

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS

Support – Others

181GK – Construction of a station for the new Terminal Doppler Weather Radar

Members are invited to recommend to Finance Committee the upgrading of **181GK** to Category A at an estimated cost of \$175.7 million in money-of-the-day prices for the construction of a station for housing a new Terminal Doppler Weather Radar.

PROBLEM

We need to construct a station for housing a weather radar called the Terminal Doppler Weather Radar (TDWR) to detect windshear.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Commerce and Economic Development, proposes to upgrade **181GK** to Category A at an estimated cost of \$175.7 million in money-of-the-day (MOD) prices for constructing the new TDWR station.

/PROJECT

PROJECT SCOPE AND NATURE

3. The proposed site for the radar station occupies an area of around 1 900 square metres (m²) on a hilltop near Brothers Point in Tai Lam Chung, Tuen Mun. The scope of the proposed works under **181GK** comprises —

- (a) construction of a single-storey main station building, with a radar equipment room, an electronic workshop, a data processing room and other ancillary facilities;
- (b) construction of a single-storey auxiliary building, with a generator room, a service fuel tank room and other ancillary facilities;
- (c) provision of a loading and unloading area for radome installation and future maintenance; and
- (d) construction of a new access road of around 305 metres (m) in length by extending an existing waterworks access road in the vicinity to the proposed site.

The site location and the proposed layout are shown in Enclosures 1 and 2 respectively. Subject to funding approval of Finance Committee (FC), we plan to start the construction works in June 2012 for completion in May 2014.

JUSTIFICATION

Acquisition of a new TDWR

4. In February 2009, FC approved the acquisition of a new TDWR of the latest technology at a project estimate of \$100 million. In seeking FC's funding approval, we explained to FC that aviation safety was critical to the further development of Hong Kong as an aviation hub in the region. The Hong Kong Observatory (HKO) needed to replace/upgrade the meteorological equipment, including the existing aging TDWR, to maintain its aviation weather services. Windshear was a hazardous weather phenomenon that had brought about aircraft accidents around the world. Issuance of windshear alerts in good time was of paramount importance for ensuring aviation safety. The present

/TDWR

TDWR, in operation since 1998, was approaching the end of its functional life¹. It needed to be replaced in a timely fashion.

Need for a New Radar Station

5. To ensure uninterrupted, timely and accurate detection of windshears, it is vital that the new radar is ready for use when the functional life of the existing TDWR draws to an end. Given that there is not enough space for installing the new TDWR at the existing station, and that operating two radars at the same station will cause unacceptable mutual interference, it is not possible to operate two TDWRs at the existing station. If the existing TDWR (located close to the Marine Police base of Tuen Mun) is dismantled to make way for the installation of the new radar, this could mean a service disruption for more than one year. The absence of TDWR coverage for such an extended period is not acceptable to aviation stakeholders, taking into account the frequency at which windshear occurs at Hong Kong International Airport (HKIA). We therefore need a separate site to hold the new radar.

6. Moreover, in anticipation of growing air traffic at HKIA, HKO sees a case for having two TDWRs in the longer term, so that at times when one of the radars is not serviceable or stands down for maintenance, it would help ensure aviation safety if we could rely on the other radar to upkeep the service. Under the scenario where a pair of TDWRs operate in tandem, the site for the existing TDWR would be used to house the other radar.

Site Selection

7. To ensure effective operation of the windshear radar, the site for holding the new radar has to fulfil certain technical criteria². HKO started the site

/selection

¹ The average annual unserviceable time of the existing TDWR has been increasing in recent years, from 33 hours for the period of 2002 to 2004, to 42 hours for the period of 2005 to 2007, and further to 44 hours for the period of 2008 to 2010.

For the last three-year period, the actual annual unserviceable time was 34 hours for 2008, 84 hours for 2009 and 13 hours for 2010.

² The criteria include, inter alia –

- (a) unobstructed view to the airport;
- (b) alignment with the direction of the runway;
- (c) at a distance of 10 kilometres (km) to 15km from the airport; and
- (d) at a height of 40m to 130m above mean sea level.

selection process in 2006, with the assistance of international radar experts. Having examined over 20 sites, HKO considered that the present proposed site was the most suitable one in technical terms. The locations of the existing radar station and the proposed new station are shown in Enclosure 3.

8. The other examined sites were not favored because of one or a combination of factors. These included impairment to full-scale functioning of the TDWR due to more extensive obstruction by nearby hills, inadequate site area to hold the station, mutual interference with the existing TDWR because of proximity, unacceptable height above the mean sea level, safety concerns, greater damage to the surrounding environment because of more extensive slope removal works, and longer construction time.

9. In September 2008, under section 16 of the Town Planning Ordinance (Cap. 131), HKO submitted an application to the Town Planning Board (TPB) for planning permission to construct the station at the proposed site as it is located in a green belt zone. Some villagers living in the vicinity raised objections against use of the site for housing the TDWR on grounds of radiation safety concerns and “Fung Shui”.

10. The TPB noted that both the Office of Telecommunication Authority (OFTA) and the Department of Health (DH) had no adverse comments on the application. HKO was experienced in operating weather radars. The angle of the radar emission would be programmed in a way that the nearby residents and the passers-by would be protected from microwave radiation exposure. The proposed radar station would comply with the relevant guidelines, code of practice and standards on radiation safety. DH considered the proposed protective measures adequate to protect the residents in the vicinity. In February 2009, the TPB approved the application and invited HKO to liaise with the local villagers to address their concerns including the “Fung Shui” issue.

