REVITALISATION SCHEME FOR BLOCK 4
THE CENTRAL POLICE STATION COMPOUND

ABSTRACT

1. The Central Police Station ("CPS") Compound revitalisation project is a heritage-led revitalisation of a significant heritage site in Central, Hong Kong, which the Hong Kong Jockey Club ("HKJC") has led since 2008. One of its primary objectives has been to conserve and revitalise the retained heritage elements as recommended by the Conservation Management Plan ("CMP") published in June 2008 and to do so safely.

2. Since the partial collapse of the Married Inspectors' Quarters ("Block 4") in May 2016 (Figure 1), the HKJC and the Government have been reporting the progress of the recovery work to the Antiquities Advisory Board ("AAB") and the public[1, 2, 3, 4]. The latest technical appraisal[5] presented to the AAB on 8 December 2022 explained that Block 4 showed signs of continuing deterioration, despite careful protection, and that the parts of the extant building fabric that are unsafe to retain must be removed as soon as practicable before ongoing dilapidation further weakens the building fabric, which would make it more hazardous to handle. The HKJC submitted an application for a permit under Section 6 of the Antiquities and Monuments Ordinance ("Section 6 Permit") to the Antiquities and Monuments Office ("AMO") for undertaking further investigations, testing, and removal works that were considered strictly necessary to make safe the building superstructure.

3. A Section 6 Permit for the above tasks was issued in June 2023. The HKJC commissioned Purcell, Arup, and PAYE ("expert team")[6] to perform investigative works. As summarised below, the findings have led to the most unfortunate but clear view that the inherent weaknesses caused by poor materials and workmanship are so widespread that the building fabric from the roof to 1/F had to be removed as soon as practicable to safeguard the public. Indeed, the condition of the brickwork superstructure was found to be even worse than expected, owing to poor workmanship when the building was first built. At present, the roof coverings and unsafe building fabric at 2/F and 1/F have been removed, and timber trusses relocated (Figures 2 and 3). This process was monitored by a Government Vetting Panel as prescribed by the Section 6 Permit. During the removal process, samples of Character Defining Elements ("CDEs") have been salvaged for potential reuse and interpretation.

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[1] Board Paper AAB/33/2015-16
https://www.aab.gov.hk/filemanager/aab/common/175meeting/175assessment-33-a-en.pdf
[2] Board Paper AAB/15/2017-18
https://www.aab.gov.hk/filemanager/aab/common/179meeting/aab-15-2017-18-annex.pdf
[3] Board Paper AAB/32/2017-18
https://www.aab.gov.hk/filemanager/aab/common/183meeting/aab_32_2017-18-annex-en.pdf
[4] Board Paper AAB/11/2019-20
https://www.aab.gov.hk/filemanager/aab/common/188meeting/aab_11_2019-20-annex-en.pdf
[5] Board Paper AAB/27/2021-22 Annex A
https://www.aab.gov.hk/filemanager/aab/common/199meeting/aab_27_2021-22-a-en.pdf
[6] The expert team comprises:
- Purcell Asia Pacific Limited, Architects and Heritage Consultants ("Purcell")
- Ove Arup & Partners Hong Kong Limited, Structural Engineers ("Arup"); also the project Registered Structural Engineer ("RSE")
- PAYE Stonework and Restoration Limited, Masonry Contractors ("PAYE"), United Kingdom

4. The topmost level of the retained building structure now stands temporarily at 300mm above the 1/F floor level (Figure 4). Under the Section 6 Permit, an assessment will be conducted to identify what further work is required for the remaining building fabric to achieve a safe condition. In parallel, the HKJC has reassembled the original Block 4 design team which includes Herzog & de Meuron ("HdM"), Purcell, Rocco Design Architects, Arup, etc. to explore two revitalisation options, i.e., (a) *Conserve-as-Found* and (b) *New Building*. Given that the new building option would inevitably lead to a total loss of the extant building fabric and foundations, the HKJC has accepted its consultants' view that a revitalisation scheme based on the so-called conserve-as-found concept would offer a better solution, noting its potential for maximising retention of the remaining building fabric.

5. The HKJC believes that coupled with the considered reuse of salvaged materials and CDEs, the proposed new revitalisation scheme would seek to demonstrate a sensitive balance between public safety and heritage conservation and facilitate future interpretation of the Block 4's history in the long term.

PURPOSE OF PAPER

6. This paper is an update on the technical appraisal presented to the AAB in December 2022. It aims to brief Members of the AAB on the findings of the visual inspections and testing conducted *before* and *during* the removal of the unsafe building fabric and the Concept Design of the new revitalisation scheme. The AAB is invited to note this project update before the revitalisation work is conducted on Block 4.

BACKGROUND

7. Of the sixteen historic buildings that were to be retained in the CPS Compound (now operating as "Tai Kwun"), fifteen have been meticulously conserved. Block 4 has remained out of use owing to its partial collapse in May 2016 while much effort has been spent planning for its recovery. Eight years on, detailed studies and lengthy deliberations on Block 4 have demonstrated the HKJC's unequivocal commitment to facing substantial technical, practical, and engineering challenges necessary to recover the fragile building for adaptive reuse. A high-level chronology of the Block 4's recovery process is outlined in **Appendix I**.

8. The CMP, first published in 2008, identified that *"The failure to find a sustainable new use must be the biggest risk to the site at present"* and consistently recommended that the retained historical buildings should be made useful. Despite the unfortunate situation of Block 4, the HKJC remains committed to achieving an optimal solution that reconciles the need to retain heritage value where feasible while seeking a sustainable long-term future that is safe in use.

9. The partial collapse and the latest understanding of the building's condition have fundamentally changed the position of Block 4. While the current condition does not diminish the heritage significance of the building (identified as "High" in the CMP), the conservation policies stated in the CMP can no longer be applicable as they were established based on wholesale retention. An alternative approach has been formulated and the resultant conservation and revitalisation proposal is explained in this paper.

FINDINGS OF LATEST INVESTIGATION AND TESTING (2023–2024)

10. The latest investigation and testing of Block 4 have been conducted zone-by-zone and floor-by-floor as prescribed by the Section 6 permit. The findings *before* and *during* the removal works are summarised below.

11. **Before Removal Works** – In November 2023, visual inspections of the existing areas of exposed brickwork (Figure 5) revealed that the conditions observed are like those identified during the re-appraisal carried out in 2021: low-strength bricks, bricks with powdery surfaces, weak mortar, voids, poor bonding, and cracks can be seen in most of the areas inspected (Figures 6 to 11). The defects, detriment of structural capacity, were however found to be more widespread than was previously known. To verify if similar conditions exist in typical brickwork, the existing plaster / render in twelve new locations was removed to aid visual inspection (Figure 12). Of these twelve locations, eleven have revealed similar brickwork conditions observed in the already exposed areas (the 12th location shows the use of red bricks, which indicates later alteration, and hence meaningful comparison cannot be made). These defects, randomly scattered, yet occurring in every area that is exposed to view to date, inevitably lead to the conclusion that the same defects must also be prevalent in the areas remaining concealed by the existing plaster / render.

12. Defective brickwork aside, one of the more unusual structural features of Block 4 is the verandahs on the north and east sides where nineteen slender brick piers support arched openings in the external façades. Brick and mortar testing shows that the brickwork is very weak. Engineering assessment indicates that the ground floor piers, having a characteristic compressive strength of approximately 1.0 MPa (N/mm^2), are close to failure owing to the self-weight of the brickwork alone.[7] Visual inspection of the external surfaces of the piers has identified compressive failures of five piers (Figure 13) – a dangerously high failure rate of 26 percent for any built structures.

13. **During Removal Works** – Visual inspections including those by the Vetting Panel (Figure 14) were conducted during the removal works between February and June 2024, allowing understanding of the actual core condition of the walls and piers in a way not possible before. Typical findings are explained below. Figure 15(a) shows the elevation of a brick pier on 2/F. The mortar at horizontal planes A and B (Figures 15(b) and 15(c)) was carefully removed to expose the brickwork condition. In both planes, cracked bricks, voids, and a lack of mortar in brick joints can be seen. Also, a rubble-filled core, albeit localised, is noted at plane B. The bonding arrangement observed is of serious concern because the bricks laid do not provide sufficient cross-bonding in the middle zone to form a robust brick pier. When the pier is stressed under normal working loads, it would very likely lose its integrity and crack (split) vertically through the middle zone in the same way observed at the failed piers. Figure 13(a) shows one of these piers where the crack is approximately in the middle zone through the height with a noticeable zig-zag pattern where inadequate cross-bonding is evident.

14. Whereas it is not unusual to find that the vertical joints in brick walls are not always filled, it is an expected minimum that horizontal joints are fully bedded with mortar. This is necessary to enable effective vertical load transfer. However, recent removal works have revealed copious evidence of substantial and widespread voids in the horizontal joints (Figure 16). From the expert team's observation, the extent of mortar in these horizontal

[7] That is, without any addition to the loading from occupancy, such as furniture and people.

joints is approximately one-half to two-thirds of the brickwork plan area. The vertical load transfer is confined to a much-reduced area, and hence the compressive stress in individual bricks is much higher than expected. The partially filled brick joints also change the intended composite characteristic of the brickwork to a stack of individual bricks working independently. This lack of mortar and weak composition means that individual bricks can be easily removed from the main body of walls as noted above (Figure 17).

15. Inspection and testing of the areas that were previously concealed but are now exposed have led the expert team to affirm the widespread fragility of the brickwork construction. This substantiates the expert team's view formed in December 2022 that retention of the superstructure was not feasible within the reasonable limits of safety and statutory compliance.

16. **Brick Strength Requirements to Modern Design Code** – Arup has assessed that for a modern brickwork building in a similar form to Block 4, brick units having a compressive strength of 30 MPa bedded in M4 mortar (i.e., with a cement:lime:sand ratio of 1:1:5~6) would be an appropriate combination to achieve the minimum characteristic strength of *6.3 MPa* of the brickwork. However, given that the compressive strength of the Block 4's grey bricks ranges from 4.32 to 5.42 MPa (according to the tests in 2021 and 2023) and that the mortar strength (lime:sand ratio of 1:5~11) is too low to be classifiable, the characteristic strength of the brickwork is approximately *1.0 MPa*, which is only 16 percent of the required strength when designed using the modern code such as BS 5628 – *Code of practice for use of masonry*.

CONSERVE-AS-FOUND VS NEW BUILDING

17. **Conserve-as-Found Option** – This option seeks to remove the historical fabric of Block 4 that is strictly necessary to make safe the building and to retain what remains as a relic. The aim would be to convey some tangible sense of the building after removing the unsafe building fabric.

18. **New Building Option** – This option entails a new building similar to the original Block 4 that would replace the extant building and thus reinstate the spatial relationship between the new building and its neighbours, including the Parade Ground.

19. The new building option would result in a functioning building that provides valuable utility at a prominent location within the CPS Compound. Keeping the new building in a form similar to Block 4 would mean that the aesthetic heritage value of the original building could be reinterpreted. However, the new building option would lead to a total loss of the extant building fabric and foundations. Given the Block 4's status as a declared monument, the optimal revitalisation scheme should be the one that retains the heritage building fabric where it is feasible. The HKJC therefore decided that the revitalisation scheme based on the conserve-as-found notion would be the preferred solution, noting its potential for long-term sustainability and the optimal degree of retaining historical building fabric.

PLANNING FOR REVITALISATION

20. In a prominent location next to the Pottinger Ramp entrance of the CPS Compound and the former Central Magistracy, the remains of Block 4 and the area associated with the original U-shaped building footprint (collectively referred to as the "Block 4 site") are envisioned to become a welcoming open space that is holistically connected with its neighbours. The design of the Block 4 site should enable it for heritage interpretation experiences and to serve as a highly popular hub in the future for a dynamic range of programmes that could bring in large numbers of visitors, assuring the long-term sustainability of the site.

21. **Primary Consideration** – Three key considerations below have been established for the development of the revitalisation scheme:

- ***Safety first*** – With public safety as the HKJC's principal consideration, the retained Block 4 site must be designed to be permanently safe for Tai Kwun visitors, staff, and program partners who work in and use the facilities.

- ***Preserve as much as technically feasible for heritage value*** – Given Block's 4 status as a declared monument, the extent of the retained historical fabric on G/F should be as much as is feasible, with or without structural intervention. The Burra Charter describes this as "*…a cautious approach of changing as much as necessary but as little as possible.*"[8]

- ***Adaptive reuse of the Block 4 site as part of and to complement Tai Kwun's overall offerings to the public, especially its relationship with the Parade Ground*** – Long-term sustainability is a key component of the revitalisation scheme for the entire site. It also applies to individual buildings and spaces, of which Block 4 is one example. The proposed revitalisation scheme should maximise the potential for future heritage interpretation and arts-related activities while retaining the historical fabric where it is feasible.

22. **Project Vision** – At the inception stage of the design process, regarding Figure 18, the HKJC and its consultants envisioned the following essential ingredients of the revitalisation scheme, which are designed to create a new, if not unique, context out of the partial collapse:

- ***Heritage value and symbolic representation of conservation achievement*** – whereby any new intervention should interact coherently with the Block 4 site, the spatial composition of the Parade Ground, and the CPS Compound; and as the final capstone of the Block 4 revitalisation project, not only to protect what remains of the Block 4 but also symbolically celebrate the unprecedented success of the CPS Compound conservation and revitalisation project with a design that embraces the dynamic nature of the site's transformative journey and ongoing innovation in heritage conservation approach. Heritage interpretation exhibitions and experiences about Block 4 will be a priority to reflect the full heritage value of Block 4 in the context of the CPS Compound.

[8] The Burra Charter, Article 3.1

- ***Creative adaptive reuse*** – of the Block 4 site as a redesigned, readily accessible public open space that responds to the contemporary needs of the public and Tai Kwun, by responding to the need for change via architectural intervention and dynamic programming in Tai Kwun's various genres of public art, outdoor performances, outdoor light / sound installations and exhibitions over a significant portion of a year, with usage as an open space for on-site heritage interpretation experiences for the rest of the year.

- ***Enhance Tai Kwun's presence on Arbuthnot Road & Wyndham Street*** – by creating a compelling new streetscape of Tai Kwun on Arbuthnot Road and Wyndham Street (Figure 19) to enhance Tai Kwun's presence, unlock the functionality of Sergeant's Yard, and highlight the neighbouring buildings of Blocks 6, 7, and 9 as one holistic zone and reveal their architectural features.

- ***Reuse of salvaged materials*** – currently held in the HKJC and Tai Kwun's storage as artefacts, props, furniture, or construction materials.

23. It is intended that the above vision would be realised by the following aspects (Figure 20) applied successfully in notable heritage sites overseas[9]:

- ***Lighting*** – To activate the elevations of Blocks 6, 7, and 9 and the Block 4 site as one holistic zone, enhancing Tai Kwun's presence on Arbuthnot Road and Wyndham Street (Figure 21). This would be a departure from the site-wide lighting strategy but it is considered appropriate in this case (paragraph 44).

- ***Public space*** – To reinterpret the Block 4 site as an extension of the Parade Ground with tactful hardscaping design to create a public open space having a unique blend of historical and contemporary urban elements. (Figure 22).

- ***Future events*** – To enable the revitalised Block 4 site to become a hub for heritage interpretation experiences, cultural events, art installations, talks, performances, and community festivals, and to showcase innovative design. (Figure 23).

PROPOSED USE OF BLOCK 4 SITE

24. **Heritage Permanent Exhibition** – Within a designated space of the Block 4 site, including the conserved verandahs, will be an experience that comprises daily public tours and exhibitions including interpretation of spaces, objects, and salvaged materials, enabling the public to explore the physical remains and architectural features of Block 4 with a focus on the learning of the site history. Perspectives will be presented to enhance the understanding of how the Block 4 site has evolved while materials about the conservation process including the craftmanship and construction techniques, etc. will be presented (Figure 24). These experiences will be available for most of the year except for special performances, festivals, and art installations.

[9] Some 'Lighting' reference projects in Figure 22: Heito 1909, Pingtung County, Taiwan; Municipal Building & City Hall, Rieti, Italy
Some 'Public space' reference projects in Figure 23: Adaptation of the inner ward of El Real de la Jara Castle, Sevilla, Spain
Some 'future events' reference projects in Figure 24: Serpentine Gallery Pavilion 2013, London, England

25. **Programming Options** – When heritage tours and interpretation are not live, the Block 4 site will be used for the following activities to enliven this part of the CPS Compound given its proximity to the premier outdoor space, i.e., the Parade Ground:

- ***Performing arts*** – Integrating the Block 4 site into the cultural fabric of the area as a street theatre and using performance programming such as dance performances, acrobatics and circus performances, mime artists, etc. to activate this transformed historical space. Under a particular setting, the Block 4 site will provide a much-needed space for cultivating local and regional street theatre artistic talents and for potential outdoor rehearsals and performances by performing artists. It would also be an experimentation stage for aspiring performers to hone their skills with live audiences (Figures 25 to 27).

- ***Public art and sculpture installations*** – Allowing the Block 4 site to serve as a canvas for artistic expression based on site-specific public art pieces, and as interpretive tools to convey the historical and heritage significance of Block 4, enhancing visitors' experience by curating public art that contributes to the overall aesthetic and ambiance of the site (Figure 28).

- ***Immersive light shows*** – Encouraging the use of immersive lighting to highlight the façade and interpret the site's historical significance and architecture, enhancing the Block 4's site visibility from Arbuthnot Road and Wyndham Street and engaging visitors in innovative ways (Figure 29). A new opportunity arises with potentially new façades unveiled in neighbouring blocks for light shows.

26. Taken together, the revitalised Block 4 site will enable a wide range of activity streams that can be presented in a sheltered, semi-outdoor environment as a complimentary space extended from the Parade Ground, which will assist Tai Kwun in its development of a varied programme that is constantly refreshed and thus able to generate visitors' interest and audiences' engagement.

INTERVENTION CONSIDERATIONS

27. **Remains of Block 4** – After removing the unsafe building fabric at 2/F and 1/F, what remains becomes a one-storey tall building fabric at G/F (Figure 30) sitting on its retaining walls and foundations. This remaining fabric can be broadly demarcated into five groups: (a) retaining wall, (b) public façades, (c) remaining G/F rooms, (d) staircases, and (e) 1/F floor elements, for discussion as follows.

28. **Retaining Wall** – The granite retaining walls on Arbuthnot Road and facing Block 6 are highly significant to the streetscape, defining the perimeters of the CPS Compound, and are indicative of the nature of its use. From the first use of the site as a prison, there has been a necessity for security – both as a defensive measure for the security of the police force and the Magistracy as well as to keep prisoners securely within. The retaining wall embodies significant heritage value, which will be the subject of careful interpretation, so that the Block 4's role in the historical development of the site may be understood. The intent and implications of keeping the granite retaining wall are deliberated below:

- ***Overturning stability consideration*** – The portion of the granite retaining wall that supports the Block 4's façade facing Arbuthnot Road was substantially strengthened to satisfy the criteria against overturning instability. The strengthening work was done before the partial collapse of Block 4. The same approach is required for the retaining wall facing Block 6 (Figure 31) including the corbelled sections (Figure 32), i.e., casting in-situ a series of stabilising concrete blocks on the back side of the retaining wall to make it stable (Figure 33). In essence, the lateral earth pressure acting on the retaining wall creates a disturbing overturning moment that cannot be balanced by the reduced dead loads that act on the retaining wall (Figure 33(b)). Hence, a series of stabilising concrete blocks are required to create a restoring moment to stablise the retaining wall (Figure 33(c)). The stabilisation work is yet to be carried out.

- ***Impacts of stabilisation work*** – The enabling work for stabilising the retaining wall entails excavating a 1.5-metre wide and 2-metre deep trench behind the retaining wall to facilitate the casting of the stabilising concrete blocks (Figure 34). A lightweight excavator should be used for excavation to minimise construction load effects on the yet-to-be-strengthened retaining wall. Access to the various excavation work fronts has to be formed around the G/F rooms that are currently packed with temporary props and bracing (Figure 35(a)). Clearing the temporary work to make safe access for workers and the excavator would be necessary. However, this would concurrently trigger instability risks of the fragile brick walls if they become partially unpropped / unbraced (Figure 35(b)).

- ***Concluding remarks*** – Given the crucial need to create a safe construction environment for the workers carrying out the stabilisation work of the heritage-significant retaining wall, both the brick walls of the G/F rooms and the temporary work therein should be removed carefully at the same time when the revitalisation work resumes. The brick walls that prohibit a safe construction environment are proposed to be reduced to 1.5m in height (Figure 35(c)). The look of the remains of Block 4 after removing the unstable brick walls is shown in Figure 35(d).

