

**Harbour-front Enhancement Committee
Sub-committee on Harbour Plan Review**

**Harbour Area Treatment Scheme Stage 2A – Upgrading of Central and Wan Chai
East Preliminary Treatment Works**

Purpose

1. The purpose of this Paper is to brief Members on the upgrading works to be carried out at the existing Preliminary Treatment Works (PTW) of Central and Wan Chai East. The upgrading works are an integral part of the Harbour Area Treatment Scheme (HATS) Stage 2A Project and the Members' views are sought on the aesthetic and landscape design proposals at these two harbour-front PTWs.

Background

2. HATS is a large scale sewage collection and treatment project for the areas on both sides of Victoria Harbour. The scheme is being implemented in stages. Stage 1 of the project was completed and commissioned in December 2001. Stage 2 is being implemented in 2 phases, namely Stage 2A and Stage 2B. The upgrading of Central and Wan Chai East PTWs form part of Stage 2A which is in the design and implementation stage.

3. The facilities completed under HATS Stage 1 collect about 75% of the sewage generated from areas on both sides of the Harbour, and deliver it to Stonecutters Island Sewage Treatment Works (SCISTW) for treatment. After the commissioning of HATS Stage 1, there has been a significant improvement to the water quality of the Harbour that is particularly evident in the water quality to the eastern side of the Harbour. To comprehensively improve the water quality in the Harbour, it is necessary to collect and treat the remaining 25% of the sewage generated from the northern and south-western part of Hong Kong Island, which currently discharges into the harbour after the screening of rags and grit only. This is one of the main objectives of HATS Stage 2A.

4. After the completion of HATS Stage 2A, screened sewage from eight PTWs on Hong Kong Island in North Point, Wan Chai East, Central, Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau will be conveyed by deep sewage tunnels for chemically enhanced primary treatment and disinfection at SCISTW before being discharged to the sea.

5. Drainage Services Department (DSD) have previously consulted the Sub-committee on Harbour Plan Review of the Harbour-front Enhancement Committee on 12 July 2006 and 28 July 2008 regarding the proposed use of the site at the eastern end of Fung Mat Road, Sai Ying Pun for the construction of the aforementioned deep sewage tunnels. The proposal was supported.

6. We have also consulted the Food, Environment, Hygiene & Works Committee of Central & Western District Council and Development, Planning & Transport Committee of Wan Chai District Council on 15 January 2009 and 17 February 2009 respectively. Both Committees support our proposed upgrading works for the Central and Wan Chai East PTWs

respectively.

Upgrading of the Preliminary Treatment Works

7. The upgrading works proposed at Central and Wan Chai East PTWs to meet the requirements of HATS Stage 2A are summarised below:

Central PTW (Enclosure 1)

- Replacement of existing plants and equipments, e.g. sewage pumps and deodourization facilities with higher capacity, more efficient and more reliable ones;
- Construction of new buildings to enclose the screening and grit handling facilities, the deodourization system and storage area;
- Construction of a below ground flume channels connecting to the drop shaft; and
- Improvement of aesthetic treatment to the existing buildings, boundary fence and landscaping works.

Wan Chai East PTW (Enclosure 2)

- Replacement of existing plants and equipments, e.g. sewage pumps and deodourization facilities with higher capacity, more efficient and more reliable ones;
- Construction of a new workshop and administration building to replace the existing old workshop building;
- Construction of a below ground distribution chamber and flume channels connecting to the drop shaft; and
- Improvement of aesthetic treatment to the existing buildings, boundary fence and landscaping works.

8. DSD is committed to delivering world-class quality sewerage facilities to the public and recognise that through the promotion of aesthetically pleasing buildings, the area surrounding the PTWs will be enhanced, creating a more pleasant environment for the local residents. As a result, the upgrading works proposed for the Central and Wan Chai East PTWs not only include those functional facilities necessary to meet the operational requirements of HATS Stage 2A but also incorporate improvement works that can enhance the visual and aesthetic environment.

Land Requirements

9. All permanent upgrading works will be contained within the existing PTW boundaries. Space within both Central and Wan Chai East PTWs is very limited because the construction of deep shafts and tunnels will also be on going at the same time in conjunction with the PTW upgrading works. Further restrictions on space arise because of the need to maintain the existing DSD preliminary treatment operations throughout the upgrading works period.

10. At Central PTW, a portion of the footpath on Western Fire Service Street is required for temporary works area because of the severe space constraints. It is proposed that the existing boundary walls of the PTW will be demolished and replaced with site hoarding along the edge of the footpath during the construction period.

11. No reclamation will be required.

Land Resumption

12. Since the proposed upgrading works and the new structures will be constructed within the existing PTW boundaries, no land resumption is required.

Aesthetic and Landscape Design

13. The aesthetic and landscaping works for Central PTW are shown on Enclosures 3 to 7 and for Wan Chai East PTW on Enclosures 8 to 11. The major aesthetic and landscape design proposals are summarised below for each PTW:

Central PTW

- The PTW site is overlooked by residents of the commercial buildings on the east and south sides and therefore roof top planting is proposed to both the existing and proposed buildings. This will enhance the view of the site from above as well as help to visually integrate the PTW with the adjacent Sun Yat Sen Memorial Park development.
- The Sun Yat Sen Memorial Park is being constructed on the lot to the west, the site is visible from water traffic on the harbour and from the future West Kowloon Cultural Centre site to the north. The visual impact on these areas has been considered whereby the new fine screen and grit trap building, the deodorizing building and store have been kept as low in height as possible.
- The existing inlet pumping station is very visible from the Harbour and it is proposed that a visual screen curtain wall be applied to enclose the upper levels. The curtain wall will have a horizontal emphasis provided by the expressed transoms. Multi-coloured glass panels set 1.0m away from the existing façade will be selected to echo the colours of the sea. In addition, the new and existing buildings will be clad in granite tiles to provide a robust, natural and visually appealing low maintenance finish that is more appropriate for the harbour front location. These upgraded finishes and the curtain wall screen will enhance the existing building's appearance, particularly from the harbour, and the upgraded finishes will be visually compatible with the backdrop of Hong Kong's central business district.
- The extent of existing soft landscaping within this PTW is very limited and there is no external soft landscaping. Upon completion of the upgrading works, the space available for soft landscaping remains small. It is therefore proposed to add as much planting as possible at the perimeter wall by creating returns in the boundary wall to create planting areas that will become part of the streetscape.
- The existing forbidding granite boundary wall will be reduced in height to provide a base above which pedestal panels of natural stone faced walls will alternate with open timber panelling. The open panelling is visually permeable providing glimpses of the soft landscaping and enhanced finishes to new and existing buildings within the site.
- This particular site environment, while in the past has been of a functional nature, will undergo significant rejuvenation when the adjacent park facility is completed.

Consequently special treatment has been given to the aesthetic design of this site in conjunction with the functionality considerations.

Wan Chai East PTW

- Upon completion of the works, the site will continue to be occupied by two buildings, the existing inlet pumping station building and a new workshop and administration building. The site is overlooked by high-rise buildings on Gloucester Road, and particularly by vehicles approaching the cross harbour tunnel from the Happy Valley direction.
- A decorative curtain wall screen is proposed to enclose and screen the upper portion of the existing inlet pumping station building in order to conceal the varying building heights, unsightly exposed services, windows, louver openings etc. that cannot be relocated for operational reasons. The screen, of laminated glass or similar, consists of undulating curved patterns created by images printed onto the glass interlayer. The theme of the pattern is intended to be reminiscent of water in sunlight in order to be harmonious with the Harbour-front location. The curtain wall screen will also help to regularise the existing building and create a facility that enhances rather than detracts from the Harbour-front environment.
- It is proposed to upgrade the external finishes of the existing building by retrofitting natural granite tiles to the elevations to improve the visual appearance and quality of the existing utilitarian finishes with a view to creating a facility that harmonises with the adjacent buildings and is more visually appealing from the adjacent harbour front promenade.
- The existing large rooftop advertising panel will be removed from the existing building to reduce its visual impact and the apparent height of the building.
- The new building will consist of a workshop at ground level and a partially buried administration facility adjoined to the north. By partially burying the administration portion of the new building, the apparent mass of new construction works will be significantly reduced. Much care has been taken to ensure the height of the new facility will not be greater than the existing facility.
- Extensive roof greening is proposed for the new workshop and administration building. Additional greening will be applied where possible to the existing building in order to reduce its visual impact on overlooking buildings and to assist with the redeveloped site enhancing the harbour-front promenade area's atmosphere.
- It is proposed to re-design the existing perimeter boundary wall where possible in order to expose the existing mature trees and to provide additional soft landscaped areas. The relocation of the perimeter walls will open up the existing cramped footpaths and gloomy public sitting out area and "give back to the Public" increased open space and amenities.

Environmental Impact during Construction Stage

14. The upgrading works will be carried out mainly within the existing boundary of PTWs. With the implementation of the environmental mitigation measures and monitoring requirements as stipulated in the EIA Report, the residual impacts of the construction works can be minimised to an acceptable level.

15. The operation of the existing PTWs will be maintained during the upgrading works. Hence, there will be no additional adverse impact on the water quality of the nearby seashore.

