

**Major Repair to
Tin Hau Temple,
Lung Yeuk Tau, Fanling**

Project Profile



**Leisure and Cultural Services Department
The Government of the Hong Kong Special Administrative Region**

January 2005

Major Repair to Tin Hau Temple Lung Yeuk Tau, Fanling

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1. BASIC INFORMATION

1.1 Project Title

Major repair to Tin Hau Temple, Lung Yeuk Tau, Fanling.

1.2 Purpose and Nature of the Project

1.2.1 The purpose of the project is to reconstruct the roof, to carry out internal and external redecorations and to undertake minor repairs and restorations as necessary to the Tin Hau Temple, Lung Yeuk Tau, Fanling (hereafter “the temple”) (Location plan showing the project area is at Appendix I).

1.2.2 The main roof of the temple is affected by termite infestation which has weakened the roof purlins. Temporary termite treatment has been arranged by the Antiquities and Monuments Office (AMO) while awaiting funding for a permanent solution. Also, the plaster and paintings on the internal walls of the temple have peeled-off and the flooring finishes have deteriorated (Photos showing the deteriorated components of the temple are at Appendix II). As the AMO has the responsibility to keep Hong Kong’s declared monuments in a sound maintenance condition, a major repair project for this Tin Hau Temple is proposed and funded by the AMO.

1.2.3 The repairs strategy and a draft specification was prepared by the Architectural Services Department (Arch SD) and vetted and agreed by the AMO. The work consists of the following major repair items and ancillary work:

- (i) Dismantling defective roof structure, including roofing tiles, purlins and truss system. Reconstruct the roof with termite-proofed roof timber and new tiling as necessary. Also, repair and re-paint the ridge and gable ridge.
- (ii) Re-plaster and re-paint the internal walls of the temple.
- (iii) Clean, repair and re-point the external wall and “dentist” replacement to individual damaged bricks. Also, re-paint the frieze of the external wall with matching original form.
- (iv) Repair and re-paint the timber doors, wooden frame and the windows.
- (v) Dismantle, supply and install lightening system for defective roof. Also, supply and install new conduits and cables.

1.2.4 Drawings showing the proposed work are attached at Appendix III to V.

1.3 Name of Project Proponent

Antiquities and Monuments Office (AMO), Leisure and Cultural Services Department

1.4 Location of Project

Tin Hau Temple, Lung Yeuk Tau, Fanling.

1.5 History of Tin Hau Temple

- 1.5.1 Situated between the Tang Chung Ling Ancestral Hall and Lo Wai, Lung Yeuk Tau, Fanling, the Tin Hau Temple is the main temple in the area. According to the village elders, there was a temple on this earlier than Tang Chung Ling Ancestral Hall, i.e. before 1525, although the present building probably dates from the mid-19th Century.
- 1.5.2 This temple is a traditional two-hall building with an internal courtyard and is one of the finest examples of its kind in Hong Kong. The whole building is exquisitely decorated with fine wood carvings, polychrome plaster mouldings, ceramic sculptures and murals of auspicious Chinese motifs, fully reflecting the superb craftsmanship of the olden days. The Main Hall of the temple is devoted to the worship of Tin Hau and her guards, Chin Lei Ngan ("Thousand Li Eyes") and Shun Fung Yi ("Heavenly Wind Ears"). The oldest relics surviving in the temple are two bronze bells which are kept in the east chamber of the Rear Hall.
- 1.5.3 The temple was declared a monument on 15 November 2002. The property is owned by the Tang Clan of Lung Yeuk Tau and is still used for worship and celebrations of traditional festivals and ceremonies.

1.6 Number and Type of Designated Project to be covered by the Project Profile

- 1.6.1 The proposed work is a designated project under Section Q.1 of Schedule 2, of the Environmental Impact Assessment (EIA) Ordinance because the project will involve building works wholly in an existing site of cultural heritage (namely a Declared Monument).

1.7 Contact Person(s)

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1.8 Estimated Cost

\$ 2.20 million.

2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Responsibilities of Parties

2.1.1 For this project, AMO is Project Proponent and Client Department who are responsible for funding the project and will also act as the building conservation adviser. AMO has engaged Arch SD as their works agent who will be responsible for project management, contract preparation, site supervision and monitoring. The Tang Clan of Lung Yeuk Tau, who are the owners of the temple, will be consulted at all stages of the project.