29. **Public Façades** – In direct contrast to the former Police Headquarters Block and Central Magistracy, the remaining public façades of the site, including those of Block 4, are domestic in scale or an obvious representation of prison accommodation. These public façades are important for understanding the intended relationships between the site and the city outside its walls. The intent and implications of keeping these remaining façades (i.e., the beige-coloured area in Figure 30) are considered as follows:

- ***Impacts of defective brickwork*** – Earlier visual inspection and recent exploration have reaffirmed that a range of defects exist in the brickwork façades. It means, for safety reasons, these façades cannot be left in their *as-is* condition. Repair of these defects will use consolidation techniques being formulated by Purcell. Arup has identified that some exoskeletal structural concrete framing[10] (Figure 36) is required to maintain the overall stability of these façades to safeguard public safety and obtain statutory compliance. As the fragile brick piers and arches that form the façades were close to failure, the execution of the proposed structural intervention is considered very risky. Indeed, the keeping of these façades is very contentious in terms of public safety.

[10] Conceptually, the strengthening scheme proposed is similar to the one structurally and architecturally designed in the 2019 Updated Recovery Plan.

- ***Concluding remarks*** – Noting the significant heritage value of the public façades and the project vision to create a new streetscape of Tai Kwun on Arbuthnot Road and Wyndham Street, these façades are proposed to be retained. In the structural scheme devised by Arup, these façades are too tall and slender to be retained as a single leaf (Figure 37(b)). The immediately adjacent internal brick walls have to be retained and connected with the façades by a new structural frame to form an integral structure that gives a robust height-to-width ratio to assure overall stability (Figure 37(c)). The look and the extent of the strengthened façades are shown in Figure 37(d).

30. **Remaining G/F Rooms** – The remaining G/F rooms (i.e., the grey-coloured area in Figure 38(a)) form part of the original individual flats or houses within Block 4. It is anticipated that the same range of defects exists in the brick walls of the rooms. Similar intervention as explained above for the façade, i.e., the consolidation techniques and exoskeletal framing for stability, will be required to preserve these rooms. Given the known fragility of the brick walls, the execution of the repair and strengthening work would be very risky. The keeping of these remaining rooms or not is deliberated thoroughly as below:

- ***Impacts of structural intervention on heritage interpretation*** – The appearance and layout of the structurally strengthened G/F rooms are shown in Figure 38(b). The exoskeletal structural concrete frame (i.e., 250mm thick concrete walls, red in colour) changes the original size and footprint of the rooms. Visitors' experience in each compartmentalised room that is partially covered up by the new concrete walls (up to 50 percent) will be a literal yet somewhat inauthentic exploration of these historical spaces. The awkward circulation of visitors through these enclosed compartments may not significantly increase their understanding and interpretation of the original heritage context. The potential to creatively exhibit the Block 4's history would be somewhat limited by these separate spaces.

- ***Potential use of G/F rooms*** – Tai Kwun has considered how any retained G/F rooms might be used and concluded that these rooms would offer limited opportunity for interpretation or other uses that the public could engage with. The end room near

- Block 9 (Figure 38(b)) was converted into a vertical circulation zone during the 2013–2016 revitalisation work. Half of the room area is a lift lobby and the remaining half is occupied by a concrete lift shaft. The use of this room for future reinterpretation is very limited. The use of the stair core area (Figure 38(b)) is subject to similar limitations. For the remaining G/F room, given that no artefacts of the original flats or houses are available, visitors' experience would be limited to an appreciation of the difference in room size by contrast to those of the Barrack Block. It is considered highly unlikely that such a future use would be of interest to visitors.

- ***Impacts of losing original appearance*** – With only one-storey brickwork that could be retained on G/F, the overall massing and appearance of Block 4 are substantially lost (Figure 39). The internal spaces that comprise the remaining G/F rooms become questionable in terms of their character and previous use. Given the inability to be interpreted in their context, the existence of these rooms alone offers very little practical 'educational' function. However, their presence does stand as a representation of the building footprint.

- ***Open spaces for cultural and leisure facilities*** – Albeit secondary in the context of the Block 4's revitalisation, it does not change the fact that open spaces are still a scarce resource in Central and appropriate use should be encouraged. When Purcell was commissioned to prepare the CMP in 2008, the HKJC did suggest and remains of the view that there is a lack of cultural facilities in Central that are of a suitable scale for use by local and amateur groups. With its location next to the Pottinger Ramp entrance, the Block 4 site would provide a focus and use pattern that would be appropriate for general public appreciation. To create a suitable scale performance space, there needs to be a suitable floor area and good floor-to-ceiling height. The Block 4 site would seem to be ideally placed for the provision of such facilities if the G/F rooms were removed. The open space so created would offer a preferred resource.

- ***Performance opportunities*** – Despite not being the primary consideration, the open space proposed to be created by the Block 4 site would be a suitable venue for the potential programming options. Retention of *all* the remaining G/F rooms would somehow restrict the seating capacity and stage area (Figure 40) which would reduce future programme opportunities with a consequential impact on the attractiveness of this area to the community.

- ***Impacts of canopy column construction*** – As explained in paragraphs 37 to 40, a new canopy oversailing the Block 4's footprint is proposed as part of the architectural intervention. The columns of the canopy are to be strategically placed at some nodal points of Block 4 to signify the *original footprint* of the building. Some columns are further accentuated to highlight the historical entrances to Block A and Block B[11] (Figure 41). To achieve a safe working environment for workers installing these columns and their foundations, the brick walls and the foundations of the nearby rooms need to be removed locally.

- ***Concluding remarks*** – Notwithstanding the need to retain the historical building fabric as far as is feasible, it is equally essential to recognise that public safety and the future sustainability of the Block 4 site need to be kept in mind. Preserving permanently the remaining G/F rooms would demonstrate faithful compliance with the conserve-as-found concept, and would make the decision of keeping these rooms a relatively simple affair. However, given the public safety concerns resulting from the keeping of the G/F rooms, and also Tai Kwun does not foresee a secure, long-term future for a scheme that retains the rooms, it is considered on balance that the remaining G/F rooms should not be retained. The look of the remains of Block 4 after removing the G/F rooms is shown in Figure 38(c). Albeit the the G/F rooms are proposed to be removed, their heritage significance in terms of their original room layout can be reinterpreted by design as explained in paragraph 42.

31. **Granite and Timber Staircases** – There are two extant staircases in Block 4, granite staircase ST1 having simple balusters and moulded hardwood handrail (Figure 42) and timber staircase ST2 (Figure 43). Neither of these staircases is in full compliance with the current safety standards, as is the case with all other retained original staircases in the CPS Compound. However, what would be different in this case is that the terms of the Buildings Ordinance would be applied strictly due to the extent of alteration to the building generally. This would make reuse of these staircases unfeasible as they would need substantial

[11] When first built, Block 4 was two buildings, joined at right angles, known as Block A and Block B, with entrances on the south and west façades respectively.

alteration. Besides, these staircases are not self-standing. Rather, they are supported by the enclosing brick walls where fragility is known and stability questionable.

32. As deliberated in paragraph 28, in order to provide a safe working environment for workers stabilising the granite retaining wall, certain brick walls including those supporting the granite staircase have to be reduced in height, meaning the granite staircase would lose its support, making its retention impracticable. As the support condition of the timber staircase is similar, it is proposed that these two staircases be removed together with the brick walls of the G/F rooms. Given that similar granite staircases can be found in Block 1 and Block 3 (Figure 44) and timber staircase in Block 6 (Figure 45), removing these two staircases, albeit unfortunately, will not cause a total loss of these kinds of heritage elements in the compound. Hence, it is proposed to preserve these staircases, and exhibit them as historical artefacts for interpretations or transformed for new uses.

33. **1/F Floor Elements** – The 1/F floor elements having heritage significance are mainly timber joists (Figure 46). The original floorboards were temporarily removed during the 2013–2016 revitalisation work and are now stored off-site. It has been confirmed by Arup that the timber joists do not have sufficient strength to meet modern design code requirements nor embedment depth within the brick walls to function as stability elements. Also, the timber floor elements, originally internal, would effectively become external if preserved in-situ and therefore exposed to the weather, albeit somewhat sheltered. As such, it is proposed to remove these 1/F floor elements altogether. If a new roof is considered necessary over a certain portion of the Block 4 site in the subsequent design stages, a new concrete slab will be cast and the timber joists would be reused as decorative elements where applicable.

PROPOSED NEW REVITALISATION SCHEME

34. HdM proposes a new revitalisation scheme based on the conserve-as-found concept with a thorough deliberation of the above interventions that factor in safety reasons, and are essential to obtain the best chance of achieving a sustainable future for this part of the site. This means the original conserve-as-found thinking, as outlined in paragraph 17, has been necessarily modified.

35. **Architectural Concept** – The architectural concept for revitalising the Block 4 site has been developed in the context of the CPS Compound as a whole. Retaining the heritage significance of the compound, both HdM and Purcell are of the view that any new intervention should interact coherently with the new spatial composition of the Parade Ground resulting from the Block 4's partial collapse, the recent removal of the unsafe building fabric, and with the need of "re-enclosing" the Parade Ground in a way that preserves its original essence provided by the surrounding buildings.

36. **Heritage Significance and Interpretation** – These aspects should be realised with an emphasis on preserving the old but with contemporary relevance. For some CDEs that cannot be preserved or reused, they could be re-emphasised on their cultural relevance via reinterpretation as art installations. CDEs such as salvaged bricks or granite blocks should be reused where feasible. Other potential examples include the use of the original timber casement and shutters at the verandahs, be it preserved in-situ or reinstated, to double as the acoustic separation between the activities / programmes in the Block 4 site and the noisy-at-time surrounding neighourhood.

37. **Permanent Canopy** – HdM aspires to use a permanent canopy to create a holistic zone unifying the Block 4 site with its neighbours. The concept design began with a general site analysis, studying the CPS Compound and elevation of Block 4 on Arbuthnot Road and from the Parade Ground (Figure 47). Based on this topography, a simple canopy having a near-rectangular plan shape, oversailing the Block 4's original U-shape footprint including the long-demolished Servants' Wing is proposed (Figure 48), with aims to provide primary weather protection of the remains of Block 4 and shading of the open space, and as a whole unifying Block 4 with the adjacent blocks (Figure 49) and the Parade Ground.

38. Riding on its overall form, the canopy is at a scale that provides visual screening of views northeast across Arbuthnot Road, hovering over the Block 4 site to make up for the loss of the original building height and promote natural ventilation of the area below. The scale of the canopy and its supports helps recreate a reinterpreted sense of "enclosure" that would be evident when viewed from the Parade Ground (Figure 50), which would otherwise have been perceived as "open" owing to the necessary removal of the roof and top two storeys of Block 4. Another important architectural intervention is the columns of the canopy which are placed strategically at the nodal points of Block 4 to signify the original building footprint at those points where the superstructure is to be or had been removed. Some columns are further accentuated to highlight the historical entrances to Block A and Block B as noted above (Figure 41).

39. The materiality of the canopy comprises (a) structural steel columns, supporting a canopy frame that is also in structural steel, (b) a glass cover for protection against rain while allowing permeability of natural light, and (c) timber fins treated for weatherproofing for shading.

40. The structural grid of the canopy and the glass panel shape originates from the linear expression of the existing granite walls and aluminum bricks, creating a harmonious visual link between the old and the new. The timber fins not only provide shading but also give a sense of warmth to the space below. Such a design concept will be further developed in the subsequent design stages. The degree of transparency and texture of the glass panels to allow sufficient natural light to come through without glare will also be further examined.

41. **Block 4 Site as Open Space** – As a result of the proposed interventions, i.e., removing the G/F rooms, staircases, and 1/F floor elements, a new setting together with the canopy can be formed, creating a much-needed shaded and rain-protected open space in the area occupied by the original Servants' Wing and adjacent yard, welcoming the public for enjoyment within the otherwise entirely outdoor environment of the Parade Ground.

42. Under the new setting, suitable salvaged materials from the site are proposed to be repurposed to create seating areas in the form of a stepped terrace, preserving a tangible connection to the building's past. To enable the G/F room layout for reinterpretation, the brick walls of the rooms are proposed to be taken down to align with the stepped terrace profile, i.e., the portion of the brick walls below the terrace profile and the foundations will be retained where it is feasible. As such, the G/F room layout can be seen and thus remain tangible (Figure 51). The activities under the heritage permanent exhibition will be carried out in this newly reconfigured open space (Figure 52).

43. Apart from the above, public art and sculpture installations (Figure 53) and performing arts (Figure 54) could be displayed and performed in the same open space, which would augment the range of artistic opportunities that can be offered by Tai Kwun. Opportunities for a wide range of publicly engaging street performance events like the Edinburgh Fringe Festival (reference photos in Figures 26 and 27) would become real possibilities. In this connection, a partial reconstruction of the collapsed West Wing is proposed (Figure 55) to house back-of-house facilities when performances are being staged. A new bridge to Block 6, replicating the bridge that previously existed in the same location (Figure 56) is proposed to connect with Block 6 for improved preparation area and movement of performers. Albeit not being the primary purpose of the proposed intervention, this setting does offer added benefits – a covered performance space that is larger than other staged areas in the CPS Compound (Figure 57), supporting new performing activities that may not be easily accommodated in the current infrastructure of Tai Kwun.

44. **External Lighting** – The elevations of Blocks 6, 7, and 9, and the Block 4 site are proposed to be holistically activated via a suitable architectural lighting scheme – generating a new opportunity to improve the elevation facing Arbuthnot Road as an enlivened, singular streetscape in the evenings (Figure 21). While the lighting strategy for the CPS Compound has been developed based on minimal intervention rather than floodlighting of façades – which in itself has been highly successful – some relaxation of this approach in this present case is considered acceptable in principle by Purcell provided that it is limited to what remains of Block 4 and its immediate surroundings.

45. **Character Defining Elements** – The CDEs of Block 4 have been fully cataloged by Purcell and submitted to the AMO before the removal works. The partial collapse of Block 4 in 2016 caused a substantial loss of the CDEs and the recent removal of the unsafe building fabric at the roof, 2/F and 1/F has inevitably resulted in further loss. Notable remaining CDEs include the external balcony, timber floor joists, brick internal walls and plaster finishes, and staircases (Figure 58). Regarding other CDEs such as bottle balustrades, granite balustrade copings, and plinths on the verandahs, they will be reinstated if they cannot be preserved in-situ. For joinery items such as floorboards, panelled doors, architraves, skirtings, timber staircases, etc., preserving in-situ or reinstatement appears not practicable owing to a change in environmental condition, i.e., some items that were originally internal would effectively become external and therefore exposed to the weather, albeit sheltered by the new canopy. For other salvaged materials, their future use could be for reinstatement if feasible; and / or interpretation as art pieces or reference materials. Further review of this will be conducted in subsequent design stages.

CONCLUDING REMARKS

46. The partial collapse of Block 4 was an unfortunate setback, resulting in a substantial loss of historical fabric, which underscores the challenges facing revitalisation projects. At this juncture, it should be remembered that heritage revitalisation is not merely about preserving a historical building that is no longer needed for its original purpose but is also about revitalising it for modern use in a sustainable manner.

47. HdM has developed a new revitalisation scheme that revitalises what little remains of Block 4. The publicly accessible open space so created under the canopy becomes an extended shaded space of the Parade Ground that can be enjoyed by the public and an

important platform for developing art and cultural talents, and learning of community history and heritage, enabling a broader interpretation of the CPS Compound as a whole.

48. Public safety has always been an overarching criterion in this project. While the proposed interventions are beyond the need for securing a safe condition, they are considered vital if what remains of Block 4 is to have a positive impact on the sustainable future of its own and the CPS Compound, offering a valuable adjunct to the current provision that would supplement Tai Kwun's overall offerings to the community.

49. As briefly explained in the heritage permanent exhibition (paragraph 24), the historical narrative of Block 4 will be preserved in various forms, including a digital 3D model for future interpretation (some sample screen captures of the model in a work-in-progress state are shown in Figure 59), and comprehensive documentation of the navigation process of change and transformation of Block 4 as a declared monument, which will no doubt serve as an informative case study in heritage conservation in Hong Kong.

50. The HKJC has been leading the revitalisation of the CPS Compound and the revitalisation of Block 4 in a responsible, transparent, and sensitive manner. The compound has been put to good use with over 90 percent of the site opened to the public since May 2018. Operating as Tai Kwun for six years, the compound has received some 18 million visitors as of July 2024, including local people and tourists, through numerous public programmes and events, making it one of the most visited heritage sites in Hong Kong. It is worth noting that the CPS Compound revitalisation project received the Award of Excellence in 2019 in the Asia-Pacific Awards for Cultural Heritage Conservation from the United Nations Educational, Scientific and Cultural Organization (UNESCO). This UNESCO award is the highest honour in cultural heritage conservation, and the project was chosen to receive this award out of 57 entries from 14 countries and territories.

51. It is with an unwavering commitment to the success of the project that the HKJC presents this revitalisation scheme for Block 4. The HKJC aims to recover Block 4 safely and as soon as possible so that it will join the other buildings and facilities in the CPS Compound to provide excellent value to the people of Hong Kong.

52. Members of the AAB are invited to note the project update before the revitalisation work is carried out.

The Hong Kong Jockey Club

September 2024

APPENDIX I –

A high-level chronology of the Block 4's recovery work since its partial collapse in May 2016

Date	Description
May 2016	Partial collapse of the Block 4's North Wing on 29 May 2016.
2016 – 2018	Eight recovery options for Block 4 were drawn up and presented to the AAB for deliberation. The options were narrowed down to a solution called the **Adaptation Scheme** presented to the AAB in September 2018.
Late 2018 – December 2019	Detailed planning of the Adaptation Scheme commenced with the engagement of overseas specialists for inspection and assessment of masonry and timber structures, resulting in a solution called the **Updated Recovery Plan** presented to the AAB in December 2019.
December 2019	A Section 6 Permit was granted for the commencement of the Updated Recovery Plan and its preparatory work, i.e., the removal of the West Room.
June 2020 – December 2020	The removal of the West Room commenced; building movements were detected first in June 2020, and then in three subsequent incidents between September and December 2020.
November 2020 – June 2021	In light of some unexpected building movements and the fragile building fabric revealed during the removal of the West Room, conservation, engineering, and masonry experts were engaged for re-appraisal of the Block 4's condition. Its findings revealed that the building was in worse condition than was previously known. The expert team believes that the structural intervention necessary to carry out the recovery operations will be more hazardous than was initially anticipated and strongly advised against proceeding with the 2019 Updated Recovery Plan.
July 2021	The HKJC accepted the findings and advice of the expert team and concluded in July that it had to terminate the implementation of the Updated Recovery Plan and seek an alternative recovery option.
December 2022	The HKJC submitted a technical update to the AAB, the CHO, and the AMO, revealing that the Block 4's condition was much weaker than anticipated. To safeguard public safety, it was considered appropriate to remove the unsafe parts of Block 4 under the strictly necessary principle. An application under Section 6 of the Antiquities and Monuments Ordinance to the AMO was submitted for approval of further investigations and testing.

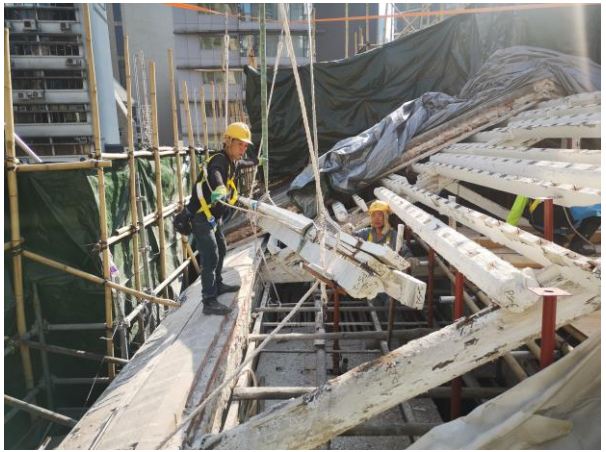
Annex

Date	Description
June 2023	A Section 6 Permit was granted for the investigation, removal, and associated alteration works for Block 4.
November 2023	With monitoring and inspection by a Government's Vetting Panel, inspection and testing of Block 4 commenced to determine the condition, and the extent that is strictly necessary to be removed to make the building safe. A digital archive of the whole building had also been created and kept.
February 2024 – June 2024	Following the completion of the investigation work, the removal of the unsafe building fabric of Block 4 commenced on a strictly necessary basis in February 2024. The removal of unsafe building fabric of Block 4 down to 300mm above 1/F floor level was completed by June 2024.
June 2024 – Present	The HKJC has been exploring a new revitalisation scheme that enables sustainable future use of Block 4 and seeks views from the AAB.

