COUNCIL OF EUROPE
CONSEIL DE L'EUROPE

Strasbourg, 19th January 1967 SG/GT/Bat. (67) 4

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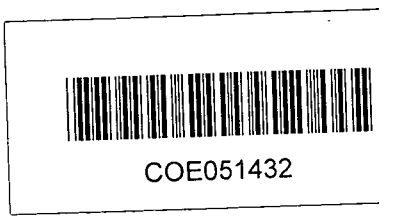
Working Party to study the problem
of Council of Europe buildings



Report on buildings A, B, C and D at
Avenue de l'Europe, Strasbourg,
at present used by the Council of Europe

Presented by Mr. Amatucci and Mr. Lange

This report deals with the present structural condition of the above-mentioned buildings with reference to the Council of Europe's future accommodation at Strasbourg.

The necessary information was supplied by the Council of Europe.

1. Buildings B, C and D do not need to be studied in greater detail because they were constructed more recently than building A and are undoubtedly sound enough to be used for a long time yet provided, of course, that they are properly maintained.

Building B - completed in 1954, property of the Council of Europe;

Building C - completed in 1961 (for the European Parliament)(1);

Building D - completed in 1965, property of the City of Strasbourg.

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(1) The Council of Europe occupies the ground floor of building C by agreement with the European Parliament in return for providing the latter, during Sessions, with offices around the Assembly Chamber.

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Buildings B and C are constructed as typical office buildings. According to the architect, Mr. Bertrand Monnet, the static conditions of building B are such as to permit another three floors to be added. This, however, would have to be accompanied by certain alternations to deal with the problem of vertical movement in the building. That would be a costly operation which would seriously inconvenience the users.

2. Building A, which is owned by the Council of Europe, was erected in 1950 in the space of 5 months because of the Council's urgent need for premises for use as offices, etc. At the decision of the Committee of Ministers of the Council of Europe, the building was designed to be used for 10 years only. The questions now arising, after 16 years, are whether:

(a) the building is still sufficiently durable (stable);

(b) it can still be used without risk;

(c) its upkeep is still economically justified,

2.1 Ground-plan (see situation plan attached)

The building is situated on the corner of Avenue de l'Europe and Allée Spach. Its two-storey front (135 metres), overlooking the Orangerie Park, contains the main entrance.

The entrance hall (about 250 m^2) also serves as the vestibule for the large Assembly Chamber with its diplomatic, press and public galleries (hemicycle of 970 m^2). To the south-west, around the Assembly Chamber, are the cloakrooms, toilets and Representatives' Lounge (310 m^2); the Lounge overlooks a terrace and garden. The part of the building which lies to the south-east and north-west of the Assembly Chamber has, level with the Chamber (headroom 10.5 metres), three floors.

The 12-metre wide and two-storey high wing running south-west of the entrance hall and parallel to the Avenue de l'Europe contains, on the ground floor, offices, press rooms with a bar, and premises housing the telecommunications equipment. In the basement, which was built later, there are offices for the press which are connected to the ground floor by a separate staircase. When the building was first built, this part of it contained eight meeting rooms; these have since been converted into offices.

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North-east of the Assembly Chamber lies a yard surrounded by two floors of offices. From this, to the north-west, runs a 10-metre wide wing housing, on the ground floor, the reproduction workshops and, on the first floor, offices.

2.2 Structure of the building

Because of the very short time available, building A had to have a simple structure that could be quickly erected. In addition, as the Council of Europe was expanding as an organisation, the rooms had to be designed in such a way as to ensure some elasticity in the use of the premises.

It was therefore found advisable to adopt a light structure for dividing up the floors, so that conversions could be made subsequently.

Foundation and design of basement

The foundation and sub-foundation were made of concrete whose quality - in so far as this can be established - is satisfactory. Because of the type and height of the sub-foundation, it was possible from 1951 to 1954 gradually to construct a basement under the whole building by excavating under the ground floor; the basement, which is about 2.3 metres high, is mainly used for storage purposes.

The floor of the basement is made of cement without any insulation. The concrete walls are unplastered and are simply whitewashed. The ceiling is made of prestressed concrete purlins with hollow bricks, resting on steel girders running from the outer sub-foundation to the inner. A screed has been laid and covered with linoleum. Under the Assembly Chamber there is a reinforced sectional concrete ceiling, stepped to correspond to the tiers of the Chamber and resting on concrete girders. The intermediate walls in the stores section are of concrete and the other walls are simple open-work partitions.

