

CA/43/19

Orig.: en

Munich, 03.05.2019

SUBJECT: SP2023 – Building Investment Program

SUBMITTED BY: President of the European Patent Office

ADDRESSEES: 1. Budget and Finance Committee (for opinion)
2. Administrative Council (for decision)

SUMMARY

In the Strategic Plan 2023 the Office addresses the issue of accommodating staff in EPO buildings and outlines a comprehensive set of maintenance and refurbishment projects. Taking the New Main building in The Hague as a benchmark, the Office will offer all EPO staff a modern, healthy working environment that increases engagement, productivity and motivation. Construction work will improve the condition of the EPO's buildings, while reducing their running costs and energy consumption. These investments in renovation and maintenance will also increase the value of the Office's patrimony.

As announced in CA/99/18, preparations have started and professional reviews of all EPO sites have been conducted. This document presents the financial impact, timeframes and logistics of the proposed construction work as analysed in the reviews. The Office requests the BFC's opinion and a decision by the AC so that it can proceed with the next project steps. If the AC's decision is positive, the Office will present the outcome of tender procedures to the BFC and the AC and seek their approval.

TABLE OF CONTENTS

Subject	Page
I. STRATEGIC/OPERATIONAL	1
II. RECOMMENDATION	1
III. MAJORITY NEEDED	1
IV. CONTEXT	2
V. ARGUMENTS	3
A. PRELIMINARY REMARKS	3
B. MUNICH	4
a) Principles for developing packages	4
b) Packages	4
c) Calculations	6
d) Conclusions and recommendations	7
C. THE HAGUE	8
a) Key principles	8
b) Scenarios	9
c) Detailed scenario calculations	10
d) Financing options	11
e) Conclusions and recommendations	11
f) The Hinge building	12
D. VIENNA	13
a) Scenarios	13
b) Principles for developing scenarios	13
c) Calculations	14
d) Financial evaluation	16
e) Conclusions and recommendation	16
E. OVERVIEW AND CONCLUSIONS	18
VI. ALTERNATIVES	19
VII. FINANCIAL IMPLICATIONS	19
VIII. LEGAL BASIS	19
IX. DOCUMENTS CITED	20

X.	RECOMMENDATION FOR PUBLICATION	20
ANNEX 1	ILLUSTRATION OF MODERN WORKING ENVIRONMENT	21
ANNEX 2	SUMMARY REPORT FOR ISAR AND FOR PSCHORRHÖFE BUILDINGS IN MUNICH	26
ANNEX 3	SUMMARY REPORT FOR THE HAGUE	35
ANNEX 4	SUMMARY REPORT FOR VIENNA	47

I. **STRATEGIC/OPERATIONAL**

1. Strategic

II. **RECOMMENDATION**

2. In order to safeguard and potentially increase the value of the EPO's patrimony and to provide all staff with state-of-the-art office space, the Administrative Council is requested to endorse the President's proposal to further develop:

- Packages A and B for the renovation of the existing Isar building and PschorrHöfe phases 1-6 and phase 8 buildings in Munich to create a flexible, modular working environment that requires less space, leading to the subsequent sale of PschorrHöfe phase 7;
- Scenario 3/4b: construction of new building(s) on the EPO site in The Hague, without alternative temporary accommodation for staff;
- Scenario 2: construction of a new building on the EPO site in Vienna.

3. For Munich and Vienna, the outcomes of international tender procedures to award project management and planning contracts will be presented to the Budget and Finance Committee for approval, most likely by the end of 2020.

In a second step the outcomes of international tender procedures to award contracts for construction work will be presented to the Budget and Finance Committee for its opinion and to the Administrative Council for its decision.

4. For The Hague, the outcome of an international tender procedure to award a design and construct contract will be presented to the Budget and Finance Committee for its opinion and to the Administrative Council for its decision, most likely at the end of 2021, in line with the procedure that was successfully adopted for the construction of the New Main building.

5. With the endorsement of the above programme, the Office can proceed with the next steps, which will involve total expenditure of around EUR 2 million.

6. The Administrative Council and its Committees will be provided with regular updates on progress with the different projects.

III. **MAJORITY NEEDED**

7. Simple

IV. CONTEXT

8. In the Strategic Plan 2023 the Office addresses the accommodation of staff in EPO buildings. Taking the New Main building in The Hague as a benchmark, the Office aims to offer its staff a modern working environment while continuously improving its buildings to meet state-of-the-art sustainability, health and safety standards. There is a great deal of evidence that this kind of modern working environment can foster flexibility, innovation and collaboration among colleagues. It also contributes to the EPO's other strategic goals like maintaining very high levels of quality and boosting staff engagement and communication.
9. The buildings owned by the EPO form a substantial part of its asset portfolio. The space rented by the EPO has, over the past five years, been reduced and three rental contracts have been terminated (Capitellum in Munich and Rijsvort and Le Croisé in The Hague). These terminations have resulted in annual savings of over EUR 9 million. The EPO will continue to review its rental portfolio and consider the rent-versus-buy decision carefully for all locations not owned, particularly for high-cost locations like the Brussels office. The buildings owned by the EPO are currently insured for EUR 1.25 billion. Depending on the location of individual buildings, however, their market value can be considerably higher than this figure suggests. Phase 7 of PschorrHöfe, for example, was purchased in 2005 for a total of EUR 120 million (land and building). It is currently insured for EUR 92 million, which represents the cost of reconstructing the building. This figure does not include the land. Its market value, however, is far higher than this figure and is currently estimated at well above EUR 200 million (land and building). Investing in buildings and maintaining them in excellent condition not only preserves the value of the EPO's assets, it also increases that value over time. To realise this potential increase, the buildings need to be well-maintained and comply with latest safety standards and technical norms. So investing in the EPO's buildings marks a commitment to preserving (or increasing) the value of our patrimony. Delaying these investments will decrease their value and increase the overall investment required at a later date as the price of materials and construction work rises and the extent of the work increases.
10. Well-maintained buildings that are continuously upgraded to meet the latest technical standards contribute significantly to reducing energy consumption and CO2 output. The EPO buildings in The Hague, Vienna and the Isar building in Munich have excessively high energy consumption levels. A new building or a renovated facade could halve their energy consumption. This kind of investment can be partly recouped over time in energy savings. More importantly, it will turn the EPO into a more responsible and sustainable organisation.

11. The goal to introduce a modern working environment and to propose a comprehensive program of maintenance projects was presented to the Administrative Council in December 2018 in CA/99/18 and received a favourable opinion. They are integrated into the Strategic Plan and are addressed in parallel with the SP2023 due to the lengthy duration of this type of project. The New Main plan was first presented to the Administrative Council in 2010 for principal approval; and in 2011 for the approval of the design and build contract. The final phase will be finished in 2021.
12. With the present document, the Office asks for approval in principle, so that it can proceed with the next steps to further develop the programme, so that it will be ready for a final decision, leading to expenditure of around EUR 2 million. The results of these steps will be presented to the BFC and AC in due time for approval of the project and the award of contracts.

V. ARGUMENTS

A. PRELIMINARY REMARKS

13. After the favourable opinion of CA/99/18 given by the Administrative Council in December 2018, the Office immediately started to conduct feasibility studies for both the Isar building and PschorrHöfe complex in Munich, the Shell building in The Hague and the building in Vienna, supported by external architects and planners.
14. In-depth analyses of the current state of all buildings (wear and tear) were conducted. Expenditure on maintenance and the cost of creating a modern working environment were calculated for each location and all of the scenarios, taking into account the evolution of future needs in terms of workplaces. Time lines were added and considerations such as the need for temporary accommodation during construction were taken into account in a cost-benefit analysis. The net present cost for the next forty years was calculated for each project based on the widely-used "Net Present Value" methodology.

B. MUNICH

The summary report of the studies carried out in Munich is available in Annex 1.

a) Principles for developing packages

15. The following approach was used:

- The buildings in Munich differ in age, as well as technical and building standards. A total of 366 000 m² GFA are spread across the Isar building and PschorrHöfe. The Isar building, which has been in operation since 1980, is fully air-conditioned with a closed facade, resulting in high energy consumption. The PschorrHöfe phases 1 to 6, which have been in operation for almost 30 years, are characterised by an openable facade combined with cooling ceilings in the office area. The office area in all buildings is old-fashioned and predominantly consists of single offices with closed walls. Areas for collaboration are either very small or non-existent. No major investments have been made since the inauguration of the buildings, with the exception of a partial renovation of the Isar building as a result of asbestos findings some 10 years ago.
- The EPO has outlined 2 packages. Package A covers wear and tear and meeting legal requirements such as fire safety. Package B relates to creating a transparent, cutting-edge working environment in terms of offices and other areas like the conference and social facilities (e.g. canteen, cafeteria). This package also covers environmental issues (e.g. reducing energy consumption, renewable energy).

b) Packages

16. The 2 packages are explained in detail below:

- Package A: Based on an annual assessment of the buildings using epiqr (see also CA/99/18), the EPO has identified the investments required over a period of 10 years to compensate for wear and tear and keep the building in a good condition. This part of the investment is due in all events. Any delay could cause serious problems and may jeopardize the operation of the buildings via malfunctioning installations or the non-fulfilment of legal requirements. Thus core business could be affected seriously.

- Package B: The creation of a flexible, transparent working environment is based on the workplace concept of New Main. In Munich, the concept would feature 50% individual workplaces and 50% workplaces in shared areas for the Isar building where the corporate functions are located; and 75% individual workplaces and 25% workplaces in shared areas for the examiners in the PschorrHöfe (same as in New Main). To support the increase of workplaces in shared areas, additional spaces are included on the floors for formal and informal meetings. The EPO has identified several ways of optimising energy consumption and generating power from renewable sources too. One option is to invest in a double skin facade for the Isar building. This would make the facade openable, similar to that of New Main. The (existing) outer facade will remain, while the double glass will be replaced with single glass (with ventilation slots). Inside a new thermal facade with an openable window will be placed in each room without any loss of space, as the existing air-conditioning duct can be used. This will result in a state-of-the-art, openable facade with optimised thermal insulation. Energy-intensive air-conditioning will also be replaced by a mixture of cooling/heating ceilings together with (very limited) air-conditioning in the office area, which will improve climate conditions. This will also create a more comfortable indoor climate for staff, for example by eliminating the air draft in the offices caused by the ventilation of the air-condition. Other investments focus on upgrading the conference areas, modernising the kitchens/canteens and cafeterias and other areas like the fitness/gym facilities to boost staff well-being. Issues like optimising logistic routes, solar panels on the roofs and security will be further developed in the design phase. Package B can only be executed together with package A.
- Optimising the office area layout results in a total of 4 470 workplaces in the Isar building and the PschorrHöfe (all phases except 7) versus 4 397 workplaces at present, and including phase 7. So the sale of phase 7 on completion of the project(s) is feasible. In addition to a capital gain, this will slash the operational costs of the Munich buildings by around EUR 2.5 million per year as of sale.

c) Calculations

Detailed calculations of the different packages per building are shown (based on an exploitation period of 40 years).

