The Institution of StructuralEngineers

Examiner Report – January 2026

Chartered Membership Exam – January 2026

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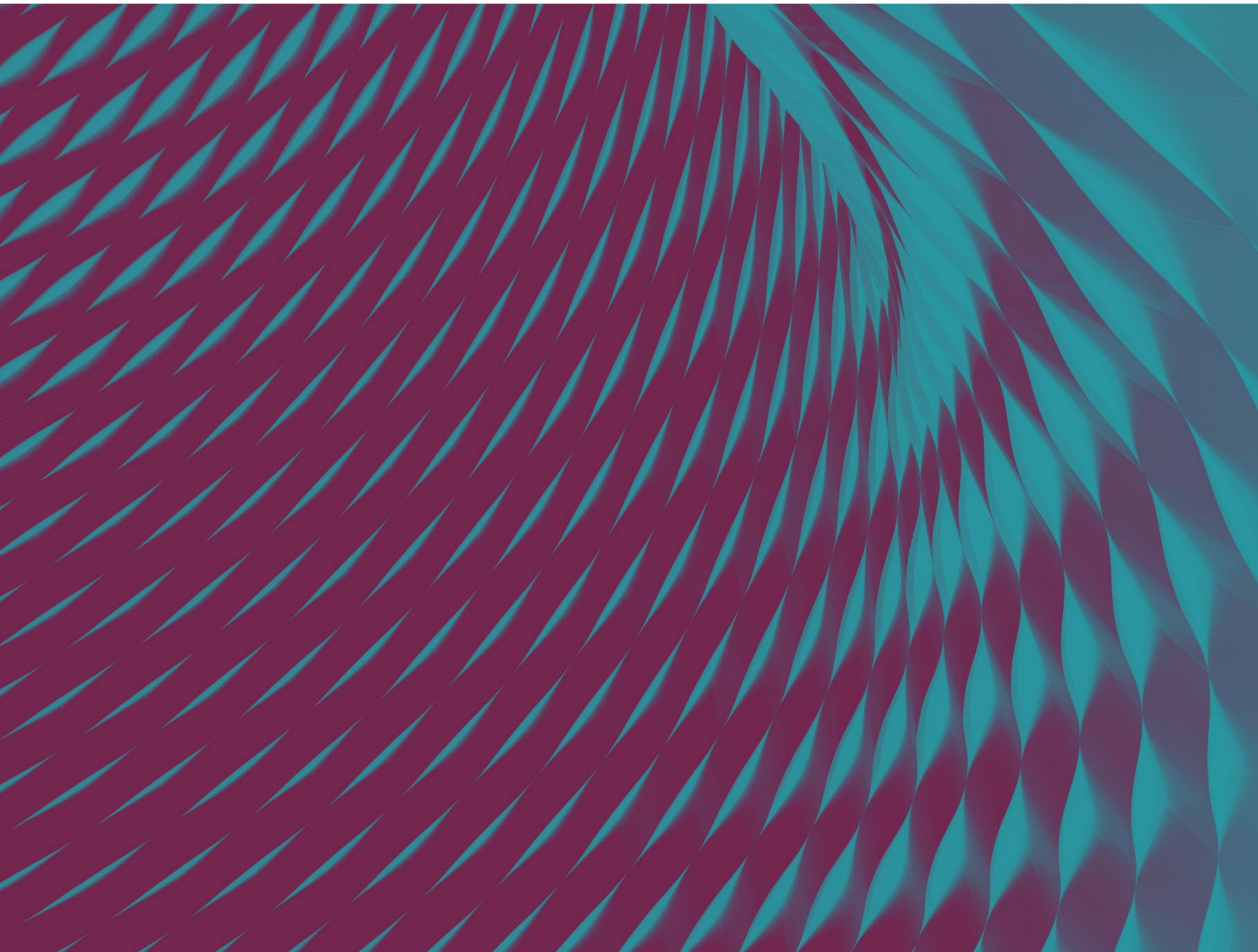

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Notes on the reports

The Examinations Panel, on behalf of The Institution of Structural Engineers, continues to review all aspects relating to the Chartered Membership, Incorporated-Membership and Chartered Supplementary Examinations and their relevance and role in assisting structural engineers to gain Chartered and Incorporated status within a worldwide professional structural engineering organisation.