2.1.2 The works will be undertaken by a specialist contractor (“the Contractor”) on the List of Approved Specialist Contractors for Repair and Restoration of Historic Buildings provided by the Environment, Transport and Works Bureau. In addition, the Contractor will be responsible in carrying out the mitigation measures for minimizing the environmental impacts induced by the project.

2.2 Site Survey

2.2.1 A condition survey of the temple has already been carried out to identify problem areas and has recommended corrective action necessary. The draft specification for the proposed work has been vetted and revised by AMO to check that it fully complies with international conservation standards. Any further environmental requirements specified in the environmental permit would be incorporated into the final specification and tender documents prior to tender action.

2.3 Method of Construction

2.3.1 As the work involves a historic building, a higher degree of care will be taken in all phases of the work. In particular, the temporary scaffolding will be provided to a high standard to ensure that all sections of the roof will be easily accessible for dismantling and no undue stress will be placed on any damaged materials.

2.4 Partial Reconstruction of the Chinese Tiled Roof

2.4.1 Existing roofing tiles are to be carefully removed and stacked for reuse. New tiles and sound old tiles will then be reused for the retiling of the roof. New tiles will be of matching size, quality and colour to original. Sample of tiles is to be approved before ordering.

2.4.2 All new timber is to be the best of its kind, free from worm holes or other defects such as cracks and will be pre-treated with anti-termite solution before fixing in the roof structure.

2.4.3 During taking down of rotten or broken timber for replacement or repair, great care is required to take out the built-in section so as not to damage the adjoining plaster work. The Contractor may be required to cut the exposed part of the timber away first and carefully break down the built-in section into pieces by drilling (using only hand-held

powered tools) before taking the section out.

- 2.4.4 All new timber is pre-treated by the timber-suppliers in their own workshops with approved preservative. Termiticide will be sprayed on the existing and salvaged timber to prevent termite infestation. The works will be conducted by a specialist termite contractor with great cares to avoid negative environmental impacts.

2.5 Replacement of Deteriorated Bricks

- 2.5.1 Deteriorated bricks include those cracked, broken bricks, worn bricks for more than 3mm depth, and bricks with the hard surface skin worn away. Areas of missing or deteriorated bricks to be replaced by new or salvaged bricks shall be indicated on site to the Contractor by Arch SD and AMO.

- 2.5.2 Replacement of bricks shall be done by “piece-in” method as follows:

- (i) Areas identified to be replaced including deteriorated bricks, mortar/cement fillings or plaster should be completely taken out without affecting the neighbouring sound bricks.
- (ii) All existing mortar joint and pointing to be carefully removed to leave a tidy position to receive the piece-in bricks.
- (iii) Header and tie bricks adhered to both the inner and outer leave of the walls should be completely taken out even though only one side of it may be deteriorated or missing.
- (iv) The final surface over the replaced area should be flat in relation to the existing surface of the wall.
- (v) Bricks used for piece-in repair should be in one complete piece with similar colour and dimensions as the existing neighboring bricks and should be laid in the same pattern as the existing.

2.6 Implementation Programme

The tentative implementation programme (as agreed with the Tang Clan) is as follows:

Pre-contract preparations

(i.e. Design, Tender Documents, EIAO, etc) April/2004 to June /2005

On-site Construction Period

June/2005 to March /2006

3. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

- 3.1 The temple, together with the adjoining Tang Chung Ling Ancestral Hall are the most significant landmarks of the Lung Yeuk Tau Heritage Trail which are located in the rural village of Tsz Tong Tsuen, in the wider neighbourhood of Lung Yeuk Tau, Fanling. The surrounding area is scattered with low-rise residential village blocks (*Ding Uk*), the nearest cluster being approx. 15m to the west of the project site. These blocks are considered to be sensitive receivers.
- 3.2 Other buildings close by the site are: a) Tang Chung Ling Ancestral Hall, a declared monument, which is located approx. 10 metres away from the external wall of the temple at its closest point; b) Lo Wai, a well-known walled village whose entrance tower and enclosing walls are declared monuments, is about 40m away.
- 3.3 There are several other historical buildings located along the trail, including Lo Wai, Ma Wat Wai, Shek Lo and Tsung Kyam Church, which are all more than 300m away and therefore not expected to be affected by any adverse environmental impacts caused by the proposed project.
- 3.4 Sui Wan Road is the only vehicular road passing through the site and as it only serves the surrounding villages, the daily traffic usage is rather low.