	Packages (in EURm)	
	A	B
Isar building		
Indexed investments*	72.5	164.7
PschorrHöfe		
indexed investments	170.3	309.7
Total	242.8	474.5

* investments indexed (inflated) to accommodate for price increase in the future: 2% per year

17. The EPO's budget usually features some EUR 20 to 30 million for building investments related to level of wear. **Package A** represents an indexed investment of around EUR 242.8 million, representing an average of EUR 24.3 million over a 10 year period. **Package B** represents an indexed investment of around EUR 474.5 million, representing an average of EUR 47.4 million over a 10 year period.
18. The indexed investment for packages A and B totals EUR 717.3 million.
19. To ensure a proper comparison of the costs of both packages, it is standard practice to establish their Net Present Cost (NPC), which takes into account all costs inherent in operating a building during its expected life-time, including the financial costs (interest, inflation, etc.), operational costs (maintenance, use of energy, cleaning, etc.) and major investments in upgrading and renovation after 20 years of exploitation. In the present case, the comparison of package A with packages A+B reveals that the savings on operational costs and the capital gain (in package B, the sale of Phase 7 of PschorrHöfe becomes possible) for a period of 40 years largely compensates for the higher initial investments required by package B, including the double skin facade in the Isar building:

	A (in EURm)	A + B (in EURm)
NPC (over 40 years)	1 029	1 143

20. The NPC of EUR 1 143 million represents an investment of EUR 28.6 million per annum.

d) Conclusions and recommendations

21. Based on the architects' reports, the Office proposes to initiate for packages A and B.

22. The renovation of the PschorrHöfe can be realised in 7 building phases and will take around 10.5 years. There is no need to partly relocate staff during the realisation process thanks to the current reserve in phase 8. In the Isar building the approach is based on 4 building phases that will take around 7 years to complete. This means that 250 workplaces have to be relocated. Accommodation costs have been taken into account, but the EPO is aiming for a solution that uses spare capacity in its existing premises, which can be combined with other strategies like PTHW.

23. Implementing these packages will upgrade all of the buildings in Munich, meaning that no major investments will be necessary for 20 years after completion. It will result in a cutting-edge working environment comparable to New Main providing space for both individual high-concentration work as well as for collaboration and communication.

24. The reduction of the Gross Floor Area (GFA) in Munich from 366 000 m² to 315 000 m² (disposal of phase 7 after completion of the project) by maintaining approximately 4 400 work places will save costs. It will also contribute to the Office's environmental ambitions, as this represents a reduction in its carbon footprint.

25. If the Budget and Finance Committee and the Administrative Council support the further development of this approach in principle, the next steps would be as follows:

- Tender procedure (CDP – competitive direct placement) for a project management company for general set-up and for defining the scope of general planner(s) (first phase of the project only)
- Tender procedure to select general planner(s) (architect, engineering teams and consultants) and a project management contract (for all remaining phases)

- Outcome of the tenders to be submitted to BFC/AC for approval (provisionally in October 2020)
- Initiate for the design phase. Based on the performance design, tender procedure(s) for the construction phase(s) will be launched in late 2021 and the outcome will be submitted to BFC/AC for approval. This will be executed only if the EPO obtains the approval of the BFC and AC for the contracts for the planner(s) and the project management company.

C. THE HAGUE

A brief summary of the study carried out in The Hague is available in Annex 2.

a) Key principles

26. The scenarios are based on the following basic assumptions:

- Staff numbers based on current EPO staff levels and assuming efficiency gains via Part-Time Home Working result in a total of 3 050 workplaces to be accommodated in The Hague (including external contractors and reserve).
- The scenarios use the same workplace concept that was implemented in New Main, but feature 65% individual workplaces and 35% workplaces in shared areas to accommodate the mix of corporate functions and examiners in the building. Additional formal and informal collaborative and meeting spaces are included on all floors to support the increase of workplaces in shared areas.
- Other key functions to be accommodated include a disaster recovery data centre (300 m² net area), conference and meeting facilities (as existing), a coffee corner (as in New Main), storage space (27% less than existing) and parking facilities (as existing).

27. Based on these assumptions, the building will need a total gross floor area of 54 000 m² (25 000 m² less than the existing Shell building) and a parking lot with a gross floor area of 21 000 m² (equivalent to current area at Shell).

b) Scenarios

28. In addition to the four scenarios proposed in CA/99/18, one additional scenario and two variants were identified. The list below covers all scenarios now under consideration:

- Scenario 1 – renovation of the existing Shell Building;
- Scenario 2.a – a new building on the footprint of the existing Shell building, built in one construction phase;
- Scenario 2.b – a new building on the footprint of the existing Shell building, built sequentially in two construction phases;
- Scenario 3 – a new building on the EPO site next to New Main building;
- Scenario 4.a – two new buildings on the EPO site: one on the footprint of the existing Shell building and one next to New Main, built in one construction phase;
- Scenario 4.b – two new buildings on the EPO site, one on the footprint of the existing Shell building and one next to New Main, built sequentially in two construction phases;
- Scenario 5 – leased building(s) and abandonment of the existing Shell building.

c) Detailed scenario calculations

29. Table 1: Detailed calculations of different scenarios (for 40-year exploitation period).

	Renovation Shell	New building on Shell location in one phase	New building on Shell location in two phases	New building on EPO site next to New Main	Two new buildings on EPO site in one phase	Two new buildings on EPO site in two phase	Lease new building(s)
(in EURm)	1	2.a	2.b	3	4.a	4.b	5
Indexed investments	297	319	333	277	311	285	40
Net Present Cost (NPC)	418	407	428	392	421	400	518

30. The lease scenario 5 involves the lowest investment at the beginning, but leads to the highest Net Present Cost (NPC) by far. It is also less efficient and does not allow the Office to accommodate all staff on one site.

The renovation scenario 1 does not require less investment due to the costs for the works being very comparable to a new building and in addition to this the scenario generates additional cost by temporarily relocating staff during the refurbishment process. It is also less efficient as it requires the maintenance of an additional 9 200 m² gross floor area versus a new building, which is reflected in the NPC.

Amongst the new building scenarios, scenarios 2a, 2b and 4a lead to higher levels of investment and NPC, mainly due to the partial relocation of staff during the realisation process. Both scenarios 3 and 4b are approximately the same and lead to the lowest investments and NPC.

31. Based on a detailed assessment (see Annex 2), we propose to combine and further pursue both scenarios 3 (new building next to Shell on the existing site) and 4b (two new buildings, one on the Shell location and one on the existing site, built sequentially in two construction phases); and to leave it to the architects and to the tender competition to propose the best solution for the EPO site in The Hague, as long as all work can be realised without temporarily relocating staff.

d) Financing options

32. Alternative financing options were examined:

- Sale and lease back;
- Public private partnership (by means of a Design, Construct, Finance and Maintain contract).

As can be seen from the report (see Annex 2), these alternative financing options turn out to be more expensive than self-financing using cash-flow surpluses.

e) Conclusions and recommendations

33. Based on the report by external experts, the President proposes to combine and pursue both scenarios 3 and 4b for the construction of new building(s) on the EPO site in The Hague, to be realised without temporary accommodation. These scenarios appear to be the most advantageous to the Office, and are submitted for approval by the Administrative Council.
34. If the Budget and Finance Committee and the Administrative Council support the further development of this combined scenarios, as was successfully implemented for New Main (see CA/43/11), in principle, the next steps would be to:
- Develop a detailed programme of requirements that includes the final number of workplaces to be accommodated, the flexibility of the accommodation strategy, the influence of part time home working on the size of the new building and measures to reduce potential constraints on staff during the building construction;

- Open formal discussions with the authorities of The Netherlands to assess the option of the EPO ultimately buy the land of the original EPO site (where all buildings could finally be constructed). Ownership would certainly enhance the value of EPO's assets in The Hague.
- Launch a tender procedure to select a consortium (comprising a design and engineering team and a construction firm) for the award of a "design & construct" contract. The tender procedure will comprise an international call for interest to tender, followed by a pre-selection for admittance to a two stage restricted tender, comprising a tender design stage and a tender bidding stage.

As with New Main, the key advantage of a design & construct competition is that the Office will have only one contract with a consortium to deliver a new building to a fixed price and in time. Most of the risks involved in every building process are then with the consortium. Design & construct competitions also lead faster to a new quality building.

- Submit the outcome of the tender featuring a design, building costs and a time schedule, and of the tender containing external contract and claim management to the BFC and the AC for approval most likely by the end of 2021;
- Implement design and construction (pending approval of the BFC and AC of the design & construct contract).

f) The Hinge building

Limited investments of approximately EUR 10 million in the existing Hinge building as the site's social area will also be necessary to age-related work and to adapt and enhance the central kitchen and canteen facilities to cater for the increased numbers eating there following the moves of all staff formerly housed in the rented buildings Le Croisé and Rijsvoort.

D. VIENNA

The summary report of the study carried out in Vienna is available in Annex 3.

a) Scenarios

35. Changes were made to the four scenarios proposed in CA/99/18: one additional variant was identified, the scenario 3 (new building on new premises) was not considered in detail. This results in the following overview:

- **Scenario 1a:** Existing building will get a refurbishment, staff will move to an external site during the construction phase.
- **Variant scenario 1b:** Existing building will get a refurbishment, only requiring on-site moves, building works in two phases.
- **Scenario 2:** Existing building will be demolished and a new building will be constructed. Staff will move to an external site during the construction phase.
- **Scenario 3:** not considered in detail due to unavailability of adequate locations.
- **Scenario 4:** A new location will be rented. The current building will be operated until the move takes place and will subsequently be sold.

b) Principles for developing scenarios

36. The following basic assumptions were made:

- A total of 110 workplaces are considered as a starting point based on the number of workplaces currently occupied by EPO staff and assuming efficiency gains via Part-Time Home Working, (including external contractors and reserve).