Figure 1 – Aerial views of partially collapsed Block 4 (North Wing) with extent of West Room indicated diagrammatically in broken lines

Figure 2 – Removal of roof coverings and relocation of timber trusses of Block 4

Removal of clay tiled roof coverings



Removal of timber purlins

Removal of timber rafters

Removal of timber trusses

Figure 3 – Removal of unsafe building fabric at 2/F and 1/F of Block 4


Removal of concrete lift shaft walls


Removal of masonry walls


Removal of timber floor elements


Removal of timber floor joists


Removal of concrete floor slabs

Figure 4 – Stage-completion of removal of unsafe building fabric (completion by June 2024)

Aerial view taken on 03 Jul 2024
Note – Protective tarpaulin to remains of Block 4 temporarily removed for photography and videography

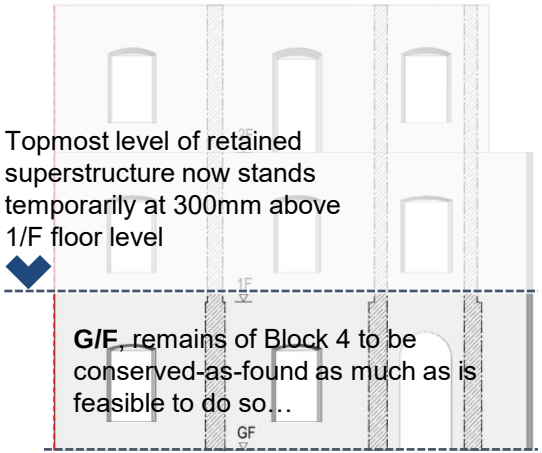


Figure 5 – Inspection and testing conducted by expert team before removal works

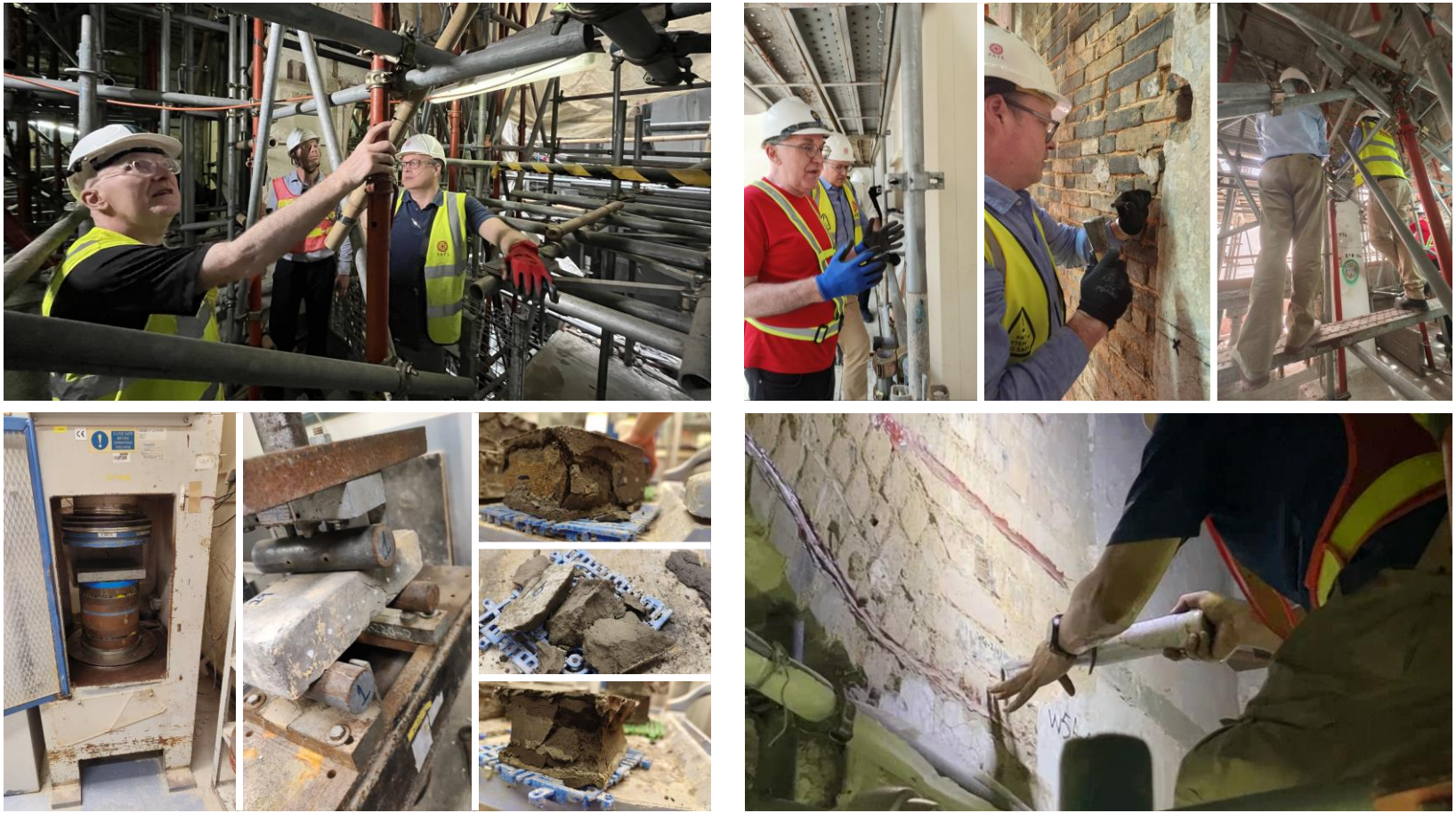


Figure 6 – Low-strength bricks seen in most areas of exposed brickwork (Location: Wall Zone W1 on 1/F)

Figure 7 – Bricks with powdery surfaces seen in most areas of exposed brickwork (Location: Wall Zone W1 on 1/F)

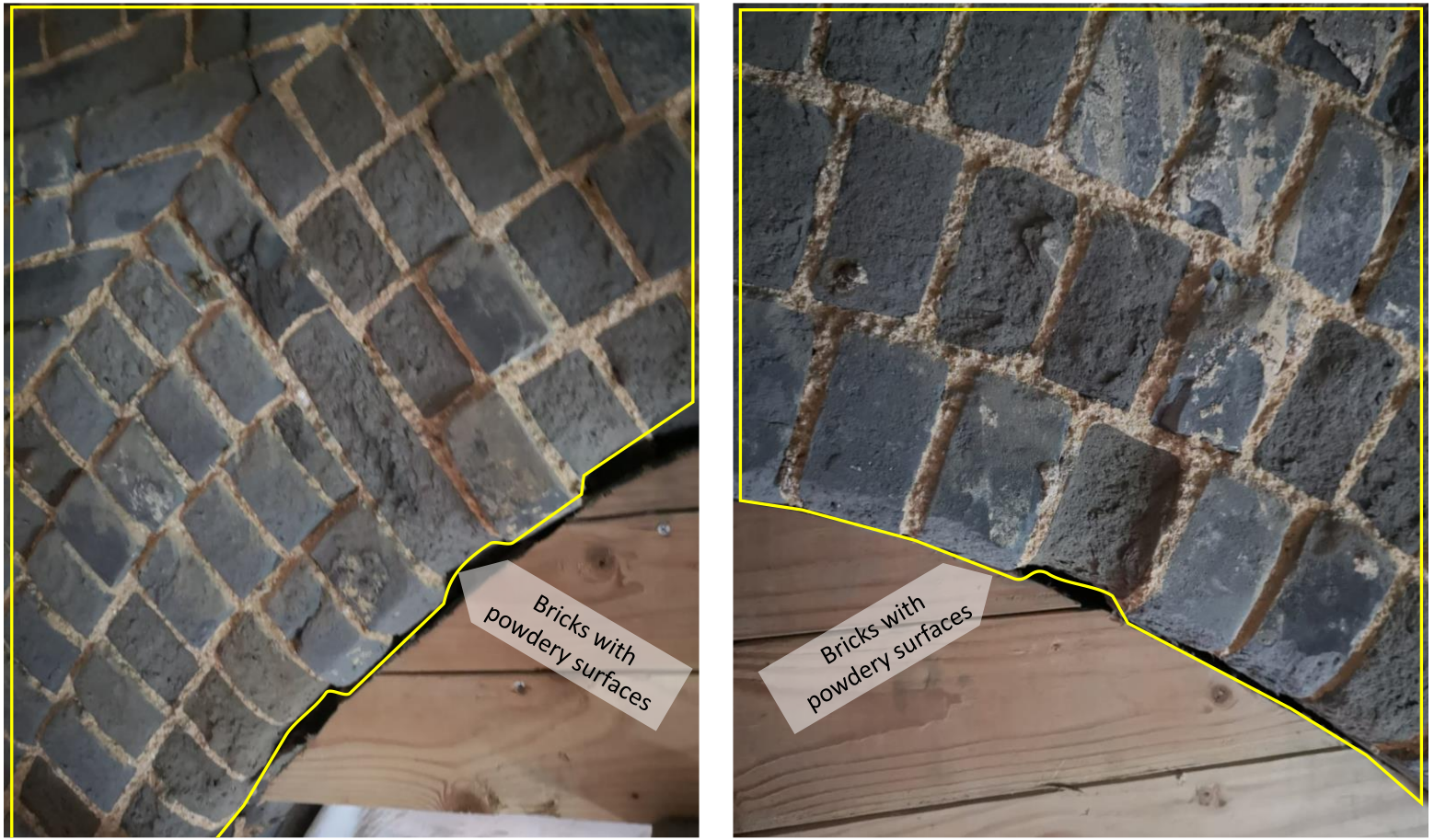
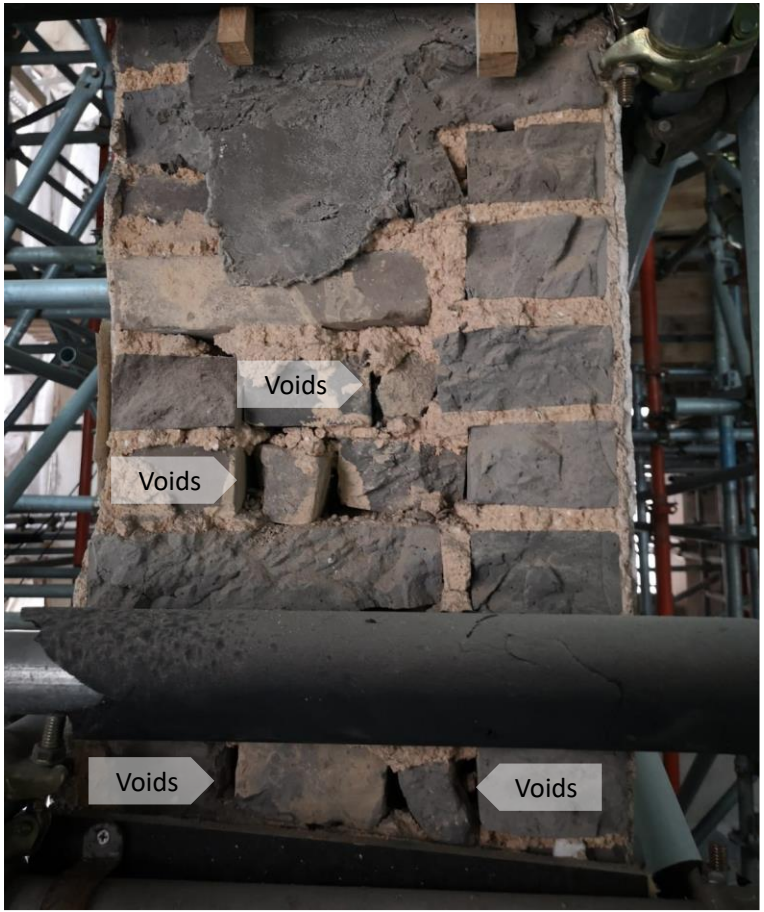


Figure 8 – Weak and non cohesive mortar (can be rubbed away by hand easily) seen in most areas of exposed brickwork (Location: Wall Zone W6 on G/F)

Figure 9 – Brickwork at door opening (section) showing substantial cracked bricks, voids and poor bonding in wall core (Location: Wall Zone W5 on 1/F)



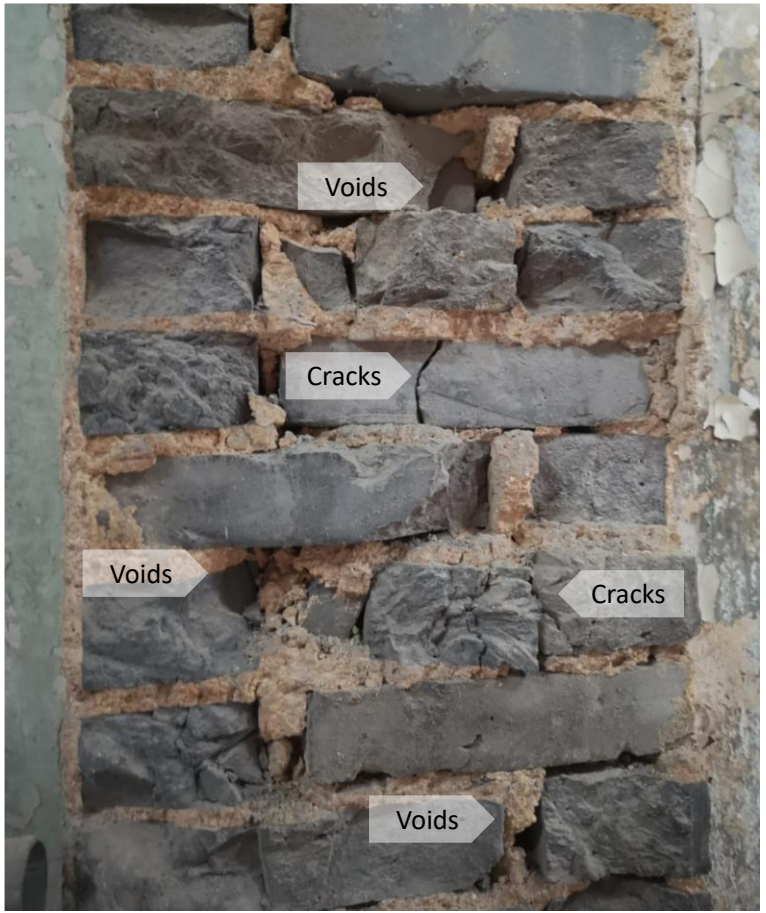


Figure 10 – (a) Poor bonding of brickwork, erratic in pattern and level (Location: Wall Zone W6 on G/F)
(b) Through-thickness cracks in the west staircase portal (Location: Wall Zone W5 on 2/F)

(a)

(b)

Figure 11 – Consistent types of defects seen in most areas of exposed brickwork

Colour-coded legends for defects:

Low strength bricks
Weak mortar

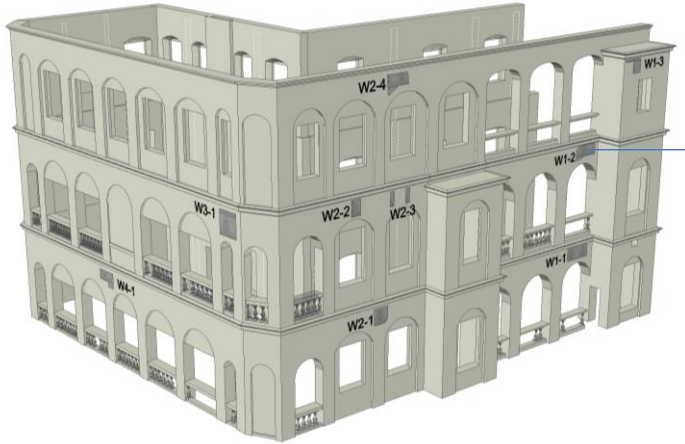
Powdery bricks

Voids / Poor bonding

Cracks

Block 4 illustrated as a wireframe for clarify, showing exposed areas visually inspected and defects identified

Figure 12 – Visual inspection of twelve newly opened-up locations and respective findings



12 newly open-up locations in various parts of Block 4

Location W1-2: View of render surface condition before open-up

Observation:

- Surface cracks on rendering can be seen

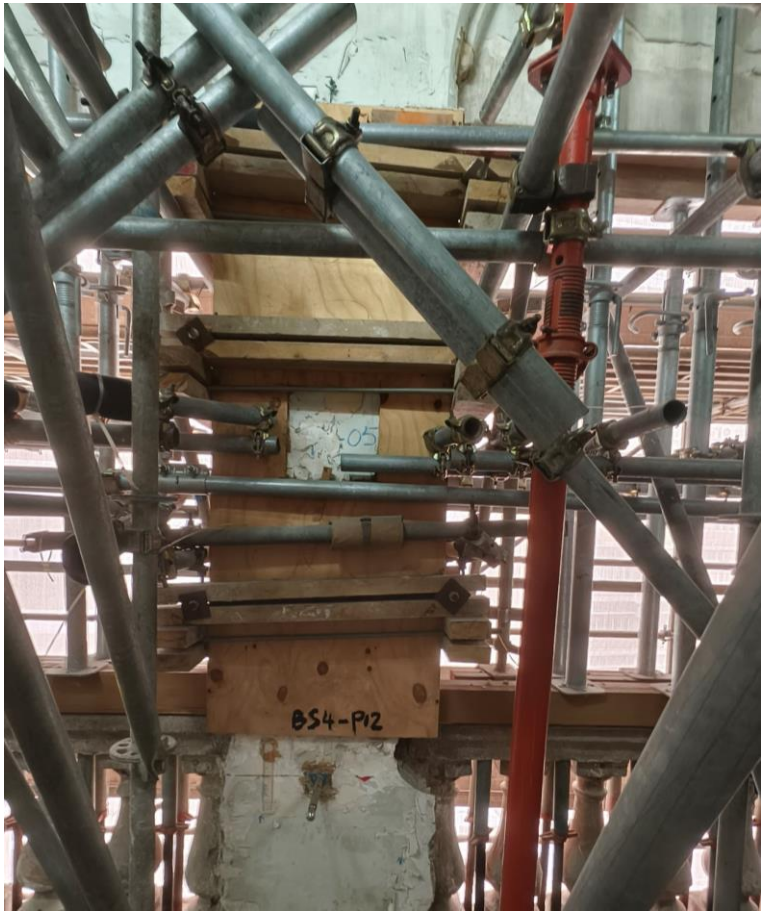
Location W1-2: View of brickwork condition after open-up

Observation:

- Structural cracks through-brick-thickness can be seen, indicating bricks are low in shear strength
- Cracks along mortar joints can be seen, indicating mortar is weak leading to poor bonding
- Surface cracks noted in unopened-up areas are likely to reflect structural cracks in the brickwork underneath

Figure 13 – (a) Cracks in brick pier noted after removal of window frame (Location: Wall Zone W4 on 1/F)
(b) Failed pier stabilised by clamped timber boards (Location: Wall Zone W4 on 1/F)

(a)



(b)

Figure 14 – Visual inspections by Government's Vetting Panel

Figure 15 – Brick pier showing a lack of cross-bonding brickwork in middle zone, preventing a robust brick pier to be formed

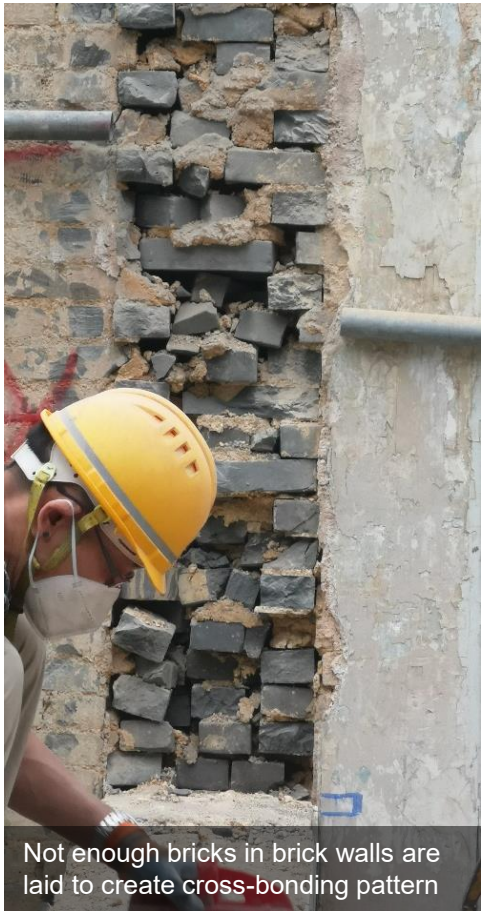
(a)

(b)

(c)

Figure 16 – Visual inspection during removal works, revealing copious evidence of substantial and widespread voids in brick vertical and horizontal joints