4. POSSIBLE IMPACTS DURING CONSTRUCTION PHASE

4.1 Cultural Heritage

- 4.1.1 In this project, the damaged portions of the roof of the temple will be carefully taken down and replaced by matching materials. Special care and attention will be paid for maintaining the historic nature of the temple; therefore all building and painting works are to be carried out in a careful and skilled manner by very experienced artisans only, who will be subject to a high level supervision by staff of AMO and Arch SD to ensure that the works are of the highest standard and the materials are exactly as required.
- 4.1.2 Another declared monument, Tang Chung Ling Ancestral Hall, is located about 10 meters away from the site. The Contractor will be required to take special cares when demolishing the roof of the temple in order to avoid any physical damage to the walls of the ancestral hall with those falling debris. Conditions have been included in the Specification regarding the proposed method of removing the old roof tiles and timber to prevent damage to persons or property on the site.

4.2 Noise

- 4.2.1 The distance between the site and the nearest cluster of residential blocks is about 15m -20m, but the only construction noise to be generated will be that from hand-held power tools and hand-held manual tools, so that only minor impacts are anticipated. No heavy power-operated machinery will be involved in this project. As a result, it is believed that the noise impact on the surrounding sensitive receivers may be considered as minimal.

4.3 Air Quality

- 4.3.1 The problem of dust emission from construction work is expected to be minimal since the demolition of the existing roof and brickwork repairs will be carried out by either hand-held power tools or hand-held manual tools. The amount of dust generated is expected to be low and will be controlled with good site management as well as dust reduction measures that are incorporated in the specification.

4.4 Traffic Impacts

- 4.4.1 Some traffic impacts on the nearby feeder roads, such as Sui Wan Road, will be inevitable as lorries will need to transport construction materials to and from the site, including timber, bricks, building waste, etc. Yet these impacts are considered to be very limited and the project is quite short in duration.

4.5 Solid Waste

- 4.5.1 During the working period, about 18 cubic metres of construction and demolition waste (C&D waste) may be produced, including cement mortar, roof timbers, roof tiles and wall plaster. Any sound roof tiles and roof timbers should be retained on-site for reuse after inspection by experts from Arch SD and AMO. Those unwanted C&D waste will be removed off site promptly and transported to the statutory landfill sites. The guidelines concerning temporary storage and proper disposal of C&D waste will be strictly monitored. Therefore, no significant impact due to the generation and disposal of the limited and non-toxic solid waste is expected from the works.
- 4.5.2 Spent chemicals from any waste termiticide and normal domestic detergent will be handled, stored and disposed of in accordance with the Waste Disposal Ordinance. Where necessary, the hotline (2755 3554) for chemical waste control and chemical waste disposal will be contacted for enquiry on technical requirements for handling chemical wastes. Any waste termiticide should be carefully returned to its container and taken back to the Contractor's workshop for filtering and future reuse. In view of the cost of the termiticide, the waste chemical is not expected to exceed 1 litre in total.

4.6 Spoil Water

- 4.6.1 Spoil water is likely to be generated from washing down the brick walls, granite columns and the floors using a mild detergent and fresh water solution. Such waste water will be no more harmful than normal domestic waste water; however it will be filtered before discharge to remove any pieces of waste materials that may block up the drains. The quantity of waste water generated is not expected to exceed 100 litres per day. Also, all the effluent discharge from the site will be subject to the Water Pollution Control Ordinance.

4.7 Dangerous Goods

4.7.1 No designated dangerous goods are involved in the project.

4.8 Ecological Impact

4.8.1 There are no trees either within the project site or close enough to the site to be damaged by the intended works. No landscaping issues therefore are expected to arise on this occasion.

4.8.2 Regarding possible bats within the roof space, representatives from Agriculture, Fisheries and Conservation Department (AFCD) and experts of Kadoorie Farm and Botanical Garden Corporation (KFBG) have already visited the site with AMO's staff and have reported that no signs of bird nests or bat roosts could be found within the temple.

4.8.3 In view of the above, it is believed that the project would induce little or zero disturbance to the surrounding wildlife.