- The office environment is based on implementing the same workplace concept as in New Main, but with a change of percentage towards around 65% individual workplaces and 35% workplaces in shared areas for the corporate functions houses in Vienna. To support the higher number of workplaces in shared areas, additional collaborative spaces are added for informal meetings (collaborative areas, knowledge point, kitchenette and printing facilities). Other key functions to be accommodated centrally include training and meeting facilities, virtual classrooms and multimedia (all for future needs), computer/data rooms, a canteen and coffee corner (as existing), storage space (as existing), sports facilities and parking facilities (as existing).
- In terms of quality levels, New Main is used as a benchmark for the indoor climate, interior layout and various facilities in the building. Additional investments will also result in intelligent (smart) building(s). The sustainability target has also been raised to BREEAM Outstanding for new buildings, and BREEAM with highest possible class for existing buildings.

37. These basic assumptions result in a total of 6 250 m² Gross Floor Area (GFA) for the building (1 700 m² GFA less than the existing Vienna building) and 3 400 m² GFA for the parking lot.

c) Calculations

38. The key results of detailed cost calculations (net present cost, following the "Net Present Value" methodology) for the different scenarios are shown below, comprising
- Other costs for external experts and consultancy, connection costs, etc.
 - Costs of temporary accommodation, including the preparation, fitting-out and rental of a building in Vienna during the construction period
 - Removal costs
 - Furnishing the office environment and canteen.

	Refurbishment	Refurbishment in two phases	New building on current location	Rented building on new premises, current building sold
Costs in EURm	1.a	1.b	2	4
Indexed investments	36.5	34.1	34.9	5.2
Net Present Cost (NPC)	51.4	48.4	51.2	53.1

39. In scenario 1 the current building will be stripped down to its basic skeletal structure and refurbished. The current Gross Floor Area (GFA) will be kept as it is. The main difference between scenario 1a and 1b is the execution in one or two phases. Not all the requirements of a modern building can be met due to the shape and height between floors of the existing building. Floor layouts have to follow the current shaping, which will lead to less flexibility. Solution 1a can be recommended, but it does have drawbacks such as the larger than needed floor space.
40. In scenario 1b no temporarily relocation of staff is required and no leasing costs have to be taken into account. Keeping staff on site, however, means 5 years of disturbance to daily business and high levels of effort to safeguard access and escape routes on site. Solution 1b cannot be recommended.
41. Scenario 2 is a lot more effective than scenarios 1a and 1b because it involves (re)building and maintaining about 1 floor and 1 700 m² less GFA than for a refurbished building according to scenarios 1a and 1b. The current building will be completely demolished. The current footprint of the building will make it possible to develop a new building that meets all the requirements of a transparent, flexible working environment. Solution 2 is recommended.

42. The lease scenario 4 has the advantage that it requires the lowest initial investment, but leads to the highest net present cost for the next forty years. The total rent for one year equals EUR 2 million (incl. operational cost such as energy). In addition, there will be no residual value after forty years, which was estimated at ca. EUR 20 million. Standard buildings on the market are not customised to the EPO like a new building that fully meets the EPO's requirements, as in scenario 2. As a result, this leads to a downgrade of requirements and flexibility to some extent. The rental indicated is based on standard local rental prices. Refurbishing the office space to meet the requirements of transparency and create a modern and collaborative working environment, as far achievable in a leased building, will also generate additional costs. All functional requirements like meeting rooms or assembly/event facilities, training and virtual classroom facilities, data rooms, sports facilities and a canteen, are included, and are comparable to scenario 2. Meeting all of the EPO's requirements in a rented building would be roughly equivalent to the build, sale and lease back option. This solution cannot be recommended.

d) Financial evaluation

43. Alternative financing options were examined using equity and debt, each with different percentages

A detailed summary of these alternative financing options is available (see Annex 3).

e) Conclusions and recommendation

44. Based on the report by the external experts and a detailed assessment (see Annex 3), it is proposed to further pursue scenario 2 for the construction of a new building on the current EPO site in Vienna. The EPO is aiming for a solution that keeps its current premises located in the centre of Vienna. This solution can be realised with temporary accommodation and is the best solution for the Office. It is proposed for approval by the Administrative Council.

45. Designing a new building will allow the EPO to fully meet its future needs and comply with all legal regulations. It will also meet all safety and security requirements. By saving 1 700 m² GFA and adopting a modern energy concept, a new building will also contribute to the Office's environmental ambitions in terms of sustainability and reducing its carbon footprint.

46. The new building can be realised in one building phase, completion date approximately 4.5 years after project approval. Staff will need to be relocated for a period of approximately 2 years and accommodation costs have been taken into account.
47. Once construction is complete, no major investments will be necessary for over 20 years. A new building will offer a transparent, cutting-edge working environment comparable to that of New Main.
48. The value of the plot and new building after completion was calculated by the consultant as totalling EUR 34.6 million. After deducting furnishing costs, the investment amounts to EUR 33.7 million, i.e. the investment is justified.
49. The residual value after 40 years of operation was calculated as EUR 20.8 million.
50. If the Budget and Finance Committee and the Administrative Council support the further development of this scenario in principle, the next steps would be:
 - Tender procedure to select an external contract management to support the choice of the general planner by developing a concept of requirements in cooperation with EPO.
 - Tender procedure to select a general planner to develop a detailed programme of requirements including a flexible accommodation strategy, the influence of part time home working on the size of the new building and measures to minimise hindrances to staff during the building construction.
 - Tender procedure to select a construction firm (pending approval of the BFC and AC for the planner contract).
51. Submission of the results of the tenders to BFC/AC for approval mid-2020 (planner) and mid-2021 (construction firm).

E. OVERVIEW AND CONCLUSIONS

52. As mentioned in CA/99/18, due to fairly high levels of wear and tear, the Office is continuously investing in its existing buildings to maintain the work environment and preserve the value of the EPO's assets.

As detailed in Table 2, the EPO expects to invest a total of EUR 317 million in its four buildings over the next decade to repair or renew building elements and installations that are reaching the end of their life-time; and to comply with the latest legislation in areas like safety requirements, hazardous materials and energy performance. These investments are needed anyhow so that the Office can fulfil its responsibilities as building owner.

53. Table 2: Overview of investments in all four EPO buildings:

Investments (EURm)	Maintain as-is buildings	Modern working environment	Difference
Munich – Isar	73	165	92
Munich – PschorrHöfe	170	240 (include sale of PH7)	70
The Hague – Shell	58	277	219
Vienna	16	35	19
Total	317	717	400

The difference of EUR 400 million in terms of cash over the next 10 years will make it possible to provide a modern working environment for all EPO staff on all sites. It is fully aligned with the goals of the Strategic Plan to build an engaged, knowledgeable and collaborative organisation. Furthermore, it will help to preserve and potentially increase the building patrimony value of the Office.

54. Table 3: Overview of the Net Present Cost calculations for all four buildings, (based on 40-year exploitation period)

NPC (in EURm)	Maintain current state of buildings	Modern working environment	Difference
Munich – Isar	247	353	106
Munich – PschorrHöfe	783	790	7
The Hague – Shell	217	392	175
Vienna	12	53	41
Total	1 259	1 588	329

The difference in net present costs of EUR 329 million over the next 40 years represents additional costs of EUR 8.2 million per annum.

VI. ALTERNATIVES

55. For each site, possible alternatives have been considered and compared in an analysis by the Office.

VII. FINANCIAL IMPLICATIONS

56. The financial implications before coming back to the Council are estimated at EUR 2m. This amount will mainly be used for the preparation and execution of the design and build contract in The Hague. The amounts have been included in the 2020 and 2021 budget. All other financial commitments will be presented to the Council for approval in 2020 and 2021.

57. To carry out all these projects simultaneously, dedicated internal project teams will have to be created with the required levels of expertise and experience for the EPO to remain in full control of the process and the quality of the output.

VIII. LEGAL BASIS

58. Article 6, 10 EPC

IX. DOCUMENTS CITED

59. CA/88/18, CA/99/18, CA/43/11

X. RECOMMENDATION FOR PUBLICATION

60. Yes

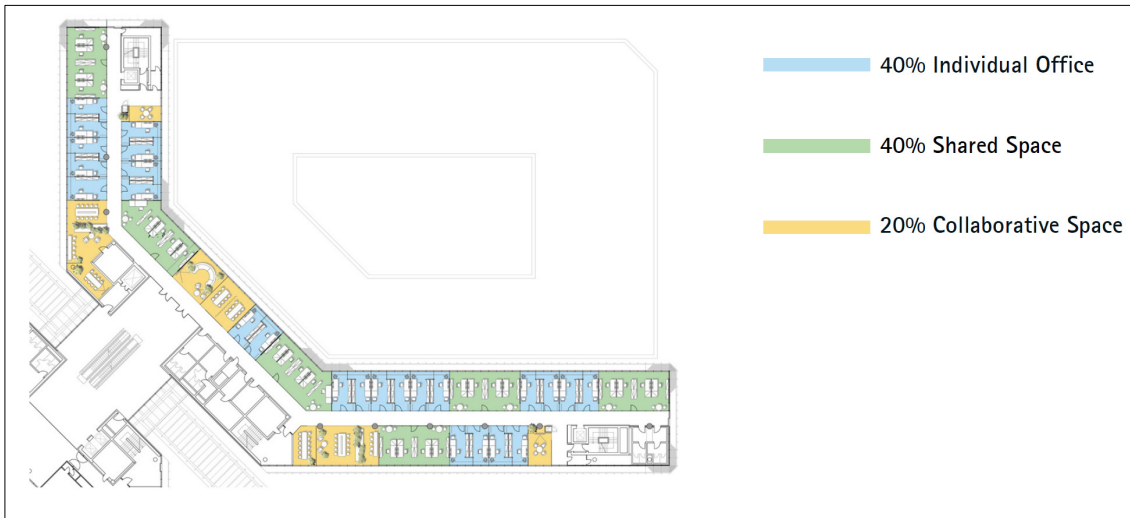
ANNEX 1 ILLUSTRATION OF MODERN WORKING ENVIRONMENT

The Office aims at offering its staff a modern working environment. This type of working environment is characterised by a flexible mix of spaces that offers work places for high concentration work, collaborative work spaces, formal and informal meeting rooms, break-out rooms and communication zones.

The renderings below illustrate how such an environment can look like. The drawings are examples and typical for what the Office will implement in all buildings; the final layout and design will be done in the next steps.