16. In order to reduce noise impacts, mitigation measures recommended in the EIA report, such as the adoption of quiet powered mechanical equipment, movable noise barriers and acoustic mats, will be implemented. There will not be an unacceptable residual environmental impact after the implementation of the mitigation measures.

17. After careful planning and design, the upgrading works will only affect a total of three trees within the PTWs. At Central PTW, two of the trees will be transplanted to more appropriate locations within the PTW. One tree at Wan Chai East PTW will be felled because its health is not good enough for transplantation. However, it will be compensated through the planting of new tree of better health and of a higher amenity value.

Construction Programme

18. The upgrading of Central and Wan Chai East PTWs are scheduled to commence in early 2011 for completion in 2014.

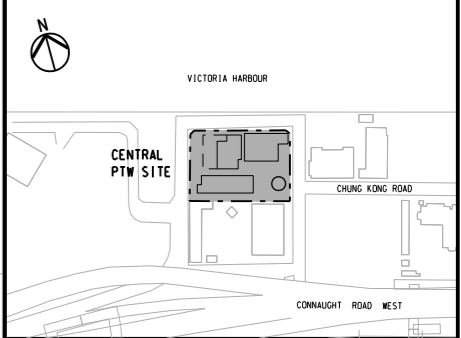
Views Sought

19. Members' views and comments are sought on the aesthetic and landscape design proposals to be incorporated into the PTW upgrading works at the two PTWs.

Attachments

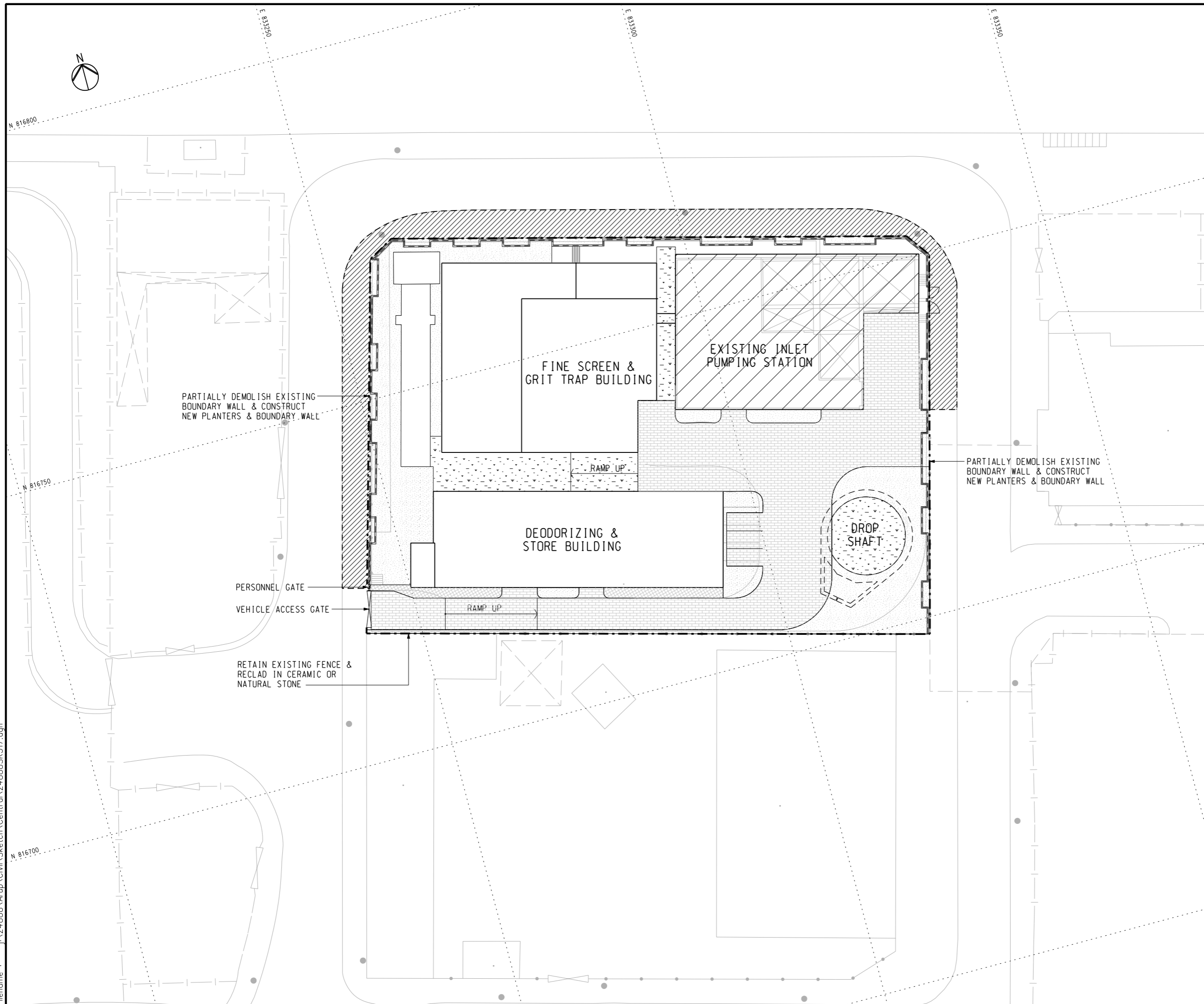
- Enclosure 1: Central PTW Proposed Upgrading Layout
- Enclosure 2: Wan Chai East PTW Proposed Upgrading Layout
- Enclosure 3: Central PTW Fine Screen & Grit Trap Building Elevations
- Enclosure 4: Central PTW Deodorization & Store Building Elevations
- Enclosure 5: Central PTW Upgrading Works for Existing Inlet Pumping Station Elevation
- Enclosure 6: Aesthetic and Landscape Design for Central PTW (Harbour View)
- Enclosure 7: Aesthetic and Landscape Design for Central PTW
- Enclosure 8: Wan Chai East PTW Existing Pumping Station & Screening Plant Elevational Treatment
- Enclosure 9: Wan Chai East PTW Administration & Workshop Building Section and Elevation
- Enclosure 10: Aesthetic and Landscape Design for Wan Chai East PTW (Harbour View)
- Enclosure 11: Aesthetic and Landscape Design for Wan Chai East PTW

Drainage Services Department – HATS Division
March 2009



KEY PLAN

- LEGEND:
- GRASSCRETE
 - SOFT LANDSCAPING
 - FOOTPATH
 - EXISTING BUILDING
 - SITE BOUNDARY
 - SITE BOUNDARY FENCE
 - DECORATIVE BLOCK WORK PAVING
 - PROPOSED TEMPORARY WORKS AREA



Rev	Description	By	Date

Consultant
ARUP 奧雅納工程顧問
 Ove Arup & Partners Hong Kong Limited

Project title
Agreement No. CE 8/2006 (DS)
Harbour Area Treatment Scheme Stage 2A
Upgrading of the Stonecutters Island
Sewage Treatment Works and the
Preliminary Treatment Works -
Investigation, Design and Construction