5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN

5.1 Measures to Minimize Environmental Impacts

5.1.1 From the above section, it is assessed that noise, air quality, traffic, solid waste and spoil water arising from the project are minimal. At the same time, standard mitigation measures in accordance with the latest version of "Recommended Pollution Control Clauses for Construction Contracts" will be adopted for further reducing the environmental impacts.

5.2 Cultural Heritage

5.2.1 Antiquities and Monuments Ordinance

According to the Section 6(1) of the Antiquities and Monuments Ordinance (Cap. 53): "no person shall demolish, remove, conduct, deface or interfere with a monument, unless a permit is granted. As the Tin Hau Temple is a declared monument, the required permit will be obtained from the Antiquities Authority before any work may commence on-site. Any person who contravenes Section 6(1) shall be guilty of an offence and shall be liable on conviction to a fine of \$100,000 and imprisonment for 1 year."

A permit will be applied from the Antiquities Authority in the usual way and the contractor and all parties involved will comply with any requirements made under the terms of the permit.

5.2.2 Standard of Workmanship

- 5.2.2.1 All works to be carried out shall match the original design and care has to be taken to trace from the existing building what the original construction should be or should have been, including materials, dimensions and colours etc..
- 5.2.2.2 On completion of the works, the new building works and paintworks should not appear too obvious and for this reason all colours for painting and all materials employed must be approved by the Arch S D and AMO before use.
- 5.2.2.3 The Contractor is required to employ experienced craftsmen and artists to reconstruct missing or damaged or deteriorated elements of the building where no similar elements can be found.
- 5.2.2.4 The Contractor is required to keep a record of methods and materials adopted in this project while the format of the record should be accepted by the Arch SD and AMO. A copy of the record will be given to AMO for future maintenance purposes.
- 5.2.2.5 The record shall contain the types of materials used (including common names and technical names), area of application, mix proportion, method of mix, method of application etc., to allow future maintenance with the same materials and methods.

5.3 Noise

- 5.3.1 Demolition of the existing roof by hand-held power tools will cause slight amount of noise nuisance during the initial stage of the project. In view of the distance between the site and the sensitive receivers (approx. 15m to 20 m away from the project site) and that no heavy power-operated machinery will be involved, it is believed that the anticipated noise level will be very low.
- 5.3.2 For further reducing the noise disturbance, appropriate mitigation measures will be implemented to control noise level within an acceptable limit as stipulated under Noise Control Ordinance, EIAO and other relevant regulations during the construction, such as the use of quieter tools, proper maintenance of plant and good working practices.
- 5.3.3 No construction works will be carried out during 7 p.m. to 7 a.m. and any time on Sundays and General Holidays; as a result, there will not be any noise generated during these sensitive hours.

5.4 Air Quality

- 5.4.1 Air pollution will not be allowed to cause a major impact, as only a small amount of dust will arise from the demolition works during the taking down of the roof and during brick wall repairs. In addition, the Air Pollution Control (Construction Dust)

Regulation will be strictly followed and monitored. The following mitigation measures will be carried out:

- (i) Avoid free falling of debris while roof material is being removed and dismantled. Baskets or similar containers shall be used to carry such material from the roof to ground level for proper disposal.
- (ii) Regularly dampen the floor with clean water to avoid spread of dust during the hacking-up and removing of the existing floor finishing.
- (iii) Spray the debris with clean water so that it remains damp before it is carted away. In addition, water will be continuously sprayed on the surface where any drilling, cutting or other small-scale breaking operation is carried out by using hand-held power tools.

5.5 Solid Waste

5.5.1 About 18 cubic metres of C&D waste would be produced from the demolition or site clearance (i.e. broken clay tiles, roof timber, old clay bricks, cement mortar, plaster, etc.). After sorting out those that can be re-used, all the unwanted C&D waste will be removed from the site to the statutory landfill sites. Moreover, all the C&D waste will be handled and disposed of in accordance with the Waste Disposal Ordinance; as a result, the environmental impact from waste disposal is minimal.

5.6 Water Quality

5.6.1 When cleaning the brick walls, columns and the floor as well as carrying out small scale brickwork repair, spoil water would be produced. Such spoil water will be filtered before discharge into drains. Also, the Water Pollution Control Ordinance would be strictly monitored for discharging such waste water from the site. Moreover, there are no water sources in the vicinity of the site that would be impacted or affected by the project.

