

Hong Kong Jockey Club

**Main Arena of the 2008
Olympic Equestrian
Event**

Project Profile

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1 Basic Information

1.1 Project Title

Main arena of the 2008 Olympic Equestrian Event

1.2 Purpose and Nature of the Project

The purpose of this Project is to construct a Main Arena and supporting facilities for hosting the 2008 Olympic Equestrian Events at the Hong Kong Sports Institute (HKSI).

The nature of the project is to provide an outdoor Main Arena with capacity to accommodate more than 10,000 persons and supporting facilities for the 2008 Olympic Equestrian Event.

1.3 Name of Project Proponent

The name of project proponent is the Hong Kong Jockey Club (HKJC) which will be responsible for construction and operation of the venue during the event.

1.4 Location and Scale of Project and History of Site

The Project Proponent proposes to construct and operate a Main Arena with capacity to accommodate about 20,000 persons with supporting back of house facilities for the Olympic Equestrian Events at HKSI.

The venues will be operational for one month during the main Olympic event, with the competition expected to last from between 10 to 14 days. 14 days after the Olympic Events, the Paralympic competition will be staged, which will last for a few days. The Paralympic Event is open to paid spectators estimated to be less than 10,000.

One year before the actual Olympic Events, the site will be occupied for the Test Event, which is used by all divisions of the Olympic Organising Committee to test their organisational capabilities for the Games and Event Management to trail the equine facilities and the footing (riding surface) of the Main Arena, Stables and Training Facilities. These mock up events are known as the 'Test Event Mode', and limited public access will be given.

The HKSI site is a government land leased to the HKSI for promoting sports education. The premises would be converted mainly to provide temporary facilities for the event. These would include restricted access supporting facilities of Dressage Training Arenas, Warm up Arena, Holding Arena, Stabling Precinct as well as a Main Arena. Only the Main Arena will be designed to accommodate more than 10,000 spectators. A summary of temporary facilities is shown in Table 1.1. Figure 1.1 shows the location and extent of the project site at HKSI with the Main Arena highlighted. The layout of the facilities on the site is presented in Figure 1.2.

Table 1.1: Summary of temporary facilities.

Existing Facility	Future Facility	Addition / Modification / Alternation works	Remarks
Tennis Court	Logistic Compound, Food & Merchandise, Spectator Entry & Broadcast Compound	Modification	Temporary, non-sporting facilities
Stadium	Main Arena for 20,000 spectators	Modification	Temporary sporting facilities
Football Field	Stables	Modification	Construction of an enclosed structures
Open Area	Warm up, dressage training and holding arenas	Modification	Temporary sporting facilities

1.5 Number and Types of Potential Designated Projects to be Covered by the Project Profile

The project comprises an outdoor sporting facility with a capacity to accommodate more than 10,000 persons as specified under O.7 in Schedule 2 Part 1 of the Environmental Impact Assessment Ordinance (Cap. 499).

1.6 Name and telephone number of contact person(s)

Contact person : Mr. John Phillip Ridley

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2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

The project timetable for HKSI is shown in Table 2.1. The construction commencement date is an important goal as it will affect the readiness of the venues for the event. Only during the Olympic and Paralympic Events will the Main Arena be providing temporary seating to accommodate the anticipated spectators (20,000 during Olympic and less than 10,000 during Paralympic).

Table 2.1: Tentative project timetable

Task	Time Schedule
Detailed Design	September 2005 – August 2006
Commencement of Construction	June 2006 – June 2008
Test Event	June 2007 – August 2007
Olympic Event	June 2008 – August 2008
Paralympic Event	September 2008 – October 2008
Reinstatement of Overlay (after Paralympic Event)	October 2008

3 Possible Impact on the Environment

3.1 Construction Phase

3.1.1 Air Quality

Construction activities will involve ground formation works for the different arenas, temporary structural works for the temporary seating of the main arena, the superstructure works for the stables and fitting out works in the interior of the HKSI building. Other than the ground formation works, dust generation associated with the other works activities would be small.

3.1.2 Noise Impact

Construction noise will be generated from the ground formation works for the different arenas, temporary structural works for the temporary seating of the main arena, the superstructure works for the stables and fitting out works in the interior of the HKSI building. It is anticipated that the use of Powered Mechanical Equipment (PME) in the open areas of the project site will be limited.

3.1.3 Water Quality

Potential sources of water contamination include construction runoff. These effluents will contain suspended solids (SS) and small amount of oil from vehicles, construction equipment and storage areas.