Expert Team conducting visual inspections during removal works



Not enough bricks in brick walls are laid to create cross-bonding pattern

Lack of mortar in brick vertical joints

Lack of mortar in brick horizontal joints, covering only one-half to two-thirds of brick plan area

Figure 17 – Cracked bricks, voids and a lack of mortar at brick joints observed; individual bricks removed easily from main body of brick walls

Figure 18 – General site analysis :
Artefacts of Site – façades (historical and new intervention) and stone walls

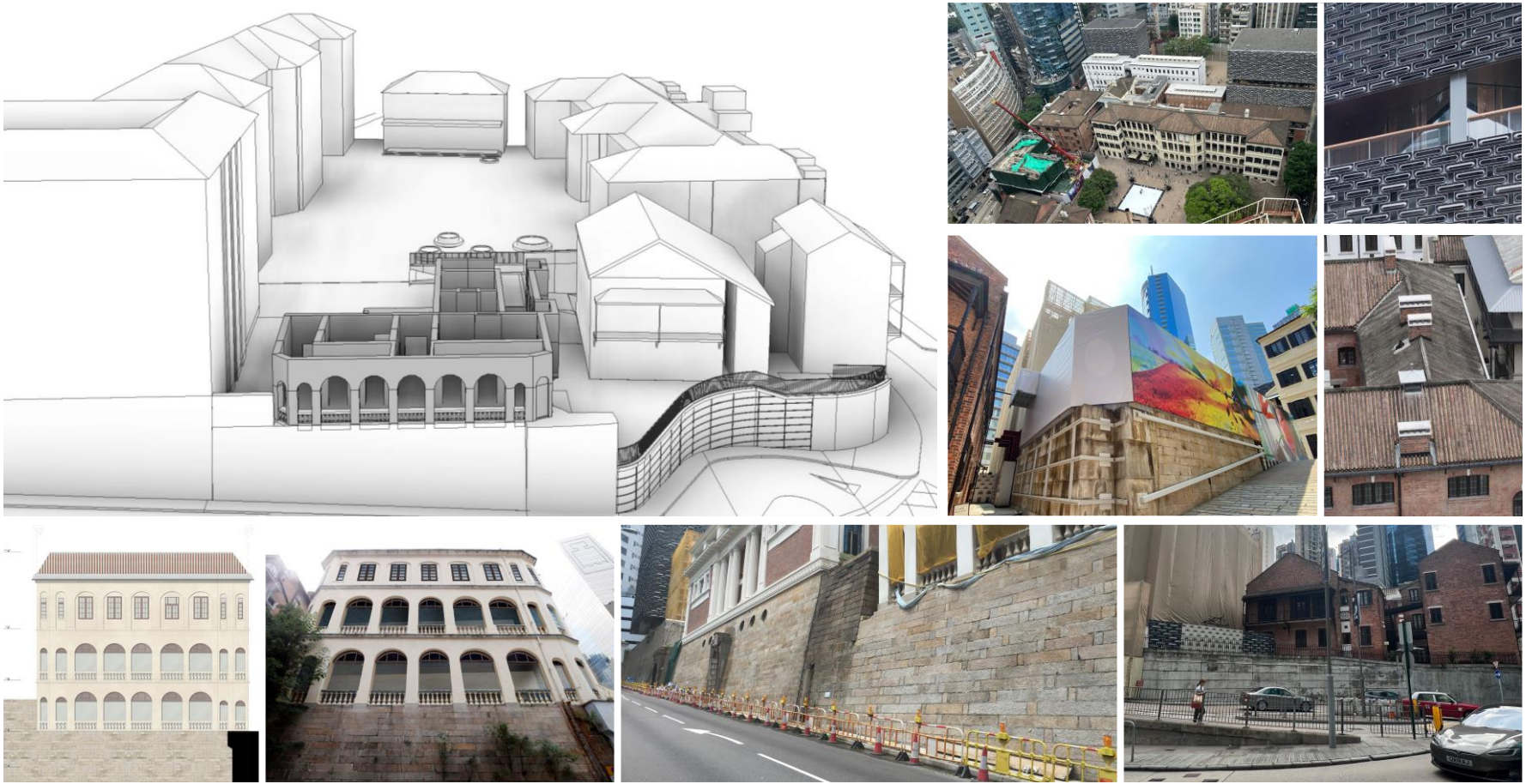


Figure 19 – Vision of compelling streetscape of Tai Kwun on Arbuthnot Road and Wyndham Street

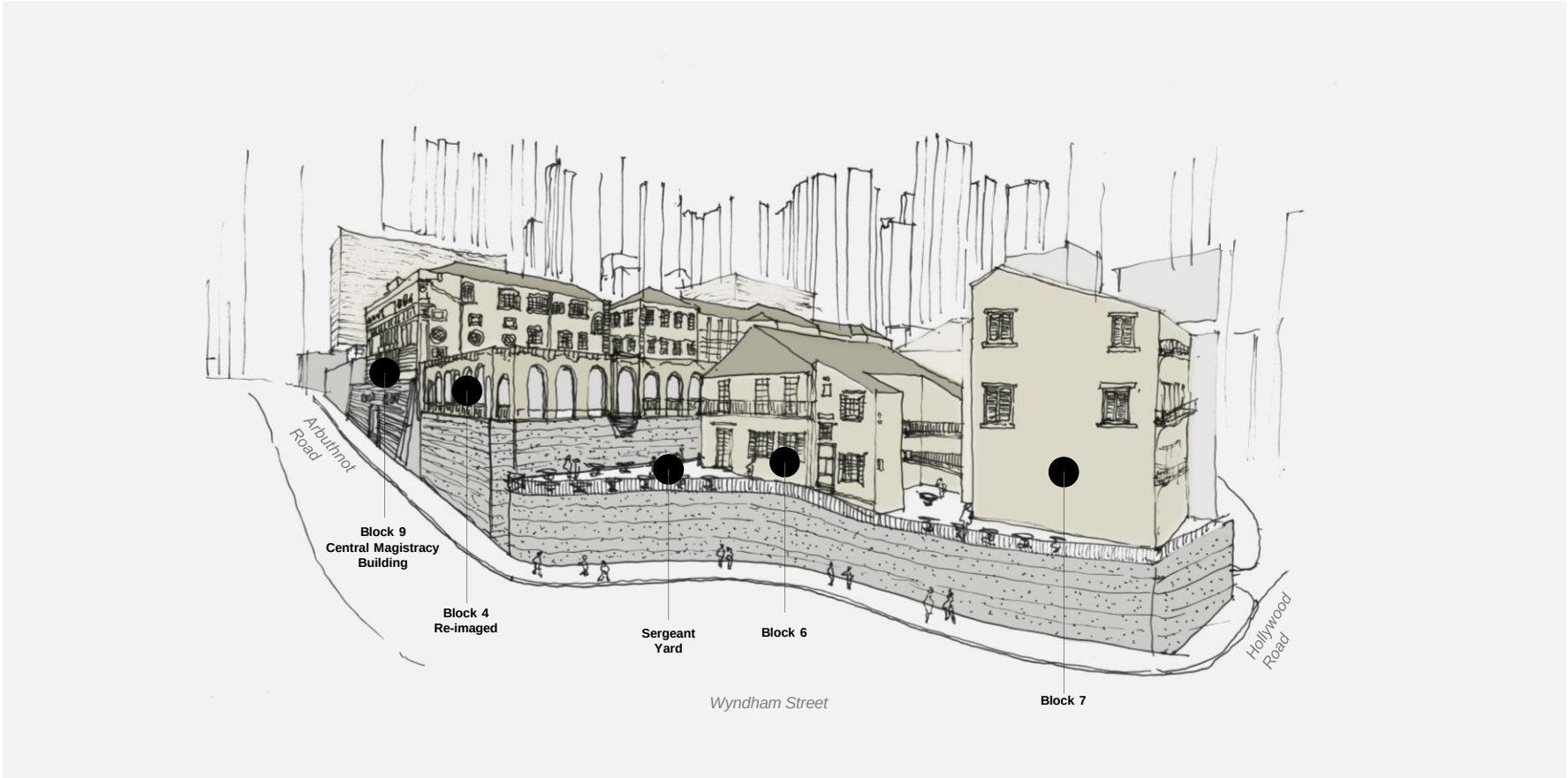


Figure 20 – Three aspects of engagement – Lighting, Public Space and Future Events – one holistic approach

+

+

Lighting

-

Use of lighting to activate the elevation of Block 6, 7, 9 and the open space of Block 4 as one singular zone, enhancing Tai Kwun's presence along Arbuthnot Road and Wyndham Street

Public Space

-

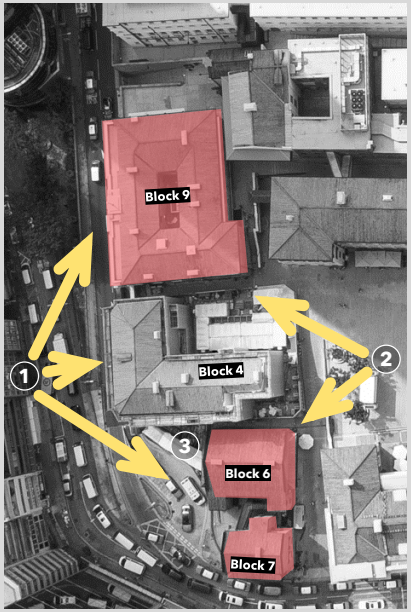
Remains of Block 4 to be incorporated into a semi open / open space with hard landscape design, creating a unique blend of history and urban intervention, an extended space of the Parade Ground

Future Events

-

The open space completed with a permanent canopy structure to showcase innovative design, engage with the environment, serve as a hub for cultural events, talks, and performance

Figure 21 – Use of architectural lighting to activate and connect with Blocks 6, 7 and 9, enhancing Tai Kwun's presence on Arbuthnot Road and Wyndham Street



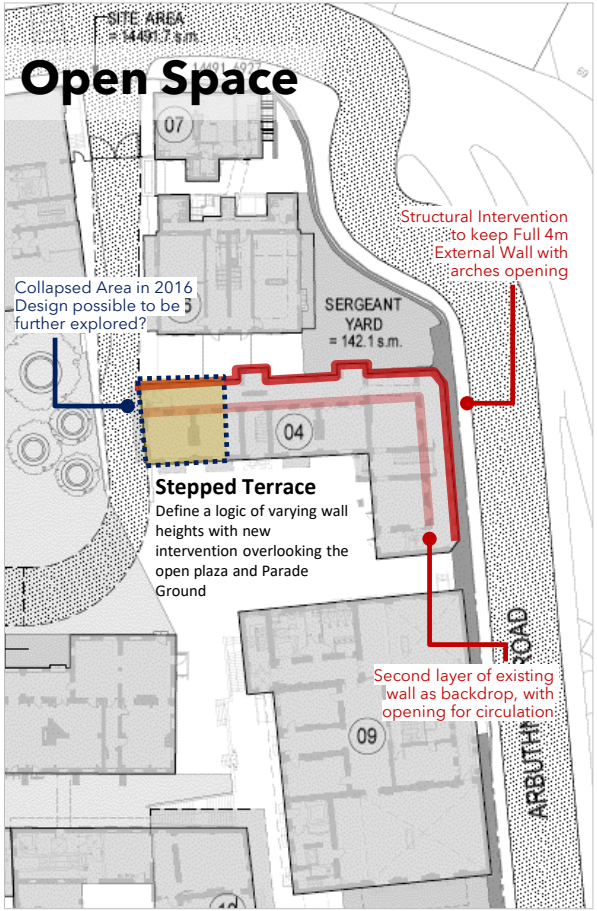
Lighting Opportunities

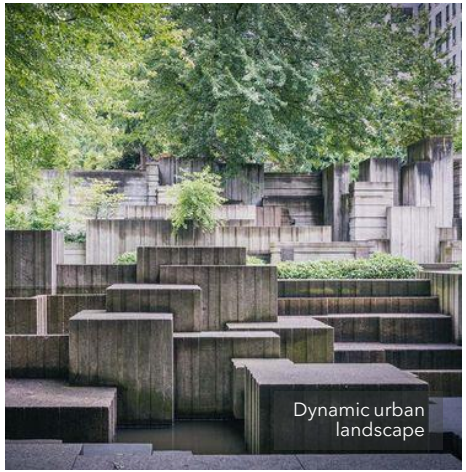
1. View from Arbuthnot Road, streetscape of Tai Kwun
2. Internal view from Parade Ground
3. Open space of Block 4 & Sergeant Yard

Above: Municipal Building, Rieti, Italy
Below: National Gallery Singapore, Singapore

Heito 1909,
Former Sugar Factory, Taiwan

Figure 22 – Reinterpretation of remains of Block 4 as public open space





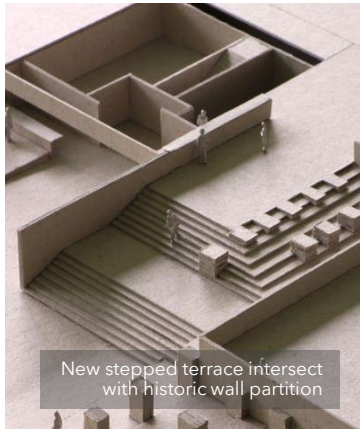
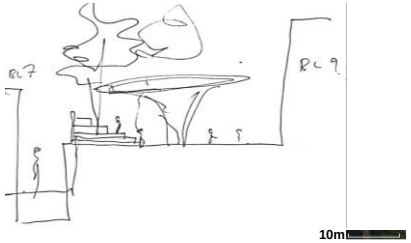


Figure 23 – Use of public open space as platform for future events such as art installations, talks, performances, etc

Case Study – Pavilion & Public Programming

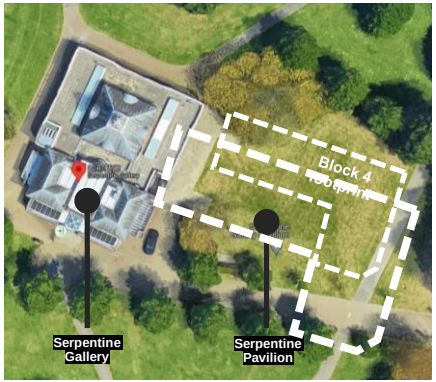
The Serpentine Gallery Pavilion operated as a public space and as a venue for Park Nights, the gallery's high-profile programme of public talks and events.

Design a temporary pavilion at the open plaza that stretches over to the remaining walls of block 4.



Scale Comparison

Serpentine Gallery, Hyde Park, London



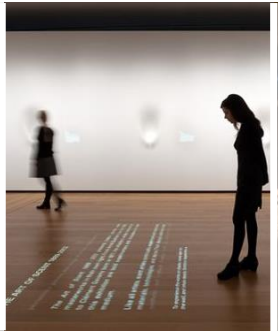
Block 4, Tai Kwun, Hong Kong

Figure 24 – Heritage Permanent Exhibition and Tour – Exhibition of salvaged materials, daily tours, interpretation of spaces, etc

1 Arcades on north and east sides (G/F)

3 Heritage permanent exhibition space

2 Public facades along Arbuthnot Road (G/F)



4 Heritage interpretation (inside arcades)

5 Thematic heritage exhibition (open space of Block 4)

PERMANENT HERITAGE EXHIBITION AND TOUR (DAILY/ ARCHITECTURAL/ SELF-GUIDED TOUR)

- Explore the physical remains and architectural features of Block 4
- Learn the history, stories associated with the site
- Understand how the site has changed over time
- Discover the conservation process including the craftmanship and construction techniques

BLOCK 9 F&B OUTDOOR SEATING

- Dining experience complementing the site's cultural heritage
- Help activating the site and enhance visitor's experience

PUBLIC SEATING (HARD LANDSCAPING)

- Accessibility and inclusivity
- Encourage visitor to spend more time at Tai Kwun
- Offer visitor to observe, explore and appreciate the historic environment

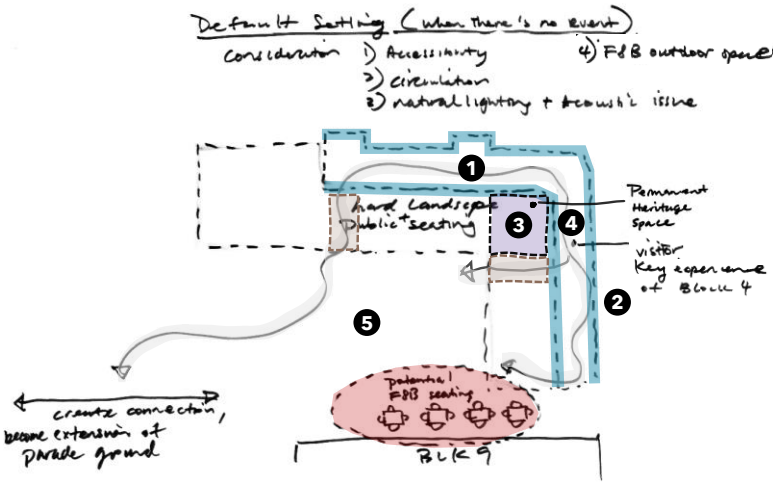
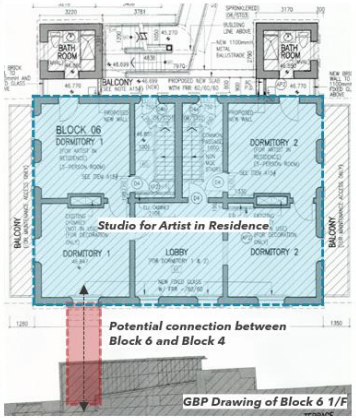


Figure 25 – Performing arts – Performances / rehearsals for talent building and performing arts



*The functional zoning of Block 4 with existing Tai Kwun Programme

TALENT BUILDING

- Cultivate artistic talent and offer potential outdoor rehearsal and performance space for performance artists
- Backdrops for aspiring performers to hone their skills with potential live audience

COMMUNITY ENGAGEMENT

- Integrate the site into the cultural fabric of the area and use performance programming activates the transformed historic spaces

Opportunities for integrating Block 6 Artists Studios on 1F to the Back of House/Storage area in the collapsed part of Block 4 to create continuous backstage to frontstage access way without down to the shops on Block 6 Ground Floor or climbing up Pottinger Ramp. Current PG usage is always requires extensive temporary truss building and back of house marquees and tents to be built to house equipment/speakers/projectors and control station

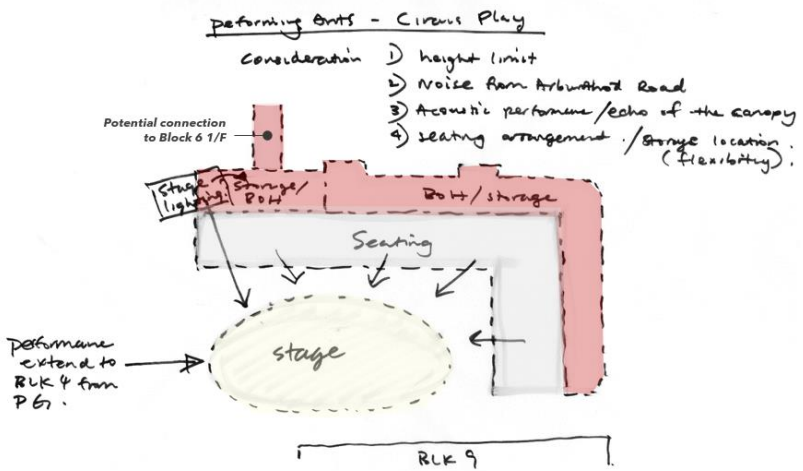


Figure 26 – Performing arts (Reference – Edinburgh Fringe Festival)

Figure 27 – Performing arts (Reference – Edinburgh Fringe Festival)

Figure 28 – Installation of public art or design sculptures

*The functional zoning of Block 4 with existing Tai Kwun Programme

SITE ENHANCEMENT

- Site-specific public art pieces serve as interpretive tools and convey the historical significance of Block 4
- Enhancing the visitor experience by curating public art that contribute to the overall aesthetic and ambiance of the site

PLACEMAKING

- The site serves as a canvas for artistic expression
- Define and activate public space

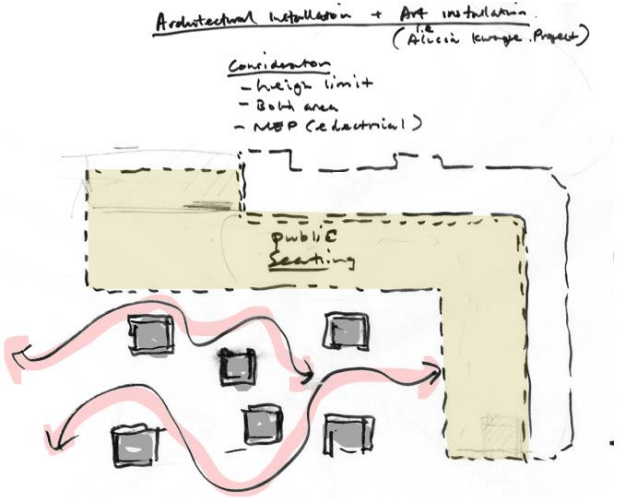


Figure 29 – Immersive light show (Reference – InnerGlow)

