSERVATIONS

The respective passing rates for the two assessments were: 82.39% and 69.79%. The overall passing rate of the paper is higher than PA2020.

OUTLOOK FOR COMING YEAR 2022

The panel will maintain its standard of setting questions and insist on preparing new questions for the year 2022. However, more focus is given to the lectures for explaining clearly the scope of examination. Hence the introductory lecture for this paper will generally cover the paper and guide the candidates for the examination.

ADVICE TO CANDIDATES

1. Study the materials and technology in terms of the various building trades.
2. Look at building control on construction and updates with the PNAP.
3. Study detail construction drawings of various components at the candidates' office or through local book references.
4. Learn the procedure of construction for various trades.
5. Read about how to write the specification of materials.
6. Attend all lectures given by the panel to understand the scope of the assessment.

Paper 5 Subject Panel Chair

HKIA / ARB Professional Assessment 2021
Paper 6: Site Design
Examiners' Report

1. The Question

The test case is a residential development, a Community Recycling Centre (CRC), and a Community Centre comprising green product gallery/shop, multi-purpose rooms, Artists' studios for recycled products, administration offices and a rooftop organic farm/ garden to promote sustainability living and community waste recycling.

The site is located within an urban neighborhood surrounded by existing residential estates, office buildings and a school. Abutting a park to the North, the site enjoys limited sea view to the North and Northwest directions. There is a busy elevated road to the South. Traffic noise impact from elevated road must be considered. Prototype with noise mitigation measure can only be placed within the zone delineated as noise sensitive area.

The task is to produce a preliminary master layout plan which includes a Community Recycling Centre (1 building or podium), a Community Centre and a rooftop organic farm/ garden (1 building), a number of residential towers (number of blocks depending on prototypes selected and from calculations. 3 prototypes are provided with 1 single aspect building types for use within the noise sensitive area. The height restriction is set at +130m MPD and 55m MPD for residential towers and GIC respectively.

Specific to the site is the need to place the residential flats with appropriate segregation from the Community Recycling Centre.

As per Paper 6 in recent years, it is specified that the design shall comply with the building separation, street setbacks and green coverage requirements in accordance with the Sustainable Building Design (SBD) Guidelines (PNAP APP-152).

The candidates are expected to demonstrate their competence in coming up with a sensible site arrangement that generally meets the statutory requirements and the design brief.

2. Answer Scripts

2.1 General

Like previous years, given the ample site area, the panel appreciates a wide range of design approach in response to the design brief and the site.

The panel is satisfied with the performance standard this year. Most of the candidates managed to produce a layout that generally complies with the relevant statutory requirements and the design brief requirements and handle

sensibly the disposition of buildings in relation to various constraints and characters of external spaces and especially the segregation between the Community Recycling Centre from the residential towers.

2.2 Fundamental Non-compliances

Despite special reminders in the Design Paper seminar, there are still a few cases of under-development as many candidates could not achieve the required gross floor area for the residential portion (mostly due to mechanical applying the prototypes without any slight adjustment to suit the total GFA required).

Another major issue is non-compliance of prescribed windows when abutting site boundary, especially when residential towers are placed next to the park.

Many candidates do not understand the single aspect layout of the prototype provided. Buildings are turned to face the flyover with their habitable room directly onto the elevated road, or to turn side way resulting with half the building being affected.

KEY INDICATORS

The preliminary master layout plan of each answer script was carefully scrutinised by the assessment panel, which did not look for perfect design solutions and absolute compliance with the regulations, but a sensible approach and reasonable execution of site planning with a general understanding of the statutory requirements.

The following key indicators are specific to the Paper this year, which indicate the level of competence of the candidates in their sensibility, mastering of technical knowledge, understanding of statutory control, and skill of implementation:

- (a) General compliance with development parameters – achieving the required development potential with correct number of building blocks, compliance with building height limit and SBD requirements, particularly on building separation.
- (b) General compliance with the special design feature requirements – respecting the site constraint on noise issue and to have the residential buildings with better view to park, and to avoid overlooking.
- (c) Sensibility in handling the segregation of two functions: to recognize the nature of the Community Recycle Centre and not to put those facilities too close or under the residential towers.
- (d) Compliance with major statutory requirement – prescribed windows, and general compliance of EVA, ingress / egress points, etc.
- (e) Sensibility in the design of the Community Centre and not to have a very small footprint but very tall building. The lift core and staircases required for such solution will render the building almost unusable.

- (f) General compliance with traffic and circulation requirements, including the adequate and sensible provision of open car park and the loading / unloading bays as required.
- (g) Sensibility in the optimal segregation of vehicular and pedestrian circulation, demonstrated by the arrangement of internal roads and pedestrian paths, car park, drop off, and loading / unloading provisions, and access to each building.