Drawing title
 CENTRAL PTW
 PROPOSED UPGRADING
 LAYOUT

Drawing no. Enclosure 1 Rev. -

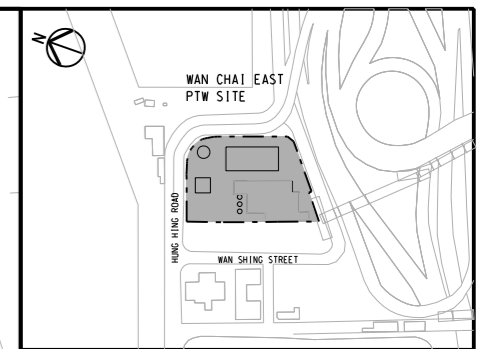
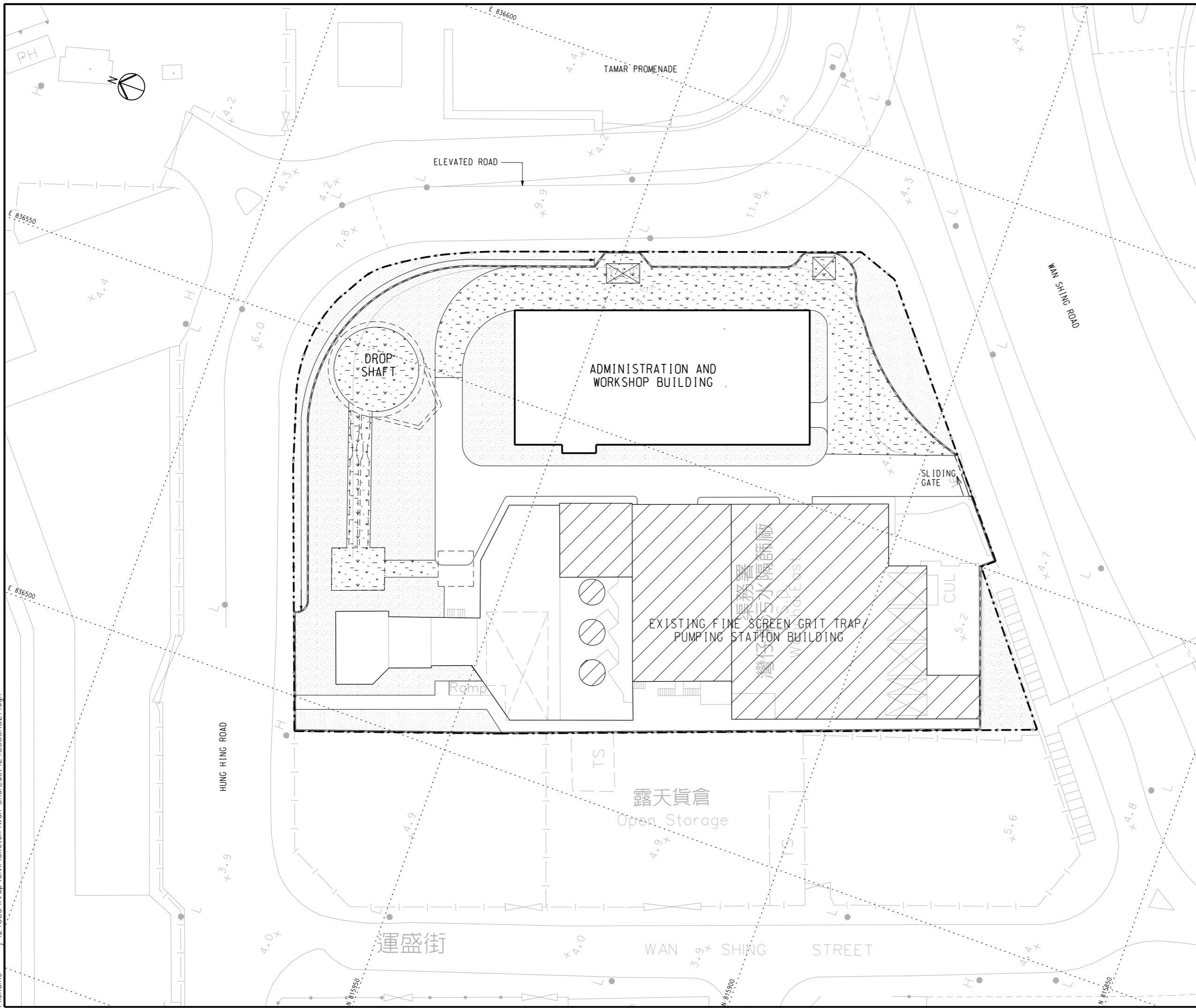
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Printed by : 2009-3-2
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KEY PLAN

- LEGEND:
- GRASSCRETE
 - SOFT LANDSCAPING
 - FOOTPATH
 - EXISTING BUILDING
 - SITE BOUNDARY
 - SITE BOUNDARY FENCE
 - DECORATIVE BLOCK WORK PAVING

Rev	Description	By	Date