1. MUNICH _ ISAR: "NETWORK" OPTION

Floor plan

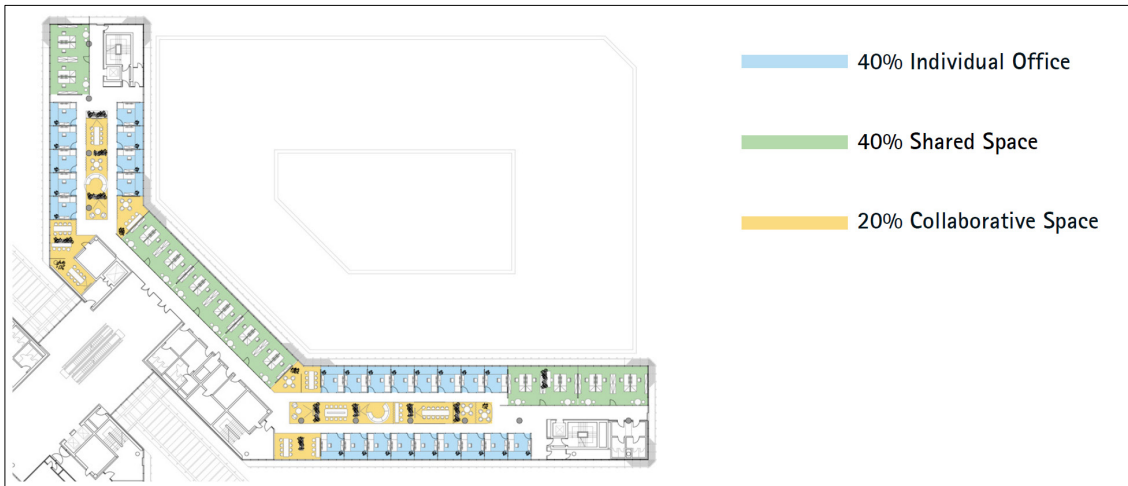


Elevations

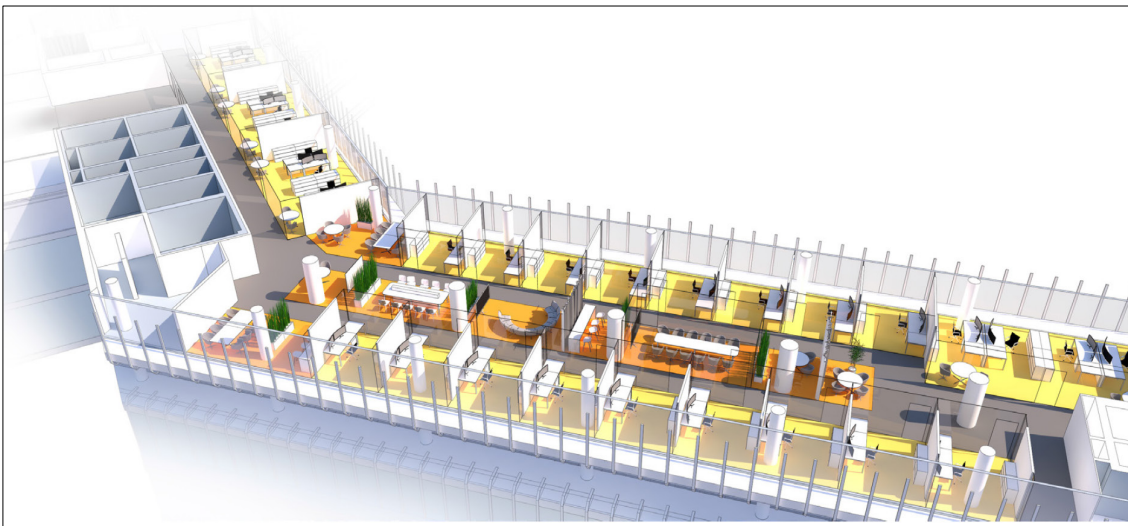


2. MUNICH _ ISAR: "OPEN MIDDLE" OPTION

Floor plan



Elevations

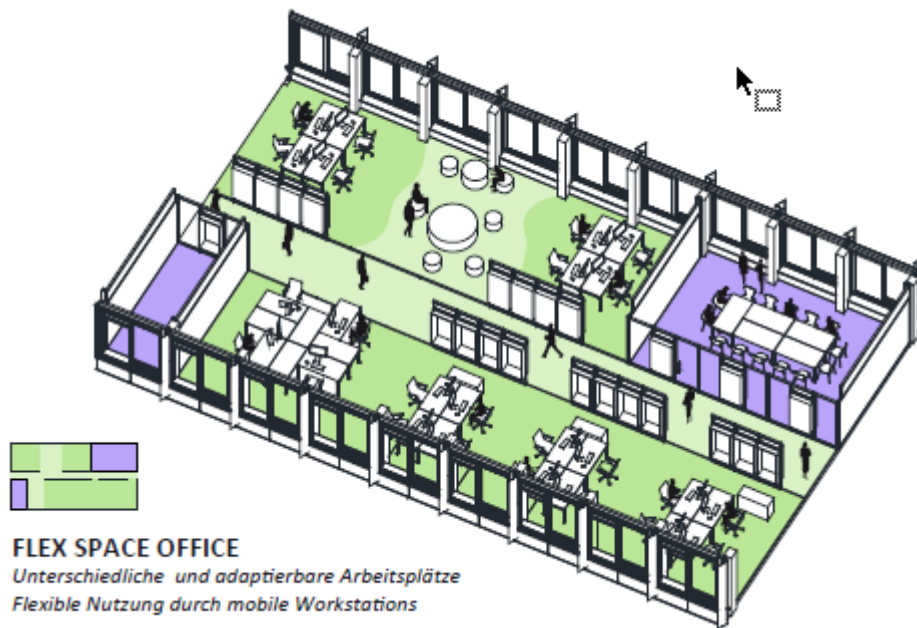


3. VIENNA: MIX OF SPACES

Floor plan



Elevations



4. VIENNA: TRANSPERANCY AND GLASS WALLS

Elevations



Approaches to remodelling buildings in Munich

The EPO's building strategy is to enhance the value of its assets and to deliver a cutting-edge working environment with effective, modular space management (see CA/88/18 and CA/99/18). The Office's main aim is to create transparent, flexible and state-of-the-art workplaces to foster communication and collaboration. Following on from the 158th meeting of the Administrative Council, a project group was formed to identify scope for remodelling the EPO's buildings in Munich.

The project group was assisted in this process by external experts from the architectural firms gmp (Gerkan, Marg & Partner, Hamburg, the original designer) for the Isar building and DMP, Munich, for the PschorrHöfe.

This report summarises the overall approach adopted, the study's results and the project group's conclusions and recommendations.

1. CURRENT SITUATION

The EPO has property at two locations in Munich: the Isar building, which has now been in use for almost 40 years, and the PschorrHöfe, where the first buildings (BT 1 to 6) were inaugurated in 1991 and extended to BT 7 in 2005 and BT 8 in 2007. In the older buildings (Isar and PschorrHöfe BT 1 to 6) age-related investments are needed to ensure proper and safe functioning in the future. The current working environment predominantly consists of single offices (19 to 22 m²) divided by non-transparent separation walls. To align with current practice in the office building sector, we are now considering investments in a cutting-edge, transparent working environment with lower energy consumption levels (all buildings). The two locations represent a total of 366 000 m² GFA featuring some 4 400 workplaces.

2. PUTTING TOGETHER INVESTMENT PACKAGES

2.1. DEFINITION

Two packages, A and B, were defined: package A covers all investments related to wear and tear and meeting legal requirements and latest safety standards. This investment is necessary in all events. Package B covers all investments related to creating a cutting-edge, transparent working environment, green building aspects (like generating renewable energy, reducing energy consumption) and well-being.

- a) Package A: based on the annual assessment of its buildings using epiqr, a standardised building assessment process developed by several research institutes (see CA/99/18), the EPO has identified the investments required over a 10 year period.

- b) Package B: the creation of a cutting-edge, transparent working environment is based on the workplace concept of New Main. It features 50% individual workplaces and 50% workplaces in shared areas for the Isar building and 75% individual workplaces and 25% workplaces in shared areas in the PschorrHöfe. To support the higher number of workplaces in shared areas, additional spaces are included on all floors for formal and informal meetings. Next to the office area, the conference area has to be transformed into a state-of-the-art facility with modern A/V equipment that meets the expectations of various users. Other investments are related to well-being (in the canteen and cafeteria) and optimal use of storage, remaining data centres, etc.

The EPO has also identified the need to invest in reducing its energy consumption. Other issues like the optimisation of logistic routes, solar panels on roofs and security will be further developed in the design phase. Package B can only be executed together with package A.

2.2. RESULTS PER PACKAGE

Based on the above definition of the packages, external experts from gmp and of DMP, together with the project group, conducted an in-depth analysis of the buildings. Every single investment listed was carefully considered and examined. Unit prices based on actual local market conditions (price level early 2019) were used and multiplied with the exact quantities (e.g. the exact number of m² of transparent separation walls were calculated based on a first design sketch for each building). The result was a very solid cost calculation at this early stage. The following major investments were identified:

- a) Package A: in the Isar building, major investments are required in renovating of the roofs, vertical exploitation, induction units, and technical facilities like cooling and water treatment equipment that was not replaced during the partial renovation some 10 years ago.

In the PschorrHöfe (BT 1 to 6) the main focus is on replacing technical central installations like the heating, cooling and air-conditioning plants. The electrical central installations have to be renewed too. The fire safety concept needs to be updated and structural elements in the parking garage require intensive restoration. Vertical transportation in the building (elevators) has also reached the end of its lifetime. The facade is still in good condition and can be preserved. There is no need to modernise the thermal insulation, but the external sun protection and internal sun blinds have to be renewed.

