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United Nations

Report of the Board of Auditors

for the year ended 31 December 2012

Volume V
Capital master plan

General Assembly
Official Records
Sixty-eighth Session
Supplement No. 5

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Note

Symbols of United Nations documents are composed of letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

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Letter of transmittal

[30 June 2013]

I have the honour to transmit to you the report of the Board of Auditors on the capital master plan for the year ended 31 December 2012.

(*Signed*) Amyas **Morse**
Comptroller and Auditor-General of the United Kingdom
of Great Britain and Northern Ireland
Chair, United Nations Board of Auditors

The President of the General Assembly
of the United Nations
New York

Report of the Board of Auditors on the capital master plan for the year ended 31 December 2012

Summary

The capital master plan to refurbish United Nations Headquarters is a complex, high value and high profile project to modernize, secure and preserve the architecture of the 1950s campus. In resolution 57/292, the General Assembly requested the Board of Auditors (the Board) to report annually on the project. This is the Board's tenth annual progress report on the capital master plan.

There has been considerable progress since our last report. The Office of the Capital Master Plan has largely completed the refurbishment of the Secretariat Building and the related move back of staff from temporary office (swing) space. The Office completed the renovation of the Conference Building in May 2013 and commenced work on the General Assembly Building in June 2013. At the time of the present report, the Dag Hammarskjöld Library and the South Annex remain on hold pending a solution to rehouse the functions of these buildings elsewhere and find an alternative use for the buildings in light of security concerns.

Overall conclusion of the Board

The Board recognizes that, as at 31 March 2013, with 91 per cent of the available financing committed and two of the three main buildings largely completed, the total level of risk to the delivery of the capital master plan is reduced. The final consolidated cost overrun to the United Nations for the completion of the capital master plan is currently forecast at $314 million. The project has experienced delays to the scheduled completion of the Conference Centre and the start of work on the General Assembly Building. Those delays have compressed the remaining schedule, in particular for the General Assembly Building which, at the time of the submission of the present report, had 13.5 months to complete construction against 16.5 months at the time of the previous report, in time for the general debate in September 2014. The project has also experienced delays due to the effects of storm Sandy, which the Administration estimates at three months. Achieving the target date for completion of the General Assembly Building, while also managing the related cost pressures within existing funding, is the critical risk facing the Administration.

The Administration considers the target delivery date for the General Assembly Building is achievable if: (a) sufficient funds are available if it becomes necessary to accelerate the schedule by, for example, paying for triple shift working; and (b) a number of assumptions hold true, including that no new major risks or issues emerge before completion. More widely, the Administration plan for completing the capital master plan assumes General Assembly approval for the full use of the remaining working capital reserve and interest ($88 million), the full use on other work of the $65 million originally budgeted for the renovation of the Library and the South Annex and funding for the $162 million of associated costs.

The Office of the Capital Master Plan considers there is sufficient remaining contingency funding to meet identified risks. This assumption is largely based on utilizing existing contingency allowances and on realizing and utilizing any potential funds that may become available upon closure of the remaining guaranteed

maximum price contracts and of contracts on swing space accommodation, in time to meet the levels of acceleration required. It also assumes that some of the less essential or visible scope of the General Assembly Building could be delivered later in 2014 (for example, conversion of space in the basements into conference rooms).

The Board notes the strong commitment of the Office of the Capital Master Plan to achieving the target delivery date for the General Assembly Building and of the Administration to delivering the capital master plan from within available funds, but at this juncture has a number of concerns:

- Despite improved knowledge of the likely risks which may arise in the renovation of the General Assembly Building, based on experience with the Conference Building, there remains an inherent uncertainty until work has commenced and the state of the building can be determined.
- There is little or no flexibility left in either the budget or the schedule; any delay or unexpected complexity will put achievement of the target date for the General Assembly Building at risk and create cost pressures, adding to the forecast cost overrun.
- The Office of the Capital Master Plan has stated that a number of contingency measures are available should the schedule for completing the General Assembly Building become unrealistic. At the time of the submission of the present report these have not been developed into a formal alternative plan for consideration by the senior responsible owner. It is also unclear how the senior responsible owner for the project will be able to independently assure himself of the realism of the plans to deliver the General Assembly Building by August 2014 without objective and independent technical advice.
- In our view, the process for estimating and reporting the anticipated final cost of the project still lacks analytical rigour and remains over-reliant on the expert judgement of key staff.

The Board concludes that the General Assembly Building, with an intense and committed effort by what it acknowledges as a dedicated, expert and agile project team, may be substantially completed by July 2014. Overall, the capital master plan is on schedule to complete in 2015, but only with agreement on how to finance the current cost overrun, a change in scope due to the enhanced security upgrade and use of the $65 million originally planned for the Library and South Annex.

Main findings and recommendations

Project budget and costs

As at March 2013, the total anticipated final cost to the United Nations was $2,379 million, $314 million (15 per cent) more than the revised consolidated budget and available funding of $2,065 million (table 1). The anticipated final cost comprises three main elements:

- **Anticipated final project costs** of $2,217 million: the costs controlled by the Office of the Capital Master Plan are $156 million (eight per cent) more than the consolidated budget for the project of $2,061 million.
- **Anticipated final associated costs** of $143 million: currently funded out of the capital master plan budget but which require an assessment from the General Assembly.

- **Costs** of $19 million for the secondary data centre, for which there is currently a budget of $4 million, with the remaining $15 million covered under commitment authority.

Table 1
Anticipated final cost against budget and available funding, 31 March 2013
(Millions of United States dollars)

	Capital master plan	*Associated costs*	*Secondary data centre*	*Total*
Total approved consolidated budget				**2 065**
Total approved project budget[a]	2 061			
Total approved budget for associated costs		–		
Contribution to the secondary data centre from the support account for peacekeeping operations			4	
Total anticipated final cost to the United Nations				**2 379**
Total anticipated final project costs	2 217			
Total anticipated final associated costs		143		
Total anticipated final costs of the secondary data centre			19	
Variance between budget and total anticipated final cost to the United Nations				**(314)**
Variance between project budget and total anticipated final project cost	(156)			
Variance between budget and total anticipated final associated costs		(143)		
Variance between budget and total anticipated final costs of the secondary data centre			(15)	

Source: Board analysis of data from the Office of the Capital Master Plan, as at March 2013.
[a] Total approved project budget and available funding includes the enhanced security upgrade ($100 million) and additional scope from voluntary contributions ($13.2 million).

The total anticipated cost overrun for the project has reduced from $430 million to $314 million since the Board last reported, owing to a $72 million increase in funding ($71 million from the working capital reserve) and a $44 million reduction in costs achieved mostly through value engineering ($13 million), reduced construction costs ($12.8 million) and a reduced share of lease costs ($13 million) by charging some rental costs related to an increase in the number of staff and consultants to a rental account established in the Secretariat (that is, not a project cost, but still a cost to the United Nations).

At the time of this report, the Administration estimates that the amount of permissible cost recovery from insurers for damage caused by Hurricane Sandy is $137 million (some 93 per cent of the total cost of the $148 million worth of assessed storm damage). The Administration is working with insurers and cost adjusters to agree to a final figure. A separate investment of approximately $6 million has been approved for work to improve the resilience of the campus to future storm damage. This will be met from the United Nations programme budget and not the budget for the capital master plan (A/67/748).

For the capital master plan to be delivered as currently scoped, not including any renovation of the Library and South Annex, approval of the General Assembly to use additional funds will be required. In September 2012, the Administration proposed measures to address the $240 million difference between the total approved project budget and the anticipated final cost, not including associated costs for which the Administration will require a further assessment from Member States (A/67/350). The General Assembly approved the utilization of $71 million of interest from the working capital reserve and some one-off savings measures ($13 million). Decisions have been deferred until the sixty-eighth session of the Assembly on a further $156 million outlined in the proposal.[1] The General Assembly expects the Secretary-General to present fully costed options on all remaining issues to support decision-making by Member States. The Board considers that the Administration must also give thought to how it can provide assurance on the robustness and completeness of the anticipated final costs.

The Board remains concerned over the robustness and analytical basis of the cost forecasting of the Office of the Capital Master Plan, as highlighted in its previous reports, and can provide no assurance that sufficient contingency remains to meet risks and trends. The Board acknowledges that the Office of the Capital Master Plan utilizes expert advice in forecasting the final costs and that improvements have been made in the last year in assigning costs to identified risks (with the total costs of the two quantification exercises broadly correlating with the levels of contingency remaining).[2] While this analysis provides the Office of the Capital Master Plan with some assurance, the identified risks are not explicitly linked to the forecast for the anticipated final cost. Additionally, although previously recommended, no structured trend analysis has been or is being undertaken to determine any potential liability for future change orders, claims or the costs of unexpected acceleration needed to finish the project.

Project schedule

Despite the impact of Hurricane Sandy in October 2012, there was less slippage to the capital master plan than reported by the Board in previous years. However, the cumulative impacts of the slippages, recognizing that in particular the enhanced security upgrade was beyond the control of the Administration, have led to a compressed and therefore high-risk schedule to complete the capital master plan. The Administration largely completed the Secretariat Building in line with last year’s target date of July 2012 and the Conference Building was completed in June 2013, four months later than the target date reported last year, due to Hurricane Sandy and delays in commissioning the state-of-the-art broadcast systems in the Conference Centre. The completion of this critical activity in May 2013 enabled work to start on the General Assembly Building in June 2013.

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[1] This is derived from the use of funding originally planned for the renovation of the Library and South Annex ($65 million), deferral of the costs of refurbishing furniture in the Conference Building ($1 million), the costs of demolishing the North Lawn Building ($2 million) and use of the remaining working capital reserve ($88 million).

[2] In October 2012 the probable total cost of the risk register was $41 million against a reported contingency of $40 million. In April 2013, the probable total cost of the risk register was $21 million against a reported contingency of $26 million.

