

**Heritage Impact Assessment
on Workmen's Quarters, Senior Staff Quarters And
Treatment Works Building of the Former Elliot Pumping Station and Filters
in Pokfulam**

BACKGROUND

The University of Hong Kong (the University) celebrated its centenary in 2011. The implementation of the new '3+3+4' academic structure and a new four year curriculum will add 40% more students and 200 more teaching staff to the University's population by 2012. Consequently, expansion westward into the former Water Supplies Department (WSD) Elliot filters site was adopted, with the new section to be known as Centennial Campus. The site retains three historic buildings related to the activities of the WSD –

- Workmen's Quarters (For photos, please refer to Figures 1 – 4 at Appendix);
- Senior Staff Quarters (For photos, please refer to Figures 5 – 8 at Appendix); and
- Treatment Works Building which will remain under WSD's ownership and maintenance (For photos, please refer to Figures 9 – 10 at Appendix).

Please refer to Figures 11 and 12 at Appendix for site plans showing the location of the Centennial Campus and the three historical buildings.

2. The Workmen's Quarters and Senior Staff Quarters will be adapted and integrated into the "entrance plaza" of the new Centennial Campus development. Since the Treatment Works Building is currently owned and maintained by WSD, no works will be proposed inside the building. However, with the agreement of WSD, the upper decks on the reservoirs at both sides of the Treatment Works Building will be converted into landscape garden and two linking bridges spanning over the building will be constructed and become the open space of the campus.

Workmen's Quarters

Year completed	:	1918 – 1919
Heritage value	:	Grade 3 status confirmed by the Antiquities Advisory Board (AAB) on 22 January 2010
Proposed new usage	:	Information centre for the University

Senior Staff Quarters

Year completed	:	1923 – 1924
Heritage value	:	Grade 2 status confirmed by AAB on 18 December 2009
Proposed new usage	:	Reception facilities for the University, as well as display gallery and office for the University Press

Treatment Works Building

Year completed	:	1930 – 1931
Heritage value	:	Grade 3 status confirmed by AAB on 22 January 2010
Proposed new usage	:	To be determined by WSD

STATEMENT OF CULTURAL SIGNIFICANCE**Site**

3. The Elliot Pumping Station and Filters retain some elements of water works infrastructure of the early twentieth century.

Workmen's Quarters

4. The Workmen's Quarters, a Grade 3 building, is a simple brick structure constructed in 1918 – 1919. The building is a representative example of Chinese workmen's quarters on Government sites. Together with the Senior Staff Quarters, they reflect the strict hierarchy of employment and the relative standards of facilities provided within the Hong Kong Public Service.

Senior Staff Quarters

5. The Senior Staff Quarters, a Grade 2 building, is a two-storey stone residence constructed in 1923 – 1924. The building is an excellent example of the

colonial bungalow/Arts and Crafts style of residential architecture of the 1920s in Hong Kong.

Treatment Works Building

6. The Treatment Works Building, a Grade 3 building, is a three-storey concrete and brick structure built in 1930 – 1931. The building is a utilitarian structure reflecting the pre-Second World War development of filtration processes for public water supply. It is a representative example of the technical processes, particularly the equipment which remains *in-situ*.

HERITAGE IMPACT ASSESSMENT (HIA)

7. In accordance with Development Bureau Technical Circular (Works) No. 06/2009 and the Antiquities and Monuments Office (AMO)'s Guidance Note to HIA Submission, an HIA is to be carried out to examine the impact of the proposed works on the historic buildings concerned and to devise mitigation measures if adverse impact is unavoidable. The requirement of HIA is stipulated in the lease condition.

I. Adaptive reuse of the Workmen's Quarters and the Senior Staff Quarters

A. *Conservation Principle to conserve the cultural significance of the Workmen's Quarters and the Senior Staff Quarters*

8. The recommended Conservation Principles for devising and implementing necessary mitigation measures to conserve and interpret the Workmen's Quarters and the Senior Staff Quarters are set out as follows -

(a) Building Fabrics

- (i) Authenticity of the Workmen's Quarters and the Senior Staff Quarters, as well as their architectural merits, should be maintained with minimum intervention. The key character defining elements (CDEs) should be preserved or repaired, namely -

- External elements representing the simple building form of the Workmen's Quarters such as the simple roof form, double-layered Chinese pan and roll tiles, red facing brickwork and the colonnade.
- The façade of the Workmen's Quarters including the cast iron pillar with granite base, cast iron roof eaves gutter and the rainwater downpipes, and the granite steps at entrances.
- Timber roof structures comprising king post roof trusses, purlins and rafter battens in the Workmen's Quarters.
- External elements representing the Arts and Crafts Style of the Senior Staff Quarters such as multiple roof forms, double-layered Chinese pan and roll tiles, chimneys, and masonry external wall.
- The vent grilles at the rear elevation and cast iron pillars at the front verandah of servant's annex of the Senior Staff Quarters.
- Timber roof structures comprising king post roof trusses, the hip rafters and valley rafters, purlins, rafter battens, and the timber suspended ceiling with cornice in the Senior Staff Quarters.
- Internal layout, especially the nearly identical floor plans, of the Senior Staff Quarters.
- Interior elements, such as timber framed windows and doors, timber staircase and fireplace, in the Senior Staff Quarters.

- (ii) New additional and alteration works should be kept to the minimum and reversible to the original building fabrics. New works should be properly located to minimise the visual impact on the original building fabrics. New elements should be of compatible design but distinguishable from the existing building fabrics.

(b) **Building Services**

- (i) Water tanks for fire services water, portable water and flush should be accommodated in the new buildings in the Centennial Campus as far as possible.
- (ii) Electricity meter room should be accommodated in the new buildings in the Centennial Campus as far as possible.

- (iii) New building services pipelines should be grouped together when entering the buildings through existing wall openings wherever practical to minimise the number of new wall openings for pipes, conduits and trunkings.

(c) Documentation and Monitoring

- (i) Cartographic and photographic surveys to properly record the historic buildings have been conducted and these two survey records would be available prior to the commencement of actual site works.
- (ii) Further maintenance works should follow the principles laid down in the HIA during operation.

B. Key Design Proposal

9. The key proposed works for conservation and adaptive re-use, as well as enhancement works, are listed as follows -

(a) Conservation and adaptive re-use of the Workmen's Quarters as Information Centre for the University

- (i) The existing building will be conserved, adaptively re-used and upgraded for modern day usage and for meeting various current standards.
- (ii) Openings will be made on the cross walls for converting into a bigger office, and on two gable walls for connecting the covered walkway from the future MTR station and the covered walkway to the new Centennial Campus building.
- (iii) Light weight glass canopy, which is detached from the building, will be added on the east side for connecting the covered walkway from the lift tower to the future MTR station at the University.