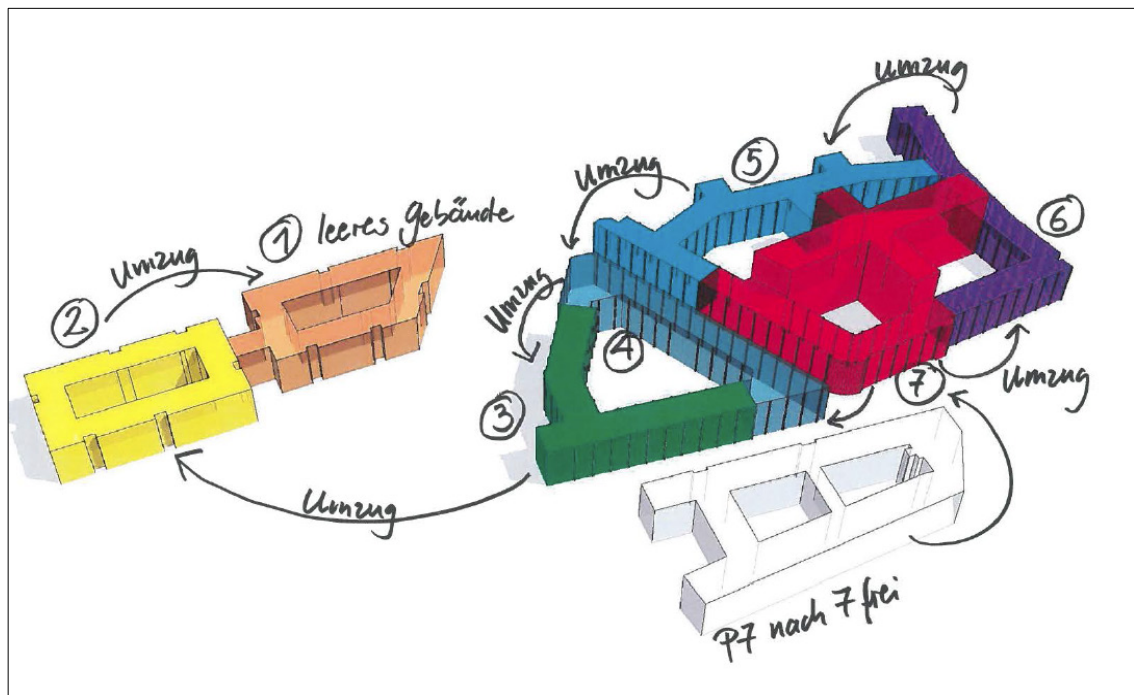
- b) Package B (all buildings): All buildings will be remodelled to create a transparent, cutting-edge working environment that fosters collaboration and communication. Despite some constraints imposed by fire safety and structural elements, this investment will result in a modular environment that satisfies both the need for high-concentration work as well as the need for ad-hoc face-to-face and team meetings, making the working day of each individual staff member more efficient. The reshaping of the office area in the PH (BT 1 to 6 and 8), together with an optimisation of single offices (size now 17 m² instead of 19 to 22 m²), will create some 550 additional workplaces, without inconveniencing staff. The efficient use of the exploitation zones for collaboration will enhance ad hoc staff meetings. All of these measures will mean that the PschorrHöfe BT 7, which currently provides some 480 workplaces, can be sold on completion of the project. This will result in a capital gain and will significantly reduce operating costs in the long term. The conference areas (7 000 m² GFA in the Isar building only) have not been modernised since the building's inauguration. However, requirements in terms of use (proceedings, internal meetings, etc.), number of participants (size of rooms) and technical equipment (video hearings, simultaneous interpretation, audio/video, etc.) have changed significantly over the years. A refurbishment will turn the conference area into a state-of-the-art facility. Other (minor) investments are required to compensate for the loss of infrastructure resulting from the sale of PschorrHöfe BT 7. These investments will cover adapting the main canteen (BT 1 to 4), and moving the data centre and the conference facilities (both BT 8).

In terms of energy costs, the biggest concern is the very high consumption levels in the Isar building due to limited thermal insulation of the facade combined with full air-conditioning (EUR 22 / m² GFA per year versus EUR 10 / m² GFA per year in the PH). Investing in a double skin facade for the Isar building would slash this figure. It would make the facade openable, similar to that of New Main. The (existing) outer facade will remain, while the double glass will be replaced by single glass (with ventilation slots). Inside a new thermal facade with an openable window will be placed in each room without any loss of space, since the existing air-conditioning duct can be used. This will result in a state-of-the-art, openable facade with optimised thermal insulation. The current energy-intensive air-conditioning system will be replaced by a mixture of cooling/heating ceilings together with (very limited) air-conditioning in office areas to improve climate conditions. Draught and other negative side effects will be eliminated.

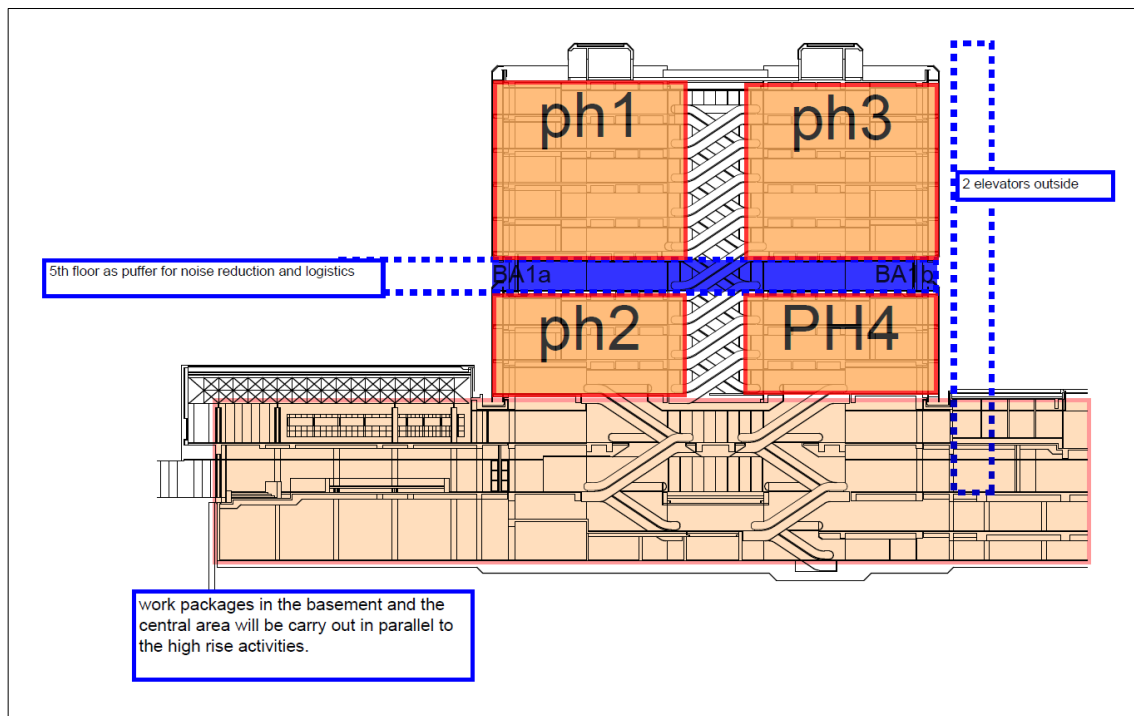
2.3. LOGISTICS

Our aim is to carry out the construction work required to remodel both locations without relocating any staff.

Construction work on the PschorrHöfe can be realised in 7 construction phases, starting with the smallest construction phase (one half of BT 8) and progressively increasing the scope of work phase by phase. With the completion of each construction phase, it will be possible to accommodate more staff than previously, which should preclude any need for temporary relocation and allow all staff to remain at the PschorrHöfe. The construction work will take a total of 10.5 years as of the day that the Council gives its approval.



The Isar building project can be realised in 4 construction phases, with one half of the high-rise forming a construction phase to allow for efficient progress. Building activities in the basement and central floors can be executed in parallel to construction work in the high-rise. This will require the relocation of 250 staff members. Accommodation has been included in the cost estimates (total amount of EUR 16 million) to be on the safe side. But the Office is confident that these 250 staff members can be accommodated in its existing facilities in Munich and the amount of EUR 16 million will probably not be needed. This construction work will take a total of around 7 years as of the day that the Council gives its approval.



3. FINANCIAL EVALUATION

3.1. INVESTMENT ESTIMATES AND NET PRESENT COST CALCULATIONS

Based on the results per package, external experts carried out financial valuations to estimate the investment and Net Present Cost (NPC) for each building and package.

The investment figures reflect different main groups of costs, comprising:

- Construction costs based on the above basic assumptions, including design and engineering, permits, etc.
- Site costs, including site preparation for building work, the removal of existing installations and finishing after completion

- Other costs, including external experts and consultancy services, connection costs, etc.
- Costs of temporary accommodation (250 workplaces for the Isar building project) including the preparation, fitting-out and rental of building(s) in the Munich area during the construction period. The Office's aim is to avoid the cost of this temporary accommodation by assigning the staff to work places in other buildings for the duration of the works,
- Removal costs.

In addition to initial investments, the Net Present Cost (or NPC) takes into account all costs inherent in operating a building during its expected life-time, including the financial costs (interest, inflation, etc.), operational costs (maintenance, use of energy, cleaning, etc.) and major investments in upgrading and renovation after 20 years of exploitation.

The Net Present Cost (or NPC) is a standard assessment method for *using the time value of money to appraise long-term projects*. It measures the excess or shortfall of cash flows in present value terms.

The following basic financial assumptions have been defined:

- An exploitation period of 40 years, as used by governmental agencies in The Netherlands;
- Financing the investments with 100% equity
- A discount rate of 3.5%, as defined in the last finalised financial study (rate currently applied at the Office)
- An interest rate of 1% (based on government loans), an annual cost increase of 2% (based on ECB-long term) and a return on equity of 4% (based on EPOTif).

The table below shows the calculated investments and Net Present Costs:

<i>(in EURm)</i>	Renovation Isar building	Renovation Isar building	Renovation PH BT 1 to 6, 8	Renovation PH BT 1 to 6, 8
	Package A	Package A+B	Package A	Package A+B
Indexed investments	73	237	170	480
Net Present Cost	247	353	783	790

4. CONCLUSION

These studies examine and evaluate the current situation, framework conditions and potential options for remodelling our buildings in Munich. They identify ways of giving the buildings a modular, cutting-edge layout to make them fit for the challenges of the future.

Package A details the investments required in the age-related installations of the older buildings based on a 10 year perspective (Isar building and PschorrHöfe BT 1 to 6). It involves a relatively high level of investment, but does not create a forward-looking working environment. Instead, it addresses wear and tear issues and guarantees the healthy, safe operation of the buildings and needs to be done anyway.

Package B focuses on creating a transparent, cutting-edge working environment in the existing buildings in Munich, based on the functional requirements established for New Main. In putting together this package, the project team and external experts also critically analysed how the New Main experience can be enhanced. A key result is that the existing buildings in Munich are excellent candidates for remodelling. Combining a functional reorganisation of the office area with optimised single office layouts results in a highly efficient working environment. The sale of one building (PschorrHöfe BT 7) is feasible without reducing the overall number of workplaces offered. In the future 320 000 m² GFA (versus the current 366 000 m² GFA) will provide approximately 4 400 workplaces. All buildings will be in a very good condition, meaning that no major investments will be required for 20 years after completion of the projects. Both locations in Munich will provide flexible working conditions, as well as refurbished conference areas and leisure facilities (canteen, cafeteria, etc.) that can be operated at reasonable energy costs.

5. RECOMMENDATION

We recommend taking the following steps:

- a) Combining packages A and B for both locations in Munich to upgrade all buildings and create a cutting-edge working environment. If feasible, both projects will be carried out without temporarily relocating staff.
- b) Launching a tender (CDP, estimated costs below EUR 200 000) for the first phase with a project management company for the general set-up of the project and to define the scope of a general planner(s).