The inner walls of the press rooms to the south-west of the entrance hall, in the basement, are made of brick. This part of the basement has no windows on the Avenue de l'Europe side. The offices there are artificially lit and ventilated. In the east corner of the basement there is the boiler room containing three Idéal Kiwanée boilers installed by the firm of Sulzer (with room for a fourth) as well as a 30,000-litre fuel-oil tank outside the building and the transformer unit.

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Structure of the floors

As the main support of the 10 and 12-metre wide office wings, there is on the walls of the concrete sub-foundation a steel framework running through two floors and so arranged that, in the outer walls, there are steel supports at 5-metre intervals connected to horizontal supports at the level of the basement and ground-floor ceilings and, in the roof, to a steel lattice girder running along the whole span. In the basement and on the ground floor there is an intermediate support on account of the working loads. The static calculations were based on the following working loads (data from Mr. Monnet):

Offices	300 kg/m^2
Passages	500 kg/m^2
Library	600 kg/m^2

The outer intervening walls between the two outer steel supports consist of hollow bricks plastered on the outside. Inside there are slabs of plaster on wooden dowels.

The ceiling is constructed by means of wooden beams (8 x 23 cm) arranged at 50 cm intervals between the steel supports, i.e. with a span of about 5 metres. There is an intermediate wooden floor with a glass-wool insulating composition. The surface of the ceiling consists of nailed Rigis panels.

The ceiling between the first floor and the attic has the same structure as the ceiling between the ground and first floors, only lighter.

The floor of the first floor (and also of the second floor in the area of the Assembly Chamber) is made of 24 mm wooden joists and covered with linoleum.

The windows are wooden-framed with pivoting sashes mounted between artificial-stone walls.

The roof (interval of 5 metres between girders) is constructed of a steel lattice frame with wooden purlins on which are mounted corrugated fibro-cement sheets.

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On the 10 and 12-metre wide floors the space is divided up by means of prefabricated partitions (Eurélithe system). The flush plywood doors are hung from the panels. In the walls of the corridor there is, in places, a row of windows above door-level.

The Assembly Chamber building is, in principle, of the same construction, i.e. the main support is provided by steel girders placed at 5-metre intervals. Because of the height of the Chamber (about 10.5 metres), this part of the building comprises three storeys. The building was originally covered with fibro-cement panels, but these were destroyed by hail in 1958 and replaced by a wooden covering protected by asphalted felt mounted on wooden purlins. The roof is supported by steel girders.

To ventilate the Assembly Chamber and adjoining premises, air is brought up from the basement mechanically. In winter an air pre-heating unit is used. There is also a simple ventilation unit for the press offices in the basement.

2.3 Cost

To provide an indication of the fabric of building A, a schedule of building costs for the building is set out below.

2.31 According to the information supplied by the Secretariat, the construction of building A resulted in expenditure of approximately ..... 2,530,000 Frs
after deduction of tax

To obtain the rough actual cost of constructing building A, the following amounts have to be deducted:

Simultaneous interpretation	260,000 Frs.	
Outside work (streets, gardens)	34,000 Frs.	
Drainage	15,000 Frs.	
Heating plant (boiler)	163,000 Frs.	
	472,000 Frs.	
		472,000 Frs.
Plus construction of basement		+ 120,000 Frs.
Actual cost of building A in its present form (in round figures)		2,200,000 Frs.

The constructed volume of building A is approximately 50,000 m^3. Thus the cost per m^3 of constructed volume was 2,200,000 Frs./50,000 = approximately 44 francs

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Considering the year of construction (1950), when the cost per m^3 of office buildings with durable fittings was about 80 francs, the cost of building A can be described as low (an indication of the simplicity of its structure).

2.32 The annual cost of maintaining buildings, excluding repairs involving improvements, has been found to be:

(a) roughly 1.5 per cent of the actual cost of constructing the building. Thus, in the case of building A:

1.5% of 2,200,000 Frs. = approx. 33,000 Frs. a year; as this figure relates to 1950 it must be corrected to take account of the percentage rise in building costs since then;

or

(b) roughly 3.4 Frs. per m^2 of floor space. Thus, in the case of building A which has 9,800 m^2 of floor space:

9,800 m^2 x 3.4 Frs. = approx 33,320 Frs. a year.