The schedule for the General Assembly Building renovation has been compressed from 16.5 months to 13.5 months since the Board last reported, increasing the risks for the completion of the General Assembly Building in time for the general debate in September 2014. The additional costs of any acceleration needed to meet further schedule compression could be significant. The Board notes that experienced project managers are transferring from the completed buildings to the General Assembly Building, which, along with learning from the other buildings on potential risks, improved construction techniques and how specifications can be reduced and designs simplified, should mitigate some of the schedule pressure. Despite improved knowledge of the likely risks which may arise in the renovation of the General Assembly Building, based on lessons learned from the similarly designed and constructed Conference Building, there remains an inherent uncertainty in the refurbishment of a 1950s building until work has commenced and the state of the building can be determined.

The Office of the Capital Master Plan has a number of contingency measures available should the current schedule to complete the General Assembly Building become unrealistic. At the time of this report these have not been developed into a formal alternative plan for consideration by the senior responsible owner. The measures could include (a) focusing efforts on completing the Assembly Hall and postponing work on less visible areas, such as the basement, until after the general debate and (b) accelerating the work through the use of triple shifts. The Board considers it prudent to set out what the trigger for contingency measures would be and agree on this with the senior responsible owner, noting that the cost implications would need to be understood before any decision is made.

Project scope

The Administration has yet to produce practical and costed options for the Library and South Annex Buildings that satisfy the enhanced security requirements, nor has it presented costed alternatives to the delivery of the functionality of either building within the campus, or for how the North Lawn Building (which cost $144 million to construct) might feature in any future Headquarters accommodation strategy. The project scope still includes the renovation of the Library and South Annex Buildings, although neither can be renovated as originally envisaged due to security considerations. The absence of a costed strategy for the use of these buildings creates uncertainty about the overall project cost and scope and hinders cost-effective decision-making by those needing to decide on the future funding of the capital master plan — for example, how any plan to deliver the functionality of the two buildings would be funded. The Administration has informed the Board that this issue will be considered in the light of the future Headquarters accommodation strategy.

Flexible workplace strategies

The Board has been concerned about the lack of progress towards implementing its previous recommendations on assessing and piloting flexible office solutions that move away from a one-person-to-one-desk ratio and make far more efficient use of office space. The Board considers this a missed opportunity, but notes that the potential to realize significant savings still remains and that a working group was established in April 2013 to propose a way forward on flexible workspace strategies in response to General Assembly resolution 67/254.

With the likelihood of other significant expenditure being required on the United Nations estate, the Administration urgently needs to evaluate the potential costs and benefits that more flexible workplace strategies could achieve within the Headquarters campus and across the global estate, in particular the potential for a significant reduction in Headquarters requirements for rented real estate in New York.

Long-term capital asset management

The United Nations does not have a long-term asset management plan in place for the newly renovated campus in New York or globally for the entire United Nations estate. There is a big difference between a minimal, reactive repair and maintenance regime that keeps a building or estate working and a whole life asset management strategy that invests more fully and keeps the building or estate in good condition. The Board warns against any expectation that maintaining the newly renovated campus will require less effort and therefore less funding. The opposite could be true, as the buildings have now been brought up to date and the more sophisticated plant and equipment may need constant care. The Board notes that the adoption of the International Public Sector Accounting Standards (IPSAS) and the current strategic capital review of the global estate present an opportunity for the Administration to develop a long-term strategy for the maintenance and upkeep of both the newly renovated New York campus and the wider estate.

The Board makes detailed recommendations in the main body of this report. In summary the main recommendations are that:

(a) **As part of the plan to complete the General Assembly Building in time for the general debate, the Office of the Capital Master Plan should provide the senior responsible owner with clear criteria for when planned contingency measures would be triggered, including a breakdown of costs versus benefits;**

(b) **The Administration should (i) produce costed and realistic options to assist the General Assembly in deciding whether to remove the Library and South Annex from the scope of the capital master plan and if so, whether to use the $65 million budget to reduce the current cost overrun and (ii) develop and present the strategy for the North Lawn Building with costed options for any future use beyond the completion of the capital master plan within United Nations Headquarters;**

(c) **As a matter of urgency, the Administration should require the working group on flexible workspace strategies to gather robust data on building occupancy utilization and the occupancy costs per desk in each building and use this new information to conduct a more robust analysis to understand future real estate requirements and update the business case for the Headquarters future estate before committing to new projects such as UNDC-5;**

(d) **The Administration should consider adopting a whole life cycle asset investment strategy and assess costed options for the through-life maintenance of the Headquarters buildings.**

Previous recommendations

Of the 12 recommendations made in the Board's previous report for the year ended 31 December 2011 (A/67/5 (Vol. V)), four (33 per cent) were fully implemented and eight (67 per cent) were partially implemented. The Board notes the progress made in implementing its recommendations, for example on the costing of risks and flexible workspace strategies.

A. Mandate, scope and methodology

1. In its resolution 57/292, the General Assembly requested the Board of Auditors to submit an annual report on the capital master plan. The Board has examined the project since the preparation of its last report (A/67/5 (Vol. V)) to assess progress and the risks to, and likelihood of, the capital master plan being delivered to budget, on time and within scope.

2. The present report addresses matters which, in the view of the Board, should be brought to the attention of the General Assembly, including new recommendations for improved management and to address identifiable risks going forward. The report also includes the Board's response to specific requests made by the Advisory Committee on Administrative and Budgetary Questions, in particular that the Board scrutinize the revised cost estimates of the capital master plan in its next audit of the project pursuant to paragraph 12 of section V of General Assembly resolution 67/246 (letter dated 7 March 2013 from the Chairman of the Committee to the Board of Auditors).

3. The Board has continued to work closely with the Office of Internal Oversight Services to understand the results of recent internal audits, coordinate its respective audit work and minimize the oversight demands on the Office of the Capital Master Plan.

4. The Board's findings and conclusions were discussed with the Administration, whose views have been appropriately reflected in the present report.

B. Background and key developments

5. The capital master plan is a complex and challenging project which aims to refurbish and architecturally preserve the 1950s campus of United Nations Headquarters, while bringing it into line with modern standards — the original aims of the project as approved by the General Assembly in resolution 57/292.

6. In September 2007, the Secretary-General, in his fifth annual progress report (A/62/364), noting delays in implementing the capital master plan and increased project costs, referred to the complexities of United Nations decision-making and the resignation of the Executive Director of the project. The Secretary-General then proposed an accelerated strategy (accelerated strategy IV), involving a shorter period of renovation, fewer phases of construction and less disruption to United Nations operations. At that time the revised estimated final cost was $2,067 million, some $190 million above the budget of $1,877 million approved by the General Assembly in December 2006 (resolution 61/251). Accelerated strategy IV remains the current implementation strategy.

7. The financial position of the capital master plan is reported as part of statement X (capital assets and construction in progress) of the financial statements of the United Nations for the biennium ended 31 December 2011 (A/67/5 (Vol. I)). According to the interim financial statements for the biennium 2012-2013, the cumulative expenditure on the capital master plan as at 31 December 2012 was

$2,124 million. Expenditure in 2012 was $314 million compared to $295 million in 2011.[3]

8. The key stages in the development of the strategy and budget for the delivery of the capital master plan are summarized in annex I. Annex II provides a summary of the changes in the budget and anticipated final cost estimates over time.

C. Findings and recommendations

1. Follow-up of previous recommendations

9. Of the 12 recommendations made in the Board's previous report (A/67/5 (Vol. V)) for the year ended 31 December 2011, 4 (33 per cent) were fully implemented, and 8 (67 per cent) were under implementation.

10. Annex III summarizes the position on implementation. Further commentary on the previous recommendations is contained in the relevant sections of the report.

2. Project budget and anticipated final costs

Cost control

11. The Board continues to observe that the Office of the Capital Master Plan exerts firm control over expenditure with an experienced project team consistently reviewing construction costs, thoroughly checking change orders and negotiating firmly before any payment is made. This is confirmed by both our audit findings and the results of the reports of the Office of Internal Oversight Services over time (A/67/330). The Board also notes that the Post-award Review Committee has not identified any serious problems to date with contract awards (see section C.5 below).

12. Since our last audit, no new cost pressures or significant risks to the final anticipated cost, including the impact of Hurricane Sandy, have emerged, with the exception of the compressed schedule to complete the General Assembly Building before the September 2014 general debate, as detailed in section C.3 below.

Cost impact of Hurricane Sandy

13. In October 2012, Hurricane Sandy flooded the third-level basement, destroying the new chiller plant, valuable specialist equipment in the print rooms and substantial amounts of wiring and plaster work. The Administration is working with insurers and loss adjusters to determine how much of the costs of the flood damage can be recovered. The current estimated costs to be reimbursed are around $138 million, with an additional $11 million unrecoverable.[4]

14. The Office of the Capital Master Plan is managing the necessary repair work, taking advantage of having a workforce on site already. The repair work incorporates lessons learned from the storm to provide increased resilience in case of a similar event in the future: for example, watertight doors and the use of trapezes

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[3] The figure of $295 million included in the 2011 financial statements was for expenditure of the Office of the Capital Master Plan only. The 2012 interim financial statements also include expenditure on associated costs, the secondary data centre and the enhanced security upgrade.

[4] Statement to the Fifth Committee on agenda item 130 by the Under-Secretary-General for Management, 15 March 2013.

for critical electrical cabling. The Advisory Committee on Administrative and Budgetary Questions recommended that the General Assembly approve the estimated amount of $6 million requested for work to improve the resilience of the campus to future storm damage under the programme budget for the biennium 2012-2013 (A/67/789).