3. WEAKNESSES

In addition to the fundamental non-compliance described in paragraph 2.2, the following major weaknesses are observed:

3.1 Non-compliance with Prescribed Windows requirements

- (a) Failure in fulfilling the prescribed window requirements for residential towers, particularly in cases of placing the buildings directly against the northern boundary.

3.2 Insensible disposition

- (a) Residential towers with serious overlooking issue.
- (b) Non-user-friendly / inaccessible leftover space between blocks.

3.4 Non-compliance with special design feature requirements

- (a) No segregation between Community Recycle Centre from residential development.
- (b) Residential towers with windows placed immediately next and facing to the elevated main road even for some candidates had selected the right prototype but turn it round with the wrong direction.

3.5 Insensible internal road planning/ carparking

- (a) Grossly over-provided internal roads leading to fragmented open space, excessive pedestrian crossings, and buildings surrounded by rounds with disjuncting external spaces within the development.
- (b) Under-provision of internal roads leading to inadequate drop off and loading / unloading provisions for each block.
- (c) Car parking spaces and loading / unloading bays provided directly from roundabouts, or even accessed from external roads. Poor provision of turning and reversing in carpark and loading/unloading bays.

3.6 Non-compliance with EVA requirements

- (a) Substandard hammerheads and turning circles for fire fighting vehicles.
- (b) Inadequate coverage of building facades for EVA.
- (c) Excessive internal roads for EVA at the expense of open space where the buildings can be easily reached from the public roads.

4. Examiner's Recommendation

This year we have selected a site with good prospects and aspect, and also constraint like many sites in Hong Kong with road and elevated road next to it. The prototypes have to be selected carefully to suit different situations and therefore some creative adjustment of their footprints would make a scheme successful.

It is important that other aspects such as development potential, statutory requirements – prescribed windows, EVA, ingress / egress points, are given proper consideration. It has been noticed that there were many cases with no or misunderstanding of the requirement of prescribed windows to open space. Prescribed windows must be respected and followed to common boundary even there is a park to the other side of the boundary.

Again, like previous year, there are still some cases with dogmatic approach of keeping southern aspect for building with no regard to view, overlooking, noise and environmental hazard.

THE PAPER

The paper this year set to examine the candidates' competence in the design of a **Community Recycling Centre** at an urban neighborhood. The Centre shall incorporate the elements of collection, disposal and recovery of waste, together with art creation, exhibition and education facilities.

It is the intention of the Centre to educate the public through participation in waste collection, recycling part of the waste collected from the community, and recovery on site through artistic creations. Active involvement of the community will be encouraged through workshops, retail galleries and exhibition/education functions held by non-profit organizations.

The design task calls for a comprehensive schematic design solution possessing an architecturally pleasing identity and satisfying generally all functional and statutory requirements. The candidates' solutions are also expected to incorporate preliminary provisions and requirements for building structure, building services and utilities etc.

The schematic design shall comprise the following principal elements and compile with the major design consideration:-

- a) **Recycling Station**, with a welcoming public entry through the main entrance of the building serving both neighborhood and public, and at a location easily accessible to both pedestrian and those arriving by car. The Station shall comprise the following components:-
 - **Covered Collection Point**, where the recyclables are collected;
 - **Sorting Room**, located at same level of the Covered Collection Point, where the recyclables collected are sorted, further processed by artist's creation at Workshops or taken off-site by Refuse Collection Vehicles;
 - **Food Waste Recovery Centre**, where food waste collected or from the Coffee Shop are processed and transported to the roof for gardening purpose;
- b) **Workshops & Exhibition / Education Centre**, where recoverable waste are regenerated into artistic products, exhibitions and educational seminars are held to engage public and to promote recycling;
- c) **Community Gardening Centre** at roof top where public are invited to practice green farming from recovered food waste from the Recovery Centre;
- d) **Green Lawn** on ground floor where large scale exhibition will be held.

Submission requirements include Site Plans, Building Layout Plans and Building Sections at 1:200 scale. 3-Dimensional Illustrations or Detailed Calculations are not compulsory.

OVERALL OBSERVATIONS

With clear definition of the functional uses and relationship between the major components of the building stipulated under the brief, the paper demanded the candidates a clear understanding on the logistics of the recycling from collection, sorting to the recovering and up-cycling activities, which shall seamlessly work with the front of house visitor experience as well as the backing house servicing.

For a building serving the community and public, a sensible planning, for a welcoming public arrival coherent with the neighbor park, and a user-friendly internal circulation, accessing facilities at various levels, are also the design merits that the Subject Panel were looking for in the design solution.

The Subject Panel was satisfied with most design schemes responding to the design parameters reasonably, although the limited time might pose challenges to some candidates to come up a comprehensive solution, which is understandable.

KEY INDICATORS

The detailed layout of each answer scripts was scrutinized carefully and jointly by the Assessment Panel. The Subject Panel are looking for a sensible design solution that could meet the design brief, and in general compliance with the building regulations.