- (iv) A light weight glass structure will be added at the west side for connecting the new Centennial Campus building, as well as part of the information centre.
- (b) Conservation and adaptive re-use of the Senior Staff Quarters as reception facilities for the University, as well as display gallery and office for the University Press
- (i) The existing building will be conserved, adaptively re-used and upgraded for modern day usage and for meeting various current standards. The ground floor will be converted into reception facilities for the University and display gallery for the University Press while the first floor will be converted into office for the University Press.
 - (ii) The original layout of the rooms will be retained, and some doors will be widened for wheelchair users.
 - (iii) The verandah at ground floor will be enclosed with full height glass panel behind the balustrade.
 - (iv) A light weight single storey glass annex will be added to the rear side as extension for the reception area.
- (c) Enhancement works to comply with statutory requirements
- (i) Barrier free access will be provided at, and a wheelchair platform will be added to, the interior of the Senior Staff Quarters. The associated alterations in the building components include forming one wheelchair door opening on the wall on each floor and raising the floor level to the landing of the wheelchair platform on the ground floor.
 - (ii) The external floor level at the ground floor entrance of the Senior Staff Quarters will be raised and a ramp will be added at the east elevation for the provision of barrier free access.

- (iii) An external staircase will be added at the east side of the Senior Staff Quarters as the second means of escape staircase.
- (iv) The reinforced concrete external staircase of the servant's annex of the Senior Staff Quarters will be re-constructed to satisfy the requirements for means of escape staircase for the first floor, and as the sole means of escape staircase.
- (v) The requirements for safety barriers will affect the existing balustrade at the first floor verandah of servant's annex of the Senior Staff Quarters.
- (vi) Timber doors on the escape route will be changed to fire rated doors, and the swing of the entrance door to both floors will be changed (from open inwards to open outwards) which may necessitate shifting back of the ground floor entrance door.
- (vii) Building services will be upgraded for the new usage. New openings on the existing internal partitions will be formed for the passing of ducts, pipes, conduits and trunkings.
- (viii) Fire services installation such as sprinkler system and smoke detection system will be added to enhance fire safety.

C. Mitigation Measures for the Conversion Works

10. For areas where the possible impact of the conversion works could not be avoided, the following mitigation measures based on the above-mentioned Conservation Principles have been devised -

- (a) Conservation and adaptive re-use of the Workmen's Quarters as Information Centre for The University
 - (i) Condition survey has been conducted. The condition survey report will be submitted to AMO for information. The defects, such as

cracked and deteriorated bricks, should be repaired prior to the commencement of any works.

- (ii) Extensive strengthening work due to excessive loading on existing structure should be avoided.
 - (iii) The construction of the additional glass canopies and glass annex should be detached from the brickwall.
- (b) Conservation and adaptive re-use of the Senior Staff Quarters as reception facilities for the University as well as display gallery and office for the University Press
- (i) Study on the structural stability of the existing structures should be carried out before the commencement of any works. The report should be submitted to AMO for information.
 - (ii) Extensive strengthening work due to excessive loading on existing structure should be avoided.
 - (iii) The wheelchair platform is designed to be located inside the building to avoid the visual impact of a high structure (with the top overrun) adjoining the external wall.
 - (iv) Raised floor system will be used for raising the floor level to the landing of the wheelchair platform on the ground floor in lieu of filling with concrete.
 - (v) The new ramps and necessary floor level changes for barrier free access on the ground floor will be structurally isolated from the original historic building. They will be understated in character to minimise the visual impact without overwhelming the elevation of the historic building. Light weight materials such as steel/glass reinforced fabric grating in lieu of concrete will be used to avoid additional modifications works of the existing surface water drainage system and prevent ingress of water into the building.

- (vi) The re-constructed reinforced concrete external staircase to the servant's annex will be compatible with but distinguishable from the existing building.
 - (vii) The modifications works to the balustrade at the first floor verandah of servant's annex should be kept minimal and reversible.
 - (viii) The new fire rated doors should follow the same style of the existing timber doors.
 - (ix) The structural frame for the light-weight single storey glass annex should be isolated from the building and at a location where visual impact can be minimised by the surrounding trees.
 - (x) The masonry external wall which becomes the internal wall of the light weight single storey glass annex should not be disturbed.
 - (xi) The fixing to the granite masonry external wall for the flashing should be kept to a minimum, and will be made on the joints of the masonry wall.
- (c) Enhancement works to compile with statutory requirements
- (i) Destructive test will only be conducted in the structural survey and the number of tests will be kept to the minimum in order to minimise the damage. The location, sample size and reinstatement method of the destructive test should be agreed with AMO prior to the test.
 - (ii) The addition external staircase for the Senior Staff Quarters should be an independent structure discernible from the building.
 - (iii) Building services will be well organised and will make use of existing wall openings as far as practicable. They will be located above the existing timber suspended ceiling in the Senior Staff Quarters to minimise the visual impact on the interior. New brick openings will

be formed by removing whole pieces of brick one by one to minimise the damage on individual bricks. The removed historic bricks, in whole piece, will be salvaged for future restoration where necessary. Details of building services installation in both buildings should be agreed with AMO prior to the commencement of work.

- (iv) Louvres that are necessary for ventilation should be installed by replacing the existing glazing panes of the timber windows without affecting the timber window frames.
11. Diagrams showing the proposed works on the Workmen's Quarters and the Senior Staff Quarters are at Figures 13 – 15 and Figures 16 – 18 at Appendix respectively.

II. Two bridges spanning over the Treatment Works Building

a. Works Proposals

- (i) The decks on the reservoirs at both sides of the Treatment Works Building will be converted into landscape garden and extension to the open space at the upper floor of the Centennial Campus building.
- (ii) Two bridges spanning over the Treatment Works Building will be added to connect the two landscape decks and form a jogging loop.
- (iii) The two bridges located above the Treatment Works Building will also serve as viewing platforms for appreciating the building with tanks on both sides.

b. Mitigation Measures for the Proposed Works

- (i) The bridges should be spanned over the Treatment Works Building without utilising the Treatment Works Building as the bridges' support.

- (ii) The design and material of the bridges should be discernible from the external appearance of the Treatment Works Building.
 - (iii) The design of the bridge will be in an arch form to highlight the significance of the Treatment Works Building and not to obstruct the view to the building.
 - (iv) Reports on cartographic and photographic surveys to properly record the historic buildings have been prepared.
12. Diagrams showing the proposed works on the Treatment Works Building are at Figures 25 – 26 at Appendix.
13. The HIA has concluded with the observation that the proposal will meet the primary objectives of properly conserving the Workmen's Quarters and the Senior Staff Quarters, enhancing the appreciation of the Treatment Works Building and meeting the needs of the University.

