

## ANNEX C.1: COST ESTIMATES, M+ AND EXHIBITION CENTRE

### 1. Scope of Cost Estimates

- 1.1 The estimation of costs and revenues was one of the key tasks undertaken to provide input to the FA's financial model and analysis. The level of detail adopted in their estimation is appropriate to a financial assessment undertaken at this stage in the project cycle i.e. prior to master planning of the site and based on the broad recommendations of MAG and PATAG, the development parameters/requirements set under the October 2005 Package and the Invitation for Proposals (IFP). The level of detail is also appropriate given that the FA assignment was tasked with considering alternative PPP arrangements, financial viability and funding arrangements for the proposed statutory body; the purpose of which was to assist the government in the preparation of the institutional and funding arrangements for the WKCD.
- 1.2 It is important to appreciate, particularly for the estimation of capital and operation, maintenance and management (OMM) costs, that this FA assignment is not a feasibility study on individual facilities which would have involved detailed site and technical surveys, preliminary design, layout plans, etc. This assignment is not based on a master plan or design of engineering works or facilities, and site and technical surveys were not undertaken. Similarly, for the estimation of revenues, it is important to appreciate that demand for facilities is based on the recommendations of PATAG and MAG (high levels of demand and a target of 2.5 million visitors a year for M+). Independent market demand assessments were not undertaken as part of this assignment.
- 1.3 In consultation with relevant Government bureaux / departments, the FA developed a set of assumptions for a WKCD 'Base Case' in the level of detail required for the estimation of capital and OMM costs and revenues on an annual basis, based on the broad recommendations of PATAG and MAG and the development parameters/requirements of the October 2005 Package and the IFP, and making use of local and international experience and benchmarks where appropriate. This included the construction phasing and development programme of the facilities to be provided, their size<sup>1</sup>, overhaul and maintenance requirements, collection acquisition costs, programming budget, annual attendance, number of performances, utilisation rates, admission charges, ticket price, hire charges, merchandise sales, rental income from resident company space, shops, restaurants and other uses, sponsorship and fundraising amongst others.

<sup>1</sup> The construction floor area (CFA) was estimated by the FA based on assumed gross floor area (GFA) and industry standards. GFA for M+ and the Exhibition Centre (EC) was provided by MAG. GFA for PA Venues was estimated by the FA based on the number of seats, provided by PATAG

## Annex C.1: Cost Estimates, M+ and Exhibition Centre

			Remarks
<b>I Capital Construction Cost Estimates</b>			
<b>1 M+ (Phase 1)</b>			
(a) GFA	81,830 sq.m.		based on MAG's recommendations for the first phase of M+ - NOFA of 49,000 sq.m. including a net exhibition area of 20,000 sq.m., NOFA to GFA ratio of 1.67 as recommended by MAG
(b) GFA to CFA	1: 1.3		
(c) CFA	106,379 sq.m.		1 (c) = 1(a) x 1(b)
(d) Unit cost	\$24,200 per sq.m. CFA (HK\$)		2006 3Q estimate; see Annex C.6 (last column) for international comparators; assumed \$4,200 per sq.m. CFA for foundation cost, \$14,000 per sq.m. CFA for building construction and \$6,000 per sq.m. CFA for fitting out (incl. basic fitting out of galleries); additional fitting out costs will be provided under exhibition development
(e) Construction Cost (excludes cost of collections, exhibition development, library and conservation laboratories equipment, professional fees, on costs, risks and inflation adjustment)	\$2,574 (million HK\$)		1(e) = 1(c) x 1(d)
<b>2 Off-Site Storage and Conservation Laboratory</b>			
(a) GFA	19,200 sq.m.		consultants' assumptions drawing on MAG's suggestion of locating storage and conservation laboratory outside WKCD - assumed 16,000 sq.m. NOFA of off-site facilities (21% of total NOFA) - storage normally takes up 20% of space in a museum
(b) GFA to CFA	1: 1.2		
(c) CFA	23,040 sq.m.		2(c) = 2(a) x 2(b)
(d) Unit cost	\$15,000 per sq.m. CFA (HK\$)		2006 3Q estimate; assumed \$2,000 per sq.m. CFA for foundation cost, \$8,000 per sq.m. CFA for building construction and \$5,000 per sq.m. CFA for fitting out
(e) Construction Cost (excludes cost of collections, exhibition development, library and conservation laboratories equipment, professional fees, on costs, risks and inflation adjustment)	\$346 (million HK\$)		2(e) = 2(c) x 2(d)
<b>3 M+ (Phase 2)</b>			
(a) GFA	16,700 sq.m.		FA' assumptions drawing on MAG's suggestion of locating storage and conservation laboratory outside WKCD - assumed Phase 2 will provide 10,000 NOFA of exhibition galleries only as all front of house and back of house facilities would have been provided in Phase 1, NOFA to GFA ratio of 1.67 as recommended by MAG
(b) GFA to CFA	1: 1.3		
(c) CFA	21,710 sq.m.		3(c) = 3(a) x 3(b)
(d) Unit cost	\$22,200 per sq.m. CFA (HK\$)		2006 3Q estimate, assumed \$4,200 per sq.m. CFA for foundation cost, \$14,000 per sq.m. CFA for building construction and \$4,000 per sq.m. CFA for fitting out (incl. basic fitting out of galleries); additional fitting out costs will be provided under exhibition development; fitting out cost lower than M+ Phase 1 given M+ Phase 2 provides exhibition galleries only and the cost of construction only covers basic fitting out for galleries

## Annex C.1: Cost Estimates, M+ and Exhibition Centre

(e)	Construction Cost (excludes cost of collections, exhibition development, library and conservation laboratories equipment, professional fees, on costs, risks and inflation adjustment)	<b>\$482</b> (million HK\$)	3(e) = 3(c) x 3(d)
<b>4</b>	<b>Total Construction Cost of M+</b>	<b>\$3,402</b>	4 = 1 (e) + 2 (e) + 3 (e)
<b>5</b>	<b>Exhibition Centre</b>		
(a)	GFA	12,500 sq.m.	NOFA of 10,000 sq.m. as recommended by MAG, NOFA to GFA ratio of 1:1.25 as per IFP
(b)	GFA to CFA	1: 1.3	
(c)	CFA	16,250 sq.m.	1 (c) = 1(a) x 1(b)
(d)	Unit cost	\$22,200 per sq.m. CFA (HK\$)	2006 3Q estimate, close to M+ Phase 2 given both Exhibition Centre and M+ Phase 2 predominately provide gallery spaces. Assumed \$4,200 per sq.m. CFA for foundation cost, \$12,600 per sq.m. CFA for building construction and \$5,400 per sq.m. CFA for fitting out
(e)	Construction Cost (excludes professional fees, on costs, risks and inflation adjustment)	<b>\$361</b> (million HK\$)	5(e) = 5(c) x 5(d)
<b>II</b>	<b>Other Capital Costs</b>		
1	Initial Collections	\$1,000 (million HK\$)	initial capital for building up sizable and impressive collections commensurating with M+'s status and attributes; annual acquisition cost of major international museums: see Annex C.7 (last row)
2	On-going Collections	\$20 (million HK\$ per annum)	see above
3	Exhibition Development (Phase 1)	\$255 (million HK\$)	net exhibition area of 20,000 sq.m. at a unit rate of \$12,750 per sq.m., this is equivalent to 75% of the unit cost of that of the Hong Kong Heritage Museum (HM) - more than half of HM's gallery area was fabricated with sophisticated reconstructions while the M+ gallery space will not require fabrication to that level of sophistication
4	Exhibition Development (Phase 2)	\$128 (million HK\$)	net exhibition area of 10,000 sq.m. at a unit rate of \$12,750 per sq.m. (see above)
5	Conservation Laboratory Equipment	\$30 (million HK\$)	FA's cost estimates prepared based on the list of conservation laboratory equipment specified in the IFP
6	Library Costs	\$40 (million HK\$)	double that of the library of the Hong Kong Film Archive given a wider theme
7	Land Cost of Off-site Storage and Conversation Laboratory	\$83 (million HK\$)	assumed an industrial site of 7,811 sq.m. [23,040 sq.m. CFA / 2.95, assuming 3 levels (max. 3 levels for operational efficiency, overseas museum usually only 1 level) and 100% site coverage for lower 2 levels and 95% site coverage for the top level] at a low land value location such as Fanling (accommodation value of \$2,125 per sq.m. GFA), and a plot ratio of 5 [max. plot ratio of industrial land in Fanling as stated in the Outline Zoning Plan]

## Annex C.1: Cost Estimates, M+ and Exhibition Centre

### III Major Repair and Renovation Costs

#### 1 M+

**Carried out every 20 years, assuming same ratio for off-site storage and M+ (Phase 2)**

(a)	Foundation Costs	\$4,200 per sq.m. CFA (HK\$)	2006 3Q estimate
(b)	Construction Cost per CFA (excl. foundation costs)	\$20,000 per sq.m. CFA (HK\$)	(b) = I 1 (d) - (a)
(c)	Fitting Out	\$638 (million HK\$)	(c) = I 1 (c) x (b) x 30% / 1000000
(d)	M&E	\$596 (million HK\$)	(d) = I 1 (c) x (b) x 70% x 40% / 1000000
(d)	Major Repair and Renovation Costs (before inflation adjustment)	\$1,234 (million HK\$)	including fitting out and M&E
(e)	Major Repair and Renovation Costs as % of Construction Cost	<b>48%</b> [% to be applied to construction costs before on-costs to estimate major overhaul costs]	(e) = (d) / I 1 (e)

