

ANNEX G: CONSULTANCY AND CONTRACT MANAGEMENT

1. Introduction

- 1.1 Capital costs for the construction of WKCD facilities also include the costs of consultancy and contract management including professional services of architects, landscape architects, engineers, quantity surveyors, arts and culture specialists such as theatre architects, acoustic engineers and museum planners etc. These costs were estimated under the PSI (Private Sector Involvement) and PSC (Public Sector Comparator). This Annex provides further information on how these costs were derived.
- 1.2 Costs for the PSI scenarios were estimated based on the experience of the FA's technical advisors in their relevant professions, supplemented by reference to the scales of professional charges for the appropriate Hong Kong professional institutes, as well as a few overseas examples. Interviews were also undertaken with a number of Hong Kong developers, including those that submitted detailed financial proposals for the original WKCD IFP to provide additional information to assist the FA in making appropriate estimates.
- 1.3 Data was provided by the Government to provide evidence for the estimation of costs under the PSC scenario. However, after careful review, the most comparable and appropriate cost assumptions for the PSC were deemed to be those estimated under the PSI. Further explanation and justification is provided below.

2. PSI Scenario - Private Sector Fees

Consultancy Fees

- 2.1 Design and other professional fees for private sector projects were estimated with reference to the scale fee basis of the appropriate Hong Kong professional institute's Scale of Professional Charges and the typical negotiated rates as advised by the FA's technical advisors in these professions. Increasingly, scale fees are often themselves used as a basis for negotiation between private sector clients and their professional design and building team and this is also reflected in the estimates, as advised by the FA's technical advisors.
- 2.2 The CACF include M+, the Exhibition Centre, Mega Performance Venue, Great Theatres, Concert Hall and Chamber Music Hall, Xiqu Centre, Medium Theatres, Black Box Theatres, Piazzas¹. The professional fee for the design and building of specialist, high cost buildings such as museums, concert halls and large theatres, requires careful estimation of fees because:
 - They require a wide range of specialist professional disciplines
 - It is assumed that in some disciplines, renowned international specialists will be employed
 - As high cost projects typically range between HK\$500 – 1,500 million, these scale of projects are often at negotiated rates
- 2.3 Table G-1 below sets out the range of professions that are expected to be employed for development of the WKCD. All percentage fee rates are percentages of the construction

¹ A small canopy will be assumed as part of piazza development

costs of individual facilities. The basis of estimation for each of the groups of professions identified is as follows:

- *Architect*: The Scale of professional charges for the Hong Kong Institute of Architects for Group I “complex” buildings (including theatres and special buildings) in the range of HK\$600 – 1,000 million is 4.5% and negotiable over this figure. The FA’s technical advisors have indicated lower achievable rates, in the order of 2.5% to 3.5% for Hong Kong professionals. Some of the venues are expected to attract architects of high international standard. Allowing for some negotiation on scale rates and the use of international architects an applied fee rate of 6.5% of total construction costs has been adopted for the more complex facilities where the requirement for “iconic” architecture has been specified by PATAG and MAG (i.e. the Concert Hall and Chamber Music Hall, M+ and the Xiqu Centre) and 4.5% for the simpler facilities (e.g. Medium Theatres). However, it should be noted that for the “iconic” facilities, the rate may need to be as high as 8% to secure the services of “star” architects
- *Structural Engineer*: The Scale of Professional Charges of the Association of Consulting Engineers of Hong Kong (ACEHK) Conditions of Engagement for works of “average complexity” over HK\$2million is 5% of the total cost of works as defined to include all excavation, building works, labour and materials (Clause 20) but is frequently negotiable for high cost projects (note that the threshold of HK\$2million is small). Nevertheless, the FA’s technical advisors and consultations with Hong Kong property developers, indicate that achieved rates, following negotiation would likely be in the order of 0.25% to 1.5% of total construction costs for these types of facilities
- *Quantity Surveyor*: The Itemised Scale of Professional Charges for Quantity Surveying Services of the Hong Kong Institute of Surveyors for Prime Cost Contracts over HK\$175 million, including estimating and cost management and final accounts, totals around 1.13% plus a negotiable figure for preparing tender documents. Given the specific requirements of the WKCD facilities, the FA’s technical advisors have estimated a rate of between 1.0% (Mega Performance Venue, Concert Hall, etc.) assuming the use of international professionals and 0.25% (public toilets, car parks, etc.) assuming the use of local Hong Kong professionals
- *Building Services Engineer*: In this case the use of local Hong Kong professionals using a ACEHK scale fee negotiated rate for high cost projects has been assumed. The negotiated rate as advised by the team’s technical advisors would range from an upper limit of 1.5% down to 0.25%
- *Civil Engineer*: the use of local Hong Kong professionals using a ACEHK scale fee negotiated rate for high cost projects has been assumed. The negotiated rate as advised by the FA’s technical advisors would range from 1.2% to 0.4%
- *Other Engineering Services*: At this reclaimed waterfront site professional inputs would be required from a range of other specialist site and building engineers such as Geotechnical, Façade, Traffic, Marine Traffic, Environmental, Fire, etc engineers. The use of local Hong Kong professionals has been assumed using a ACEHK scale fee negotiated rate for high cost projects. The negotiated rates as advised by the FA’s technical advisors would range between 0.5% and 0.2%
- *Landscape Architect / Water Features Specialists*: inputs would be required for certain facilities and works, notably public open space and the piazzas. The use

of local Hong Kong professionals has been assumed at rates of between 0.25-0.5% as calculated by the FA's technical advisors.

- *Acoustic Engineer*: Acoustics are a specialist professional input important for performing arts venues and the Automated People Mover (to assess noise and vibration impacts). International specialists are expected to be required at a negotiated rate assumed to be in the order of 1.5% to 0.25% depending on the requirements of specific facilities.
- *Other Venue Consulting Specialists (e.g. Theatre Architects, Museum Specialists)*: Physical space planning and programming for museums and performing arts venues is usually carried out by international specialists advising the design team. In the case of theatres, specialist theatre architects are also normally part of the design team to design interior layouts and services. The latter comprise a small group of international specialists who will link up with the architect team on an additional negotiated basis. International specialists are expected to be required at a negotiated rate assumed to be in the order of 0.3% of total building costs for M+, rising to 2.3% for the theatres and concert halls.

Table G-1 Summary of Estimated Consultancy Fees under PSI

Profession	% Fee (on total construction cost)	Remarks
Architect	0.5-6.5%	Assumes high quality international architect and higher fees for more complex and "iconic" facilities (e.g. 6.5% for M+ vs 4.5% for the medium theatres). * Lower end of range assumed for G/IC uses.
Structural Engineer	0.25-1.5%	Assumes locally based engineering services
Quantity Surveyor	0.25-1.0%	Assumes international costing services for the more complex projects and locally based costing services for other facilities
Building Services Engineer	0.25-1.5%	Assumes locally based engineering services
Civil Engineer	0.4-1.2%	Assumes locally based engineering services
Other Engineering Services – Geotech / Façade / Traffic / Marine / Environmental / Fire etc.	0.2-0.5%	Assumes locally based engineering services
Landscape Architect / Water Feature Specialists	0.25-0.5%	Assumes locally based professionals
Acoustic Engineer	0.25-1.5%	Assumes international specialists
Venue Consulting Specialists (e.g. Theatre Architects, Museum Specialists)	0.3-2.3%	Assumes international specialists

Notes: *Higher rate of 8% may be required for "star" architects

Contract Management

- 2.4 The estimates of contract management under the PSI were developed based on inputs from the FA's relevant technical advisors, supplemented by consultation with major Hong Kong developers (see below). For this exercise, the key components of contract management are assumed to be on-site construction management and supervision plus administrative overheads, most importantly the costs incurred by senior staff and support

(at head-office) in over-seeing the project. Whilst a figure of 5-10% is common for on-site construction management, the additional overheads for the more complicated facilities can be significant. This is confirmed by the experience of the FA's team when working on the detailed submissions for the earlier WKCD IFP and on projects for the development of arts and cultural facilities in other locations.