The University of Hong Kong
March, 2012

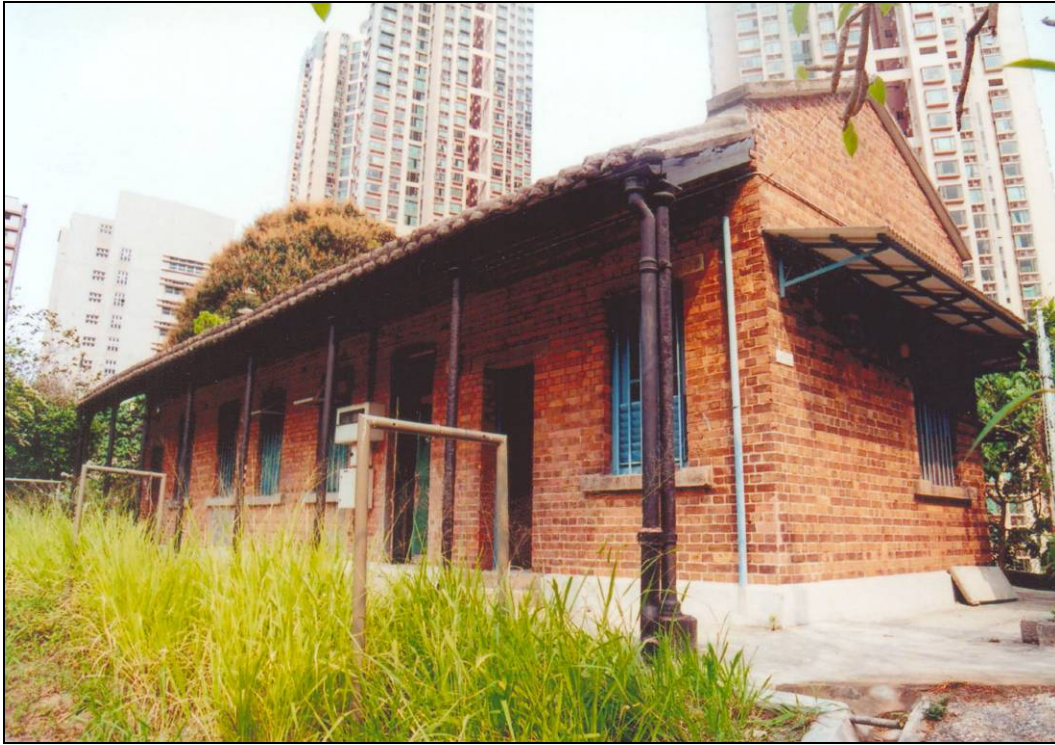


Figure 1 Workmen's Quarters – front and east elevation



Figure 2 Workmen's Quarters – rear elevation



Figure 3 Workmen's Quarters – interior view



Figure 4 Workmen's Quarters – interior view



Figure 5 Senior Staff Quarters – front elevation

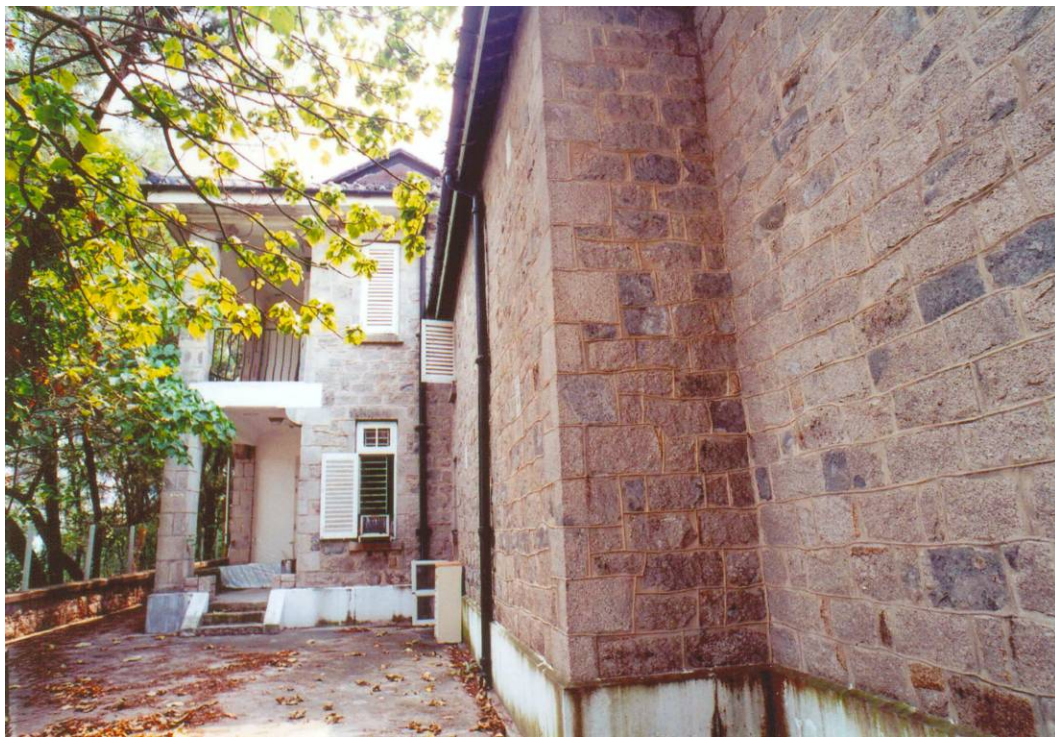


Figure 6 Senior Staff Quarters – rear elevation (part)



Figure 7 Senior Staff Quarters – ground floor interior view



Figure 8 Senior Staff Quarters – first floor interior view



Figure 9 Treatment Works Building – front and east elevation



Figure 10 Treatment Works Building – rear and west elevation

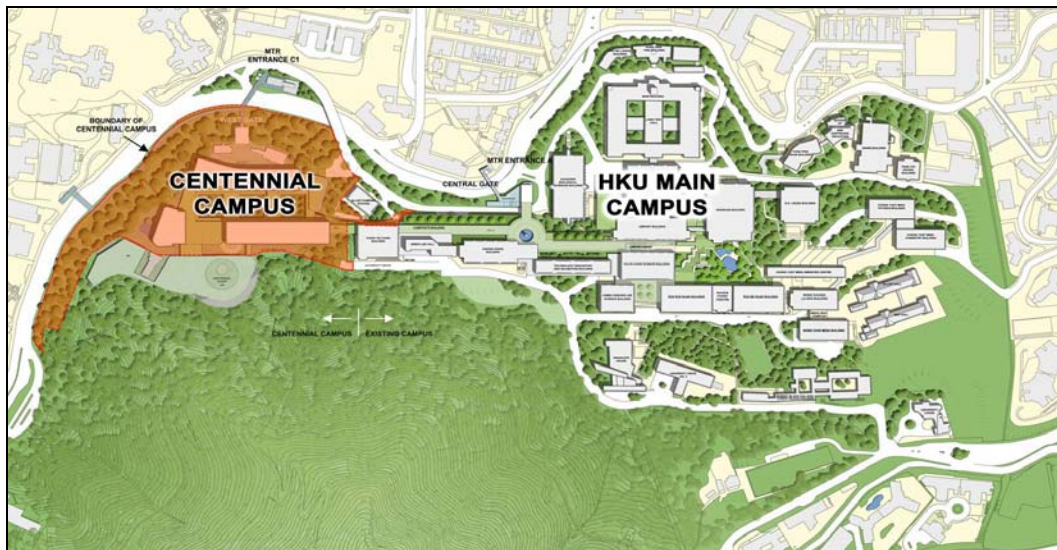


Figure 11 Site plan of the University showing the location of the Centennial Campus

