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DESIGN BRIEF FOR PHASE 2 OF THE BELMONT PLAN (FONTENOY SITE) AND REPORT ON THE RESTORATION AND IMPROVEMENT OF UNESCO HEADQUARTERS (MIOLLIS/BONVIN SITE)

OUTLINE

Source: 31 C/Resolution 62.

Background: At its 31st session, the General Conference requested the Director-General:

to undertake a design brief, including aspects relating to future maintenance in Phase 2, to determine UNESCO's requirements in the light of the Medium-Term Strategy (2002-2007) and decentralization policy and to set an order of priority for the work scheduled under Phase 2 of the Belmont Plan. The design brief was considered by the Executive Board at its 165th session (165 EX/INF.4) and was also examined by the Headquarters Committee at its 148th session, on 9 September 2002;

to invite the French Government kindly to extend Mr Belmont's mission to allow him to give an opinion on the building at the Miollis/Bonvin site. The report prepared by Mr Belmont was considered by the Executive Board at its 166th session (166 EX/INF.4) and was also examined by the Headquarters Committee at its 149th session, on 3 December 2002.

Purpose: This document comes in addition to document 32 C/40 and presents, on the one hand, the design brief for work to be carried out on the Fontenoy site and, on the other, the report on the restoration and improvement of the Miollis/Bonvin site.

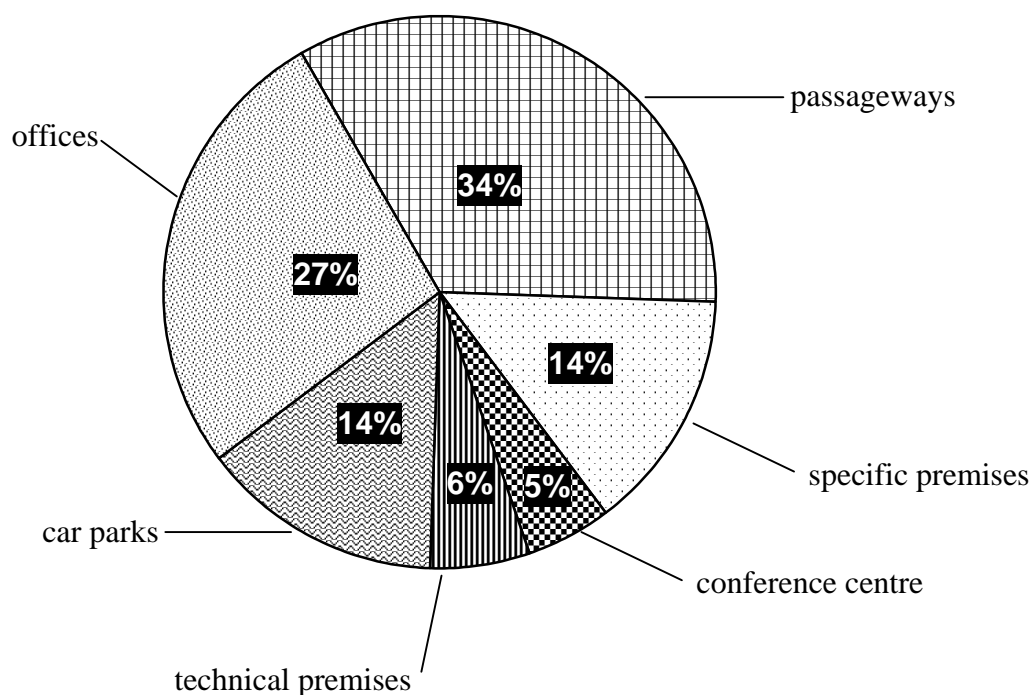
Decision required: This document requires no decision.

DESIGN BRIEF FOR PHASE 2 OF THE BELMONT PLAN (FONTENOY SITE)

A. SUMMARY

PHASE 2 AND THE “DESIGN BRIEF”

1. The General Conference at its 31st session requested the Director-General to undertake a design brief, including aspects relating to future maintenance in Phase 2, to determine UNESCO's requirements in the light of the Medium-Term Strategy (2002-2007) and decentralization policy and to set an order of priority for the work scheduled under Phase 2 of the Belmont Plan.
2. The company ACE was designated to draw up the design brief. The work should be carried out from 2004 to 2008. This preplanning exercise consists of two parts: a functional part and a technical part.
3. The **functional part** involves an analysis of the present situation. With a view to determining more clearly the work to be carried out, it puts forward two options concerning the staff of UNESCO.
4. The first option may be presented as follows. The vacating of premises as a result of the decentralization of services should enable office holdings to be consolidated at Fontenoy while the space vacated in Building VI on the Bonvin site should provide better premises for the delegations, which are at present accommodated in very cramped conditions in Building V.
5. The second option provides for the flexible adaptation of offices to as yet unidentified needs, either by moving partitions or by creating “hot-desking” areas in 10% to 20% of the available space for mobile staff (consultants, temporary assistance, trainees, etc.). A detailed breakdown of the occupation of premises by units, which depends on decisions, as yet unknown, on the restructuring of UNESCO, is not part of the present study. On the other hand, provisional proposals for the layout after the works have been completed, aimed *inter alia* at creating unallocated areas on each floor, would facilitate the adjustments made necessary by the structural changes for the delocalization of some activities. It should nonetheless be pointed out that a number of units at the Miollis/Bonvin site could return to Fontenoy after Phase 2 of the work has been completed.
6. It should be noted, however, that the decentralization process and the transfer of staff members from Headquarters for the purpose of increasing human resources in field units have not yet resulted in a significant reduction in the Organization's needs for office space and workplaces at Headquarters. The transfer of staff during the current biennium (164 EX/5, Part III) falls far short of the number needed to offset the growing number of requests for additional offices by the Permanent Delegations (47 offices in August 2002). Hence, the effects of this process on the definition of the Organization's requirements in the design brief can be disregarded for the time being.
7. In connection with the design brief, a new study has been carried out on the occupation of offices at the Headquarters of the Organization. A summary of the findings can be seen in the following diagram:



8. The diagram highlights:

the large amount of space occupied by passageways, accounting for a third of the surface area, which arises both from the nature of the premises and the architectural design of the buildings;

the extent likewise of premises with specific functions, such as the Restaurant Service, the Commissary, the libraries, shops, print-shop, exhibition space, etc., i.e. usable floor area that is not taken up by offices, technical premises or the Conference Centre;

the relatively small proportion of space occupied by the Conference Centre.

9. The analysis may be taken further by considering the figures provided in the following table and, in particular, the figures for offices and staff and those for premises with specific functions:

Posts at Headquarters 2002-2003, regular programme (1,417) and extrabudgetary (260) (excluding temporary staff: consultants, supernumeraries, temporary posts, ALDs, etc.)	1,677	
Number of offices at Headquarters allocated to the Secretariat		1,806
Number of offices at Headquarters allocated to Permanent Delegations		547
Number of offices at Headquarters allocated to the Conference Centre		29
Number of offices at Headquarters allocated to NGOs		60

Number of offices at Headquarters allocated to other than Secretariat services (Mediators, External Auditor, Appeals Board, ancillary services, etc.)		34
Number of offices at Headquarters allocated as meeting rooms and for training (FABS, languages, etc.)		90
Total number of offices at Headquarters, all buildings		2,566

10. With regard to office space, these data make it possible to calculate the surface area per member of the Secretariat, which is 15 square metres. This figure is quite low considering the large number of personnel, including high-level consultants, working on temporary contracts, and also the documentation services of the sectors and services. This situation appears unavoidable insofar as it is deemed necessary by the sectors concerned, some of which have even given up one of their meeting rooms to accommodate extra staff.

11. The growing number of projects funded from extrabudgetary resources also results in an increase in the number of extrabudgetary posts. For example, in Appendix VII of document 30 C/5 the number of extrabudgetary posts is put at 87 whereas in document 31 C/5 the figure is 141 posts. In actual fact, the number of extrabudgetary posts at Headquarters in August 2002 was 260. Thus, the reduction in regular programme staff is more than offset by the increase in the number of posts financed by extrabudgetary resources.

12. As indicated above, the wholly justified requests of Permanent Delegations for more space are a major factor to be taken into account in the context of this study.

13. The general conclusion to be drawn from this analysis is that Phase 2 of the Belmont Plan as conceived in 1999 is still valid.