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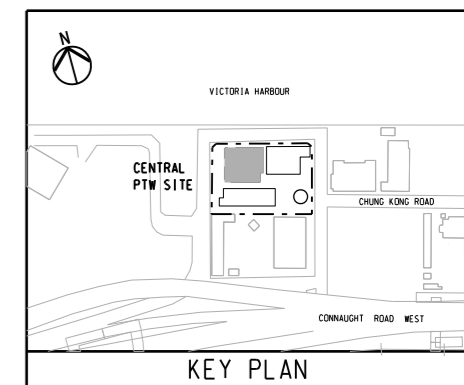
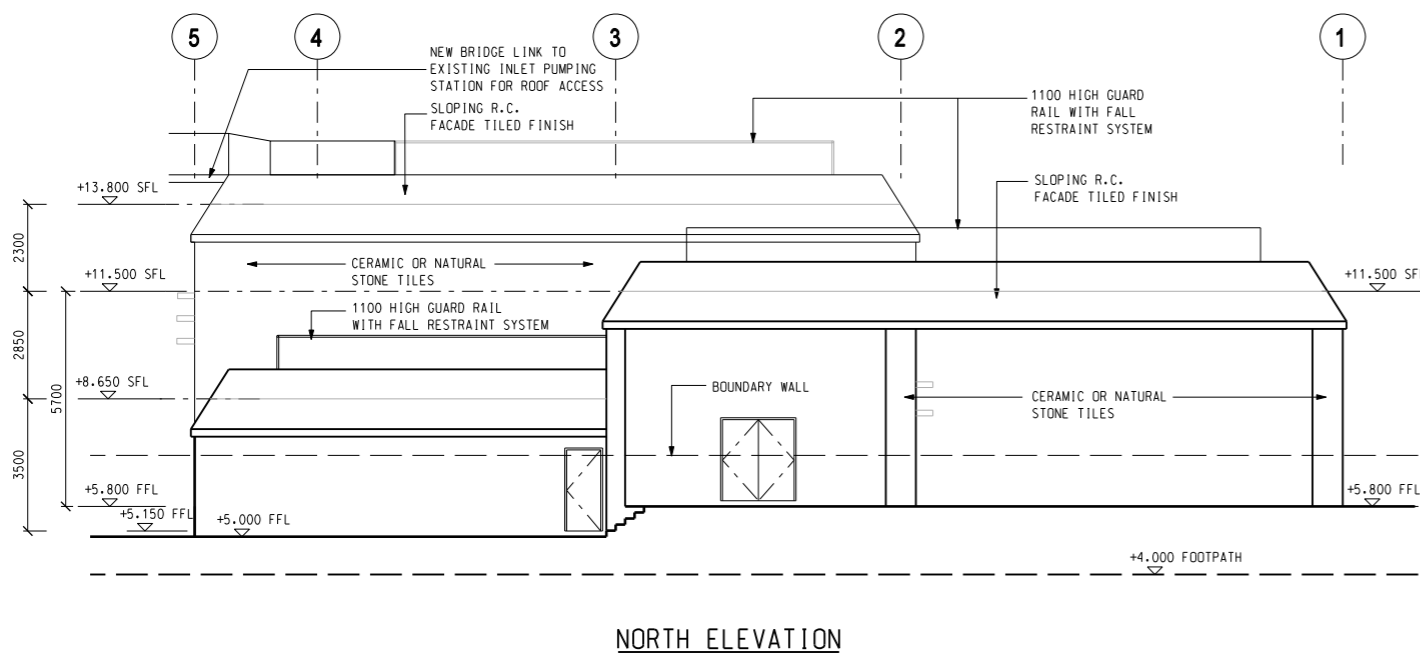
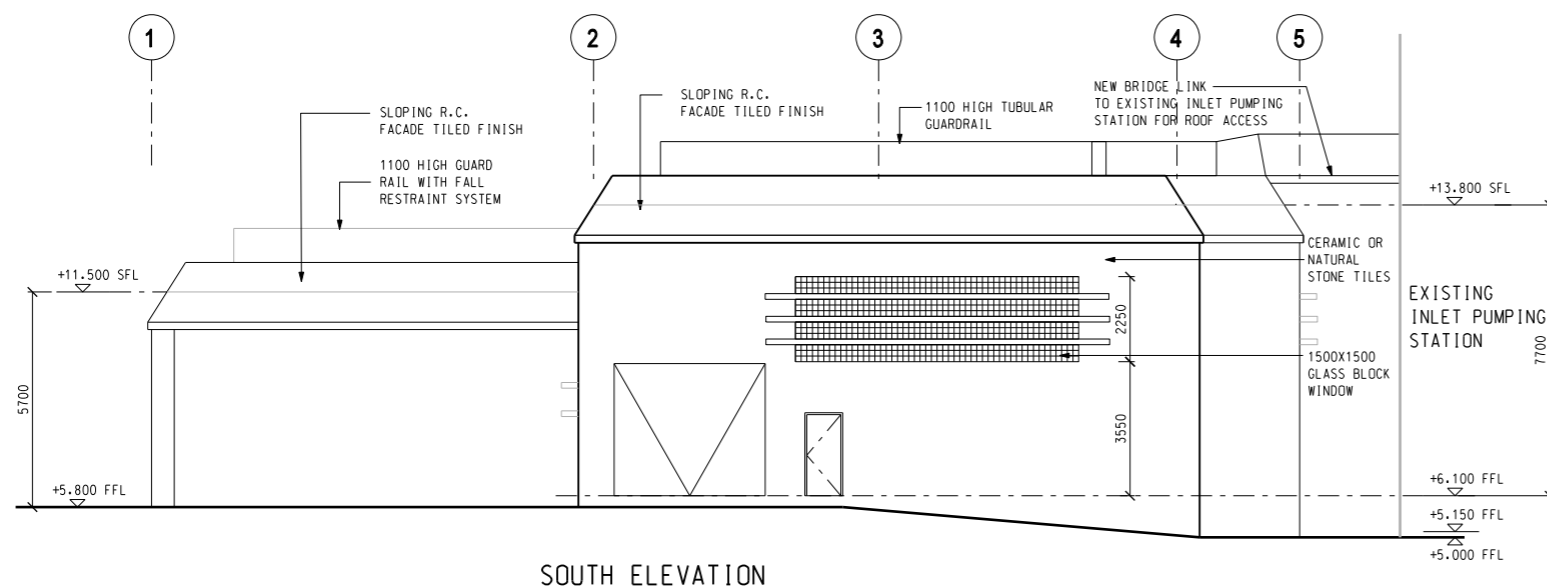
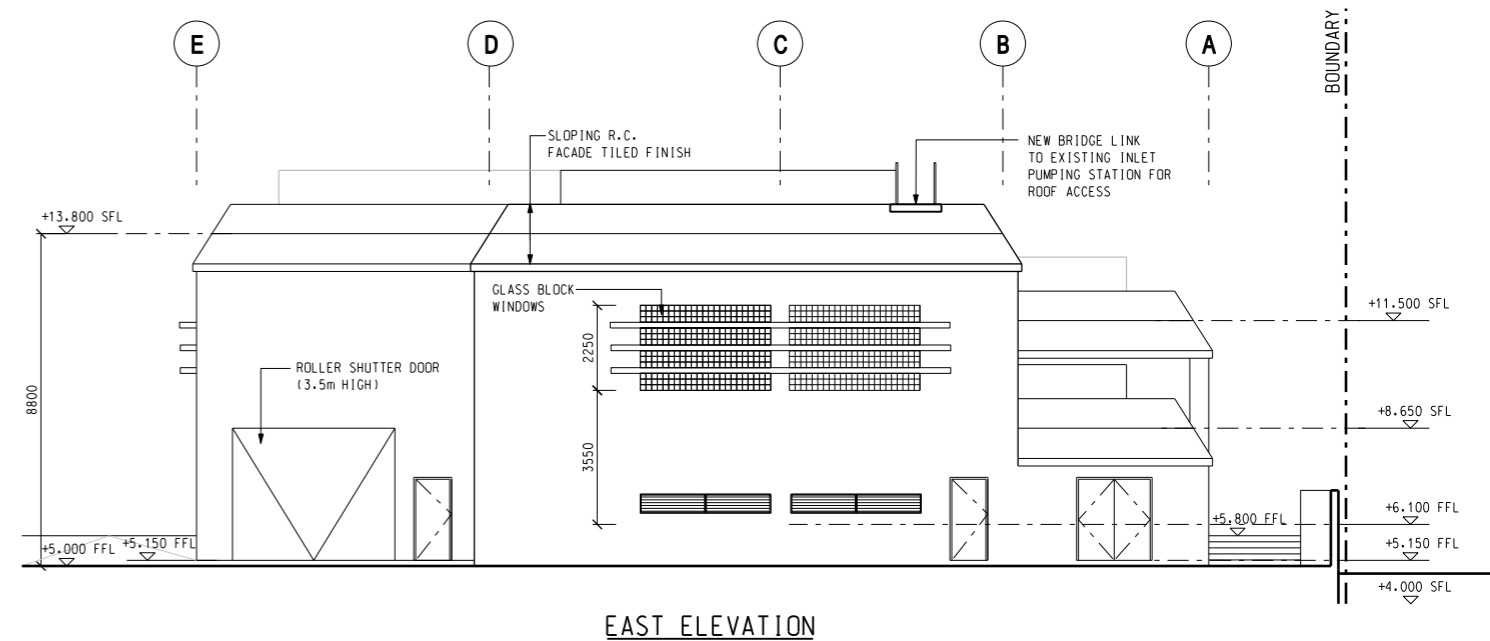
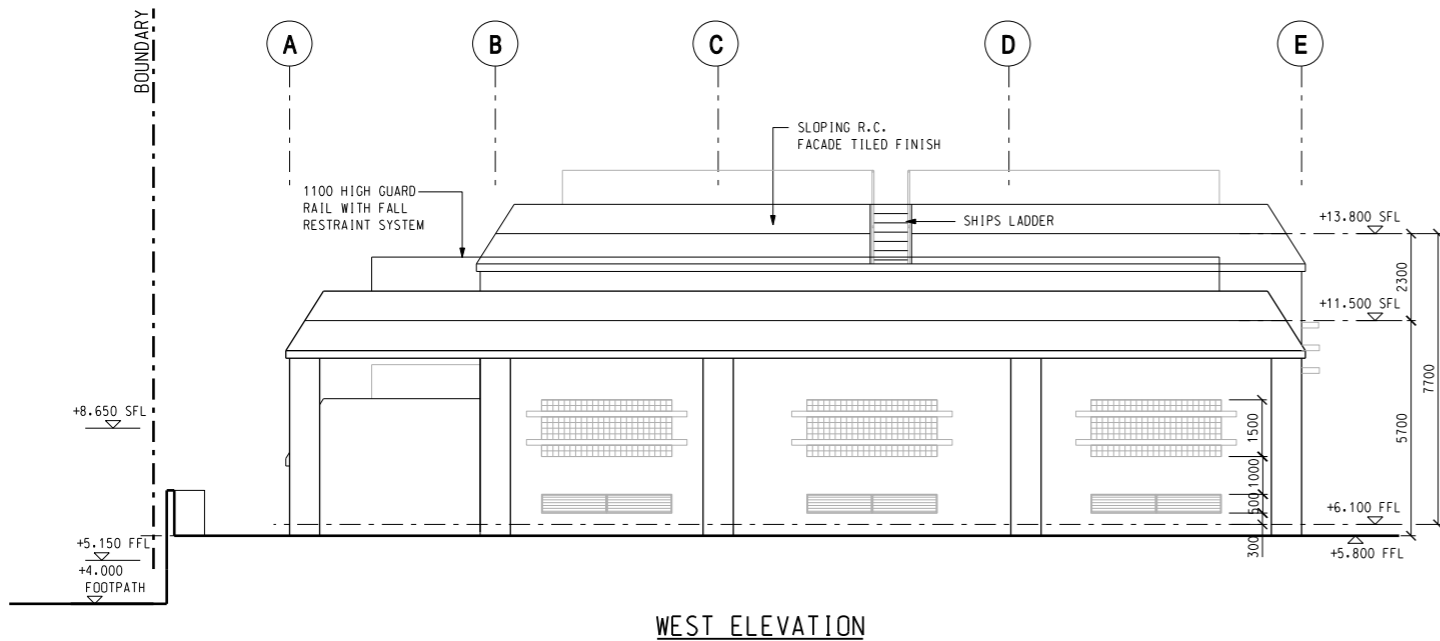
Project title
Agreement No. CE 8/2006 (DS)
Harbour Area Treatment Scheme Stage 2A
Upgrading of the Stonecutters Island
Sewage Treatment Works and the
Preliminary Treatment Works -
Investigation, Design and Construction