11. HKO has continued to engage the villagers since then. In response to a number of alternative sites put forward by villagers, HKO duly considered the sites in consultation with the Architectural Services Department. Each of the sites had its own shortcomings. These included the need for reclamation, extensive obstruction by nearby hills, greater damage to the surrounding environment because of more extensive slope removal works, site not being available until 2014, longer construction time, etc.

/12.

12. After taking into account technical, environmental and other relevant factors, HKO remains of the view that the present proposed site meets all the requirements and is the most suitable one.

Local Concerns

13. Some villagers living near the proposed site have raised concerns about radiation safety and the visual impact (or “Fung Shui”) of the proposed radar station. We have endeavoured to put the villagers’ minds at ease. A summary of our efforts is given in the ensuing paragraphs.

(A) Radiation Safety

14. We are mindful of our responsibility to protect the health of the villagers living near the proposed radar station. Their health should not be compromised because of the need to maintain aviation safety.

15. When briefing villagers, we highlighted the fact that HKO had been operating weather radars since 1959 and following strictly the code of practice issued by OFTA. Moreover, the radar itself had various safeguarding measures to ensure radiation safety³.

16. We informed the villagers that HKO had been regularly measuring the radiation levels of the existing TDWR, both inside and outside the station. OFTA also carried out separate measurements in 2009 and 2010. OFTA and DH had confirmed that the radiation level of the existing TDWR fully complied with the international standard endorsed by the World Health Organization (for details, please see Enclosure 4). As such, there should not be adverse health impact on nearby villagers.

/17.

³ Key safeguarding measures include the following –

- (a) the antenna of the radar focuses the radiation beam to a very narrow one;
- (b) there is a sophisticated software to control the direction at which the radar beam will point. In particular, the radar beam only points to the sky, and not downwards towards the villages;
- (c) there is a mechanical stop to prevent the radar antenna from pointing downwards; and
- (d) there is an electronic switch to stop the emission of radiation automatically when the radar somehow does not scan as planned.

17. Acceding to the villagers' request, HKO engaged in early 2011 an expert from a local university to carry out independent radiation measurement. The expert re-affirmed that the radiation level of the existing radar was well within the international radiation safety guideline.

18. Details of the radiation measurements taken by HKO, OFTA and the independent expert are shown at Enclosure 4.

19. Since the technical specifications and protective measures of the new TDWR are similar to those of the existing one, its radiation level is expected to resemble that of the existing TDWR. OFTA has examined the latest design of the proposed radar station and confirmed that the radiation level should comply with the international standard. It will also take actual radiation measurements upon installation of the new radar. HKO will consult both OFTA and DH again before the new TDWR is brought into operation.

20. When the new TDWR is installed, HKO will extend the present regular radiation measurement arrangements for the existing TDWR to the new radar. This would provide on-going monitoring of the radiation levels for safeguarding the health of nearby villagers.

21. The international standard above refers to the level for limiting public exposure to radiation having regard to safety considerations. It does not make reference to the distance between the source of radiation and the measuring location(s). That said, as requested by the Legislative Council (LegCo) Panel on Economic Development (ED) at its meeting on 28 November 2011, we have identified some examples overseas where the physical distance between the TDWRs and the nearest residential/commercial developments are similar to that between the proposed site in Tuen Mun and the nearest village (about 300m). These examples include airports in the USA and Europe⁴.

/(B)

⁴ They are –

- (a) Orlando International Airport, USA – distance between the TDWR and the nearest residential area at less than 150m;
- (b) Boston Logan International Airport, USA – distance between the TDWR and the nearest residential area at around 150m; and
- (c) Hamburg Airport, Germany – distance between the TDWR and the nearest commercial and residential buildings at around 100m and 300m respectively.

(B) Visual Impact and “Fung Shui”

22. To minimize the visual impact of the proposed radar station, we have modified the design of the station as far as it is technically feasible, whilst not compromising the functionality of the new radar. The key changes made include –

- (a) moving the TDWR by 17m away from the nearby villages. We would need to construct a platform over the cliff just adjoining the main site area to support the radar station at some additional cost;
- (b) reducing the height of the radar station by 7m (by compressing the station building from two storeys to one storey and using a smaller radome); and
- (c) planting trees facing the direction of the nearby villages downhill.

23. As a result, the radar should generally be masked from sight when viewed from the nearby villages downhill. Details are at Enclosure 5.

24. We have also assured local villagers that in accordance with the established policy on “Tun Fu” ex-gratia allowance, the Government is prepared to consider claims for the allowance in accordance with the existing established policy when the project enters the construction stage. Details of the existing policy on “Tun Fu” ex-gratia allowance are at Enclosure 6.

Date of Commissioning

25. Subject to the funding approval by FC, HKO plans to commission the new TDWR by late 2014. Though HKO has been taking contingency measures over the last few years to prolong the lifespan of the existing TDWR⁵,

/HKO

⁵ Contingency measures taken by HKO include –

- (a) increasing the frequency of preventive maintenance;
- (b) increasing the stock of spare parts and requesting the radar manufacturer to repair the faulty items; and
- (c) putting the TDWR on “standby” mode when the weather is fine (as the TDWR is mainly for detection of windshears during rainy weather).

HKO considers that if the new radar could not be brought into operation by late 2014, there is a real risk of the existing radar being out of service when the new radar is not yet fully functional. This will not be acceptable as aviation safety would be at stake.

Anticipated Benefits

26. The proposal would ensure uninterrupted delivery of windshear alerts to the aviation community, thereby contributing towards the maintenance of aviation safety. By facilitating safe and efficient operation at HKIA, that in turn would help uphold Hong Kong's position as a leading aviation hub in the region.

