



# General Assembly

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## Seventy-sixth session

Item 138 of the provisional agenda\*

### Proposed programme budget for 2022

## **Progress on the renovation of the North Building at the Economic Commission for Latin America and the Caribbean in Santiago**

### **Report of the Secretary-General**

#### *Summary*

The present report, which is the third progress report on the seismic mitigation and renovation project of the North Building at the Economic Commission for Latin America and the Caribbean in Santiago, is submitted pursuant to section XI of General Assembly resolution [75/253](#) A.

The present report provides an update on the project since the issuance of the previous progress report of the Secretary-General ([A/75/347](#)), including information on services performed by the lead consulting firm on the final design of the project, which allows for the inclusion of persons with disabilities, on risk management and mitigation measures, on sustainability and energy efficiency updates and on procurement activities related to the construction contract tendering process for the construction phase of the “net zero” building.

The report also includes a detailed evaluation of the potential impact on the project of the coronavirus disease (COVID-19) pandemic and risk-mitigating measures regarding health and safety, logistics and programming.

The project is proceeding within the approved budget of \$14,330,200 and according to schedule, and it is estimated that construction will be completed by 2023. The architectural and engineering design documents have been completed, and projected costs are continuously being monitored by the project management team to achieve United Nations objectives regarding seismic mitigation measures, energy efficiency and compliance with health and safety standards. An update of the Monte Carlo analysis and efforts to mitigate potential risks during the ongoing design and construction phases are also included in the report.

The proposed actions to be taken by the General Assembly are set out in section VII of the report. The Assembly is requested to take note of the report and approve an appropriation of \$5,590,100 for 2022.

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\* [A/76/150](#).



## I. Introduction

1. The present report is the third progress report on the implementation of the seismic mitigation and renovation project of the North Building at the Economic Commission for Latin America and the Caribbean (ECLAC) in Santiago. It is submitted pursuant to section XI of General Assembly resolution [75/253](#) A and provides an update on the progress made on the project since the issuance of the previous progress report ([A/75/347](#)).

2. The project continues to be implemented in accordance with the approved project objectives. The aim of the project is to dismantle the existing building envelope and reconstruct the building, reutilizing its current structure, to attain a code-compliant, safe, functional and efficient office building that is conducive to a modern, productive and sustainable working environment, while extending its useful life in the range of 40 to 50 years. The renovation is expected to result in a reduction in operating costs. It will also help to establish the functional, operational and sustainability guidelines for future projects.

3. In the present report, the planning and related actions for the project to date are summarized and updates are provided on: (a) project governance, including the stakeholders committee, the activities of working groups and the working relationship with the Global Asset Management Policy Service at United Nations Headquarters; (b) the work of the project management team; (c) project benefits; (d) the risk management analysis; (e) the deployment of temporary swing space; (f) the detailed analysis of energy efficiency components and the energy efficiency strategy; and (g) a revised overall cost plan based on updated projections and the latest surveys, analysis and design information.

## II. Project objectives, benefits and governance

4. The key project objectives and benefits, established at the inception of the project plan, remain as indicated in previous progress reports and are in line with the key objectives outlined in the report of the Secretary-General on the strategic capital review ([A/68/733](#)). The project objectives include: (a) to meet local and international codes related to health and safety issues; (b) to maintain property value; (c) to reduce fresh and sanitary water consumption; (d) to develop an energy efficiency strategy, including returning surplus energy to the national grid; and (e) to improve space usage efficiency. With respect to the anticipated benefits, the project will provide the Organization with a fully renovated, seismically safe and code-compliant work environment in an efficient building that meets or exceeds industry standards. Additionally, the project comprises both passive and active strategies to achieve high standards of energy efficiency, energy generation and wastewater treatment, while reducing greenhouse gas emissions and achieving savings in operating costs.

5. The established overall governance structure for the project remains unchanged. The Executive Secretary of ECLAC is the project owner and is supported by a Project Executive and a dedicated project management team. The project stakeholders committee was established in March 2018 and meets quarterly.

6. As noted in the previous report, several working groups have been established within the stakeholders committee to provide detailed input in specific areas, such as occupational health and safety, sustainability and accessibility for persons with disabilities. During the reporting period, the working group on accessibility has included representatives of CEPALDIS, a recently established voluntary committee formed by ECLAC staff from Santiago and regional offices to discuss and review the implementation of integration measures in accordance with Secretary-General's

bulletin [ST/SGB/2014/3](#) on employment and accessibility for staff members with disabilities in the United Nations Secretariat. The committee includes staff representing different levels of disabilities.

7. The project management team continues to engage closely with the Global Asset Management Policy Service at United Nations Headquarters, which remains actively involved in overseeing the project, with an emphasis on risk management and alignment with lessons learned. Regular coordination meetings regarding project execution are held at least fortnightly between the project management team and the Service, in addition to quarterly meetings with the independent risk management firm providing services directly to the project owner.

8. The local project management team has been fully onboarded since the issuance of the previous report. The recruitment of the Project Coordinator (P-3) to be located in the Global Asset Management Policy Service at Headquarters was delayed intentionally to limit possible cost overruns on project budgets as a result of delays due to the coronavirus disease (COVID-19) pandemic. The recruitment for this position is planned to commence in 2022 to coincide with the beginning of the construction phase of the project. The position will be cost-shared with the major construction project at the United Nations Office at Nairobi.