The **technical part** consists of the following three elements:

- Establishment of the technical programme by sections

14. The contents of Phase 2 as set out in this study incorporates two changes in relation to the Belmont Report.

15. The first change is to make optional a number of budget items that are not essential to the objectives of the site's restoration and improvement. This concerns the installation of the art gallery on the ground floor, the creation of a staircase between the ground floor and the first basement, and the clearance of the area in the vicinity of the wall decorated with Miró's work.

16. The second change is to incorporate the option for the overall air-conditioning of the premises into the basic scheme in order to ensure the best working conditions for staff, having regard to the orientation of the office façades.

17. These choices are justified by the desire to remain within budget while incorporating all the technical parameters modified by this study and, in particular, by the need to balance the budget following the installation of air-conditioning in all the offices.

- Establishment of a tentative plan for carrying out the work

18. The plan envisages a duration of five years for the operation, including one for the studies by the architectural and engineering team and four for the actual works. This means, in the case of the studies begun in 2004, completion of the works in 2008 (including temporary relocations and reinstallations). The plan provides for moving the units in two complete levels at one time; the duration of the works for the two levels concerned being put at one year. Provisional accommodation will be built on the piazza over Building IV during the studies by the architectural and engineering team and prior to the beginning of the works.

- Establishment of the provisional budget

19. The provisional budget for Phase 2 is based upon the studies contained in the report produced by Mr Belmont in December 1999. The budget, which then amounted to €61,918,589 (excluding tax), has been recosted to take account of the changes in economic conditions since 1999. It will amount, at the date when the work will foreseeably be carried out, to €79,874,979.94 (excluding tax) (value January 2004).

We should recall that Phase 2 of the work comprises: the completion of safety work, the renovation of the glass façades, the renovation of the solid façades, the modernization of offices and the temporary relocation of staff (Annex I).

20. The apportionment of the expenditure is as follows:

2004	2005	2006	2007	2008	Budget €
7,977,927	18,589,497	17,604,331	18,297,435	17,405,789	79,874,980

21. The impact of Phase 2 of the work on the maintenance and upkeep of Headquarters is directly linked to the technical choices to be made during future design studies; only the general approach can be outlined in this study. It should be recalled that the sums currently allocated for maintenance and upkeep by UNESCO are notoriously inadequate and that this underfunding has led, in large measure, to the need for the complete renewal of a number of structures and fittings: sunbreakers, blinds, electrical and fire safety equipment, air-conditioning of the conference rooms, etc. Thus no significant savings can be anticipated under this budget heading having regard to the works envisaged. On the other hand, these works should make it possible to introduce a rational plan for short-, medium- and long-term preventive maintenance. Such a plan would enable work to be carried out preventively, worn-out elements to be replaced before they break down, obsolete systems to be replaced before they are completely dilapidated and the general dysfunctioning of certain equipment to be avoided.

22. A comprehensive study will make it possible to frame strict specifications for the materials and equipment installed by firms; it will take account of the recommendations of the architectural and engineering team and of the materials proposed by firms in order to arrive at a rational choice. This study will be conducted in two phases: the first after the technical options have been determined by the architectural and engineering team (Preliminary Design Phase) and the second prior to the signing of the work contracts, following the response from firms.

B. TECHNICAL PROGRAMMING

B.1 General remarks/limits of the study

23. The purpose of this technical schedule is to define the limits of the work and the constraints relating to the execution of Phase 2 of the project; a summary version is contained in the Belmont Plan.

24. The schedule will serve as an analytical tool for the architectural and engineering teams tendering for the work of designing and overseeing the execution of the project, aimed at achieving the expected qualitative and quantitative results.

25. The modifications proposed by the designers shall comply with all laws and regulations applicable to this type of building in France, and in particular:

the Code de la Construction et de l'Habitation (Building Laws and Regulations), General Provisions;

the Code de l'Environnement (Environment Code);

the Code du Travail (Labour Code), Volume 2;

the Code de la Santé Publique (Public Health Code);

non-codified texts applicable to the construction of office buildings.

26. The technical codes and texts published by the Centre Scientifique et Technique du Bâtiment (C.S.T.B.) under the heading of Documents Techniques Unifiés (D.T.U.) and the rules for the use of the products – themselves in conformity with the relevant European standards – shall be duly applied.

27. Fire safety

The complex is classified as a building open to the public (E.R.P.).

Building I is classified as type W from the ground floor to the sixth floor, as type N on the seventh floor and partly as types T and S on the ground floor.

Building II is classified as type L.

Buildings III and IV are classified as type W.

The fire-safety measures approved by the Paris Préfecture are dealt with in the document annexed hereto.

28. This study sets out all the technical measures but is not intended to take the place of the subsequent architectural and engineering studies.

The solutions proposed reflect UNESCO's concerns as to the direction that the designers' research should take; however, these solutions may naturally be adapted to reflect the findings of this research and any changes in the relevant regulations.

B.2 The context: recapitulation of the contents of phase 1

29. The work carried out during the two stages making up Phase I concerned urgent fire safety work on the site: compartmentalization, insulation of premises at risk and of the car park, the fire-safety system (S.M.S.I.).

30. This work is listed in the annexed “Master Plan” document.

31. The following list sets out concisely the types of work to be carried out during the second stage of Phase 1.

Most urgent safety work

Safety work not carried out during the first stage and basic security measures.

LIST OF WORKS BUILDING BY BUILDING

Building I

Renovation of glass and concrete façades

Fire safety landing for disabled persons

Insulation/library

Smoke extraction/library

Check allowance made for substandard width of emergency stairs

Safety sign on isolated step at seventh-floor level, stairwell 1 A

Separation of stairwell 1 B at ground-floor level

Replacement of extractors in sanitary facilities, including power supply

Installation of guard post at Fontenoy entrance and reorganization of the service

Building II

Removal of needle-bolts, Room I

Separation of flights on the circular staircase, Room I

Insulation of basement

Anchoring of seats

Creation of additional exit, Room VIII

Changing hand of doors, Rooms VI, VII, VIII

Construction of exterior doors onto patio, Rooms V, X, XI

Smoke extraction system, conference hall walkways

Installation of hose station system, completion of

Renovation of security lighting

Partitioning of premises at risk

Treatment of Room IX

Building III

Separation of stairways at ground-floor level

Building IV

Compartmentalization, including two exits

Construction of two outside exits

Construction of landings leading outside

Insulation of offices in conference areas

Construction of stairways in the patios

Removal of the moving staircases between the car park and the ground floor, and construction of a staircase with two lifts

Basement

Alteration of the hose station system

Construction of a larger solvents locker

Replacement of electrical equipment/substandard protection rating

Car park

Creation of three compartments

Treatment of upper floor, and beams/fire resistance 3hrs

Removal of moving staircases

Ventilation/smoke extraction of the three compartments

Construction of an additional, central exit

Construction of staircase in patio

LIST OF WORKS BY SECTIONS

Façades

Replacement of sunbreakers

Heavy electrical current

Improvement of load shedding between transformers

Replacement of neutral elements to give an earthed electrical system protecting neutral (T.N.S.)

Renovation of low-voltage supply

Standardization of generator

Security lighting

Standardization of installations and renovation of lighting in conference rooms

Low-voltage supply

Renovation of horizontal and vertical supply in Buildings I and II

Renovation of earthed circuits

Signposting of electrical cut-off switches

Renovation of office electrical supply (currently by lower level and Ferrel terminal, not separated by level)

Renovation of lighting in passageways

Treatment of battery-charging room

Servocontrols

Additional work

MAINTENANCE/UPKEEP

32. The fundamental question of ensuring the longlastingness of the equipment put in place should be the subject of specialized studies based on the development of specialized tools (some of which UNESCO possesses) and, first and foremost, on the preparation of plans of equipment holdings, upon completion of the work, enabling resources to be easily and regularly upgraded.

33. These plans should provide all the technical information essential to execution of a short-, medium- and long-term maintenance schedule (updating of previous schedule).

B.3 Definition of work for Phase 2, by section

34. This schedule needs to be taken in conjunction with the work plan interlinking the execution of certain sections. It makes no assumptions about the method of assigning and parcelling out any architectural and engineering tasks that might be put out to tender at a later date.

35. Façades

Here the specifications of the Belmont Plan will be strictly applied.

These are of two kinds:

Fidelity to the original architectural design;

Maximum conformity with the regulations (RT 2000) with a view to energy conservation.

36. This work will be carried out at the same time as the installation of fan convectors against the façades, the convectors being supplied through the hollow posts at two panel intervals.