Budget and expenditure

15. As at 31 March 2013, the total consolidated budget for the capital master plan was $2,065 million and comprised the original approved budget of $1,877 million (General Assembly resolution 61/251); donations by Member States of over $13 million; a contribution of $100 million made by the host nation for the enhanced security upgrade; a $4 million contribution to the secondary data centre from the support account for peacekeeping operations; and $71 million of working capital and interest approved by the General Assembly in resolution 67/246.

16. As at 31 March 2013, the total committed expenditure was $2,081 million,[5] consisting of $1,947 million on the capital master plan (including the enhanced security upgrade)[6] and $134 million on associated costs and the secondary data centre.[7]

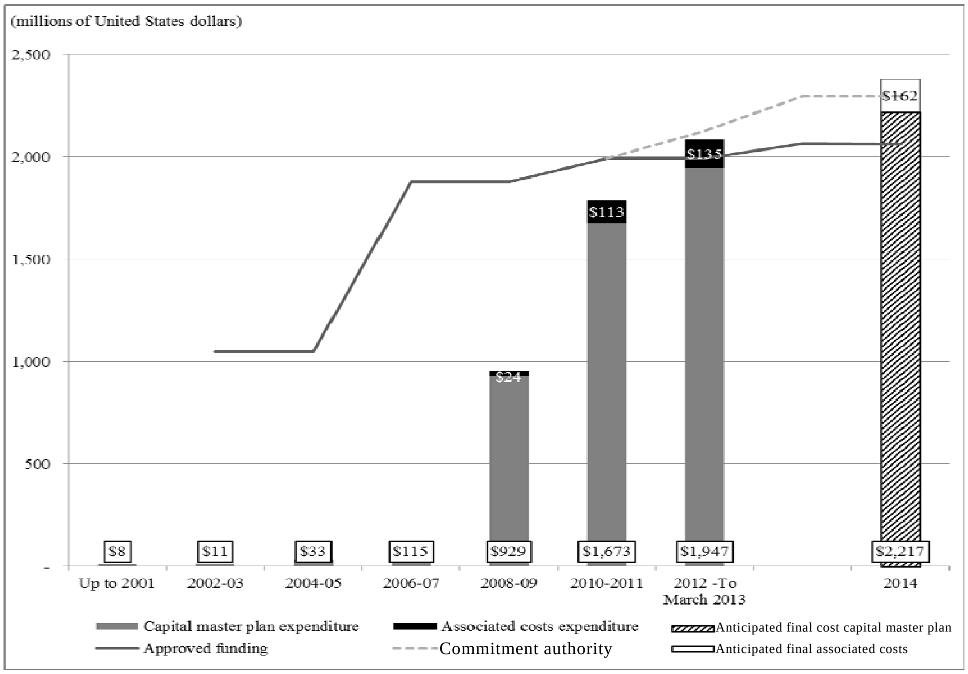
17. Figure I illustrates the expenditure of the Office of the Capital Master Plan to 31 March 2013 against the consolidated budget, including the levels of commitment authority approved by the General Assembly to enable the project to continue spending. The total committed expenditure of the Administration has, for the first time, exceeded the total budget by around $20 million, but is still within the level of commitment authority approved by the General Assembly. Since the Board's last report, the General Assembly has authorized two further commitments of expenditure: $135 million in April 2012 and $168 million in December 2012 (resolutions 66/258 and 67/246). Figure I also includes a projection of the anticipated final cost of the project as at 31 March 2013, which indicates that there will be a shortfall in funding and commitment authority in 2014 for which the Administration has indicated it will require a further commitment authority of $15 million (see A/67/350).

[5] Total committed expenditure includes contractual obligations and actual cash disbursements.

[6] $1,872 million for the capital master plan and $74 million for the enhanced security upgrade.

[7] $115 million associated costs and $19 million for the secondary data centre.

Figure I
Financial position of the capital master plan since 2001, including current anticipated final cost



Source: Board analysis of data from the Office of the Capital Master Plan.

Anticipated final cost of the capital master plan

18. As at March 2013, the Office of the Capital Master Plan estimates the final project cost, excluding associated costs, to be $2,217 million, 8 per cent more than the revised consolidated budget of $2,061 million.[8] This has reduced the anticipated project overspend by 41 per cent from $266 million to $156 million since our last report.

19. The Administration estimates the anticipated final associated costs[9] and cost of the secondary data centre will be $158 million (figure II), a 6 per cent reduction since our last report. The Administration maintains that it will attempt to absorb associated costs within the consolidated capital master plan budget, but that many of the associated costs covered under the commitment authority will require further funds to be approved.[10]

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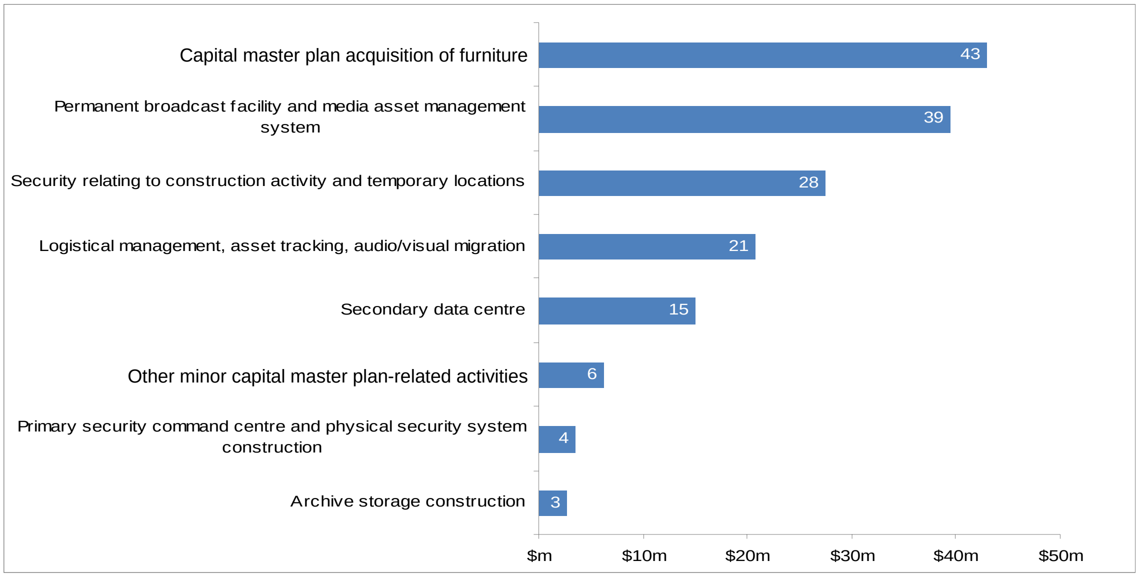
[8] The $4 million contribution to the secondary data centre from the support account for peacekeeping operations has been removed from this total as it is not part of the project costs.

[9] Associated costs relate to goods and services which, although made necessary by the work of the capital master plan, are not directly attributable to the refurbishment operations of the plan and were therefore excluded from the original budget.

[10] Briefing by the Under-Secretary-General for Management to the Fifth Committee on the capital master plan, 4 March 2013.

Figure II
Anticipated final associated costs (including the secondary data centre)
(Millions of United States dollars)



Source: Supplementary information for A/67/350 and Add.1.

20. As at 31 March 2013, the Administration estimates a total anticipated final cost to the United Nations of $2,379 million against an approved budget of $2,065 million. The combined cost overrun of $314 million is a reduction of $116 million from the $430 million reported in March 2012. The reduced cost overrun is explained by a $72 million increase in funding ($71 million from the working capital reserve) and a $44 million reduction in costs achieved mostly through value engineering ($13 million), reduced construction costs ($12.8 million) and a reduced share of lease costs ($13 million) by charging some rental costs related to an increase in the number of staff and consultants to a rental account established in the Secretariat (see table 2).

Table 2
Reasons for the reduction in the consolidated project cost overrun
(Millions of United States dollars)

Area of cost	*Reason for change*	*Impact on funding* Cost increase	Cost reduction	Funding increase	
Capital master plan renovation and swing space	Additional work carried out as a result of donations by Member States	2.5			
Enhanced security upgrade	Anticipated use of increased donation from the host nation	0.4			
Rental of office space	Charging some rental costs to the rental account established in the Secretariat to cover higher than predicted staff numbers in swing space		-13.0		
Capital master plan renovation and swing space	Savings derived from value re-engineering exercise		-13.0		
Capital master plan renovation and swing space	Reduction in planned expenditure		-12.8		
Associated costs	Based on current costs to date, an anticipated reduction in planned expenditure		-3.7		
Secondary data centre	Reduced costs of the secondary data centre		-1.4		
Use of working capital fund and associated interest	Increase in funding approved by General Assembly in December 2012			-71.0	
Donations	Increased donations made by Member States			-2.5	
Enhanced security upgrade	Increased donation from the host nation			-0.4	
Secondary data centre	Contribution from the support account for peacekeeping operations for the secondary data centre			-0.9	
Reduction in reported overrun		**3.0**	**-43.9**	**-74.9**	
Total reduction in overrun					**115.8**

Source: Board analysis of data from the Office of the Capital Master Plan, as at March 2013.
Note 1: The $3 million cost increase for additional work carried out as a result of Member State donations and the enhanced security upgrade nets off against a corresponding funding increase.

21. In September 2012, the Administration set out its proposal to bridge the gap between the approved funding and the anticipated final costs of the capital master plan.[11] The plan included a request for commitment authority to cover the associated costs, which the Administration assumes will require a further assessment from the General Assembly.