Drawing title
WAN CHAI EAST PTW
PROPOSED UPGRADING
LAYOUT

Drawing no. Enclosure 2		Rev. -	
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Scale 1:250 @ A1		Status PRELIMINARY	

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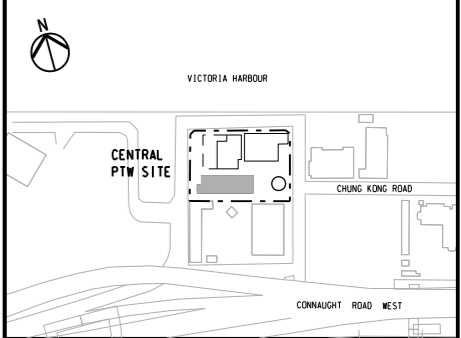
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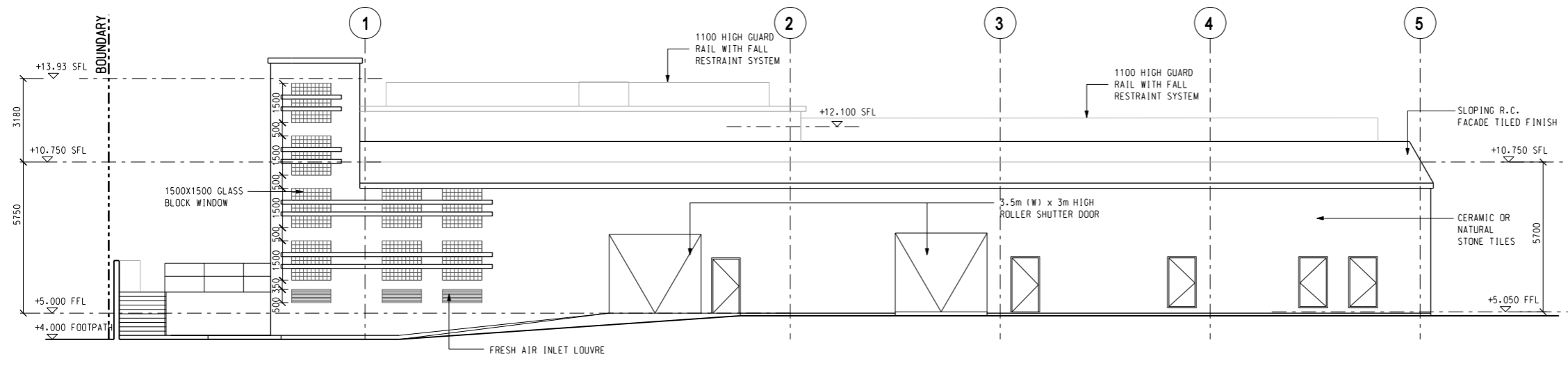
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Agreement No. CE 8/2006 (DS) Harbour Area Treatment Scheme Stage 2A Upgrading of the Stonecutters Island Sewage Treatment Works and the Preliminary Treatment Works - Investigation, Design and Construction			
Drawing title			
CENTRAL PTW FINE SCREEN & GRIT TRAP BUILDING ELEVATIONS			
Drawing no.		Rev.	
Enclosure 3		-	
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AL	02/09	RS	PC
Scale		Status	
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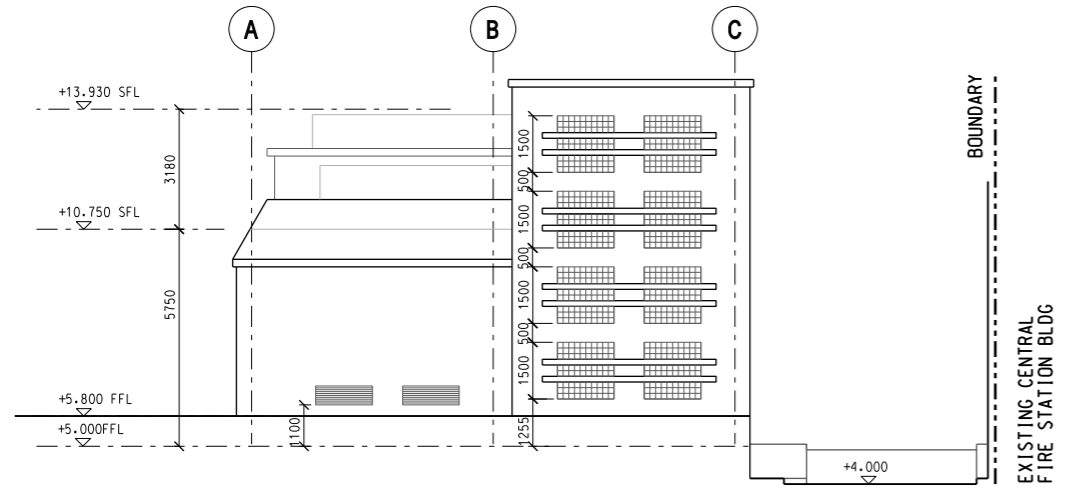
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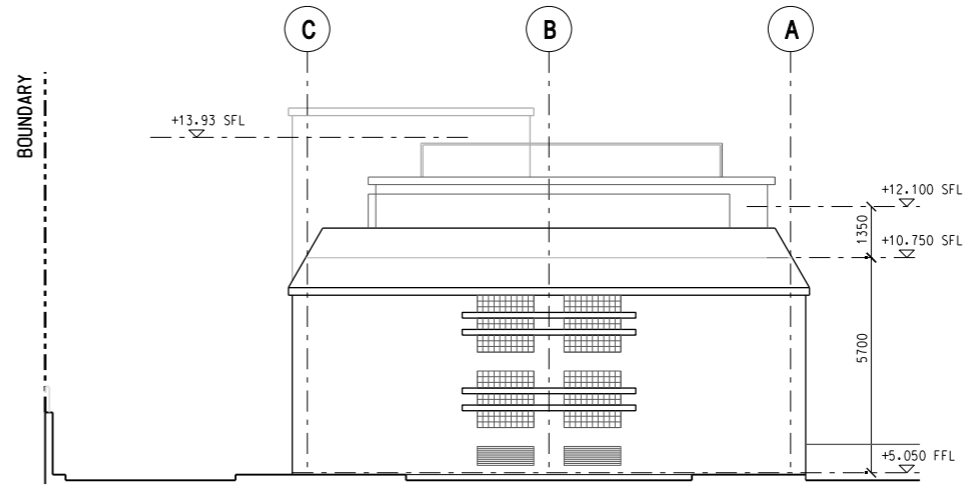
KEY PLAN



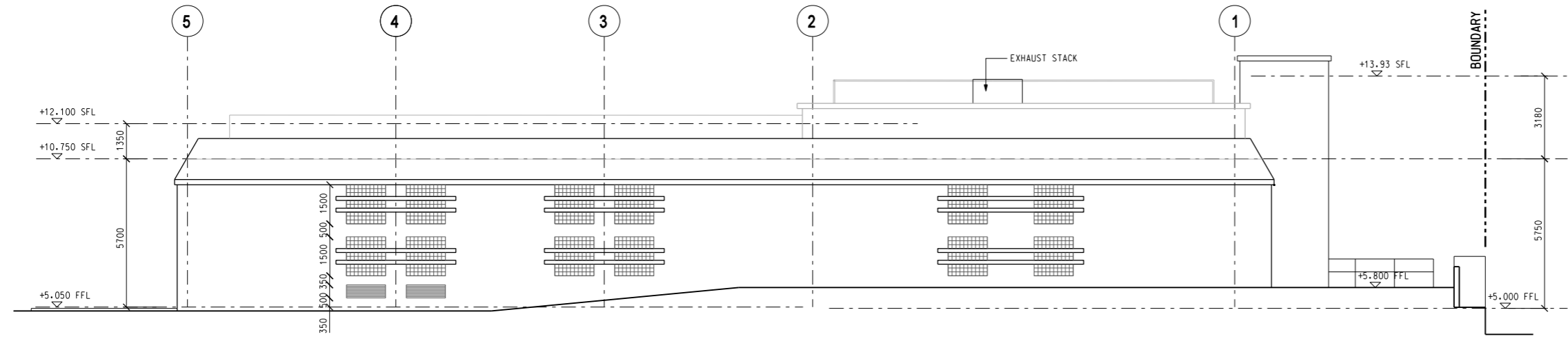
SOUTH ELEVATION



WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION

Rev	Description	By	Date

Consultant
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 Ove Arup & Partners Hong Kong Limited

Project title
Agreement No. CE 8/2006 (DS)
Harbour Area Treatment Scheme Stage 2A
Upgrading of the Stonecutters Island
Sewage Treatment Works and the
Preliminary Treatment Works -
Investigation, Design and Construction

Drawing title
CENTRAL PTW
DEODORIZATION & STORE
BUILDING ELEVATIONS

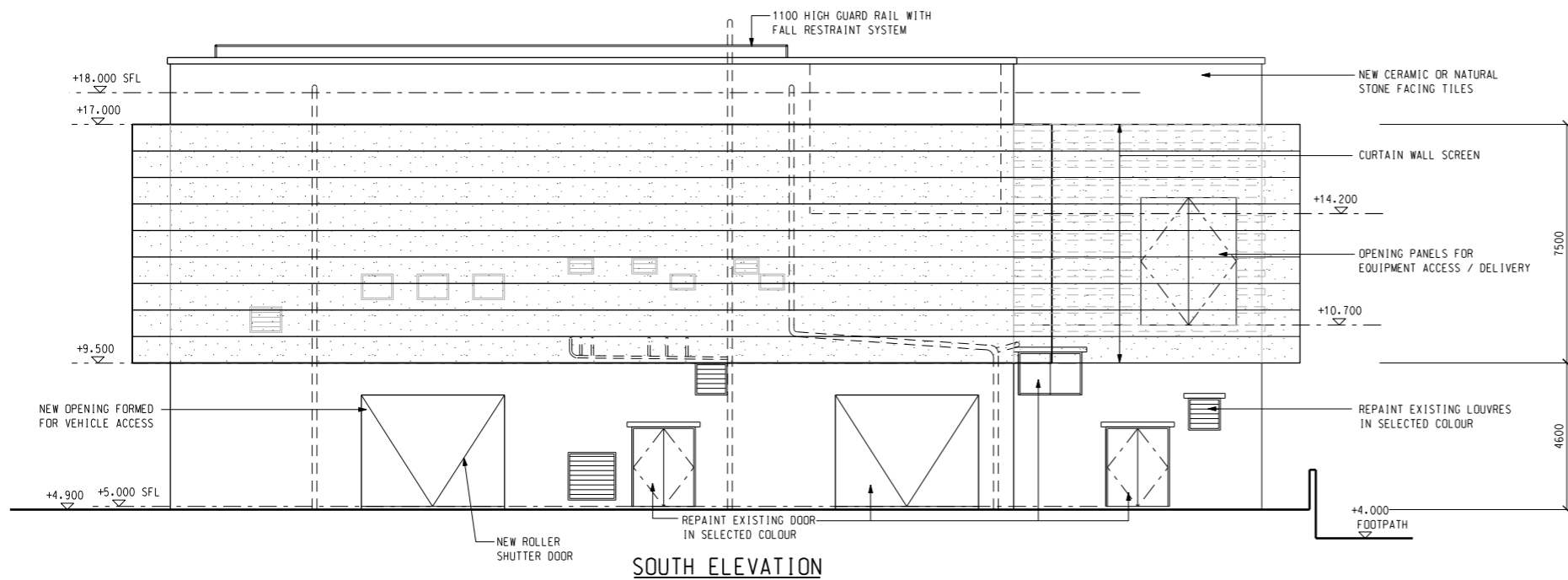
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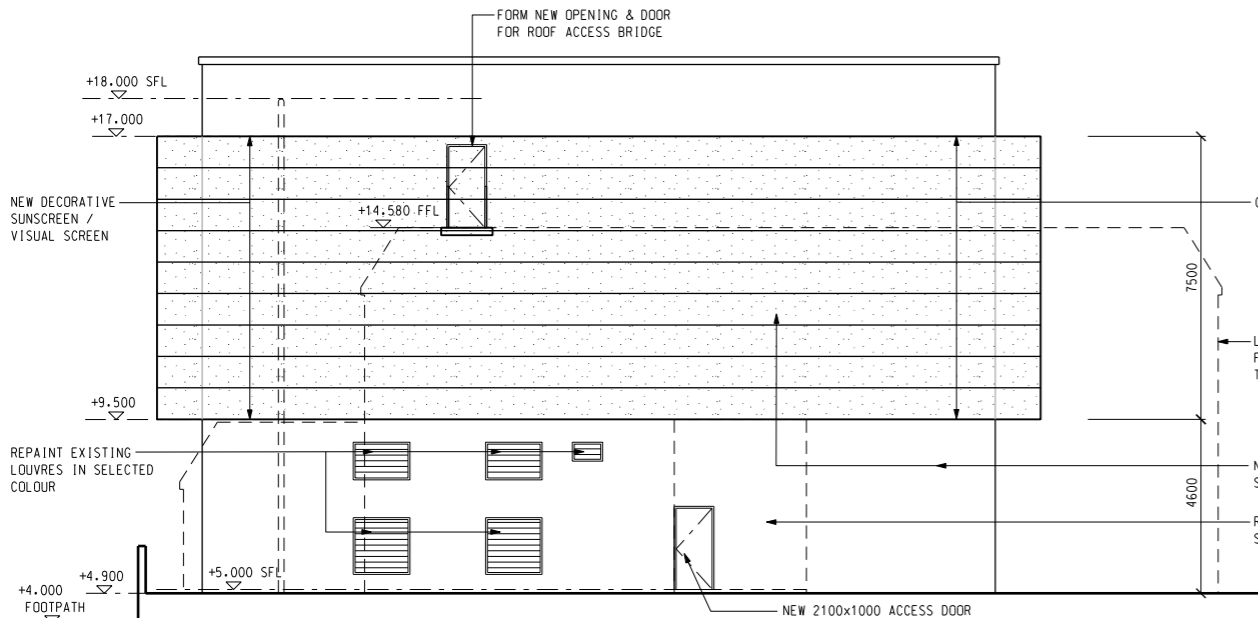