Glass façades of Building I and Building III

37. The present façades consist of single-glazed windows, composed of aluminium strips mounted on the original wood frames retained in the apron wall section, which has a wired glass façade with hardboard on the inside. External, manually adjustable metal venetian blinds, make it theoretically possible to reduce the sunlight. The half-panels at the end of each façade date from the construction of the building.

38. These window fittings have suffered a great deal of damage and the absence of insulation in their design means that the components will have to be completely renewed in order to save energy and thus to release for investment the funds currently required for the building's operation.

39. The elements to be installed can be fitted from inside the building. They will match the lines of the original components, with a ventilation grille for fresh air intake in the apron wall.

40. The glazed components will consist of wood sections, cold-bridge-free metal sections or else solid-wood or glulam sections, and high-performance double or triple glazing with low heat-loss ($U=1.9 \text{ W/m}^2\text{K}$ to east and north, and $U=1.6 \text{ W/m}^2\text{K}$ to south and west). The apron wall will have enamelled glass on the outside to preserve the aesthetic quality of the façade, insulated in conformity with the specifications of RT 2000.

41. In accordance with energy saving requirements, office heating will be cut off when the windows are opened.

The sealing joints and the connecting joints for the masonry will be closely studied. The window fittings should make it possible to achieve an air/water/wind rating of A3E2V3.

42. The system of manually adjustable external blinds will be retained. An in-depth study will identify the products most likely to keep servicing and maintenance costs down. The designers will look in detail at wind action and the acoustic and functional effects related to wind strength.

43. The heating engineer will study closely the size of the air intake grilles and air flow path.

Finally, the replacement of the window fittings will reflect the concern with technical efficiency that characterized the installation of the original modules.

44. The components of the façade may be replaced as the other work progresses floor by floor.

45. The work will also include the replacement of all the single-panel outside metal doors by insulated units.

Glazed façades of Building IV

46. This building at present has traditional aluminium-frame curtain walls with single glazing.

47. The intention is to replace all the curtain walls on this building, using techniques that offer the best possible thermal performance: a framework of wood or cold-bridge-free metal sections and high-quality double or triple glazing.

48. The performance expected is identical with that for the window fittings on the other buildings but linear heat loss could be reduced by overall treatment of masonry interfaces.

The size of the glazed sections, opening and fixed, and the apron walls is such that each patio is easily accessible.

Stone-clad façades and gable walls

49. Some façades and gable walls have a marble stone cladding, the state of which needs to be checked. All such façades and gable walls will be cleaned as appropriate, having regard to the nature and state of the stone. Elements that are fractured or detached from their structural surface will be replaced or repaired.

Concrete façades

50. All such façades and gable walls will be cleaned in a manner appropriate to the original treatment of the original architectural concrete and its state. Decayed or damaged elements exhibiting cracks or spalling or which are likely to become detached will be repaired in such a way as to resemble the existing surfaces, which have weathered with time.

External emergency stairs, canopies

51. The concrete parts of these structures outside of Building I will be treated. The metal guard-rail and the access paths to the central emergency stairs will be brought up to standard.

Heating/air conditioning

52. The buildings are at present heated from a C.P.C.U. sub-station and by convectors supplied from the façades. Only a few conference rooms are air-conditioned and some offices have been fitted with independent units.

53. The intention is to install air conditioning in all of the offices by means of fan convectors installed on the window side, with air recirculation through exhaust ducts along the corridor walls (or false ceilings).

54. A double ventilation system will be put in place, with heat exchangers, for corridors and specific areas: windowless conference rooms, etc. The air will be fed in through existing ducts at

the end of each wing, so that each façade can be regulated independently and adjustments made for each level and half-façade.

In view of the considerable reduction in heat loss resulting from the external fittings, it is expected that substantial energy savings will be made.

55. Heat will continue to be supplied by the Compagnie Parisienne de Chauffage Urbain (C.P.C.U.). The contract may be renegotiated depending on the new estimated consumption. The present contract may prove to be disadvantageous if consumption is significantly reduced.

These modifications will indirectly bring about changes in the operating conditions and the terms of upkeep and maintenance (outside contracts, organization of workshops, ...), which should generate further savings.

56. Some of the work to reduce the energy bill could, in theory, qualify for French and European funding earmarked for such improvements.

57. The entire distribution, production and regulation system will be renewed. Serious consideration must therefore be given to Centralized Technical Management (CTC) and its links with other information delivery systems.

The designers will also look closely at the domestic hot water supply for the kitchen and its rational management having regard to RT 2000, energy savings and work qualifying for subsidies.

58. Cold-air production could take several forms, the relative advantages of which should be investigated: independent production and energy recovery, production by Climespace, or composite solutions.

59. Taking actual office occupancy into account, it should be possible with the group of systems managed by CTC to manage the various energy supplies in such a way as to provide a close match with real needs.

60. The ventilation of technical and sanitary installations and staff rest rooms will be considered separately.

The reference temperatures for offices, set as targets, are:

In winter: 20°C+/-1°C

In summer: 24°C+/-1°C

Users will be able to adjust the temperature of their offices by +/-2°C.

Electricity/lighting

61. The electrical system from the rising mains will be completely reconstituted, and will include the installation of electrical boxes on each floor. The installations will enable multiblocks to be installed in the offices; the equipment per person will be at least one block of three earthed three pin 15A sockets, a socket with indexing pin for later installation of pulsating current, and four RJ45 sockets (computers and telephones). Office lighting will provide 350 lux at work desks and 250 lux in the corridors.

62. Office lighting will be controlled from each office. Out of office hours, it will be possible to control lighting centrally, on each level and for each wing. This system will be programmable from the central control room and may be adjusted by individual users for their own offices.

63. The supply cables will be housed behind the reconstructed walls in ducts running along the corridors (or in the false ceilings).

Finishings

64. The goals are:

to create the conditions for easy maintenance,

to provide better sound insulation between premises.

65. Maintenance goals

The flooring will comply with a minimum rating of U4P3C2E2. It will be antistatic and fungicidal. The materials will be standard for all premises, with colorimetric variations for identification purposes.

The wall coverings will also be easy to maintain and highly shock-resistant.

Mechanical strength:

Load-bearing/supporting capacity, 200 kg/ml max., lateral shock without deformation or destabilization of the wall: 240 joules.

66. Acoustic goals

The wall materials, door assemblies and false ceilings will provide noise attenuation of 44dB(A) between offices and between offices and corridors, possibly increasing to 48dB(A) in the vicinity of meeting rooms and certain offices where greater confidentiality is required.

The walls between the offices will be dry partitions that may be removed without altering the building's structure.

The corridor walls will house all the fluid distribution ducts, and any corresponding control and protective devices.

Having due regard for the architectural volumes, the designers could propose the replacement of the present heavy false ceilings with light false ceilings that would meet the acoustic requirements and facilitate fluid distribution.

Telephony/Information Technology

67. The site has centralized facilities located in the computer room in the basement. The network cabling system is currently haphazard since it has been established in response to piecemeal requests from different units. It starts from the computer room and feeds into all the premises in buildings I, II, III and IV.

Space in one of the rooms at the centre of the building, at present used as a cloakroom for the cleaning staff, could be used to cable Building I vertically with optical fibre. Such premises would

house the active elements (hubs, etc.) and constitute the departure point for distribution along the corridors of each wing, using dedicated cables and category 6 cables supplying the RJ45 sockets.

Certain specific premises will be fitted with additional RJ45 sockets: fax and photocopy rooms, technical premises. Ceiling installations will make it possible to connect any security-related equipment.

There will be four RJ45 sockets for each staff member in the offices.

68. Telephony

The present automatic switchboard can easily cope with needs. The call distributors are currently being modernized. The work required during Phase 2 only involves the establishment of connections from the distributors on the different floors to the terminals in the offices through the cables described above.

Voice/Data/Image Network

69. A VDI network is already in existence: the monitors relay the proceedings in Building II to certain offices. This system will be retained.

B.4 Budget

70. Technical basis: this simulation supposes that the work will be carried out using the best techniques conceivable at this stage of the studies.

Building I: two levels at a time, ground floor and seventh floor on an overlapping schedule

Building II: one level at a time + compartmentalization

Building III: separate, concurrently with other work

Maintenance: replacement work

Table annexed.

B.5 Planning of works and temporary relocations

Relocation proposals

71. The area required for the purpose of re-accommodating the most densely occupied level of Building I is 130 standard units, equal to 2145m² of office space, adding a ratio of 1.15 for the corridors: 2500m². Or, for two floors: approximately 5,000m².

