



General Assembly

Distr.: General
23 August 2019

Original: English

Seventy-fourth session

Item 137 of the provisional agenda*

Proposed programme budget for 2020

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

Report of the Secretary-General

Summary

The Secretary-General hereby submits his first progress report on the seismic mitigation and renovation project of the North Building at the Economic Commission for Latin America and the Caribbean (ECLAC) in Santiago, pursuant to General Assembly resolution [73/279 A](#), in which the General Assembly approved the overall scope, maximum cost and implementation strategy of the project.

The present report provides an update on the project since the issuance of the previous report of the Secretary-General ([A/73/351](#)). The Commission aims to ensure, through the use of solar energy and wastewater treatment, and the functional optimization of the workspace, that a technologically innovative, disability-inclusive and sustainable strategy is implemented, leading to the first “net zero” building in the region, as a landmark example of the Organization’s commitment to achieving the Sustainable Development Goals.

The project is proceeding according to schedule and is expected to be completed in 2023, within the overall estimated maximum cost of \$14,330,200.

The proposed actions to be taken by the General Assembly are set out in section VIII of the report, which include taking note of the revised project cost plan and appropriating the amount of \$389,100 for 2020.

* [A/74/150](#).



I. Introduction

1. The present report is the first 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 X of resolution [73/279 A](#), in which the General Assembly approved the overall scope of the project and its estimated maximum cost of \$14,330,200, including construction costs and professional services. The report provides an update on the progress made on the project since the previous report of the Secretary-General ([A/73/351](#)).

2. The General Assembly, in its resolution [73/279 A](#), requested that the progress report include information on the voluntary and in-kind contributions proactively solicited from Member States, in full compliance with all regulations and rules of the Organization. The Assembly stressed the importance of governance, effective oversight, transparency and accountability in the management of the project to ensure that the objectives of the project are achieved within the approved budget and time schedule, welcomed the intention to mitigate potential risks during the design phase and requested an update of the results of the Monte Carlo analysis. The Assembly also requested the Secretary-General to further develop an energy efficiency strategy in regard to redirecting energy to the ECLAC compound, including returning surplus energy, if any, to the national grid and to provide more detailed information regarding the planned seismic mitigation measures in his future reports.

3. The project continues to be implemented in accordance with the previously reported project objectives. The basis of the Secretary-General's proposal 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, extending its useful life by 40 to 50 years, that is conducive to a more productive and sustainable working environment. The proposed building will contribute to minimizing operational costs and to setting the functional, operational and sustainability guidelines for future projects.

II. Project objectives and benefits

A. Objectives

4. The key project objectives, established at the inception of the project plan, are in line with the key objectives outlined in the report of the Secretary-General on the strategic capital review ([A/68/733](#)) and have been refined as follows since the previous report of the Secretary-General:

(a) To meet local and international codes related to health and safety issues, including:

(i) Chilean seismic code requirements related to preparedness and structural design against potential seismic events;

(ii) Fire and life safety planning and systems design, incorporating current evacuation standards and air, water and lighting quality criteria to conform to current norms, together with fire suppression, fire alarm and public address systems;

(b) To replace major building systems that have exceeded their useful lives, including mechanical, electrical, low-voltage, plumbing, conveyor and vertical transportation systems in order to bring the North Building up to industry standards, ensure code compliance and extend the useful life of the building;

(c) To incorporate appropriate design features, such as the removal of physical barriers, to allow persons with disabilities to freely participate in and make use of the working environment;

(d) To maintain the property value of the North Building, which was constructed in 1989 within the ECLAC premises;

(e) To implement a sanitary water treatment plant to allow the Commission to clean and reuse 100 per cent of the wastewater from the North Building;

(f) To move towards an energy-efficient building, specifically by reducing energy consumption, fresh water consumption, the use of non-renewable material resources and waste generation, and to improve indoor air and lighting quality;

(g) To improve space efficiency by maximizing the use of available work areas, conference facilities and meeting rooms according to the Commission's needs and to introduce a more efficient, productive and inclusive work environment by applying a needs-based approach aimed at providing different types of space tailored to the diverse requirements of the work undertaken by the Commission, including different strategic approaches and solutions for each specific area.

5. Pursuant to General Assembly resolution [73/279 A](#) (sect. X, para. 9), the following objective has been added:

To further develop an energy efficiency strategy in regard to redirecting energy to the ECLAC compound, including returning surplus energy, if any, to the national grid.

B. Benefits

6. The North Building renovation project will provide the Organization with a fully renovated and code-compliant work environment in an efficient building that meets or exceeds industry standards. 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, as follows:

(a) It is estimated that the project will achieve a 40 per cent reduction in the current electricity consumption of the North Building;

(b) In its resolutions [70/205](#) and [71/228](#), the General Assembly requested the Secretary-General to submit an action plan aimed at integrating sustainable development practices into the operations and facilities management of the Secretariat. Those mandates have been taken into consideration and the project will include the introduction of energy features and photovoltaic energy generation that will result in a reduction in the annual greenhouse gas emissions of the North Building equivalent to 104.7 tons of carbon dioxide. That reduction is equivalent to 10.4 per cent of the Commission's total annual facilities-related greenhouse gas emissions (986.34 tons of carbon dioxide);

(c) As part of the high-efficiency strategy of the project, the construction of a 2,000 m² photovoltaic plant on top of the North Building will generate 478,608 kilowatt-hours (kWh) of electricity per year, which is equivalent to 115 per cent of the energy consumption of the North Building;

(d) Installation of a sanitary wastewater treatment plant will allow for the reuse of 100 per cent of the wastewater from the North Building for irrigation purposes. Projections estimate an annual volume of 1,762 m³ of recycled water that would supply 57 per cent of the irrigation requirements for the 21,500 m² gardens of the ECLAC campus.