Comments from the Examination and PRI Manager

All candidate exam papers were received back from the exam centres in good time and all scripts and pages were accounted for.

Candidates should make sure that they are aware of their candidate number and the location of the exam in advance of the day. The Institution sends out a reminder prior to the exam to check this information by signing in to the website and looking in the 'My Exams' section.

Candidates continue to leave page numbers blank on scripts which results in Marking Examiners not always being able to follow an answer script logically. Candidates are reminded that the final 5-10 minutes of the exam should be used to ensure that their papers are in order and ready for collection at the end by the invigilators.

A general observation from examiners is that many candidates continue to adopt a formulaic approach in their responses to Section 1B, 2D and 2E, using 'standard' wording and generic sketches possibly taken from an exam preparation course. Candidates should note that examiners are looking for bespoke solutions which address the specific requirements of the brief and marks will not be awarded for generic answers.

The Examinations Panel has created and made available a preparation guidance document that all candidates are encouraged to download and use as part of the revision, as well as taking a copy into the exam for any last-minute reminders.

Question 1 – Manufacturing building

The question requires designing an industrial building comprising a single storey workshop with an electrical overhead travelling crane and an integrated 3-storey ancillary building accommodating offices and show rooms. The key challenges are:

- The shape and structure of the roof is left to candidates to decide but must be continuous over the whole structure, e.g. a rigid frame or a truss system. A rigid frame with duo-pitched roof can offer greater interior space but at the expense of large moment connections at eaves and ridge levels. A truss system on the other hand is a simpler option but occupies more interior space and requires heavier columns.
- The single storey workshop structure should carry the crane vertical and horizontal loads safely with limited lateral deflections. The overhead travelling crane generates lateral loads at the runway beam level (surge loads), causing sidesway of the columns. The size of this column sway must be limited for safe operation of the crane (usually to height to runway beam/350 – although candidates were permitted to use standard building movement limits). To achieve this, columns can be fixed at the base or alternatively be pin-based but with heavy roof bracings in two directions. The columns can be of uniform cross-sections or stepped at the runway beam level.
- The primary scheme for column spacings in the longitudinal direction is 6m. There is a prospect of having 9m spacing which gives smaller number of columns but larger deflections hence larger beam, column, bracing, and foundation sizes.
- In the 3-storey ancillary building, internal columns are only permitted at levels 2 and 3. This requires transfer beams at level 1, if internal columns are utilised at levels 2 and 3. The floor construction can be in the form of composite floor, one-way or two-way RC slab, or precast slab with reinforced concrete topping. The limited floor structural zones means that a slim floor system may become necessary if floor beams are too deep.
- The lateral stability can be provided by rigid frames with fixed bases at 6m/9m intervals. Alternatively, a combination of vertical bracings in gable end walls of the workshop and core walls of the ancillary building can be used. In this case longitudinal roof bracing should provide for diaphragm action of the roof to transfer the lateral loads from crane and wind loads to vertical bracings. The eccentricity of the lateral load resisting system needs to be considered.
- The longitudinal stability can be provided by bracings along the workshop perimeter walls and separating wall between the workshop and showrooms, core walls, and moment frames in the perimeter walls of the showroom. The combination of braced frame and moment frame needs consideration for relative lateral stiffness. Again, the eccentricity of the lateral load resisting system needs to be considered.
- The presence of a dominant opening should be addressed when calculating the wind loads.
- Foundations can be of isolated pads on dense sand or piled foundations extended into the dense sand. A raft solution is generally uneconomical due to the wide column spacings and large excavations. Foundations for core walls or moment frames need to resist the overturning moment due to the lateral wind loads. The made ground is 1.0m thick, therefore the ground slab should be either a suspended slab on ground beams spanning between the pile caps/pads; or alternatively, a ground bearing slab on an improved ground. The ground improvement can be by a compaction method or by replacing the made ground with an approved compacted granular material. The amount of excavation and requirements for safety measures need to be considered for cost comparisons.
- In case fixed bases are used for workshop columns the horizonal reactions at column bases must be resisted by foundations. This can be by using horizontal ties between the columns at base levels.