2.5 Based on this analysis, the assumed costs of contract management as a percentage of construction costs were estimated as follows:

- Core Arts and Cultural Facilities – 8 to 9%
- Other Arts and Cultural Facilities – 8%
- Automated People Mover – 11%
- Roadworks and Pedestrian Connections – 11%
- Car parks – 8%
- Public Open Space – 8%
- Fire Station, Police Post – 8%
- Public Toilets – 8%
- Infrastructure and Engineering Works – 11%

Evidence from Market Sentiment Consultations

2.6 As part of a review of market sentiment the FA carried out consultations with a range of developers and operators of cultural, commercial and residential facilities in Hong Kong and internationally. The market sentiment survey included consultations with seven major private Hong Kong commercial and residential developers. Apart from those that had submitted detailed technical and financial proposals for WKCD development, there is relatively little experience among Hong Kong developers of cultural or entertainment facilities. As a result the consultations with all developers was carried out on the basis of their general experience in commercial and residential development rather than their cultural project specific views. In this way the FA was able to treat all respondents views on an equally informed basis.

2.7 Given the lack of confirmed detail for the WKCD, respondents initially found it difficult to provide guidance other than at the most general of levels. To mitigate this, the FA undertook follow-up discussions as more details were available – specifically views were sought on the FA's estimation of consultancy and contract management fees as outlined in the previous sections.

2.8 The consultations confirmed the range of fee rates for these categories of works and in particular the higher rates that might be expected for the development of CACF. Developers pointed to their unfamiliarity with these types of building and the expectation that they would commission high quality international specialists to fill this gap in their experience increasing costs accordingly. Those developers that had undertaken detailed analysis of cultural facilities during the preparation of WKCD submissions - including site visits to overseas, world-class facilities - emphasised the high costs of these facilities, especially where an international architect is commissioned to deliver an "iconic" building.

The challenges were highlighted in delivering such projects on time, to budget and in realising world-class standards².

- 2.9 In Hong Kong it was noted that there were few, if any, examples of truly world-class, facilities as envisaged for the WKCD Core Arts and Cultural Facilities. Hence, the comparability of cost estimates for existing Hong Kong cultural facilities was questioned.
- 2.10 Whilst stressing the generally high costs for professional services, it was also noted that all rates were subject to negotiation, which could deliver cost reductions for professional and contract management fees. In terms of on-site contract management, the possibility of pushing rates down towards 5-6% of total construction costs was highlighted. The possibility of achieving economies of scale on the larger projects with a higher budget was also mentioned (i.e. a lower share of total capital costs required for contract management and consultancy fees).
- 2.11 The market sentiment survey was also used to gain some insight into the weighted average cost of capital (WACC) for developers undertaking this type of project. This is a commercially sensitive issue for developers. Moreover, confidentiality concerns aside, the WACC can change substantially depending on market conditions and the specific circumstances of the developer in question. Nevertheless, figures in the range of 10-20% were indicated.