7. With regard to the envisaged efficiency gains in the amount of \$13.8 million in total cost of ownership over a 20-year period, as noted in a previous report of the Secretary-General ([A/72/367](#), para. 29), the gains are based on three major cost projections over the whole building life cycle, namely: (a) the construction and replacement costs of existing building components; (b) energy costs; and (c) maintenance costs. Of those three factors, savings from the second factor are expected to increase, according to the latest projections of surplus energy production. The surplus, which will be redirected to the ECLAC compound, will generate estimated additional savings over a 15-year period (2023–2038) in the amount of \$150,000, equivalent to 63,000 kWh. The estimation will be updated during the design development of the detailed engineering drawings and included in future reports of the Secretary-General.

III. Project governance, management and accountability

A. Project governance

8. The established overall governance structure for the project is unchanged. As described in the previous report of the Secretary-General ([A/73/351](#)), the Executive Secretary of ECLAC is the project owner and has designated the Chief of the Division of Administration as the Project Executive to supervise the project and liaise with the stakeholders committee. The Project Executive is supported by the dedicated Project Manager, who oversees day-to-day execution by the project team.

Stakeholders committee

9. The stakeholders committee established in March 2018 has convened on a regular basis since its first meeting on 21 July 2018. Quarterly meetings will be held through to project completion in 2023 and will be augmented by ad hoc meetings, when necessary, for matters requiring the immediate attention of the committee. The committee members are provided with and review updates on the status of implementation and the schedule of the project and discuss the development of design solutions as the project progresses.

10. In March 2019, the stakeholders committee participated in the risk management workshop, held at ECLAC, which was facilitated by the Global Asset Management Policy Service from Headquarters and the independent risk management consultant. Stakeholders engaged in the workshop to identify corporate risks, current operational risks and future operational risks during upcoming stages of the project, and to propose mitigating actions.

11. The stakeholders committee has established two working groups, one covering occupational health and safety and accessibility issues and the other covering sustainability.

12. The working group on occupational health and safety and accessibility includes representatives of the local staff-management committee, the ECLAC Medical Services Unit, the ECLAC Facilities Management Unit and the ECLAC Safety and Security Section. The working group addresses issues and proposes solutions based upon three principal considerations: the Staff Regulations and Rules of the United Nations and relevant international codes and industry standards; lessons learned from case studies of similar projects; and the input of ECLAC staff in relation to special requirements.

13. The working group on sustainability is composed of representatives from the ECLAC Division of Natural Resources and Infrastructure, the ECLAC Sustainable

Development and Human Settlements Division and the ECLAC General Services Section. The working group reviews and proposes strategies for the definition and implementation of technical and organizational sustainable measures, as part of the life cycle of the North Building, incorporating the “circular economy” concept¹ from inception and throughout implementation.

14. In addition, the project team conducts individual meetings with the ECLAC Directors and Chiefs of operational units located in the North Building. The meetings are held to review the organizational structure, work processes and functional specifications required to achieve the Commission’s objective of improving space efficiencies for a more productive and inclusive work environment, tailored to the Commission’s needs. Those meetings will continue on a monthly basis during the design phase with the lead consulting firm.

Coordination and oversight by the Global Asset Management Policy Service at Headquarters

15. A signed administration and coordination agreement between ECLAC and the Global Asset Management Policy Service was put in place in May 2018, which sets out roles and responsibilities and coordination methods for all stages of the project. In that context, regular coordination meetings between the project team and the Global Asset Management Policy Service are held fortnightly regarding day-to-day project execution, for monitoring and oversight. In March 2019, during the risk management workshop held at ECLAC, which was facilitated by the Global Asset Management Policy Service, the following issues were reviewed:

(a) *Lead consulting firm (architectural and engineering services) tender documents.* A review of the multidisciplinary services included in the scope of work was carried out to ensure consistency with the Financial Regulations and Rules of the United Nations and best practices of the Organization. The technical evaluation criteria and scoring documents for the lead consulting firm bidding process were defined and a qualitative evaluation methodology was established;

(b) *Lessons learned from other capital projects.* The Global Asset Management Policy Service provided support to the ECLAC Procurement Unit in reviewing similar processes carried out by the Procurement Division at Headquarters, assisting the Unit in defining the strategy to be used in respect of the tendering process for the North Building. In addition, lines of communication were established with the seismic mitigation project management team of the Economic and Social Commission for Asia and the Pacific (ESCAP) to share information and define the possible participation of ECLAC in the joint purchase of furniture through a potential global contract, which is currently under negotiation.

B. Project management

16. Recruitment was completed for the position of Project Manager for the dedicated project team, which was approved by the General Assembly in resolution [72/262 A](#), and the staff member was onboarded in September 2018. With regard to the two temporary positions (Local level) dedicated to the project team, approved by the Assembly in resolution [73/279 A](#), the Administrative Assistant position was filled in March 2019 with a female candidate with experience in architectural and energy

¹ A circular economy is an economic system aimed at minimizing waste and making the most of resources. In a circular system, resource input, waste, emissions and energy leakage are minimized by slowing, closing and narrowing energy and material loops, which can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing and recycling.

efficiency and the Architect is expected to be onboarded in late August 2019. Applications from female candidates were strongly encouraged during recruitment.

C. Project accountability

17. The recommendations of the Office of Internal Oversight Services as a result of its 2018 audit in respect of the following actions were accepted and have been implemented and completed: (a) assembling a project team; (b) establishing a stakeholders committee to oversee the project; (c) establishing an independent risk management function and an anti-fraud and anti-corruption framework; (d) ensuring the accessibility and energy efficiency of the renovated North Building; and (e) developing a strategy for identifying and securing suitable swing space for the duration of the North Building renovation project.

IV. Risk management

A. Independent risk management firm

18. The Global Asset Management Policy Service, in consultation with the ECLAC project team, has established a risk management strategy for the North Building renovation project, which achieves the following:

(a) It establishes processes and procedures for the identification and assessment of risks and their prioritization in accordance with their evaluation;

(b) Once risks are identified, the strategy facilitates planning the implementation of risk responses to ensure the successful delivery of the expected project objectives;

(c) It enables the Organization to assess and manage a risk-based contingency budget, in accordance with the recommendations of the Advisory Committee on Administrative and Budgetary Questions ([A/72/7/Add.6](#), para. 22), as endorsed by the General Assembly.