3.1.4 Waste Management

Wastes that will be generated from construction works are identified as follows:

- Construction and Demolition (C&D) wastes from ground formation works and fitting out works. As no major superstructure will be demolished, the amount of C&D waste generation will be small.
- Chemical waste of residual oil and lubricating fluids from construction plants and machinery.
- General refuse

3.1.5 Land Contamination

The site is currently a large athletics and football playground in operation since 1992. There is no underground fuel storage tank. Land contamination is unlikely to be an issue for this project.

3.1.6 Ecology

The site is currently a large athletics and football playground. It is a man-made environment and is not known to have any ecological species of importance. Ecological impact on the site is therefore not anticipated.

3.1.7 Landscape and Visual

The existing trees are of high amenity value and the architectural features of HKSI are distinct. Construction activities, including hoarding demolition works, material piling, the erection of site offices and vehicular movement may pose visual impacts on the surrounding Visually Sensitive Receivers (VSRs). However, works will be phased and only temporary, hence reducing the visual impact during construction phase.

3.2 Operational Phase

3.2.1 Air Quality

Equestrian competition activities will be held at the Main Arena and there will be no adverse air quality impacts of dust and gaseous emissions. Odour emissions from the stables will not be a concern to the surrounding air sensitive receivers since all the stables would be enclosed and air-conditioned with the

provision of activated carbon filter at exhaust for odour removal, as required. Adverse odour impact is considered unlikely.

Spectators will arrive the venue by public transport similar to a horse racing day. Secondary impact resulting from increase in vehicular traffic is not anticipated to be significant.

3.2.2 Noise

Potential operational noise impact will include crowd noise and Public Address (PA) system broadcast. Reference will be made to previous assessment conducted elsewhere for Olympic Equestrian events in other countries, eg the Sydney reference when data is available. Failing this, the typical crowd noise level of a horseracing day will be adopted and correction factor proposed where necessary.

Cumulative noise impact from PA broadcast will be controlled at source by limiting the maximum sound level output to meet the noise criteria. Furthermore, significant crowd noise and PA sound levels from the competition at the main arena is not anticipated due to the generally quiet nature of the equestrian events.

As the stables are totally enclosed and the horizontal distance to the nearest NSR is more than 300m. Noise impact from operation of the stable is not anticipated.

3.2.3 Water Quality

Potential sources of water pollution include rainwater runoff from above ground structures and the Stabling Precinct. There is an issue of runoff being contaminated with horse manure. To mitigate this a low flow interceptor system will be constructed to intercept the first foul flush and convey it to the public sewerage system. The design requirements in terms of performance standard will be the same as that adopted for the system currently being implemented at the existing racecourse stables. It is also initially proposed that the interceptor system capacity is sized similarly. Impact from rainwater runoff is therefore considered insignificant given also the short duration of the Olympic Equestrian events.

For sewage from the stabling precinct, it will be conveyed by gravity to the public sewer network along the promenade adjacent to Shing Mun River and drain to the existing DSD Shatin Sewage Pumping Station and be pumped to Sha Tin STW. Adverse water quality impact is not anticipated. The sewerage and drainage impacts including additional sewage flows from staff and spectators will be addressed separately in the DIA and SIA reports.

3.2.4 Waste Management

Solid waste from horses in the stables will be collected by a licensed waste collection company registered with EPD for disposal at the landfill. About 216 horses will stay in the Stabling Precinct for a month. When compared with the existing total of 1,192 horses currently accommodated at the Shatin Racecourse, the new horses would contribute to a 18% increase in the total horse number. The current practice for solid waste management at stables in HKJC would be duly followed and therefore no adverse impact is anticipated.

Municipal waste, including litter, foodstuffs, plastics and office waste will be generated from staff and spectators. Since the horse race will not be run at the same time with Olympic and the waste generation during Olympic Event is much less than a normal racing day (the crowd size for a normal racing day is 85,000 people whereas the crowd size for the Olympic Event is only 20,000 people), no significant waste impact is expected.

3.2.5 Land Contamination

Land contamination is not an issue of concern for this project.

3.2.6 Ecology

As the site is a man-made habitat and there is no known ecological species of importance, adverse ecological impact is not anticipated.

3.2.7 Landscape, Visual and Glare

Approximately 80 trees, about 10% of the total, will require removal. The three trees, all *Ficus microcarpa*, with sizes equal to Old and Valuable Trees will not be affected.

The HKSI site is characterised by its distinct architecture, tree cover and sports facilities. Equestrian facilities will transform the character from an athletics venue to an equestrian venue with the temporary loss of tennis courts, football fields, and athletics track. The majority of athletic facilities will be covered up for the equestrian event. Other man-made features like buildings will remain in place. Though some trees will be removed, the well-treed character of the site will be maintained, as losses will be compensated.