- The letter requires to address what can be done to change the original brief for reduction in material usage whilst maintaining all key structural design features. Amongst the possible options are:
  - Reducing imposed load in the office area.
  - Adding more columns in the showroom to eliminate the need for transfer beams.
  - Reducing the clear height of the showroom to reduce the weight.
  - Using single girder crane to reduce the crane weight.
  - Reducing the minimum perimeter column spacing.

Section 1a

Majority of scripts used a pin-based steel framed structure with braced bays around the perimeter. This took the form of portal frames for one scheme and a trussed roof for the second scheme. Most scripts did not appreciate the significance of the presence of the crane in workshop. The horizontal surge in the transverse and longitudinal directions was almost entirely overlooked. The column sway for tall columns in the single storey workshop was often ignored or not addressed adequately. The stability in the transverse direction was often relied upon the perimeter/core bracings without providing longitudinal roof bracings in the workshop to transfer the lateral loads to vertical bracings and to avoid excessive sway of the crane columns. Where this was considered there was no calculations to justify the adequacy of the bracings. In some cases, the lateral stability was provided by core walls only with no considerations for a large torsional moment caused by the eccentricity of this system.

Many candidates tried to turn the scheme into a commercial building, with many opting to have a reinforced concrete frame with oversized elements and foundations.

The presence of large openings was not addressed in majority of the scripts.

Foundations usually took the form of piled, pads, or raft foundation with a number of candidates using a substantial raft slab which is highly inefficient from both a cost and carbon footprint perspective. The treatment of the ground floor slab on 1.0m deep made ground was often addressed reasonably.

Section 1b

Generally, the letters were fair to good, with many seeing opportunities to reduce the carbon cost by simplifying the structure or reducing the imposed load. Many tried to reduce the capacity of the crane, as if they knew it was a significant component but did not know how to address it. Some candidates did not win marks for suggesting changes that they could have incorporated in their scheme proposal without a change to the brief.

Section 2c

Calculations consistently lacked clear narrative. Element design was adequate, but the understanding of how the structure functioned and how loads were derived and transferred was not well explained. Most candidates suggested that frame action contributed to the stability, but none included any resulting moments in the calculations.

Candidates should be experienced in preparing simple hand calculations in practice. It is understandable that a full detailed design analysis cannot be achieved but it is expected to see the stability structure, such as the cores or bracing/moment frame systems, to be designed as a priority. Carbon calculations were sometimes absent which will affect the marking.

The calculations were often poor. Many were incomplete with some ignoring the lateral stability components of the building entirely. The stronger scripts did cover the core components of the structure and those that passed demonstrated that the lateral stiffness of the structure was sufficient to support the crane, even if they did not allow for its presence in their calculations. Many candidates carried out excavation and lateral support (ELS) checks on the building.

A number of candidates concentrated on the overall stability such as overturning, sliding, and uplift of the structure as a whole, which is irrelevant for a structure of this size.

Foundation calculations tended to be focussed on the foundation rather than the ground. A raft was a common design even though this was not a preferred option for a widely spaced column point loads. When the raft calculations showed very low bearing pressure the candidates did not think to use pads instead hence saving a considerable amount of material. Retaining wall calculations were generally missing. In some cases, secant piled walls were used.

Section 2d

Drawings were very mixed in terms of quality, most candidates presented reasonable floor plans with descriptions, typically using a split plan approach. Sections were generally very basic without inadequate information. Annotations were minimal with many plans not completely dimensioned. Often details were limited to generic RC details and did little to describe the key interfaces of the question constraints would be addressed. Details continue to be an issue, with too many either reproducing stock details or providing details deemed not critical. There is a tendency for some candidates to equate details as being reinforcement layouts for concrete structures. This is not the case and this needs to be discouraged as they are not relevant.

Section 2e

As is common with this section, most candidates provided a generic construction sequence. A vast majority of method statements did not address the unique aspects of the structure the candidate had designed. Generic descriptions of site preparation and the assertion that the frame would be built were prevalent. Very few acknowledged the presence of the transfer structure within the showroom or the problems of installing long span elements such as trusses and or beams.

Here, the method statement is expected to address the critical aspects of the construction sequence and temporary works from a designer point of view. Some candidates did manage to focus on assembling large members on the ground, excavation issues, and temporary instability related issues.