19. As noted above, a risk management workshop was held in Santiago, facilitated by the Global Asset Management Policy Service. The workshop was attended by the project management team, ECLAC stakeholders and representatives from the independent risk management firm. The outcome of the workshop was the risk management strategy document and the project risk register. The independent risk management firm will produce two biannual reports for the duration of the project, the first of which was issued in the third quarter of 2018.

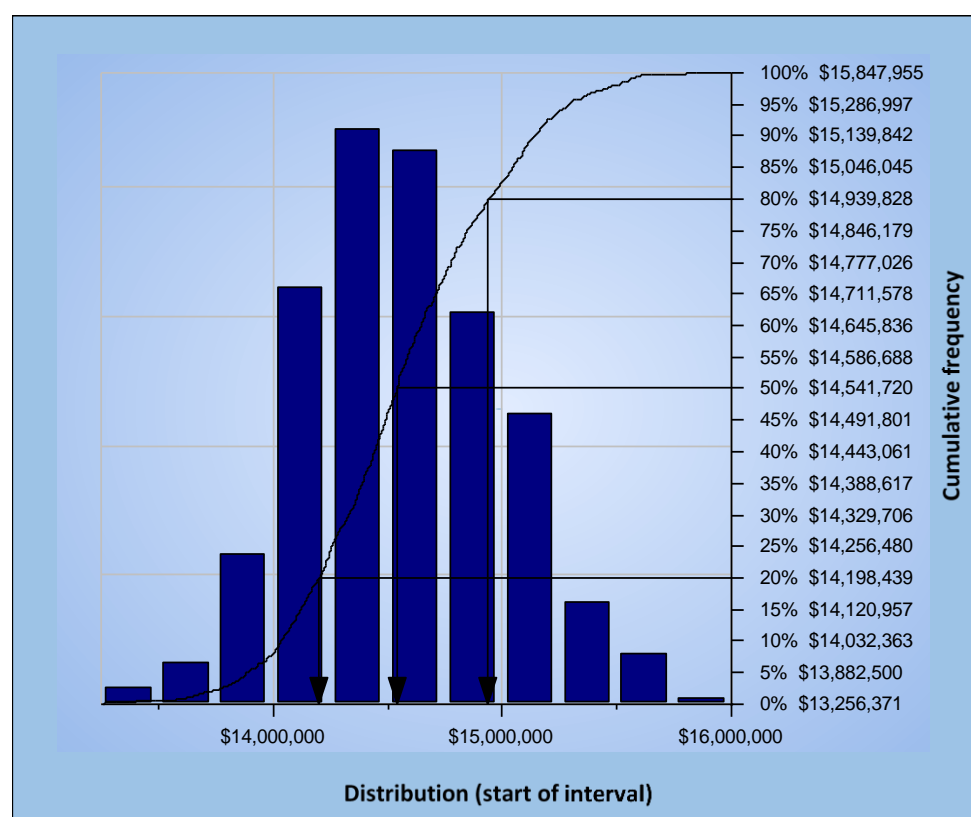
20. During the risk management workshop, a quantitative analysis of risks relating to costs and schedules was undertaken to generate a Monte Carlo analysis. The Monte Carlo analysis takes input from the project team, including risk scores – probability and likelihood – of each risk, the most likely range of quantitative effects of each, and simulates approximately 1,000 theoretical versions of the project. The Monte Carlo analysis serves to provide a snapshot of the most likely overall cost of known risks at the time the inputs from the project management team were provided. At the time of the risk management workshop, work on the project design with the lead consulting firm had not commenced. This meant that a high level of design uncertainty remained, and the risk levels commensurately appeared high. The quantitative Monte Carlo analysis shows the overall projected effect of known risks on the project, assuming no further mitigating actions are taken.

21. United Nations construction projects are assigned an established “P80” benchmark target for measuring risk on a given project, which means that the project team would ideally strive to have an 80 per cent confidence level that the project will be completed within budget.

22. A summary of the first Monte Carlo analysis of this project is provided in the form of a cost histogram in figure I.

23. The first Monte Carlo simulation shows that at the United Nations “P80” benchmark level, the project would be expected to come in at approximately \$14.9 million, or \$0.6 million over budget. The cost histogram illustrates that there is a relatively low level of confidence, about 30 per cent, that the project will be completed within the approved budget of \$14.3 million, assuming that no further risk mitigation action is taken. While it is normal that in the early stages of a construction project a large number of unknown factors may lead to exposure to high risk, the Secretariat considers the risk confidence level of the project at this stage to be low.

Figure I
Cost histogram of analysed risks, June 2019



B. Integrated risk management

24. Integrated risk management continues to be performed at the local level by the dedicated project team at ECLAC through an established risk register process, which will be supported by the lead consulting firm once on board. In the meantime, the Global Asset Management Policy Service at Headquarters, in coordination with the independent risk management firm, support the ECLAC project team and will continue to do so throughout the various project phases through to completion. The highest emerging risks during the reporting period relate to potential owner-directed

changes, the lead consulting firm contract, unknown interior construction conditions, engineering of major systems, such as mechanical and exterior enclosure, to establish procurement requirements for long lead items, as well as escalation costs.