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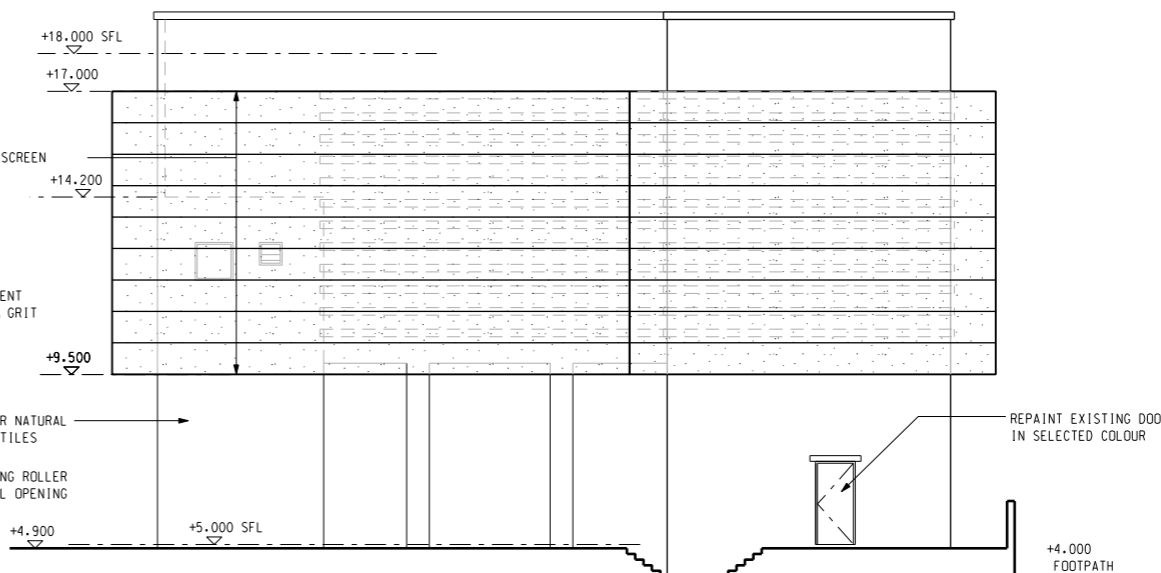
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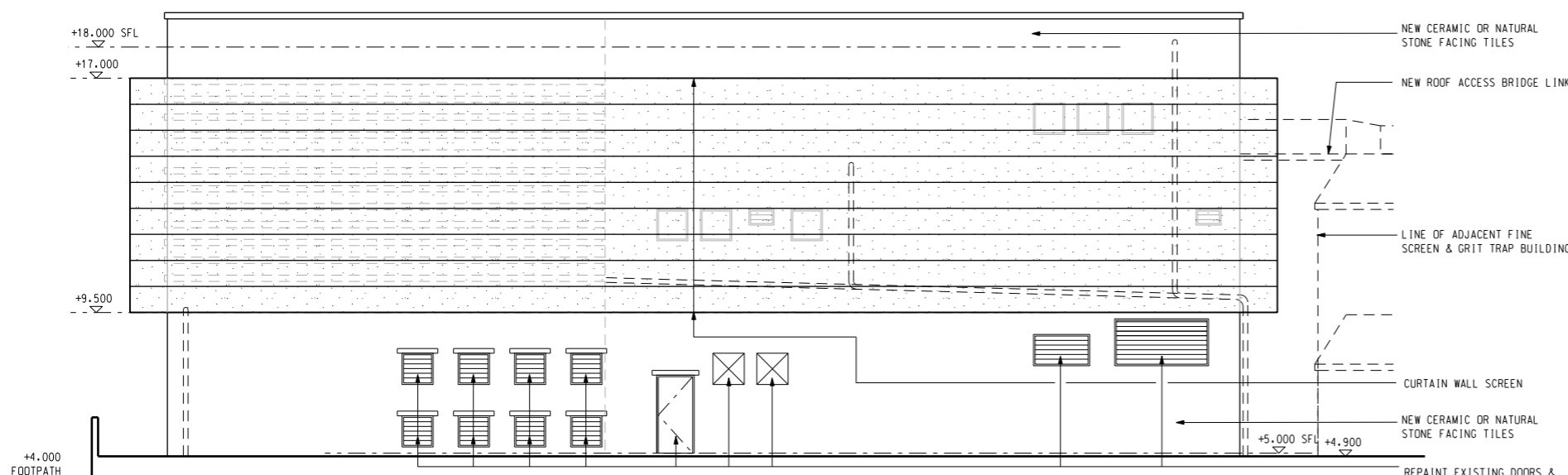
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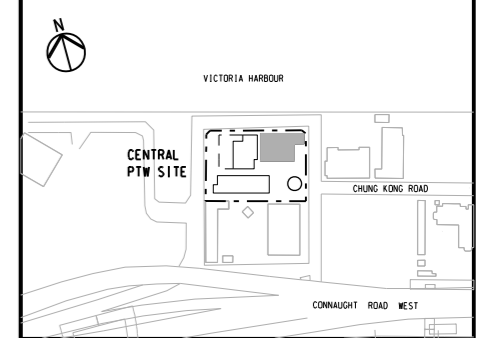
WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION



KEY PLAN

- LEGEND**
- EXISTING RWDP MAJOR PIPES
 - CURTAIN WALL SCREEN IN ETCHED GLASS

Rev	Description	By	Date

Consultant
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Project title
Agreement No. CE 8/2006 (DS)
Harbour Area Treatment Scheme Stage 2A
Upgrading of the Stonecutters Island
Sewage Treatment Works and the
Preliminary Treatment Works -
Investigation, Design and Construction

Drawing title
CENTRAL PTW
UPGRADING WORKS FOR EXIST.
INLET PUMPING STATION
ELEVATIONS

Drawing no. Enclosure 5		Rev. -	
Drawn AL	Date 02/09	Checked RS	Approved PC
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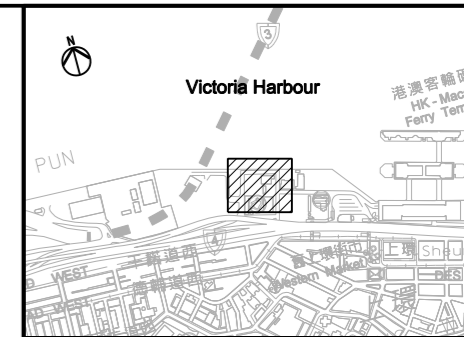
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Existing Central PTW



Photomontage of Upgraded Central PTW



Key Plan

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Project title
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 Harbour Area Treatment Scheme Stage 2A
 Upgrading of the Stonecutters Island
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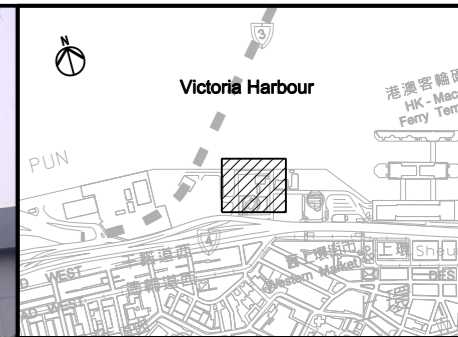
Drawing title
**AESTHETIC AND LANDSCAPE
 DESIGN FOR CENTRAL PTW
 (HARBOUR VIEW)**