Available surface (after removal of flagpoles): roughly 5200m² on one level, subject to check on load-bearing capacity.

Year 2004

General studies and provisional IT arrangements. Relocation of third and fourth floors containing the units of the Education Sector (ED); these offices will be installed in temporary site accommodation. The vacated areas will be used as a temporary relocation zone.

Year 2005

First relocation of part of the seventh floor (445.5 m²), of the sixth floor and of the entire fifth floor of Building I. The seventh floor could be installed in a separate building near to the entrance to the conference rooms, or else in unoccupied offices, when the General Conference is not sitting, subject to appropriate planning. The fifth and sixth floors to be installed for a year on the third and fourth floors, which will be cleared and will remain unrenovated. Work on the fifth and sixth floors, reinstallation of units at the end of the year.

Year 2006

Work on third and fourth floors.
Reinstallation of units.

Year 2007

First and second floors move to temporary site accommodation
Work on first and second floors.
Work on Building III (126 offices) with relocation of one floor at a time

Year 2008

Building IV relocated to temporary site accommodation
Work on Building IV, including two relocation operations.

Planning

72. A four-year completion period (not counting studies) represents the optimum solution in terms of project execution. The standard schedule offers contractors savings with regard to site installation, hence in terms of the amortization of equipment, labour costs and the number of relocations/reinstallations. The result will be cost savings for UNESCO, in terms of the length of time that the buffer installations required for the relocation of units have to be rented.

Mode of operation

73. The studies on the relocation operations and on the renovation of heat generation and primary distribution are separate from the general architectural and engineering studies and must be tackled simultaneously. These studies will make it possible to bring forward the work on the horizontal connections from the sub-stations to the new rising columns.

It will thus be possible to connect the completed floors to heat production as the work advances.

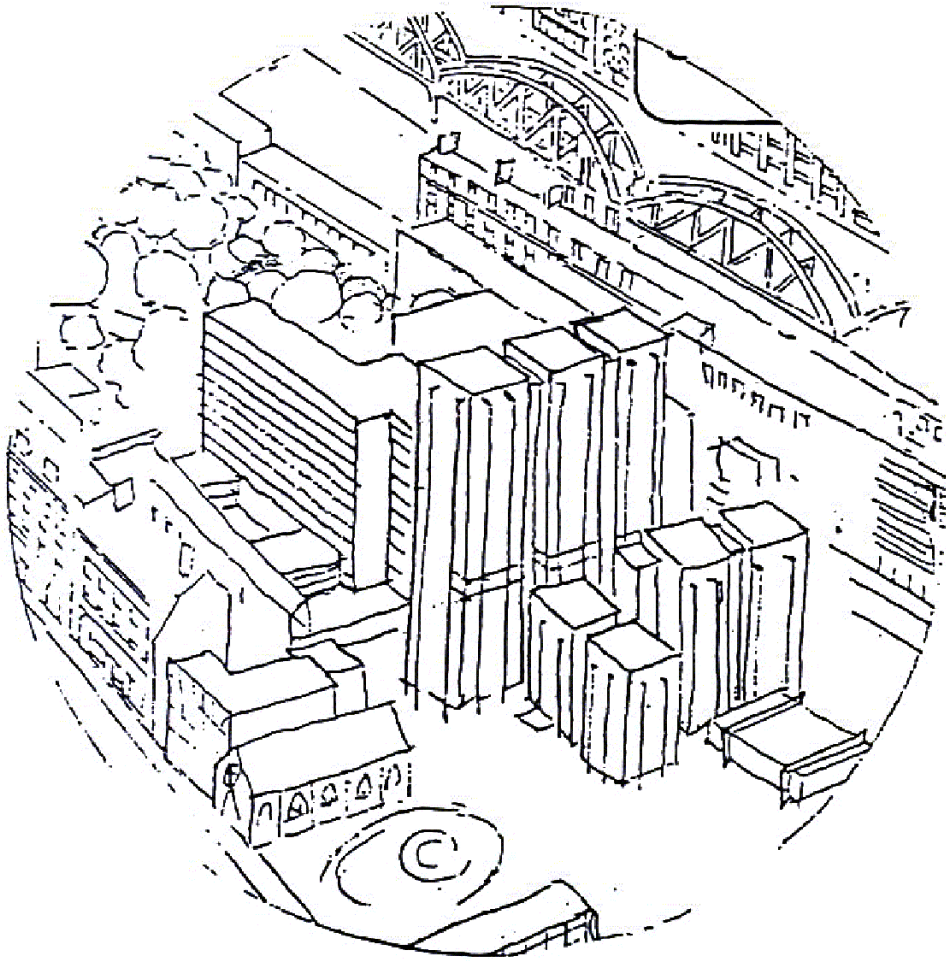
This mode of operation dictates that floors be treated starting from the seventh floor and ending with the ground floor, proceeding two floors at a time.

ANNEX

Provisional estimates for work under Phase 2 of the Belmont Plan

BREAKDOWN INTO STAGES 4+1						
	in euros	2004	2005	2006	2007	2008
General studies		2,786,336.50	696,584.13	696,584.13	696 584.13	696,584.13
Completion of security work	8,496,858					
(amount excluding studies and contingencies)	6,964,814		2,222,607.27	1,683,341.37	1,529,432.87	1,529,432.87
Renovation of glass façades	12,969,905					
(amount excluding studies and contingencies)	11,653,104		2,913,276.06	2,913,276.06	2,913,276.06	2,913,276.06
Renovation of solid façades	1,205,184					
(amount excluding studies and contingencies)	915,627		224,428.40		691 198,43	
Modernization of offices	31,573,342					
(amount excluding studies and contingencies)	30,069,850		7,517,462.49	7,517,462.49	7,517,462.49	7,517,462.49
Temporary relocation, related costs reduced to 15%	4,685,987					
Work (construction, furnishings)	2,561,999	2,561,998.73				
Removals	1,193,210	238,641.96	238,641.96	238,641.96	238,641.96	238,641.96
(amount excluding studies and contingencies)						
Unknown and miscellaneous	2,987,312					
Amount excluding related costs	2,987,312	597,462,40	597,462.40	597,462.40	597,462.40	597,462.40
TOTAL EXCLUDING TAX	61,918,589	6,184,439.60	14,410,462.42	13,646,768.42	14,184,058.35	13,492,859.92
Value May 1999	0					
OVERALL TOTAL (EXCLUDING TAX) including 1.29 of provisional revaluation in January 2004	79,874,979.79	7,977,927.08	18,589,496.91	17,604,331.26	18,297,435.27	17,405,789.29
Revaluation up to January 2002: 22%, +3.5% per annum up to January 2004						

REPORT
ON THE RESTORATION AND IMPROVEMENT
OF UNESCO HEADQUARTERS IN PARIS
MIOLLIS/BONVIN SITE



Joseph Belmont
September 2002

INTRODUCTION

SUMMARY OF THE REPORT

UNESCO Headquarters in Paris is split into two building complexes, one fronting on Place Fontenoy and the other on Rue Miollis and Rue Bonvin.

One cannot rehabilitate the buildings of the Fontenoy site without at the same time making similar plans for those of the Miollis/Bonvin site, as these two complexes are closely linked in respect of their functioning, safety, maintenance and financing.

This report concerns the rehabilitation of the Miollis/Bonvin site and is a sequel to the December 1999 report for the Fontenoy site.

It will be divided into four parts, covering a description of the site, an examination of the dysfunctions of the buildings, the remedial work to be undertaken, and the cost estimates for such work.

The Miollis/Bonvin site is occupied by four buildings. The first, Building V, provides accommodation for some of the delegations of Member States of the Organization (115 out of 188). The second, Building VI, houses several Secretariat units other than those located at Place de Fontenoy. The third, Building VI bis, is a pre-engineered building which also houses UNESCO units, as does Building VII, located near a disused church.

Buildings V and VI are connected by a common ground floor, with the main entrance to the site being on the rue Miollis.

They are of scant architectural interest (apart from the Building V façades, designed by Jean Prouvé). Building VI is classified as a high-rise building (IGH).

The buildings on the Miollis/Bonvin sites were constructed in the 1970s and no longer comply with current safety standards. What is more, they complicate the matter of ensuring site security.

They also suffer from a series of technical defects affecting the trouble-free operation of the buildings, particularly as regards the façades, air-conditioning and electricity.