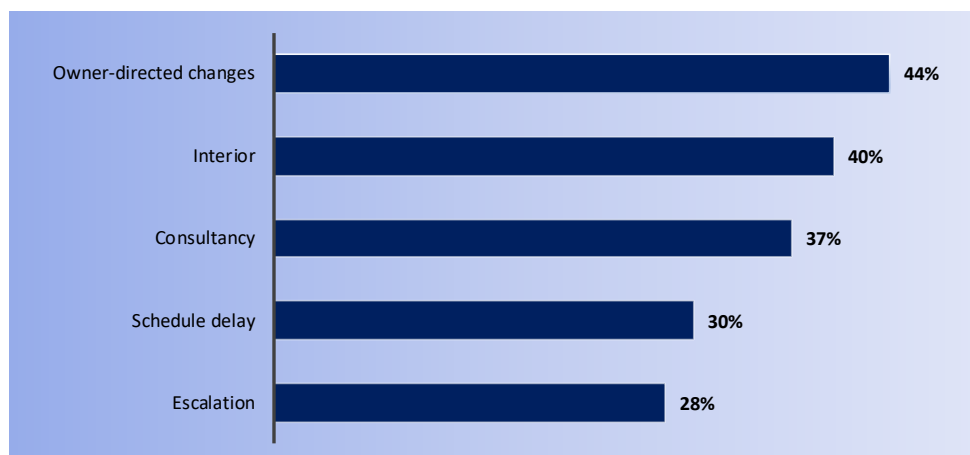
C. Risk register

25. Building upon the outcome of the risk meeting held in July 2018, which was reviewed during the risk management workshop held in March 2019, the project team has populated and is now managing the project's risk register in accordance with its risk management strategy. All risks were given scores and assigned a risk owner, and proposed responses were put forward. Risks are monitored, controlled and mitigated by the project team. In accordance with the risk management strategy, emphasis will be placed on the top five risks because they pose the greatest potential threat to the project and therefore focused effort is required, which can offer the greatest beneficial impact to mitigate their potential effects.

26. The Secretariat is proactively managing the identified risks. Currently, the procurement tender for the lead consulting firm is one of the highest priorities in order to keep the project progressing. At the time of drafting the present report, the tender process for the lead consulting firm is in the technical evaluation phase. Once the project design phase gets under way, it is expected that the confidence level reported in the cost histogram (see figure I) will rise accordingly.

27. 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 2019



D. Description of the top five project risks

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

(a) **Owner-directed changes (late design requirements and optional scope additions).** This risk refers to owner requirements that may not have been captured in baseline design documents and that could, therefore, potentially result in additional costs if a change order is received during construction. Risk mitigation measures are

focused on attaining stakeholder approvals prior to the issuance of construction contract documents to mitigate the chances of receiving change requests at a later stage. The project team continuously emphasizes the importance of the stakeholders committee's active involvement in the project, in line with the risk management strategy;

(b) **Interior renovations.** This risk is inherent to the project. The renovation of existing premises carries risk owing to unknown conditions that may be revealed during the demolition or construction process and potential delays in the delivery of materials, equipment and furnishings. This risk will be mitigated through extensive site due diligence, conditions surveying and market research of material suppliers;

(c) **Consultancy.** This risk refers to the critical importance of the lead consulting firm contract and the associated procurement tender in order for the project to continue to progress. At the time of the risk workshop and the development of the risk register, the contract for the lead consulting firm was not yet in place. To mitigate this risk, the project team has developed a scope of work, technical evaluations and a request for proposals in consultation with the Procurement Unit and the Global Asset Management Policy Service. As noted above, the tender process is currently in the technical evaluation phase. The contract is expected to be put in place during the third quarter of 2019;

(d) **Schedule delays.** As the project is in the early stages of development and the necessary contracts are not yet in place, potential schedule delays are emerging as a high risk. There could be potential delays in implementation due to the lack of availability of equipment and technology in close proximity to Chile, such as mechanical systems and photovoltaic plant systems. In addition, the procurement of goods and services and contract implementation may take longer than usual owing to the extensive requirements of the scope of the project. As a risk mitigation measure, the project team is working closely with the Procurement Unit to develop and execute all bid tenders as expeditiously as possible;

(e) **Cost escalation.** Using an annual baseline that starts from July 2017, the date on which the project budget was developed, escalation was calculated at 4.935 per cent of construction trade cost, on the basis of a forward projection of published data on recent past escalation rates, compounded from 2018 until the midpoint of construction. To mitigate the risk of additional escalation due to a potential slippage of the construction schedule, the project team intends to include in the general contractor request for proposals the requirement for the contractor to purchase many of the construction materials up front at a fixed cost and warehouse them in a secure location. In addition, the project team intends to assess the possibility of pre-purchasing long lead items, such as mechanical systems and window wall systems.

V. Progress made on the project during the reporting period

A. Cooperation with Member States and the host Government

29. The host country has provided significant support arrangements for United Nations operations in Chile and specifically for the ECLAC compound by providing privileges and immunities, including duty exemption on contracts and material importations for official purposes such as construction materials, equipment and infrastructure. Those benefits would be extended to any construction project, leading to minimized overall cost and expedited importation arrangements through the established host country liaison arrangements.

30. During the Forum of the Countries of Latin America and the Caribbean on Sustainable Development, held in Santiago in April 2019, meetings were organized by the ECLAC Division of Natural Resources and Infrastructure with the Director of the National Institute of Statistics of Ecuador to discuss opportunities for sharing technical expertise and knowledge to achieve the project's sustainability goals. Further details of this potential contribution will be included in future progress reports.

31. Through the ECLAC Sustainable Development and Human Settlements Division, communication channels have been established with the Republic of Korea to request potential voluntary and in-kind contributions regarding technical support for the installation of technological components produced in the Republic of Korea that will be part of the active strategies included in development of the project. Details of this potential contribution will be included in future progress reports.

B. Status of voluntary contributions

32. In-kind contributions have been provided by the Chilean Economic Development Agency, under the Ministry of Economic Affairs, Development and Tourism. The contributions, which go beyond the scope of the project, include the following:

(a) The North Building project will be based on integrated building information modelling. The Agency has given technical support to the ECLAC project team through its building information modelling programme;

(b) One of the sustainability goals of the project is to minimize the amount of debris and waste resulting from the dismantling of the existing building. The Agency's "Construye2025" programme, as part of the circular economy initiative, is able to support this goal and has given technical support to the ECLAC project management team, with specific guidelines for the development of a plan for reusing, recycling or otherwise deriving value from disassembled components. These guidelines have been included as part of the deliverables required from the lead consulting firm for the architectural and engineering services scope of work. Support will be provided through the "Construye2025" programme to the ECLAC project team and the lead consulting firm through all phases of design and construction drawing development.

33. The in-kind contributions do not cover any items in the original scope of the project as approved by the General Assembly.