3. PSC Scenario – Consultancy Fees and Contract Management

- 3.1 The Government provided some confidential on-cost information for public building works and civil engineering works for reference. In terms of building works, data was not available that would allow for an estimation of PSC costs tailored to meet the specific requirements of the varied facilities at WKCD. These range from highly complex and iconic buildings, requiring specialist inputs, for example, a Concert Hall or Xiqu Centre, to more straightforward buildings such as public toilets. Therefore, it was deemed inappropriate as a basis for developing a PSC that would provide a meaningful or “like for like” comparison with the PSI.
- 3.2 Instead, the approach used to derive the PSI estimates was adopted for the PSC. Under both scenarios, a similar range of consultancy inputs will be required – for example, there is no reason to assume that a concert hall developed under the PSC scenario would require different inputs (architects, structural engineers, acoustic engineers, etc.) as compared with the same specification of concert hall developed under the PSI. Under different procurement approaches consultants and specialists would likely be supplied from the private sector – i.e. from the same suppliers as under the PSI. The only plausible difference, might be the ability of different parties to secure cost savings in the fees charged by the relevant professionals, however, negotiation (and competition) could be used under either scenario (i.e. by either a private developer in negotiation with an acoustic engineer or by a government department negotiating with the same acoustic engineer). On this basis, the same rates for consultancy fees have been assumed for the PSC and PSI.

² For example, reference was made to the high cost (US\$274 million) of the “iconic” Frank Gehry-designed Walt Disney Concert Hall in Los Angeles (the project was 6 years late and US\$174million over budget). Also cited was the Kimmel Center in Philadelphia, where the international architect, Rafael Viñoly, commissioned to deliver an “iconic” facility. Total costs had run to US\$175 million and even then, the quality of the building, including its acoustic performance had been questioned (Viñoly had also been sued for project over-runs of US\$23 million). Whilst project risk is addressed separately within the FA’s analysis, these examples and the views expressed by developers highlight the complexity and high-costs of delivering iconic, world-class facilities (even before project over-runs are considered).

- 3.3 Contract management costs may vary between the PSI and PSC scenarios, however in the absence of detailed cost data, specifically in terms central overheads there is no sound basis on which to assume that one or other of the PSI or PSC scenarios would deliver lower contract management costs for delivery of the same project. Therefore the same rates for contract management have also been assumed under the PSC and PSI.

4. Consultancy Fees and Management Costs Adopted – PSI & PSC

- 4.1 Table G-2 summarises the key assumptions for consultancy fees and management costs adopted under the PSI and PSC scenarios. The higher costs for the more complex and iconic facilities are clear. For example, consultancy fees and contract management are estimated at 23.6% of total construction costs for the concert hall and chamber music hall, as compared with 14.5% for the piazzas. Table G-3 provides a more detailed breakdown of the estimates by profession for each facility. The notes accompanying Table G-3 summarise the assumptions and steps taken to inform the FA's estimates.

Table G-2 Estimated Consultancy Fees and Contract Management Costs (as % of Construction Costs)

	PSI			PSC
	Consultancy Fees (A)	Contract Management (B)	Consultancy Fees and Contract Management (A) + (B)	Consultancy Fees and Contract Management
Museum and Exhibition Space				
M+	11.10%	9.00%	20.10%	20.10%
Exhibition Centre	9.00%	8.00%	17.00%	17.00%
Performing Arts Venues				
Mega Performance Venue	12.00%	8.00%	20.00%	20.00%
Great Theatre 1	12.00%	8.00%	20.00%	20.00%
Concert Hall and Chamber Music Hall	14.60%	9.00%	23.60%	23.60%
Xiqu Centre	14.10%	9.00%	23.10%	23.10%
Medium Theatre 1	12.00%	8.00%	20.00%	20.00%
Medium Theatre 2 and Black Box Theatre 1	12.00%	8.00%	20.00%	20.00%
Black Box Theatres 2 and 3	12.00%	8.00%	20.00%	20.00%
Black Box Theatre 4	12.00%	8.00%	20.00%	20.00%
Piazas*	6.50%	8.00%	14.50%	14.50%
Other Arts and Cultural Facilities	6.20%	8.00%	14.20%	14.20%
Transport Facilities				
Automated People Mover	5.75%	11.00%	16.75%	16.75%
Road Works	2.75%	11.00%	13.75%	13.75%
Pedestrian Connections	3.00%	11.00%	14.00%	14.00%
Public Pier	3.00%	11.00%	14.00%	14.00%
Car parks	2.95%	8.00%	10.95%	10.95%
Communal Facilities				
Public Open Space	2.05%	8.00%	10.05%	10.05%
Fire Station, Police Post and RCP	2.75%	8.00%	10.75%	10.75%
Public Toilets	2.75%	8.00%	10.75%	10.75%
Engineering Works				
Deck Over WHC Tunnel Portal	4.45%	11.00%	15.45%	15.45%
Build Over Ventilation Buildings	4.45%	11.00%	15.45%	15.45%
Other Site Engineering Works	1.45%	11.00%	12.45%	12.45%
Performing Arts Venues (Phase 2)				
Great Theatre 2 and Medium Theatre 3	12.00%	8.00%	20.00%	20.00%
Medium Theatre 4	12.00%	8.00%	20.00%	20.00%
Museum and Exhibition Space (Phase 2)				
M+ (Phase 2)	11.10%	9.00%	20.10%	20.10%