#### 2 Exhibition Development

(a)	M+ (Phase 1)	<b>\$255</b> (million HK\$)	<b>For galleries provided in Phase 1 (20,000 sq.m.), carried out every 15 years, assuming unit cost of \$12,750 per sq.m. x 10,000 sq.m. NOFA exhibition galleries</b>
(b)	M+ (Phase 2)	<b>\$128</b> (million HK\$)	<b>For galleries provided in Phase 2 (10,000 sq.m.), carried out every 15 years, assuming unit cost of \$12,750 per sq.m. x 10,000 sq.m. NOFA exhibition galleries</b>

#### 3 Conservation Laboratory Equipment

**\$15** (million HK\$)

**Carried out every 10 years**

#### 4 Exhibition Centre

**Carried out every 20 years**

(a)	Foundation Costs	\$4,200 per sq.m. CFA (HK\$)	2006 3Q estimate
(b)	Construction Cost per CFA (excl. foundation costs)	\$18,000 per sq.m. CFA (HK\$)	(b) = I 5 (d) - (a)
(c)	Fitting Out	\$88 (million HK\$)	(c) = I 5 (c) x (b) x 30% / 1000000
(d)	M&E	\$82 (million HK\$)	(d) = I 5 (c) x (b) x 70% x 40% / 1000000
(e)	Major Repair and Renovation Costs (before inflation adjustment)	\$170 (million HK\$)	including fitting out and M&E
(f)	Major Repair and Renovation Costs as % of Construction Cost	<b>47%</b> [% to be applied to construction costs before on-costs to estimate major overhaul costs]	(e) = (d) / I 5 (e)

Note: All numbers are rounded to 0 decimal places (nearest \$ million) for presentational ease

## Annex C.2: Base Case Operating Assumptions

### M+ - PSC Base Case

Assumptions				Remarks
1	<b>Physical Parameters</b>			
1 . 1 . 1	On-site NOFA	49,000 sq.m.		
1 . 1 . 2	On-site GFA	81,830 sq. m.		= [1.1.1] x [1.1.3]
1 . 1 . 3	On-site NOFA to GFA Ratio	1: 1.67		
1 . 2 . 1	Food Service Space	1,000 sq. m.		
1 . 2 . 2	Retail Space	1,000 sq. m.		
1 . 3	Exhibition Space	20,000 sq. m.		
1 . 4 . 1	Off-site Storage (NOFA)	16,000 sq.m.		
1 . 4 . 2	Off-site Storage (GFA)	19,200 sq. m.		= [1.4.1] x [1.4.3]
1 . 4 . 3	Off-site Storage NOFA to GFA Ratio	1: 1.20		
2	<b>Total Attendance</b>	1,500,000 per annum		Total Assumed Phase 1 Attendance (hypothetical figure for planning purposes, about two-thirds of total full build-out attendance of 2.5 million since we have two-thirds of exhibition space)
3	<b>Usage by Hirers</b>	300 number of hires per annum		
4	<b>Admission and Hire Charges</b>			
				Adult Ticket Price of \$25 (regular) + \$20 (blockbuster exhibitions) and concessions; no free days - concessions & income from blockbuster exhibitions offset one another
4 . 1	Admission Revenue from Visitors	\$25 per person		HK Museum of Art 04/05: \$10
4 . 2	Hire Charge per Engagement	\$6,000 average per hire		HK Central Library: Lecture Theatre \$2,200

## Annex C.2: Base Case Operating Assumptions

5	<b>Retail/Food Service</b>		
5 . 1 . 1	Retail Spend	\$28.0 per visitor	The average spend per visitor for museum retail for art museums in the U.S. is about US \$7 per visitor or HK \$55. Assume half will be spent on M+ merchandise.
5 . 1 . 2	Profit Margin on Retail Goods	15%	
5 . 2	Food Service Concession Rental	\$4,000 per sq.m. per annum	~\$30 per sq.ft. per month
5 . 3	Retail Shop Rental	\$4,000 per sq.m. per annum	~\$30 per sq.ft. per month
6	<b>Initial Broad Groupings and Exhibitions (includes qualitative assumptions)</b>		
6 . 1	Initial Broad Groupings will be design, moving image, popular culture and visual art		
6 . 2	All exhibitions will be to international standards		
7	<b>Public and Educational Programmes</b>		
7 . 1	There will be a full range of museum quality public and educational programmes as per international museum practice		
7 . 2	Public and Educational Programme Revenues	\$3,000,000 per annum	Higher than existing museums given more active programming
8	<b>Collections (includes qualitative assumptions)</b>		
8 . 1	The Museum will build a world-class collection relating to each of the four broad groupings.		Costs are generated in part from an assumed percentage of total operating budget given need to build a world-class collection
9	<b>Fundraising - Special Events</b>	\$15,000,000 per annum	Based on industry averages. Assumed percentage of operating budget (in line with international standards for world-class museums)
10	<b>Other Income</b>	\$4,000,000 per annum	Copyright, license fees etc.

## Annex C.2: Base Case Operating Assumptions

11	<b>Staff Costs</b>			
11 . 1	Total Number of Full Time Equivalent (FTE) Positions	400	number	Lower than staffing requirements at international comparable museums given more out-sourcing in HK
11 . 1 . 1	Senior Staff (Directors, Chief Curators, Senior Managers and Curators etc.)	18	number	Made reference to the staffing structure of HK museums
11 . 1 . 2	Professional Staff (Managers, Assistant Curators, Designers, Lab Technicians, Executive Officers etc.)	265	number	
11 . 1 . 3	Assistant / Clerical Staff (Cultural Services Assistants, Photographers, Clerical Assistants, Office Assistants, Workman / Artisans etc.)	117	number	
11 . 2 . 1	Assumed Average Salary/Benefits - Senior Staff	\$1,367,000	per FTE per annum	Based on average salaries / benefits of LCSD museums (2006/07)
11 . 2 . 2	Assumed Average Salary/Benefits - Professional Staff	\$478,000	per FTE per annum	
11 . 2 . 3	Assumed Average Salary/Benefits - Assistant / Clerical Staff	\$203,000	per FTE per annum	
12	<b>General and Administrative Costs</b>	15.0%	of Staff Costs	A typical figure for an "arm's length" organization would be anywhere from 10% to 15% - we have chosen the high end of the range for PSC
13	<b>Occupancy Costs</b>			
13 . 1	Building Maintenance	\$70	per sq.m. GFA per annum	average of HK museums
13 . 2	Electricity	\$500	per sq.m. GFA per annum	HK Heritage Museum: \$369; HK Museum of History: \$634; HK Film Archive: \$832 (Museums in TST lower cost due to district cooling system in place: \$184 to \$304)
13 . 3	Water	\$0.1	per visitor	HK Museum of Art: \$0.18; HK Heritage Museum: \$0.03; HK Museum of History: \$0.05
13 . 4	Cleaning and security	\$300	per sq.m. GFA per annum	HK Museum of Art: \$376; HK Heritage Museum: \$170; HK Museum of History: \$320
13 . 5	Other Occupancy Costs (including workshop services - lighting, A/C, escalators/elevators etc.; technical services - e.g. sound, telecom systems; general and specialist supplies; maintenance contracts of office and other equipments; postal services etc.)	\$550	per sq.m. GFA per annum	HK Museum of Art: \$681; HK Heritage Museum: \$533; HK Museum of History: \$526

## Annex C.2: Base Case Operating Assumptions

14	<b>Exhibitions</b>		
14 . 1	Number of Major Temporary Exhibitions	5 per year	
14 . 2	Average Cost per Temporary Exhibition	\$14,000,000	Includes cost of blockbuster exhibition plus insurance.
14 . 3	Number of Small Scale Temporary Exhibitions	15 per year	
14 . 4	Average Cost per Small Scale Temporary Exhibition	\$2,000,000	Typical blended cost of small and very small temporary exhibitions.
14 . 5	Routine Maintenance Cost	\$10,000,000 per year	
15	<b>Public and Educational Programmes</b>	5 times the Public and Educational Programme Revenues	Typically museum public and educational programmes return one-fifth of development and delivery costs
16	<b>Marketing Costs</b>	5% of Total Operating Expenditure	The typical average is between 1% and 5% of total operating expenses. To justify attendance figures we have chosen the percentage at the high end of the range.
17	<b>Library Costs</b>	\$3,000,000 per annum	At about 3% of total operating costs, this figure is higher than typically seen (usually 1%-2%) to take collection development needs into account.