### **III. Risk management**

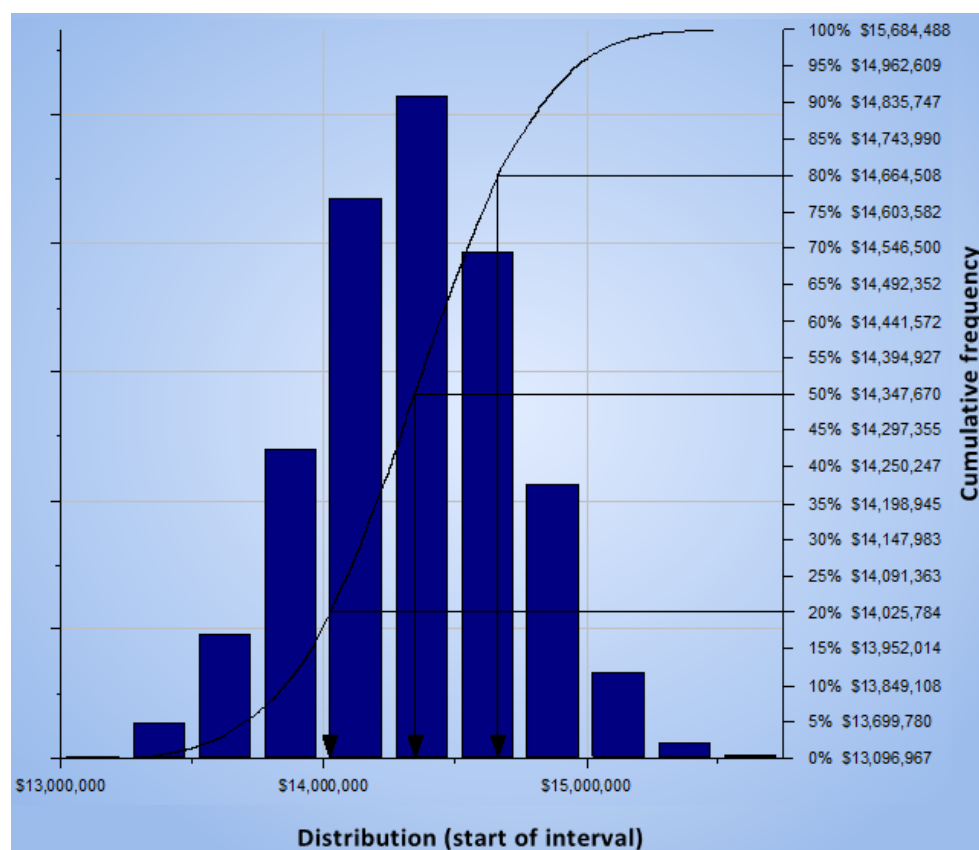
#### **A. Independent risk management firm**

9. As previously reported, the first risk management workshop was held in Santiago in March 2019 and was facilitated by the Global Asset Management Policy Service, the independent risk management consultant and the project management team. Participants established the baseline for the Commission's risk register and the first quantitative Monte Carlo analysis. Since the issuance of the risk management strategy in 2018, the risk consultant has issued six biannual reports: two for 2018, two for 2019 and two for 2020. Regular meetings continue to be held quarterly to review the project risk register and provide guidance on the management of project risks accordingly.

10. In May 2021, the Global Asset Management Policy Service, the project management team and the risk consultant conducted the third and current Monte Carlo analysis to determine the project's current risks and the likelihood of achieving the "P80" benchmark that has been established as the target confidence level for a capital project. As noted in the previous report, the Monte Carlo analysis serves to provide an estimate of the most likely overall cost of known risks at the time at which inputs were provided by the project management team.

11. A summary of the third Monte Carlo analysis of the project is provided in the form of a cost histogram in figure I.

Figure I  
Cost histogram of analysed risks as at June 2021



12. The second Monte Carlo simulation, generated in 2020, showed that at the United Nations “P80” benchmark level, the project was expected to come in at approximately \$14.8 million, or \$0.5 million over budget, with a confidence level of 40 per cent. The current Monte Carlo analysis reveals that the confidence level that the project will be completed within the approved budget has increased to 49 per cent. The simulation of the cost histogram illustrates that the level of confidence for the project to be completed within the approved budget, without any further mitigation action, has risen by 9 percentage points from the 2020 simulation, and the confidence level is moderate for the project to be completed within the approved budget of \$14.3 million, with a “P80” confidence level at \$14.6 million or approximately \$0.3 million over budget. With the confidence level progressing to 49 per cent during the pre-tender phase of the project, it is expected to continue to rise once the general construction documents are issued through a formal bid tender process and bids are received.

13. Throughout the reporting period, the project management team has continued to take proactive measures to manage the risks identified by engaging closely with the ECLAC Procurement Unit to identify potentially qualified construction firms for the expression of interest as part of the pre-tender process. The project management team continues to work closely with the Procurement Unit for the direct purchase of various systems as a means of generating savings on costs and administrative fees. Receiving goods in advance and storing them in the ECLAC compound has the potential to reduce the risk exposure. These steps should prove to be effective and useful risk mitigation actions towards the continued improvement of the confidence level.

## B. Integrated risk management

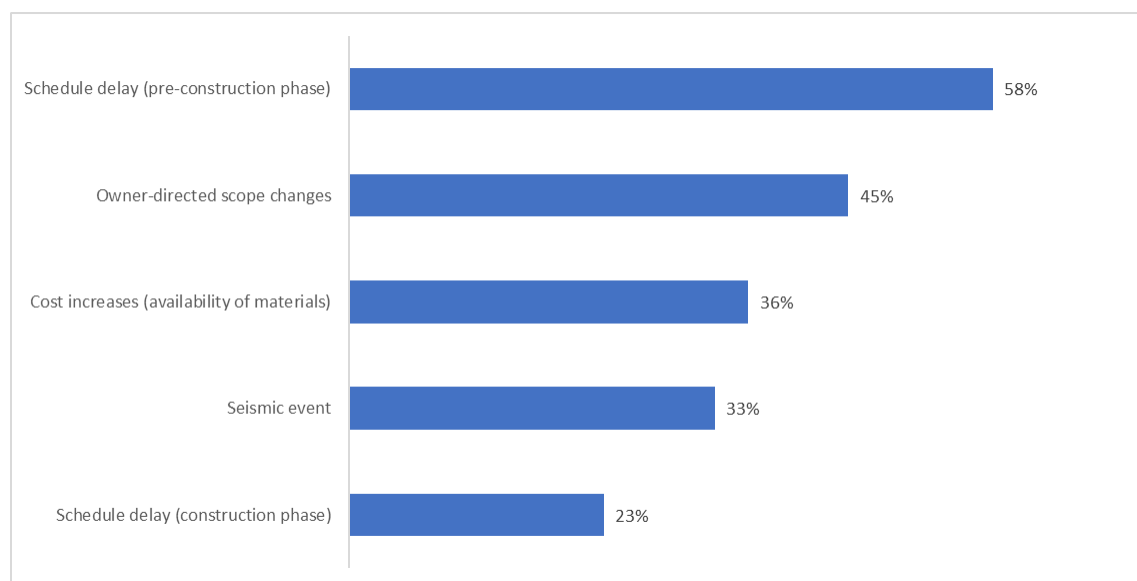
14. Integrated risk management continues to be performed at the local level by the project management team at ECLAC through the established risk register process, which is supported by the lead consulting firm and engineers. The Global Asset Management Policy Service at Headquarters, in coordination with the independent risk management consultant, support the ECLAC project management team and will continue to do so through to project completion. The highest-ranked emerging risks during the reporting period relate to schedule delays (pre-construction phase), owner-directed changes, cost increases (availability of materials due to the COVID-19 pandemic), a seismic event and schedule delays (during construction phase).