Existing VSRs view HKSI from within and from all peripheries. The nearest VSRs are visitors to the HKSI itself, residents of the Jockey Club Staff Quarters and users of the promenade adjacent to the Shing Mun River Channel. Parts of the site are visible from the grandstand of the Shatin Racecourse (viewing distance is 300m and more). Views are also available to residents of nearby housing estates such as Jubilee Garden (viewing distance is approximately 250m) and residents from across the Shing Mun River Channel such as Ravana Garden (viewing distance is approximately 250mm). Views from within the HKSI site are of medium to high quality. Views from the outside are medium quality, being obstructed by the grandstand and other infrastructure. An embankment between the promenade and the site screens views. The sensitivity of outside viewers to change is therefore medium. The new stables will reduce the soft landscape area. Visitors to the institute view this area when playing soccer. Since these facilities will be removed, the stables will not affect such visitors. From the promenade, the stables will only be partially visible, being obstructed by the embankment. The stables will not affect lower views from the Jockey Club Staff Quarters, since the existing buildings block these. Higher views will look onto the new stables. The same applies for residents nearby the site. It should be noted that this latter group of VSRs outside the site have a wide range of alternative views.

VSRs are experiencing some glare at present from the roofs of existing buildings. They also view floodlights, since there are a large number of floodlights in the courts and playing fields. The new stable roofs and stable lighting may cause glare impact. New stable roofs could add to sunlight glare if not coated to reduce glare. The additional lighting at the stables will be minimal in comparison with the existing floodlights. Sunlight glare can be mitigated by coating roofs and facades with colours that do not reflect sunlight - earth colours. White and silver surfaces would be avoided. The other mitigation principle is the use of trees adjacent to buildings to screen glare. These are lighting design issues that can be adequately controlled from a design perspective. Glare impact is therefore considered not significant.

In summary, the HKSI site will inevitably temporarily lose much of its open area under these proposals, however the well-treed character of the site will be maintained and enhanced.

4 Major Elements of the Surrounding Environment

The HKSI site is parallel to Shing Mun River to the Southeast and almost parallel to Tai Po Road – Shatin Section to the Northwest. The nearest residential building to the HKSI future Main Arena exceeds 140m. The air and noise sensitive receivers are shown in Table 4.1 to Table 4.2. Figure 4.1 shows the locations of ASRs surrounding HKSI and Figure 4.2 shows the locations of NSRs.

Table 4.1: List of Air Sensitive Receivers

ASR ID.	Description	Distance to Construction Site, m
SA1	HK Jockey Club Staff Quarters	140
SA2	Ravana Garden	250
SA3	Garden Vista	250
SA4	Pictorial Garden	250
SA5	Jubilee Garden	370
SA6	Hong Kong Institute of Vocational Education (Shatin)	440
SA7	City One Shatin	400
SA8	Royal Ascot	430
SA9	Wo Che Estate	470
SA10	Jockey Club TH College	207

Table 4.2: List of Noise Sensitive Receivers

NSR ID.	Description	Distance to Construction Site, m
SN1	HK Jockey Club Staff Quarters	140
SN2	Ravana Garden	250
SN3	Garden Vista	250
SN4	Pictorial Garden	250
SN5	Jockey Club TH College	207

There are approximately 710 trees on the site. The majority of these are ornamentals introduced for aesthetic purposes. Three trees, all *Ficus microcarpa*, are of sizes equivalent to Old and Valuable Trees.

Shrub planting at the HKSI site is established along footpaths and at building entrances. Mostly ornamentals, shrub cover is not extensive. The largest lawn areas are the football fields. Lawn cover is also present under trees at the peripheries of the site and some garden areas. The total cover is approximately 6.5 ha.

5 Environmental Protection Measures to be Incorporated in the Design and Any Further Environmental Implications

5.1 Construction Phase

5.1.1 Air Quality

Standard dust suppression techniques, as set out in the Air Pollution Control (Construction Dust) Regulations, should be sufficient to control the dust impacts on the nearby ASRs. By implementing these control measures and with good construction site practice, it is anticipated that dust impacts will be insignificant. The Contractor should undertake proper watering on all exposed spoil throughout the construction phase. These requirements will be incorporated into the Contract Specification for the civil and construction works.

5.1.2 Noise

A combination of mitigation measures will be incorporated into the Contract Specification to control construction noise impacts. Typically, they include:

- Good site practices to limit noise emissions at the source;
- Use of quiet plant and working methods (stated in the EPD's quality powered mechanical equipment inventory);
- Use of site hoarding as noise barrier to screen noise at ground level of NSRs;
- Use of shrouds / temporary noise barriers to screen noise from relatively static stationary PMEs;
- Scheduling of construction works outside school examination periods in critical area; and
- Alternative use of plant items within project site, wherever practicable.