C. Procurement activities

34. The project team holds biweekly meetings with the ECLAC Procurement Unit on ongoing and future bidding processes related to the project. These meetings include: (a) planning procurement strategies for required tenders; (b) monitoring ongoing procurement tenders; and (c) establishing logistic and administrative support for the Procurement Unit to avoid delays in the bidding processes.

35. Procurements activities during the reporting period included the following:

(a) *Request for proposals for the lead consulting firm.* The procurement process for establishing the contract of the architectural and engineering services required for the development of the project began with the publication, locally and internationally, of the request for expressions of interest in March 2019. Over 40 architectural firms responded to the invitation. Among those firms, 26 were Chilean, 4 were from Spain, 2 were from Turkey, 2 were from India, and 1 was from each of the following countries: Burkina Faso, Costa Rica, Nigeria, Panama and

United States of America. At the time of drafting the present report, the evaluation process was ongoing and the contract was expected to be awarded in the third quarter of 2019;

(b) *Temporary swing space building, market research.* In the first quarter of 2019, the project team initiated a request for information process, which was carried out by the ECLAC Procurement Unit. The exercise included several local specialized companies to discuss costs and technical issues related to the implementation of a modular solution adapted to the specific needs of ECLAC, such as more efficient mechanical, electrical and plumbing systems, as well as specific features tailored to comply with the Organization's requirements and standards such as working conditions, safety and security, environmental quality and universal accessibility. This process has helped to define the technical requirements to be included in the final scope of work for the request for proposals process for the temporary swing space modular building, scheduled for the third quarter of 2020;

(c) *Furniture, market research.* During the last quarter of 2018, a request for information was carried out for adjustable height workstation systems. The process included technical specifications based on the systems included in the latest refurbishment projects carried out in the Secretariat Building at Headquarters. Local vendors were contacted by the ECLAC Procurement Unit to define: (a) the availability of the required furniture systems on the local market; (b) the location of the manufacturers; (c) lead times and cost of import; (d) product certifications and warranties; and (e) complementary features for workstation systems. The information obtained for the process will be reviewed and compared with the results of the global furniture contract tender that is being developed by ESCAP and the Economic Commission for Africa, in which ECLAC has been named as a potential future party to the contract;

(d) *Furniture pilot project, request for quotation process.* During the first quarter of 2019, a local request for quotation process was initiated on the basis of the information received following the request for information as indicated above. Through this process, 10 workstations will be procured and installed for staff to test, review and to provide feedback, as part of the pilot project that will exhibit and introduce a new concept of workstations to ECLAC staff to be considered for the renovated North Building.

36. The project team and the ECLAC Procurement Unit have established a timeline for the construction request for proposals process, with the bid tender expected to be issued in the second quarter of 2020. The project team seeks to achieve the following through the process:

(a) Periodic research of local and regional market conditions for the required construction materials and related technologies to identify any variances that will affect the project scope. This will also inform any required adjustments to the project costs and schedule;

(b) Conducting market research for construction companies with similar project experience. The Procurement Unit shall use this market research to issue an expression of interest through the United Nations Global Marketplace;

(c) Reviewing similar request for proposals processes conducted for other United Nations capital projects and the lessons learned, setting technical evaluation criteria and establishing the bidding process deliverables appropriate for the North Building renovation project;

(d) Coordinating through the Global Asset Management Policy Service, advisory meetings with the Procurement Division at Headquarters to review the

bidding process and contractual documents according to procurement rules and the Financial Regulations and Rules of the United Nations.

D. Local knowledge and lessons learned

37. One of the main aspects for the efficient planning, development and execution of the project is to consider lessons learned and best practices from previous construction and renovation projects, which includes drawing from local knowledge, technology and capacity throughout the implementation of the project, as well as similar capital projects within the United Nations property portfolio, including space planning strategies, furniture standards and security measures.

38. During the reporting period, several consultations were held between the project team, the ECLAC Procurement Unit and local experts on both technical and commercial matters. These discussions were focused on the processes, systems and materials to be considered in the project to define the range of possibilities for the various scopes to be developed by the lead consulting firm. In that context, and in coordination with the Global Asset Management Policy Service, project teams for other United Nations capital projects were consulted regarding resource administration, procurement processes, scheduling and technical definitions.

39. In the context of the lead consulting firm bidding process, the procurement tenders performed by ESCAP and the United Nations Office at Nairobi were reviewed. Consultation meetings were held with the Global Asset Management Policy Service over technical evaluation criteria and the deliverables required. As a result of that process, a technical evaluation document based on qualitative requirements was developed by the project team and reviewed by the ECLAC Procurement Unit.

40. Regarding the development of an energy efficiency strategy, as requested by the General Assembly (resolution [73/279 A](#), sect. X, para. 9), for the return of possible surplus energy to the national grid, the project team contacted, through the Procurement Unit, a local electrical distribution company. Through the specialized energy efficiency technical department of the company, the photovoltaic plant diagrams, electrical loads and projected electricity generation capacities were revised. In addition, current regulatory framework and projected modifications related to return of energy to the national grid, energy costs and technical requirements were also revised.

E. Locally sourced materials

41. The project team has reviewed the availability of potential materials that may be used as construction components and technologies from local suppliers or representatives that could have a positive impact on both the costs and planning of the project. The project team found as follows:

(a) Given that the existing structural components of the building are made of steel and since Chile is a significant producer of recycled crude steel, the project team is considering supplying the required steel components locally, thus minimizing transport and import costs and significantly reducing the carbon footprint of the project;

(b) Regarding glass components and glass façades, the high-efficiency glass with solar control and low-emissivity required for the project is not manufactured locally and will therefore likely need to be imported;

(c) Mechanical, electrical and plumbing pipes and fittings, including sanitary, hydraulic and conduit products are manufactured in Chile, as well as other countries

in South America. The importation costs for pipes are extremely high and therefore the most efficient process may be local manufacturing and supply of pipes;

(d) Aluminium bars and tubes are currently not produced in Chile. The aluminium required for façades, interior glass partitions and other elements must therefore be imported;

(e) Chile is the main producer of copper in the world, with 5.8 million tons produced in 2018. An important part of the local copper industry is high-tension and low-tension electrical conductors, which provides 80 per cent of the local market demand and therefore will probably be sourced locally;

(f) Forestry is a major industry in Chile and ranks second highest in terms of export value. It also ranks first for products made with renewable raw material. The forest industry in Chile produces a wide range of wood products, mainly from cultivated forests of pine and eucalyptus, with the production of boards constituting an important output. Wood products for construction will therefore probably be sourced locally;

(g) Other technological components, such as heating, ventilation and air conditioning (HVAC) systems, automation systems, power generation systems, electrical breakers and lighting will likely be imported, with long expected lead times.