These dysfunctions are listed in Part II of the report.

To remedy these dysfunctions, Part III of the report proposes a series of works to be carried out, by building trade and by building.

Some works deemed to be priorities have already been started. Cases in point are the building of a command post for security staff on Rue Miollis and the renovation of sanitary facilities and corridors in Building V.

The other works depend on a number of options.

The first option is that of combining in one comprehensive operation the works on the façades, the air-conditioning and the internal refurbishment, for reasons of economy, speed and non-disruption of the Organization's work.

The second option provides for complete replacement of the façades of Building VI, which presupposes the construction of a temporary building to accommodate the units concerned during the works.

The final option rules out any shifting of partitions in Building VI in order to prevent any release of asbestos (which is at present sealed in and hence not dangerous).

The final part of the report contains an estimate of the cost of the works to be carried out, amounting to €63,210,000 (excluding tax) (value September 2002). Of that amount, 65% represents the cost of the works proper and 35% the related expenses (architectural and engineering team, client assistance, insurance, etc.).

This estimate can be broken down by building as follows:

	€
Building V	26,240,000
Building VI	31,140,000
Building VII bis	1,500,000
Building VII	2,320,000
Total	63,210,000

It can also be broken down by year according to the degree of urgency:

No specific timetable: security and renovation works

	€
on sanitary facilities and corridors in Building V	1,176,000
1st year: general surveys	14,800,000
2nd year: safety and electricity works	10,480,000
3rd year: internal refurbishment (1st stage)	20,690,000
4th year: internal refurbishment (2nd stage)	17,200,000
Total	63,210,000

This report has been prepared in cooperation with Mr Egoshkin, Director of Headquarters Division, Mr Maufont, Chief of the Renovation Section (Headquarters Division), Mr Nicolas, also

of the Renovation Section, Mr Viroulet, Chief of Security, Safety and Transport Services, and Mr Velter, Project Director.

Information and advice were provided by those in charge of UNESCO's maintenance workshops: air-conditioning, heating, plumbing, electricity, and metalworking, and account was duly taken of the observations of Mr Margeotte, Chief of the Fire Protection Unit.

The report is also indebted to the technical expertise and financial estimates of Mr Bertrand, President of the ACE company. He in turn called upon several specialists to support his analyses.

Annexes

The following documents are annexed to this report:

- a Fontenoy and Miollis/Bonvin site plan;
- a plan of the city of Paris showing wooded areas to be preserved;
- project for the new security/safety command post.

DESCRIPTION OF THE SITE

1.1 General description

The UNESCO site gives on to Rue Miollis, Rue François Bonvin and Rue Jean Daudin and is bordered on two sides by a row of buildings. The site grounds are complex in form, having been acquired in several stages. This explains the arrangement of the buildings on the site, which is the result of urban planning regulations rather than a well-thought-out assemblage of services. Moreover, apart from a fine façade designed by Jean Prouvé for Building V, the architecture of the buildings holds no particular interest. One section of the site, measuring approximately 2,000 m², has been classified under the land-use plan of Paris as a protected wooded area.

1.2 Building V

Building V was built on a site accessible from Rue Miollis. Construction began in 1967 and the building was inaugurated in March 1970. The building has eight floors above the ground floor and three basement levels. The floors are occupied by 115 delegations of UNESCO's Member States (some delegations of UNESCO's 188 Member States are housed outside of Headquarters). The basement levels contain 120 parking spaces and various communal areas (bar, gymnasium, associations and so forth). The total external surface area of the building is 24,377 m², including the basement. The floors have an internal surface area of 679 m². The building has three passenger lifts and one service lift, one main staircase and two emergency staircases (one interior, one exterior).

The building has an exposed steel framework. On the ground floor and in the basement, the framework is a mixture of steel and concrete (with casing in the third basement). The façades consist of curtain walls designed by Jean Prouvé.

The building is air-conditioned by air induction units located in the apron walls of the façade.

1.3 Building VI

Building VI was built on a site accessible from Rue François Bonvin. Construction began in 1975 and the building was inaugurated in November 1977. At its highest point, the building has 15 floors above the ground floor (including one mechanical floor) and three floors below the ground floor. Classified as a high-rise building (*immeuble de grande hauteur* (IGH)), Building VI is subject to French IGH regulations.

Various UNESCO Secretariat departments (Social and Human Sciences, Natural Sciences, Culture, Communication and Information) are located on the upper floors. The basements contain 218 parking spaces and various communal areas (cafeteria, commissary, meeting rooms, maintenance workshops, service rooms and storerooms).

The total external surface area of the building is 30,327 m² (including the basement). The habitable surface of the floors varies, since the building is made up of several adjoining spaces.

The building has a central bank of six passenger lifts and one service lift, with one main staircase and three emergency staircases.

The building framework consists of a central core of reinforced concrete supporting a metal structure with posts extending beyond the façades. A reinforced concrete cellular structure was constructed in the third basement. The façades are curtain walls of tinted glass.

The building is air-conditioned by air induction units located in the apron walls of the façade.

1.4 Building VI bis

Building VI bis was built adjacent to Building VI on the side facing Rue François Bonvin. Construction began in 1980 and the building was opened for use in 1982. The building has two floors above the ground floor and two basement levels. The upper floors are occupied by the Secretariat but will have to be reorganized to accommodate all the non-governmental organizations (NGOs).

The total external surface area of the building is 1,255 m². The floors have a habitable surface area of 187 m².

The building has one lift, one main staircase and one external fire escape.

The building construction is of the “industrialized” type with a metal superstructure and a concrete infrastructure. The façades are composed of curtain walls.

The building is not air-conditioned. It is heated with hot-water radiators connected to the city heating system.

1.5 Building VII

This building was constructed on Rue François Bonvin between a church and an apartment building. Work began in 1982 and the building was opened in 1984.

The building has six floors above the ground floor (one of which is not accessible by lift) and three basement levels (lit by an interior courtyard). The floors are occupied by the United Nations Information Centre, Secretariat offices and NGOs.

The total external surface area is 4,458 m². The habitable surface of the floors varies, since the building is composed of several adjoining spaces.

The building has two lifts, one main staircase and one emergency staircase. Its framework is of reinforced concrete. The façades are composed of curtain walls.

The building is not air-conditioned. It is heated with hot-water radiators connected to the city heating system.

1.6 Ground floor of Buildings V and VI

The ground floor, beginning at the entrance to the Miollis Building, connects Buildings V and VI (an additional entrance on Rue François Bonvin is currently closed). The ground floor consists of a reception area serving all the buildings and common services (bank, travel agency, medical service, delegates’ lounge, meeting rooms and Children’s Club). It also houses the fire safety control room.

The car park in Building V communicates with the car park in Building VI (in the third basement) and Building VI communicates with Building VII (in the second basement).

1.7 Exterior spaces

Exterior spaces encompass, first of all, access to the buildings from Rue Miollis including a roadway for cars, a pedestrian walkway, an open car park and an entrance ramp to the basement car parks.

Exterior spaces also include access to the buildings from Rue François Bonvin, with a ramp leading to the delivery bays and the car parks of Building VI. Within this space are two small courtyards which provide light for the basement offices.

Finally, on Rue Jean Daudin there is an entrance for firefighters and a service entrance for the cafeteria kitchen. This space contains a slope to a sunken area which provides light for a meeting room.

Two areas, one on each side of the Miollis entrance, are planted with trees (several of which are in poor condition).

MIOLLIS/BONVIN SITE: SURVEY AND PROBLEMS

2.1 General remarks

Although constructed long after the Headquarters buildings on Place de Fontenoy, the buildings on the Miollis/Bonvin site are today in a very poor state of repair. This is due in part to the rudimentary nature of the construction and, above all, to a failure to maintain the buildings and their technical facilities.

The services working on these sites experience various problems which are due either to the location of their premises or to under-staffing.

Unlike the Headquarters complex on Place de Fontenoy, the condition of the buildings varies widely, making a comprehensive approach difficult. For that reason, this survey has been broken down into different categories of work.

2.2 Security

The service responsible for site security monitors the entrances and the premises in general to ensure rapid intervention in the event of incidents or unexpected problems. The service is staffed by six persons: a chief of unit, one person in the main reception area, one person at each guard post at the Miollis and Bonvin entrances, one person at the control post and one patrolman (who opens the other entrances when needed).

All the monitoring devices are located in the security services control post, situated in the basement near the car parks and the unloading bays.