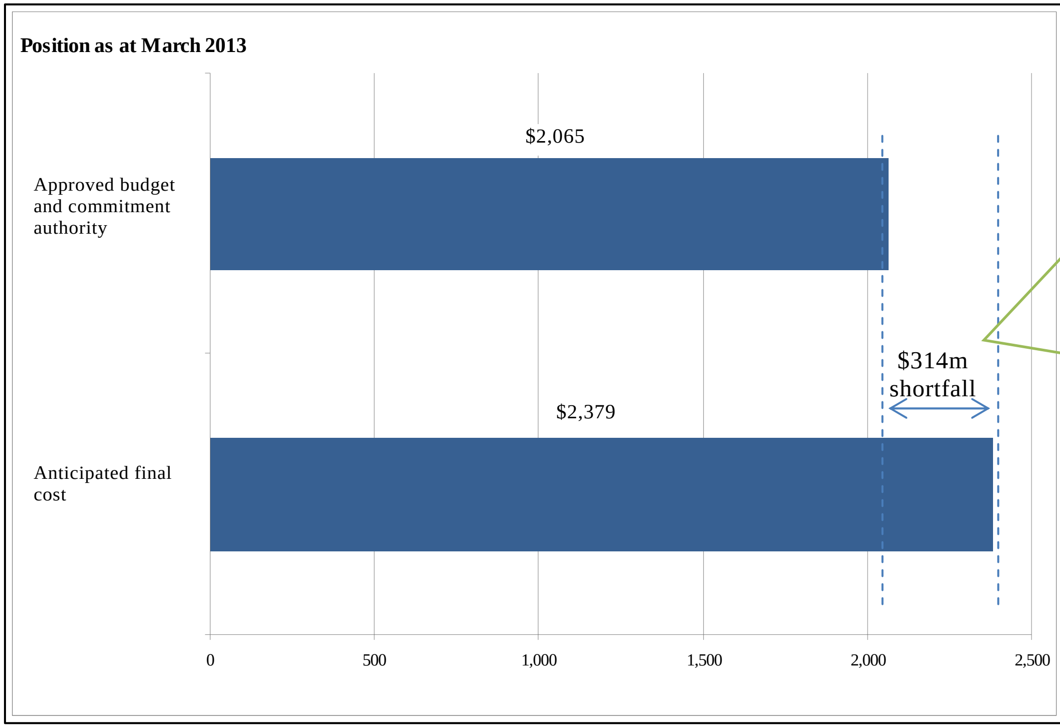
22. The proposal to reduce the cost overrun was to utilize (a) the working capital reserve ($45 million), (b) all income from accumulated interest earned on advance funding ($109.4 million) and (c) the $65 million currently allocated for the renovation of the Dag Hammarskjöld Library and the South Annex. Further elements of the

[11] The proposal was presented in the tenth annual progress report (A/67/350) and agreed in part by the General Assembly.

proposal were to undertake only minimal landscaping and defer the demolition of the North Lawn Building and the refurbishment of furniture ($16 million).

23. In December 2012, the General Assembly approved $13 million in savings measures and partial use of the working capital reserve and accumulated interest — some $71 million. The Assembly also requested that options for the renovation of the Library and the South Annex be included in the eleventh annual progress report (resolution 67/246). Figure III summarizes the Administration plan, its partial approval by the General Assembly and the funding position as at March 2013. The majority of the $314 million shortfall between the approved budget of $2,065 million and the anticipated final cost of $2,379 million is currently covered by commitment authority of $303 million. Annex IV contains a detailed breakdown of current approved funding and total anticipated final costs.

Figure III
Overview of the cost overrun of the capital master plan and the Administration plan as at March 2013 (including associated costs and the secondary data centre)



Proposal to offset remaining cost overrun	
Shortfall against approved budget	$385 million
General Assembly approved	
Interest from Working Capital Fund (resolution 67/246)	($71 million)
March 2013 funding shortfall	**$314 million**
Further General Assembly approval required	
Remaining Working Capital Fund and interest	($88 million)
Suspension of Library/South Annex	($65 million)
Conference room 14 furniture deferral	($1 million)
Deferral of demolition of North Lawn Building ($2 million)	
Projected remaining funding shortfall	**$158 million**

Source: Board analysis of data from the Office of the Capital Master Plan.

Process for estimating and reporting anticipated final costs

24. The Board has previously raised concerns over the reporting of the anticipated final cost. These concerns were shared by the members of the Advisory Committee on Administrative and Budgetary Questions (A/67/548) who reported that they could not accept the assurances of the revised consolidated cost estimate provided in the tenth annual progress report (A/67/350) and requested on behalf of the General Assembly that the Board examine the process during the course of this audit.

25. In its previous report, the Board recommended that the Administration include, within its reporting of the anticipated final cost of the project:

- Quantified project risks
- Change orders until project completion
- Claims that have been submitted and an allowance for future claims
- Any acceleration activity required to meet the project schedules
- Up-to-date estimates for the remaining guaranteed maximum price contracts[12]
- The costs of off-site alterations to office locations.[13]

Quantifying risk

26. The Board noted progress by the Administration in quantifying project risks. In October 2012, the Office of the Capital Master Plan used an independent risk expert to carry out the annual review of the project risk register. For the first time risks were assigned an individual cost based on their likelihood and impact. The total cost was estimated at $40 million, roughly the same as the level of existing contingency. During the Board's audit in April 2013, the Office of the Capital Master Plan estimated the total cost of remaining risks at $21 million against a reported contingency of around $27 million.

27. The new risk forecasting technique is a positive step forward and the assignment of costs to risks appears reasonable. The detailed results provide the Administration with greater insights into the actions needed to address the risks. For example, the Board notes that the risk register indicates that the impact and probable costs of poor quality of design drawings/specification and of acceleration on the General Assembly Building is $11 million, but the internal cost report of the Office of the Capital Master Plan provides only a $6.7 million contingency sum for this risk. This requires either an increase in contingency or a mitigating action to reduce the likelihood and impact of the risk.

28. The Board notes that the Administration's risk assessment technique is not actively used as part of the process to determine the contingency. There is no clear link between the contents of the risk register and the effect of any expected costs, should those risks arise, in the anticipated final cost of the project.

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[12] Guaranteed maximum price contracts stipulate the maximum price the United Nations will pay to the construction manager for certain elements of the construction work. Changes to the contracts are priced and evaluated on an individual basis. At the time of reporting, only two contracts remained to be executed, the General Assembly Building and the landscaping contract (both were based on estimates from 2011).

[13] The Office of the Capital Master plan informed the Board that no further off-site alterations were required at the time of reporting.

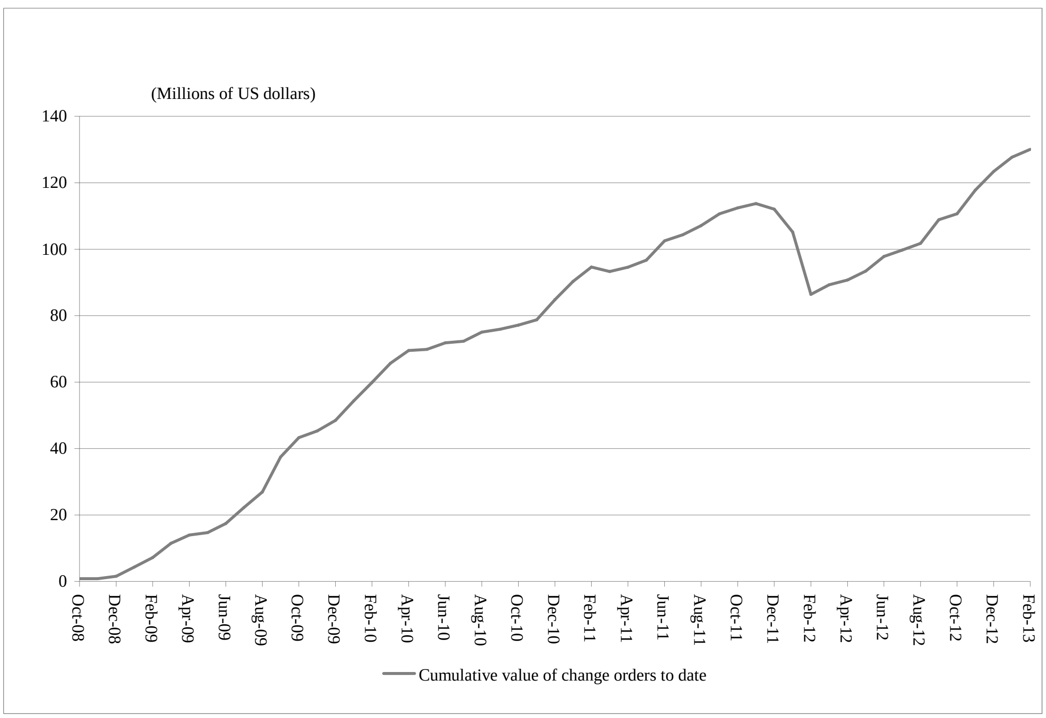
Change orders

29. The project continues to experience considerable change. As of March 2013, there had been 2,516 change order requests submitted, with a total value of $130 million.[14] This is an increase of 789 change order requests since the Board last reported the position as at 1 February 2012.

30. The Board continues to note that a projection of potential change order submissions is not factored into the estimates of the Office of the Capital Master Plan for the final costs of the project. Instead the approach of the Office assumes changes can be covered from within a blanket contingency provision calculated as a percentage of the expected expenditure.

31. The significant reduction of $25 million in the cost of change orders that took place in 2011 (figure IV) reflects the continuing weakness in taking account of trends in change orders in the approach to forecasting. Only when the guaranteed maximum price contracts are closed and settled are cost savings released, rather than forecasting the probable outcome in advance. In this case savings arose from within the guaranteed maximum price contracts for the Secretariat Building ($8 million), basement B2 ($11 million) and the curtain wall ($9 million). At the time of reporting, there appears to be the potential that a further $20 million might be realized upon closure of nine guaranteed maximum price contracts, but the Office of the Capital Master Plan does not include this in any cost forecast.

Figure IV
The cumulative cost of change orders as at February 2013



[14] A change order is a mechanism for changing the details of a contract and can arise for a number of reasons, for example, the discovery that the existing condition of a building is worse than expected. Change orders result in costs being higher than expected.