*The functional zoning of Block 4 with existing Tai Kwun Programme

INNOVATIONS & SPACE ACTIVATION

- Enhance the site's visibility from Arbuthnot/Wyndham to engage visitors in innovative ways
- Immersive lighting to highlight and interpret the site's historical significance and architecture and potential extension of InnerGlow light shows

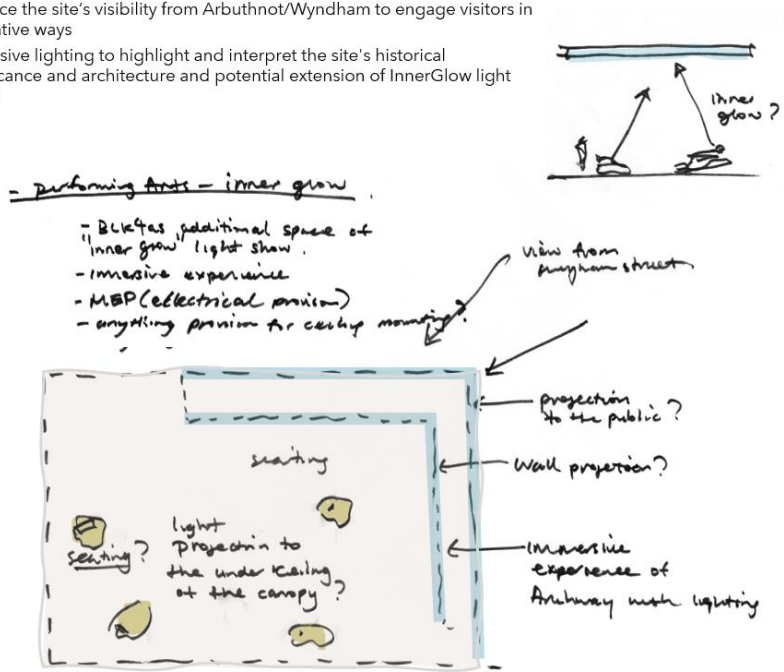
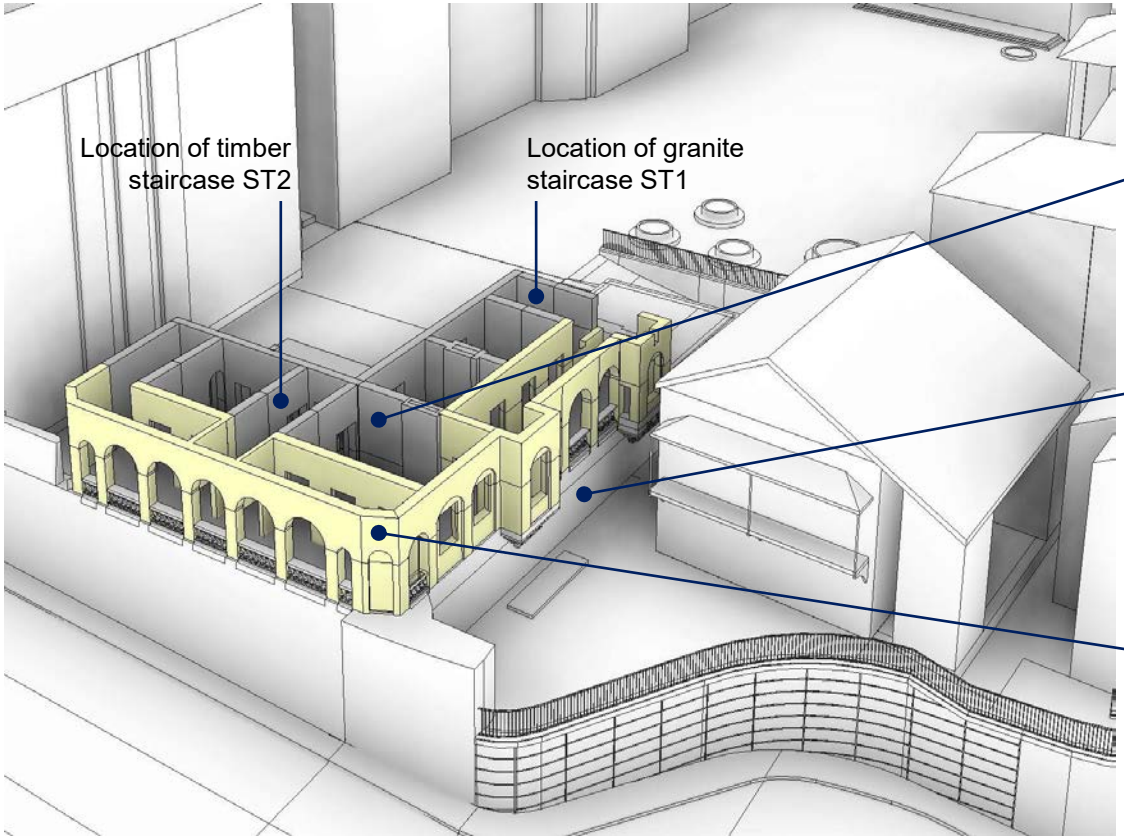


Figure 30 – Façades on G/F (beige-coloured) facing Arbuthnot Road & Block 6 retained; Retention of other brick walls (grey-coloured) as per structural / architectural assessment



G/F room brick walls and **staircases** in grey-coloured zone to be structurally / architecturally assessed to ascertain extent that can be retained with or without structural interventions…

Granite retaining wall and **corbels** aimed to be retained given their heritage significance, via structural intervention to achieve stable condition of retaining wall

Public facades and immediately **adjacent internal brick walls** aimed to be retained via structural and architectural interventions to create stable facades and compelling streetscape on Arbuthnot Road and Wyndham Street

Note – **1/F floor elements** not shown for clarity

Figure 31 – Granite retaining walls of Block 4 (facing Block 6)

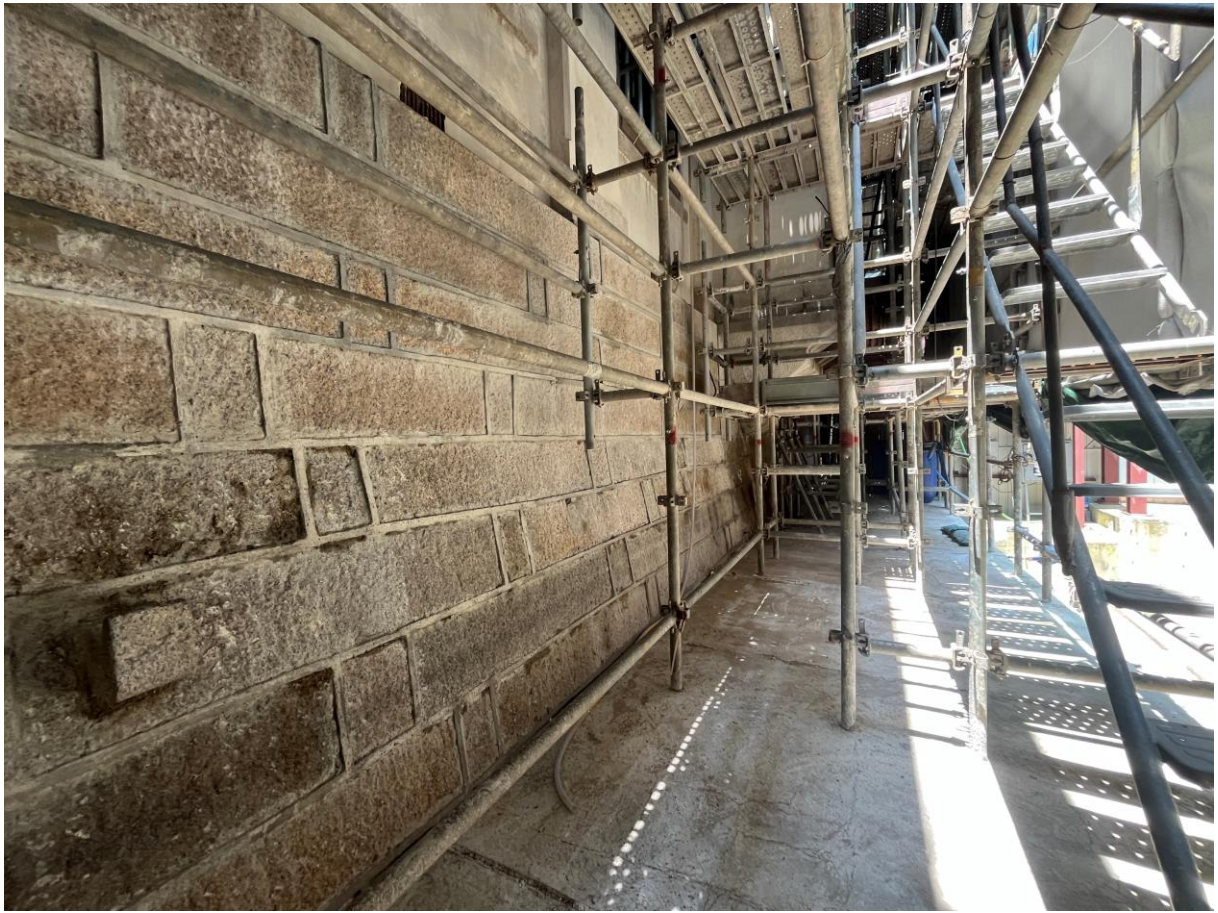


Figure 32 – Granite corbels of Block 4 supporting projecting bays

Figure 33 – Reason for strengthening of granite retaining wall

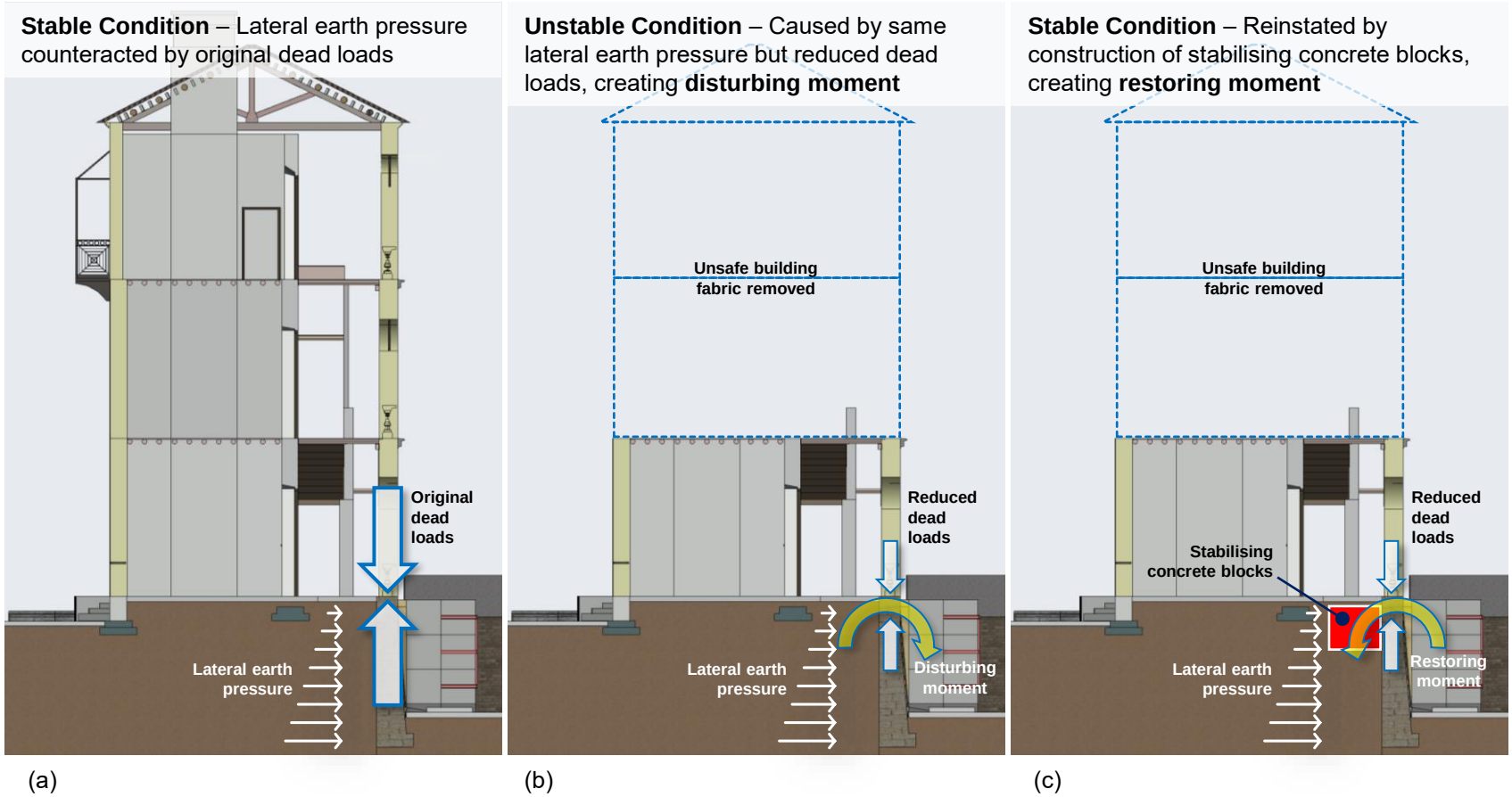
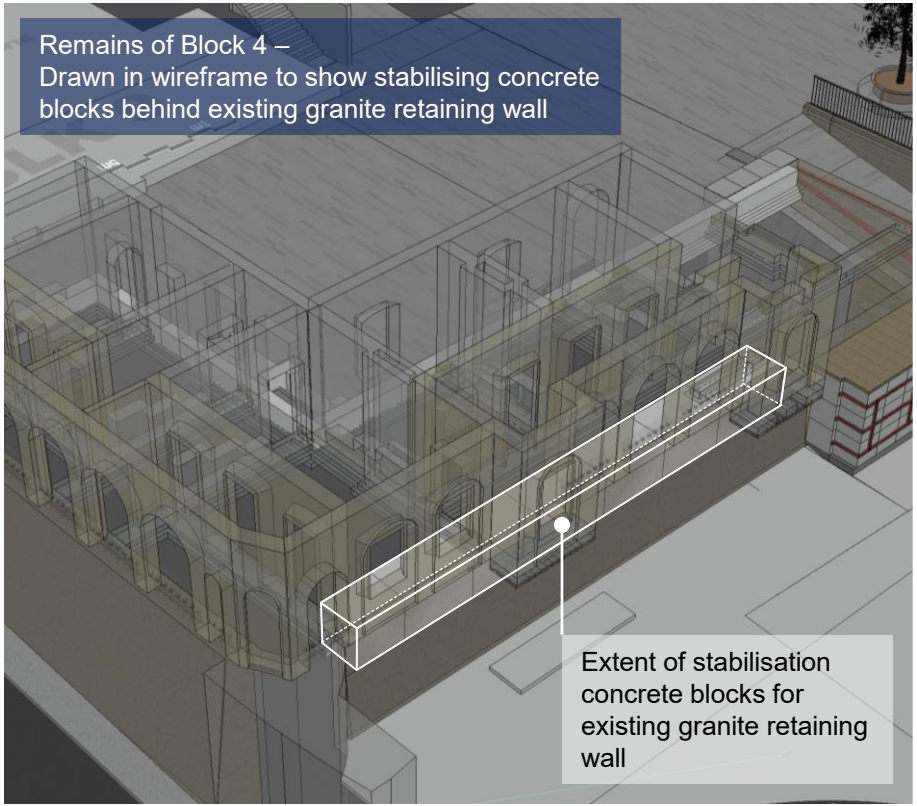


Figure 34 – Location and extent of stabilising concrete blocks with respect to granite retaining wall



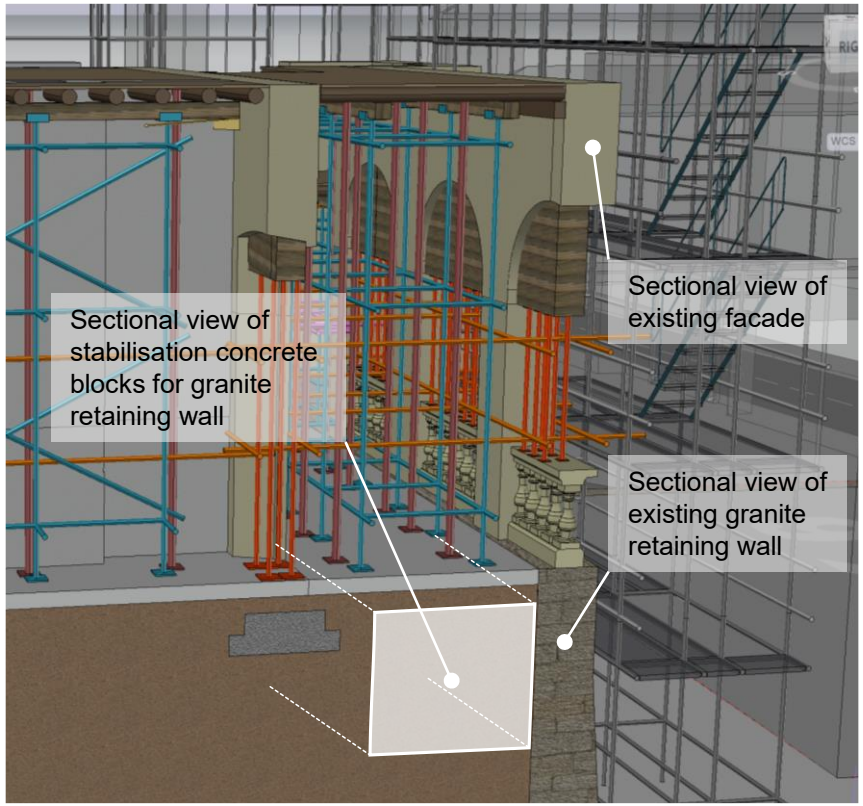
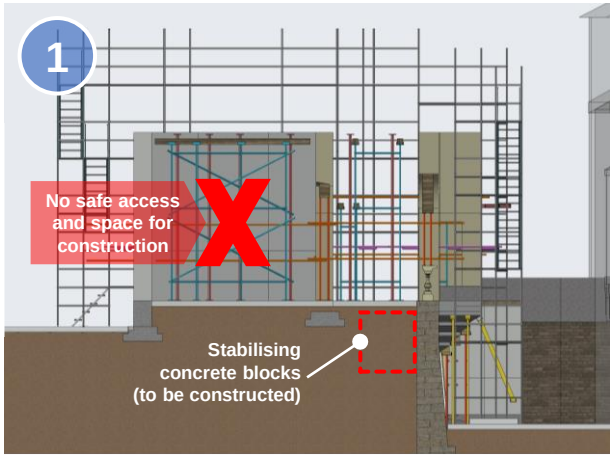


Figure 35 – Approach for creating a safe construction environment for workers carrying out retaining wall strengthening work

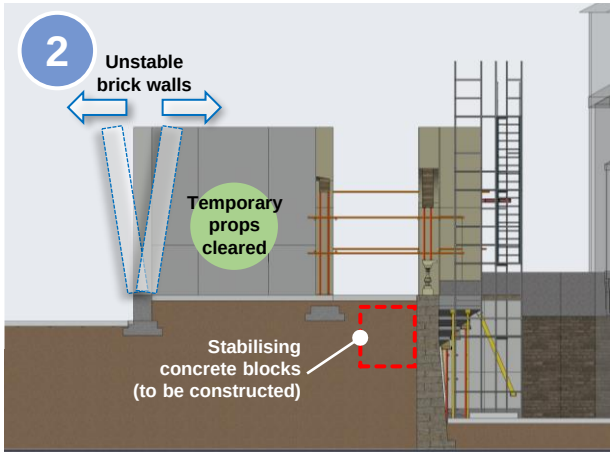
(a)

G/F spaces packed with temporary props and bracing, **prohibiting safe access** to excavating work fronts near existing granite retaining wall…