## C. Risk register

15. The project risk register, which was established in line with the risk management strategy, is monitored and updated on a regular basis by the project management team. Nine risks are currently being monitored by the team, none of which have been closed at the current stage of the project. It is expected that, as the project moves into the construction phase, certain risks will be mitigated and closed and new ones will emerge. However, other risks, such as a seismic event, will likely remain through to project completion. As noted in the previous report, the risk register is intended to be a dynamic documentation tool for the project management team that is fully coordinated with the Monte Carlo analysis process through to the end of the project.

16. Figure II presents a cost sensitivity analysis, which measures the correlation or relationship between individual risk entries and the overall estimated cost. The higher the cost sensitivity, the stronger the relationship between the estimate at completion and the individual risk. The figure contains a list of the top risks that are currently emerging.

Figure II  
Cost sensitivity as at June 2021



## D. Description of the top five project risks

17. The top five risks identified in figure II are explained in further detail below with a description of the risk response:

(a) **Schedule delay (pre-construction phase).** At the time of the third Monte Carlo workshop and at the time of reporting, the general construction expression of interest exercise revealed that there was a weaker-than-expected response, which raised concerns over the potential for a less-than-robust pool of qualified bidders during the bid tender phase. With respect to other procurement tender processes, it is still not fully clear how the COVID-19 pandemic will affect the ability of various vendors to provide services or manufacture and deliver goods in a timely fashion. Until bid tenders have been successfully conducted in a timely manner and contracts are awarded, the project management team will not have a level of certainty in commencing construction on schedule. To mitigate this risk, the project management team has been working closely with the ECLAC Procurement Unit to define a competitive acquisition process to assist with the purchase of various goods (equipment and systems). It is believed that receiving goods in advance of when they are needed for construction and storing them in the ECLAC compound will reduce this risk. The project management team and the Procurement Unit will continue to monitor the status and impact of the pandemic in the host country and the region to mitigate this risk accordingly;

(b) **Owner-directed scope changes.** This risk refers to owner requirements that may not have been captured in the baseline design and construction documents and that could potentially result in additional costs and schedule delays if change orders are received during construction. Risk mitigation measures are focused on attaining project owner and stakeholder approvals prior to the issuance of construction contract documents to mitigate the chances of receiving change requests later in the project. The project management team continuously engages with the project owner and the stakeholders committee, in line with the risk management strategy;

(c) **Cost increases (availability of materials).** This risk accounts for potential cost increases for material purchases. The current market trends for materials have shown an increment for some construction materials due to high demand. The home construction and renovation sector during the pandemic has contributed to high demand for some construction materials, which has led to significant price increases. Between February and May 2021, an average increase of 20 per cent has been registered for steel and wood construction materials. The project management team and the ECLAC Procurement Unit will continue to monitor market fluctuations for essential construction materials and research alternative suppliers. Additionally, the project team periodically reviews the cost material reports published by the Chilean Chamber of Construction to detect possible cost estimate increases delivered by the lead consulting firm;

(d) **Schedule delay (unavailability of materials due to COVID-19).** At the time of the third Monte Carlo workshop and at the time of reporting, the COVID-19 pandemic was experiencing another surge in the region, with another round of lockdowns. Therefore, this schedule delay has emerged again as a top risk due to the uncertainty of how the regional markets and supply chain may react as a result of shipping, importation and other restrictions. As the project progresses into the construction bid tender phase, without the construction contracts yet in place, potential schedule delays continue to emerge as a high risk. Delays may arise with respect to possible shortages of equipment and technology, such as mechanical systems and photovoltaic plant systems, which will be procured directly by the ECLAC team and installed by the general contractor. Furthermore, the procurement

of goods and services and contract implementation may take longer than usual due to the large scope of requirements of the project relative to staff capacity. The impact of pandemic-related manufacturing closures and the potentially low rate of goods production is also a consideration. As a risk mitigation measure, the project management team is working closely with the ECLAC Procurement Unit to develop and execute all bid tenders as expeditiously as possible and keep track of the markets. An acceleration of the bidding process may help to address the risk of the long lead time for procuring and importing major equipment;

(e) **Seismic event.** Historically, the region in which ECLAC is located has experienced a major earthquake every seven years, which means that there is a chance of an earthquake at some point during the execution of the project. This is an inherent risk to the project with great impact but with a relatively low likelihood, and would have an impact on cost, scheduling, logistics and the availability of materials in the region and cause other supply chain delays. The mitigation measures being implemented in the current renovation phase are aimed at ensuring that prevailing local seismic codes are respected and preparedness measures are in place, and that insurance policies and contract clauses with the various contractors are in place to reduce the risk. The project management team, ECLAC facilities management and the safety and security staff are continually keeping abreast of any developments in this area.

## **IV. Progress made on the project during the reporting period**

### **A. Cooperation with Member States and the host Government**

18. ECLAC continues its efforts to raise voluntary contributions and cooperate with Member States and the host Government, in particular with regard to technical support and in-kind contributions. The results of these efforts are described below.

### **B. Status of voluntary contributions**

19. As noted in the previous report, in-kind contributions have been provided by programmes funded by the Production Development Corporation of Chile under the auspices of the Government of Chile. These contributions relate to the following activities:

(a) Technical support from the “Plan BIM” project on the implementation of the building information modelling methodology, information management and the compilation of technical documents during the design and construction phases;

(b) Technical support from the “Construye 2025” programme in the definition of guidelines for the development of a plan for reusing, recycling or otherwise deriving value for disassembled building components, which has been developed by the lead consulting firm and included in the technical documentation for the bidding of construction services;

(c) Continued provision of technical guidance for the identification of sustainable strategies for the disposal of selected materials at the end of their useful life, according to the results of the analysis of the local market and the methodologies used by the “Construye Circular” programme;

(d) Raising awareness of the availability of local sustainable materials and efficient technologies through the Chilean Technological Centre for Innovation and Development programme for the implementation of local alternatives to the requirements included in the scope of the project.