Claims

32. The Board reported previously that, as at 31 March 2012, there had been five claims from contractors for additional costs and as at 30 April 2013, there were three new claims. Overall, the claims have either been withdrawn, settled or are in progress and the maximum estimates are significant (this information is commercially sensitive and therefore not disclosed in this report). Some allowance is made for these claims in the contingency provisions of the Administration and the main contractor and where claims have been settled they are included in the anticipated final cost. However, no allowance is made in the anticipated final cost for as yet unknown claims which may arise through to the end of the project.

33. As the Board has previously reported, given the significant time and cost pressures of the project and the schedule for the completion of the General Assembly Building in particular, it is possible that more claims may occur towards the end of the project as contractors are required to work at, or near, maximum capacity. The Board continues to consider that it may be prudent to forecast an element of future claims in the anticipated final cost estimate.

Contingency

34. The Board notes that additional sources of contingency funds may exist within the project budget that could help manage cost pressures arising through to completion of the project, including potential unused provisions of approximately $20 million, previously allocated to risks across a number of the guaranteed maximum price contracts which remain open. The Board estimates that if the additional untapped savings are realized upon closure of the guaranteed maximum price contracts and combined with the contingency level already reported by the Administration ($26.9 million), the available contingency fund could be over $45 million. The Board notes that unused provisions are not explicitly identified in the routine reports of the Administration to the General Assembly. The Administration commented that it does not explicitly report unused provisions because they are uncertain until the guaranteed maximum price contract is closed. The Board considers that given their importance and value, they should be explicitly reported, with clear explanations for any uncertainty, to assist decision-making by those responsible for funding the project.

Overall assessment on cost forecasting

35. The Administration agreed with the Board's previous recommendation that it urgently take stock and rebuild the forecast anticipated final cost of the project. The Board understood that the agreement of this recommendation entailed each detailed component of the recommendation being addressed and that the Board would be presented with robust evidence and an audit trail, including for allowances and estimates, to support the new anticipated final cost at its next audit. This evidence was not provided, primarily because the Administration had not changed its approach, with the exception of the costing of risk. For this reason, the Board is unable to provide assurances on the process used by the Administration to produce the final cost projections of the capital master plan as requested by the Advisory Committee on Administrative and Budgetary Questions.

36. The Board notes that (a) the cost impact of risks is not included in the forecast, although it acknowledges that the new risk quantification informs the project team's

judgements (a blanket percentage contingency is used instead to provide for the costs of future risks, claims and change orders) and (b) potential savings from guaranteed maximum price contracts are not included in the cost forecast.

37. The Board considers that there are sufficient contingency funds available, if no significant delays or issues occur on the General Assembly renovation through to the completion of the project. If no further issues arise, the Administration should be able to deliver the remainder of the project within the current funding plan.

38. **The Board reiterates its previous recommendations on the process for determining the anticipated final costs (A/67/5 (Vol. V), para. 32).**

39. **The Board recommends that for future projects of this nature the Administration develop a risk-based approach to determining, allocating and reporting contingency funds based on best practice in modern project management.**

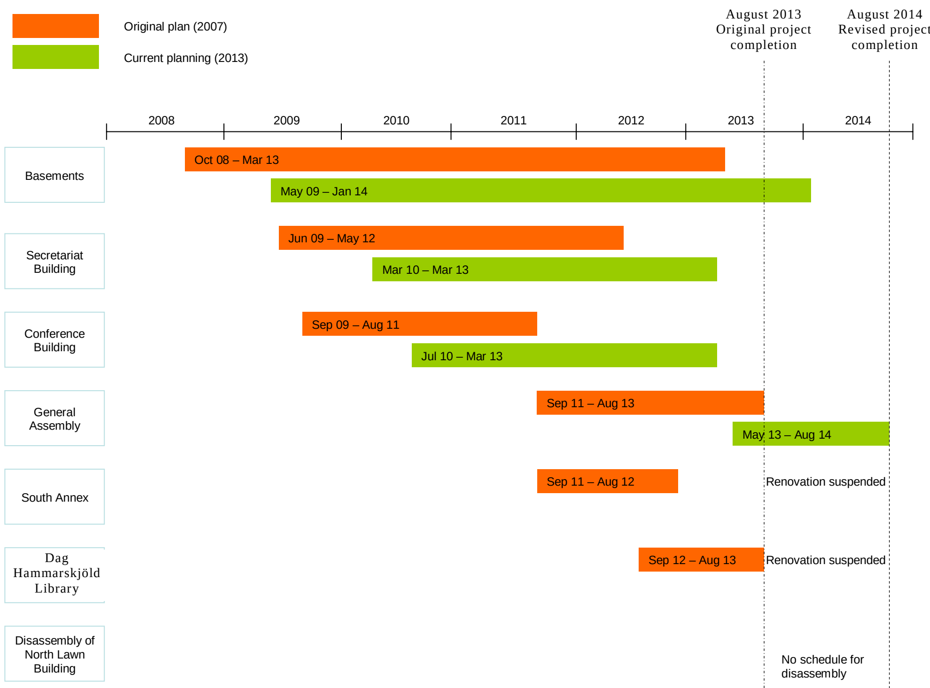
3. Project schedule

40. Since the Board's last report, the Administration has completed the refurbishment and restacking of the Secretariat Building. This has significantly reduced the risks of the project, in particular the risk of paying for excess rents in temporary office space (swing space). The Conference Building was completed four months later than the revised schedule due in part to Hurricane Sandy, after the one-year delay incurred as a result of the enhanced security upgrade. This delay, combined with previous delays across the project, has compressed the available schedule to complete the General Assembly Building by August 2014 in time for the general debate. This is now the main risk to completion of the capital master plan.

41. Figure V compares the current schedule,[15] against the schedule approved in accelerated strategy IV (General Assembly resolution 61/251). The Administration estimates the impact of Hurricane Sandy could lead to delays of around two months on the overall planned schedule, although the precise impact is yet to be determined.

[15] Capital master plan lead contractor monthly report, February 2013.

Figure V
A comparison of acceleration (IV) to the current planned schedule with the original plan



Source: Board analysis of data provided by the main contractor to the Office of the Capital Master Plan.

The schedule for the Conference Building

42. The Conference Building was completed in May 2013. The permanent broadcast facility and the accompanying media asset management system contained within the Conference Building are both complex systems and required significant testing prior to handover. The original two-month schedule for commissioning and testing these systems was compressed and required parallel working with construction activities.

43. The start of the renovation of the General Assembly Building, in June 2013, was dependent on the completion of the Conference Building. With the transfer of the conference facilities currently housed in the North Lawn Building back into the Conference Building, the North Lawn Building is then freed up to house the activities of the General Assembly, enabling the Administration to start refurbishing the General Assembly Building. Every delay in finalizing the Conference Building reduces the time available to complete the General Assembly Building.

The schedule for the General Assembly Building

44. At this stage in the project, the main risk is a failure to complete the General Assembly Building in time for the general debate in September 2014. The schedule

for renovation of the General Assembly Building is 13.5 months,[16] compared to 16.5 months at the time of the last report and 24 months in accelerated strategy IV.[17] The Administration stated that a number of contingency measures are available should the schedule for completing the General Assembly Building become unrealistic, for example, triple shift working and the completion of less visible work after the general debate. At the time of this report, these had not been developed into a formal alternative plan for consideration by the senior responsible owner.

45. The Board recognizes that experienced project managers are transferring from the completed buildings to the General Assembly Building, which, along with learning from the other buildings on risks, improved construction techniques and how specifications can be reduced and designs simplified, should mitigate some of the schedule pressure. For example, the installation of the curtain wall in the Conference Building proved difficult because the unevenness of the concrete made the metal window frames difficult to fit. In the General Assembly Building, the concrete will be surveyed prior to the demolition and abatement phase, enabling metal frames to be made and measured prior to installation. This should save time and result in fewer change orders.

46. The Board acknowledges that there is improved knowledge of the likely risks which may arise in the renovation of the General Assembly Building, stemming from the lessons learned from the similarly designed and constructed Conference Building. However, there remains an inherent uncertainty in the refurbishment of a 1950s building until work has commenced and the state of the building can be ascertained. The Administration will learn quite soon after renovation starts if some of the more significant construction risks will materialize, because the demolition and abatement activities will quickly reveal any issues with the structural integrity of the building. Additionally, major risks relating to the installation and commissioning of the broadcast and communications systems in the General Assembly Building will remain open all the way to the end of the schedule. This activity is highly complex and has contributed to delays in completing the Conference Building.

47. The Board considers that, despite significant learning derived from the work to date and an experienced project team, risks to timely delivery remain significant. The compression of the schedule from 16.5 months to 13.5 months is a considerable challenge, with multiple critical paths. If triple shift construction work (24-hour working) is required, it will be expensive and bring shift handover issues which can lead to quality and scope problems, the management of which will place a burden on the Office of the Capital Master Plan and its construction manager. The criteria to trigger using this or any other contingency measure need to be fully understood.

48. **The Board recommends that as part of the plan to complete the General Assembly Building in time for the general debate in September 2014, the Office of the Capital Master Plan provide the senior responsible owner with clear criteria for when planned contingency measures would be triggered, including a breakdown of costs versus benefits.**

49. The Board has previously recommended that processing time and backlogs in the change order approvals process should be reduced. We note that, against a

[16] Based on the latest capital master plan project schedule.
[17] As per the original schedule (resolution 61/251).

30-day target, the average time taken to process and approve change orders over the lifetime of the project is 44 days. We also note that the average processing time since January 2012 has been within the 30-day target.