* including a small canopy

Table G-3 Estimated Consultancy Fees – Detailed Breakdown (as % of Construction Costs)

	Architect	Structural Engineer	Quantity Surveyor	Building Services Engineer	Civil Engineer	Other Engineering Services – Geotech / Façade / Traffic / Marine / Environmental / Fire etc.	Acoustic Engineer	Landscape Architect / Water Feature Specialists	Venue Consulting Specialists (e.g. Theatre Architects, Museum Specialists)	TOTAL Consultancy Fees (A)	Contract Management (B)
Museum and Exhibition Space											
M+	6.50%	1.50%	1.00%	1.50%	0.00%	0.30%	0.00%	0.00%	0.30%	11.10%	9.00%
Exhibition Centre	4.50%	1.50%	1.00%	1.50%	0.00%	0.20%	0.00%	0.00%	0.30%	9.00%	8.00%
Performing Arts Venues											
Mega Performance Venue	4.50%	1.50%	1.00%	1.50%	0.00%	0.20%	1.00%	0.00%	2.30%	12.00%	8.00%
Great Theatre 1	4.50%	1.50%	1.00%	1.50%	0.00%	0.20%	1.00%	0.00%	2.30%	12.00%	8.00%
Concert Hall and Chamber Music Hall	6.50%	1.50%	1.00%	1.50%	0.00%	0.30%	1.50%	0.00%	2.30%	14.60%	9.00%
Xiqu Centre	6.50%	1.50%	1.00%	1.50%	0.00%	0.30%	1.00%	0.00%	2.30%	14.10%	9.00%
Medium Theatre 1	4.50%	1.50%	1.00%	1.50%	0.00%	0.20%	1.00%	0.00%	2.30%	12.00%	8.00%
Medium Theatre 2 and Black Box Theatre 1	4.50%	1.50%	1.00%	1.50%	0.00%	0.20%	1.00%	0.00%	2.30%	12.00%	8.00%
Black Box Theatres 2 and 3	4.50%	1.50%	1.00%	1.50%	0.00%	0.20%	1.00%	0.00%	2.30%	12.00%	8.00%
Black Box Theatre 4	4.50%	1.50%	1.00%	1.50%	0.00%	0.20%	1.00%	0.00%	2.30%	12.00%	8.00%
Piazas*	2.50%	1.50%	0.50%	1.50%	0.00%	0.00%	0.25%	0.25%	0.00%	6.50%	8.00%
Other Arts and Cultural Facilities	3.50%	1.00%	0.50%	1.00%	0.00%	0.20%	0.00%	0.00%	0.00%	6.20%	8.00%
Transport Facilities											
Automated People Mover	2.00%	0.25%	0.25%	1.25%	1.00%	0.50%	0.25%	0.25%	0.00%	5.75%	11.00%
Road Works	1.00%		0.25%		1.00%	0.00%	0.00%	0.50%	0.00%	2.75%	11.00%
Pedestrian Connections	1.00%	1.00%	0.25%	0.75%		0.00%	0.00%		0.00%	3.00%	11.00%
Public Pier	1.00%	0.00%	0.25%	0.25%	1.00%	0.50%	0.00%	0.00%	0.00%	3.00%	11.00%
Car parks	1.00%	0.75%	0.25%	0.75%	0.00%	0.20%	0.00%	0.00%	0.00%	2.95%	8.00%