The Panel made the assessment based on the following key indicators that can reveal the competence of the candidates in their design sensibility, level of technical knowledge and skill of implementation:

- a) General compliance with development parameters, including building height, plot ratio and site coverage requirements;
- b) General compliance with major statutory requirements, including fire escape and emergency vehicular access;
And specifically for this paper, the arrangement of prescribed windows facing common boundaries with adjoining lots and the exit route leading to the place of ultimate safety at ground floor;
- c) General compliance with specific site constraints and design requirements – including the logistics of recycling activities, the visitor's arrival experience, the user-friendly internal circulations;
- d) Logical planning of functional uses and effective allocation of usable floor area, without over-provision of corridor space, lifts or escape staircases;
- e) Sensible of external space including the green lawn, access road, refuse collection point, loading / unloading and parking facilities ;
- f) Appropriate segregation of visitor's activities, staff circulations, and back of house servicing routes.

- g) Integration of structural grid alignment, floor-to-floor height, and structural span;
- h) Integration of building services plant rooms and its functional relationship;

SUGGESTIONS FOR IMPROVEMENT

The design panel is generally pleased with variety of solutions formulated from different understanding of the design problem. Some suggestions are listed below to draw candidates' attention for improvement.

Draftsmanship and Scale

Though general improvement in draftsmanship and legibility of the drawings are recognized by the Panel, there is still issue of the scale in building components, e.g. unproportioned lift or staircases, grossly oversized corridor or undesignated spaces. Future candidates are encouraged for more extensive practice on their hand drawing skills, and attention to be paid to proper line weight, annotation and established drawing conventions to improve the drawings' clarity with minimal coloring.

Time Management

It is not uncommon to observe there are answer scripts that started with a detailly drawn Ground Floor Plan, but finally submitted with missing floor plans or meaningful major section essential for illustrating the overall design. The phenomenon appears to the Panel mainly caused by the candidates' poor time management during examination. Future candidates are encouraged to practice more on past papers, have a clear planning on work sequence and properly allocate time for understanding of the brief, sketching on bubble diagrams, working on preliminary layout, drafting of final drawings, and most importantly, proof checking.

Effective Planning of Functional and Circulation Space

It is observed that escape staircases are quite often over provided, which leads to poor efficiency and relationship to the building's functional and circulation arrangement. A comprehensive planning of the building profile with allocation of escape staircases at the most appropriate and efficient locations, instead of an ad-hoc afterthought, would benefit subsequent detailed planning of the functional space. Candidates are encouraged to study more on real life examples in terms of an effective planning.

Clear Structural Integration and Planning

Structural grids should be clear and integrated with functional space with sensible alignment. Large spaces such function halls are expected to be column free. The vertical arrangement of long span and short span functions between floors also demands a greater sensibility for a more cost-effective solution to minimize structural transfer. This has been a consistent issue through many years that the candidates are encouraged by attempt their best understanding of structural integration accordingly.

Sensible Back of House and Servicing Route

Apart from the principal functional uses, there would be requirements in the design brief to incorporate various back of house ancillary area as well as loading / unloading facilities. A clear understanding on the back of house routing starting from the loading vehicle to services lift, from services corridor to respective functional spaces etc. are equally important to the planning of front-of-house in a well thought out design.

Paper 7 Subject Panel Chair

HKIA / ARB Professional Assessment 2021
Paper 8: Case Study
Examiners' Report

STRUCTURE OF PAPER

Candidate has to provide a one-page synopsis and go on to complete a 20+20-page report. The Professional Assessment Handbook details the topics requirement and report format. The passing mark is set at 50%.

ASSESSMENT OBSERVATIONS

175 out of 207 candidates passed the Paper this year. The passing rate was 84.54%. Five candidates received zero mark due to plagiarism and will not be allowed to take PA2021 – Paper 8. Although the same project may be studied, other than for re-sitting candidates, the special topic has to be different from the one used in previous submissions. It was generally agreed that the case study remains a useful tool through which candidates could learn about the essential elements of project administration, even though the projects they were handling in the office may not give them sufficient exposure to the entire range of practical issues. Passing rates were usually high and it was not seen as a major source of anxiety for candidates.

RECOMMENDATIONS TO CANDIDATES

Carefully study and analyze available information on the project and talk to the project team for a thorough understanding, then write the report in your own words to cover what has been learned. High emphasis was put on candidate's ability to ask proper questions in order to give his/ her own appraisal of the various issues and problems relating to the project. Avoid common reasons for scoring low marks including the lack of candidate's own judgment and appraisal, study in sufficiently detailed, too many general statements and record of events, and failing to demonstrate the understanding of problems encountered in the project.

Special topic study gives candidates opportunity to research in depth a topic of interest. Candidate may continue to use previous reports as format and contents template but must refrain from copying multiple sentences and paragraphs, which will be readily detected by the plagiarism software.

Paper 8 Subject Panel Chair