5.7 Further Environmental Implications

Severity, Distribution and Duration of Environmental Effects

5.7.1 The possible severity, distribution and duration of environmental effects and further implications are summarised below:

Impact	Effects	Severity	Distribution	Duration
Cultural Heritage	Enhance the condition and attractiveness of the temple	Beneficial	Project Site only	Long-term
Noise	Noise nuisance from demolition and clearance works	Minimal	Project Site only	About 3 months
Air Quality	Dust generated from demolition works and construction activities	Minimal	Project Site only	About 3 months
Solid Waste	Handling and disposal of about 20m ³ of demolished building	Minimal	Project Site only	About 3 month

Impact	Effects	Severity	Distribution	Duration
	material			
Water Quality	Discharging approx. 100 litres of spoil water into drains with appropriate filtering process	Minimal	Project Site only	About 3 months
Traffic	Lorries to and from work site	Minimal	Sui Wan Road	About 3 months

5.8 Public Consultation

- 5.8.1 Regular progress meeting will be held among the Tang Clan of Lung Yeuk Tau, Arch SD, AMO and the Contractor. As the temple is one of the most attractive tourism spots at the Lung Yeuk Tau Heritage Trail, the Contractor will be urged to complete the project on time.
- 5.8.2 The local villagers have long urged the government to undertake this project and therefore strongly support its urgent completion. It is also understood that they are willing to tolerate reasonable disturbance during the construction period providing the level is minimal and appropriate mitigation measures will be adopted.
- 5.8.3 The Antiquities Advisory Board have been informed of the proposed project and they strongly support the proposal

5.9 Monitoring

- 5.9.1 In view of the small scale of this project, limited monitoring procedures are proposed to be adopted and the following parties will be responsible for monitoring operations:

Arch SD as Project Architect:

- ? to ensure that the general aspects of environmental quality will comply with the project requirements;
- ? supervise the Contractor to ensure that the requirements in the Project Profile are fully complied with;
- ? instruct the Contractor when action is required to reduce or prevent any impacts;
- ? bring to the attention of AMO any complaints received with regard to any environmental aspects of the project; and
- ? on completion of the project to prepare a summary of the environmental performance of the Contractor.

AMO as Conservation Architect

- ? to ensure the quality of the conservation aspects of the project are carried out to the highest possible standard, with the co-operation of the Project Architect; and
- ? to effectively and speedily deal with any complaints on environmental performance referred by the Project Architect.

5.10 History of Similar Projects

5.10.1 During February 2004 to July 2004, a similar but much larger roof reconstruction project was carried out at Tin Hau Temple, Causeway Bay.

6 USE OF PREVIOUSLY APPROVED EIA REPORTS

6.1 There are no previously approved EIA reports concerning this building that can be referred to. Yet, the Project Profile “Renovation Project for the Tin Hau Temple, Causeway Bay” (Ref: DIR-091/2003) was approved and we were allowed to apply for an environmental permit directly. As both projects involve similar repair works to a traditional Chinese Declared Monument, the previously approved documentation was referred to in preparing the current Project Profile.

7 CONCLUSIONS

7.1. Water quality, noise, dust, traffic and solid waste impacts will be minimal during the construction phase. Moreover, by adopting appropriate mitigation measures, no adverse impacts are anticipated and the sensitive receivers will be protected from impacts. (The mitigation measures are summarized in Appendix VII).

7.2. The project will repair the Tin Hau Temple, while preserving and enhancing the traditional features of the building. The Contractor will strictly comply with the requirements specified in the permit issued under Section 6 of the Antiquities and Monuments Ordinance by the Antiquities Authority. All the repair works will be carried out by experienced craftsmen and workers. Experts from AMO as well as from Arch SD will monitor and supervise the works in order to ensure the historic value and architectural features of the building would be kept intact.

7.3 This project is intended to put the temple back into good maintenance condition in order to facilitate the religious practices and ceremonials organized by the Tang Clan. As the building forms one of the landmarks in Lung Yeuk Tau Heritage Trail, its renovation will help to promote cultural tourism and heritage education in Hong Kong.

7.4 The environmental impact arising from the project is not considered to be adverse, but on the contrary is considered to be beneficial, both for the building itself and for the surrounding environment. For this reason an application for permission to apply directly for an environmental permit under EIA Ordinance is therefore requested.