4. Project scope

50. It is no longer possible to renovate the Dag Hammarskjöld Library and the South Annex as previously planned, owing to security concerns over blast resilience. The work is on hold, pending a decision on the future use of the buildings and the alternative arrangements for the functions they currently house. The Administration has been assessing options to provide a practical solution that satisfies security and user requirements, including major property developments to the south of the campus. To date, a practical solution has not emerged and design work stopped in 2011 to avoid wasting costs. The two buildings and the estimated $65 million to refurbish them remain within the scope and budget of the project, until a decision is taken by the General Assembly.

51. In its most recent report on the capital master plan, the Advisory Committee on Administrative and Budgetary Questions commented that the Secretary-General had not proposed viable and costed options for the use of these buildings and the transfer of their functions (see A/67/788). Subsequently, the General Assembly requested that the Administration provide, no later than during the main part of the sixty-eighth session, updated information and options, including financial implications, on whether the scope of these buildings should remain within the project and whether the budget for the renovation and demolition of these buildings ($65 million) should instead be used to help finance the current cost overrun (resolution 67/246). This is important because it is difficult to take a well-informed decision on the proposed use of the $65 million on other parts of the project if, for example, the potential cost of rehousing these facilities elsewhere on the campus is unknown.

52. The Board also notes the uncertainty over the future of the $144 million North Lawn Building. The scope of the capital master plan currently includes $2 million to demolish the building, but its potential use beyond the completion of the plan has been raised in the Administration strategy for future accommodation needs at Headquarters.[18] The Administration reports that keeping the North Lawn Building would increase operational flexibility and reduce capital expenditure by $2 million, albeit with operating costs per year of between $0.6 million (unoccupied) and approximately $2.5 million (fully occupied). The longer-term implications of not demolishing include compromising the architectural integrity of the Headquarters campus.

53. The Board notes and shares the concern of the Advisory Committee on Administrative and Budgetary Questions that the proposal put forward for the North Lawn Building did not present the General Assembly with sufficient information to warrant reconsideration of the current schedule of the capital master plan, including the demolition of the building.

[18] Statement by the Under-Secretary-General for Management to the Fifth Committee on the feasibility study on Headquarters accommodation needs 2014-2034, agenda item 130, 15 March 2013.

54. **The Board recommends that the Administration produce costed and realistic options to assist the General Assembly in deciding whether to remove the Library and South Annex from the scope of the capital master plan and if so, whether to use the $65 million budget to reduce the current cost overrun.**

55. The Board also recommends that the Administration develop and present a strategy for the North Lawn Building with costed options for any future use beyond the completion of the capital master plan.

5. Project governance and assurance

56. The Board notes that the Administration now provides quarterly briefings to the Fifth Committee, the Advisory Committee on Administrative and Budgetary Questions and the Management Committee on the progress and cost of the project. In addition, the Project Director provides weekly updates on the project for the Executive Management Group chaired by the Under-Secretary-General for Management. The weekly update is an important mechanism for establishing at the earliest possible moment if the target for the General Assembly Building will be missed.

57. The Board notes that since its last report, the Under-Secretary-General for Management has taken an increasingly active role in the monitoring and supervision of the capital master plan. In his update to the Fifth Committee in October 2012 and in responding to our last recommendation, the Under-Secretary-General stated that he is personally accountable for ensuring the successful completion of the capital master plan.

58. The Board is aware that organizations undertaking a project of this size and complexity would typically put in place a system of integrated assurance to provide senior management with expert advice, independent of the project team. It is unclear to the Board how the Under-Secretary-General, as senior responsible owner, will, for example, be able to independently assure himself of the realism of the plans to deliver the General Assembly Building by August 2014 without objective and independent technical advice.

59. **In light of the challenging schedule for the General Assembly Building, the Board recommends that the Under-Secretary-General for Management consider obtaining independent technical advice on the likelihood of the General Assembly Building being completed in line with the existing deadline, specifications and cost.**

Post-award Review Committee

60. In October 2009 the Administration set up the Post-award Review Committee to improve the scrutiny of change orders and contract amendments. A consistent risk-based methodology has been applied to reduce the previously reported backlog of 218 contract amendments in March 2012 to 34 at the time of this report. The Committee has found only minor compliance issues and no material problems arising from their review of contract amendments.

6. Future estate

Flexible workspace strategies

61. Flexible workplace strategies, including desk-sharing policies, are used by many organizations to make the most efficient use of office space, recognizing that each day people are absent from the office on business, attending conferences or training events, taking holidays or are ill. Flexible workplace strategies cannot only reduce annual real estate costs, but increase flexibility and, in more progressive examples, have been used to drive new ways of working which improve productivity. The ideal opportunity to consider changing the use of workspace is during any major newbuild or refurbishment project; this will enable a better definition of space requirements and office layouts and help identify the changes in staff behaviours that may need to be introduced and managed.

62. In its report of July 2011 (A/66/5 (Vol. V)), the Board noted that the Administration's plans to repopulate the Secretariat Building on a one-person-to-one-desk basis constituted a significant missed opportunity to make far more flexible use of desk space ("hot-desking") and that adopting a flexible approach to desk space would enable more staff to be housed in the building, reducing the need for both rental space and also future new space. The Board recommended that the Administration establish a group to assess the potential for desk sharing before the restacking of the Secretariat. In the event, the Administration agreed that consideration of flexible desk space should feature in future capital developments, but not for the Secretariat.

63. In its report of July 2012 (A/67/5 (Vol. V)), the Board, recognizing that the Administration was at a critical phase in planning its future accommodation needs, but also concerned that an opportunity was being missed, recommended that the Administration pilot and assess the operational and financial impacts of adopting a desk-sharing strategy.

64. In its previous report on the capital master plan, the Advisory Committee on Administrative and Budgetary Questions stated that the feasibility study undertaken by the Secretary-General on accommodation needs at Headquarters did not provide a comprehensive enough analysis of the possible estate options (see A/67/548). The Committee outlined a number of key factors affecting the estimation of office space needs in New York that should have been considered, such as population analysis, office space allowance, alternative work strategies and the balance of owned and leased office space. The Board agrees that an understanding of these factors is integral to any assessment of the future accommodation needs of the United Nations in New York and across its global estate. In particular, robust occupancy data regarding on- and off-campus space utilization is essential to avoid overestimation of space needs and potential overexpenditure.

65. In its resolution 67/254, the General Assembly requested the Administration to propose a way forward on flexible workspace strategies. In the meantime, the Advisory Committee on Administrative and Budgetary Questions requested that the Board examine the occupancy of the renovated United Nations campus as part of this audit. The Administration informed the Board that after the renovation the Headquarters campus will hold 4,216 people, compared with 4,047 prior to the capital master plan, with the Secretariat Building able to accommodate 204 additional occupants.

66. The Board attempted to independently verify the occupancy of the Secretariat Building, but the data required was unavailable at the time of audit. The Administration could not provide the Board with an auditable basis for the total number of personnel working within the Secretariat or other Headquarters buildings, nor did it have data on, for example:

- Actual occupancy over a representative period of time
- The costs of a desk in property owned by the United Nations
- The costs of a desk in leased space.

67. There are several key decisions to be taken by the General Assembly in 2014 regarding future real estate at Headquarters and in other locations. The Board notes that the Administration urgently needs to develop the business case for its future estate by capturing relevant data and fully exploring the options for flexible workspace solutions, including the impact of different space allocations to different grades, and any other significant assumptions that might impact on the space required.

68. The Board notes that in April 2013, in response to the General Assembly request that it propose a way forward on flexible workspace strategies, the Under-Secretary-General for Management established a cross-functional working group to develop an initial strategy on flexible workspace strategies in August 2013 and a detailed business case in early 2014. While recognizing this positive step, it is important that the Administration understands that if the working group comes forward with practical solutions for flexible workspace strategies, this will be a challenging change management activity requiring visible senior management sponsorship and leadership.

69. **The Board recommends that the working group on flexible workspace strategies (a) gather robust data on building occupancy utilization and the occupancy costs per desk in each building, across the entire portfolio of New York permanent and rented space and (b) use this analysis to better understand its future estate requirements both in New York and across the wider global estate.**

Lessons learned

70. The Board notes that, at the time of the audit, as mandated by the General Assembly, the Office of the Capital Master Plan is planning to capture lessons relating to the management of the project, but that there is no formal process in place to involve other stakeholders in this — for example, the Facilities Management Service and the end users of the refurbished accommodation — or to share the lessons more widely.

71. The United Nations has ongoing or planned major capital construction projects around the world, for example in New York and Geneva. The 24-strong team in the Office of the Capital Master Plan is a valuable asset to the United Nations and has a strong capability in many aspects of capital programme management. It is important that the Administration obtain best value from the experience gained, at the very least by capturing and transferring the lessons to other projects as they make their early strategic procurement and delivery choices. In annex V, the Board sets out

some initial thoughts on the key lessons for the Administration on the management of major capital projects and programmes derived from its progress reports to date.

72. **The Board recommends that the Administration formally document and embed lessons from the capital master plan in other emerging projects as it makes it early strategic procurement and delivery choices.**

Long-term capital asset management

73. The United Nations does not have a long-term asset management plan in place for the newly renovated campus in New York or globally for the entire United Nations estate. The adoption of the new International Public Sector Accounting Standards within the United Nations will mean that the estate and buildings, for the first time, will need to be identified and valued appropriately, aiding the development of a longer-term asset management strategy for the Organization. As part of the strategic capital review, the Facilities Management Service is currently looking at the method for generating more accurate information on assets and assessing how it can be used to better manage the estate.

74. There is a big difference between a minimal, reactive repair and maintenance regime that just keeps a building or estate working, or even a routine preventative maintenance programme, compared to a whole life asset management strategy that invests more fully and keeps the building or estate in good condition. The expenditure profiles for a robust whole life cycle investment profile can fluctuate significantly from year to year. For example, electrical cooling units may have a 15-20 year replacement cycle, creating a significant but irregular cash flow demand over longer time frames. Some organizations choose to pay for whole life cycle investments out of a normal operating revenue account, accepting the rationale for irregular cash flow demand patterns. Others, more typically, set up a sinking fund to provide sufficient returns each year to pay for repairs and minor maintenance. Once the initial capital investment has been made, the objective is to fund the maintenance regime from the annual returns.