Question 2 – Renovation of existing multi-storey building

The question required candidates to convert an explosion damaged ten storey residential building into a minimum 4,000 m² office space. The question introduced several key challenges, including the demolition of the original stair and lift/elevator tower, which was located outside the main building envelope on the road facing elevation. The question did not clarify whether this tower provided access to the basement, and no candidate raised this issue or questioned how basement access was achieved. A renovation project may be trickier to establish distinct schemes for as a change of grid / load path is awkward to handle while looking to retain reuse.

The question should have been straightforward but many candidates over complicated it at the start. Rather than accepting the remaining concrete frames and basement foundation were structurally acceptable, since less future load was being applied, some candidates set about strengthening the basement with additional piling. Some candidates strengthened existing beams and columns to an impossible level, when simple numbers would have shown that these were acceptable. A few candidates used the basement as office space, even though the question stated that all offices must be fully glazed. Some proposed building to the 20 m space between the building and the adjacent road.

Many candidates failed to fully appreciate the breadth of issues presented and focused predominantly on achieving the required gross floor area. Few recognised the constraints imposed by floor levels when extending the two-storey section of the building adjacent to the existing four storey portion. A significant proportion also overlooked the impact of horizontal deflections and the need to control sway and instability in the upper floors as the structure was extended vertically. Few candidates addressed horizontal movement between the new vertical extension over the existing two storey block and the adjacent four storey structure, proposing ties to transfer horizontal loads.

Some candidates did not appreciate the original load path created by the primary beam directions and introduced new floor layouts with beams spanning perpendicular to the original arrangement. This resulted in increased loads on columns that, in the original building, would likely have supported only minimal floor area and façade loads.

A small number of candidates deviated from the brief and proposed solutions that did not meet the client's requirements, such as placing circulation cores within the building or introducing shear walls on the elevation.

Section 1a

Most recognised the need for 20m span structure in the new building needed in the four extra 400m^2 spaces needed. For distinct schemes those additions could be stacked differently but would not overload the existing below when a comparison with existing load was considered. Adding up only would avoid the issues of supporting beams in steel or concrete on existing columns and allow the use of post-tensioned concrete. Many candidates did demonstrate the existing beams were working hard.

If there was concern on load adjustments, few noted that carbon fibre strengthening could add a bit of capacity to beams.

A change in material was possible – steel or concrete with floors added on both sides or one only and with a careful load check a steel and CLT floor could be added on the low section without overloading columns that had a lot of the concrete slab removed.

Stability was not always well tackled – the capacity from frame action should have been considered difficult and the addition of bracing was permitted and could be installed early to avoid any temporary stability issues during construction. Some candidates assumed that the original building consisted of a moment frame. They then typically provided bracing to the vertical floor extensions continuing through the original buildings but failed to demonstrate consideration of the relative stiffness of each system or how lateral loads would be shared.

Very few candidates considered the original load path or the reason for differing primary beam directions on each side of the building.

Several candidates proposed to use the basement as office which is a violation of the brief.

Several candidates proposed to demolish the whole or a part of the superstructure above L1 or even include L1. This is also a violation of the brief on "Reuse". More demolition results in more marks being deducted.

Some proposed changing the load path (i.e. the direction of beams) for the new floors without checking or discussing the effect on the existing lightly loaded facade columns.

A few candidates misinterpreted that the existing structure is not adequate. They proposed strengthening of the existing structure or the foundation by complicated solutions but lacking discussions of the key implications of the solutions and how they are to be constructed.

Sketch quality varied widely from minimal generic diagrams to fully developed sections illustrating load paths. Many candidates demonstrated an understanding of lateral load transfer through text, sketches, or both.

Rule-of-thumb calculations ranged from overly simplistic to unnecessarily detailed. Some candidates provided no viability checks at all.

Candidates were marked down for an unrealistic scheme intended only to provide an alternative scheme. Unrealistic schemes prepared by candidates included hanging column from roof and deep truss supported by slender UC column. The unselected scheme must be also practical. Different floor layout effectively gained marks as functional frame and load path were distinct. The identical floor arrangement with different material was not regarded as distinct schemes.

Most candidates used a tabulated comparison for their scheme appraisal, listing advantages and disadvantages before selecting a preferred option. However, they often failed to critically evaluate their schemes against the key challenges of the brief.

Candidates are reminded that the scripts do need to be legible and organised so the design ideas expressed can be assessed. No marks are lost for poor handwriting, but if the material is indecipherable, it makes marking much more difficult for examiners.