F. Consultancy services

42. The request for proposals process for the architectural and engineering services was launched in June 2019. The scope of work included all aspects related to the required services, project definitions and experience of the multidisciplinary teams, to ensure the comprehensive development of the project, according to the approved scope and budget.

43. The statement of work includes the following disciplines as part of the design team:

(a) Architecture, structural engineering, sustainable engineering, mechanical, electrical and plumbing engineering (including HVAC, lighting and electrical systems);

(b) Safety and security systems, façade engineering, centralized building control systems;

(c) Targeted dismantling and demolition and landscaping;

(d) Expediting services (permits and code consultancy for local and international building codes).

44. The document identifies the main objectives of the project as seismic mitigation, energy efficiency, efficient space planning and accessibility for persons with disabilities as part of the design requirements.

45. The architectural scope, as well as the main disciplines included in the statement of work, must be developed entirely on the basis of an integrated building information model. The detailed engineering scope for the photovoltaic plant and water treatment plant will be procured separately during the first quarter of 2020. ECLAC will coordinate the project with the lead consulting firm to ensure that the projected operational requirements of the building are fully covered in the scope of work and drawing documents.

G. Planning and design activities

46. As stated in the previous report of the Secretary-General ([A/73/351](#)), projects proposed under the strategic capital review are aimed at providing the Organization with more modern and flexible working environments. To that end, in 2018, ECLAC conducted a space utilization analysis through an external consultancy firm.

47. During the reporting period, informal interviews were conducted with Directors and Chiefs of operational units located in the North Building. The purpose of the sessions was to gain a better understanding of the work processes and space requirements of each substantive division and operational unit, so that the flexible workplace strategies implemented could adequately address local user requirements.

48. Once the lead consulting firm is on board, the information gathered in the interviews will be integrated into the design planning. The design is expected to be completed by mid-2020.

H. Other matters

49. The General Assembly, in its resolution [73/279 A](#), requested the Secretary-General to provide more detailed information on seismic mitigation measures in his future reports on the project (sect. X, para. 11).

50. The seismic mitigation measures that will be defined in detail as part of the structural engineering services are included in the lead consulting firm's contract. The scope of services requires the engineers to provide modelling simulation software, which will provide a detailed analysis of the behaviour of the existing base building structure during a high-intensity seismic event. From the simulation, the engineers will recommend required remedial actions as needed. The same analysis will provide required loads of the new structural components to reinforce the building.

51. The structural engineering services will consider, among other mitigation measures, reinforcements, insulation and dissipation technologies that are compliant with current national regulations, which require conventional structures to be designed to: (a) resist moderate intensity seismic movements without damage; (b) limit damage to non-structural elements during medium-intensity earthquakes; and (c) avoid collapse during earthquakes of exceptionally severe intensity, safeguarding the life of building occupants.

52. The General Assembly, in its resolution [73/279 A](#), requested the Secretary-General to further develop an energy efficiency strategy in regard to redirecting energy to the ECLAC compound, including returning surplus energy, if any, to the national grid (sect. X, para. 9).

53. The 2,000 m² photovoltaic plant to be installed on the roof of the building will have an estimated annual production of 478,600 kWh,² which would be used according to the following strategy:

(a) Seventy-five per cent of the total annual estimated energy production (358,950 kWh) will be used directly to cover the operations of the North Building, equivalent to the required hours of operation of the North Building;

² Based on a simulation provided by software from the Ministry of Energy of Chile, which evaluates geographical and climatic variables based on the specific location of the North Building.

(b) Twenty-two per cent of the total energy produced (105,292 kWh) will be injected into the ECLAC internal electrical grid, which will partially fulfil the energy supply requirements of other facilities in the ECLAC compound;

(c) An estimated 3 per cent of the energy produced (14,358 kWh) will be placed into the national power supply grid by means of a bidirectional meter;

(d) Energy storage through lithium batteries is not included in the project owing to the high acquisition and maintenance costs of these storage elements, which require costly battery replacement.