Drawing no. Enclosure 6		Rev. -	
Drawn WM	Date 02/09	Checked AL	Approved SYC
Scale N.T.S.		Status PRELIMINARY	

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Existing Central PTW



Key Plan



Photomontage of Upgraded Central PTW



Rev	Description	By	Date

Consultant
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Project title
**Agreement No. CE 8/2006 (DS)
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 Upgrading of the Stonecutters Island
 Sewage Treatment Works and the
 Preliminary Treatment Works -
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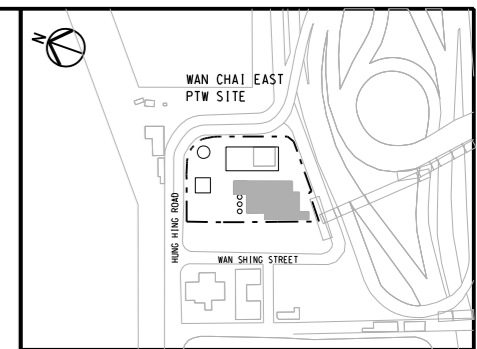
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**AESTHETIC AND LANDSCAPE
 DESIGN FOR CENTRAL PTW**

Drawing no. **Enclosure 7** Rev. **-**

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Scale N.T.S	Status PRELIMINARY		

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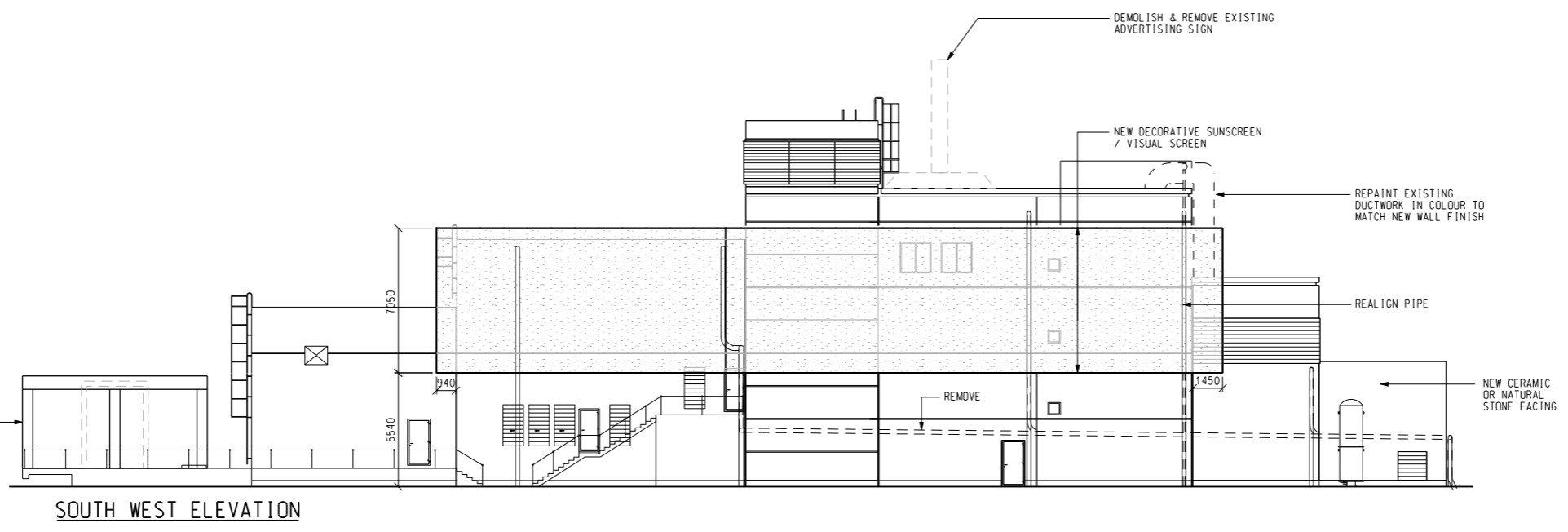
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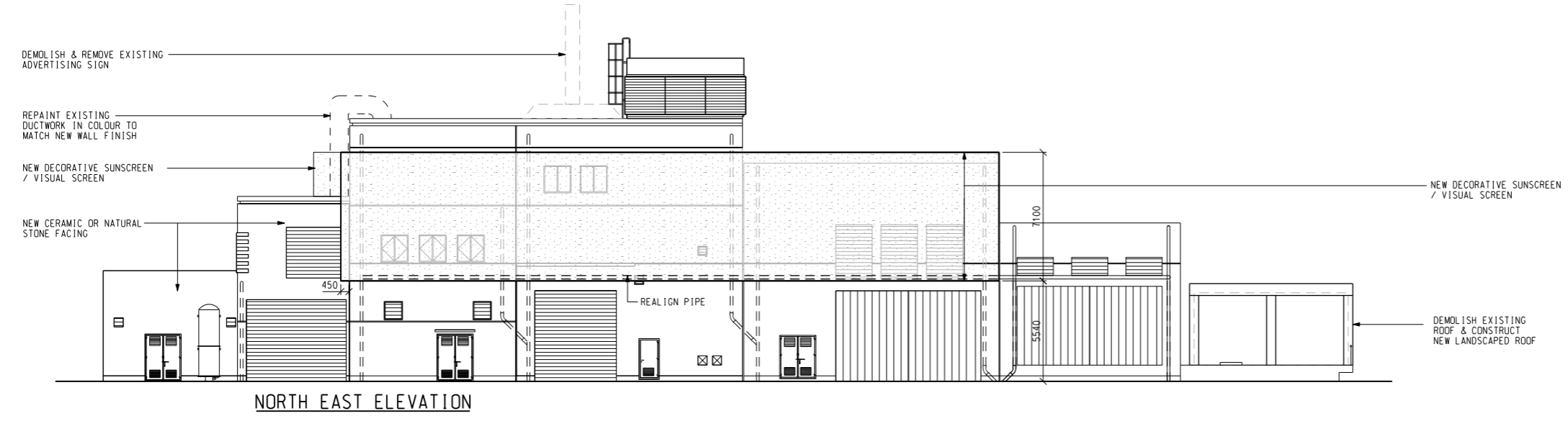
KEY PLAN

LEGEND

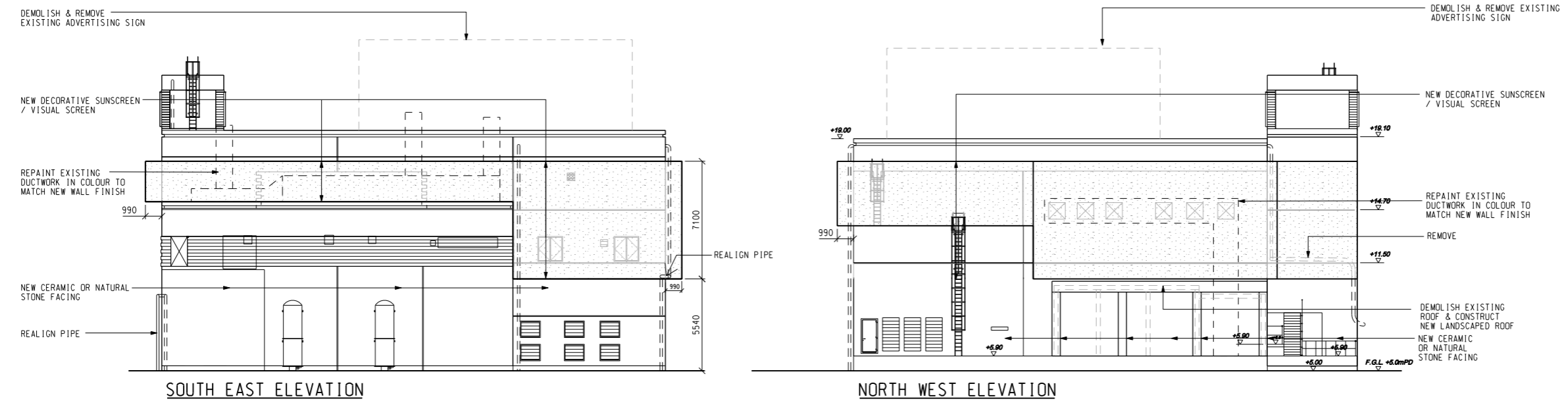
- == == EXISTING RWDP & MAJOR PIPES
- ==== REALIGNED EXISTING RWDP & MAJOR PIPES
- - - - EXISTING MAJOR DUCTWORK
- [Pattern] EXTENT OF NEW SUNSCREEN / VISUAL SCREEN



SOUTH WEST ELEVATION



NORTH EAST ELEVATION



SOUTH EAST ELEVATION

NORTH WEST ELEVATION

Rev	Description	By	Date

Consultant
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Project title
Agreement No. CE 8/2006 (DS)
Harbour Area Treatment Scheme Stage 2A
Upgrading of the Stonecutters Island
Sewage Treatment Works and the
Preliminary Treatment Works -
Investigation, Design and Construction