## C. Procurement activities

20. The procurement activities described below have been planned during the reporting period for items that will be purchased directly by ECLAC through a competitive tender process. This approach is intended to reduce the risk of long manufacturing lead times and importation delays, as purchases will be scheduled to be received before the construction work begins. Once received, goods will be stored in the ECLAC compound at no additional cost. These procurement activities will be issued as requests for proposals for the following items:

(a) **Temporary building.** As part of the swing space strategy outlined in previous reports, the temporary building tender process was launched in April 2021, and a total of 17 companies responded to the expression of interest. Upon completion of the technical and financial evaluation, a contract was awarded to a successful bidder in September 2021. The execution of the works is projected to be performed between the fourth quarter of 2021 and the beginning of the first quarter of 2022;

(b) **North Building construction.** During the first part of 2021, the project management team, with the support of the ECLAC Procurement Unit, prepared the technical bid documents that were used during the tender process. In May 2021, the tender was launched, beginning with an expression of interest. The request for proposals is in progress and is expected to be completed with a contract award in the first quarter of 2022;

(c) **Workstations and furniture.** For the final renovated building, alternative furniture system providers for workspaces and auxiliary spaces are being evaluated. For the temporary swing space, active United Nations systems contracts as well as local providers are being analysed and compared for best quality for money. The procurement process was initiated in September 2021 and is expected to be completed in the fourth quarter of 2021;

(d) **Heating, ventilation and air conditioning system components.** These components will be directly purchased by ECLAC to gain the benefit of avoiding potential project schedule delays. Technical documentation provided by the lead consulting firm includes full technical specifications and a detailed schedule of the heating, ventilation and air conditioning system components. This process includes the purchase of indoor and outdoor units for the system and the associated components directly from the manufacturer. The works will be carried out by the general contractor to align with the overall coordination of other project infrastructure. The request for proposals was launched in September 2021 with an expected award in the fourth quarter of 2021;

(e) **Solar photovoltaic plant components.** The technical documents and scope of work for the supply and installation of the photovoltaic plant have been developed by the ECLAC project management team with the support of the requirements developed by the lead consulting firm and engineers to fulfil the projected energy needs of the building. The expression of interest was launched in September 2021 with an expected award in the fourth quarter of 2021;

(f) **Wastewater treatment plant and its components.** This bid tender process will be launched by the ECLAC Procurement Unit and will include local and international representatives of specialized companies in water treatment solutions for the supply and installation of the wastewater treatment plant and its components according to the standards defined in the scope of work, including technological proposals for the modernization of the existing system in line with the state-of-the-art standards in the industry. Expanding the operation to other buildings and its inclusion as part of the ECLAC general water management plan will also be part of



the scope of work. The expression of interest was scheduled to be launched in August 2021 at the time of reporting and the request for proposals is expected to be launched in September 2021.

## **D. Local knowledge, lessons learned and locally sourced materials**

21. During the reporting period, lessons learned from the ongoing COVID-19 pandemic resulted in a comprehensive technical and operational review of the architectural design of the project to incorporate COVID-19 mitigation strategies, namely:

(a) **Ventilation and air renovation systems.** World Health Organization recommendations on returning to the workplace, case studies of similar office buildings and updated standards, such as those of the Federation of European Heating, Ventilation and Air Conditioning Associations and the American Society of Heating, Refrigerating and Air Conditioning Engineers, were evaluated. The decision taken by the lead consulting firm and the technical project management team of ECLAC was to implement an additional mechanical air ventilation system jointly with an automated natural ventilation system, to provide additional natural air ventilation as needed and to respond to possible pandemic scenarios. The ventilation system was also designed to be fully automated using real-time air quality monitoring to control the spread of airborne disease;

(b) **Social, working and personal distancing.** Allowance for the temporary implementation of recommended distancing for private and public areas was included in the new design. The floor layout has been adapted to accommodate minimum spatial seat assignment and recommended personal distancing;

(c) **Spatial separation.** An additional risk analysis of possible impacts of the pandemic was applied to the architectural layout and alternative solutions were integrated. Among them was the identification of spatial separation to isolate work areas during outbreaks, connect them to access/egress routes and incorporate them into the final design.

22. Sanitary protocols developed by local authorities have been duly incorporated into the scope of work for the general construction tender and for all other project vendors who are required to be physically on-site;

23. As a result of the global COVID-19 pandemic, the materials required for the project may be subject to increases in construction costs. Construction costs have been continually monitored by the ECLAC project management team, with periodic reviews of local materials and labour costs provided by the Chilean Chamber of Construction, as well as a periodic review of cost increases for imports. This task has been performed throughout the project's design phase as a mitigation measure to identify alternative materials or directly purchase specific equipment, if necessary.

24. Regarding locally sourced materials, emphasis has been given to the implementation of sustainable alternatives to diminish the project's carbon footprint, highlighting the following:

(a) For thermal and acoustic insulation, the implementation of a certified solution based on organic fibres, produced entirely with local vegetation materials, was considered. The technical characteristics of this product were identified as equal to or better than traditional synthetic insulation materials;

(b) An alternative gravel in the reinforced concrete mix, such as a black steel slag recycled from metal-making processes, is also being considered for inclusion in the gravel mix with the aim of decreasing the use of natural aggregates in concrete finishing;

(c) The scope of work has provided an opening for suppliers in the steel industry to consider recycled steel as part of their offering of products for the project. This has been communicated in the technical documents as a specification for the reinforcement bars in the concrete walls and foundations to be constructed entirely with local recycled steel.

25. Low-carbon features in imported materials have also been taken into consideration, as follows:

(a) The project considers primarily modular ceilings based on wood wool, which improves the acoustic performance. The sourcing and disposal of this material is more sustainable in comparison to standard modular ceiling solutions;

(b) All interior flooring except for restrooms and specific service areas are designed with a linoleum-based product. Ninety-seven per cent of linoleum is composed of natural raw materials, of which 62 per cent is renewable. The basis is linseed (the seeds of the flax plant), from which linseed oil is extracted.

## **E. Consultancy services**

26. In December 2020, the lead consulting firm completed the architectural and engineering design drawings. In January and February 2021, the design development, including all engineering design, was reviewed in detail by the project management team and the technical units of ECLAC. Final comments were incorporated by the lead consulting firm into the final design drawings as well as the building information modelling process as from March 2021.

27. The final technical documents include technical specifications, calculation sheets, building information models, renderings and construction drawings for architecture and engineering disciplines. An estimated detailed bill of quantities, including cost estimating, “4D” models (three-dimensional models with technical data attached to model objects) with projected construction sequencing within the expected schedule, on-site logistics and recycling plan proposals, was submitted to ECLAC.

28. As noted in the previous report, the architectural design and engineering activities are being implemented entirely on the basis of integrated building information modelling.