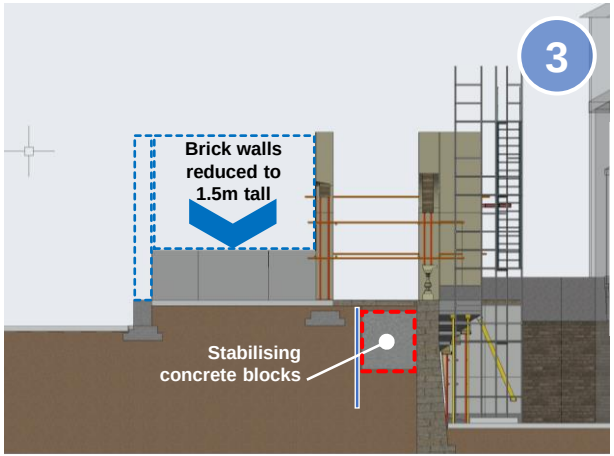
(b)

Temporary props and bracing removed to make access for excavator; however, removal of temporary props and bracing would trigger **instability risks** of defective brick walls



(c)

Affected brick walls reduced to 1.5m tall to mitigate instability risks, providing a **safe construction environment** for workers



(d)

Perspective view showing **partially removed brick walls**, providing safe access for strengthening of granite retaining wall

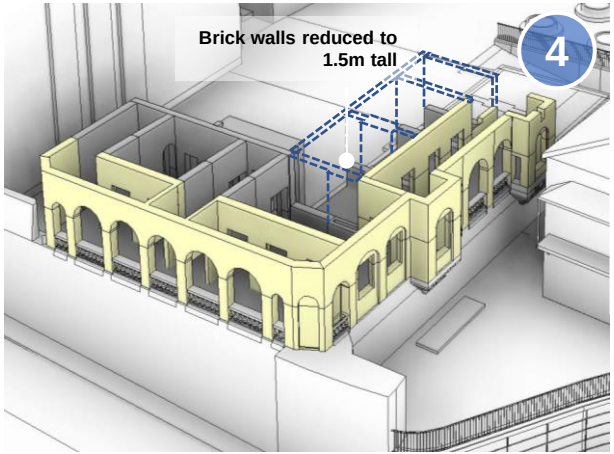
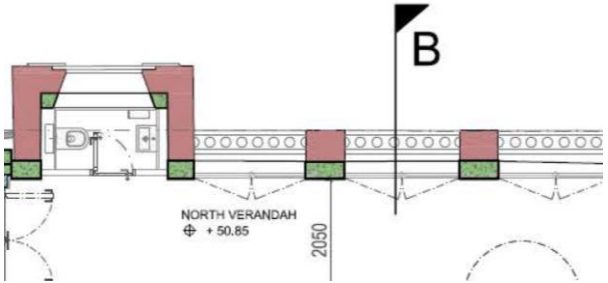
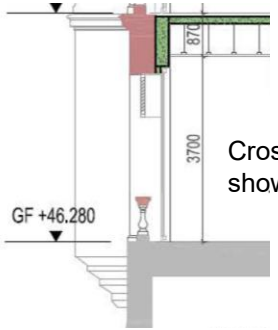


Figure 36 – Conceptual design of structural intervention – New concrete structure constructed to stabilise retained brickwork



Part plan of façade on G/F showing structural strengthening

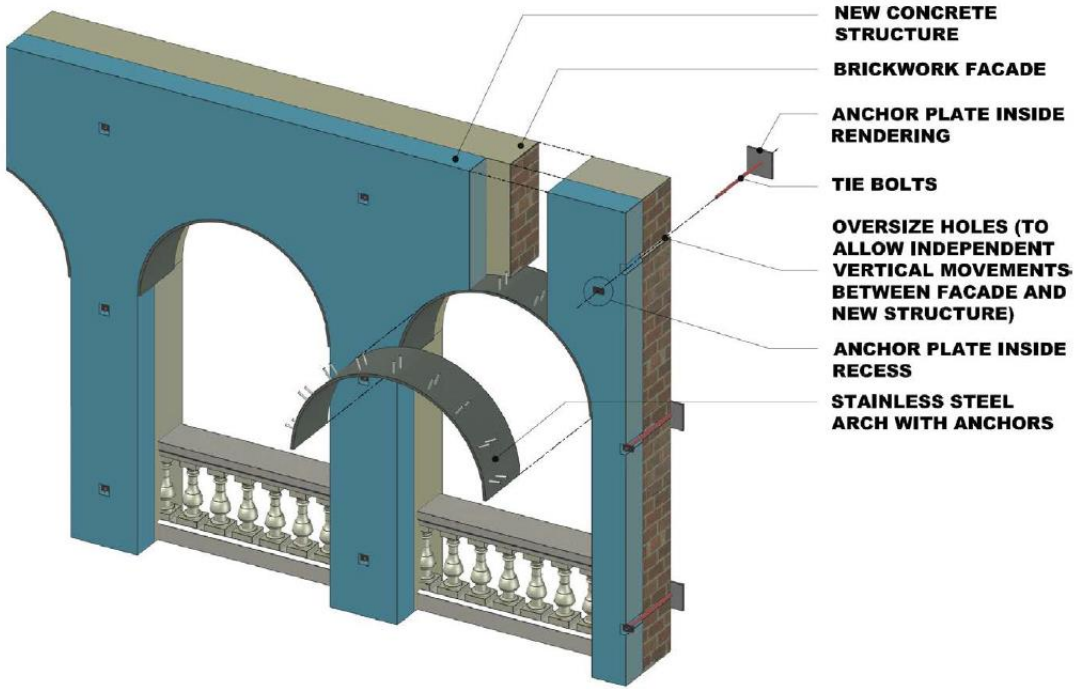


Cross-section of façade on G/F showing structural strengthening

LEGEND

EXISTING BRICK FACADE

NEW RC STRUCTURE

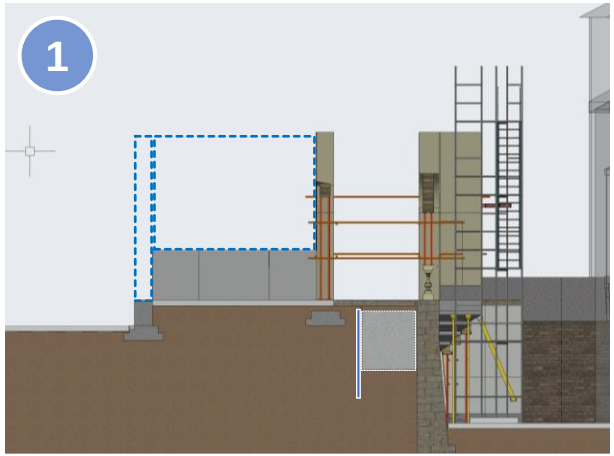


Partial 3D view showing conceptual strengthening scheme for façades / walls on G/F

Figure 37 – Approach for constructing new concrete structure to stabilise facade facing Block 6 (Same approach for facade facing Arbuthnot Road)

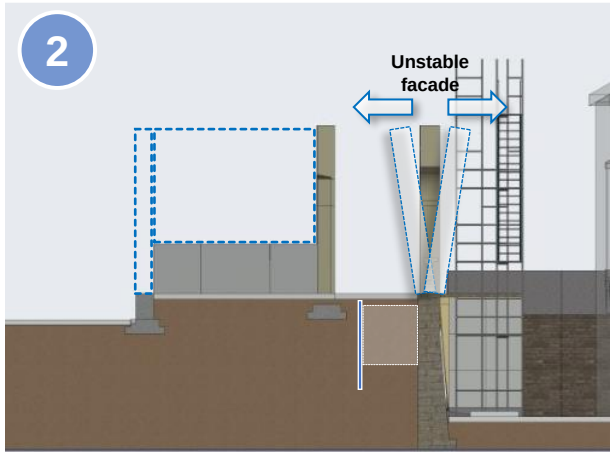
(a)

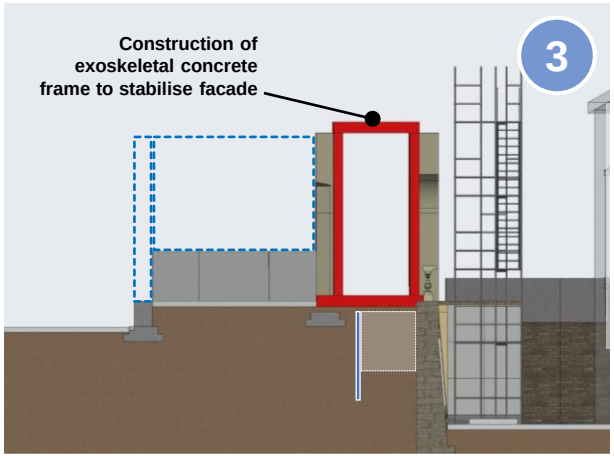
Condition of brickwork facade after completion of stabilisation of granite retaining wall



(b)

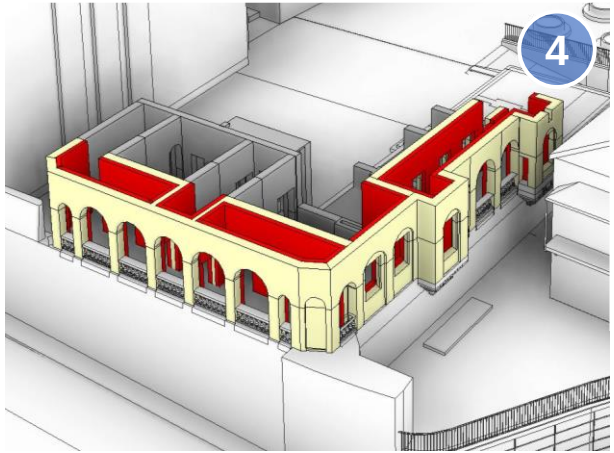
Brickwork facades too tall and slender to be retained as single leaf





(c)

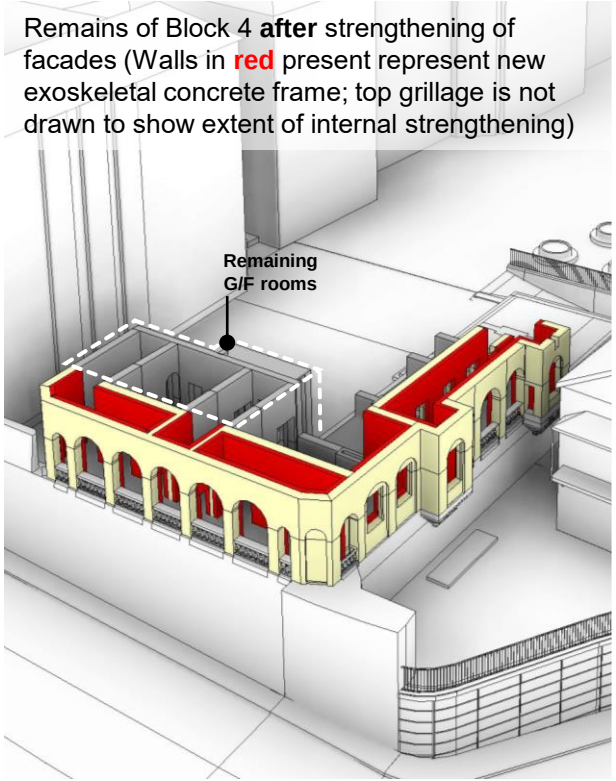
Exoskeletal concrete frame required to connect brickwork facade and immediately adjacent internal wall to create robust and stable structure



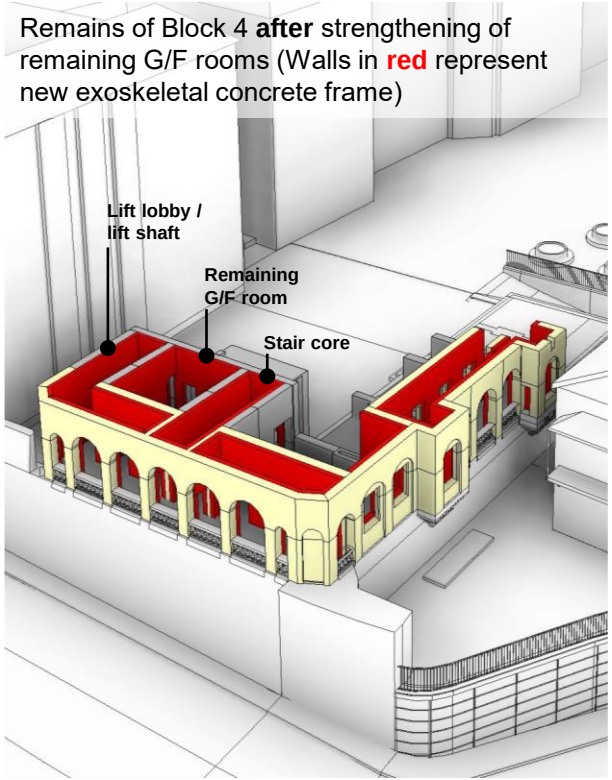
(d)

Perspective view showing extent of strengthened facades (Walls in **red** represent new exoskeletal concrete frame)

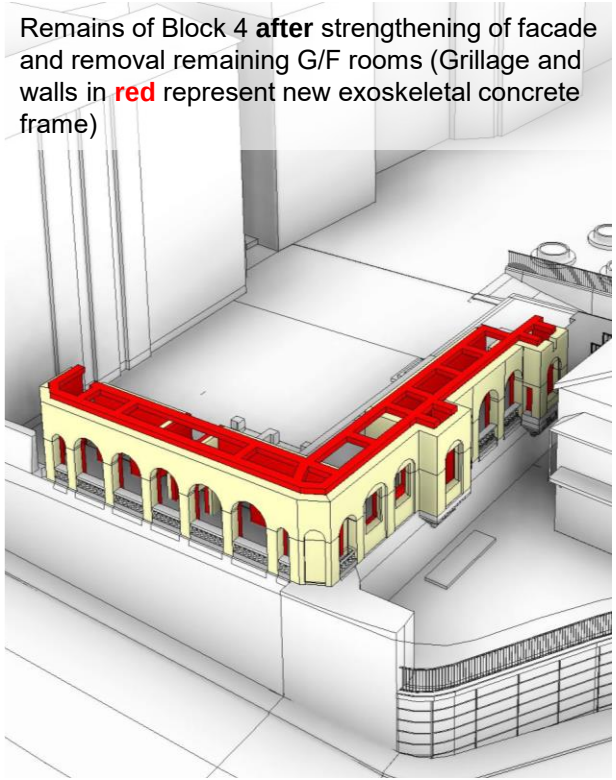
Figure 38 – Views of remains of Block 4 – (a) & (b) with remaining G/F rooms strengthened / retained; (c) with remaining G/F rooms removed



(a)



(b)



(c)

Figure 39 – Changes in overall appearance of Block 4
(from a 3-storey building with a roof to one-storey tall)

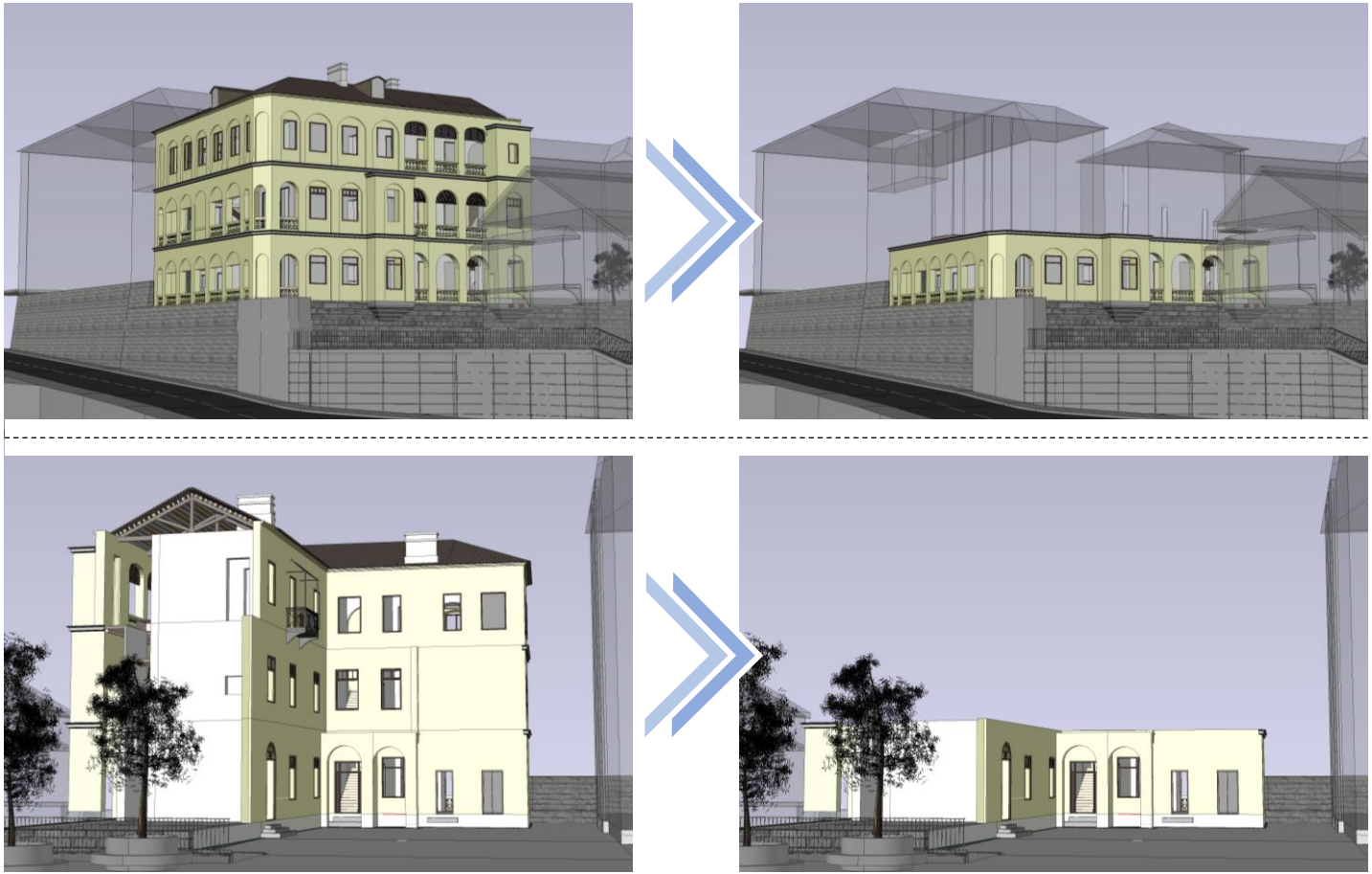
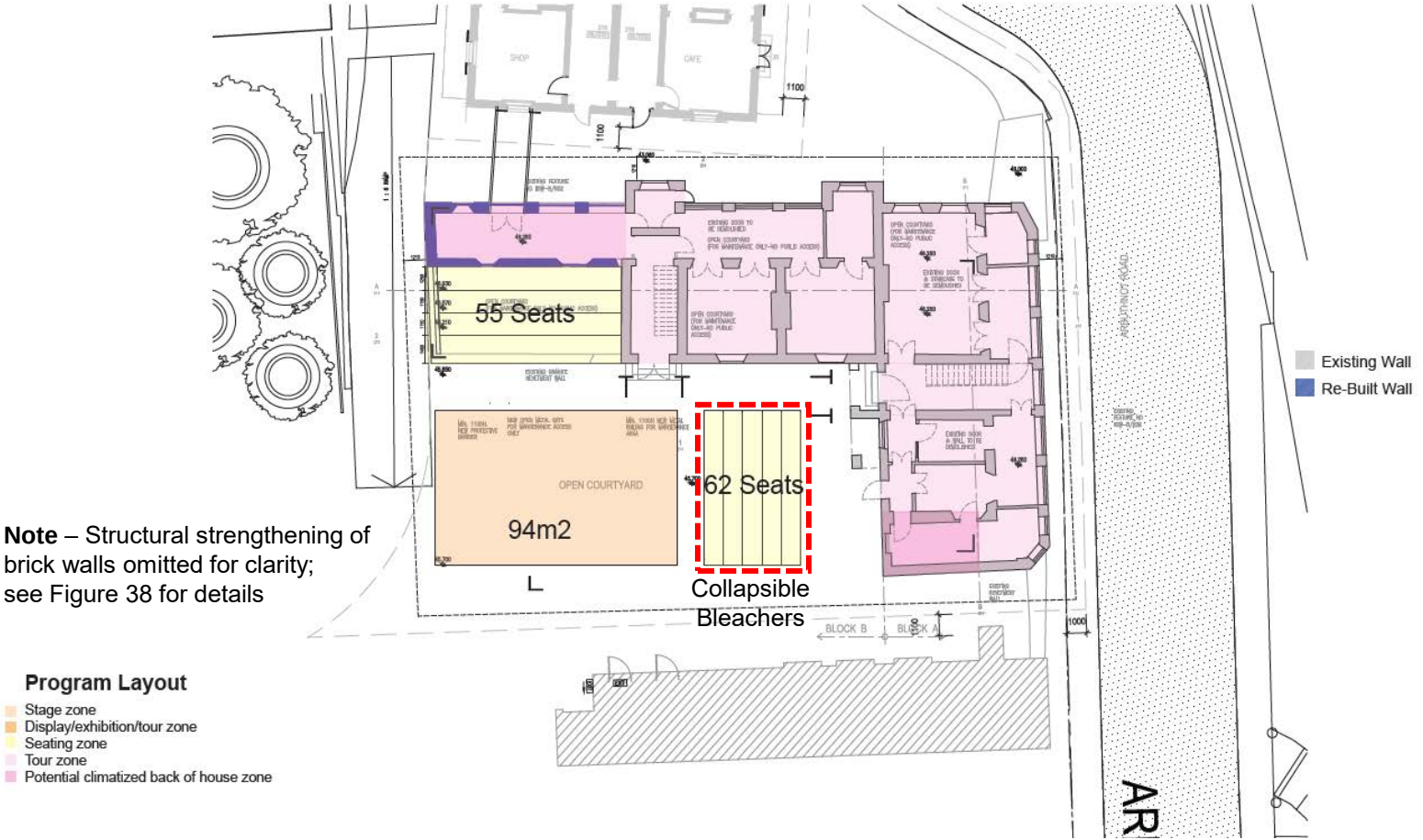
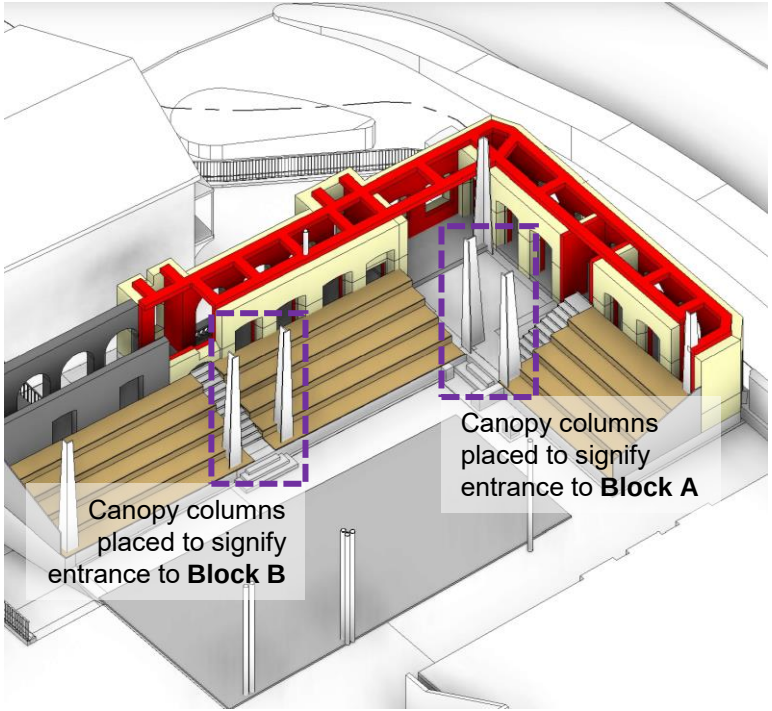