Section 1b

The letter required candidates to advise the client on options to reduce material usage while maintaining the overall floor plan.

It seemed there were few very easy wins here, although a change in column grid was likely to be a win, but needed to note that it would be likely to be balanced a little by adding foundation as it changed the load path. Changing cladding requires care in explaining reduced material use as alternative systems would need the same area, could easily be more volume and a similar weight! The advantage of avoiding overheating and so the need for cooling was not noted in this switch. Some had taken the easy win in roof load in their initial design. However, few candidates identified the excessive roof loadings or suggested strategies to reduce them, despite the roof not being designated as a plant area.

Most candidates suggested the provision of additional columns, but this is a generic statement unless the candidate provided a sketch with a specific location of columns. To gain marks effectively, a candidate should suggest site specific options. These include use of basement, reducing glazing area, reducing roof loading, internal core, etc.

Section 2c

Candidates typically designed simple structural elements such as beams, slabs, and columns. Most also addressed lateral stability through bracing or shear wall calculations. While candidates are expected to design five to seven elements, many repeated similar element types and neglected unique or critical components.

Stability was generally dealt with reasonably but with limited checks on the fixing of systems to the top of the basement RC wall.

All listed design codes but not all that the carbon factors were those from the IStructE. Alternative sources can be used but the source should be referenced. A1–A3 carbon calculations were not included by most candidates which is disappointing.

Despite the existing building already loading the foundations, very few candidates provided foundation calculations to justify the new loading, resulting in lost marks.

Section 2d

The quality varied. In some cases, an overall section was missing, making it harder than it should have been to understand the proposal from the drawings. Where a section was provided, plans for the basement, ground, and first floors were often unnecessary if these remained "as existing." Instead, it would have been more effective to show full plans of the new structure, with only minimal notes on bracing where this was not clear from the section. Using colour keys would also help reduce the amount of written annotation.

Details were reasonably good in showing work that was needed in connecting to existing, but few showed the principle of how glazing in the elevations might be fixed. Some interest here as steel centred on 500 square RC columns at low level make this an issue that is unique to a renovation project like this.

Drawings were often incomplete and lacked sufficient detail for concept stage estimating, particularly regarding reinforcement quantities. Many candidates split floor general arrangements across multiple sheets but failed to provide adequate dimensions or member sizes to support cost estimation.

Candidates frequently wasted time including standard drawing notes instead of focusing on the atypical details required, such as connections between the new and existing structures at floor and basement/foundation levels.

Section 2e

Method statements generally demonstrated limited construction experience. While most candidates provided a reasonable preliminary sequence for site setup, the superstructure sequence was typically brief and lacked project specific detail, particularly regarding temporary works. Candidates did, however, commonly allow for investigative works to verify the suitability of the existing structure.

The candidate should demonstrate the subject related to the basement water fill. This includes detailed site inspection to find the cause of water fill, structural assessment, repair, waterproofing, or abandoning the basement as an office space. A candidate should also demonstrate work close to the existing structure. If a new foundation is proposed for new external core, excavation close to the existing foundation should be discussed. Few candidates attempted this.

Conclusion

Candidates appeared to spend excessive time interpreting the question and writing preliminary thoughts before beginning their answers. This resulted in lost time with no marks awarded. Candidates should have kept initial notes brief and prioritised answering the set questions directly.

Although the scenario of renovating an explosion damaged building was not characteristic of previous papers, it offered substantial opportunity for candidates to demonstrate their technical understanding and design judgement.

Responses should have avoided generic commentary and instead addressed the specific issues raised in the brief, demonstrating an understanding of structural behaviour and the elements required to achieve a stable structure. This paper offered an excellent opportunity for candidates to show their grasp of both lateral and vertical load paths through a building, and to recognise how these influence not only the interfaces between new and existing construction, but also the more heavily loaded or highly stressed components of the structure. Many candidates did not adequately demonstrate this level of understanding.

In summary, stronger answers demonstrated focused feasibility studies, explicit treatment of lateral stability within the given constraints, clear and well-presented drawings, and method statements tailored to the design. However, still quite a few candidates produced work that was too general, incomplete, or in conflict with the brief.