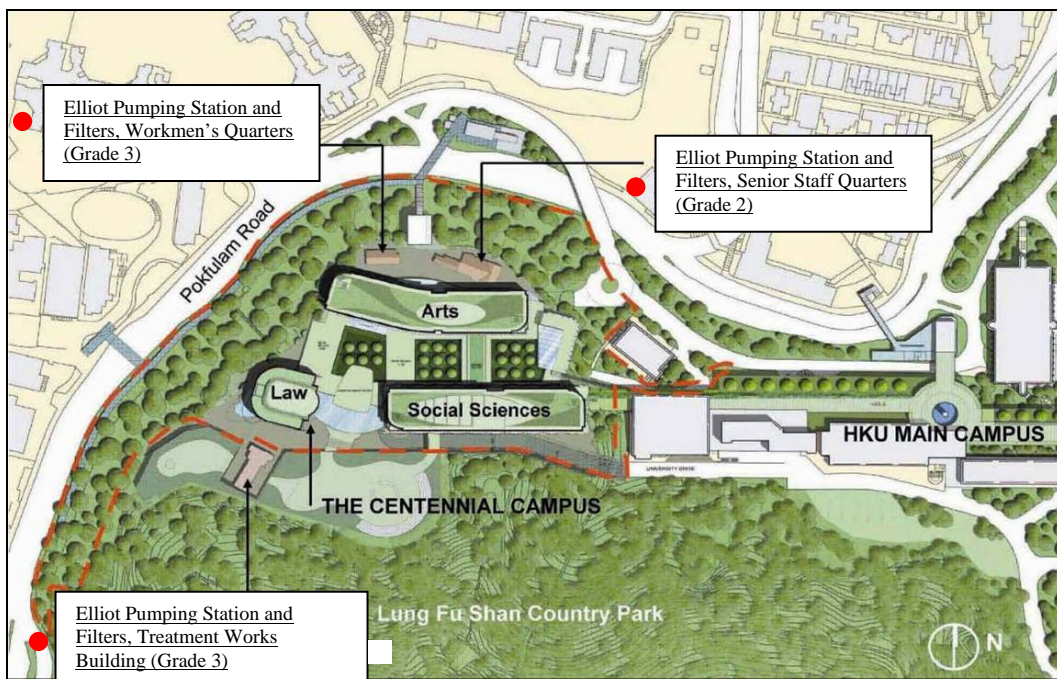


Figure 12 Site plan of the Centennial Campus with the three historic buildings highlighted



Figure 13 Ground Floor Plan showing the proposed works at the Workmen's Quarters

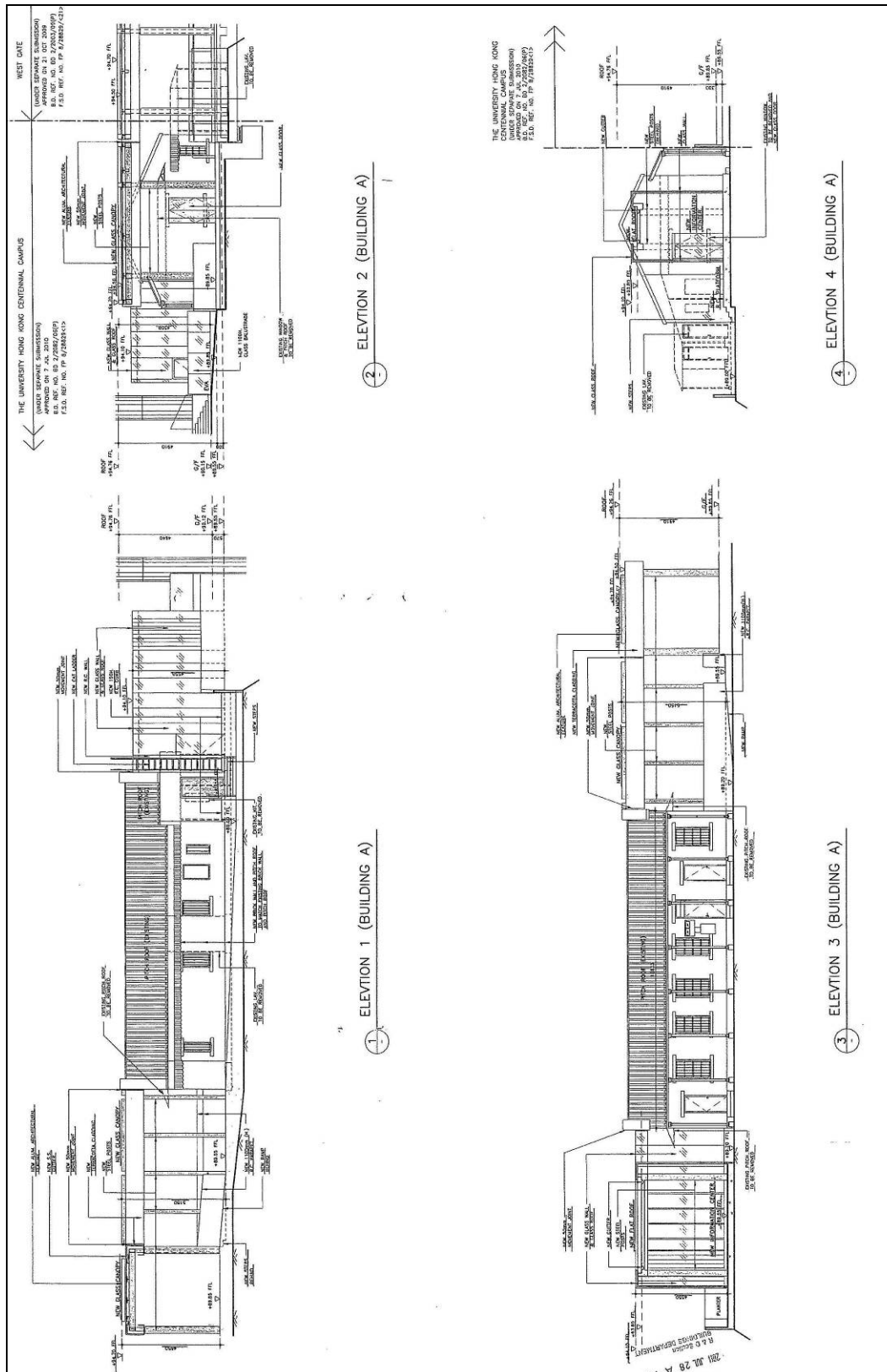


Figure 14 Elevation showing the proposed works at Workmen's Quarters



Figure 15 Workmen's Quarters –Photo montage Showing the proposed glass box and canopy