Figure 40 – Possible seating and stage areas with G/F rooms and staircases retained; stage and seating area (with 117 seats where 62 seats by collapsible bleachers)



Note – Structural strengthening of brick walls omitted for clarity; see Figure 38 for details

Figure 41 – Strategic placement of canopy columns to signify original entrance to Block A and Block B



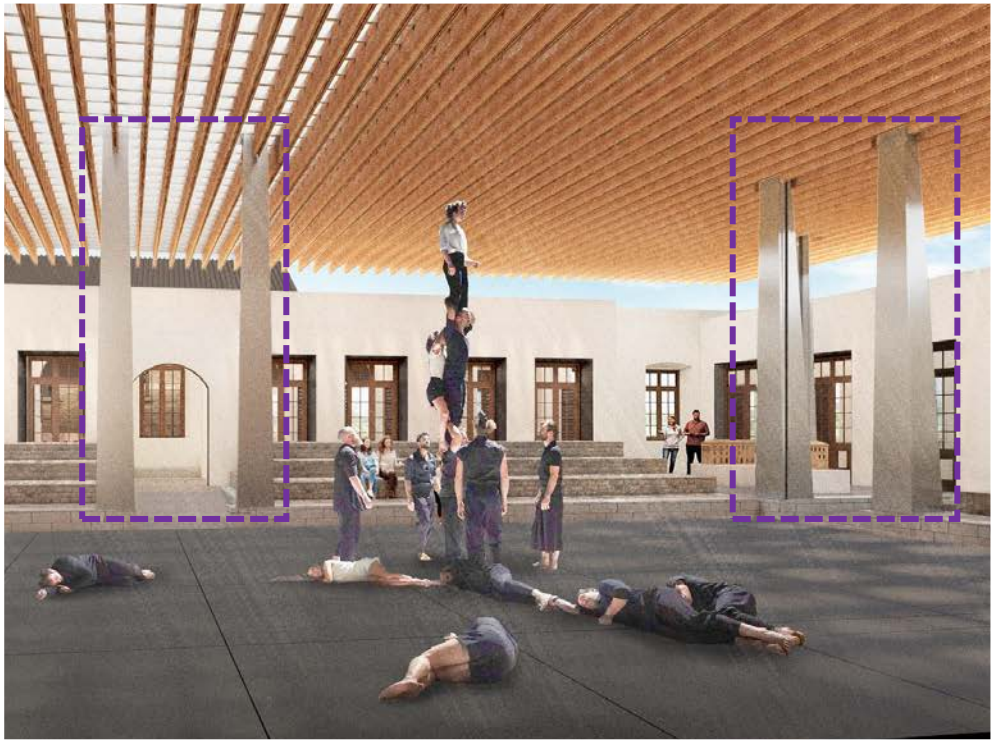


Figure 42 – Granite staircase ST1 in Block 4

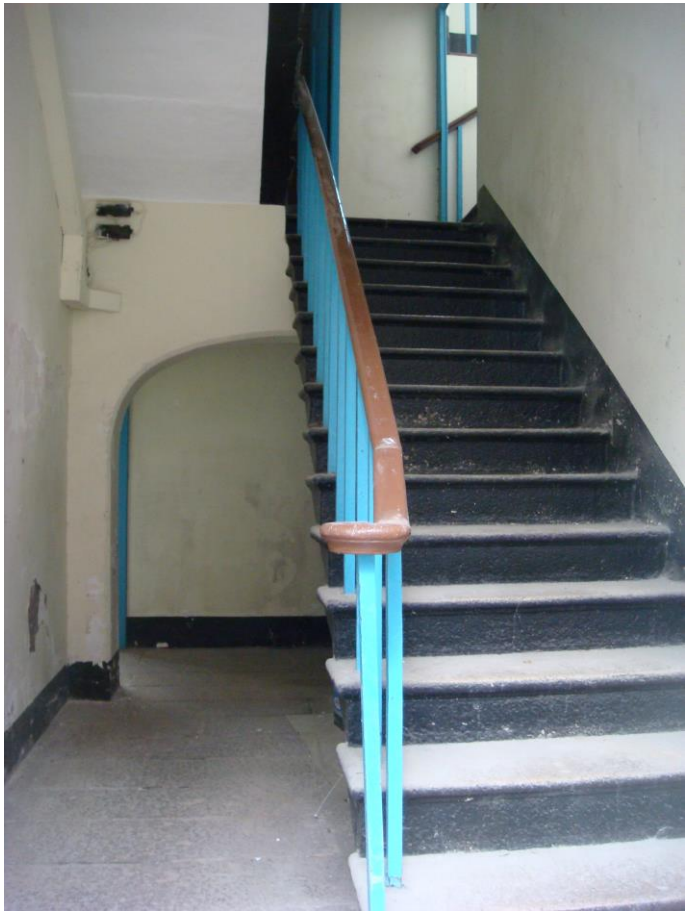


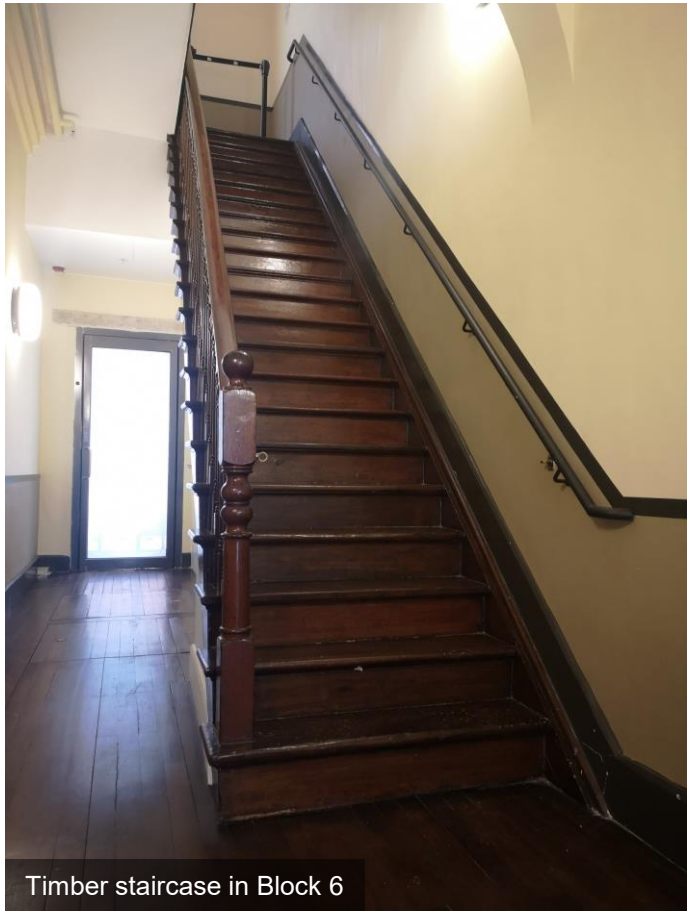
Figure 43 – Timber staircase ST2 in Block 4

Figure 44 – Other granite staircases in CPS Compound

Granite staircase at LG1/F of Block 1

Granite staircase G/F of Block 3

Figure 45 – Timber staircase in Block 6 of CPS Compound


Timber staircase in Block 6

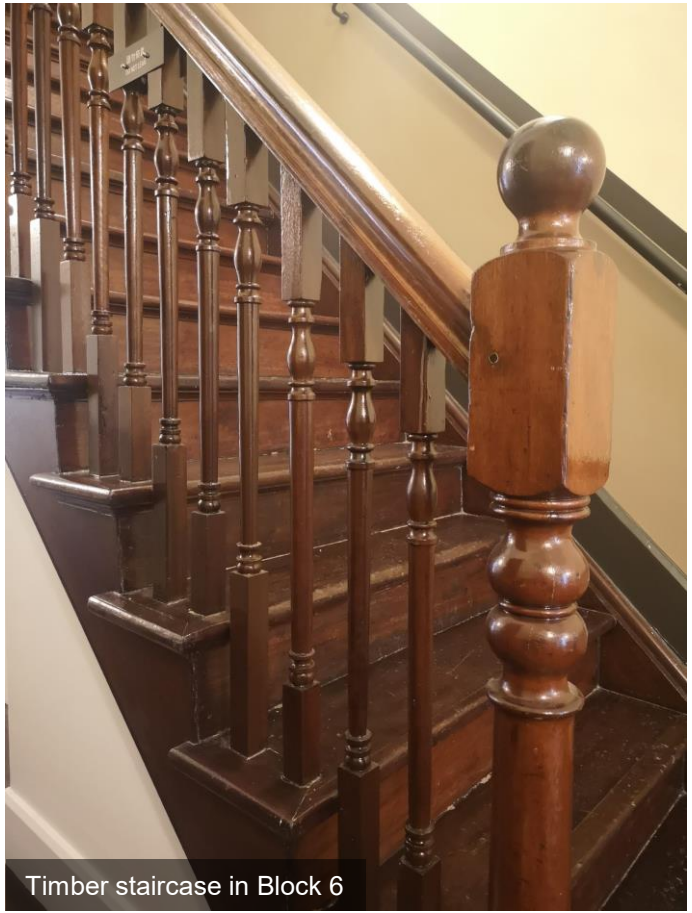
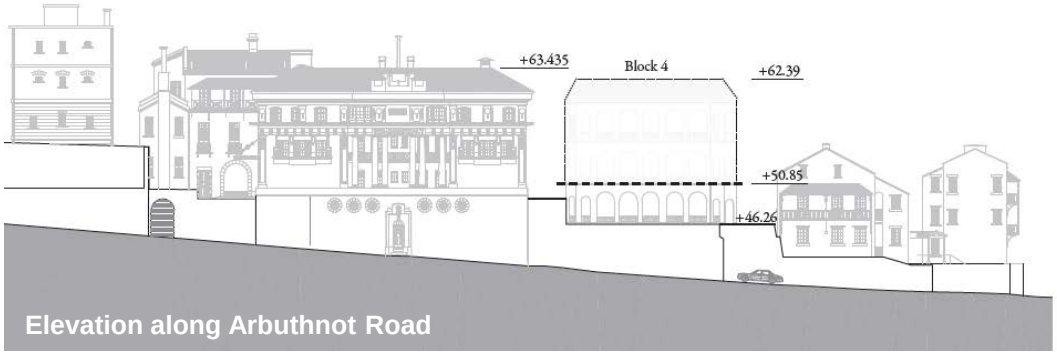
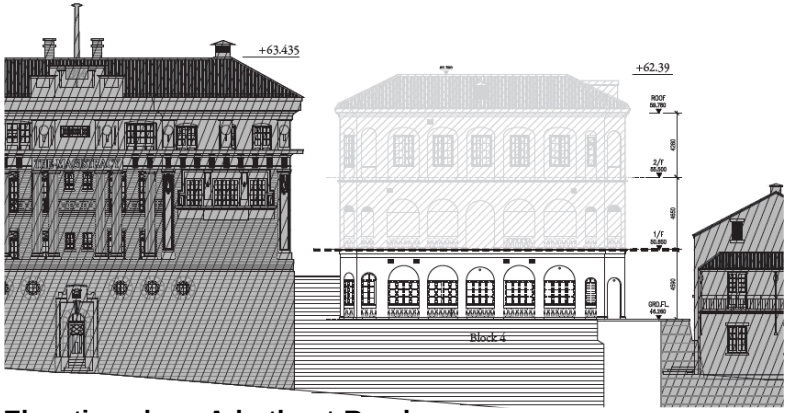

Timber staircase in Block 6

Figure 46 – Timber floor joists and new reinforcing steel beams
(steel beams installed as part of revitalisation work in 2013-2016)

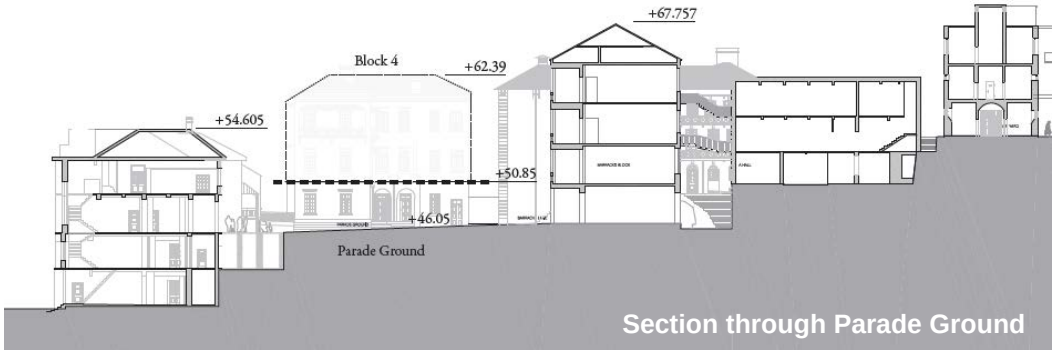
Figure 47 – General site analysis – Elevation of Block 4 facing Arbuthnot Road and Parade Ground



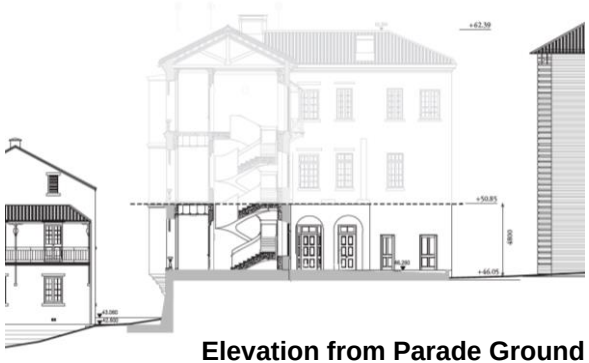
Elevation along Arbuthnot Road



Elevation along Arbuthnot Road

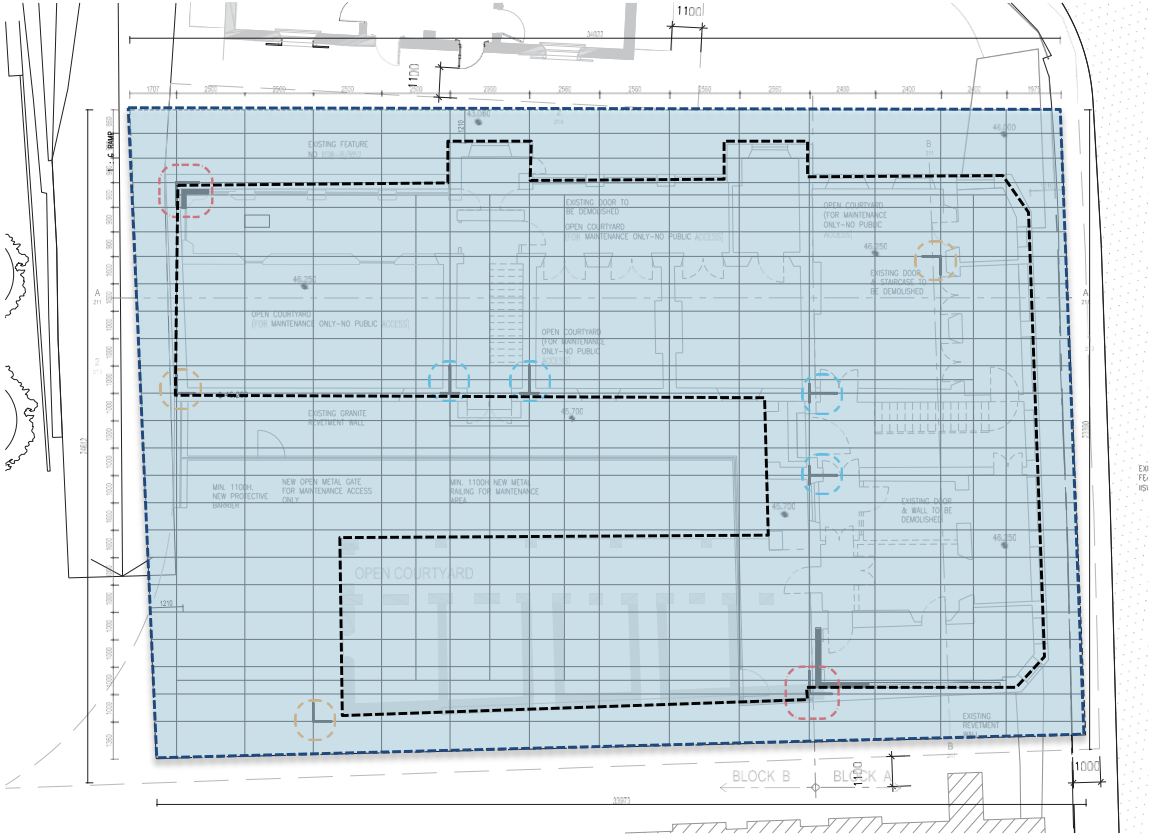


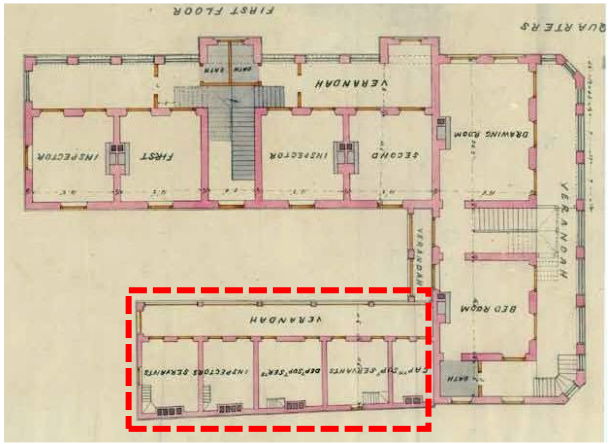
Section through Parade Ground



Elevation from Parade Ground

Figure 48 – Extent of proposed permanent canopy, oversailing original U-shaped footprint of Block 4