75. Currently, the Administration does not use a whole life approach to its facilities management support services, but is revisiting the need for a long-term investment strategy as part of its strategic capital review, to identify long-term funding requirements and inform the biennial budgeting process. An interim progress report is expected to be presented to the General Assembly at the sixty-eighth session, including a proposal for criteria against which capital projects will be assessed to enable priorities for work and funding to be established across the United Nations estate.

76. The Board warns against an expectation that the Facilities Management Service will be able to reduce the level of the budget allocated to the newly refurbished campus, on the basis that the renovated building should require less maintenance effort. The opposite could be true, as the more sophisticated plant and equipment may need constant care. A robust analysis should be undertaken to set the correct annual maintenance budget which reflects both the long-term maintenance of the Headquarters buildings and the delivery of environmental benefits from the renovated buildings, such as reduced energy costs.

77. **The Board recommends that the Administration adopt a whole life cycle asset investment strategy and assess costed options for the through-life maintenance of the Headquarters buildings.**

Handover and facilities management

78. As set out in accelerated strategy IV, the capital master plan is handing over parts of the campus in a planned sequence to the Facilities Management Service (see A/67/548, sects. IV and V). The North Lawn Building was handed over first in 2010, followed by the Secretariat in 2013. Some floors in the Secretariat have yet to be handed over to the Facilities Management Service, as some of the final remedial building works on the mechanical and electrical plant floors need completing.

79. The phasing of the handover presents the Facilities Management Service with a challenge in terms of achieving best value for money with its maintenance contracts, because it is harder to present the totality of the scope to facilities management suppliers and potentially achieve better prices. Further difficulties stem from floor-by-floor handover phases within each of the main buildings. For example, plant floors in the Secretariat and most significantly the basements, which tie all three main buildings together, will only be fully handed over in 2014. The total scope of any future facilities package is also uncertain, given that future use of the Library, South Annex and North Lawn Building has not yet been decided.

80. The Facilities Management Service has approached the market but in the interim is using the lead contractor of the capital master plan to organize and manage the temporary maintenance contracts. While it is only a temporary measure, with a cost premium, the arrangement allows the Facilities Management Service to concentrate on the handovers, manage the sign-over process and undergo training on new plant and equipment.

81. The Board notes that the Facilities Management Service will need to clearly understand the scope of the future maintenance required and, working closely with the Procurement Division, will need to develop a procurement strategy and recruit people with the necessary skills to support it. It will also be important in that time to gather operating data about the new assets, in terms of energy consumption and maintenance patterns, so that contractors can bid on an informed basis.

82. **The Board recommends that the Office of Central Support Services review its ongoing maintenance contracts, based on an assessment of the total scope of facilities management requirements after completion of the capital master plan, and assess the possibilities for obtaining better value from any future strategic commercial relationship.**

D. Acknowledgement

83. The Board wishes to express its appreciation for the cooperation and assistance extended to its staff by the Under-Secretary-General for Management, the Assistant Secretary-General for the Capital Master Plan and members of their staff.

(*Signed*) Amyas **Morse**
Comptroller and Auditor-General of the United Kingdom
of Great Britain and Northern Ireland
Chair, United Nations Board of Auditors
(Lead Auditor)

(*Signed*) **Liu** Jiayi
Auditor-General of China

(*Signed*) Ludovick S. L. **Utouh**
Controller and Auditor-General of the United Republic of Tanzania

30 June 2013

Annex I

Key stages in the development of the strategy and budget for the capital master plan

Late 1990s	*The need for a total refurbishment of the Headquarters campus was identified.*
2000	In June, the Secretary-General articulated the need for refurbishment and presented a range of potential approaches (A/55/117). The preferred option was a six-year refurbishment costing some $964 million and involving construction activity of up to 30 per cent of the campus at any one time. In December in resolution 55/238, the General Assembly authorized the design plan and cost analysis for the capital master plan, which was initially funded through an appropriation from the United Nations regular budget.
2002	In December in resolution 57/292, the General Assembly decided to implement the capital master plan with a projected construction budget of $1,049 million. The resolution also established a special account for the capital master plan with appropriations from assessments of Member States.
2003	In February, the Secretary-General established the Office of the Capital Master Plan.
2005	In November, in his third annual progress report (A/60/550), the Secretary-General proposed four strategic options following the development of design and cost estimates and the failure of plans for the UNDC-5 building, which was to accommodate swing space. The preferred option was strategy IV (phased approach) with a revised budget of $1,588 million.
2006	In June in resolution 60/282, the General Assembly approved strategy IV as outlined in A/60/550. In October, in his fourth annual progress report (A/61/549), the Secretary-General explained that the budget for strategy IV had increased to $1,877 million because market conditions had increased construction costs and professional fees and there was a need for additional scope, including extra blast security and information technology backup systems and security. In December in resolution 61/251, the General Assembly approved the revised project budget of $1,877 million and the proposed phased approach to construction.
2007	In September, the Secretary-General in his fifth annual progress report (A/62/364) noted delays in implementing strategy IV because of the complexities of United Nations decision-making and the resignation of the Executive Director of the project. The estimated final cost of the project was now $2,096 million, some $220 million over budget, mainly because of slippage in the schedule and the associated impact of price inflation on construction and rental costs. The Secretary-General proposed an accelerated strategy IV, involving a shorter period of renovation, fewer phases of construction and less disruption to United Nations operations. The estimated final cost of this accelerated approach was $2,067 million, some $190 million over budget. In December in resolution 62/87, the General Assembly approved accelerated strategy IV and reiterated that it should be completed within the budget as approved by resolution 61/251. Accelerated strategy IV remains the current approved strategy.

Late 1990s	*The need for a total refurbishment of the Headquarters campus was identified.*
2009	In April in resolution 63/270, the General Assembly requested the Secretary-General to make proposals to allow Member States to make donations to offset the costs of the project. In December in resolution 64/228, the General Assembly decided that approved associated costs would be financed from within the approved budget for the capital master plan. It also encouraged the Secretary-General to pursue value engineering to maximize cost savings to complete the project within its approved budget.
2011	In October 2011, in his ninth annual progress update (A/66/527) the Secretary-General reported that the host country had provided $100 million for enhanced security upgrades. The project had also identified some $100 million of savings from value engineering. Consequently, the estimated final cost was $2,061 million, some $74 million over budget.
2012	In April in resolution 66/258, the General Assembly approved additional commitment authority of $135 million. In September, in his tenth progress report (A/67/350), the Secretary-General proposed to suspend renovation on the Library and South Annex buildings because of unresolved security agreements with the host country. The estimated final cost of the project was now $2,228 million, excluding associated costs, some $240 million over budget. The Secretary-General proposed total cost reductions amounting to $16 million, $65 million from the suspension of the renovation of the Library and South Annex buildings and application of $159 million accumulated income and working capital reserve to reduce the cost overrun. In December in resolution 67/246, the General Assembly authorized additional commitment authority of $168 million but did not accept proposals to suspend renovation of the Library and the South Annex. It further approved $13 million of the proposed cost reductions and the use of $71 million from the working capital reserve.

Annex II

Budget and anticipated final cost estimates reported in the progress reports of the Secretary-General

(Thousands of United States dollars)

	Strategy IV	*Accelerated strategy*						
	Budget approved by General Assembly in 2006	*Status as at September 2007*	*Status as at September 2008*	*Status as at September 2009*	*Status as at September 2010*	*Status as at May 2011*	*Status as at July 2012*	*Status as at April 2013*[a]
Construction	935 300	964 625	1 032 900	1 057 402	1 016 920	1 058 714	1 206 003	1 215 263
Enhanced security upgrade construction	–	–	–	–	–	82 185	82 628	82 628
Professional fees, management costs	231 000	234 508	280 340	302 365	316 549	326 994	368 290	368 831
Enhanced security upgrade fees	–	–	–	–	–	10 713	10 713	10 713
Swing space fit-out and rental	214 500	389 858	425 695	426 881	421 113	529 629	511 819	511 818
Contingency	199 900	199 859	–	–	–	–	–	–
Forward price escalation	296 000	277 960	235 236	181 423	202 209	89 084	41 638	21 382
Additional contingency for enhanced security upgrade	–	–	–	–	–	6 659	6 659	6 659
Associated and secondary data centre costs	–	–	–	–	–	167 556	158 399	162 408
Peacekeeping funding for secondary data centre	–	–	–	–	–	–	–	(4 228)
Voluntary contributions	–	–	–	–	–	(110 500)	(110 700)	(113 232)
Capital reserve fund and interest	–	–	–	–	–	–	–	(71 000)
Total project cost	**1 876 700**	**2 066 810**	**1 974 171**	**1 968 071**	**1 956 791**	**2 161 034**	**2 275 449**	**2 191 242**
Project budget	**1 876 700**	**1 876 700**	**1 876 700**	**1 876 700**	**1 876 700**	**1 876 700**	**1 876 700**	**1 876 700**
Variance against budget	**0**	**190 110**	**97 471**	**91 371**	**80 091**	**284 334**	**398 749**	**314 542**

[a] Update provided after the audit by the Office of the Capital Master Plan; project data as at 31 March 2013.