- c) Commissioning the first phase from the successful bidder and defining the general set-up of the project and the scope of a general planner(s).
- d) Launching a tender procedure to select general planner(s), (architects, engineering teams and consultants) and a project management company.
- e) Submitting the outcome of the tenders to BFC/AC for approval (provisionally in October 2020).

**Scenarios
for the future of the Shell Building in The Hague**

The EPO's building strategy is to enhance the value of its assets and deliver a modern working environment with effective, modular space management (see CA/88/18 and CA/99/18). The Office's main aim is to provide transparent, flexible and state-of-the-art workplaces to foster communication and collaboration. Following on from the 158th meeting of the Administrative Council, a project group under the lead of PD 4.4 was formed with representatives of General Administration, Finance and Legal Services to develop and assess the different scenarios for the future of the Shell Building in The Hague.

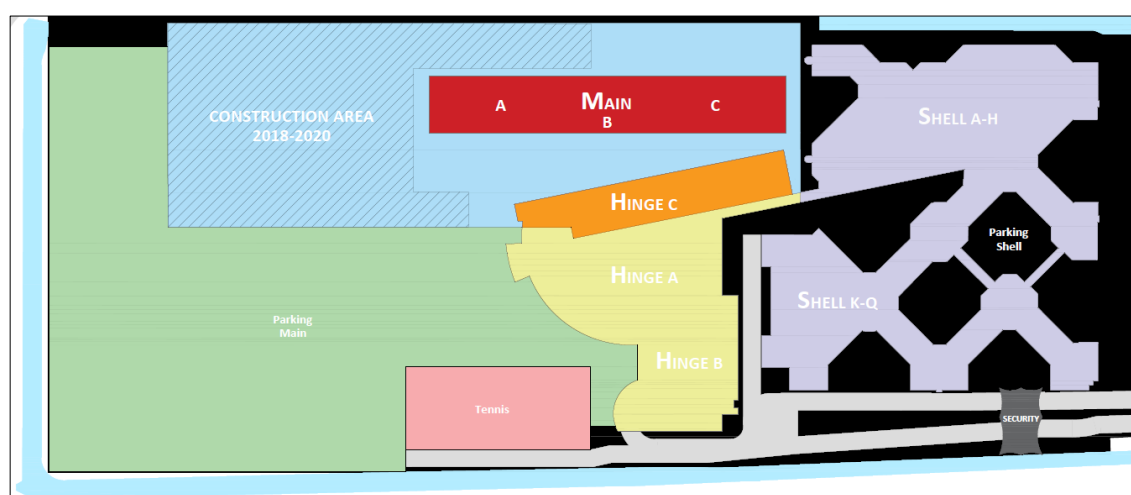
The project group was assisted in this process by external experts from the consulting firm bbn adviseurs, which was commissioned following a competitive direct placement procedure in accordance with the EPO financial regulations.

This report summarises the overall approach developed, the evaluation results and the project group's conclusions and recommendations.

1. CURRENT SITUATION

In the current situation the key figures on ownership and surfaces are:

	Hinge A-C	Main A-C	Shell A-Q	Total EPO Site
Property/building	owned		owned	
Land	leased from The Netherlands		owned	
Ground (m ²)	64 900		29 555	94 455
Gross Floor Area (m ² GFA)	23 041	87 276	79 109	189 426
Number of workplaces	0	1 946	1 511	3 457



The condition and limitations of the Shell building were detailed in CA/88/18 and CA/99/18. A further investigation by the external experts, according to standard NEN2767, confirmed that it is necessary to carry out major maintenance works estimated at approximately 58 million Euros only to use the Shell building for the next 20 years in its current form, without upgrading the offices to a modern workplace environment. These works will need to be done in any case and will not support the office in achieving the key-goals of its Strategic Plan Framework for modern and collaborative working environment.

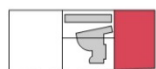
2. DEVELOPMENT PATH OF SCENARIOS

2.1. DEFINITION

Five basic scenarios were selected from a range of potential options and developed in detail:



Scenario 1 (renovation)
Renovation of the existing Shell building



Scenario 2 (new building)
A new building on the footprint of the existing Shell building, built in:
– 2a) one construction phase
– 2b) in two construction phases, sequentially



Scenario 3 (new building)
A new building on the EPO site next to the New Main building



Scenario 4 (new buildings)
Two new buildings on the EPO site: one on the footprint of the existing Shell building and one next to New Main, built in
– 4a) one construction phase
– 4b) in two construction phases, sequentially



Scenario 5
leased building(s) and abandonment of the existing Shell building

2.2. BASIS ASSUMPTIONS

The objective of the study is to define, compare and assess different feasible scenarios on the basis of predefined criteria that are applied uniformly. The following three main assumptions were used and further elaborated:

a) Number of workplaces to be accommodated

A total of 1 100 workplaces are considered as a starting point, based on current workplace occupation by EPO staff and assuming half a workplace per contractor and efficiency gains via Part-Time Home Working.

Staff in The Hague – no. of occupied workplaces by EPO Staff	2 679
External contractors (330 contractors, 0,5 workplace/contractor)	165
Reserve (10%)	300
<hr/>	
Total workplaces to be accommodated	3 144
– Total workplaces in New Main	-1 945
– Further efficient with PTHW	-100
<hr/>	
Total workplaces to be accommodated in Shell building	1 100

b) Spatial requirements

The scenarios adopt the same workplace concept that was implemented in New Main, but feature 65% individual workplaces and 35% workplaces in shared areas. Additional collaborative spaces are added on all floors for formal (local meeting and video-conferencing rooms, private spaces for telephone conversations, touchdown areas for private or confidential discussions) and informal meetings (collaborative areas, knowledge point, kitchenette and printing facilities) to support a higher number of workplaces in shared areas.

Other key functions to be accommodated include a small disaster recovery data center, conference and meeting facilities (as existing), a coffee corner (as in New Main), storage space (27% less than existing) and parking facilities (as existing).

Room list			m ² NFA	m ² GFA
a) Office environment	wp	m ² /wp		
Office individual – director	20	29.0	580	986
Office individual 65%	95	14.5	10 078	17 132
Office shared 35%	385	12.8	4 928	8 378
Decentralised ancillary rooms			5 912	10 050
Toilets			912	1 550
Total office environment	1 100		22 409	38 095
b) Other key functions				
Disaster recovery data centre			300	510
Conference/meeting centre			4 412	7 500
Coffee corner			800	1 360
Storage and archive area			4 000	6 800
Sub-total Office building				54 265
Parking facilities for cars	673	30.0		20 190
Parking facilities for bicycles	508	1.7		864
Parking facilities for motorcycles	30	4.4		132
Total (including parking facilities)				75 451

c) Definition of a required building quality level

In terms of the quality level of indoor climate, interior and various facilities, the New Main requirements are referred to as the standard to be achieved. Additional investments will also result in intelligent (smart) building(s). Our sustainability targets have also been raised to BREEAM Outstanding for new buildings, and BREEAM with highest possible class for existing buildings.

These starting points and data, defined to facilitate a comparison of the scenarios, do not represent the final amount of square meters needed, nor the number of workplaces required to realize any of the scenarios.

3. FINANCIAL EVALUATION

3.1. INVESTMENTS ESTIMATES AND NET PRESENT COST CALCULATIONS

Based on the above, the external experts bbn adviseurs carried out financial valuations to estimate the investment and the Net Present Cost (NPC) for each scenario.

The investments figures reflect different main groups of costs, comprising:

- Construction costs based on the basic assumptions cited above and realisation by means of a design and build contract, including design and engineering, permit, etc.;
- Site costs including site preparation for building works, demolition of the existing Shell building and completion of the remaining site;
- Other expenditure on external experts and consultancy services, connection costs, etc.;
- Costs of temporary accommodation, including the preparation, fitting-out and rental of building(s) in The Hague area during the period of construction;
- Removal costs.

In addition to initial investments, the Net Present Cost (or NPC) takes into account all costs inherent in the exploitation of a building during its expected life-time, including the financial costs (interest, inflation, etc.), the operational costs (maintenance, use of energy, cleaning, etc.) and major investments in upgrading and renovation after 20 years of use.

The Net Present Cost (or NPC) is a standard assessment method for *using the time value of money to appraise long-term projects*. It measures the excess or shortfall of cash flows, in present value terms.

To proceed, the following basic financial assumptions have been defined:

- An exploitation period of 40 years, as used by governmental agencies in The Netherlands;
- 100% equity financing;
- A discount rate of 3.5%, as defined in the last finalised Financial study (Deloitte 2016);
- An interest rate of 1% (based on government loans), a yearly cost increase of 2% (based on ECB-long term) and a return on equity of 4% (based on EPOTif).

The table below shows calculations of investments and Net Present Costs.

	Renovation Shell	New building on Shell location in one phase	New building on Shell location in two phases	New building on EPO site next to New Main	Two new buildings on EPO site in one phase	Two new buildings on EPO site in two phases	Lease new building(s) not in the direct vicinity of EPO site
(in EURm)	1	2.a	2.b	3	4.a	4.b	5
Indexed investments	297	319	333	277	311	285	40
Net Present Cost	418	407	428	392	421	400	518

3.2. FINANCING OPTIONS

The alternative financing options considered are "self-financing" by cash-flow surplus, "sale and lease back", or a "Public-Private Partnership" in the shape of "Design, Build, Finance and Maintain and Operate" ("DBFMO") contract model.

Some of these options may not be applicable to all scenarios, but for comparative purposes, all models have been applied to one single scenario, namely Scenario 3 (a new building on the EPO site next to the New Main building).

<i>Net Present Cost (in millions of euros)</i>	Scenario 3 New building on EPO site
Self-financing (100% equity)	392
Sale and lease back	517
Public-Private Partnership (DBFMO) (subject to very long-term agreements)	464

Considering the above, the "self-financing" option remains the most interesting model for the EPO to finance such investments.

4. ASSESSMENT OF NON-FINANCIAL PARAMETERS

During the investigation, the possible risks, advantages and disadvantages of each scenario were identified and listed.

The predefined scenarios are compared on the basis of three main criteria in order to assess the:

- a) Long term impact on the EPO site in The Hague, referring to the final situation and
- b) the building life-time of at least 40 years;

Temporary issues, with a focus on the realisation process (5 to 8 years).

For each of these groups, the most important issues were taken into account and qualified, as shown below.