## **F. Planning and design activities**

29. The planning and design activities described below were carried out during the reporting period.

### **North Building architectural and engineering projects**

30. As noted above, the design phase concluded on schedule in December 2020, with further updates made upon review and coordination by the project management team in January and February 2021. Each engineering specialty described in the previous report was duly integrated into the project, including specifications, detail design and cost estimates.

31. Features of the final design include measures to mitigate seismic activity, pandemic risks (such as natural and mechanical ventilation), finishes that can be easily sanitized and an architectural layout that allows for the possibility of compartmentalization of working areas. Passive strategies, such as natural lighting and ventilation, are complemented by automated systems through an integrated building monitoring system for optimal operation and occupancy of the final renovated building.

32. Once the engineering design was finalized and detailed specifications of equipment and building components indicating energy requirements were selected, the energy savings estimates contained in the previous report were confirmed and validated. An estimated 50 per cent of energy savings will be achievable in the newly renovated building, with high-efficiency equipment and building components, compared to the existing building.

33. As part of the reviews conducted by the lead consulting firm, a detailed project schedule based on a “4D” building sequence estimated a construction period of 18 months. Additionally, a detailed building information modelling-based disciplines coordination exercise was performed to integrate the architecture and engineering designs. Through this exercise, any conflicts detected were corrected, diminishing the risk of delays and additional costs.

34. In addition, logistics and on-site safety and security plans were executed. Furthermore, a comprehensive material recycling, reuse and recovery plan has been included. All these documents are included as part of the construction bid tender documents. It is expected that the successful bidder will minimize the environmental impact of waste from the dismantling of the existing building.

### **Seismic mitigation**

35. As noted in the previous report, the structural engineering design includes structural reinforcement, insulation and dissipation technologies that are fully compliant with current national regulations, namely Chilean standard 433 and Supreme Decree No. 61 of 2011. These regulations require conventional structures to be designed to resist a moderate-intensity seismic movement without any damage. The recent updated standards have been expanded to include the coverage of non-structural elements during a medium-intensity earthquake and prevent collapse in earthquakes of exceptionally severe intensity, safeguarding the lives of building occupants.

36. The structural engineering firm, which has vast experience in seismic mitigation, managed by the lead consulting firm, delivered a structural project based on an analytical three-dimensional model assessment of the existing structural components as well as the reinforcement of existing structures. Additionally, an independent structure to support the solar photovoltaic plant was designed for the rooftop, reducing loads on the existing structure. All structural components, whether concrete, steel or mass timber frames, have been validated according to the seismic codes mentioned above.

37. A detailed analysis of the structural model that considered the parameters of static loads, dead or live loads, wind impact, seismic loads, loads related to snow and temperature changes was applied to reinforced concrete structures, steel structures, wood structures and soil.

38. Existing steel structural elements, such as columns, trusses and bracings, comply with structural performance standards according to the loads considered in relation to tensile capacity. However, deformations obtained from the structural analysis show that they exceed regulations; therefore, additional vertical bracing systems were added to the new project to ensure full compliance with updated seismic codes.

39. The structural engineering firm included non-structural construction components, such as ceilings, heating, ventilation and air conditioning equipment, mechanical, electrical and plumbing installations and lighting equipment, within the overall structural design to comply with Chilean standard 433 and Supreme Decree No. 61 of 2011. To minimize the risk of these components collapsing during an earthquake, location and clamping details for non-structural elements were developed as part of the architectural project and were included among the technical documents for the construction bidding process.

### **Workspace design criteria**

40. As noted in the previous report, a workplace strategy was developed considering several criteria: (a) extensive analysis of organizational space requirements; (b) current workplace usage patterns from previous experience and from the flexible workspace approach; and (c) the space utilization study findings on workspace efficiency at ECLAC, which was carried out by an external consultant in 2017 and described in the report of the Secretary-General on the proposal for the renovation of the North Building at ECLAC in Santiago ([A/73/351](#)). The North Building workspace strategy is characterized by a modern, flexible and overall adaptable layout that will fit and evolve according to the working arrangements of the ECLAC substantive divisions.

41. The final design considers working areas independent from the public space, as noted in the previous report, and office space is located at the periphery of the building to improve natural light use. A central core will be wrapped by primary circulation, which will house meeting rooms and service and technical areas. Additionally, information technology equipment, server rooms and electrical switchboards will be located in a mezzanine area. Direct access from this central core area to the rooftop will be provided for the maintenance of heating, ventilation and air conditioning equipment and the solar photovoltaic plant.

42. Flexible work strategies will be implemented extensively in relation to each organizational area. Layouts include five working areas, each of which will house one of the organizational units located in the North Building using a flexible, dynamic and collaborative layout, with improved conditions for teamwork and adaptability of open working areas according to the needs of each working group. Each unit is located around a central common collaborative working space with full access to natural lighting and ventilation. This space concept allows for modifications in the arrangement of workstations without interfering with pedestrian circulation and accessibility standards. Other individual working spaces will be located on each side of these common areas to allow for more concentration and privacy. An additional flexible working area was designed to accommodate a maximum capacity of 30 users in accordance with COVID-19 protocols. This area has been equipped with shared printing areas, rooms for videoconferences and a meeting room. A soft seating area has been designed for both private and collaborative work. Meeting and videoconference rooms located in the central area of the building have been designed to allow for dynamic use and easy adaptation of teamwork, meetings and conferences.

43. As described above, natural ventilation will be complemented with additional mechanical systems to reinforce air renewal during intensive demand in pandemic scenarios. For monitoring indoor air quality, carbon dioxide sensors with connection to the building management system have been considered for the automated and intelligent performance of passive and mechanical systems to achieve optimal indoor air quality.

44. The project developed by the lead consulting firm considered design elements to mitigate the impact of the pandemic, such as dynamic layouts that allow for the rapid restructuring of workspaces and changes in density without the need for infrastructure modifications; predefined supplementary physical barriers to separate the building into six independent areas, with segregated access routes from the outside leading directly to each work area; exit routes closely allocated to each work area to avoid crowding and preserve social distancing; and the adaptation of outdoor areas for informal meetings or work-related activities.

### **Safety and security**

45. Regarding safety measures for emergency evacuation routes, the space layout has been developed with five emergency exits that comply with the National Fire Protection Association and the International Building Code safety codes.

46. The technical aspects of safety and security systems, including fire detection, deterrent and control systems, public address systems, closed circuit television to support security cameras and access control systems, have been developed by the lead consulting firm and reviewed and validated by the detachment of the Department of Safety and Security of the Secretariat in ECLAC, ensuring their integration with existing security systems in the compound. They were also included in the technical documents to be supplied by the lead contractor as part of the construction project.