Question 3 – Railway bridge and access road

The brief calls for a new road through a railway embankment as part of a major land development in open countryside. The brief offers several superstructure and substructure options. The challenges for producing viable and sustainable options are geometry, ground conditions, buildability and minimising railway disruption.

The majority of the scripts were poorly presented and some difficult to follow. Time management appears to be poor as a number of candidates ran out of time and sections appear rushed.

Section 1a

The height of the proposed roadway and footway structure will likely result in the new road level to be lower than the embankment ground level, with the track construction resting directly on to the new deck. This was not addressed adequately by many candidates. Many candidates also allowed for the longer span along the railway track than the width square to the proposed roadway-footways due to the 70-degree skew. The heavy railway loading would require span to depth ratios of 10 or 12, which again was recognised by many candidates for deflection control to keep the wheels on the track and avoid derailment. Superstructure options could include single span bridge beams, pinned one end and free at other end longitudinally on T-shape cantilevered reinforced concrete abutments, single span integral jointless deck thereby eliminating movement joint at track level supported on bearings below deck onto abutments or integral with the abutments effectively a portal frame with no bearings or a rectangular box structure. Materials could be concrete, steel, composite or prestressed. Steel decks could be half-through type with transverse beams either square or on a skew, edge main girders/ trusses with transverse beams, composite deck, etc.

Ground conditions are such that ground-bearing and piled options are feasible. However, the water table would need to be allowed for and could be avoided for ground-bearing options. Embankment profile and composition meant that any piling operation would need to minimise dynamic forces for stability of the embankment and railway track.

Buildability was generally not adequately addressed. To minimise railway disruption, long-period in-situ options would not meet the brief. Fast-track construction methods are required, such as offsite prefabrication and good use of the available railway closure periods for phased short-term work. Two feasible methods namely, open cut excavation, sliding the preconstructed bridge into position and backfilling or temporary support of the embankment with sufficient clearance along the span of the proposed bridge followed by excavation and temporary scaffolding to the tracks, construction of the abutments, backfilling, lifting into position the new deck, ideally including the railway track, and finally removal of the temporary embankment support. Permanent sheet piling embankment support could alternatively be incorporated into the new bridge scheme. Jacking a precast concrete box through the embankment using a thrust bed and hydraulic jacks would disrupt the railway track due to insufficient vertical clearance, whereas sliding into position in open cut and backfilling would be feasible.

Wingwalls were generally not covered. The need for any movement joints due to the length of the abutments and wingwalls were also generally not covered. A movement joint between the wingwalls and the abutments would be feasible as cantilevering off the abutments results in massive structures in what is already a long abutment.

Scheme selection: The open spaces at the proposed bridge location enables offline fabrication without disrupting the railway. Access is however available from the south side of the embankment. Temporary sheet piling carries the risk of disturbing the embankment as well potentially more periods of railway disruption. The opencut option with offline fabrication involves the least track possession and less risk of delays from unforeseen issues.

Section 1b

The obvious point for review is why the skew is required, given that this is a first phase of land development and road alignment could perhaps be adjusted to suit a square span of shorter length. A 6m road height clearance is greater than normal standards and depends on the proposed road classification; hence a traffic strategy review might result in reduced abutment heights and reduced earthworks. A 10m carriageway and 5m footways, also seem generous which could be reduced resulting in a shorter bridge span subject to a review of the traffic and road classification. The railway loadings also appear generous; a check of the classification of the railway line for tonnage and speed could result in reduction to loadings leading to material savings. The brief does not exclude a longer bridge, so any suggestion of columns at edge of carriageway or at carriageway centreline between the two lanes to reduce deck span would need to mention if the saving in a resulting shallower deck is offset by the columns and associated foundations as well as the need for collision protection and visibility considerations. Columns along the carriageway centreline might also require a central reservation which would further increase the overall span.

The quality of the letter to the client varied significantly. The majority of candidates identified the vertical and horizontal clearances but only a few the loadings and the skew.

Section 2c

The following calculations were required: vertical and horizontal clearances, loadings and bearing capacities, principal members for deck and substructure or portal frame or box, foundations, wingwalls and carbon calculations for the selected scheme.

Sufficient design calculations were generally not done to establish the form and size of all principal structural elements. Most missed out calculations for the wingwalls. Where prestressed structures were proposed, the interface between the prestressed deck and the integral reinforced concrete abutment frame was incomplete. While some candidates demonstrated reasonable load derivation and member sizing, many omitted key elements. Numerical errors and unsupported assumptions were common. The majority included carbon calculations but not all candidates.