Renovation Shell	New building on Shell location in one phase	New building on Shell location in two phases	New building on EPO site next to New Main	Two new buildings on EPO site in one phase	Two new buildings on EPO site in two phases	Lease new building(s) not in the direct vicinity of EPO site
1	2.a	2.b	3	4.a	4.b	5

Financial results (millions of euros)							
Investments	297	319	333	277	311	285	40
Net Present Cost (NPC)	418	407	428	392	421	400	518
Functionality							
Synergy between buildings, all staff in one site, ease of use							
Building functionality and flexibility (different ways of working)							
Building to facilitate an optimal working environment							
Future flexibility of the entire site (increase/decrease staff)							
EPO as sustainable and socially responsible organisation							
Urban quality							
Relation with surroundings in Plaspoeolder, use of EPO site							
Emphasize New Main as the main building on the EPO site							
Time issues/Phasing							
Duration of construction until staff move in							
Need for temporary office space, amount of moves							
Nuisances/Hindrance of construction works on EPO site							

5. CONCLUSION

Scenario 1 and 5 are the least attractive scenarios for the following reasons:

- Scenario 1 (renovation of the existing Shell building) is less attractive mainly due to the lower functional and urban quality of the resulting building. While floor layouts could potentially be adapted to create a modern environment, the limitations of the existing building structure make it more difficult to achieve the requisite levels of functionality. It is also less efficient than a new building because around 9 200 m² more gross floor areas would need to be maintained. The fact that scenario 1 uses the existing building structure does not lead to lower costs.
- Scenario 5 (leased building(s) and abandonment of the existing Shell building) involves the lowest investment at the beginning, but leads to the highest Net Present Cost (NPC) by far. Based on current market, the leased buildings – either one new building via a real estate investor, or at least two existing buildings in the Plaspoelpolder – will not be located in the direct vicinity of the EPO site. So this scenario is not to be taken into consideration, as it does not fulfil the requirement of accommodating all staff on one site to ensure greater synergies and collaboration. It is also less efficient in terms of the duplication of functions and facilities.

Scenarios 2, 3 and 4 relate to new building(s), and could offer suitable solutions.

- Scenario 2 (a new building on the footprint of the existing Shell building) provides a final situation in which most functional ambitions can be achieved. The realisation process, however, involves the temporary relocation of some staff. Although scenario 2a, built in one construction phase, requires higher initial investments, the NPC over 40 years remains in the same range as for scenarios 3 and 4b). But the need to relocate staff temporarily creates more risks for the project (for example, of finding and leasing temporary accommodation, price increases in case of delays, etc.). Scenario 2b, built sequentially in two construction phases, is not recommended, as it is the most expensive scenario, takes about 2 years longer to complete and has no major benefit.

- Scenario 3 (a new building on the EPO site next to the New Main building) is the cheapest scenario, both in terms of investments and NPC. There is also no need to relocate staff temporarily and fewer constraints on the EPO's operations are expected because the construction site would be further away from existing buildings. Most functional ambitions can be achieved, although the overall urban quality would be lower than for scenarios 2 and 4. The main drawback of scenario 3 is that it could constrain the EPO in case of any future decrease in staff levels. In this case, it would not be possible to sell (land is leased and not EPO's property) and challenging to lease (limited accessibility from the street) part of the new building. The risk could, however, be (partly) mitigated by discussing the possibility of the EPO becoming the owner of the land with the authorities of The Netherlands.
- Scenario 4 (two new buildings on the EPO site: one on the footprint of the existing Shell building and one next to New Main) provides for the best results in terms of the long-term impact on the EPO site. All functional ambitions could be achieved and the EPO site will have a good overall urban quality.
Scenario 4a, built in one construction phase is, however, more expensive and it also involves temporarily relocating staff. This is also the scenario that could most severely affect the EPO's operations, as two construction sites would be working in parallel. So this scenario is not recommended.
Scenario 4b, built sequentially in two construction phases does not present these disadvantages: working in two phases is one of the cheapest scenarios (similar to scenario 3), as it avoids the need for temporary accommodation. However, this is the longest and most complex realisation process. Compared to construction in one phase, there will be more hindrances to staff and a higher risk of potential delays, claims and additional costs.

As this detailed evaluation shows, the two most advantageous scenarios are:

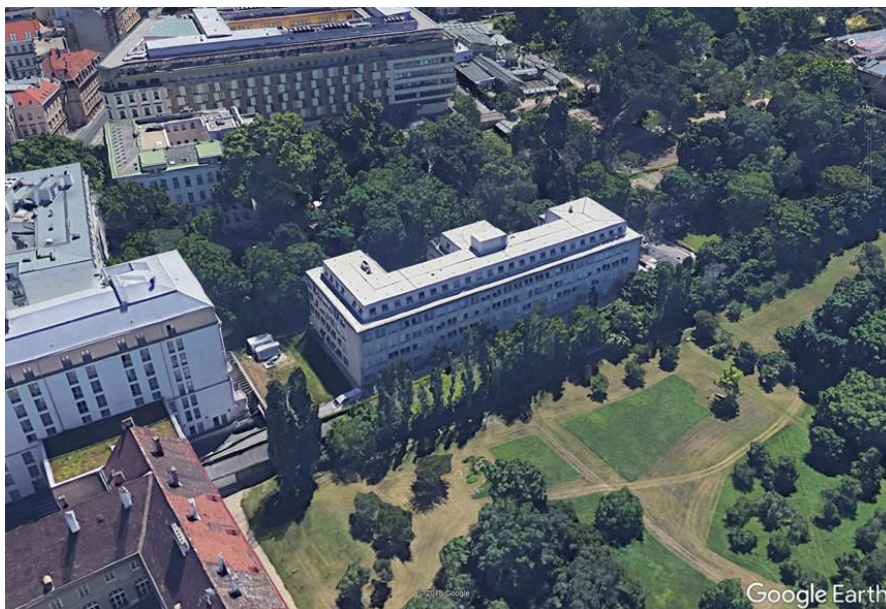
- Scenario 3: a new building on the EPO site next to the New Main building;
- Scenario 4b: two new buildings on the EPO site: one on the footprint of the existing Shell building and one next to New Main, built sequentially in two construction phases.

6. RECOMMENDATION

It is proposed to:

- a) Combine and further pursue both scenarios 3 (new building next to Shell on the existing site) and 4b (two new buildings, one on the Shell location and one on the existing site, built sequentially in two construction phases) as one scenario, and to leave it to the architects and the tender competition to propose and develop the best solution for the EPO site in The Hague, as long as the construction can be carried out without temporarily relocating staff.
- b) Open formal discussions with the authorities of The Netherlands to assess the option of the EPO ultimately buy the land of the original EPO site (where all buildings could finally be constructed). Ownership would certainly enhance the value of EPO's assets in The Hague.
- c) Launch a tender procedure to select a consortium (comprising a design and engineering team and a construction firm) for the award of a "design & construct" contract. The tender procedure will comprise an international call for interest to tender, followed by a pre-selection for admittance to a two stage restricted tender, comprising a tender design stage and a tender bidding stage.
As with New Main, the key advantage of a design & construct competition is that the Office will have only one contract with a consortium to deliver a new building at a fixed price and in time. The consortium is then responsible for coordinating all disciplines and activities, and is liable for most of the risks involved in all building processes as a result. A design & construct contract also provides for earlier certainties on budget and time, and leads to the faster completion of a new, quality building.

Scenarios for the future of the EPO site in Vienna



The EPO's building strategy is to enhance the value of its assets and to deliver a cutting-edge working environment with effective, modular space management (see CA/88/18 and CA/99/18). The Office's main aim is to create transparent, flexible and state-of-the-art workplaces to foster communication and collaboration. Following on from the 158th meeting of the Administrative Council, a project group under the lead of PD 4.4 was formed with representatives of General Administration, Finance and Legal Services to develop and assess different scenarios for the future of the EPO site in Vienna.

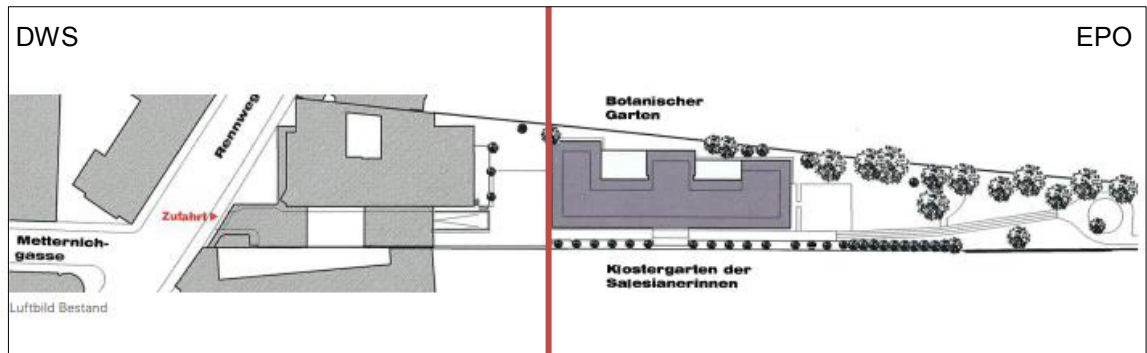
The project group was assisted during this process by external experts from the consulting firm ATP, commissioned following a competitive direct placement procedure in accordance with EPO financial regulations.

This report summarises the overall approach developed, the evaluation results and the project group's conclusions and recommendations.

1. CURRENT SITUATION

The table below presents key figures on ownership and surfaces in the current situation

Ground (m ²)	Co-owned with DWS Grundbesitz GmbH, subsidiary of Deutsche Bank	8 757
Property ground (m ²)	EPO 5 144	DWS 3 613
EPO buildings	Main building	Garden building
Property building	Owned	Owned/Long term lease contract, let to university of Vienna
Gross Floor Area EPO (m ² GFA)	11 350	860
No. of available workplaces	120	10
No. of parking places	Total: 145 of which let to DWS: 82	./.



2. DEVELOPING SCENARIOS

2.1. SCENARIOS

Due to the fact that the so called "Garden Building" is rented to the University of Vienna on a long-term lease contract until 2033, the scope of the study only covers the main building on the EPO's premises. There is also a long-term lease contract with DWS covering 82 parking lots in the second basement of the main building that runs until the end of 2060.

Changes were made to the four scenarios proposed in CA/99/18: one additional variant was identified, the scenario 3 (new building on new premises) was not regarded in detail. This results in the following overview:

Scenario 1a: Existing building is refurbished, staff will move to an external site during the construction phase.

Variant scenario 1b: Existing building is refurbished, but all staff members are only relocated on site and construction takes place in two phases.