## **G. Disability inclusion and physical accessibility**

47. A comprehensive inclusion strategy for persons with disabilities is one of the project's main objectives. Consideration has been given to Secretary-General's bulletin [ST/SGB/2014/3](#) on employment and accessibility for staff members with disabilities in the United Nations Secretariat. In addition, the International Building Code and Uniform Building Code standards, as well as local standards, are being enforced and compliance with those standards constantly reviewed throughout the design process.

48. CEPALDIS, the ECLAC working group dealing with the disability inclusion strategy, was consulted in the review of the final design and valuable comments from staff with disabilities were taken into consideration.

49. The project includes the following considerations regarding an accessible design:

(a) The layout is oriented towards easily finding transit routes to encourage autonomous movement through the building, avoiding any possible physical obstacle or unevenness in pavements. Tactile surfaces and pavements were considered for identification by persons with visual disabilities;

(b) All door widths are universally accessible and the use of automated doors is considered in all main accesses and for accessing each working area;

(c) Specially designed restrooms for exclusive use by persons with physical disabilities were included, with consideration given to dimensioning and the implementation of accessories and fixtures in accordance with international standards;

(d) In addition to the above-mentioned design criteria, complementary inclusive signage aligned with international standards is being developed throughout ECLAC premises, including the North Building.

## **H. Sustainability and energy efficiency**

### **Photovoltaic plant**

50. In relation to the energy efficiency strategy requested by the General Assembly in paragraph 9 of section X of its resolution [73/279](#) A and noted in the first progress report ([A/74/330](#)), both energy requirements and projected energy consumption have been updated on the basis of the results of the energy efficiency study and the updated project models. The new building is projected to have an annual consumption of 226,797 kWh, which will be supplied from the output of a photovoltaic solar plant on the roof. The updated strategy for the use of this energy is as follows:

(a) 226,797 kWh, equivalent to 55 per cent of the estimated total annual energy production, will be used directly to power the operations of the North Building, being equivalent to the required hours of operation of the building;

(b) 163,723 kWh, equivalent to 40 per cent of the total annual energy produced, will be injected into the ECLAC internal electrical grid, meeting in part the energy supply requirements of other facilities in the ECLAC compound;

(c) 8,186 kWh, equivalent to 5 per cent of the total annual energy produced, which is produced on weekends, non-working hours and holidays, will be sent into the national power grid by means of a bidirectional meter.

51. Current calculations indicate that, based on the size and power-generating capacity of solar panels available on the market, the photovoltaic plant will use a total area of 2,450.23 m<sup>2</sup>, with a total of 972 solar panels that will produce a total installed potency of 267.3 kWp (kilowatt peak). The plant will be housed on the roof of the North Building.

52. The electrical engineering design developed by the lead consulting firm includes an additional medium voltage cell room adjacent to the North Building to allow for the distribution of clean energy produced to the other buildings in the compound. This scope of work is included in the requirements for the construction bid tender to be supplied by the general contractor.

### **Wastewater treatment plant**

53. A treatment capacity of 10 m<sup>3</sup> per day was calculated and included in the engineering design. The lead consultant recommended using existing wastewater networks and taking advantage of the location of the existing treatment plant of ECLAC to include the calculated capacity in a specially designed installation in compliance with international standards. The detailed engineering and installation of the wastewater treatment plant is scheduled to be tendered in September 2021.

## **I. Status of construction efforts**

54. The social and economic implications of the COVID-19 pandemic on local and regional scales have had a direct impact on several market areas related to construction works, as follows:

(a) The Chilean Chamber of Construction has reported a consistent rise in costs of construction materials on the local market, currently presenting an increase of between 20 and 25 per cent in the steel and wood categories. Other material categories present increases of between 5 and 10 per cent;

(b) Other reports indicate that local construction labour has experienced a decrease in availability coupled with an increase in cost.

55. The project management team continues to monitor these conditions to assess possible increases in construction costs and possible impacts on the schedule.

56. In preparation for the construction phase, the ECLAC project management team has considered a temporary on-site swing space strategy, including the implementation of a temporary building that will have the capacity to house 40 staff members, taking into account COVID-19-related physical distancing measures, and the use of existing premises.

57. Additionally, a temporary relocation of machinery will allow for swing space in the printing building of ECLAC, which is equipped with electrical and networking connectivity to house another group of 30 additional staff members, taking into account COVID-19-related physical distancing measures.

58. Various areas of the main tower, which has existing infrastructure, will also be adapted for swing space and will facilitate the housing of 40 additional staff members, taking into account COVID-19-related physical distancing measures.