The above mitigation measures will be implemented in all work sites as good practices.

5.1.3 Water Quality

A combination of mitigation measures will be incorporated into the Contract Specification to control runoff. Typically, they include:

- The Contractor shall observe and comply with the Water Pollution Control Ordinance (WPCO) and its subsidiary regulations by implementing environmental protection measures (such as the use of silt traps) and preventing any point or non-point source pollution.
- The Contractor shall carry out the works in such a manner as to minimize adverse impacts on water quality during ground formation works. In particular he shall arrange the method of working to minimize the effects on water quality impact within and outside the site, on transport routes and at the loading and dumping areas.
- The Contractor shall follow the practices and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in the Professional Persons Environmental Consultative Committee Practice Note (ProPECC PN) 1/94 – "Construction Site Drainage" issued by the Director of Environmental Protection Department. The design of the approved mitigation measures shall be submitted to the Director of Environmental Protection by the Contractor or the Engineer's representatives for comments.
- The Contractor shall contain within the site all surface runoff generated from construction works, concreting works, dust control and vehicle washing, etc, if any.
- The Contractor shall cover excavated materials or stockpiles with tarpaulin or similar fabric during rainstorms, if any. In addition, the Contractor shall arrange for other measures, such as

the provision of sand bags or temporary diversion system surrounding the manhole to prevent washing away of soil, silt or debris into any nearby drainage system. Any runoff shall be diverted into appropriate sediment traps before discharging to the nearby drainage system. Any trade effluent or foul or contaminated or cooling or hot water should not be discharged into any public sewer, stormwater drain, channel stream course or the sea. If toilet facilities are erected, foul water should be directed to the public foul sewer or otherwise collected by licensed sewage collection tankers.

With the implementation of the recommended mitigation measures, no adverse impact on water quality during construction phase is anticipated.

5.1.4 Waste Management

A combination of mitigation measures will be incorporated into the Contract Specification to manage waste. Typically, they include:

- The Contractor shall observe and comply with the Waste Disposal Ordinance (WDO) and its subsidiary regulations, especially the Waste Disposal (Chemical Waste) (General) Regulation. A Waste Management Plan shall be included by the Contractor in the construction contract.
- The Contractor shall not permit any sewage, wastewater or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the site onto any adjoining land or allow any waste matter which is not part of the final product from any waste processing plants to be deposited anywhere within any site or onto any adjoining land.
- The Contractor shall minimize the generation of waste from his work. Avoidance and minimization of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.
- The reuse and recycling of waste shall be practised as far as possible. The recycled materials shall include paper/cardboard, timber, metal, etc.
- The Contractor shall ensure that C&D materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused in earth filling, or shall be transported to public fill facilities while the C&D waste shall be disposed of at landfills. Monitoring of the Contractor's compliance with the requirements of trip ticket system in accordance with ETWB TCW No. 31/2004 shall be carried out to ensure that the correct procedures are being followed at all time.

With the implementation of the recommended mitigation measures for handling, transportation and disposal of waste arising, unacceptable residual impacts would not be expected during the construction phase of the proposed Project.

5.1.5 Landscape/visual

A separate tree felling and transplantation application will be processed prior to the removal of any tree. Compensatory tree planting would be provided.

Decorative hoarding, phasing of construction works, protection of existing trees and early planting of new vegetation will be incorporated into the contract specification requirement.

5.2 Operation Phase

5.2.1 Air Quality

Stables in HKSI site would be roofed and provided with centralized air-conditioning such that no significant odour emission would occur during normal operation. Odour removal filters (such as activated carbon) will be fitted to the exhaust and be regularly replaced.

5.2.2 Noise

During the Olympic and Paralympic Events, background music and commentary coverage will be broadcast to support the equestrian competition. The volume of which would be adjusted to appropriate level such that its impact on the sensitive receivers nearby is minimized. The directivity and distribution of PA system would be strictly controlled. EPD's "Noise Control Guidelines for Holding Open Air Entertainment Activities" would be duly followed. The noise levels at representative noise sensitive receivers would be kept monitored throughout the Olympic and Paralympic Events period. With the implementation of the above measures, the noise impact on surrounding sensitive receivers due to PA system would be insignificant and of a short-term nature.

Crowd noise is anticipated to be much less than the average noise level at the grandstand of typical horse racing day. An Environmental Noise Monitoring & Audit programme will be in place during the event days.