## Annex C.2: Base Case Operating Assumptions

### M+ (Phase 2) - PSC Base Case

#### Assumptions

#### Remarks

#### 1 Physical Parameters

1 . 1 . 1	On-site NOFA		59,000 sq.m.
1 . 1 . 2	On-site GFA		98,530 sq. m.
1 . 1 . 3	On-site NOFA to GFA Ratio	1:	1.67
1 . 2 . 1	Food Service Space		1,000 sq. m.
1 . 2 . 2	Retail Space		1,000 sq. m.
1 . 3	Exhibition Space		30,000 sq. m.
1 . 4 . 1	Off-site Storage (NOFA)		16,000 sq.m.
1 . 4 . 2	Off-site Storage (GFA)		19,200 sq. m.
1 . 4 . 3	Off-site Storage NOFA to GFA Ratio	1:	1.20

$$= [1.1.1] \times [1.1.3]$$

$$= [1.4.1] \times [1.4.3]$$

#### 2 Total Attendance

2,500,000 per annum

Hypothetical figure for planning purposes

#### 3 Usage by Hirers

300 number of hires per annum

#### 4 Admission and Hire Charges

Adult Ticket Price of \$25 (regular) + \$30 (blockbuster exhibitions) and concessions; no free days

#### 4 . 1 Admission Revenue from Visitors

\$27.5 per person

HK Museum of Art 04/05: \$10

#### 4 . 2 Hire Charge per Engagement

\$6,000 average per hire

HK Central Library: Lecture Theatre \$2,200

## Annex C.2: Base Case Operating Assumptions

5	<b>Retail/Food Service</b>			
5 . 1 . 1	Retail Spend	\$28.0	per visitor	The average spend per visitor for museum retail for art museums in the U.S. is about US \$7 per visitor or HK \$55. Assume half will be spent on M+ merchandise.
5 . 1 . 2	Profit Margin on Retail Goods	15%		
5 . 2	Food Service Concession Rental	\$4,000	per sq.m. per annum	~\$30 per sq.ft. per month
5 . 3	Retail Shop Rental	\$4,000	per sq.m. per annum	~\$30 per sq.ft. per month
6	<b>Initial Broad Groupings and Exhibitions (includes qualitative assumptions)</b>			
6 . 1	Initial Broad Groupings will be design, moving image, popular culture and visual art			
6 . 2	All exhibitions will be to international standards			
7	<b>Public and Educational Programmes</b>			
7 . 1	There will be a full range of museum quality public and educational programmes as per international museum practice			
7 . 2	Public and Educational Programme Revenues	\$4,800,000	per annum	60% higher than Phase 1
8	<b>Collections (includes qualitative assumptions)</b>			
8 . 1	The Museum will build a world-class collection relating to each of the four broad groupings.			Costs are generated in part from an assumed percentage of total operating budget given need to build a world-class collection
9	<b>Fundraising - Special Events</b>	\$18,000,000	per annum	20% higher than Phase 1
10	<b>Other Income</b>	\$5,000,000	per annum	Copyright, license fees etc.

## Annex C.2: Base Case Operating Assumptions

11	<b>Staff Costs</b>			
11 . 1	Total Number of Full Time Equivalent (FTE) Positions	420	number	5% higher than Phase 1
11 . 1 . 1	Senior Staff (Directors, Chief Curators, Senior Managers and Curators etc.)	20	number	slightly higher than Phase 1
11 . 1 . 2	Professional Staff (Managers, Assistant Curators, Designers, Lab Technicians, Executive Officers etc.)	283	number	slightly higher than Phase 1
11 . 1 . 3	Assistant / Clerical Staff (Cultural Services Assistants, Photographers, Clerical Assistants, Office Assistants, Workman / Artisans etc.)	117	number	same as Phase 1
11 . 2 . 1	Assumed Average Salary/Benefits - Senior Staff	\$1,367,000	per FTE per annum	Based on average salaries / benefits of LCSD museums (2006/07)
11 . 2 . 2	Assumed Average Salary/Benefits - Professional Staff	\$478,000	per FTE per annum	
11 . 2 . 3	Assumed Average Salary/Benefits - Assistant / Clerical Staff	\$203,000	per FTE per annum	
12	<b>General and Administrative Costs</b>	15.0%	of Staff Costs	A typical figure for an "arm's length" organization would be anywhere from 10% to 15% - we have chosen the high end of the range for PSC
13	<b>Occupancy Costs</b>			
13 . 1	Building Maintenance	\$70	per sq.m. GFA per annum	average of HK museums HK Heritage Museum: \$369; HK Museum of History: \$634; HK Film Archive: \$832 (Museums in TST lower cost due to district cooling system in place: \$184 to \$304)
13 . 2	Electricity	\$500	per sq.m. GFA per annum	HK Museum of Art: \$0.18; HK Heritage Museum: \$0.03; HK Museum of History: \$0.05
13 . 3	Water	\$0.1	per visitor	HK Museum of Art: \$376; HK Heritage Museum: \$170; HK Museum of History: \$320
13 . 4	Cleaning and security	\$300	per sq.m. GFA per annum	
13 . 5	Other Occupancy Costs (including workshop services - lighting, A/C, escalators/elevators etc.; technical services - e.g. sound, telecom systems; general and specialist supplies; maintenance contracts of office and other equipments; postal services etc.)	\$550	per sq.m. GFA per annum	HK Museum of Art: \$681; HK Heritage Museum: \$533; HK Museum of History: \$526

## Annex C.2: Base Case Operating Assumptions

14	<b>Exhibitions</b>		
14 . 1	Number of Major Temporary Exhibitions	8 per year	
14 . 2	Average Cost per Temporary Exhibition	\$14,000,000	Includes cost of blockbuster exhibition plus insurance.
14 . 3	Number of Small Scale Temporary Exhibitions	23 per year	
14 . 4	Average Cost per Small Scale Temporary Exhibition	\$2,000,000	Typical blended cost of small and very small temporary exhibitions.
14 . 5	Routine Maintenance Cost	\$15,000,000 per year	
15	<b>Public and Educational Programmes</b>	5 times the Public and Educational Programme Revenues	Typically museum public and educational programmes return one-fifth of development and delivery costs
16	<b>Marketing Costs</b>	5% of Total Operating Expenditure	The typical average is between 1% and 5% of total operating expenses. To justify attendance figures we have chosen the percentage at the high end of the range.
17	<b>Library Costs</b>	\$3,000,000 per annum	At about 3% of total operating costs, this figure is higher than typically seen (usually 1%-2%) to take collection development needs into account.

## Annex C.2: Base Case Operating Assumptions

### M+ - PSI Base Case

Assumptions				Remarks
1	<b>Physical Parameters</b>			
1 . 1 . 1	On-site NOFA	49,000 sq.m.		
1 . 1 . 2	On-site GFA	81,830 sq. m.		= [1.1.1] x [1.1.3]
1 . 1 . 3	On-site NOFA to GFA Ratio	1:1.67		
1 . 2 . 1	Food Service Space	1,000 sq. m.		
1 . 2 . 2	Retail Space	1,000 sq. m.		
1 . 3	Exhibition Space	20,000 sq. m.		
1 . 4 . 1	Off-site Storage (NOFA)	16,000 sq.m.		
1 . 4 . 2	Off-site Storage (GFA)	19,200 sq. m.		= [1.4.1] x [1.4.3]
1 . 4 . 3	Off-site Storage NOFA to GFA Ratio	1:1.20		
2	<b>Total Attendance</b>	1,500,000 per annum		same as PSC
3	<b>Usage by Hirers</b>	300 number of hires per annum		same as PSC
4	<b>Admission and Hire Charges</b>			Adult Ticket Price of \$25 (regular) + \$30 (blockbuster exhibitions) and concessions; no free days - assuming 25% of visitors will pay extra for blockbusters
4 . 1	Admission Revenue from Visitors	\$27.5 per person		Assumed higher admission for blockbuster exhibitions under PSI
4 . 2	Hire Charge per Engagement	\$7,000 average per hire		Assumed higher charges under PSI
5	<b>Retail/Food Service</b>			
5 . 1 . 1	Retail Spend	\$28.0 per visitor		same as PSC
5 . 1 . 2	Profit Margin on Retail Goods	15%		same as PSC
5 . 2	Food Service Concession Rental	\$4,000 per sq.m. per annum		same as PSC
5 . 3	Retail Shop Rental	\$4,000 per sq.m. per annum		same as PSC

## Annex C.2: Base Case Operating Assumptions

6	<b>Initial Broad Groupings and Exhibitions (includes qualitative assumptions)</b>		
6 . 1	Initial Broad Groupings will be design, moving image, popular culture and visual art		
6 . 2	All exhibitions will be to international standards		
7	<b>Public and Educational Programmes</b>		
7 . 1	There will be a full range of museum quality public and educational programmes as per international museum practice		
7 . 2	Public and Educational Programme Revenues	\$5,000,000 per annum	Assumed higher charges and income under PSI
8	<b>Collections (includes qualitative assumptions)</b>		
8 . 1	The Museum will build a world-class collection relating to each of the four broad groupings.		Costs are generated in part from an assumed percentage of total operating budget given need to build a world-class collection
9	<b>Fundraising - Special Events</b>	\$20,000,000 per annum	Higher than PSC since museum will not be perceived as supported by government
10	<b>Other Income</b>	\$4,000,000 per annum	Copyright, license fees etc.
11	<b>Staff Costs</b>		
11 . 1	Total Number of Full Time Equivalent (FTE) Positions	400 number	same as PSC
11 . 1 . 1	Senior Staff (Directors, Chief Curators, Senior Managers and Curators etc.)	18 number	
11 . 1 . 2	Professional Staff (Managers, Assistant Curators, Designers, Lab Technicians, Executive Officers etc.)	265 number	
11 . 1 . 3	Assistant / Clerical Staff (Cultural Services Assistants, Photographers, Clerical Assistants, Office Assistants, Workman / Artisans etc.)	117 number	
11 . 2 . 1	Assumed Average Salary/Benefits - Senior Staff	\$1,367,000 per FTE per annum	same as PSC
11 . 2 . 2	Assumed Average Salary/Benefits - Professional Staff	\$450,000 per FTE per annum	Slightly lower than PSC
11 . 2 . 3	Assumed Average Salary/Benefits - Assistant / Clerical Staff	\$180,000 per FTE per annum	Slightly lower than PSC