FINANCIAL IMPLICATIONS

27. We estimate the capital cost of the project to be \$175.7 million in MOD prices (please see paragraph 28 below), broken down as follows –

	\$ million
(a) Site formation	13.1
(b) Foundation	13.5
(c) Building	29.0
(d) Building services	9.3
(e) Drainage	2.4
(f) External works	29.4
(g) New access road	24.4
(h) Furniture and equipment ⁶	4.3
(i) Additional energy conservation measures	4.4

/(j)

⁶ The estimated cost is based on an indicative list of furniture and equipment required.

		\$ million	
(j)	Consultants' fees	4.2	
	(i) contract administration	4.0	
	(ii) management of resident site staff	0.2	
(k)	Remuneration of resident site staff	3.1	
(l)	Contingencies	13.6	
	Sub-total	150.7	(in September 2011 prices)
(m)	Provision for price adjustment	25.0	
	Total	175.7	(in MOD prices)

We propose to engage consultants to undertake contract administration and site supervision for the project. A detailed breakdown of the estimate for consultants' fees and resident site staff costs by man-months is at Enclosure 7. The construction floor area (CFA) of **181GK** is about 734 m². The estimated construction unit cost, represented by the building and the building services costs, is \$52,180 per m² of CFA in September 2011 prices. We consider this comparable to that of similar projects built by the Government.

28. Subject to FC's approval, we plan to phase the expenditure as follows –

Year	\$ million (Sept 2011)	Price adjustment factor	\$ million (MOD)
2012 – 13	10.0	1.05375	10.5
2013 – 14	55.0	1.11171	61.1
2014 – 15	51.0	1.17285	59.8
2015 – 16	20.0	1.23736	24.7
			/2016 – 17

Year	\$ million (Sept 2011)	Price adjustment factor	\$ million (MOD)
2016 – 17	8.0	1.30541	10.4
2017 – 18	6.7	1.37721	9.2
	150.7		175.7

29. We have derived the MOD estimates on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period 2012 to 2018. We will deliver the construction works through a lump-sum contract because we can clearly define the scope of the works in advance. The contract will provide for price adjustments.

30. We estimate the annual recurrent expenditure arising from this project to be \$0.55 million.

PUBLIC CONSULTATION

31. Timely replacement of the aging TDWR has the strong support of the Windshear and Turbulence Warning System Working Group and the Liaison Group on Aviation Weather Services. These two user groups include representatives from airlines, pilots and air traffic controllers. The Airport Authority also supports the replacement.

32. We consulted the TPB on the proposed radar station site in February 2009. The TPB supported the application and asked HKO to liaise with the villagers on their concerns including "Fung Shui". We made modifications to the proposed radar site as far as it is technically feasible to minimize the visual impact of the proposed radar station. We consulted the Tuen Mun District Council (TMDC) on the proposed site in January and May 2010. TMDC recognized the

/importance

importance of the project from the aviation safety angle and showed understanding of the choice of the proposed site. Whilst TMDC did not object to the construction of the new radar station, it invited the Government to continue to liaise with the villagers and see if there were any additional measures that might help further ease their minds.

33. We have continued to engage local stakeholders, explaining to them further the safeguards that would be in place to ensure radiation safety. We have taken additional measures to ease their concerns, including the independent radiation measurement exercise referred to in paragraph 17 above. We have confirmed our readiness to consider claims for “Tun Fu” ex-gratia allowance when the project enters the construction stage, in accordance with the established policy on the ex-gratia allowance. We have also kept the local stakeholders posted of the detailed design of the radar station.

34. We consulted the LegCo ED Panel on 28 November 2011. The Panel supported the project. Members recognized the importance of the project to aviation safety and noted the various actions taken by the Administration to ease villagers’ concerns. They sought assurance that the normal functioning of the new TDWR would not be compromised as a result of the modifications made to the proposed station. They also appreciated the need to put the minds of the nearby villagers at ease. For better understanding of the subject, the Panel asked that LegCo be given more background information about radiation safety associated with the proposed new station and “Tun Fu” ex-gratia allowance. The Panel also asked the Administration to provide overseas examples, if any, of TDWR stations being located at similar proximity to residential/commercial developments as in Hong Kong. The requisite information is provided in footnote 1 above, paragraphs 14 to 21 above and at Enclosures 4 and 6.

ENVIRONMENTAL IMPLICATIONS

35. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). In view of its small scale, the project will not cause long-term environmental impact. We have included in the project estimates the cost to implement suitable mitigation measures to control short-term environmental impacts.

36. During construction, we will control noise, dust and site run-off nuisances to within established standards and guidelines through the implementation of mitigation measures in the relevant contract. These include the use of silencers, mufflers, acoustic lining or shields and the building of barrier wall for noisy construction activities, frequent cleaning and watering of the site, and the provision of wheel-washing facilities.

37. At the planning and design stages, we have considered measures to reduce the generation of construction waste where possible (e.g. using metal site hoardings and signboards so that these materials can be recycled or reused in other projects). In addition, we will require the contractor to reuse inert construction waste (e.g. use of excavated materials for filling within the site) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste at public fill reception facilities⁷. We will encourage the contractor to maximize the use of recycled/ recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

38. At the construction stage, we will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

39. We estimate that the project will generate in total about 13 300 tonnes of construction waste. Of these, we will reuse about 7 600 tonnes (57.1%) of inert construction waste on site and deliver 5 600 tonnes (42.1%) of inert construction waste to public fill reception facilities for subsequent reuse.

/We

⁷ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

We will dispose of the remaining 100 tonnes (0.8%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be \$0.2 million for this project (based on an unit cost of \$27 per tonne for disposal at public fill reception facilities and \$125 per tonne⁸ at landfills).