5.2.3 Water Quality

The low flow interceptor system will be used to mitigate runoff being contaminated with horse manure. The low flow interceptor system shall be constructed to intercept the first foul flush and convey it to the public sewerage system. The design requirements in terms of performance standard will be the same as that adopted for the system currently being implemented at the existing racecourse stables. It is also initially proposed that the interceptor system capacity is sized similarly. Impact from rainwater runoff is therefore insignificant given also the consideration of the short duration of the Olympic Equestrian events.

The interceptor system at the existing stables has been designed to capture a 1 in 2 year 10 minute event. Based on the proposed catchment area and interception of a 1 in 2 year event the tank size required is estimated to be 42m³. The tank contents shall require to be pumped to the gravity sewerage system. A pumped outlet will be required to prevent inundation of the foul sewerage system with storm water runoff. The arrangement and mechanism for controlling the total volume to the foul system shall be determined during detailed design stage.

The low flow interceptor system will be designed to prevent sand being conveyed into the tank causing a build up of silt and damage to the pump impellers. Therefore, sand traps will be incorporated at the drainage outlet of each lung rings. A further sand trap will be included just upstream of the storage tank.

5.2.4 Waste Management

Waste from horses would be collected by licensed collectors registered with EPD. The current waste management practice for stables adopted by HKJC would be duly followed.

Vegetation and landscape wastes will be composted on-site and re-used as organic fertilizer in an environmental friendly and economic approach wherever applicable.

In general, municipal waste, including litter, foodstuffs, plastics and office waste will be generated from staff and spectator. Paper waste will be minimised by pursuing the use of non-paper promotion materials as appropriate. The use of recyclable materials will be encouraged, whenever practicable. Recycle bins will be provided at the public areas.

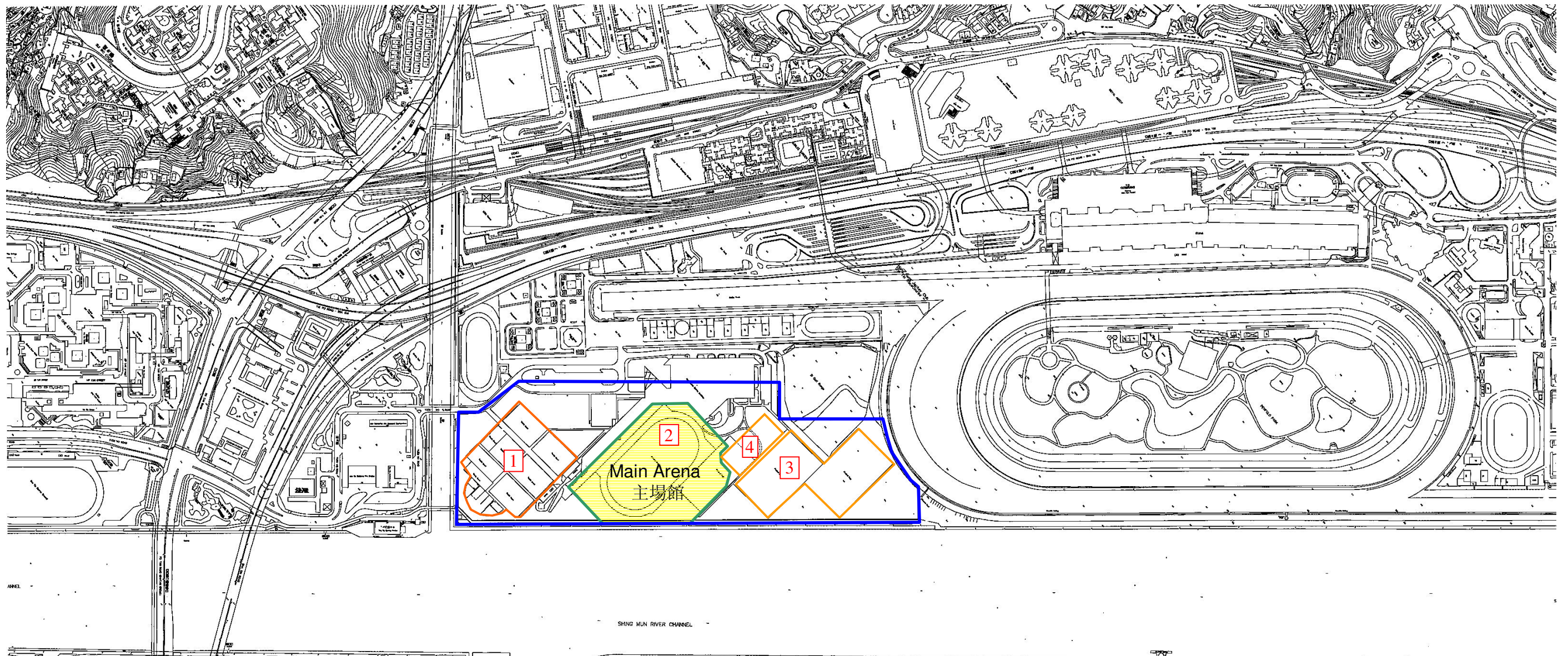
5.2.5 Landscape and visual

Compensatory shrub planting would be provided. Upon the completion of all events, the athletics facilities will be reinstated and compensatory planting would be provided.