## Annex C.2: Base Case Operating Assumptions

12	<b>General and Administrative Costs</b>	12.0% of Staff Costs	A typical figure for an "arm's length" organization would be anywhere from 10% to 15% - we have chosen the low end of the range assuming greater efficiencies under PSI
13	<b>Occupancy Costs</b>		
13 . 1	Building Maintenance	\$70 per sq.m. GFA per annum	same as PSC
13 . 2	Electricity	\$500 per sq.m. GFA per annum	same as PSC
13 . 3	Water	\$0.1 per visitor	same as PSC
13 . 4	Cleaning and security	\$300 per sq.m. GFA per annum	same as PSC
13 . 5	Other Occupancy Costs (including workshop services - lighting, A/C, escalators/elevators etc.; technical services - e.g. sound, telecom systems; general and specialist supplies; maintenance contracts of office and other equipments; postal services etc.)	\$440 per sq.m. GFA per annum	Assumed 20% lower than PSC
14	<b>Exhibitions</b>		
14 . 1	Number of Major Temporary Exhibitions	5 per year	same as PSC
14 . 2	Average Cost per Temporary Exhibition	\$14,000,000	same as PSC
14 . 3	Number of Small Scale Temporary Exhibitions	15 per year	same as PSC
14 . 4	Average Cost per Small Scale Temporary Exhibition	\$2,000,000	same as PSC
14 . 5	Routine Maintenance Cost	\$10,000,000 per year	same as PSC
15	<b>Public and Educational Programmes</b>	3 times the Public and Educational Programme Revenues	Higher % of cost recovery under PSI
16	<b>Marketing Costs</b>	6% of Total Operating Expenditure	The typical average is between 1% and 5% of total operating expenses. To justify higher admission revenue per visitor over PSC we have increased the percentage to above the normal range.
17	<b>Library Costs</b>	\$3,000,000 per annum	At about 3% of total operating costs, this figure is higher than typically seen (usually 1%-2%) to take collection development needs into account.

## Annex C.2: Base Case Operating Assumptions

### M+ (Phase 2) - PSI Base Case

Assumptions					Remarks
<b>1</b>	<b>Physical Parameters</b>				
1 . 1 . 1	On-site NOFA		59,000	sq.m.	
1 . 1 . 2	On-site GFA		98,530	sq. m.	= [1.1.1] x [1.1.3]
1 . 1 . 3	On-site NOFA to GFA Ratio	1:	1.67		
1 . 2 . 1	Food Service Space		1,000	sq. m.	
1 . 2 . 2	Retail Space		1,000	sq. m.	
1 . 3	Exhibition Space		30,000	sq. m.	
1 . 4 . 1	Off-site Storage (NOFA)		16,000	sq.m.	
1 . 4 . 2	Off-site Storage (GFA)		19,200	sq. m.	= [1.4.1] x [1.4.3]
1 . 4 . 3	Off-site Storage NOFA to GFA Ratio	1:	1.20		
<b>2</b>	<b>Total Attendance</b>		2,500,000	per annum	same as PSC
<b>3</b>	<b>Usage by Hirers</b>		300	number of hires per annum	same as PSC
<b>4</b>	<b>Admission and Hire Charges</b>				Adult Ticket Price of \$25 (regular) + \$40 (blockbuster exhibitions) and concessions; no free days - assuming 25% of visitors will pay extra for blockbusters
4 . 1	Admission Revenue from Visitors		\$30.0	per person	Assumed higher admission for blockbuster exhibitions under PSI
4 . 2	Hire Charge per Engagement		\$7,000	average per hire	Assumed higher charges under PS
<b>5</b>	<b>Retail/Food Service</b>				
5 . 1 . 1	Retail Spend		\$28.0	per visitor	same as PSC
5 . 1 . 2	Profit Margin on Retail Goods		15%		same as PSC
5 . 2	Food Service Concession Rental		\$4,000	per sq.m. per annum	same as PSC
5 . 3	Retail Shop Rental		\$4,000	per sq.m. per annum	same as PSC



## Annex C.2: Base Case Operating Assumptions

6	<b>Initial Broad Groupings and Exhibitions (includes qualitative assumptions)</b>		
6 . 1	Initial Broad Groupings will be design, moving image, popular culture and visual art		
6 . 2	All exhibitions will be to international standards		
7	<b>Public and Educational Programmes</b>		
7 . 1	There will be a full range of museum quality public and educational programmes as per international museum practice		
7 . 2	Public and Educational Programme Revenues	\$8,000,000 per annum	60% higher than Phase 1
8	<b>Collections (includes qualitative assumptions)</b>		
8 . 1	The Museum will build a world-class collection relating to each of the four broad groupings.		Costs are generated in part from an assumed percentage of total operating budget given need to build a world-class collection
9	<b>Fundraising - Special Events</b>	\$24,000,000 per annum	20% higher than Phase 1
10	<b>Other Income</b>	\$5,000,000 per annum	Copyright, license fees etc.
11	<b>Staff Costs</b>		
11 . 1	Total Number of Full Time Equivalent (FTE) Positions	420 number	same as PSC
11 . 1 . 1	Senior Staff (Directors, Chief Curators, Senior Managers and Curators etc.)	20 number	
11 . 1 . 2	Professional Staff (Managers, Assistant Curators, Designers, Lab Technicians, Executive Officers etc.)	283 number	
11 . 1 . 3	Assistant / Clerical Staff (Cultural Services Assistants, Photographers, Clerical Assistants, Office Assistants, Workman / Artisans etc.)	117 number	
11 . 2 . 1	Assumed Average Salary/Benefits - Senior Staff	\$1,367,000 per FTE per annum	same as PSC
11 . 2 . 2	Assumed Average Salary/Benefits - Professional Staff	\$450,000 per FTE per annum	Slightly lower than PSC
11 . 2 . 3	Assumed Average Salary/Benefits - Assistant / Clerical Staff	\$180,000 per FTE per annum	Slightly lower than PSC

## Annex C.2: Base Case Operating Assumptions

12	<b>General and Administrative Costs</b>	12.0% of Staff Costs	A typical figure for an "arm's length" organization would be anywhere from 10% to 15% - we have chosen the low end of the range assuming greater efficiencies under PSI
13	<b>Occupancy Costs</b>		
13 . 1	Building Maintenance	\$70 per sq.m. GFA per annum	same as PSC
13 . 2	Electricity	\$500 per sq.m. GFA per annum	same as PSC
13 . 3	Water	\$0.1 per visitor	same as PSC
13 . 4	Cleaning and security	\$300 per sq.m. GFA per annum	same as PSC
13 . 5	Other Occupancy Costs (including workshop services - lighting, A/C, escalators/elevators etc.; technical services - e.g. sound, telecom systems; general and specialist supplies; maintenance contracts of office and other equipments; postal services etc.)	\$440 per sq.m. GFA per annum	Assumed 20% lower than PSC
14	<b>Exhibitions</b>		
14 . 1	Number of Major Temporary Exhibitions	8 per year	same as PSC
14 . 2	Average Cost per Temporary Exhibition	\$14,000,000	same as PSC
14 . 3	Number of Small Scale Temporary Exhibitions	23 per year	same as PSC
14 . 4	Average Cost per Small Scale Temporary Exhibition	\$2,000,000	same as PSC
14 . 5	Routine Maintenance Cost	\$15,000,000 per year	same as PSC
15	<b>Public and Educational Programmes</b>	3 times the Public and Educational Programme Revenues	higher % of cost recovery under PSI
16	<b>Marketing Costs</b>	6% of Total Operating Expenditure	The typical average is between 1% and 5% of total operating expenses. To justify higher admission revenue per visitor over PSC we have increased the percentage to above the normal range.
17	<b>Library Costs</b>	\$3,000,000 per annum	At about 3% of total operating costs, this figure is higher than typically seen (usually 1%-2%) to take collection development needs into account.