HERITAGE IMPLICATIONS

40. This project will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/ buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

41. The project does not require any land acquisition, but clearance of government land is required. Ex-gratia allowance, e.g. “Tun Fu” ceremonial fees, will be paid where appropriate.

ENERGY CONSERVATION MEASURES

42. This project has adopted various forms of energy efficient features, including –

- (a) Variable Refrigerant Volume (VRV) air-conditioning system;
- (b) T5 energy efficient fluorescent tubes with electronic ballast and lighting control by occupancy sensors and daylight sensors; and
- (c) light-emitting diode (LED) type exit signs.

43. For renewable energy technologies, we will adopt photovoltaic system for environmental benefits.

/44.

⁸ This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90 per m³), nor the cost to provide new landfills (which is likely to be more expensive), when the existing ones are filled.

44. For greening features, we will provide greening on the appropriate external areas of the buildings for environmental and amenity benefits.

45. For recycled features, we will adopt a rainwater recycling system for landscape irrigation.

46. The total estimated additional cost for adoption of the energy conservation measures is around \$4.4 million (including \$0.2 million for energy efficient features), which has been included in the cost estimate of this project. The energy efficient features will achieve 4.4% energy savings in the annual energy consumption, with a payback period of about 6.6 years.

BACKGROUND INFORMATION

47. We upgraded **181GK** to Category B in October 2008. We have engaged an architectural consultant to undertake site investigation and detailed design since November 2009. The total cost of the consultancy services and works is about \$4.2 million. We have charged this amount to block allocation **Subhead 3100GX** “Project feasibility studies, minor investigations and consultants’ fees for items in Category D of the Public Works Programme”. The architectural consultant has completed the site investigation and detailed design.

48. Of the 44 trees within the project boundary, 20 trees will be preserved. The proposed works will involve the felling of the remaining 24 trees within the project site. All trees removed are not important trees⁹. We will incorporate the planting proposal of 24 trees as part of the project.

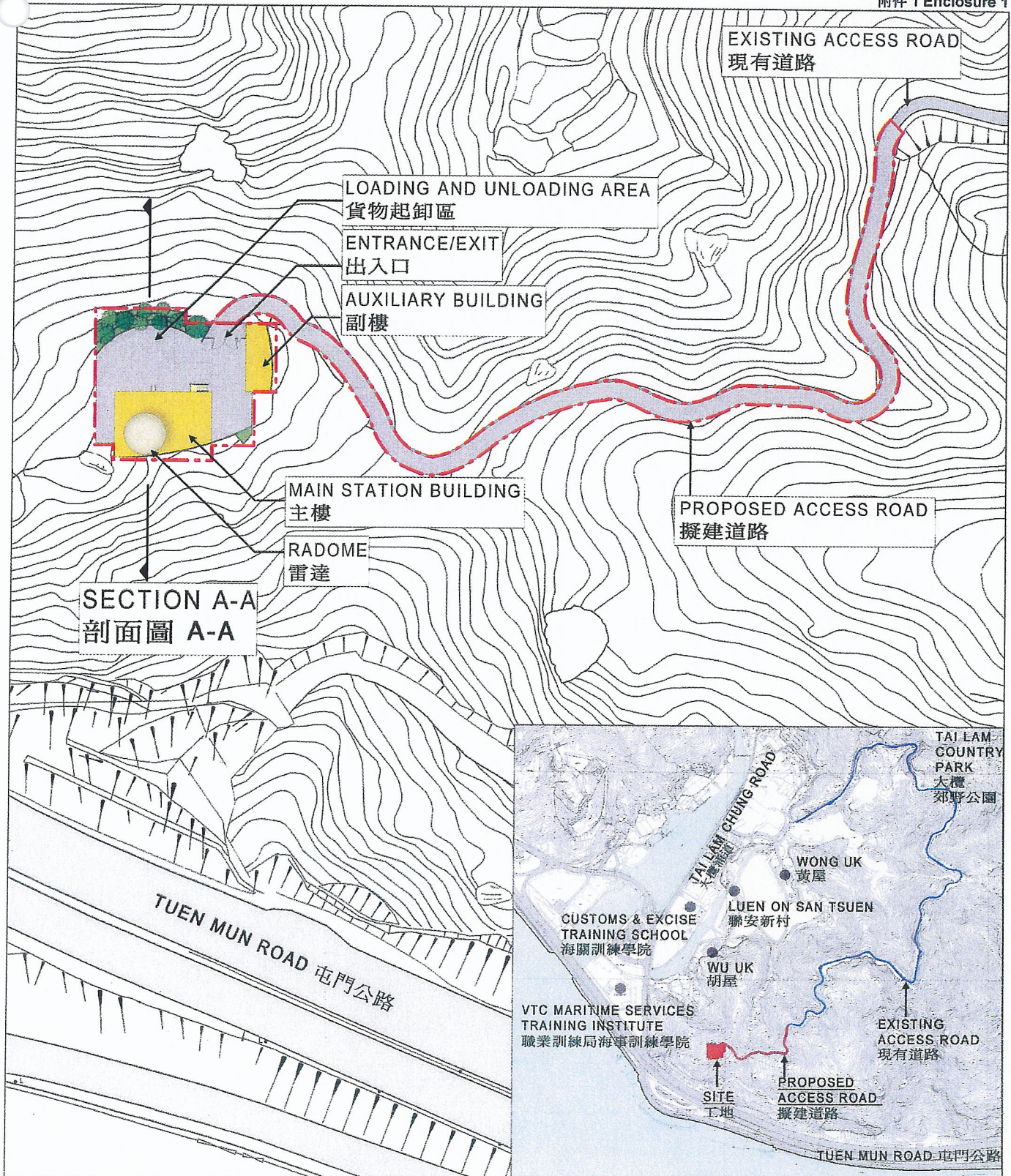
/49.