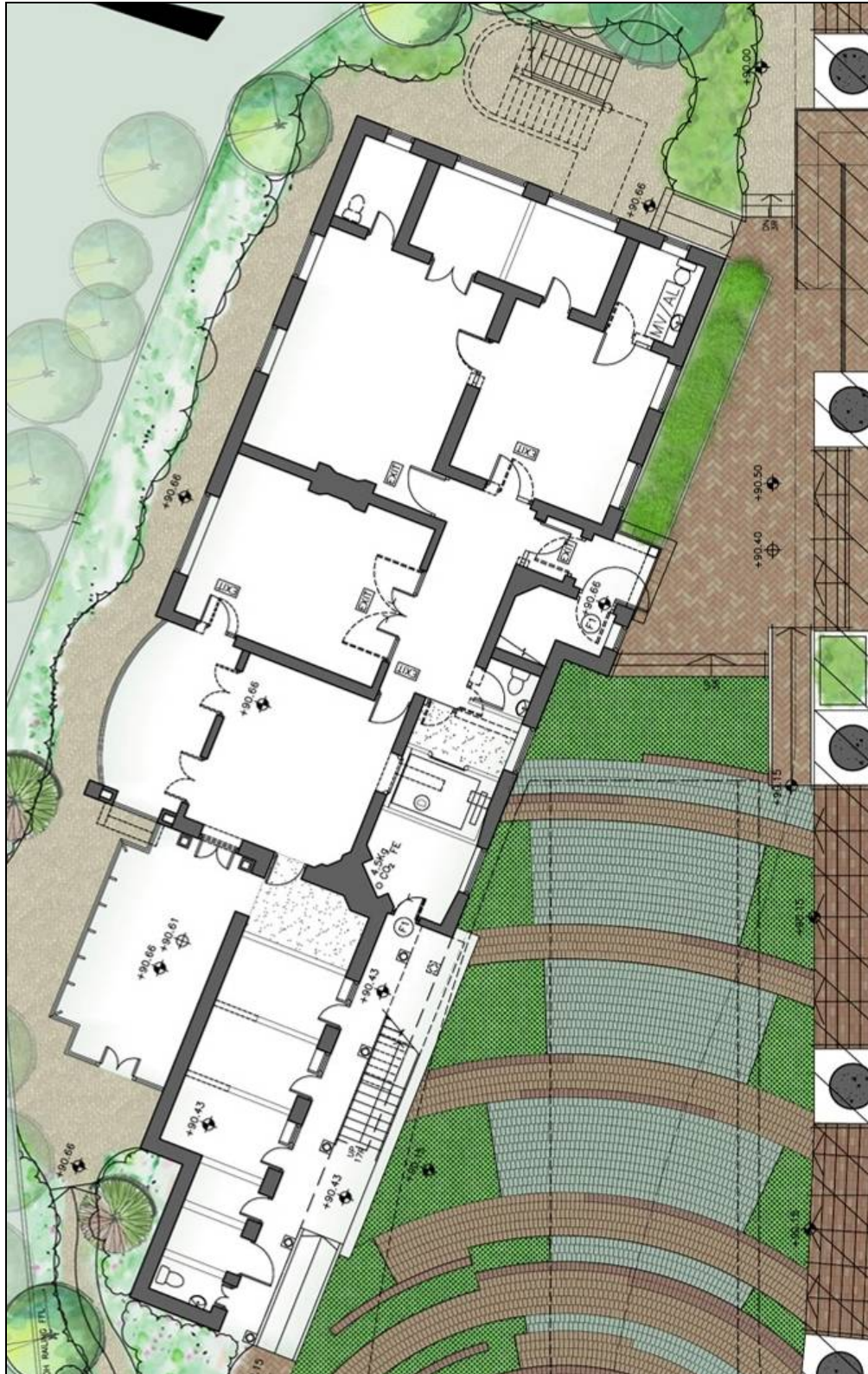
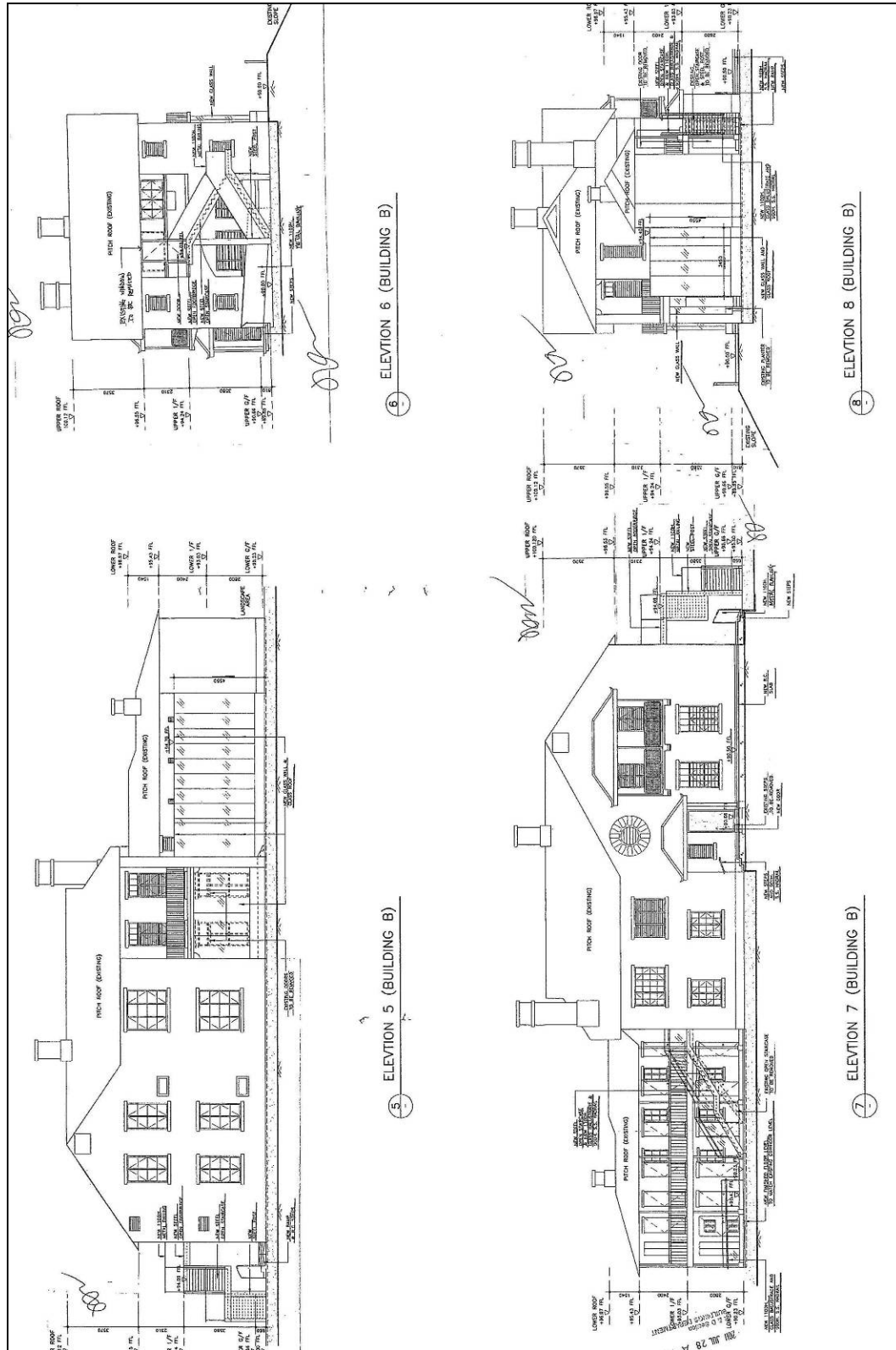