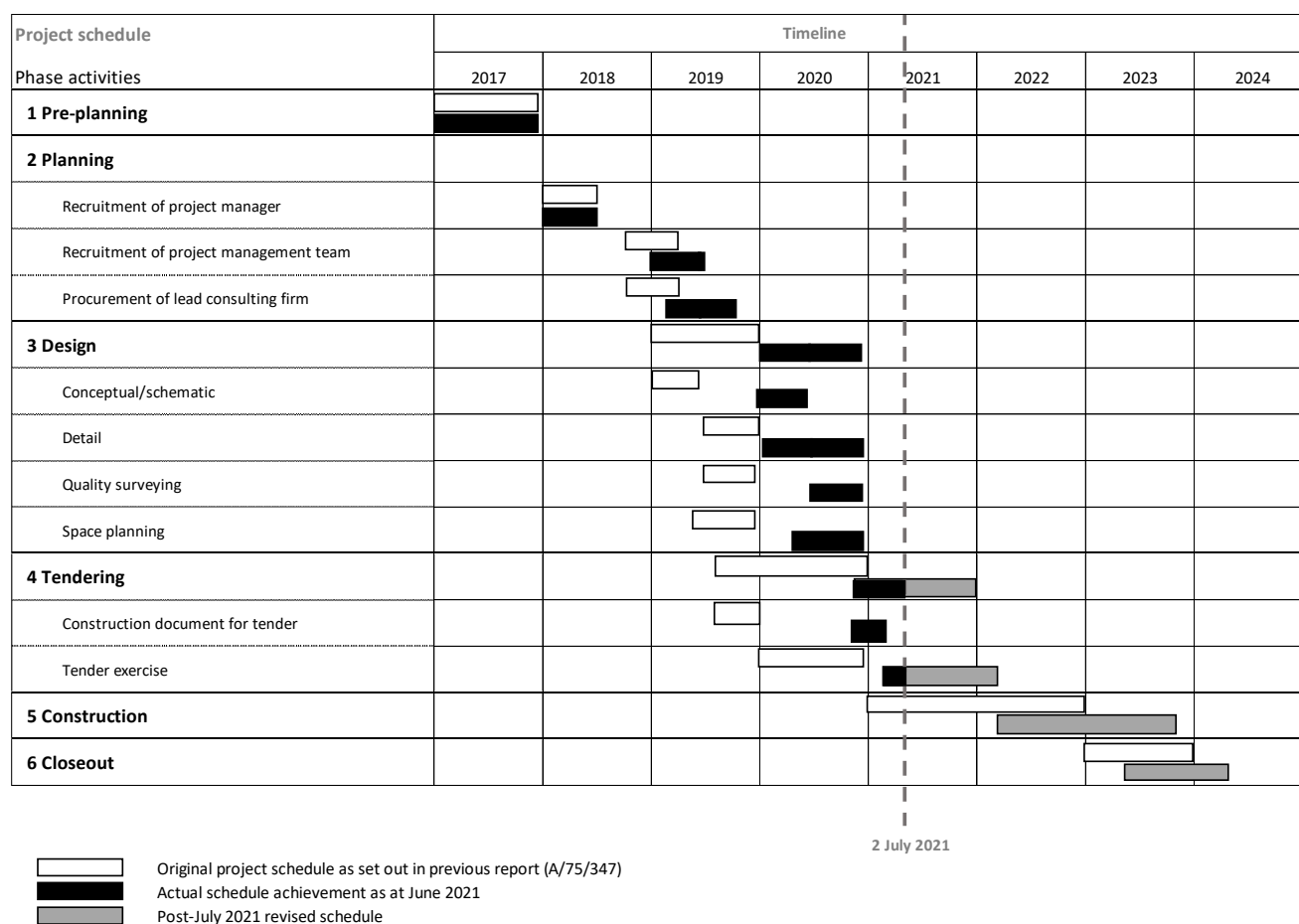
59. As indicated in section IV.C above, on procurement activities, the temporary building is currently in the bid tender phase and works are expected to be performed from September 2021 through January 2022. The main North Building renovation project is expected to begin in the first quarter of 2022, providing enough lead time for staff to move out of the existing building.

## J. Project schedule updates

60. In the previous report, consideration was given to streamlining the overall procurement process by adjusting the deliverables scheduled for 2021, taking into account final design schedules and construction logistics, which include both the renovation of the North Building and the phased direct purchase of the associated technical systems. The procurement process for the implementation of the temporary building, as well as the purchase of furniture and the request for building inspection professional services, remain as scheduled and should be completed by the fourth quarter of 2021.

61. Figure III provides an updated project schedule, indicating activities and adjustments to the proposed schedule regarding ongoing and future processes.

Figure III  
Updated project schedule as at 2 July 2021



62. After a complete technical review of the project by the ECLAC project team, the project documents were delivered by the lead consulting firm in February 2021. A further review of the documentation was carried out by the Department of Operational Support of the Secretariat in March 2021 and the expression of interest process for construction tendering was launched in April 2021.

63. According to the analysis carried out by the ECLAC Procurement Unit of previous procurement tenders, the international request for proposal for construction,

including the expression of interest process, is estimated to take up to 12 months and therefore the contract award is scheduled for March 2022.

64. The construction process, due to start in January 2022, has shifted 15 months from the original project schedule. However, the lead consulting firm has advised that the construction process could take between 18 and 20 months, with completion expected by the end of the fourth quarter of 2023, thereby making up for part of the shifted timeline.

65. An additional three months to the original schedule presented in the previous report have been considered for the closeout phase, resulting in a final date of March 2024. Up to that time, it is not foreseeable that the required three additional months will have an impact on the overall cost plan. The schedule for the construction and closeout phases will be confirmed once the tendering processes are completed and will be included in the next progress report.

## V. Project expenditure and anticipated costs

### A. Status of expenditure and projected expenditure up to the end of 2021

66. In its resolutions [72/262 A](#), [73/279 A](#), [74/263](#) and [75/253 A](#), the General Assembly appropriated a total amount of \$2,808,800 for the project for the period 2018–2021, including \$756,000 under section 21, Economic and social development in Latin America and the Caribbean, and \$2,052,800 under section 33, Construction, alteration, improvement and major maintenance.

67. The status of expenditure as at 31 July 2021 and projected expenditure for the remainder of 2021 are provided in table 1. It is projected that a cumulative unused balance of \$348,500 will remain at the end of 2021.

68. Variances between the appropriation and the total projected expenditure for the period 2018–2021 result from: (a) lower actual staff costs compared with standard costs; (b) the delayed recruitment of one Local level position and one Coordinator (P-3) position cost-shared with the United Nations Office at Nairobi; (c) lower than projected expenditure in risk management and travel costs; (d) no contingency expenditure; (e) exchange rate variations between the Chilean peso and the United States dollar; and (f) current market conditions that have forced ECLAC to postpone smaller tenders.

Table 1

#### Status of expenditure as at 31 July 2021 and projection for the remainder of 2021

(Thousands of United States dollars)

	<i>Appropriation for the period 2018–2021</i>	<i>Cumulative expenditure as at 31 July 2021</i>	<i>Projected expenditure from 1 August to 31 December 2021</i>	<i>Total projected expenditure for 2018–2021</i>	<i>Projected unused balance at the end of 2021</i>
	(a)	(b)	(c)	(d)=(b)+(c)	(e)=(a)-(d)
<b>Section 21, Economic and social development in Latin America and the Caribbean</b>					
1. Project management	756.0	554.4	162.7	717.1	38.9
<b>Subtotal, section 21</b>	<b>756.0</b>	<b>554.4</b>	<b>162.7</b>	<b>717.1</b>	<b>38.9</b>
<b>Section 33, Construction, alteration, improvement and major maintenance</b>					
2. Construction costs	1 156.3	—	1 156.3	1 156.3	—



	<i>Appropriation for the period 2018–2021</i>	<i>Cumulative expenditure as at 31 July 2021</i>	<i>Projected expenditure from 1 August to 31 December 2021</i>	<i>Total projected expenditure for 2018–2021</i>	<i>Projected unused balance at the end of 2021</i>
	(a)	(b)	(c)	(d)=(b)+(c)	(e)=(a)-(d)
3. Professional services	593.3	398.3	188.6	586.9	6.4
4. Escalation	182.9	–	–	–	182.9
5. Contingency	120.3	–	–	–	120.3
<b>Subtotal, section 33</b>	<b>2 052.8</b>	<b>398.3</b>	<b>1 344.4</b>	<b>1 743.2</b>	<b>309.6</b>
<b>Total</b>	<b>2 808.8</b>	<b>952.7</b>	<b>1 507.6</b>	<b>2 460.3</b>	<b>348.5</b>