Scenario 2: Existing building is demolished and a new building is constructed. Staff moves to an external site during the construction phase.

Scenario 3: A new building is constructed on new premises. The current building is operated until the move and subsequently sold. This scenario was not analysed in detail. On the real estate market in Vienna no comparable premises are currently available in any inner district of Vienna, potential properties are currently only available in development areas in the northern periphery of the city.

Scenario 4: A new location is rented. The current building is operated until the move takes place, and is subsequently sold.

2.2. BASIC ASSUMPTIONS

This study defines, compares and assesses various feasible scenarios based on predefined criteria applied uniformly. The following three basic assumptions were used and developed in greater detail:

Number of workplaces to be accommodated:

A total of 110 workplaces are considered as a starting point based on the number of workplaces currently occupied by EPO staff and assuming efficiency gains via Part-Time Home Working, (including external contractors and reserve).

Spatial requirements:

The office environment is based on implementing the same workplace concept as in New Main, but with a change of percentage towards ca. around 65% individual workplaces and 35% workplaces in shared areas. To support the higher number of workplaces in shared areas, additional collaborative spaces are added for informal meetings (collaborative areas, knowledge point, kitchenette and printing facilities). Other key functions to be accommodated centrally include training and meeting facilities, virtual classrooms and multimedia (all for future needs), computer/data rooms, a canteen and coffee corner (as existing), storage space (as existing), sports facilities and parking facilities (as existing).

Room list, GFA based on scenario 2

Room list	m ²	m ² GFA
a) Office environment		
Office individual – director	29.0	
Office individual 65%	14.5	
Office shared 35%	12.8	
Collaborative space	Various	
Meeting and ViCo facilities	Various	
Training facilities	Various	
Lavatories		
b) Other key functions		
Computer/data rooms		
Sports facilities		
Canteen/Coffee Corner		
Foyer/exhibition/event		
Storage and archive area		
Sub-total Office building		6 250
Parking facilities for cars (EPO use 50%)		3 400
Total, including parking facilities		9 650

Definition of required building quality level:

In terms of quality levels, New Main is used as a benchmark for the indoor climate, interior layout and various facilities in the building. Additional investments will also result in intelligent (smart) building(s). The sustainability target has also been raised to BREEAM Outstanding for new buildings and BREEAM with highest possible class for existing buildings.

These reference points and data, established as a means of comparing scenarios, do not automatically represent the final number of square meters or workplaces needed.

These basic assumptions result in a total of 6 250 m² GFA for the building (1 700 m² GFA less than the existing Vienna building) and 3 400 m² GFA for the parking (of which 1 700 m² must be provided to the co-owner of the premises due to contractual obligations).

3. FINANCIAL EVALUATION

3.1. INVESTMENT ESTIMATES AND TOTAL COST OF OWNERSHIP FOR THE NEXT FORTY YEARS, FOLLOWING THE "NET PRESENT COST" METHODOLOGY

Based on the above, the external experts ATP carried out financial valuations to estimate the investment and the overall costs based on the total cost of ownership for the next forty years, following the "Net Present Cost" methodology for each scenario.

The investment figures reflect different main groups of costs, comprising:

- Other costs for external experts and consultancy services, connection costs, etc.
- Costs of temporary accommodation, including the preparation, fitting-out and rental of a building in Vienna during the construction period
- Removal costs
- Furnishing office environment and canteen.

In addition to the initial investments, the Net Present Value methodology takes into account all costs inherent in operating a building during its expected life-time, including financial costs (interest, inflation, etc.), operational costs (maintenance, use of energy, cleaning, etc.) and major investments in upgrading and renovation.

The Net Present Value methodology is a standard assessment method for *using the time value of money to appraise long-term projects*. It measures the excess or shortfall of cash flows, in present value terms.

The following basic financial assumptions have been defined:

- An exploitation period of 40 years;
- Financing the investments with 100% equity;
- A discount rate of 3.5%, as defined in the last finalised Financial study (Deloitte 2016);
- An interest rate of 1.75% (based on local market for loans in Austria), an annual cost increase of 2% (based on ECB-long term) and a return on equity of 4% (based on EPOtif).

The table below shows calculations of the investments and Net Present Costs:

	Refurbishment	Refurbishment in two phases	New building on current location	Rented building on new premises, current building sold
Costs in millions of EUR	1.a	1.b	2	4.a
Indexed investments	36.5	34.1	34.9	5.2
Net Present Cost (NPC)	51.4	48.4	51.2	53.1

The value of the current EPO plot and a new building after completion was calculated by the consultant to total EUR 34.6 million. After deduction of costs for furniture, the investment required amounts to EUR 33.7 million, i.e. the investment is justified (based on scenario 2).

The residual value after 40 years totals EUR 20.8 million (based on scenario 2).

3.2. FINANCING OPTIONS

Alternative financing options were examined including financing by 100% equity, 100% debt, 50% equity and 50% debt, sale and lease back, and a "Design, Build, Operate and Maintain" (DBOM) model.

Some of these options may not be applicable to all scenarios and the preferred option needs to be thoroughly considered in the light of actual interest and loan rates at the time financing starts. Based on current figures, financing by equity and/or debt seems to be the best model for the EPO.

4. ASSESSMENT OF NON-FINANCIAL PARAMETERS

This analysis identifies the potential risks of each scenario. The predefined scenarios are compared on the basis of three key criteria in order to assess:

- a) Long-term impact on the EPO site in Vienna, referring to the final situation and a building life-time of at least 40 years;
- b) Temporary issues, with a focus on the realization process (4 to 5 years).
- c) Timeline after approval

	Scenario 1a	Scenario1b	Scenario 2	Scenario 4
	Refurbishment existing building, external allocation	Refurbishment existing building, no external allocation	New building on EPO site, external allocation	New location to be rented
Financial results in millions of EUR	Scenario 1a	Scenario1b	Scenario 2	Scenario 4
Overall investment costs excl.VAT	36.50	34.10	34.90	5.20
Net Present Cost (NPC)	51.40	48.40	51.20	52.30
Functional quality	Scenario 1a	Scenario1b	Scenario 2	Scenario 4
Ease of use for visitors and employees, logistics, parking spaces				
Building functionality and flexibility				
Facilitate the optimum (modern) working environment				
Optimal shape of the building				
Sustainability, social and environmental requirements of EPO				
Urban quality	Scenario 1a	Scenario1b	Scenario 2	Scenario 4
Relation with surroundings				
Accessibility for all users				
Timeline	Scenario 1a	Scenario1b	Scenario 2	Scenario 4
Overall period until business without nuisances				
Nuisances/Hindrances of construction works on EPO site				
Completion after AC decision	4 years	5 years	4.5 years	2.5 years

5. CONCLUSION

- Scenario 1a (refurbishment of the existing Vienna building) is a solution with some limitations. While the floor layout can be adapted to create a modern and transparent working environment, the constraints of the existing building structure make it more difficult to achieve the functionality levels required. It is also less efficient than a new building because about 1 700 m² more gross floor area will have to be maintained. The fact that scenario 1 uses the existing building structure does not cut costs. Solution 1a can be partially recommended, but it does have drawbacks.
- Scenario 1b (refurbishment of the existing Vienna building in 2 phases) The same constraints apply as in scenario 1a. Scenario 1b requires no temporary relocation of staff and no leasing costs have to be taken into account. However, keeping staff on site means 5 years of disturbance to daily business and high levels of effort and risk associated with safeguarding access and escape routes on site. Solution 1b cannot be recommended.
- Scenario 2 (a new building on the current footprint of the existing Vienna building) represents a solution that makes it possible to achieve almost all ambitions. It is a lot more effective than scenarios 1a and 1b because it involves (re)building and maintaining about 1 floor and 1 700 m² less GFA than in a refurbished building according to scenarios 1a and 1b. The current building will be completely demolished. The current footprint of the building would make it possible to develop a cutting-edge new building that meets all the requirements of a transparent, modular working environment. All functional requirements are met, only the meeting room ratio deviates slightly from the benchmark due to the constraints of the current footprint. The total cost of ownership for the next forty years, following the "Net Present Cost" methodology NPC is the lowest of all scenarios except 1b, which cannot be recommended. Solution 2 is highly recommended as the preferred solution.

- Scenario 4 (lease on new premises) has the advantage of requiring the lowest initial investment, but leads to the second highest total cost of ownership for the next forty years, following the "Net Present Cost" methodology. In addition, there will be no residual value after 40 years. This means an additional difference or loss in value of about EUR 20 million compared to scenario 2. Standard buildings on the market are also less efficient and flexible than a custom-made new modern building and workplace concept aligned with the EPO's requirements, as in scenario 2. As a result, it lowers standards and flexibility to a certain extent. The rental indicated is based on standard local rental prices. Refurbishing the office space to create a transparent, collaborative working environment, as far achievable in a rented building will also generate additional costs. All functional requirements like meeting rooms or assembly/event facilities, training and virtual classroom facilities, data rooms, sports facilities and a canteen, are included, and are comparable to scenario 2. However, meeting all of the EPO's requirements in a rented building would be roughly equivalent to the build, sale and lease-back option. This solution cannot be recommended.

In the light of the detailed evaluation above, only two solutions that can be recommended are:

- Scenario 2, the preferred solution: a new building on the existing EPO site
- Scenario 1a, the solution with drawbacks: a full refurbishment.

6. RECOMMENDATION

We recommend taking the following steps:

- a) Further pursue scenario 2 to construct of a new building on the current EPO site in Vienna. This can be achieved with temporary accommodation for staff and is the best solution for the Office. Designing a new building will allow the EPO to fully meet future needs and comply with all legal regulations.

A new building will meet all safety and security requirements. By saving 1 700 m² GFA and developing a modern energy concept, a new building will also contribute to the Office's environmental ambitions in terms of sustainability and reducing its carbon footprint.

The value of the plot and new building on completion was calculated to be EUR 34.6 million. After deducting furnishing costs, the investment is EUR 33.7 million, i.e. the investment is justified. The residual value after forty years was calculated at EUR 20.8 million.

- b) If the Budget and Finance Committee and the Administrative Council support the further development of this scenario in principle, the next steps would be:
- Tender procedure to select an external contract management to support the choice of the general planner by developing a concept of requirements in cooperation with EPO.
 - Tender procedure to select a general planner to develop a detailed programme of requirements that covers a flexible accommodation strategy, the influence of Part-Time Home Working on the size of the new building and measures to minimise hindrances to staff during the building construction.
 - Tender procedure to select a construction firm.
 - Submission of the results of tenders to BFC/AC for approval mid-2020 (planner) and mid-2021 (construction firm).