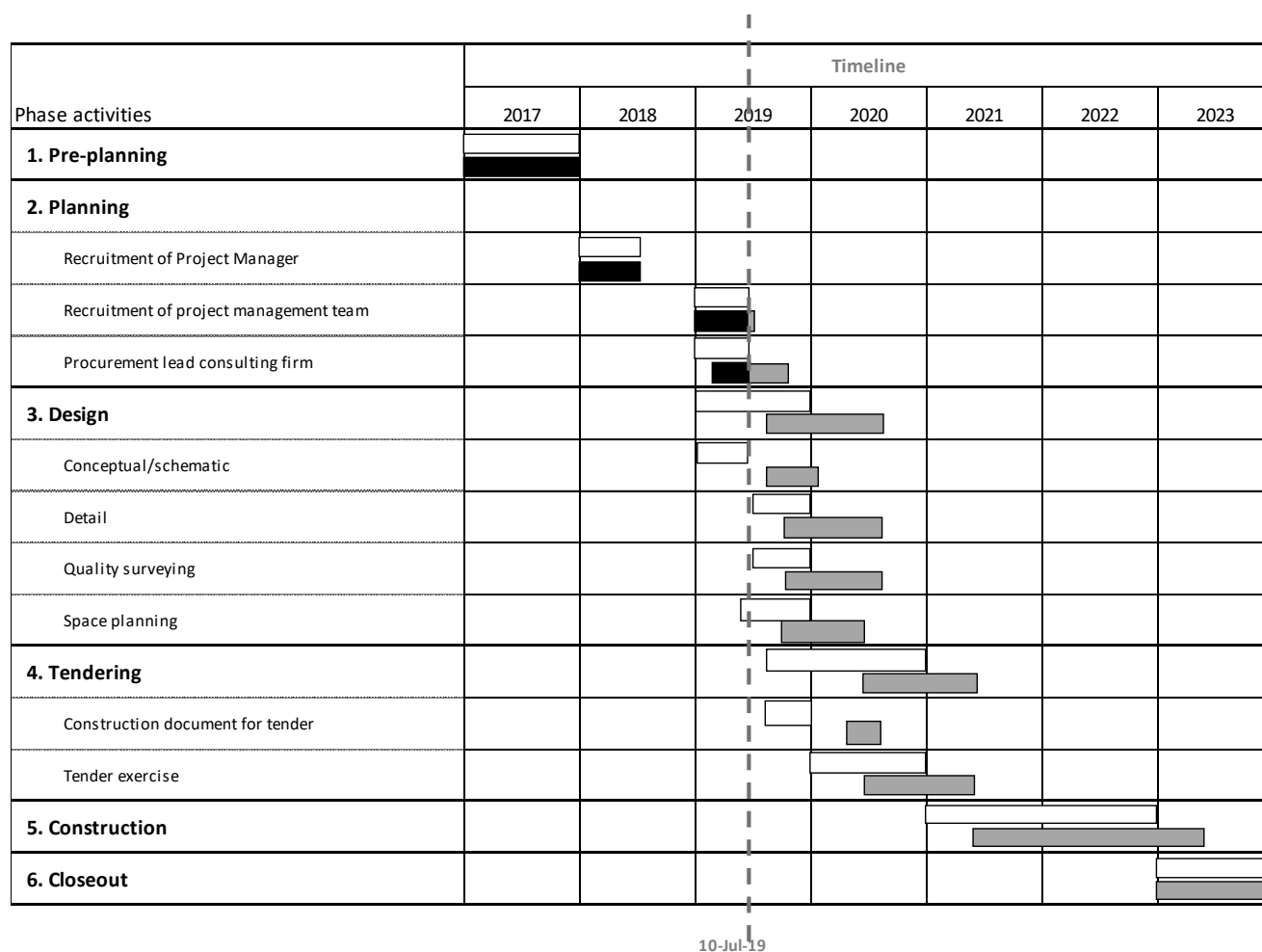
54. The generation of photovoltaic energy together with the 40 per cent reduction in energy consumption in the North Building will result in an overall reduction of 30 per cent in energy consumption in the ECLAC compound.

55. The swing space strategy for the construction period includes the use of three different locations within the ECLAC compound and a 370 m² temporary modular building, which will be located in the south parking lot of the compound and will accommodate approximately 66 persons. All swing space areas will have an open plan design with individual desks, grouped according to the organizational chart of each substantive or operational division. These spaces will include all basic requirements for the continuity of operations, such as data networks, Wi-Fi network and printers, as well as life safety and security features, including fire detection, alarm systems, strobe lights and audible notification appliance systems, compliant with prevailing fire codes.

I. Project schedule

56. Figure III provides an updated project schedule, indicating activities completed by the end of June 2019 and adjustments of the proposed programming regarding ongoing and future processes.

Figure III
Project schedule



- Original project schedule as set out in the previous report of the Secretary-General (A/73/351)
- Actual schedule achievement as at June 2019
- Post-July 2019 revised schedule

57. An additional three months has been incorporated for the development of the scope of work for the lead consulting firm, as compared with the original planning period set out in the previous report (A/73/351), in order to coordinate the requirements for the definition of the multiple engineering scopes needed to achieve a “net zero” building. The additional period also included the consolidation of the terms of reference for building information modelling, as well as the definition of the technical evaluation criteria.

58. The procurement process for the lead consulting firm started in March 2019, with the launch of a request for expressions of interest, followed by the release of the request for proposals out to the market in May 2019.

59. To mitigate slippage on the overall progress of the project, the following measures have been taken:

- (a) Review and adjustment of the schedule for the planning and design phases, compiling necessary technical documents that may be required for future bidding processes;

(b) Review of the procurement process and detailed planning required in the schedule of the general construction services. This includes identifying areas that can be completed in advance of bid tenders, such as registering potential vendors, issuing expressions of interest and reviewing necessary contractual documents. The project team will also coordinate closely with the Global Asset Management Policy Service on lessons learned;

(c) Identification of systems that could potentially be procured or purchased directly by ECLAC once the engineering design is in place. It may be possible to purchase certain items in advance of the construction bid tender in order to save time on equipment with a long lead time;

(d) Early start of the equipment handover process, performance of the review processes of each of the installed systems as it is completed and commencement of the process of as-built drawings with the general contractor and subcontractors.

VI. Project expenditure and anticipated costs

A. Status of expenditure and projected expenditure up to the end of 2019

60. In its resolutions [72/262 A](#) (sect. V, para. 10) and [73/279 A](#) (sect. X, para. 13), the General Assembly approved a total amount of \$836,700 for the project for the period 2018–2019. The cumulative expenditure as at 30 June 2019 was \$167,400 and the projected expenditure for the remainder of 2019 amounts to \$609,600, of which \$433,100 relates to the lead consulting firm, for which a contract is expected to be awarded by the end of the third quarter of 2019. More details are provided in table 1.

Table 1

Status of expenditure as at 30 June 2019 and projection for the remainder of 2019

(Thousands of United States dollars)

	<i>Appropriated project funding for the period 2018–2019</i>	<i>Cumulative expenditure as at 30 June 2019</i>	<i>Projected expenditure from 1 July to 31 December 2019</i>	<i>Total projected expenditure for 2018–2019</i>	<i>Projected unused balance at the end of 2019</i>
	(a)	(b)	(c)	(d)=(b)+(c)	(e)=(a)-(d)
Section 33, Construction, alteration, improvement and major maintenance					
1. Construction costs	–	–	–	–	–
2. Professional services	490.0	56.9	433.1	490.0	–
3. Escalation	–	–	–	–	–
4. Contingency	35.0	–	35.0	35.0	–
Subtotal, section 33	525.0	56.9	468.1	525.0	–
Section 21, Economic and social development in Latin America and the Caribbean					
5. Project management	311.7	110.5	141.5	252.0	59.7
Subtotal, section 21	311.7	110.5	141.5	252.0	59.7
Total	836.7	167.4	609.6	777.0	59.7

61. As shown in table 1, a balance of \$59,700 is projected to remain unused at the end of 2019, reflecting lower expenditure under project management owing to the slightly later-than-expected onboarding of some of the project staff. With the

onboarding of the Architect in August 2019, expenditure under this heading will reach the level consistent with original budget estimates.