Annex III

Analysis of the status of implementation of the recommendations of the Board for the year ended 31 December 2011

	Summary of recommendations	*Paragraph*	*Financial period first made*	*Fully implemented*	*Under implementation*	*Not implemented*	*Overtaken by events*
1	The Administration agreed with the Board's recommendation that it develop a cost-time trade-off criterion to guide decisions on whether it is worth making acceleration payments or better value for money to accept a delay.	28	2011		X		
2	The Administration agreed with the Board's recommendation that it urgently take stock and rebuild the anticipated final cost of the project. The rebuilt anticipated final cost should include estimates for the likely cost of (a) identified project risks; (b) change orders until project completion; (c) acceleration activities in order to meet the project schedule; (d) claims that have been submitted and an allowance for future claims; (e) up-to-date estimates for remaining guaranteed maximum price contracts (by revalidating prices and setting a realistic level of contingency based on the outturn experiences of previous guaranteed maximum price contracts); and (f) the costs for altering off-site office locations, to the extent that they will be met by the capital master plan budget.	32	2011		X		
3	The Administration agreed with the Board's recommendation that the anticipated final cost be recalculated and reported on a quarterly basis from now until the completion of the project.	34	2011	X			
4	The Board further recommended that senior management in the Administration put in place appropriate controls such that they could clearly demonstrate to the General Assembly that assurance could be placed on the reported cost forecasts.	35	2011		X		
5	The Administration agreed with the Board's recommendation that once it had prepared a complete and robust anticipated final cost, it should set out the timeline for all remaining project commitments, being clear about the effect that delayed or partial release of funding would have on the costs and timing.	41	2011		X		

	Summary of recommendations	Paragraph	Financial period first made	Fully implemented	Under implementation	Not implemented	Overtaken by events
6	The Administration agreed with the Board's reiterated recommendation that (a) it resolve the security issues and lack of a viable design solution for the Library and South Annex buildings as a matter of urgency; (b) if it is proposed that the two buildings remain in scope, make clear what the approach to resolving the security challenges should be; and (c) seek approval for the proposed course of action from the General Assembly.	50	2011	X			
7	The Administration agreed with the Board's recommendation that, if the Library and South Annex could not remain in scope, it present the General Assembly with costed options for accommodating the facilities which are currently housed in these buildings. The Administration committed to implementing this recommendation at the sixty-seventh session of the General Assembly.	51	2011		X		
8	The Administration agreed with the Board's recommendation that it seek approval from the General Assembly for any proposals to reduce the scope of planned work to the General Assembly Building. The Administration committed to implement this recommendation at the sixty-seventh session of the General Assembly.	52	2011	X			
9	The Board recommended that the Administration urgently establish more effective and regular governance over the capital master plan. The Under-Secretary-General for Management should determine how to assure himself that cost and progress forecasts are accurate, especially where areas of technical construction judgment are involved. The Board is aware that typically in a project of this nature, senior management would be supported by expert advice which is independent of the project team.	55	2011		X		
10	The Administration agreed with the Board's recommendation that, drawing on the lessons from the capital master plan, it consider how in future it can manage contingency funding on capital projects in a more transparent and effective manner.	62	2011		X		

	Summary of recommendations	*Paragraph*	*Financial period first made*	*Fully implemented*	*Under implementation*	*Not implemented*	*Overtaken by events*
11	The Administration agreed with the Board's reiterated recommendation that the Office of the Capital Master Plan significantly reduce the processing time and backlogs in the change order approvals process.	76	2011	X			
12	The Administration agreed with the Board's recommendation that the Department of Management (a) pilot the implementation of flexible working strategies which move away from a one-person-to-one-desk ratio and (b) assess the potential operational and financial impact of adopting flexible workplace strategies to reduce the future space needs of the United Nations in the context of any proposals for renovating existing or acquiring new office space.	83	2011		X		
	Total			**4**	**8**	**0**	**0**
	Percentage share of total			**33**	**67**	**0**	**–**

Annex IV

Latest approved funding position and anticipated final costs, including proposed further sources of funding

(Thousands of United States dollars)

	Capital master plan	*Associated costs*	*Combined total cost to the United Nations*
Funding			
Capital master plan			
Budget	1 876 700		
Donations	13 232		
Enhanced security upgrade	100 000		
2013 approved working capital fund and interest	71 000		
Capital master plan total approved funding	**2 060 932**		**2 060 932**
Associated costs			
Secondary data centre		4 228	
Associated costs total approved funding		**4 228**	**4 228**
Total approved funding available			**2 065 160**
Costs			
Capital master plan			
Building renovation	1 250 966		
Swing space (temporary North Lawn Building and office swing space)	310 351		
Contingency	26 989		
Professional fees, management costs	346 040		
Rent (office swing space)	182 948		
Enhanced security upgrade	100 000		
Total capital master plan estimated final cost	**2 217 294**		**2 217 294**
Associated costs			
Secondary data centre		19 269	
Associated costs		143 139	
Total estimated final associated costs (including secondary data centre)		**162 408**	**162 408**
Total estimated final cost			**2 379 702**
Capital master plan variance to approved funding	(156 362)		
Associated costs variance to approved funding		(158 180)	
Total variance to approved funding			**(314 542)**

	Capital master plan	*Associated costs*	*Combined total cost to the United Nations*
Proposed sources of additional capital master plan funding			
Deferral of Dag Hammarskjöld Library and South Annex buildings	65 000		
Furniture	1 000		
Remaining working capital fund and interest	88 400		
Total proposed additional sources of capital master plan funding	**154 400**		
Remaining capital master plan shortfall	**(1 962)**		
Associated costs shortfall		**(158 180)**	
Total combined shortfall			**(160 142)**

Source: Board analysis of data provided by the Office of the Capital Master Plan, as at April 2013.

Annex V

Initial thoughts on lessons from the capital master plan

1. The Board is developing a paper on the lessons learned for the future management of major United Nations capital projects from its reports over time on the capital master plan, as a contribution towards embedding both the good practices and lessons learned from problems encountered on the capital master plan. In drawing on those lessons, the Board is mindful of two important principles that underpin effective project management:

(a) **Making the right start on any project**. Best practice is to hold any major project to a very high level of scrutiny before any decision is taken to start or initiate each major phase during the project life cycle. This requires effective governance and decision-making from the outset;

(b) **The need for a standard unified approach to the delivery of major projects**. It should not be left to each individual project team to determine the processes to follow and actions to take to deliver successfully within the United Nations system. There should be a structured and well-disciplined approach to project governance, management and assurance.

2. The Board considers that areas where there will be useful lessons to be learned are likely to include:

(a) **Project governance**. The need to establish from the outset (i) a senior responsible owner with clear accountability and the requisite authority and (ii) a formal steering committee reflecting both appropriate and independent expertise and the key areas of the Organization who are both customers (end users) and contributors to the project, to provide support to the senior responsible owner and challenge and support the project director and delivery team;

(b) **Project assurance**. Providing an independent and expert assessment at key stages as to whether the elements fundamental to successful project delivery are in place and operating effectively, to identify and help mitigate any risks to successful delivery and provide information to those that sponsor, govern and manage a project to help them make better informed decisions;

(c) **Commercial strategy**. Establishing at the outset the commercial opportunities that are available for vendors and how the United Nations will approach the market to enable vendors to organize themselves to deliver maximum value to the project and achieve the best return on United Nations buying power;

(d) **Contracting strategy**. Assessing the procurement and contracting options that might be available, including their relative risks and benefits and whether the organization can either manage the risks or realize the benefits of any given approach. The Board considers that the decision to use a guaranteed maximum price contract for the capital master plan is one that needs to be examined in detail. It also considers that the guaranteed maximum price approach is more suited to a newbuild on a well-understood location, rather than to a complex refurbishment with significant uncertainties regarding the state of the building. The Board understands the rationale for selecting the guaranteed maximum price approach, but considers that the United Nations encountered significant difficulties in using this approach and should avoid its use in future complex refurbishments of ageing buildings;

(e) **Management of risk**. Modern best practice is for programmes and projects to be driven by their risk management processes, with the risk register and associated mitigating actions frequently updated and a clear link maintained between the contents of the risk register and the expected costs should those risks arise. The Office of the Capital Master Plan instead opted to use a blanket 10 per cent contingency allowance once each guaranteed maximum price contract had been awarded. This had the advantage of simplicity but the fundamental disadvantage of masking the true forecast costs of the risks. The point to be learned from this is the need to put in place at the outset a forecasting system driven by a costed appreciation of potential risks to provide early warning of the anticipated final costs;

(f) **Contingency**. The project established the good practice principle of having a funded contingency, albeit not based on a costed assessment of risk. The contingency must be fundamentally linked to managing risk, with no assumption that it will all be used, but at the same time available for use should a well-justified reason arise. The contingency was entirely managed by the project team, but in future the Administration should consider how risks at project level and risks beyond the control of the project can be defined and how associated governance arrangements can be established to ensure decisions to use the contingency are clearly and transparently justified and reported;

(g) **Associated costs**. The project scope and boundaries of the capital master plan were not fully defined from the outset to ensure that the budget allowed for the direct cost of delivering the core scope, as well as the indirect or knock-on consequences on other parts of the Organization. When deciding on the scope of a programme, care must be taken at the outset to consider all of the associated costs, how they will be funded, which budget they fall within and who will be accountable for their management;

(h) **Integrated project delivery team**. The Administration recognized early in the project that they needed to build a new and expert team with skills in managing a complex capital project. The team was integrated and collocated with the main contractor and the cost consultant. This improved lines of communication and helped build a strong delivery ethos and shared objectives. This is a model that could be adapted and enhanced for other major projects;

(i) **Change control**. Once work has started on any construction project, changes can and will occur. Large numbers of changes are a risk because of the potential to increase costs and delay project delivery. An effective change control mechanism is therefore a well-recognized feature of successful construction projects whereby once the design is finalized, often after extensive consultation, clear rules and strong governance and management are established to minimize changes. The Administration did not establish from the outset of the project a robust occupier-related change control mechanism and clear accountability to control the level, nature and cost of the changes being requested by occupier departments and offices and ensure that the cost implications changes were fully appreciated. This contributed to increased costs and time pressures, particularly with the swing space activities.

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