⁹ An “important tree” refers to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui tree, tree as landmark of monastery or heritage monument, and trees in memory of an important person or event;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (m) (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.

49. We estimate that the proposed works will create about 150 jobs (130 labourers and another 20 for professional/technical staff), providing a total employment of 1 990 man-months.

Commerce and Economic Development Bureau
December 2011




SITE PLAN - 工地圖

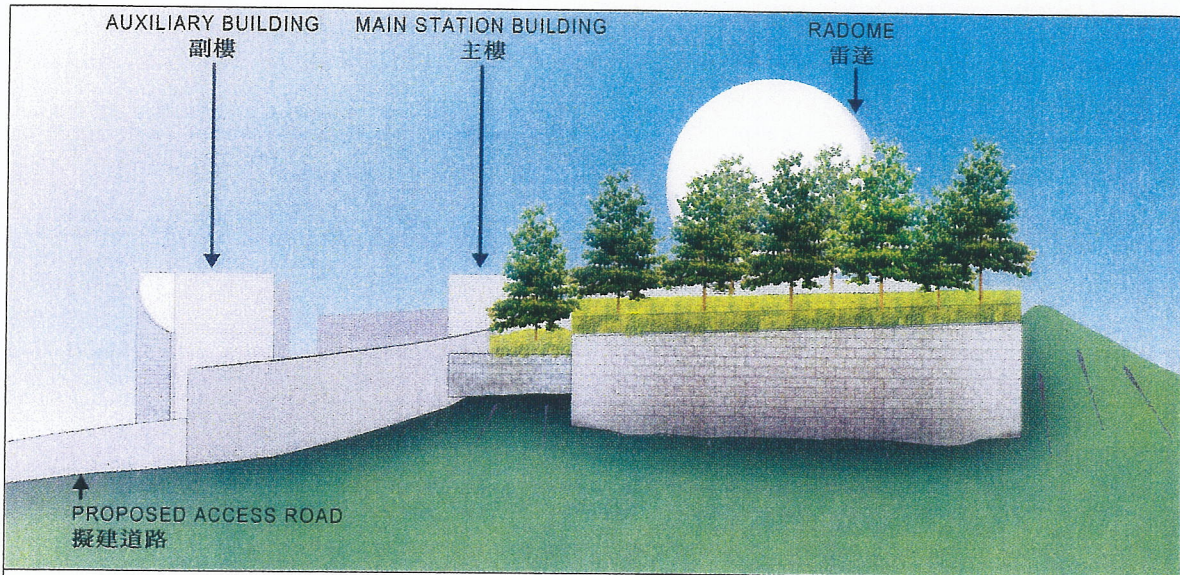


LOCATION PLAN 位置圖

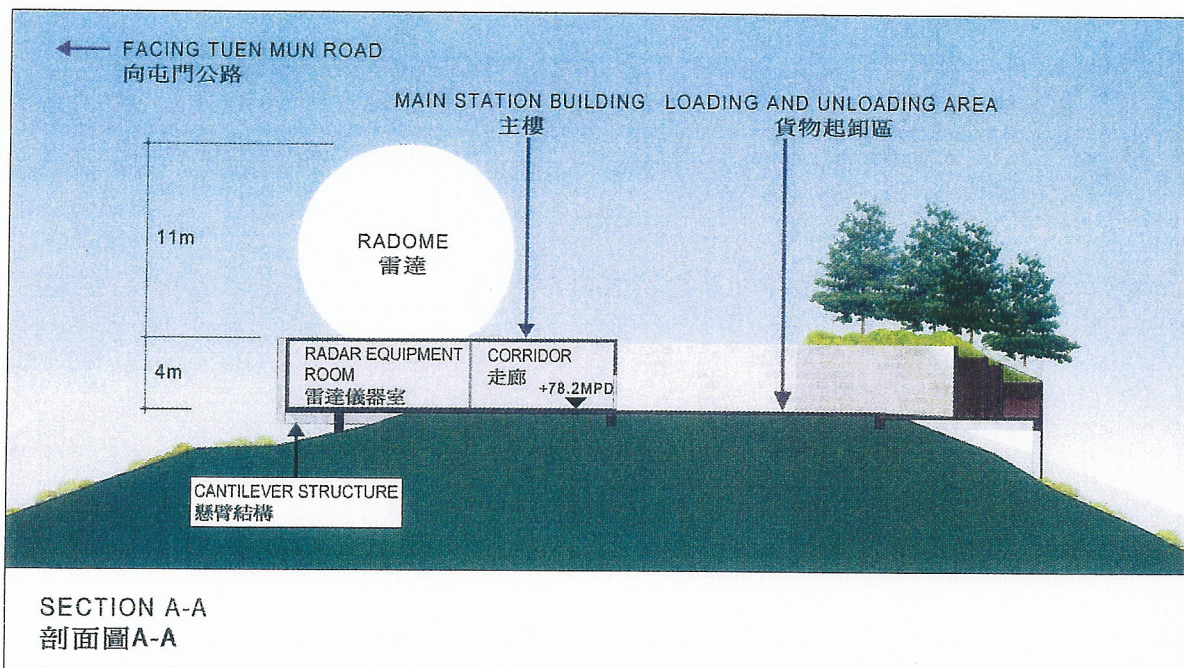
scale 比例 1 : 15000




project code and title 工程計劃編號和名稱 181GK - CONSTRUCTION OF A STATION FOR THE NEW TERMINAL DOPPLER WEATHER RADAR 181GK - 為新的機場多普勒天氣雷達建造雷達站	drawn 繪圖 K.C. Leung	date 日期 9/11/2011	drawing no. 編號 PMB1/7218/XA101	scale 比例 1:1500
	approved 覆核 S.K. Yeung	date 日期 9/11/2011	 ARCHITECTURAL SERVICES DEPARTMENT 建築署	
	office 辦事處 PROJECT MANAGEMENT BRANCH 工程策劃管理處			