## Annex C.2: Base Case Operating Assumptions

### Exhibition Centre - PSC Base Case

Assumptions				Remarks
<b>1</b>	<b>Physical Parameters</b>			
1 . 1	Total NOFA	10,000	sq.m.	
1 . 2	Total GFA	12,500	sq.m.	= [1.1] x [1.3]
1 . 3	GFA to NOFA Ratio	1.25		
1 . 4 . 1	Exhibition Space (Gallery 1)	2,000	sq.m.	HK Convention and Exhibition Centre Hall5A/7A: 2,000 sq.m.
1 . 4 . 2	Exhibition Space (Gallery 2)	1,300	sq.m.	HK Central Library Exhibition Gallery: 1,540 sq.m.; HK City Hall Exhibition Hall: 590 sq.m.
1 . 4 . 3	Exhibition Space (Gallery 3)	1,000	sq.m.	
1 . 4 . 4	Exhibition Space (Gallery 4)	500	sq.m.	HK Central Library Exhibition Gallery No. 5: 250 sq.m.
1 . 5	Retail Space	100	sq.m.	
<b>2</b>	<b>Hire Charges</b>			
2 . 1 . 1	Gallery 1	\$35	per sq.m. per day	HK Convention and Exhibition Centre Hall5A/7A forum package: \$37
2 . 1 . 2	Gallery 2	\$43	per sq.m. per day	HK Central Library Exhibition Gallery: \$43
2 . 1 . 3	Gallery 3	\$45	per sq.m. per day	
2 . 1 . 4	Gallery 4	\$55	per sq.m. per day	City Hall Exhibition Hall: \$42; HK Central Library Exhibition Gallery No. 5: \$62
2 . 2	Discount for Cultural Uses	30%		HK Central Library Exhibition Gallery: 60% for activities considered as appropriate by HK Central Library
2 . 3	Other Hire Charges	5%	of Gallery Hire Income	Hire of ancillary uses (Lecture Hall, Meeting Rooms, VIP facilities, Entrance Hall), equipment and services, incl. rental from kiosks
<b>3</b>	<b>Utilisation</b>			
3 . 1	Days for Hire	351	days a year	
3 . 2	Utilisation Rate	70%		HK Convention and Exhibition Centre 05/06: 58%
3 . 3 . 1	Gallery 1 (commercial)	172	days	assuming 70% commercial and 30% cultural
3 . 3 . 2	Gallery 2 (commercial)	172	days	
3 . 3 . 3	Gallery 3 (commercial)	172	days	
3 . 3 . 4	Gallery 4 (commercial)	172	days	
3 . 4 . 1	Gallery 1 (cultural)	74	days	= [3.1] x [3.2] - [3.3]
3 . 4 . 2	Gallery 2 (cultural)	74	days	= [3.1] x [3.2] - [3.4]
3 . 4 . 3	Gallery 3 (cultural)	74	days	= [3.1] x [3.2] - [3.5]
3 . 4 . 4	Gallery 4 (cultural)	74	days	= [3.1] x [3.2] - [3.6]

## Annex C.2: Base Case Operating Assumptions

5	<b>Rental of Retail Space</b>	<b>\$4,000</b> per sq.m. per annum	~ \$30 per sq.ft. per month
6	<b>Attendance</b>	<b>1,500,000</b> per annum	Total Assumed and Stabilized Annual Attendance
7	<b>Staff Costs</b>		
7 . 1 . 1	Level 1 Staff	<b>\$999,852</b> per annum	Based on average salaries / benefits of LCSD performing arts venues (2006/07)
7 . 1 . 2	Level 2 Staff	<b>\$669,396</b> per annum	
7 . 1 . 3	Level 3 Staff	<b>\$429,372</b> per annum	
7 . 1 . 4	Level 4 Staff	<b>\$289,128</b> per annum	
7 . 1 . 5	Level 5 Staff	<b>\$215,112</b> per annum	
7 . 1 . 6	Level 6 Staff	<b>\$161,988</b> per annum	
7 . 2 . 1	Level 1 Staff	<b>1</b> staff	= sum of [7.8] to [7.14]
7 . 2 . 2	Level 2 Staff	<b>2</b> staff	
7 . 2 . 3	Level 3 Staff	<b>2</b> staff	
7 . 2 . 4	Level 4 Staff	<b>5</b> staff	
7 . 2 . 5	Level 5 Staff	<b>10</b> staff	
7 . 2 . 6	Level 6 Staff	<b>15</b> staff	
7 . 2	Total Number of Staff	<b>35</b>	
8	<b>General and Administrative Costs</b>	<b>15%</b> of staffing costs	
9	<b>Occupancy Costs</b>		
9 . 1	Building Maintenance	<b>\$70</b> per sq.m. GFA per annum	average of HK museums
9 . 2	Electricity	<b>\$350</b> per sq.m. GFA per annum	HK Heritage Museum: \$369; HK Museum of History: \$634; HK Film Archive: \$832 (Museums in TST lower cost due to district cooling system in place: \$184 to \$304)
9 . 3	Water	<b>\$0.1</b> per visitor	HK Museum of Art: \$0.18; HK Heritage Museum: \$0.03; HK Museum of History: \$0.05
9 . 4	Cleaning and security	<b>\$300</b> per sq.m. GFA per annum	HK Museum of Art: \$376; HK Heritage Museum: \$170; HK Museum of History: \$320
9 . 5	Other Occupancy Costs (including workshop services - lighting, A/C, escalators/elevators etc.; technical services - e.g. sound, telecom systems; general and specialist supplies; maintenance contracts of office and other equipments; postal services etc.)	<b>\$400</b> per sq.m. GFA per annum	HK Museum of Art: \$681; HK Heritage Museum: \$533; HK Museum of History: \$526
10	<b>Marketing Costs</b>	<b>10%</b> of Hire Income	
11	<b>Public and Educational Programming Costs</b>	<b>\$600,000</b> per annum	

## Annex C.2: Base Case Operating Assumptions

### Exhibition Centre - PSI Base Case

Assumptions				Remarks
<b>1</b>	<b>Physical Parameters</b>			
1 . 1	Total NOFA	10,000 sq.m.		
1 . 2	Total GFA	12,500 sq.m.		= [1.1] x [1.3]
1 . 3	GFA to NOFA Ratio	1.25		
1 . 4 . 1	Exhibition Space (Gallery 1)	2,000 sq.m.		same as PSC
1 . 4 . 2	Exhibition Space (Gallery 2)	1,300 sq.m.		same as PSC
1 . 4 . 3	Exhibition Space (Gallery 3)	1,000 sq.m.		same as PSC
1 . 4 . 4	Exhibition Space (Gallery 4)	500 sq.m.		same as PSC
1 . 5	Retail Space	100 sq.m.		
<b>2</b>	<b>Hire Charges</b>			
2 . 1 . 1	Gallery 1	\$37 per sq.m. per day		Assumed higher charges under PSI
2 . 1 . 2	Gallery 2	\$45 per sq.m. per day		Assumed higher charges under PSI
2 . 1 . 3	Gallery 3	\$47 per sq.m. per day		Assumed higher charges under PSI
2 . 1 . 4	Gallery 4	\$57 per sq.m. per day		Assumed higher charges under PSI
2 . 2	Discount for Cultural Uses	30%		same as PSC
2 . 3	Other Hire Charges	8% of Gallery Hire Income		Assumed higher charges under PSI
<b>3</b>	<b>Utilisation</b>			
3 . 1	Days for Hire	351 days a year		
3 . 2	Utilisation Rate	72%		Assumed higher rate under PSI
3 . 3 . 1	Gallery 1 (commercial)	177 days		assuming 70% commercial and 30% cultural
3 . 3 . 2	Gallery 2 (commercial)	177 days		
3 . 3 . 3	Gallery 3 (commercial)	177 days		
3 . 3 . 4	Gallery 4 (commercial)	177 days		
3 . 4 . 1	Gallery 1 (cultural)	76 days		= [3.1] x [3.2] -[3.3]
3 . 4 . 2	Gallery 2 (cultural)	76 days		= [3.1] x [3.2] -[3.4]
3 . 4 . 3	Gallery 3 (cultural)	76 days		= [3.1] x [3.2] -[3.5]
3 . 4 . 4	Gallery 4 (cultural)	76 days		= [3.1] x [3.2] -[3.6]

## Annex C.2: Base Case Operating Assumptions

5	<b>Rental of Retail Space</b>	\$4,000 per sq.m. per annum	same as PSC
6	<b>Attendance</b>	1,500,000 per annum	same as PSC
7	<b>Staff Costs</b>		
7 . 1 . 1	Level 1 Staff	\$1,200,000 per annum	Assumed higher salary under PSI
7 . 1 . 2	Level 2 Staff	\$800,000 per annum	Assumed higher salary under PSI
7 . 1 . 3	Level 3 Staff	\$450,000 per annum	Assumed slightly higher salary under PSI
7 . 1 . 4	Level 4 Staff	\$200,000 per annum	Assumed lower salary under PSI
7 . 1 . 5	Level 5 Staff	\$150,000 per annum	Assumed lower salary under PSI
7 . 1 . 6	Level 6 Staff	\$125,000 per annum	Assumed lower salary under PSI
7 . 2 . 1	Level 1 Staff	1 staff	
7 . 2 . 2	Level 2 Staff	2 staff	
7 . 2 . 3	Level 3 Staff	2 staff	
7 . 2 . 4	Level 4 Staff	5 staff	
7 . 2 . 5	Level 5 Staff	5 staff	
7 . 2 . 6	Level 6 Staff	5 staff	
7 . 2	Total Number of Staff	20	= sum of [7.8] to [7.14]
8	<b>General and Administrative Costs</b>	12% of staffing costs	
9	<b>Occupancy Costs</b>		
9 . 1	Building Maintenance	\$70 per sq.m. GFA per annum	same as PSC
9 . 2	Electricity	\$350 per sq.m. GFA per annum	same as PSC
9 . 3	Water	\$0.1 per visitor	same as PSC
9 . 4	Cleaning and security	\$300 per sq.m. GFA per annum	same as PSC
9 . 5	Other Occupancy Costs (including workshop services - lighting, A/C, escalators/elevators etc.; technical services - e.g. sound, telecom systems; general and specialist supplies; maintenance contracts of office and other equipments; postal services etc. and temp staff)	\$336 per sq.m. GFA per annum	cost of temp staff increased but other costs are 20% lower compared with PSC
10	<b>Marketing Costs</b>	10% of Hire Income	same as PSC
11	<b>Public and Educational Programming Costs</b>	\$600,000 per annum	same as PSC