This arrangement requires a substantial (although still highly inadequate) number of staff members, but does not satisfactorily meet security needs on the site.

2.3 Fire safety

Fire safety on the Miollis/Bonvin site is the responsibility of a team of eight persons, under the authority of the Chief of the Safety and Security Section (located at Fontenoy). The number of staff members is wholly inadequate and should, to comply with current regulations, be raised to 12.

The fire safety office in Miollis/Bonvin is located on the ground floor of Building VI and is not accessible to fire engines.

Building VI, classified as a high-rise building, and Building V, classified as a building open to the public (ERP), communicate with each other through the ground floors and the basement car parks. Given these circumstances, the regulations concerning high-rise buildings should in theory also be applied to Building V, which would imply substantial alterations to it.

Asbestos-removal work has been carried out on several occasions (fire-stop valves, flock-spray covering and surface coatings). Nevertheless, several unprotected hard primers remain (car parks). There is still asbestos in other parts of the building, albeit in a protected form.

The dysfunctions in the buildings may be summarized as follows:

2.3.1 Building V

- car parks and service rooms are not insulated from other premises
- insulation between adjacent premises is non-existent, since the corridor walls are not classified as firewalls
- corridors are not equipped with regulation fire doors
- corridors in the basement floors end in fire traps
- on the floors above ground level, office occupants have closed off some corridors for private use, blocking the access to some emergency stairways
- the building is not equipped with a fire detection system
- the fire alarm does not comply with regulations
- there is no regulation fire safety control panel (*centralisateur de mise en sécurité incendie* (CMSI)) monitoring the fire-stop valves with an activated safety device (*dispositif actionné de sécurité* (DAS))
- existing fire doors are not equipped with electromagnetic door holders linked to a fire safety control panel
- transformers containing pyralene need to be brought into compliance with existing regulations
- low-voltage distribution boards are not insulated from transformer cells
- primary electrical supply cables do not meet safety standards
- electrical cabinets on the various floors are not equipped with regulation protection and shut-down devices
- the external fire escape is in very poor condition and its stability is in jeopardy

2.3.2 Building VI

- there is no standard general information panel showing the layout of the premises
- on the upper floors, there is no insulation between compartments and there are no interlocked fire doors
- the concrete emergency stairway in the cafeteria does not comply with existing standards
- the insulation of the lift shaft is not complete on every floor
- the risers and service rooms are not insulated between floors and are not insulated from the emergency exit routes
- the car park and the premises at risk in the basement are not insulated

- the smoke extraction device uses non-standard guillotine-type smoke vents
- the fire detection system does not comply with existing standards (suction-type smoke detectors and unprotected cables). The fire detection system in the car parks is altogether inadequate
- owing to the type of equipment used, the installation of fire hose stations does not comply with existing regulations
- the wet rising mains have not been tested; in addition, a sprinkler system for archives stored on the upper floors is connected to the wet rising mains, contrary to regulations
- the fire safety system is no longer in compliance with regulations; the new electrical equipment cabinets have not been connected because the distribution cables are no longer in compliance with regulations
- the existing system of cylinders in the office door locks makes it impossible to draw up a key-use chart ensuring access to emergency service workers

2.4 Façades

The façades of Buildings VII and VI bis do not present any major problems and their overhaul can be completed as part of routine maintenance.

The façades of Buildings V and VI, however, need major renovation or even full replacement.

2.4.1 Building V

The façade is composed of prefabricated panels of stamped galvanized iron sheet, positioned at either end of the floor surfaces. Moulded steel consoles support horizontal sunbreakers in the form of grids. The panels contain unframed single-glaze tempered glass panes, and one pane in two pivots open without a safety stay. The panels are insulated with a layer of approximately 4 cm of glued-on rock wool.

These panels have the following defects:

- they are neither airtight nor watertight and develop numerous leaks when the wind blows from the west
- movable sashes not in compliance with labour regulations (apron walls too low, no safety stays on window openings)
- inadequate insulation with heat loss and cold draughts in the offices
- defective ventilation caused by blocking of the fresh-air ducts in the convector covers
- inefficient performance of venetian blinds on southern and western sides
- on some panels, blistering of the top coat of paint
- in the bar, a large hanging mirror has broken, requiring the installation of a temporary support

2.4.2 Building VI

This building has anodized aluminium frame curtain walls with tinted single glazing. The curtain walls are in front of poorly insulated masonry apron walls.

These façades have the following defects:

- neither airtight nor watertight
- apron walls not in compliance with labour regulations
- overheating of tinted window panes

2.5 Air-conditioning

Only Buildings V and VI are air-conditioned. Cold air is generated by Trane generators dating from the construction of the building. The result is high maintenance and running costs for a low return.

The units are arranged in series and by floor, which makes it impossible to regulate the air flow along an entire façade. As a result there are serious problems in summer and in spring and autumn along the southern and western façades (personnel in offices facing north or east often refuse to move for that reason).

Air circulation depends on piston-driven air induction units which are cost inefficient, noisy and in poor condition. These units have been in service since the building was constructed even though the normal life span of such equipment is 15 years. In addition, the water shut-off valves are located in the offices, which makes unscheduled repairs difficult.

Because the façades are not airtight, building occupants often block up the fresh-air ducts, thereby interfering with the air circulation system.

The occupancy rate of the buildings has increased significantly since their construction, leading to an over-abundance of heat-producing equipment and a greater need for equipment.

2.6 Heating and plumbing

The four buildings on the site are connected to the municipal heating system (*réseau de chauffage urbain* (CPCU)). The facilities are inspected regularly. The heating system in Building V is new. The system in Building VI is in poor condition and fails to meet safety standards.

The water supply and drainage systems are old and poorly maintained.

In Building V, there have been a large number of leaks in the shut-off valves located at the base of the rising mains and on the upper floors.

In Building VI, the systems are not watertight, giving rise to significant maintenance costs. The installation in the basement needs to be completely overhauled. The booster should be changed. The water-tightness of the sprinkler water tanks must be checked.

2.7 Electricity

Several transformers are still operating on pyralene. The low-voltage distribution boards do not conform to existing regulations. The primary electrical supply leading to the electrical cabinets on each floor is not in compliance with current regulations. The generator control cabinets are also not in compliance. The diesel oil reserves in the generators show signs of leakage.

The premises on which transformers, low-voltage distribution boards, back-up batteries and generators are located are not in compliance with existing regulations (insulation, ventilation).

The security lighting is incomplete and not in compliance.

2.8 Flat roofs

The flat roofs of Buildings V and VI, VI bis and VII have asphalt waterproofing and are no longer watertight.

In addition, the flat roofs of Buildings V and VI have no safety devices for the protection of repair workers.

The condition of the flat roofs in these two buildings may be described in greater detail:

Building V

- the rainwater drainpipes are no longer watertight and the bases of the drainpipes are not connected to the horizontal drains
- the grating covering the gutters is rusted

Building VI

- the flat roofs of Building VI are equipped with metal guard rails which do not comply with safety standards and are in poor condition (rust), and the anchoring in the concrete has oxidized
- the grating covering the gutters is rusted.

2.9 Building interiors

In general, the soundproofing of the offices is highly inadequate and some office occupants have themselves taken steps to improve the soundproofing.

The paint and the floor coverings are in poor condition.

There is no master key enabling security guards to enter all premises. The lifts do not have wheelchair access.

Some of the delegations occupying Building V have taken over the corridor space outside their offices, a situation which could have serious consequences in cases where the corridor leads to an emergency staircase.

UNESCO has undertaken a partial programme of renovation including the rehabilitation of communal areas (corridors) and a complete overhaul of the sanitary facilities in Building V.

2.10 Building exteriors

The outside areas are properly maintained and do not pose any particular problem.

The green spaces nonetheless need to be improved, including the layout of thoroughfares and partial replanting.

PROGRAMME OF WORK

3.1 Future organization of UNESCO's working arrangements

The following pages will propose a programme to restore and improve the buildings in order to remedy the deterioration and dysfunctions described in the preceding pages.

It is obvious that such a programme should be placed in the context of the long-term reorganization of UNESCO's various departments, both in the Place de Fontenoy Headquarters buildings and on the Miollis-Bonvin site.

The programme exists as a very broad outline and is covered by a schedule drawn up by the UNESCO Secretariat and approved by the General Conference, but it has not yet been translated into a more detailed organization of work units.

Admittedly, the purpose of this report is not to study such a reorganization but, in order to have a better definition of the work to be done, two assumptions will be made concerning changes in UNESCO's staff.