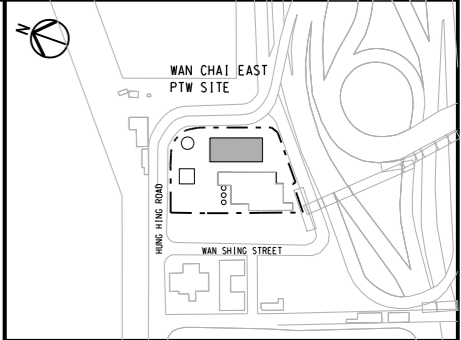
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WAN CHAI EAST PTW
EXISTING PUMPING STATION &
SCREENING PLANT ELEVATIONAL
TREATMENT

Drawing no. **Enclosure 8** Rev. -

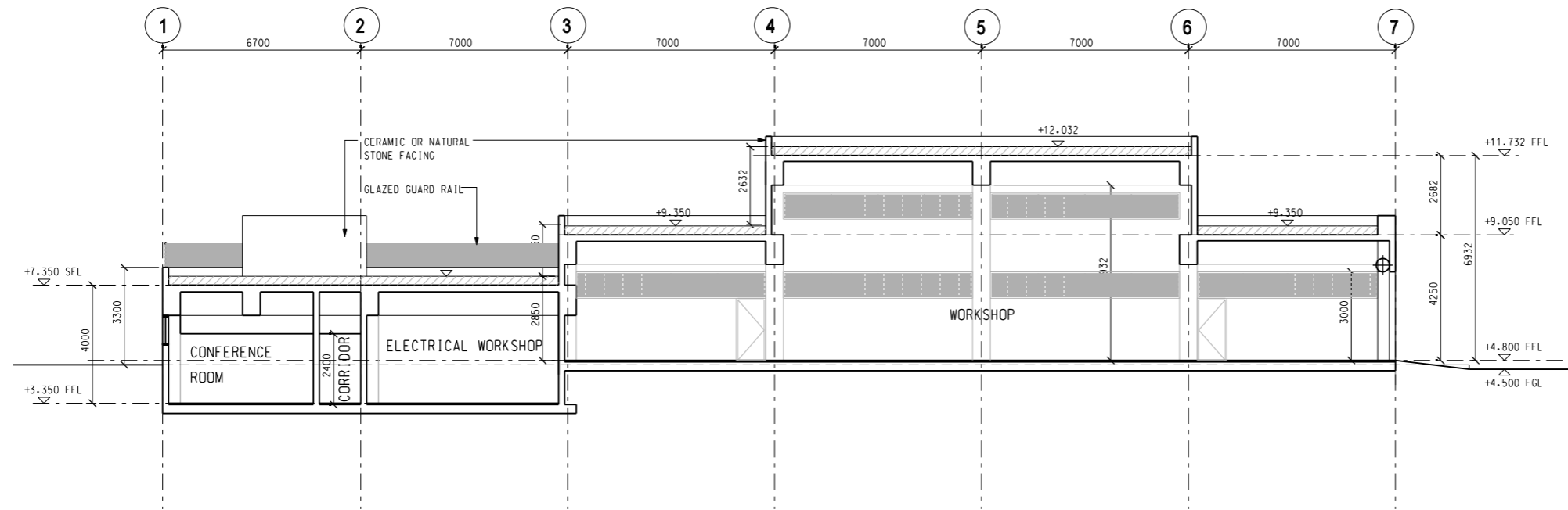
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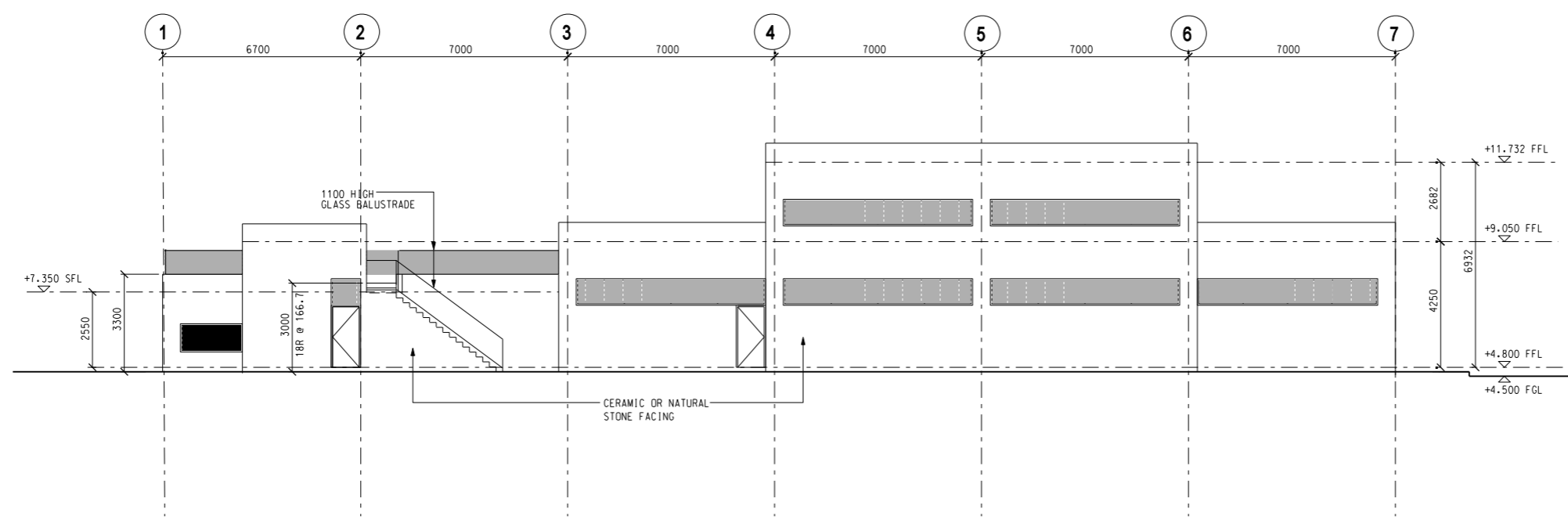
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KEY PLAN



SECTION THROUGH BUILDING



WEST ELEVATION

Rev	Description	By	Date

Consultant
ARUP 奧雅納工程顧問
 Ove Arup & Partners Hong Kong Limited

Project title
Contract No. DC/2007/20
Harbour Area Treatment Scheme Stage 2A
- Construction of Advance
Disinfection Facilities at Stonecutters Island
Sewage Treatment Works

Drawing title
WAN CHAI EAST PTW
ADMINISTRATION & WORKSHOP
BUILDING SECTION
AND ELEVATION

Drawing no. **Enclosure 9** Rev. **-**

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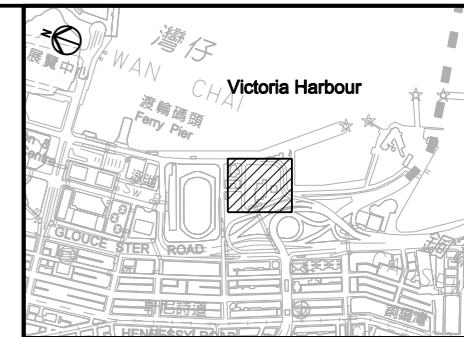
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Existing Wan Chai East PTW



Photomontage of Upgraded Wan Chai East PTW



Key Plan

Rev	Description	By	Date
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Consultant
ARUP 奧雅納工程顧問
 Ove Arup & Partners Hong Kong Limited

Project title
**Agreement No. CE 8/2006 (DS)
 Harbour Area Treatment Scheme Stage 2A
 Upgrading of the Stonecutters Island
 Sewage Treatment Works and the
 Preliminary Treatment Works -
 Investigation, Design and Construction**

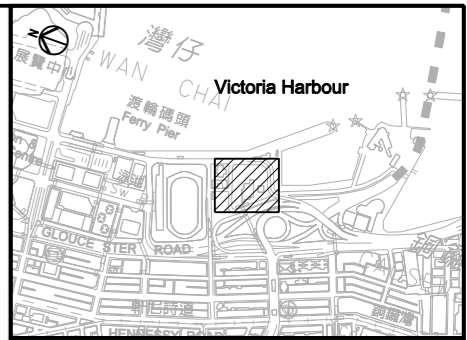
Drawing title
**AESTHETIC AND LANDSCAPE
 DESIGN FOR
 WAN CHAI EAST PTW
 (HARBOUR VIEW)**

Drawing no. **Enclosure 10** Rev. **-**

Drawn WM	Date 04/08	Checked AL	Approved SYC
Scale N.T.S.	Status PRELIMINARY		

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 GOVERNMENT OF THE
 HONG KONG
 SPECIAL ADMINISTRATIVE REGION



Key Plan

Existing Wan Chai East PTW



Photomontage of Upgraded Wan Chai East PTW

Rev	Description	By	Date

Consultant
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**Agreement No. CE 8/2006 (DS)
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Drawing title
**AESTHETIC AND LANDSCAPE
 DESIGN FOR
 WAN CHAI EAST PTW**

Drawing no. **Enclosure 11** Rev. **-**

Drawn WM	Date 02/09	Checked AL	Approved SYC
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