Figure 16 Ground floor plan showing the proposed works at Senior Staff Quarters



Figure 17 First floor plan showing the proposed works at Senior Staff Quarters



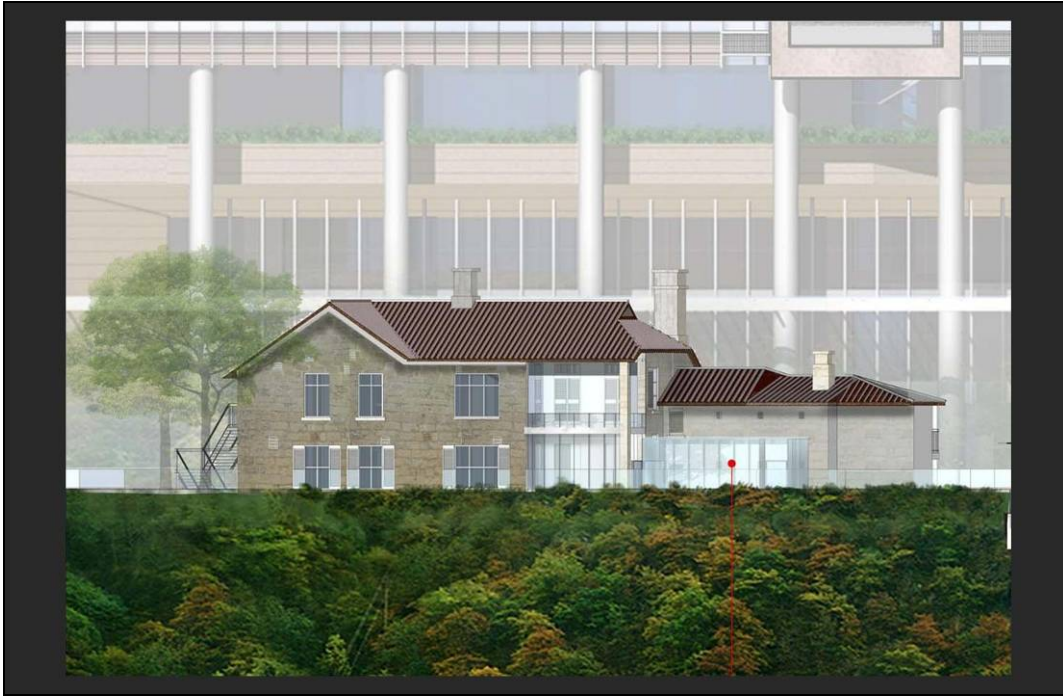


Figure 19 Senior Staff Quarters – Photo montage showing the rear view from Pokfulam Road with existing trees hidden

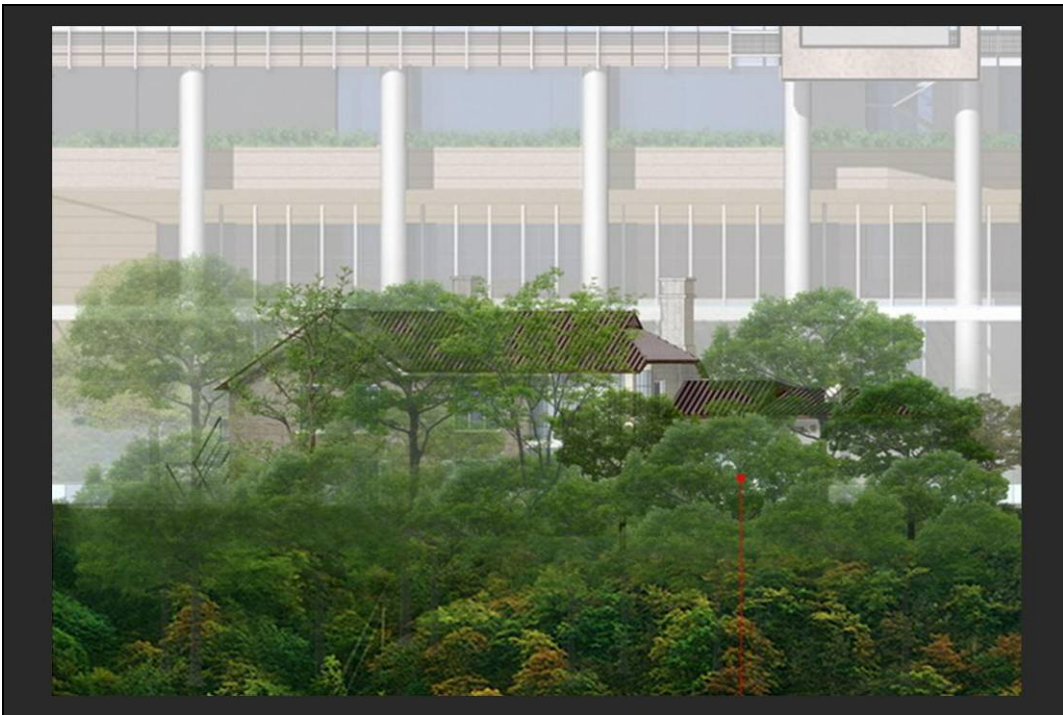


Figure 20 Senior Staff Quarters – Photo montage showing the rear view from Pokfulam Road with existing trees



Figure 21 Senior Staff Quarters – Photo montage showing the view of proposed glass box with existing trees hidden