## Annex C.2: Base Case Operating Assumptions

### M+ and Exhibition Centre - PSC Base Case

HK\$ Million	M+ (Phase 1)	M+ (Phases 1 and 2 Combined)	Exhibition Centre
<b>Revenue</b>			
1 Hire Income / Admissions	39.3	70.6	49.6
2 Retail / Catering / Tenant Income	14.3	18.5	0.4
3 Programmes	3.0	4.8	0.0
4 Fundraising	15.0	18.0	0.0
5 Other Income	4.0	5.0	0.0
Total	75.6	116.9	50.0
<b>Expenditure</b>			
1 Staff Cost	175.0	186.4	9.2
2 Admin Overheads	26.3	28.0	1.4
3 Building Maintenance	7.1	8.2	0.9
4 Cleaning and Security	30.3	35.3	3.8
5 Utilities	50.7	59.1	4.5
6 Marketing	24.7	30.5	5.0
7 Programmes	125.0	197.0	0.6
8 Other Costs	58.6	67.8	5.0
Total	497.6	612.2	30.3
<b>Net</b>	<b>(422.0)</b>	<b>(495.4)</b>	<b>19.6</b>

Notes:

Programmes incl. exhibitions and public and educational programmes

Other expenditure incl. other occupancy costs and library costs

Hire income is based on market rental and discount for community hire has been accounted for

All numbers are rounded to 1 decimal place for presentational ease

Expenditure excl. depreciation, major refurbishment, equipment update and insurance for M+'s collections

## Annex C.2: Base Case Operating Assumptions

### M+ and Exhibition Centre - PSI Base Case

HK\$ Million	M+ (Phase 1)	M+ (Phases 1 and 2 Combined)	Exhibition Centre
<b>Revenue</b>			
1 Hire Income / Admissions	43.4	77.1	55.0
2 Retail / Catering / Tenant Income	14.3	18.5	0.4
3 Programmes	5.0	8.0	0.0
4 Fundraising	20.0	24.0	0.0
5 Other Income	4.0	5.0	0.0
Total	86.7	132.6	55.4
<b>Expenditure</b>			
1 Staff Cost	164.9	175.8	6.1
2 Admin Overheads	19.8	21.1	0.7
3 Building Maintenance	7.1	8.2	0.9
4 Cleaning and Security	30.3	35.3	3.8
5 Utilities	50.7	59.1	4.5
6 Marketing	28.2	35.0	5.5
7 Programmes	125.0	197.0	0.6
8 Other Costs	47.5	54.8	4.2
9 Insurance	3.5	4.0	0.1
10 Rates and Government Rents	11.3	13.4	2.6
Total	488.2	603.8	29.0
<b>Net</b>	<b>(401.6)</b>	<b>(471.2)</b>	<b>26.4</b>

#### Notes:

Programmes incl. exhibitions and public and educational programmes

Other expenditure incl. other occupancy costs and library costs

Hire income is based on market rental and discount for community hire has been accounted for

#### For M+:

Insurance incl. general and building insurance (assumed 0.5% of expenditure) + 0.055% of 2 billion for collections (to cover initial acquisition, on-going acquisition and donations)

Rates and government rents estimated based on rateable value of university buildings for M+ and industrial use for off-site facilities [M+ ~\$12 per sq.ft. per month on gross floor area + off-site storage ~\$6 per sq.ft. per month on gross floor area] Rates and government rents will increase substantially if the contractor method is employed by Rating and Valuation Department for rating valuation.

#### For Exhibition Centre:

Insurance incl. general and building insurance (assumed 0.5% of expenditure)

Rates and government rents estimated based on rateable value of commercial uses [~\$20 per sq.ft. per month on gross floor area]

All numbers are rounded to 1 decimal place for presentational ease

Expenditure excl. depreciation, major refurbishment and equipment update



## Annex C.3: Optimistic Case and Pessimistic Case Operating Assumptions

### M+ PSC

	Base Case	Optimistic Case	Pessimistic Case
Total Attendance	1,500,000	1,800,000	1,050,000 per annum
Hire Charge per Engagement	\$6,000	\$7,200	\$4,200 per hire
Food Service Concession Rental	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Retail Shop Rental	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Public Programme Revenues	\$3,000,000	\$3,600,000	\$2,100,000 per annum
Fundraising - Special Events	\$15,000,000	\$18,000,000	\$10,500,000 per annum
Other Income	\$4,000,000	\$4,800,000	\$2,800,000 per annum
Cleaning and security	\$300	\$330	\$270 per sq.m. GFA per annum

### M+ (Phase 2) PSC

	Base Case	Optimistic Case	Pessimistic Case
Total Attendance	2,500,000	3,000,000	1,750,000 per annum
Hire Charge per engagement	\$6,000	\$7,200	\$4,200 per hire
Food Service Concession Rental	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Retail Shop Rental	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Public Programme Revenues	\$4,800,000	\$5,760,000	\$3,360,000 per annum
Fundraising - Special Events	\$18,000,000	\$21,600,000	\$12,600,000 per annum
Other Income	\$5,000,000	\$6,000,000	\$3,500,000 per annum
Cleaning and security	\$300	\$330	\$270 per sq.m. GFA per annum

## Annex C.3: Optimistic Case and Pessimistic Case Operating Assumptions

### M+ PSI

	Base Case	Optimistic Case	Pessimistic Case
Total Attendance	1,500,000	1,800,000	1,050,000 per annum
Hire Charge per engagement	\$7,000	\$8,400	\$4,900 per hire
Food Service Concession Rental	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Retail Shop Rental	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Public Programme Revenues	\$5,000,000	\$6,000,000	\$3,500,000 per annum
Fundraising - Special Events	\$20,000,000	\$24,000,000	\$14,000,000 per annum
Other Income	\$4,000,000	\$4,800,000	\$2,800,000 per annum
Cleaning and security	\$300	\$330	\$270 per sq.m. GFA per annum

### M+ (Phase 2) PSI

	Base Case	Optimistic Case	Pessimistic Case
Total Attendance	2,500,000	3,000,000	1,750,000 per annum
Hire Charge per engagement	\$7,000	\$8,400	\$4,900 per hire
Food Service Concession Rental	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Retail Shop Rental	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Public Programme Revenues	\$8,000,000	\$9,600,000	\$5,600,000 per annum
Fundraising - Special Events	\$24,000,000	\$28,800,000	\$16,800,000 per annum
Other Income	\$5,000,000	\$6,000,000	\$3,500,000 per annum
Cleaning and security	\$300	\$330	\$270 per sq.m. GFA per annum

## Annex C.3: Optimistic Case and Pessimistic Case Operating Assumptions

### Exhibition Centre PSC

	Base Case	Optimistic Case	Pessimistic Case
Hire Charges			
Gallery 1	35	40	30 per sq.m. per day
Gallery 2	43	48	38 per sq.m. per day
Gallery 3	45	50	40 per sq.m. per day
Gallery 4	55	60	50 per sq.m. per day
Discount for Cultural Uses	30%	30%	40%
Utilisation			
Utilisation Rate	70%	80%	60%
Gallery 1 (commercial)	172	207	137 days per annum
Gallery 2 (commercial)	172	207	137 days per annum
Gallery 3 (commercial)	172	207	137 days per annum
Gallery 4 (commercial)	172	207	137 days per annum
Rental of Retail Space	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Attendance	1,500,000	1,800,000	1,050,000 per annum
Cleaning and security	\$300	\$330	\$270 per sq.m. GFA per annum
Public Programming Costs	\$600,000	\$350,000	\$750,000 per annum

## Annex C.3: Optimistic Case and Pessimistic Case Operating Assumptions

### Exhibition Centre PSI

	Base Case	Optimistic Case	Pessimistic Case
Hire Charges			
Gallery 1	37	42	32 per sq.m. per day
Gallery 2	45	50	40 per sq.m. per day
Gallery 3	47	52	42 per sq.m. per day
Gallery 4	57	62	52 per sq.m. per day
Discount for Cultural Uses	30%	30%	40%
Utilisation			
Utilisation Rate	72%	82%	62%
Gallery 1 (commercial)	177	212	142 days per annum
Gallery 2 (commercial)	177	212	142 days per annum
Gallery 3 (commercial)	177	212	142 days per annum
Gallery 4 (commercial)	177	212	142 days per annum
Rental of Retail Space	\$4,000	\$4,500	\$3,000 per sq.m. NOFA per annum
Attendance	1,500,000	1,800,000	1,050,000 per annum
Cleaning and security	\$300	\$330	\$270 per sq.m. GFA per annum
Public Programming Costs	\$600,000	\$350,000	\$750,000 per annum

## ANNEX C.4: OTHER OPERATING ASSUMPTIONS

### 1. Build Up / Phasing Assumptions:

#### 1.1 M+

- Build up period from year 1 to year 4

#### 1.2 Exhibition Centre

- Base case to happen in year 10, build up period from year 1 to year 9
- Utilisation rate to increase by 5% from year 10 to year 30
- Hire charges to increase by 0.5% per annum in real terms from year 10 to year 30
- No further growth after year 30

### 2. Operator Assumptions Under PSI Scenarios:

- M+ will be operated by a not-for-profit operator
- Exhibition Centre will be operated by a commercial operator who will receive a reasonable share (8%) of revenue as management fee<sup>1</sup>