ELEVATION OF THE RADAR STATION FROM NORTHERN DIRECTION (ARTIST'S IMPRESSION)
從北面望向雷達站的立面構思圖

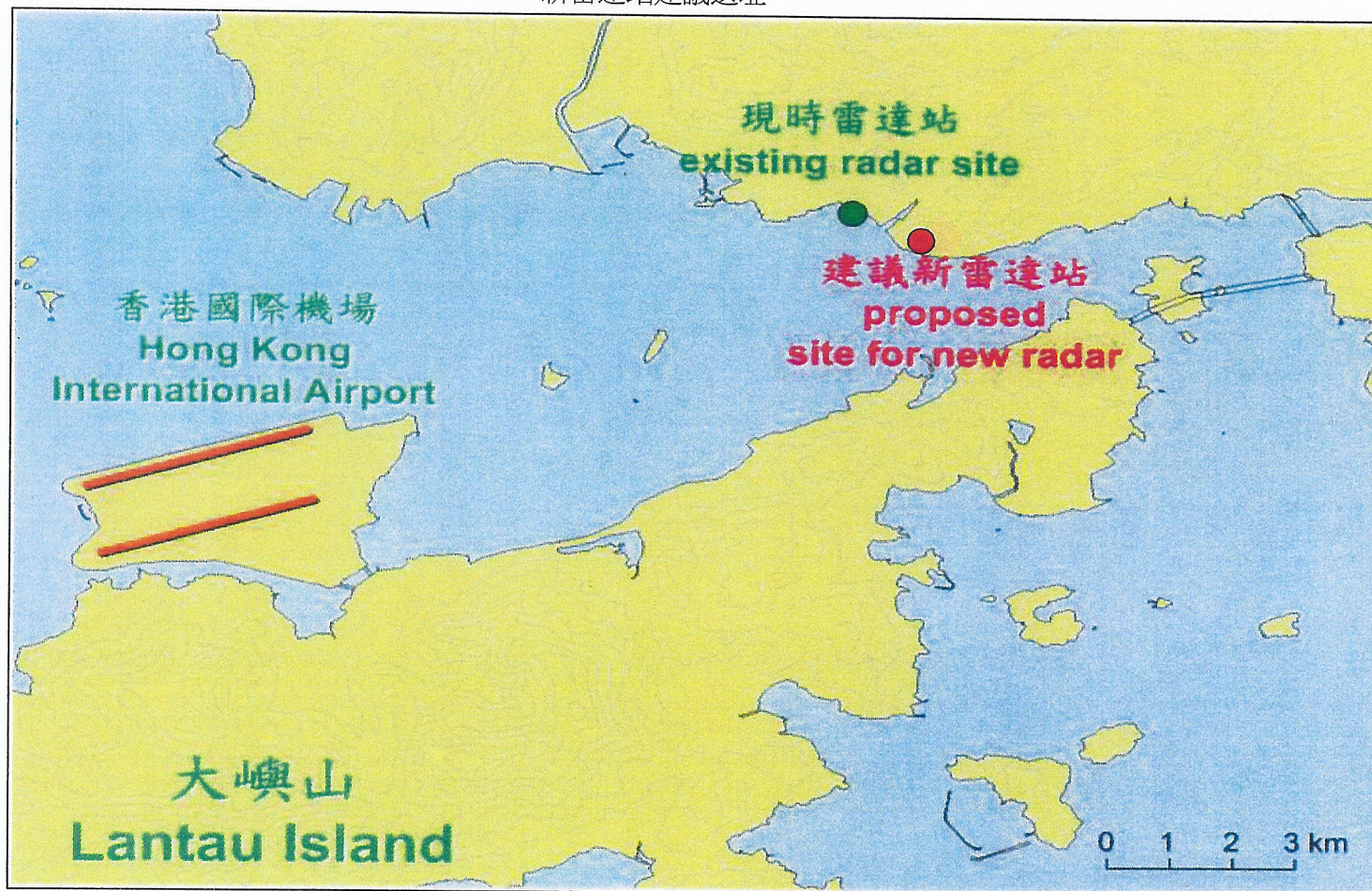


SECTION A-A
剖面圖A-A

project code and title 工程計劃編號和名稱 181GK – CONSTRUCTION OF A STATION FOR THE NEW TERMINAL DOPPLER WEATHER RADAR 181GK – 為新的機場多普勒 天氣雷達建造雷達站	drawn 繪圖 K.C. Leung	date 日期 9/11/2011	drawing no. 編號 PMB1/7218/XA102	scale 比例 1:400
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PROPOSED SITE FOR THE NEW RADAR