The colour and texture of the roofs can be selected to minimize glare. The introduction of screen planting can help alleviate the impact of glare from the buildings. Proper lighting design will be carried out in addition to control glare.



6 Use of Previously Approved EIA Reports

There are no previously approved EIA reports which have been undertaken for this project.



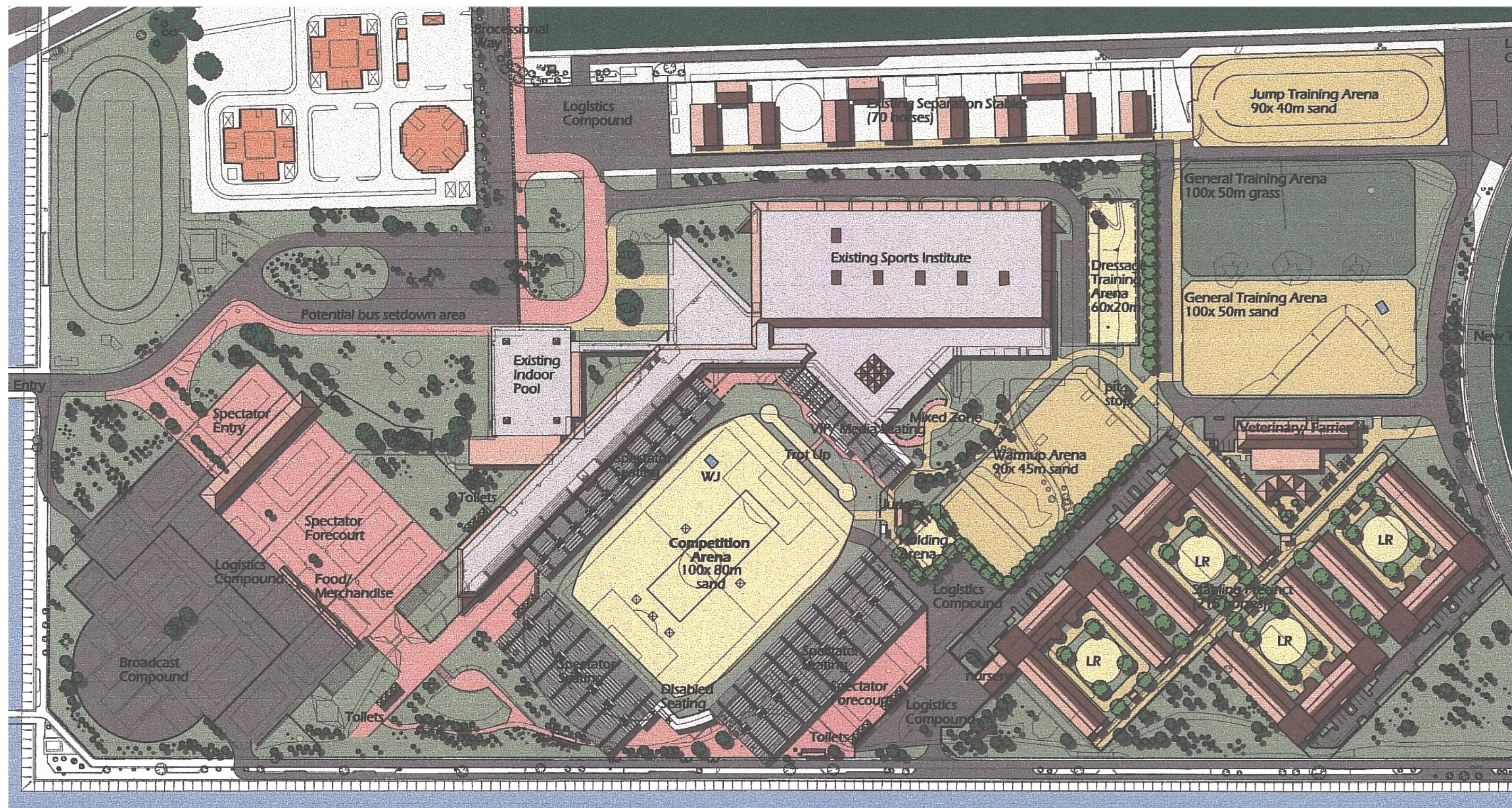
Location 位置	Existing Facility 現有設施	Future Facility 將來設施	Addition / Modification / Alternation works 加工 / 改建 / 修改工程	Remarks 附註
1	Tennis Court 網球場	Logistic Compound, Food & Merchandise, Spectator Entry & Broadcast Compound 物流設施、食品及商品售賣 區、觀眾入口、廣播設施	Modification 改建	Temporary non- sporting facilities 臨時設施
2	Stadium 體育館	Main Arena for 20,000 spectator 可容納二萬人的主場館	Modification 改建	Temporary non- sporting facilities 臨時設施
3	Football Field 足球場	Stable precinct 馬房區	Modification 改建	Construct of an enclosed building 興建密封式建築物
4	Open Area 空地	Warmup Arena 熱身場館	Modification 改建	Temporary sporting facilities 臨時設施