B. Resource requirements for 2020

62. The resource requirements for 2020 are shown in table 2. The total projected expenditure for 2020 amounts to \$448,800, comprising:

(a) \$345,500 under section 21, Economic and social development in Latin America and the Caribbean, related to the cost of the project management team. This will provide for the continuation of the project management and support 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) \$103,300 under section 33, Construction, alteration, improvement and major maintenance, for professional services related to the lead consulting firm, the independent risk management firm, travel costs and the provision for contingency.

Table 2

Resource requirements in 2020

(Thousands of United States dollars)

	<i>Projected expenditure in 2020</i>	<i>Projected unused balance at the end of 2019</i>	<i>Net funding requirement in 2020</i>
	<i>(a)</i>	<i>(b)</i>	<i>(c)=(a)-(b)</i>
Section 33, Construction, alteration, improvement and major maintenance			
1. Construction costs	–	–	–
2. Professional services	98.0	–	98.0
3. Escalation	–	–	–
4. Contingency	5.3	–	5.3
Subtotal, section 33	103.3	–	103.3
Section 21, Economic and social development in Latin America and the Caribbean			
5. Project management	345.5	59.7	285.8
Subtotal, section 21	345.5	59.7	285.8
Total	448.8	59.7	389.1

63. Since the project funding is recorded under a multi-year construction-in-progress special account, approved by the General Assembly in resolution [73/279 A](#), the anticipated unused balance of \$59,700 at the end of 2019 will be carried forward and will offset part of the resource requirement of \$448,800 in 2020. Consequently, the net resource requirement to be appropriated for 2020 amounts to \$389,100, comprising: (a) \$285,800 under section 21, Economic and social development in Latin America and the Caribbean; and (b) \$103,300 under section 33, Construction, alteration, improvement and major maintenance, of the proposed programme budget for 2020.

VII. Next steps

64. Actions to be undertaken during the forthcoming reporting period are as follows:

- (a) Award contract award to the lead consulting firm and commence work;
- (b) Hold coordination meetings with project stakeholders and the design team to advance the design phase of the project;
- (c) Conduct regular updating and tracking of the risk management register, escalating risks as needed and tracking the mitigation of risks through to final sign-off;
- (d) Carry out tendering for the temporary modular building required to partially fulfil the swing space requirements in the last quarter of 2020;
- (e) Commence the preparation works for the temporary spaces within the existing buildings that will be used as swing space during the construction phase;
- (f) Upon appropriate design and engineering of infrastructure systems (to be finalized by the end of 2020), commence the tendering processes for HVAC equipment, photovoltaic components, furniture and other equipment to shorten importation lead times through parallel tendering of the construction works;
- (g) Upon finalization of the architecture and engineering tendering documents, issue the tender for construction services to commence the construction work by early 2021, including logistics and construction waste management strategies, in line with the circular economy concept.

VIII. Recommended actions to be taken by the General Assembly

65. **The General Assembly is requested:**

- (a) **To take note of the progress made since the issuance of the previous report of the Secretary-General;**
- (b) **To take note of the revised cost plan;**
- (c) **To appropriate an amount of \$389,100 for the project in 2020, comprising \$285,800 under section 21, Economic and social development in Latin America and the Caribbean, and \$103,300 under section 33, Construction, alteration, improvement and major maintenance, of the proposed programme budget for 2020, which would represent a charge against the contingency fund.**

Annex

Revised cost plan

(Thousands of United States dollars)

	2018 ^a	2019	2020	2021	2022	2023	Total	Reported in A/73/351	Change
Section 33, Construction, alteration, improvement and major maintenance									
1. Construction costs									
1.1 Building costs	–	–	–	3 259.0	3 059.0	–	6 318.0	6 318.0	–
1.2 Energy efficiency systems	–	–	–	885.0	885.0	–	1 770.0	1 770.0	–
1.3 Swing space costs	–	–	–	200.0	150.0	–	350.0	400.0	(50.0) ^b
1.4 Physical security system	–	–	–	231.0	231.0	–	462.0	462.0	–
2. Professional services									
2.1 Consultancy	–	350.0	53.0	125.0	125.0	53.0	706.0	706.0	–
2.2 Risk management	36.4	73.6	30.0	30.0	30.0	–	200.0	200.0	–
2.3 Travel costs	–	30.0	15.0	20.0	20.0	–	85.0	85.0	–
3. Escalation	–	–	–	712.0	931.0	14.0	1 657.0	1 657.0	–
4. Contingency	–	35.0	5.3	521.2	523.1	6.7	1 091.3	1 091.3	–
Subtotal, section 33	36.4	488.6	103.3	5 983.2	5 954.1	73.7	12 639.3	12 689.3	(50.0)
Section 21, Economic and social development in Latin America and the Caribbean									
5. Project management									
5.1 Dedicated project management and support	40.0	190.6	307.7	325.4	339.7	352.7	1 556.1	1 556.1	–
5.2 Project Coordinator at Headquarters (25 per cent of costs, cost shared with the United Nations Office at Nairobi)	–	21.4	37.8	37.8	37.8	–	134.8	134.8	–
Subtotal, section 21	40.0	212.0	345.5	363.2	377.5	352.7	1 690.9	1 690.9	–
Total	76.4	700.6	448.8	6 346.4	6 331.6	426.4	14 330.2	14 380.2	(50.0)

^a Reflects actual expenditure.^b The decrease of \$50,000 under swing space costs is in accordance with section X, paragraph 14, of General Assembly resolution [73/279 A](#).