## B. Resource requirements for 2022

69. The resource requirements for 2022 are shown in table 2. The total projected expenditure for 2022 amounts to \$5,938,600, comprising:

(a) An amount of \$470,200 under section 21, Economic and social development in Latin America and the Caribbean, which will provide for the continuation of the staff of the project management team (1 National Professional Officer and 2 Local level posts) and 25 per cent of the cost of one Project Coordinator (P-3) at Headquarters, cost-shared with the project to replace blocks A–J at the United Nations Office at Nairobi;

(b) An amount of \$5,446,400 under section 33, Construction, alteration, improvement and major maintenance, for construction costs; professional services related to resources for consultancy, risk management and travel costs; escalation costs; and the provision for contingency.

Table 2  
**Resource requirements in 2022**

(Thousands of United States dollars)

	<i>Projected expenditure in 2022</i>	<i>Projected unused balance at the end of 2021</i>	<i>Net funding requirement in 2022</i>
	(a)	(b)	(c)=(a)-(b)
<b>Section 21, Economic and social development in Latin America and the Caribbean</b>			
1. Project management	470.2	38.9	431.3
<b>Subtotal, section 21</b>	<b>470.2</b>	<b>38.9</b>	<b>431.3</b>
<b>Section 33, Construction, alteration, improvement and major maintenance</b>			
2. Construction costs	4 052.2	–	4 052.2
3. Professional services	210.7	6.4	204.3
4. Escalation	661.5	182.9	478.6
5. Contingency	544.0	120.3	423.7
<b>Subtotal, section 33</b>	<b>5 446.4</b>	<b>309.6</b>	<b>5 158.8</b>
<b>Total</b>	<b>5 938.6</b>	<b>348.5</b>	<b>5 590.1</b>

70. Since, in its resolution [73/279](#) A, the General Assembly approved the establishment of a multi-year construction-in-progress account for the project, the

anticipated unused balance of \$348,500 at the end of 2021 will be carried forward and will offset part of the resource requirements of \$5,938,600 in 2022. Consequently, the net resource requirements to be appropriated for 2022 amount to \$5,590,100, comprising: (a) \$431,300 under section 21, Economic and social development in Latin America and the Caribbean; and (b) \$5,158,800 under section 33, Construction, alteration, improvement and major maintenance, of the proposed programme budget for 2022.

## **VI. Next steps**

71. The actions to be taken during the forthcoming reporting period are as follows:

- (a) Continue to hold coordination meetings with the project stakeholders to advance the project in accordance with the schedule;
- (b) Conduct regular tracking and updating of the risk register to mitigate risks, escalating them as needed and tracking them through to final sign-off;
- (c) Commence the construction of the temporary building during the fourth quarter of 2021;
- (d) Coordinate staff moves to temporary space within the existing buildings that will be used as swing space during the construction phase;
- (e) Carry out the tender processes for heating, ventilation and air conditioning equipment, photovoltaic components, furniture and other equipment to begin coordination with awarded vendors for the logistics, delivery and installation of equipment;
- (f) Complete the tender process for general construction services to commence the construction work in the first quarter of 2022.

## **VII. Recommended actions to be taken by the General Assembly**

72. The General Assembly is requested:

- (a) To take note of the present report;
- (b) To appropriate an amount of \$5,590,100 for the project in 2022, comprising \$431,300 under section 21, Economic and social development in Latin America and the Caribbean, and \$5,158,800 under section 33, Construction, alteration, improvement and major maintenance, of the proposed programme budget for 2022, which would represent a charge against the contingency fund.

## Annex

## Revised cost plan

(Thousands of United States dollars)

	2018 <sup>a</sup>	2019 <sup>a</sup>	2020 <sup>a</sup>	2021 <sup>b</sup>	2022	2023	Total	Reported in A/75/347	Change
<b>Section 21, Economic and social development in Latin America and the Caribbean</b>									
<b>1. Project management</b>									
1.1 Dedicated project management team	40.0	154.9	235.7	325.4	393.5	406.6	1 556.1	1 556.1	–
1.2 Project Coordinator at Headquarters (25 per cent of cost, cost-shared with the United Nations Office at Nairobi)	–	–	21.4	37.8	37.8	37.8	134.8	134.8	–
<b>Subtotal, section 21</b>	<b>40.0</b>	<b>154.9</b>	<b>257.1</b>	<b>363.2</b>	<b>431.3</b>	<b>444.4</b>	<b>1 690.9</b>	<b>1 690.9</b>	<b>–</b>
<b>Section 33, Construction, alteration, improvement and major maintenance</b>									
<b>2. Construction costs</b>									
2.1 Building costs	–	–	–	773.5	3 833.7	3 480.8	8 088.0	8 088.0	–
2.2 Swing space costs	–	–	–	350.0	–	–	350.0	350.0	–
2.3 Physical security system	–	–	–	–	218.5	243.5	462.0	462.0	–
<b>3. Professional services</b>									
3.1 Consultancy	–	350.0	53.0	53.0	125.0	125.0	706.0	706.0	–
3.2 Risk management	36.4	33.0	24.0	50.0	56.6	–	200.0	200.0	–
3.3 Travel costs	–	6.7	–	20.0	29.1	29.2	85.0	85.0	–
<b>4. Escalation</b>	–	–	–	182.9	661.5	812.6	1 657.0	1 657.0	–
<b>5. Contingency</b>	–	–	2.6	117.7	544.0	427.0	1 091.3	1 091.3	–
<b>Subtotal, section 33</b>	<b>36.4</b>	<b>389.7</b>	<b>79.6</b>	<b>1 547.1</b>	<b>5 468.4</b>	<b>5 118.1</b>	<b>12 639.3</b>	<b>12 639.3</b>	<b>–</b>
<b>Total</b>	<b>76.4</b>	<b>544.6</b>	<b>276.4</b>	<b>1 910.3</b>	<b>5 899.7</b>	<b>5 562.5</b>	<b>14 330.2</b>	<b>14 330.2</b>	<b>–</b>

<sup>a</sup> Reflects actual expenditure.<sup>b</sup> Reflects actual expenditure as at 31 July 2021 and projections for the period from 1 August to 31 December 2021.