	Architect	Structural Engineer	Quantity Surveyor	Building Services Engineer	Civil Engineer	Other Engineering Services – Geotech / Façade / Traffic / Marine / Environmental / Fire etc.	Acoustic Engineer	Landscape Architect / Water Feature Specialists	Venue Consulting Specialists (e.g. Theatre Architects, Museum Specialists)	TOTAL Consultancy Fees (A)	Contract Management (B)
Communal Facilities											
Public Open Space	0.50%	0.00%	0.25%	0.30%	0.40%	0.00%	0.00%	0.60%	0.00%	2.05%	8.00%
Fire Station, Electricity Substation, Police Post and RCP	1.00%	0.75%	0.25%	0.75%	0.00%	0.00%	0.00%	0.00%	0.00%	2.75%	8.00%
Public Toilets	1.00%	0.75%	0.25%	0.75%	0.00%	0.00%	0.00%	0.00%	0.00%	2.75%	8.00%
Engineering Works											
Deck Over WHC Tunnel Portal	1.00%	1.50%	0.25%	1.50%	0.00%	0.20%	0.00%	0.00%	0.00%	4.45%	11.00%
Build Over Ventilation Buildings	1.00%	1.50%	0.25%	1.50%	0.00%	0.20%	0.00%	0.00%	0.00%	4.45%	11.00%
Other Site Engineering Works	0.00%	0.00%	0.25%	0.00%	1.20%	0.00%	0.00%	0.00%	0.00%	1.45%	11.00%
Performing Arts Venues (Phase 2)											
Great Theatre 2 and Medium Theatre 3	4.50%	1.50%	1.00%	1.50%	0.00%	0.20%	1.00%	0.00%	2.30%	12.00%	8.00%
Medium Theatre 4	4.50%	1.50%	1.00%	1.50%	0.00%	0.20%	1.00%	0.00%	2.30%	12.00%	8.00%
Museum and Exhibition Space (Phase 2)											
M+ (Phase 2)	6.50%	1.50%	1.00%	1.50%	0.00%	0.30%	0.00%	0.00%	0.30%	11.10%	9.00%

* including a small canopy

Notes on data assumptions and FA estimates

FA estimates are based on:

- The experience of the FA's technical advisors in working on comparable projects – covering arts & culture, transport facilities, engineering works, etc. Commercial confidentiality restricts the presentation of details for specific projects
- Consultations with major Hong Kong developers to review and confirm that FA's estimates of consultancy and contract management fees are appropriate. In some cases, the developer made reference to his own experience in submitting detailed financial proposals for the WKCD IFP
- Reference to the appropriate Hong Kong professional institute's Scale of Professional Charges and typical negotiated rates as advised by the FA's technical advisors in these professions.

- Reference to Government on-cost information for building projects and Hong Kong civil engineering works.
- *Detailed* data for comparable, *world-class* facilities are not readily available. As indicated in Annex D.6, the construction costs (original contract and additional contract) of The Lowry in the UK totalled 63 million GBP, excluding professional fees of 9 million GBP. The fee ratio is in the order of 14% which is similar to our assumed fee ratios for more sophisticated performing arts venues. For most other major world-class arts and cultural facilities, only construction costs are indicated.
- The Hong Kong Arts Development Council study of the original WKCD scheme estimated “Consultants’ fees” in the range of 15% to 20%, although no detailed breakdown was provided (Centre of Cultural Policy Research, University of Hong Kong, May 2004).