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<sup>1</sup> Assumed a simple profit-sharing arrangement to provide incentives for revenue maximizing; in reality there are many different and individualistic arrangements

## ANNEX C.5: OFF-SITE STORAGE AND CONSERVATION LABORATORY

### 1. Cost Benefit Analysis

**Table 1 Physical Parameters and Initial Capital Costs**

		<b>Storage and Conservation Lab within M+</b>	<b>Off-site Storage and Conservation Laboratory</b>
Net Operating Floor Area (NOFA)	sq.m.	16,000	16,000
NOFA to Gross Floor Area (GFA)	sq.m.	1:1.67	1:1.20
GFA	sq.m.	26,720	19,200
GFA to Construction Floor Area (CFA)	sq.m.	1:1.30	1:1.20
CFA	sq.m.	34,736	23,040
\$ per CFA	HK\$ per sq.m.	24,200	15,000
Construction Costs*	HK\$ million	841	346
Consultancy Fee and Contract Management Ratio		1.20	1.20
Construction Costs, Consultancy Fee and Contract Management Costs	HK\$ million	1,009	415

\* 2006 3Q estimate, excludes the costs of collections, library, exhibition development and conservation lab equipment, professional fees, on costs, risks and inflation adjustment

**Table 2 Cost Benefit Analysis**

	<b>Benefits</b>	<b>Costs</b>
Initial Capital Costs / Revenue	Release 26,720 sq.m. GFA for retail, dining, entertainment use at WKCD, increasing land value by \$830 million	Land cost of \$83 million, assuming a site at Fanling, Plot Ratio of 5 and site area of 7,810 sq.m. (see Section 2 below)
	Reduce construction cost, consultancy fee and contract management costs by \$594 million	
Major Repair and Maintenance Costs*	Reduce major repair and maintenance costs by \$238 million every 20 years	
Recurrent Costs / Revenue**	Reduce GFA by 7,520 sq.m. and annual occupancy costs of \$9.9 million a year under the PS1 1A scenario	Some increase in operating costs (travel and transportation, and insurance) and lower efficiencies – not expected to be significant based on international experience

\* 48% of Construction Costs (before on-costs)

\*\* \$1,310 per sq.m. GFA for building maintenance, electricity, cleaning and security, maintenance of electrical equipment etc.

## 2. Land Valuation

### 2.1 The Proposed Site for Off-site Storage and Conservation Laboratory:

- Site Area: 7,810 sq m
- NOFA: 16,000 sq m (equivalent to a GFA of 19,200 sq m)
- Building Height: 21m (3 levels – max. 3 levels for operational efficiency)

#### ***Method of Valuation***

2.2 It is assumed that a clear industrial site in Fanling will be required for building the proposed off-site storage and conservation laboratory. Industrial land value in Fanling is assessed in broad order to reflect the potential land cost of the proposed site.

2.3 Residual Method of Valuation is employed for the land value estimate. Based on a hypothetical industrial development that would be permitted in general on an industrial site in Fanling under the prevailing planning control, the gross development value (GDV, i.e. the potential sale proceeds of the completed development) is assessed with reference to the comparable transactions of industrial properties in Fanling. By deducting the development costs and required profit from the GDV, the residual land value is assessed.

2.4 Through direct land grant from Government, the proposed site could be tailor-made for the actual development and the land value shall be assessed based on the proposed GFA of 19,200 sq.m. However, for the purpose of this valuation, it is assumed direct land grant from Government is not available and the proposed site can only be acquired from the open market. The land value is assessed on the basis of maximum permitted development under the prevailing development control, i.e. Plot ratio 5 and GFA of 39,050 sq m (= 7,811 x 5), notwithstanding that it is not the intention to build to the maximum.

#### ***Valuation***

2.5 Based on the above, the current land value of the proposed storage site on a clear site basis and with vacant possession is assessed in the region of \$83 million (see Figure 1 for details)



Figure 1 Off-Site Storage and Conservation laboratory (Land Value Assessment)

For an industrial site in Fanling, NT

Site Area	0.7810	ha, ie	7,810	m² (GFA determined)
Class of site		Class A (assumed)		
Proposed Net Operating Floor Area (NOFA)	16,000.00	m²		
Proposed Gross Floor Area (GFA)	19,200.00	m²		
Proposed Construction Floor Area (CFA)	23,040.00	m²		
Proposed building	3-storey, 21m building height (95% site coverage)			
Maximum Plot Ratio under OZP	5.0		39,050.00	m² GFA
Maximum Height	25.0	m	(or the existing building height, whichever is greater)	
Max. Sit Coverage under Building (Planning) Regulations	89.0%			

**Optimal development**  
6-storey industrial building with 100% site coverage for the first 15m , including G/F to 3/F  
G/F with workshop, lobby, plant room (400m²) ; 1/F with car parking space (CPS) (40m² for each private CPS and 60m² for each lorry CPS) and workshop; 2/F - 5/F workshops  
Total GFA = 39,050.00 m² (PR 5.0)

Provision of CPS (acc. to HK Planning Standards and Guidelines)	1 per 1,000m² - 1,200m² GFA (1 per 1,200m² adopted)
Total No. of CPS	33.00 no. ( 17 for private CPS 16 for lorry CPS )

**Comparison Method**  
**En-bloc transactions in Fanling**

	Address	Lot No.	GFA (sq. ft.)	Consideration	Accommodation Value (AV) (per sq.ft.)	Remarks
1	4 Yip Wo Street	FSSTL 30	137,382	\$113,000,000	\$823	existing is 6-storey warehouse
2	13 On Chuen Street	DD51 Lot 5294	84,092	\$65,000,000	\$744	existing is 6-storey warehouse with 12 CPS
3	23 Yip Cheong Street	FSSTL 163	127,576	\$112,000,000	\$856	existing is 6-storey warehouse with 14 CPS
4	28 On Chuen Street	FSSTL 85	87,179	\$81,000,000	\$929	existing is 6-storey warehouse

  

AV for the proposed Building erected on the site		Average AV	\$838	/ft²
	\$4,322.92 /m²		\$9,020	/m² (indicating GDV of en-bloc site)
		quantum	10%	
		Individual Comp G/F	\$20,000	/m²
		Age	5%	
		Hypothetical U/F	\$7,800	/m²
		Hypothetical G/F	\$21,000	/m²

**Residual Method**  
**Land Value**

Gross Development Value					G/F Industrial	1/F Industrial	U/F Industrial
	<u>GFA (sm) / nos.</u>		<u>Price (psm / per no.)</u>		\$150,570,000.00		
G/F Industrial	7,170	x	\$21,000	\$150,570,000			
1/F Industrial	5,850	x	\$7,800	\$45,630,000		\$45,630,000.00	
U/F Industrial	26,030	x	\$7,800	\$203,034,000			\$203,034,000.00
Private Carpark	17	x	\$250,000	\$4,250,000			
Lorry Carpark	16	x	\$400,000	\$6,400,000			
Less Stamp Duty	0.75% (assume the unit transactions will between \$1.08M to \$2M)						
				\$406,809,870			
PV @	7.750%	2 years		0.8613			
					\$350,385,341		
<b>Less Cost</b>					\$128,713,296.44	\$39,006,360.61	\$173,561,635.32
	<u>GFA (sm)</u>		<u>Cost (psm)</u>				
Construction Cost							
Industrial	39,050	x	\$4,975	\$194,273,750	\$35,670,750.00	\$29,103,750.00	\$129,499,250.00
Carpark, Loading/Unloading	1,960	x	\$3,950	\$7,742,000			
				\$202,015,750			
Professional Fee	6%		x )	1.06			
Profit	20%		x )	1.20			
Contingency	5%		x )	1.05			
				269,812,236			
PV @	7.750%	1 year		0.9281			
					\$250,412,736		
					\$99,972,605		
<b>Less Profit on Land</b>	20%		divided by	1.20	\$44,216,404.42	\$36,076,145.86	\$160,523,431.94
					\$84,496,892.02	\$2,930,214.74	\$13,038,203.38
					\$70,414,076.69	\$2,441,845.62	\$10,865,169.48
<b>Land Value</b>				<b>Say</b>			
				<b>AV (per sm)</b>			
				<b>G/F AV (per sm)</b>	\$9,821.00		
				<b>1/F AV (per sm)</b>		\$417.00	
				<b>U/F AV (per sm)</b>			\$417.00