3.1.1 Size of the staff

The computerization of the various units will have little impact in this field.

On the other hand, the decentralization of services may, in the long term, have effects on staffing levels, which should result in a reduction in office holdings.

The assumption here might be summed up as follows: any vacation of premises should contribute to the grouping together of departments on the Place de Fontenoy site. Office space vacated in Building VI on the Miollis-Bonvin site would provide more space for the delegations (currently housed in very cramped quarters in Building V).

3.1.2 Accommodation of the various departments

As it is not possible to determine the long-term organization of units, the report will propose a rather flexible office arrangement adaptable to various changes.

It will consist of standardized office accommodation, with partitions that can be removed or shifted as needed.

It will also involve a hot-desking area for mobile staff, possibly amounting to 10% or 20% of the total office area.

It is on these two assumptions that the proposed restoration and improvement work on the buildings will rest.

3.2 Outline of the programme of work

The operations scheduled under this programme will be set out in the order used for the appraisal, namely:

- security work
- safety work
- work on the façades
- air-conditioning work
- heating and plumbing work
- electricity
- work on the flat roofs
- internal refurbishment work
- external refurbishment work.

Each operation under this programme will be costed in euros, before tax (August 2002 value). Sixty-five per cent of these estimates account for the cost of the work proper and 35% concern indispensable related costs (surveys, management of the operation, technical monitoring, insurance, data compilation and other indirect expenses).

3.3 Security work

The main item of security work at the site concerns the erection of a new control post at the Miollis entrance.

The post will collect together in one place the site's currently scattered staff and equipment and will make it possible to dismantle the current control post located in the basement.

The plans for the new post are appended to this report. They consist of two main parts:

First, a set of three barriers, one for cars without swipe cards, another for cars with cards and the third at the exit for all vehicles. To complete this system, there is a sliding gate to close all entrances (except for a door to be used by staff working outside opening hours).

Second, a 12.5m x 6.3m ground-floor building, which will have a full glass façade giving on to the entrance, providing two possible routes: one for visitors without swipe cards and another for card-holding staff. The latter route would lead through an entrance to be built beyond the barriers. In addition, the existing entrance on rue Bonvin would be open at certain times of the day.

Checks with the technical departments of the city of Paris have revealed that there is no obstacle to the installation of these facilities.

The security staff would then hold five posts: two guards assigned to the command post, one to the hut on rue Bonvin, the guard at the reception desk in the main hall (the counter would have to be moved) and a "patrolman".

The estimate for the work would be broken down as follows:

	€
Building	140,000
Technical installations and shifting of the counter	100,000
Equipment included in the security master plan	<u>290,000</u>
Total	530,000

3.4 Safety work

Before considering the details of the work to be done in Buildings V and VI, it must be pointed out that it is indispensable to separate the two buildings completely (at basement and ground floor level) to avoid the application of high-rise building regulations to Building V.

In addition, a safety master plan must be drawn up, approved by the Préfecture de Police and then implemented. It is also necessary to strengthen the emergency teams and resume fire drills.

The safety work to be done has been numbered according to its degree of urgency. In any case, operations rated 1 and 2 must be carried out immediately, whatever the decision taken regarding the conduct and funding of the entire operation.

3.4.1 Building V

- Regulation fire doors in the corridors and installation of swing door assemblies activated by safety devices (urgency No. 1)
- General fire detection equipment, installation of a fire safety control panel (CSMI) (urgency No. 1)
- Complete overhaul of the alarm system connected to the fire safety control panel (CMSI) (urgency No. 1)
- Installation of all fire-stop valves activated by safety devices (urgency No. 1)
- Installation on fire doors of electromagnetic door holders connected to a fire safety control panel (CSMI) (urgency No. 1)
- Replacement of a mirror in the bar (urgency No. 2)
- Replacement of an external metal fire escape, which is in very bad condition (urgency No. 2)
- Infaced insulation of ceilings and regulation fire doors in parking areas and service rooms (urgency No. 3)
- Installation of emergency stairs on dead-end basement landings (urgency No. 3)
- Renovation of the lifts (urgency No. 3)
- Replacement of the skylights in the gymnasium (urgency No. 4)

- Treatment of the guardrail (C + D standard) (urgency No. 5)
- Installation of partitions to compartmentalize basement premises and the superstructure (urgency No. 6)
- Partitions to compartmentalize the various floors and provision of unobstructed access to emergency stairs (urgency No. 6)

3.4.2 Building VI

- Shifting of the fire safety control post into the archives to provide a direct link to the firefighters' entrance (urgency No. 1)
- Production and posting of regulation notices (urgency No. 1)
- Installation of fire-stop valves activated by safety devices throughout the building (urgency No. 1)
- Installation of a regulation fire safety control panel and installation of an appropriate fire detection system (urgency No. 1)
- Replacement of fire hose stations (urgency No. 1)
- Installation of interlocked fire doors in corridors (urgency No. 2)
- Renovation of the guardrail on the cafeteria fire escape and of the guardrail along the walkways (urgency No. 2)
- Replacement of fire doors on lift landings (urgency No. 2)
- Infaced insulation of service rooms and the car park, partitioning of premises at risk and replacement of single-faced metal door assemblies by door assemblies that ensure insulation of premises at risk. Insulation of the car parks under Building VI and under Building V (urgency No. 2)
- Installation of an independent network to treat premises housing archives on the various floors, or transfer of archives (urgency No. 2)
- Insulation of rising mains and service rooms on the various floors (urgency No. 3)
- Renovation of the lifts (urgency No. 3)
- Replacement of cylinders on doors connected to the key-use chart (urgency No. 4)

3.4.3 Buildings VI bis and VII

- Work on these buildings to meet safety standards

The estimates for the work would be broken down as follows:

	€
Building V	6,200,000

Building VI	5,700,000
Building VI bis	130,000
Building VII	<u>250,000</u>
Total	12,300,000

3.5 Façades

The problems posed by the façades of the four buildings on the Miollis-Bonvin site differ considerably from one building to another.

The façades of Building V, designed by Jean Prouvé, are of considerable architectural interest and should therefore be preserved in spite of all their faults. The renovation proposed here, suggested by the building maintenance unit, could extend their lifespan by approximately 20 years.

The façades of Building VI, in very poor condition, may be either repaired or replaced.

The façades of Buildings VI bis and VII may simply be repaired.

3.5.1 Building V

- Renovation of façade joints and glass joints
- Standardization of window fastenings in accordance with labour law (height of apron wall)
- Repainting of apron walls
- Fixture of safety stays
- Replacement of outside blinds

3.5.2 Building VI

In view of the condition of the façades, their complete replacement appears unavoidable. That would settle the waterproofing problems and get rid of the differences in the colour of the glass. In addition, it would improve the heat insulation of the glass. While the work is being carried out, the staff would have to be moved to temporary buildings to be erected in the courtyards.

3.5.3 Buildings VI bis and VII

- Work may be confined to “major maintenance” of the façades and replacement of faulty joints
- Such work should lengthen the buildings’ lifespan by some 20 years. Eventually, it will no doubt be necessary to demolish or replace Building VI bis, known as the “prefabricated building” (in fact it simply involved the use of an industrialized process).

The work described above may be estimated as follows:

Total replacement	€
Building VI façade	10,000,000

Partial renewal	
Building V façade	3,200,000
Building VI bis façade	600,000
Building VII façade	<u>500,000</u>
Total	14,300,000

3.6 Air-conditioning

The work to be done may be summed up and prioritized as follows:

- distribution and supply by fan convectors, comprising four tubes, on apron walls (urgency No. 1)
- installation of service rooms for the adjustment of settings by compartment and by façade (urgency No. 2)
- renovation after work (urgency No. 2)
- renovation of air-conditioning production unit in Buildings V and VI (urgency No. 3).

Estimated cost of work:

	€
Building V	3,200,000
Building VI	<u>3,900,000</u>
Total	7,100,000

3.7 Heating and plumbing

The work to be carried out may be summarized as follows:

Building V

- replacement of drainpipes and gutters
- replacement of the water pumping station

Building VI

- replacement of drainpipes and gutters
- replacement of the booster
- re-sealing of sprinkler water tanks
- rehabilitation of water-pumping equipment.