Legend 圖例:

-  Project Boundary
工程範圍
-  Designated Project Boundary
指定工程項目範圍

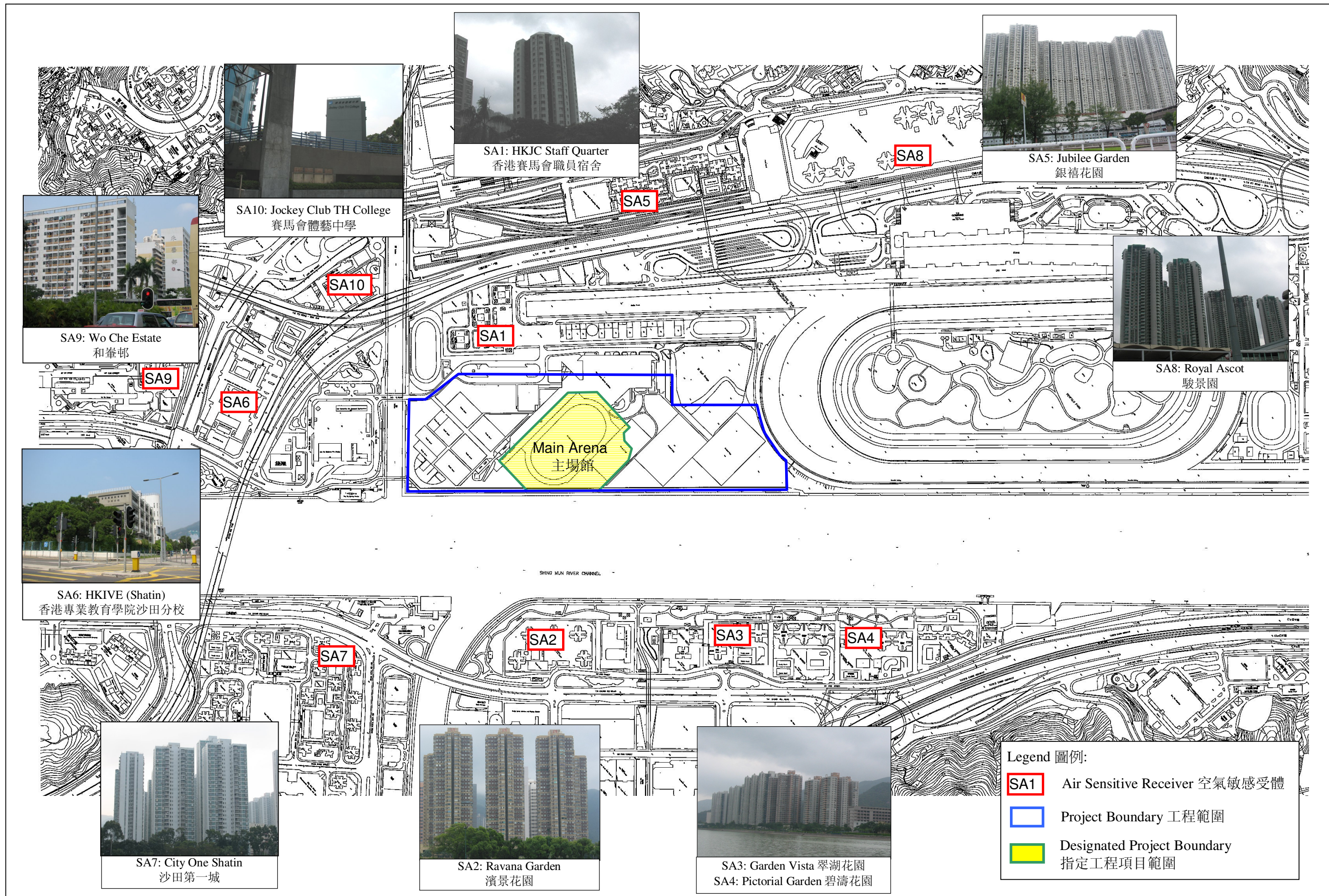
Location Plan 工程位置圖

Figure 圖 1.1



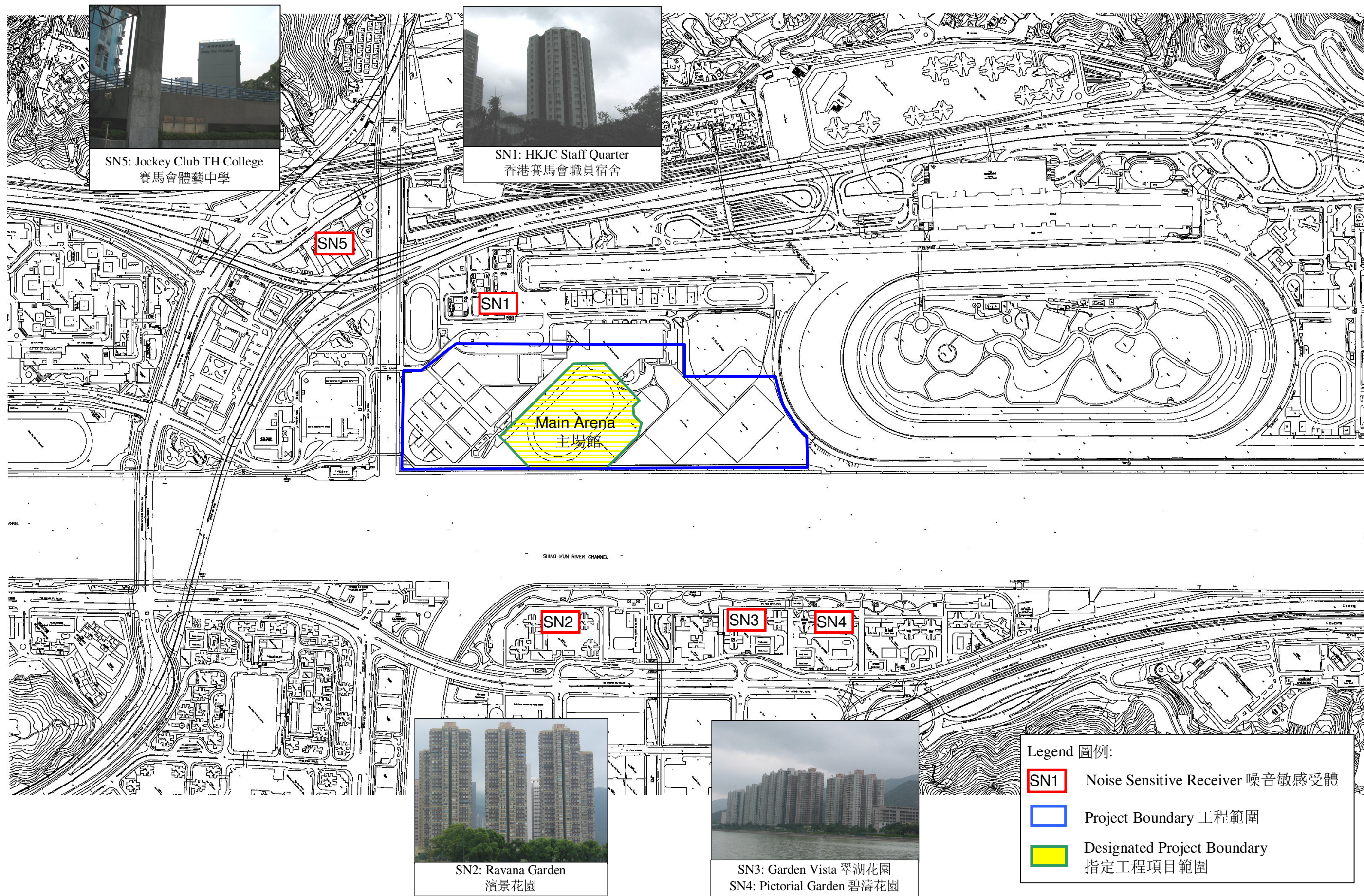
Tentative Layout Plan 暫時佈置圖

Figure 圖 1.2



Locations of Air Sensitive Receivers 空氣敏感受體位置

Figure 圖 4.1



Locations of Noise Sensitive Receivers 噪音敏感受體位置

Figure 圖 4.2