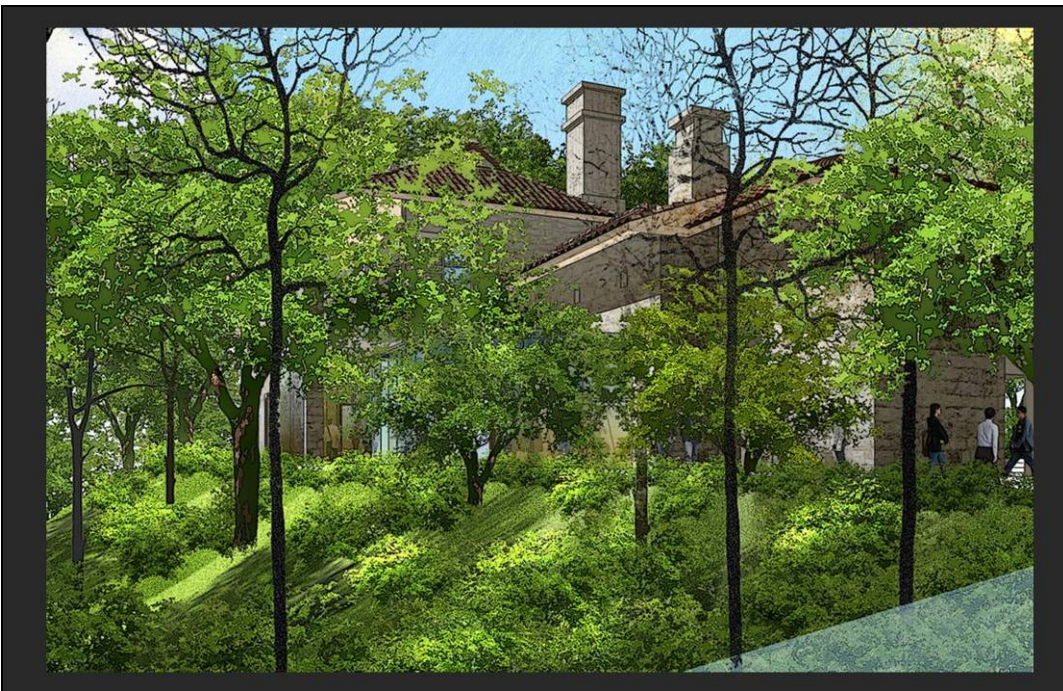


Figure 22 Senior Staff Quarters – Photo montage showing the view of proposed glass box with existing trees

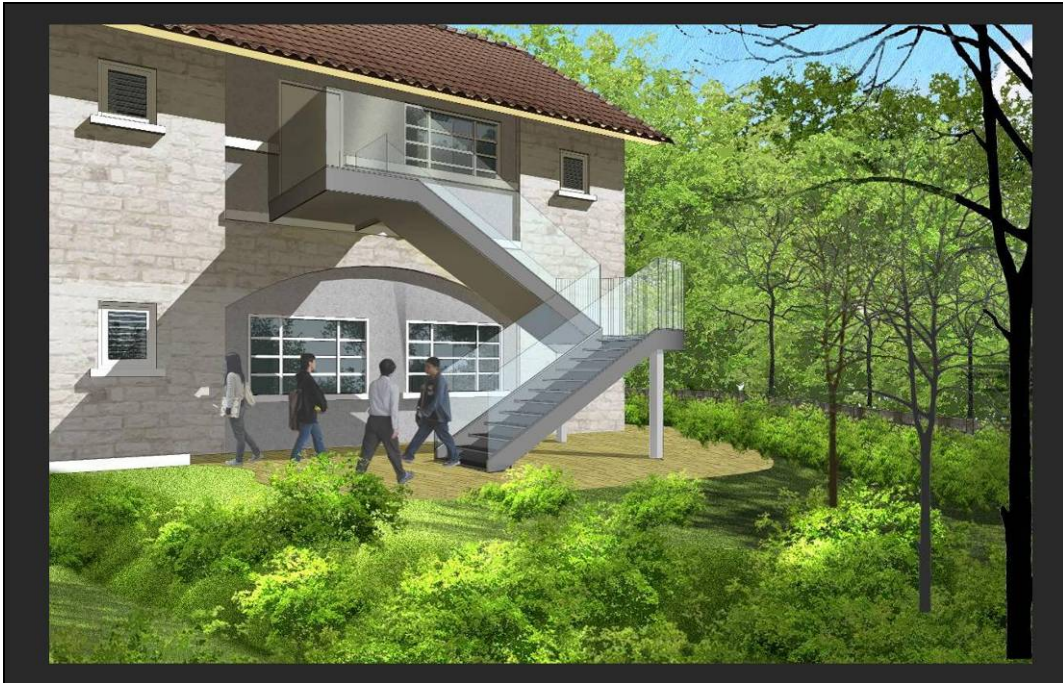


Figure 23 Senior Staff Quarters –Photo montage showing the view of new means of escape staircase with trees hidden

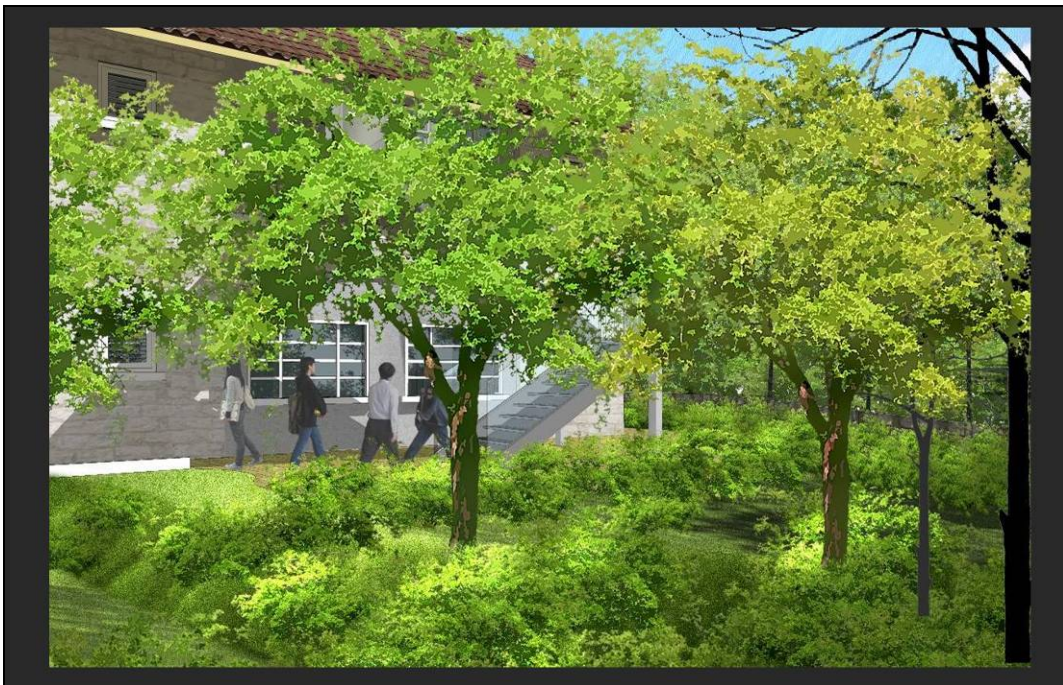


Figure 24 Senior Staff Quarters –Photo montage showing the view of new means of escape staircase with trees and new landscape