Estimated cost of work:

	€
Building V	1,230,000
Building VI	1,910,000
Building VI bis	10,000
Building VII	<u>50,000</u>
Total	3,200,000

3.8 Electricity

The work to be carried out includes, for all the buildings:

- Changing of the pyralene transformers
- Reorganization of the low-voltage distribution boards and the primary electrical supplies
- Renovation of the emergency and security lighting
- Renovation of the generator tanks
- Standardization of generator commands
- Renovation of the network of clocks.

Estimated cost of work:

	€
Building V	2,170,000
Building VI	2,630,000
Building VI bis	60,000
Building VII	<u>230,000</u>
Total	5,090,000

3.9 Flat roofs

The works to be carried out may be summarized as follows, for Buildings V, VI, VI bis and VII:

- Renovation of flat roofs and guardrails
- Provision of safety equipment for workers operating on the flat roofs
- Verification of gutters and renewal of waterproofing of patios
- Renovation of roofing of the conference rooms.

Estimated cost of work:	€
Building V	490,000
Building VI	345,000
Building VI bis	470,000
Building VII	45,000
Roofing	<u>390,000</u>
Total	1,780,000

3.10 Interior refurbishment

There are three justifications for an interior refurbishment of the Miollis/Bonvin site.

The first is the run-down state of the premises as a result of insufficient maintenance.

Then there are the working conditions of their occupants (in particular, the soundproofing is utterly inadequate and corrected in only a few offices).

The third justification is personnel action (following the relocation of NGOs) requiring partial renovation of the offices.

It is therefore planned to carry out a complete renovation of the offices and their exit areas and adjoining premises (floors, ceilings, painting, electricity, low-voltage supplies).

It should be remembered that the partitions in Building VI contain asbestos, danger-free so long as it remains sealed. The plans are therefore that in future there will be no shifting or demolition of partitions. Any departure from this rule would entail substantial expenditure (in the region of €15,000,000, over and above the cost of interior refurbishment).

Estimated cost of work:	€
Building V	9,500,000
Building VI	6,500,000
Building VI bis	210,000
Building VII	<u>1,260,000</u>
Total	17,470,000

3.11 Exterior refurbishment

This work should include renovation of the two green spaces.

It should also include the transplanting of two trees located where the future security command post is to be.

The work would not include cleaning of the party walls with the adjacent properties.

Estimated cost of work: €430,000.

SCHEDULING AND FUNDING OF WORK

4.1 Implementation of work

What was deemed a priority operation had to be undertaken before the circulation and approval of this report, namely, work concerned with security. Furthermore, given the demands of delegations, it was also planned ahead of work on refurbishing the sanitary facilities and corridors of Building V.

Apart from those two operations, the work to be done is primarily concerned with safety.

Subsequently the façade, air-conditioning and interior refurbishment will have to be carried out concurrently. These three operations need to be combined for technical reasons (they are closely linked), economic reasons (there will only be one work project instead of three) and psychological reasons (the occupants of the offices cannot be disturbed too often).

It will then be necessary to carry out, by order of priority, the operations concerning the renovation of plumbing and heating and the rehabilitation of the flat roofs.

The exterior refurbishment work could be done last.

4.2 Cost of work per building trade

The total cost of the work provided for in this report is as follows:

	€
Security work	530,000
Safety work	12,300,000
Work on façades	14,300,000
Air-conditioning	7,100,000
Heating and plumbing	3,200,000
Electricity	5,090,000
Flat roofs and roofing	1,780,000
Interior refurbishment	17,470,000
Exterior refurbishment	430,000
Temporary offices	<u>1,050,000</u>
Total	63,210,000

This total could be reduced to €63,160,000 should it be possible, in organizing the work, to use the temporary buildings on the Fontenoy site.

4.3 Cost of work per building

The total cost of work per building is as follows:

Building	V	VI	VI bis	VII	Total
Security	-	-	-	-	530,000
Safety	6,200,000	5,700,000	150,000	250,000	12,300,000
Façades	3,200,000	10,000,000	600,000	500,000	14,300,000
Air-conditioning	3,200,000	3,900,000	-	-	7,100,000
Heating-plumbing	1,250,000	1,900,000	10,000	40,000	3,200,000
Electricity	2,170,000	2,630,000	60,000	230,000	5,090,000
Flat roofs	490,000	350,000	470,000	40,000	1,350,000
Roofing	230,000	160,000	-	-	390,000
Interior refurbishment	9,500,000	6,500,000	210,000	1,260,000	17,470,000
Exterior refurbishment	-	-	-	-	430,000
Temporary offices	-	-	-	-	1,050,000
Totals	26,240,000	31,140,000	1,500,000	2,320,000	63,210,000

4.4 Cost of work per year

Security work and the renovation of sanitary facilities should be done without any fixed schedule.

The operations should then be divided into three phases, as follows:

Off schedule	Security works		
	Renovation of sanitary facilities and corridors		
	Surveys	330,000	
	Works	846,000	
	Total		1,176,000
1st year	General studies		14,800,000
2nd year	Safety works		
	Electricity		
	Total		10,480,000
3rd year	Relocation of staff		
	Façades		
	Heating		
	Air-conditioning		
	Interior refurbishment	19,200,000	
	Flat roofs – roofing	1,490,000	
	Total		20,690,000
4th year	Façades		
	Heating		
	Air-conditioning		
	Interior refurbishment		
	Flat roofs – roofing		
	Exterior refurbishment		
	Total		17,200,000
Grand total			63,210,000

4.5 Cost of work per phase

Consolidation of the work by major phase according to the degree of urgency may be illustrated as follows:

<u>Phase 1: maximum urgency</u>	
This work, being crucial to the safety of persons and buildings, must be done as a matter of absolute priority. It includes the operations specified in urgencies 1 and 2 under the safety head.	
Cost of work:	€5,753,000
<u>Phase 2: secondary urgency</u>	
This work must be done very soon after the above. It includes operations specified in urgencies 3 to 5 under the safety head, together with the operations specified under the electricity head.	
Cost of work:	€12,294,000
<u>Phase 3: interior refurbishment, first stage</u>	
This work includes interior renovation, façades and air-conditioning of Building VI, together with the plumbing and the flat roof of the building. They also include the temporary relocation of staff.	
Cost of work:	€20,677,000
<u>Phase 4: interior refurbishment, second stage</u>	
This work includes the same renovations, for Buildings V, VI bis and VII, in addition to the exterior refurbishment.	
Cost of work:	€24,486,000
Total cost of work:	€63,210,000

CONCLUSION

The purpose of this report was to determine the restoration and improvement works to be carried out on UNESCO's Miollis/Bonvin site and provide a cost estimate for them.

This information was needed in order to organize the financing of the Fontenoy site without overlooking the requirements of the Miollis/Bonvin site. It was also necessary in order to coordinate the comprehensive maintenance work to be done on all Headquarters premises.

The presentation of this document has remained highly technical. The fact is that the buildings of the Miollis/Bonvin site are of little architectural merit and contribute little to the institution's image (unlike the buildings of the Fontenoy site). On the other hand, their renovation and upkeep are essential to the running of the Secretariat.

The total cost of the prospective works for the four buildings on the site is €63,210,000, which, for a total area of all the premises of 60,000 m², represents an average cost per m² of €1,053.

This figure is to be set against the average per m² price of €1,066 for the buildings of the Fontenoy site.

It should further be noted that the estimate of €63,210,000 takes account of two important parameters. First, it is essential that there should be no shifting of partitions in Building VI. Next, it is advisable to replace all the façades of the building, which would involve relocating the staff occupying it.

There is room for conjecture at this stage that it might be worth giving up a part or all of the buildings on the Miollis/Bonvin site, relocating the units that work there.

The report submitted in December 1999 for the restoration and improvement of UNESCO Headquarters tentatively proposed that option.

It would mean negotiating with the French Government an exchange between the premises of UNESCO's Miollis/Bonvin site and those of several ministerial units located on the Place de Fontenoy.

This option obviously presents a great many problems, including the transformation of extraterritoriality, the refurbishment of part of the premises of the ministries, and communication between the refurbished premises and the UNESCO Headquarters building.

If such an operation is to have a chance of materializing, both parties will have to find it worth their while. The advantage is obvious where UNESCO is concerned, and the same could be true on the French side if the exchange meant a substantial gain in surface area (which is possible).

Other options may be suggested involving the full or partial vacation of the Miollis/Bonvin site. They would be justified by the high cost of restoring buildings of no great architectural or functional value and of ageing construction.

Such options, whose study is beyond the scope of this report, could be examined during the second phase of work on the Fontenoy site.