新雷達站建議選址



project code and title
工程計劃編號和名稱

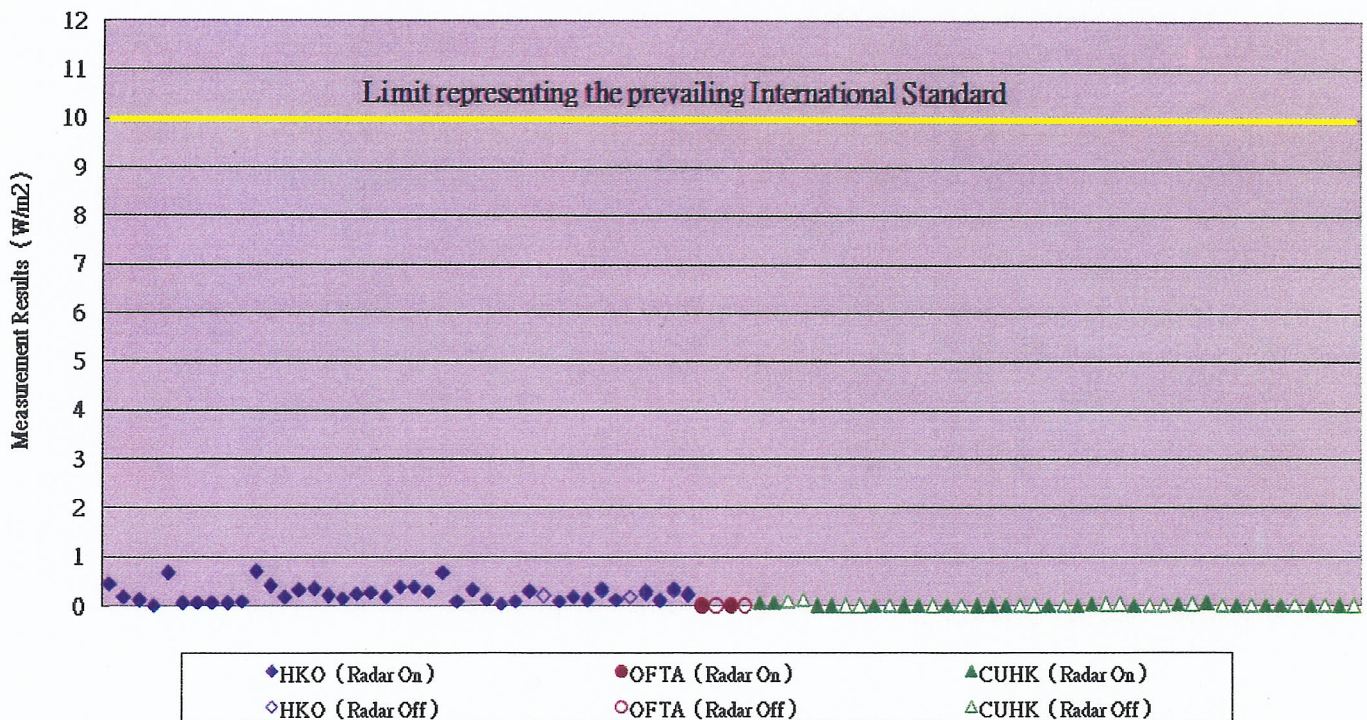
181GK – CONSTRUCTION OF A STATION FOR THE NEW TERMINAL DOPPLER WEATHER RADAR

181GK - 為新的機場多普勒天氣雷達建造雷達站

International Radiation Safety Guideline and Details of the Radiation Measurements

- Weather radars emit a type of radiation called “radiofrequency (RF) electromagnetic waves”. It is similar in nature with light and radio waves etc., which are common in our daily lives.
- For safety considerations and as guidelines for best practices, WHO has endorsed an international standard for limiting public exposure to radiation, which is much more stringent than the level which has been established to cause the earliest known health effects. The prevailing international standard is 10 Watt/metre² (W/m²), which is shown by the yellow line in the graph below.
- The Hong Kong Observatory, the Office of the Telecommunications Authority and an independent expert from the Chinese University of Hong Kong have separately measured the radiation levels of the existing Terminal Doppler Weather Radar (TDWR). They measured the radiation levels when the existing TDWR was switched on and off, as well as at locations inside and outside the existing station. The actual measurements are shown on the graph below as dots of different colours.