Section 2d

Drawing quality and completeness varied significantly. Only a small number of candidates provided a coherent, scaled set of drawings including plans, longitudinal and transverse sectional elevations and critical details. Three critical details could have included deck to abutment particularly for prestressed deck elements or integral structures, deck transverse beams to edge main girder connection, foundation details, etc. Bearing details and deck articulation plan were not always included for articulated schemes. Notes generally appear to have been generic rather than specific to the selected scheme. Dimensions were also incomplete or unclear.

Section 2e

A designer's detailed method statement would be expected to include the following:

- Embankment and bridge geometry site check to verify design assumptions.

- Selective ground and embankment investigation to verify design assumptions for temporary and permanent works.
- Railway track possessions for partial or full track closures.
- Temporary works prior to substructure and superstructure construction such as sheet piling and any embankment monitoring.
- Substructure construction and the need for any heave monitoring and/ or dewatering.
- Superstructure construction sequence.
- Any offsite trial assembly and provision for site adjustment for unforeseen lack of fit, etc.
- Embankment re-instatement.
- Road construction.

Most of the method statements lacked enough information on, for example, the temporary works and stage-by-stage stability.

Conclusion

The low pass rate was surprising for a relatively easy question with many options. Most candidates did not demonstrate sufficient overall competence to achieve a pass rate.

Question 4 – Pre-assembled pipe rack

No candidates attempted this question.

Question 5 – New climbing wall

This question is intended as an opportunity for candidates to demonstrate their ability to use different materials to form a lightweight and efficient structure. A new climbing wall structure is required within an existing larger building, which has a substantial concrete slab across the footprint. The climbing wall has different sloped faces on each elevation. Structure is required to support a unitised cladding system at specified centres.

Section 1a

The structure could be constructed in several different materials, with lighter solutions such as timber or steel expected, including the potential of pre-fabricated panelised systems in either. Whilst concrete can provide a structurally viable solution, a candidate should consider the economy and sustainability of a heavy structure for this wall.

There are opportunities to use bracing or moment frames for lateral stability, with the only restrictions being an opening on one elevation, and another on the roof. Depending on their solution, candidates were likely to have horizontal forces exerted onto the stability system by live loads onto the sloping walls. Candidates are expected to clearly demonstrate their understanding of load paths on the structure.

Use of the existing industrial concrete slab was expected to be suitable for foundations, although candidates were expected to do some form of justification for this.

Section 1b

Candidates were asked to make changes to the brief to reduce material usage, whilst maintaining the form of the climbing wall. Those candidates who chose a heavy solution such as concrete framing in Part 1a should have been able to propose alternatives with ease. All candidates should be able to consider alternative materials.

Other potential solutions would be to introduce external columns at the edges of the sloped walls, or to investigate the existing structure to see whether it could be used to restrain the new climbing wall.

Section 2c

Candidates should produce sufficient calculations to justify the key members within the structure, including lateral stability, vertical, horizontal and inclined members.

Section 2d

Candidates are expected to provide sufficient drawings to fully describe the structure. Given that each elevation of this structure is individual, the candidate should consider whether simplification of the drawings results in a lack of information. As a guide, candidates should not expect to be able to produce less views than the examiner uses within the question.

Section 2e

The method statement is the opportunity for the candidate to demonstrate that they know how this structure could be safely constructed. The key items for a candidate to address in a method statement are:

- Working within an existing building: methodology for access, construction and protection of structure.
- Clear understanding of the construction stages and temporary stability in each stage of construction, considering the sloped facades.

Examination Statistics

The following section provides some general statistics to provide an overview of candidate performance during the exam. A total of 328 candidates attempted the exam.

Pass rates by question

Question	Pass rate
1: Manufacturing building	29%
2: Renovation of existing multi-storey building	27%
3: Railway bridge and access road	20%
4: Pre-assembled pipe rack	N/A
5: Climbing wall	36%
Total	29%

Pass rates by exam attempt

Exam attempt	Pass rate
1st Attempt	54%
2nd Attempt	22%
3rd Attempt	9%
4th Attempt +	15%

This table does not include the total number of candidates in each attempt number, only those that passed.