## Annex C.6: International Comparators - Capital Costs

Museum	Location	Gross Floor Area (sq.m.)	Net Floor Area (sq.m.)	Source	Exhibition Area (sq.m.)	Source	Architect	Source	Cost	Remarks	Source	Opening Year	Construction Period	Source	Unit Construction Cost (incl. fit out) per CFA (Converted to HK\$ in 2006 prices) <u>See Note</u>
Beijing New Capital Museum	China	63,800	na	3	na	na	AREP and China Architecture Design and Research Group	4	RMB 1.23 billion	assumed to be construction cost (incl. fit out cost excl. exhibition)	3	2005	4 years	3	26,200
The Centre Pompidou	France	103,305 [112,523]	na	3 [7]	22,000	5	Renzo Piano, Richard Rogers and Gianfranco Franchini	3	Francs 576 million	1999 prices, for renovation	3	2000	1996 to 2000 (renovation)	3	not applicable (renovation project)
									Francs 750 million	1972 prices, for buildings and equipment	3	1977	1972 to 1977 (for new build)	3	29,600
Tate Modern	UK	43,000	34,500	7, 3	7,827	3	Herzog and de Meuron	3	GBP 134 million	for conversion from a power station, incl. land cost and removal of machinery	3	2000	1997 to 1999	3	30,300
Tate Modern Extension	UK	23,400	na	3	7,000 for use by a cultural organisation	3	Herzog and de Meuron	3	GBP 215 million	2006 prices, estimate	4	2012	na	4	not applicable (project under planning)
Imperial War Museum North, Manchester	UK	9,000	6,500	2	na	na	Daniel Libeskind	2	USD 39 million	assumed to be construction cost (incl. fit out cost excl. exhibition)	2	2002	1997 to 2001	2	23,200
Jewish Museum, Berlin	Germany	15,000	12,000	2	na	na	Daniel Libeskind	2	USD 40 million	building cost, total cost of USD 62 million (fully fitted and art installed)	2	2001	1989 to 1999 (from design competition to completion)	2	14,300
The Museum of Modern Art, New York	USA	58,527 (on-site uses only) [73,420]	na	3 [7]	11,612	3	Yoshio Taniguchi	3	USD 425 million	assumed to be construction cost (incl. fit out cost excl. exhibition)	3	2004	na	3	41,100
San Francisco Museum of Modern Art	USA	20,911	13,800	3, 6	4,647	3	Mario Botta	1	USD 63 million	assumed to be construction cost (incl. fit out cost excl. exhibition)	1	1995	na	1	23,900
Denver Art Museum Extension	USA	14,600	na	2	na	na	Daniel Libeskind	2	USD 75 million	assumed to be construction cost (incl. fit out cost excl. exhibition)	2	2006	2000 to 2006 (from design competition to completion)	2	24,600

Source:

- 1 [www.structurae.de](http://www.structurae.de)
- 2 [www.daniel-libeskind.com](http://www.daniel-libeskind.com)
- 3 Official website
- 4 Other websites
- 5 MAG report
- 6 Lord Cultural Resources
- 7 Museum management

Note:

construction cost data have been converted to the current price level using the published regional Tender Price Index (TPI) in different countries and to local construction cost data by making reference to the published construction costs for different countries worldwide

Annex C.7: International Comparators - Operating Costs

Museum	Centre Pompidou	Source	Tate Gallery (Tate Modern, Tate Britain, Tate Liverpool and Tate St Ives)	Source	Museum of Modern Art, New York	Source	San Francisco Museum of Modern Art	Source	The Solomon R. Guggenheim Museum in New York, Guggenheim Hermitage Museum in Las Vegas and Peggy Guggenheim Collection in Venice	Source	The Metropolitan Museum of Art, New York	Source	The Art Institute of Chicago	Source
Location	France		UK		USA		USA		USA / Italy		USA		USA	
Opening Year	1977	1	1897 (known as National Gallery of British Art)	1	founded in 1929	1	1935 (known as San Francisco Museum of Art)	1	founded in 1930s	1	1872	1	founded in 1879	1
Description	a centre focusing on modern and contemporary creation	4	Tate Britain displays British art, Tate Modern displays international modern art, Tate Liverpool displays both British art and international modern art, and Tate St Ives displays modern and contemporary art	1	a modern and contemporary art museum		768,483	2	modern art museums	1	one of the world's largest and finest art museums	1	an art museum and school, one of the great art museums of the world	1
Gross Floor Area (sq.m.)	103,305 [112,523]	1 [6]	Tate Modern: 43,000	6	73,420	6	20,911	1	na		About 200,000	1	64,400 (gross), 43,900 (net) - excl. rooftop facilities	1
Exhibition Area (sq.m.)	22,000	4	Tate Modern: 7,827	1	11,612	1	4,647	1	4,600 (New York); 600 (Las Vegas)	1	78,366	3	19,600	1
Adult Admission (HK\$)	\$103	1	Tate St Ives: \$87, Other galleries: free	1	\$156	1	\$98	1	\$137 (New York); \$152 (Las Vegas); \$103 (Venice)	1	Voluntary, suggested \$156	1	\$94	1
Attendance	5.5 million a year	4	Tate Britain: 1.6 million, Tate Modern: 4.0 million, Tate Liverpool: 0.6 million, Tate St Ives: 0.2 million, Total: 6.4 million	2	2.7 million (2004/05)	4	0.8 million (2004)	2	0.9 million (New York)	1	more than 4 million a year in the past few years	1	1.4 million (2005)	1
No. of Staff	918 permanent staff, 63 contract staff and 36 others	2	1,157 full time equivalent, incl. 15 on temp. contracts and 34 on fixed term contracts	2	590 full-time, 20 part-time, approx. 200 volunteers and interns	5	232 (estimated based on staff list)	2	95 full-time employees (New York)	3	1,783 full-time staff, 744 part-time staff, approx. 1,300 volunteers and interns	5	725 full-time staff, 46 part-time staff, 790 volunteers/interns	5
Annual Operating Costs (HK\$ million) - excl. acquisitions, depreciation and interest	\$930	4	\$1,185 (2005/06 - incl. costs of generating voluntary income, the costs of fundraising trading, other costs of generating funds, investment management costs, the costs of charitable activities, governance costs and other resources expended)	2	\$1,108 (2005/06 - incl. curatorial and related support services, exhibitions, other museum programmes, cost of sales / auxiliary activities, public services, membership and development, facilities, security and other, public information, administration and other operating expenses)	2	\$249 (2003/04 - incl. the costs of programme services, administration, finance, development and membership, museum store, artists gallery, facility rental and parking garage and auxiliaries)	2	\$401 (2004 - incl. exhibition and projects, traveling exhibitions, curatorial and collection maintenance, visitor services, education, auxiliary expenses, management and general supporting services and fundraising)	2	\$2,132 (2004/05 - incl. curatorial, education and libraries, development and membership, operations, general administration, auxiliary activities, interest on debt service)	2	\$486 (2004/05 - incl. curatorial, libraries, collections, development and special exhibitions, museum education, other programmes, auxiliary activities, managerial and general administration, member development, and fund raising)	2
Self-generated Revenue as a % of Operating Costs - excl. acquisitions, depreciation and interest	27%	4	54% (2005/06 - incl. trading income, admissions, other income from charitable activities, sponsorship and other activities for generating funds, and other incoming resources)	2	57% (2005/06 - incl. admissions, membership and revenue of auxiliary activities)	2	59% (2003/04 - incl. revenue from museum store, admissions, membership, tours and special events, facility rental, artists gallery, auxiliaries, parking garage, exhibitions and other revenues)	2	66% (2004 - incl. membership income, benefit and special event income, admissions, traveling exhibition fees, royalties and auxiliary revenues)	2	55% (2004/05 - incl. admissions and membership, auxiliary activities and other income)	2	50% (2004/05 - incl. admissions, memberships, special exhibitions, other programme revenues, auxiliary activities and other revenue)	2
Staff Cost as a % of Operating Costs	50%	4	40%	2	na		na		na		na		51% (2004/05)	
Annual Acquisition Costs (HK\$ million)	\$70	4	\$264 (2004/05)	4	\$395 (2005/06)	2	\$11 (2003/04)	2	\$16 (2004)	2	\$774 (2004/05)	2	\$125 (2004/05)	2

Note: Exchange Rate: 1 USD = 7.8 HKD, 1 GBP = 15.2 HKD, 1 Euro = 10.3 HKD

Source:  
1 Official website  
2 Annual Report  
3 Lord Cultural Resources  
4 MAG Report  
5 Directory of the American Association of Museums 2006  
6 Museum Management

## ANNEX C.8: CONSULTATION WITH MUSEUM OPERATORS

### List of Museum Operators / Potential Museum Operators Consulted

Theatre Operator	Background Information	Contact	Interview Date
Solomon R. Guggenheim Foundation	<ul style="list-style-type: none"> <li>a nonprofit corporation founded in 1937</li> <li>developed modern art museums in New York, Las Vegas, Bilbao, Venice and Berlin</li> <li>developing a Guggenheim museum in Abu Dhabi, United Arab Emirates</li> <li>considered developing a Guggenheim museum in Taiwan, Rio de Janeiro and Guadalajara, Mexico but none of the projects went ahead</li> <li>currently doing an exhibition at the Art Museum in Shanghai</li> </ul>	Thomas Krens (Director)	14 March 2007
Centre Pompidou	<ul style="list-style-type: none"> <li>a public cultural institution created in 1975 (opening in 1977)</li> <li>Pompidou Centre gathers modern art museum, library, research institute on contemporary music, theatre and a Brancusi Atelier</li> <li>Creation of a branch in Metz, built by Shigeru Ban</li> <li>Considered developing a branch in Shanghai</li> <li>Developing relationships in Latin America</li> </ul>	Kara Lennon (Head of International Department)	14 March 2007

### **Summary of Views:**

- Pompidou remains interested in potential for long term partnerships, particularly for exhibitions. Guggenheim would also be interested in exhibition placement. The facility and its operations (curatorial, conservation and security) would have to meet international museum standards for either to place exhibitions in Hong Kong.
- Neither institution would “invest” in the development of the WKCD, nor are interested in operating the museums, except perhaps under a very strict and costly “branch” museum scenario. Their branch interests are currently more directed at China than Hong Kong.