Already-demolished
Servants' Wing

Figure 49 – Proposed permanent canopy, unifying remains of Block 4 with Blocks 6 and 9 (View from Arbuthnot Road)

Figure 50 – Proposed permanent canopy, creating reinterpreted sense of “enclosed” Parade Ground (View from Parade Ground)

Figure 51 – Use of salvaged materials (salvaged bricks and granite blocks) from CPS Compound, repurposed to create seating, preserving tangible connection to building's past

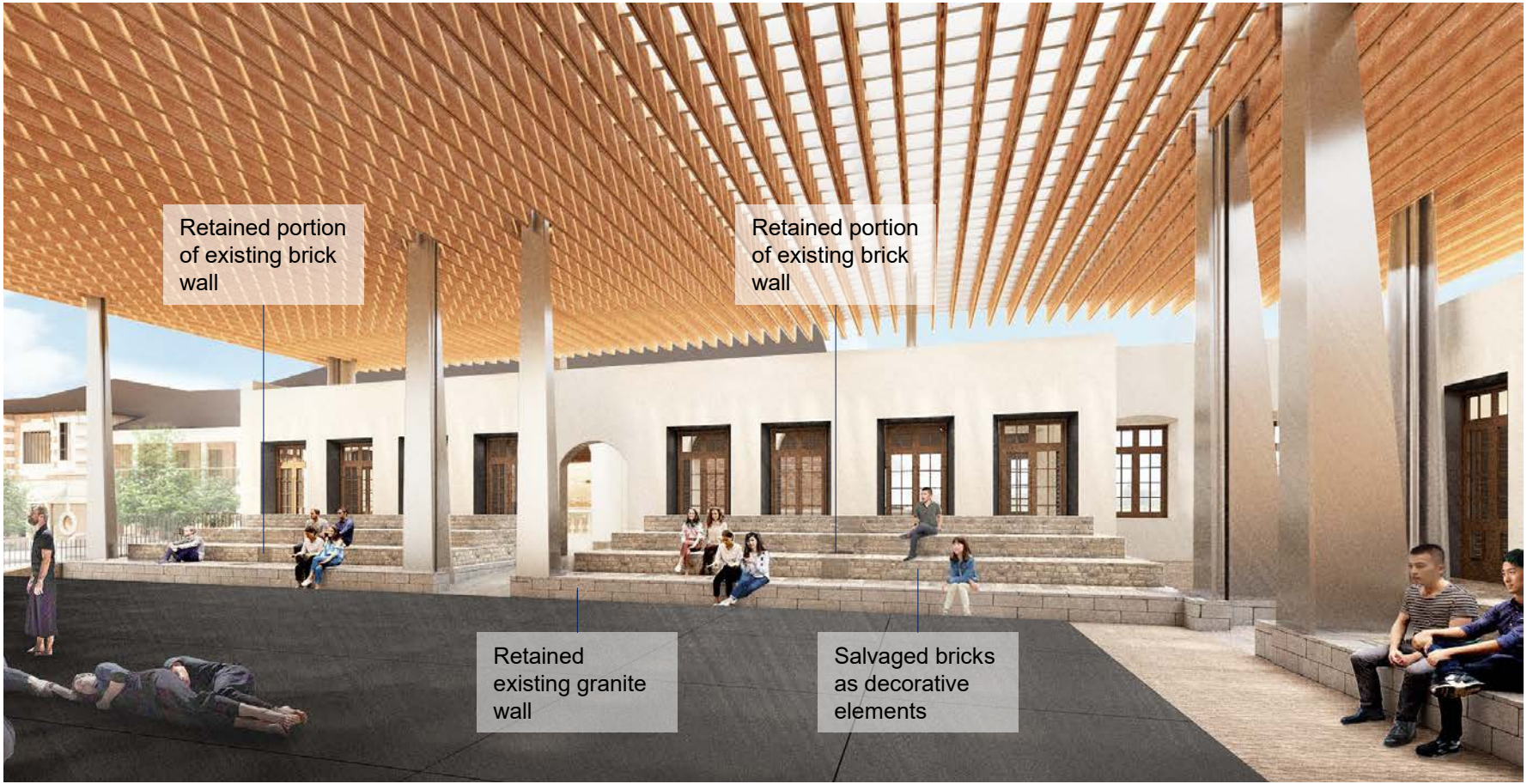


Figure 52 – Activities under newly reconfigured open space setting

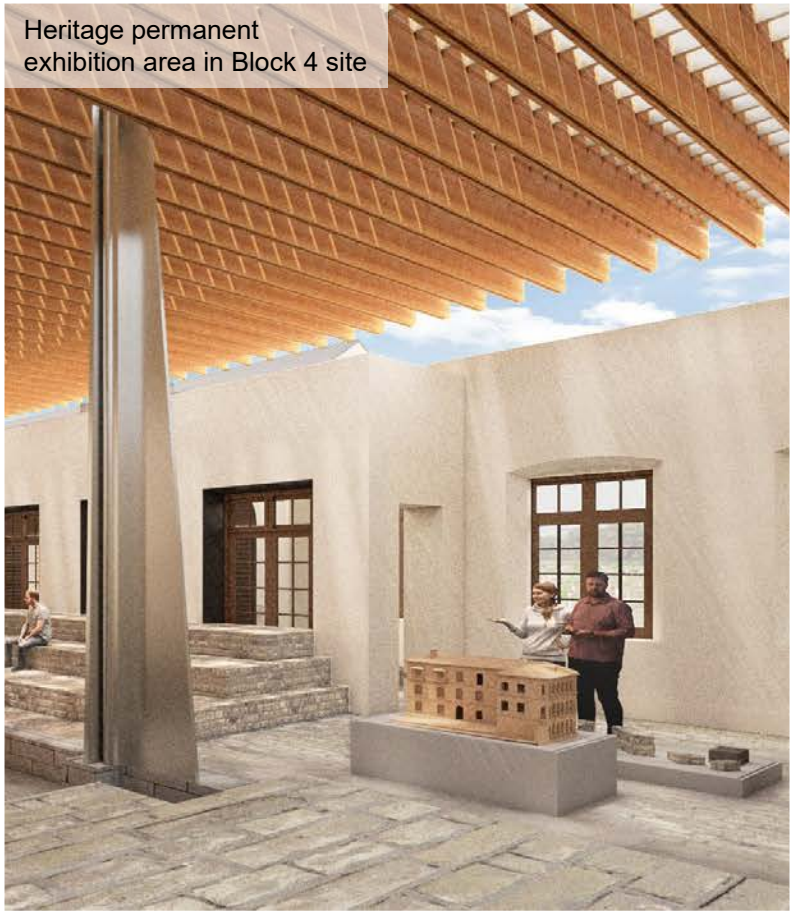


Figure 53 – Public art and sculpture installations in open space

Figure 54 – Performing arts in open space

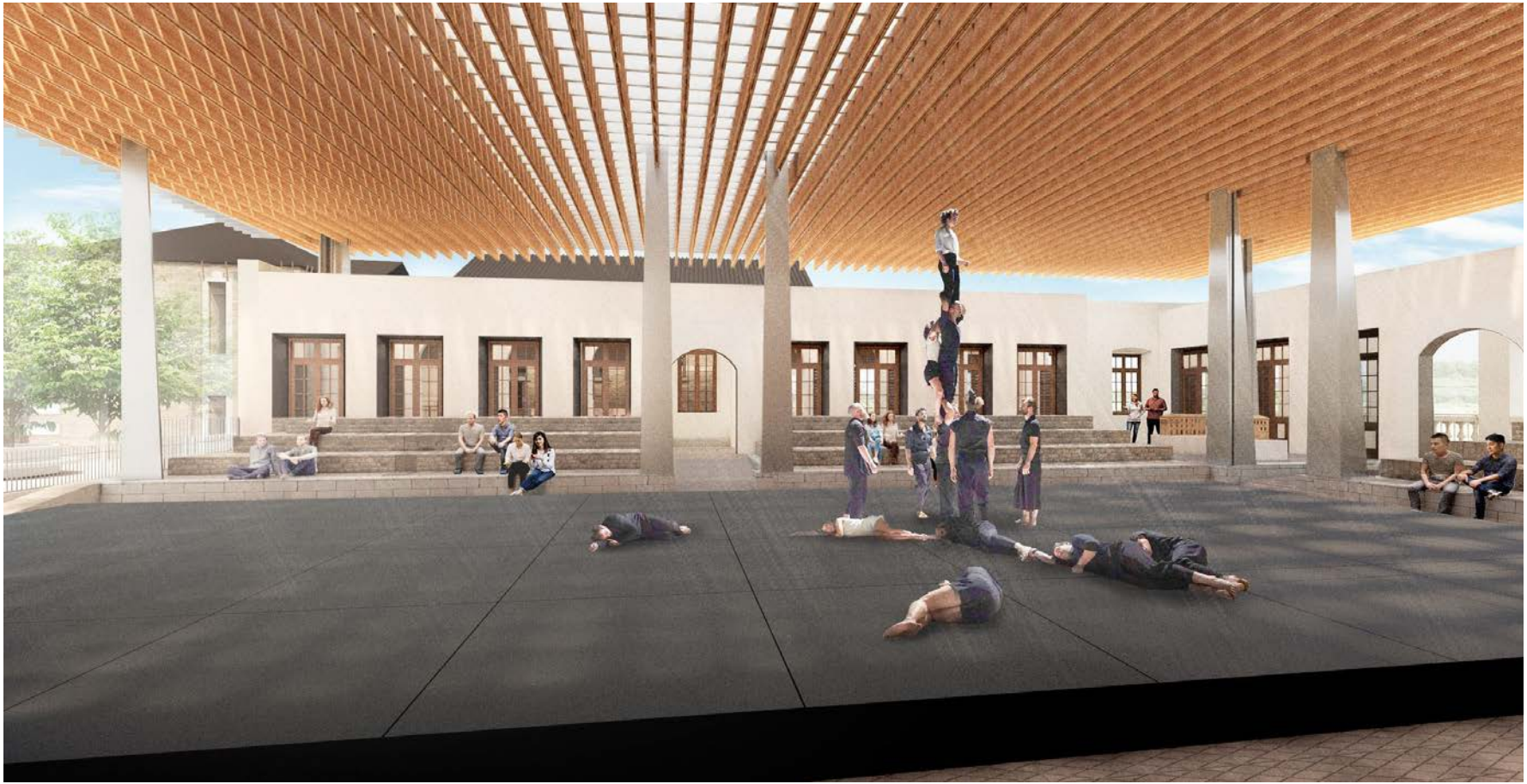


Figure 55 – Partial reconstruction of West Wing to house back-of-house facilities

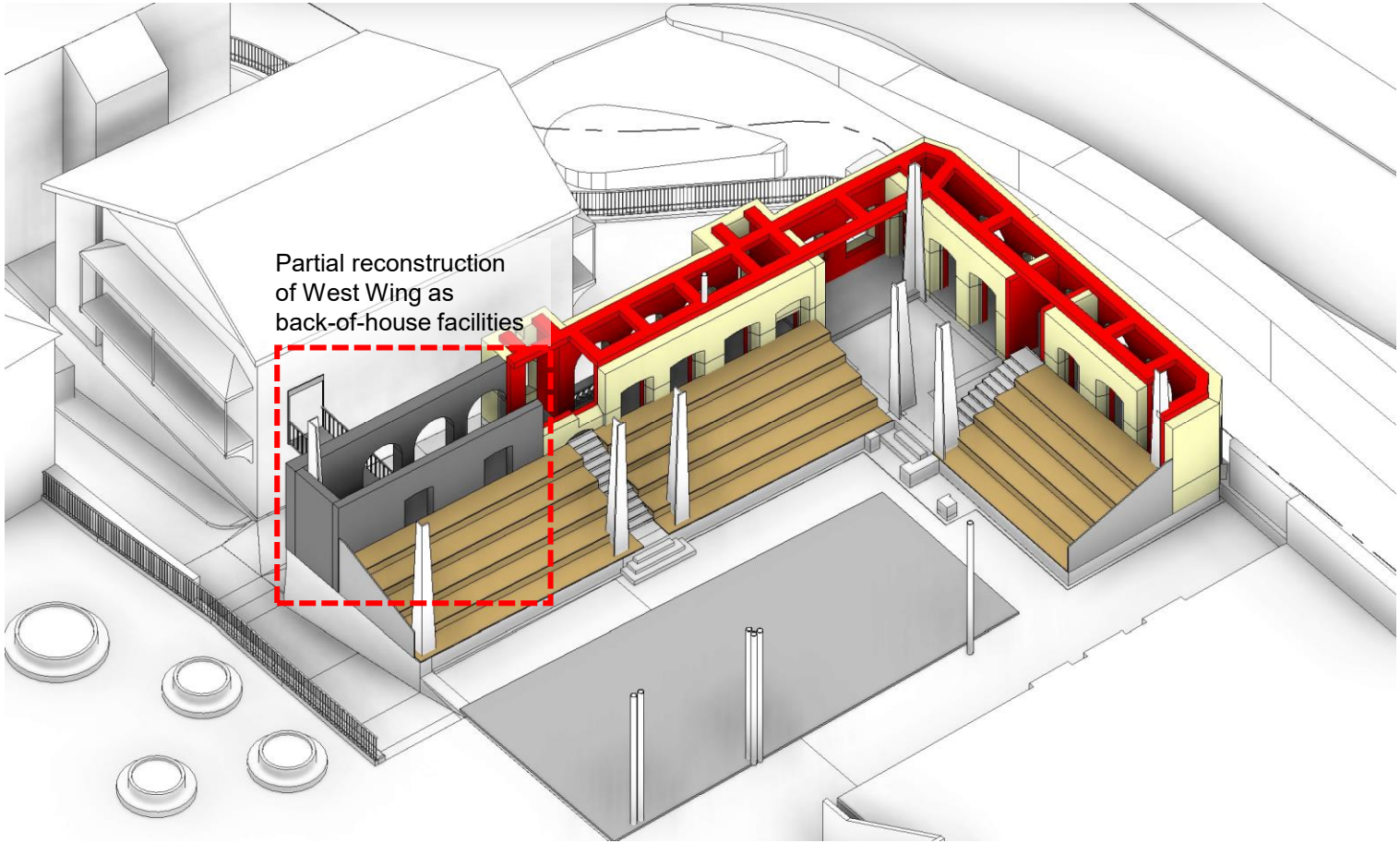


Figure 56 – Re-introducing previously existed footbridge connecting Block 4 and Block 6, enhancing performers' movement and back-of-house facilities

Previously existed footbridge

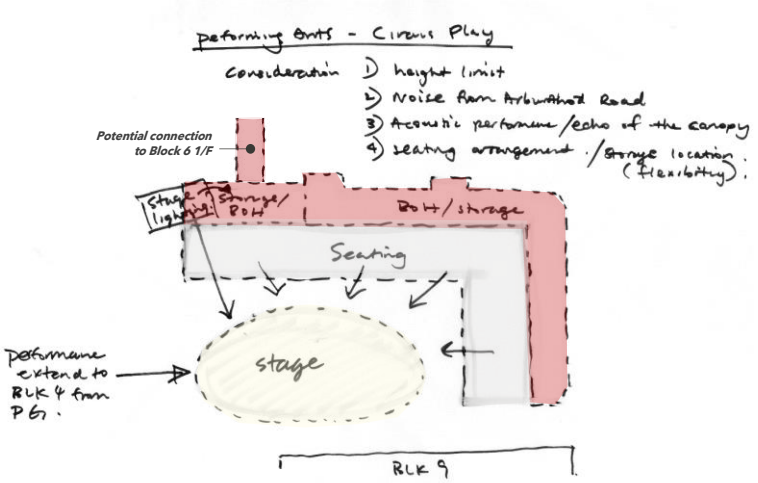
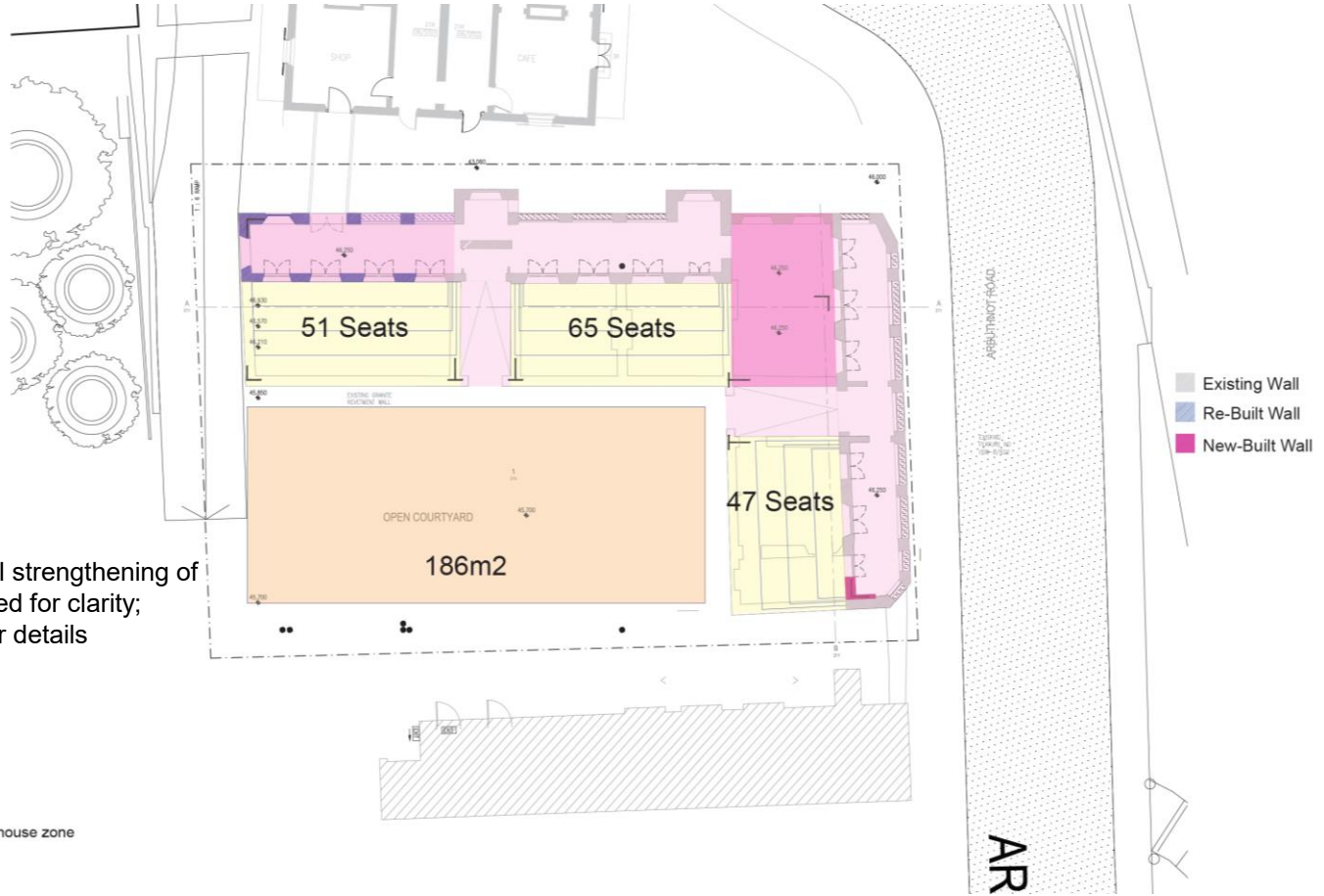


Figure 57 – A covered performance space to enhance performing art opportunities; stage and seating area with 163 seats



Note – Structural strengthening of brick walls omitted for clarity; see Figure 38 for details

Figure 58 – Some character defining elements salvaged during removal works for potential reuse or reinterpretation



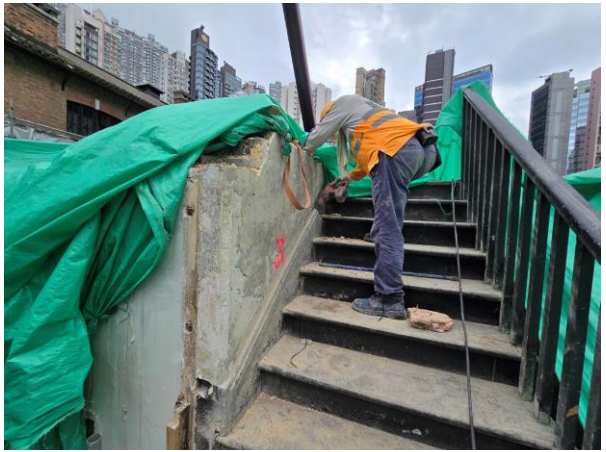



Figure 59 – Sample screen captures of digital 3D model of Block 4 for record and future interpretation