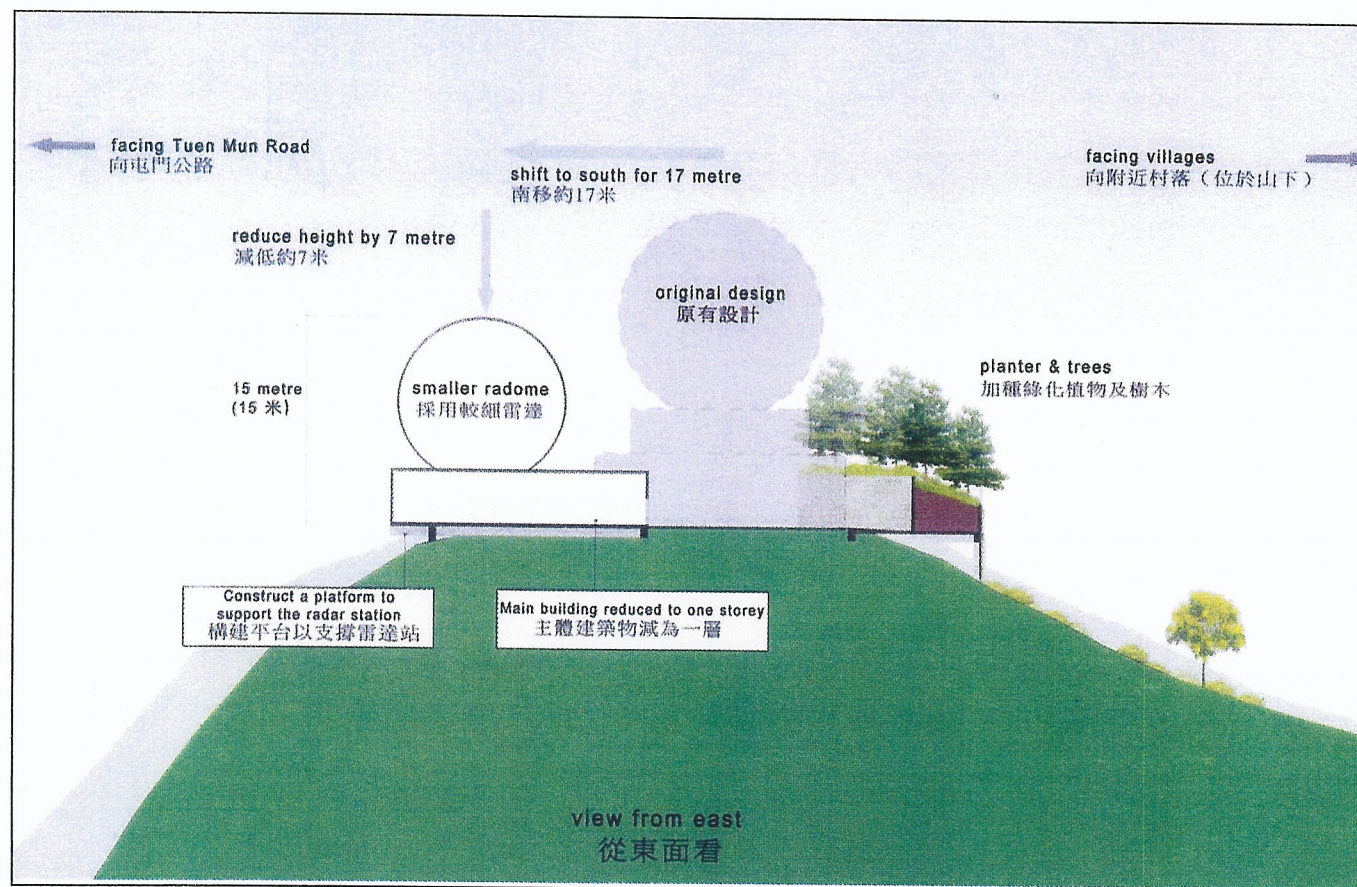
Radiation Measurement Results Near the Existing Terminal Doppler Weather Radar
(2004-2011)



- In all cases, the measurements recorded are less than 1 W/m^2 , i.e. well within the limit representing the prevailing international standard (shown by the yellow line in the graph above). In other words, the existing TDWR is safe.

MODIFICATIONS MADE TO THE PROPOSED RADAR STATION

對建議雷達站詳細設計的變動



project code and title
工程計劃編號和名稱

181GK – CONSTRUCTION OF A STATION FOR THE NEW TERMINAL DOPPLER WEATHER RADAR

181GK - 為新的機場多普勒天氣雷達建造雷達站

Existing Policy on “Tun Fu” Allowances

Since the 1960s, the Government has been paying, based on claims lodged by the relevant village representatives, “Tun Fu” allowance to the affected indigenous villages prior to commencement of construction of public works that involved land acquisition and clearance in the New Territories. The allowance aims to maintain an amicable relation with the villagers for expediting works progress.

2. All “Tun Fu” allowance claims must be fully justified and a list of itemised costs in respect of “Tun Fu” ceremonies must be submitted for consideration. Typical itemised costs include fung shui master’s fee, “Tun Fu” master’s fee, purchase of joss-papers and sticks, food to be offered in the ceremony etc. In determining the final amount of “Tun Fu” payment, the reasonableness of the claim with reference to previous similar claims, the distance between the locations of the public works and the villages or sites which fung shui is alleged to be affected, village size and population will be taken into account. Relevant departments will also be consulted.

3. The granting of approval of the “Tun Fu” allowance is based on established criteria, and each village may only submit one single claim in respect of each public works project. Payment for a claim under \$20,000 is approved by the relevant District Lands Officer. Payment between \$20,001 and \$30,000 has to be approved by the Director of Lands. A claim above \$30,000 has to be approved by the Secretary for Financial Services and the Treasury. After the ceremony, the village representative is required to submit to the relevant District Lands Office for record an account of expenditure for the “Tun Fu” ceremony. “Tun Fu” allowance, if released, will be charged to **Head 701 – Land Acquisition** of the Capital Works Reserve Fund, instead of the project vote of a particular project. The Government would not choose any fung shui expert for the villagers for conducting the “Tun Fu” ceremonies.

4. Claims for “Tun Fu” allowance are processed by negotiation with the claimants based on their proposed itemised costs of expenditures for holding “Tun Fu” ceremonies and the reasonableness of the claims having regard to established criteria. In case the claimants are not satisfied with the approved amount of “Tun Fu” allowance, they may submit appeals which will be examined on individual case merits.

5. From January 2007 to end of September 2011, the authorities approved a total of 73 claims for “Tun Fu” allowance which amounts to about \$4.6 million.

Development Bureau
Lands Department
December 2011

181GK – Construction of a station for the new Terminal Doppler Weather Radar

Breakdown of the estimates for consultants’ fees and resident site staff costs (in September 2011 prices)

		Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Consultants’ fee for contract administration (Note 2)	Professional	–	–	–	2.4
	Technical	–	–	–	1.6
				Sub-total	4.0
(b) Resident site staff costs (Note 3)	Technical	97	14	1.6	3.3
				Sub-total	3.3
Comprising -					
(i) Consultants’ fees for management of resident site staff				0.2	
(ii) Remuneration of resident site staff				3.1	
				Total	7.3

* MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of resident site staff supplied by the consultants. (As at now, MPS salary point 14 = \$21,175 per month.)
2. The consultants’ staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of **181GK**. The assignment will only be executed subject to Finance Committee’s approval to upgrade **181GK** to Category A.
3. The actual man-months and actual costs will only be known after completion of the construction works.