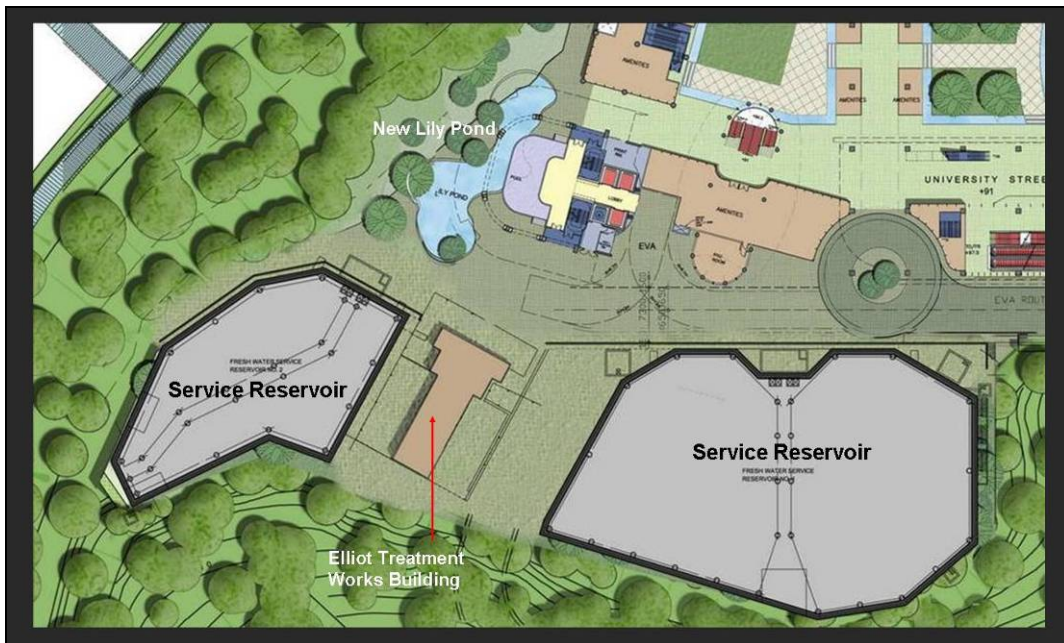


Figure 25 Proposed Development in the vicinity of the Treatment Works Building

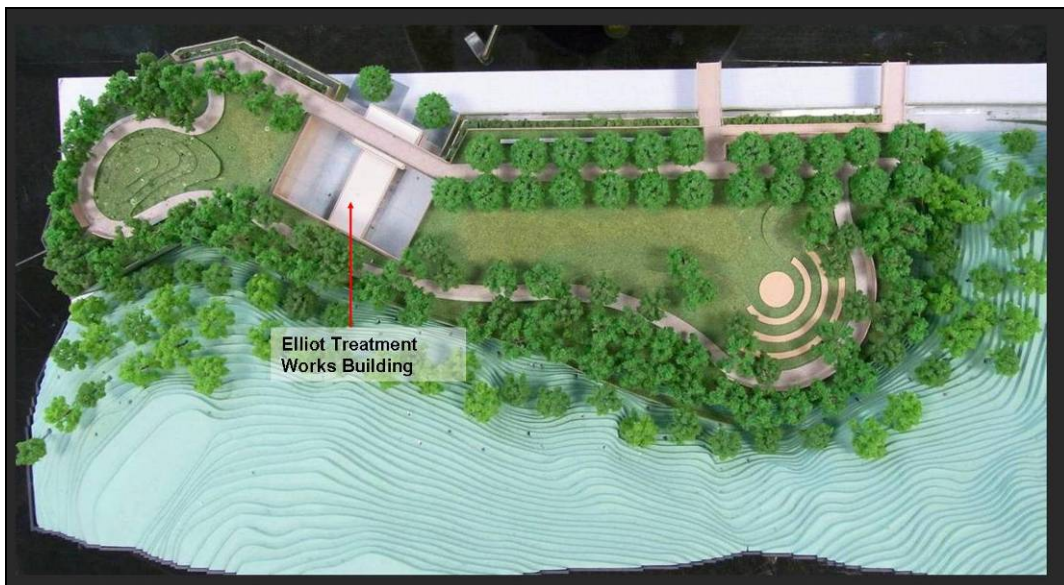


Figure 26 Proposed landscape in the vicinity of the Treatment Works Building



Figure 27 Photo montage showing the Elevation of Treatment Works Building

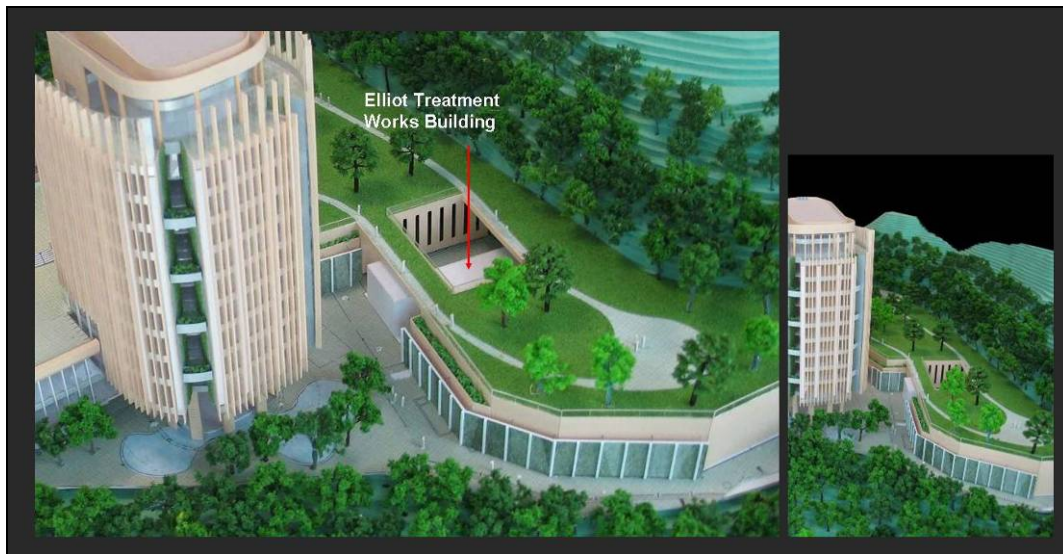


Figure 28 Model showing the Treatment Works Building



Figure 29 Model showing the front view of new bridge spanning over the Treatment Works Building



Figure 30 Model showing the oblique view of new bridge spanning over the Treatment Works Building