Thus upkeep costs of about 35,000 Frs. a year were to be expected.

In fact, the annual expenditure on the upkeep of building A has been much lower. The lack of maintenance is apparent.

The Secretariat has pointed out that in view of the provisional nature of the building only essential maintenance work has been carried out: roofing replacements, new flooring in corridors, and re-painting. Moreover, it has been very difficult to obtain the necessary funds from the Governments.

2.4 Conclusions on the structural condition of building A

After examining the information provided on building A and making an inspection of the whole building, we found that the building's supporting structure, i.e. foundation, sub-foundation, the steel framework stabilising the structure with the masonry of the outer walls, and the roof were in good condition.

An inspection made some time ago of the steel bed-plate of a support threatened by moisture revealed that strength and stability were not impaired. The steel framework stabilising the structure, of a type normally used for more permanent buildings, will not lose any of its stability or strength for a very long time. The statics of the ceilings conform to the requirements of the

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Office du contrôle des constructions. The structure used does not give rise to any doubts about the strength of the ceilings. However, in view of the load capacity of the ceilings in the vicinity of the offices (250 kg/m^2), inspections should be made from time to time to ascertain that the permissible load has not been exceeded through the accumulation of documents in the office cupboards.

The inside of the building is less satisfactory and durable. The fact that the building was intended to last only 10 years can be seen from the floor, the inner walls, the structure of the ceiling and the fittings. Nevertheless, there is no evidence of any hazard. Because the building has not been fully maintained in the way that is particularly necessary for a building of its kind (see para. 2.32 above), its fabric gives the impression of considerable wear and tear.

Moreover, much decoration work needs to be done inside the building.

The following defects requiring attention should be pointed out:

The use of light prefabricated walls and the system of connecting the building's supporting components - the result of the short time available for completing the building - will always make for difficult conditions for those using the building, particularly because of the inadequate sound-proofing.

The defective construction of the outer walls causes draughts in the rooms and offices, especially in windy weather; as a result the premises are not properly heated. This can be overcome by filling in the cracks in the outer walls, flooring and window frames. At the same time, the heating could be improved by the addition of a boiler.

Technically, it would be possible to deal to some extent with the inadequate sound-proofing and heating; this applies to the offices. But improvements should be confined to the laying of sound-proof floor-covering, the fitting of acoustic panels to the ceiling and the replacement of the inner walls (partitions) by walls with better sound-proofing properties; in addition, the outer walls

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should be sealed. This work would involve replacement of the electrical and telephone installations. The cost, not counting incidental costs (evacuation of offices, temporary accommodation, removals), would be roughly 220-250 Frs. per m^2 of floor space. For the 2,500 m^2 occupied by offices (assuming work was done on the whole of this area), this would make an approximate cost of 2,500 x 250 Frs. = 625,000 Frs.

If important records were to be kept in the basement, the floors, ceiling and walls would have to be properly treated so as to prevent the records getting covered with dust, as is the case at present.

The parts of the roof still covered with corrugated fibre-cement should, in the next few years, be covered with the same material as the Assembly Chamber building.

2.5 Summary

The questions asked in paragraph 2, viz. whether:

1. building A was still sufficiently durable,
2. it could still be used without risk,
3. its upkeep was still economically justified,

should be answered as follows:

1. Neither the type of supporting structure used nor the structure's present condition gives rise to any doubt about the building's stability.

2. There is no hazard to preclude the building's continued use.

3. The building has a fabric that is typical of a rapidly constructed building and therefore needs to be more carefully maintained than an office building of normal durable construction. In addition, it is subjected to more than the customary wear and tear through being used by two international organisations (which results in its being congested).

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Building A is worth keeping, but nothing can be said at the moment about how long for. Consideration ought to be given to the various improvements suggested.

There is no reason to abandon or condemn building A because of its present condition, even though being in it and working in it have certain drawbacks (which can be partially eliminated through improvements).

The fact that the building is over-used will have an adverse effect on its durability. Because of its age, a considerable amount of money will eventually have to be spent on repairs.

It seems possible that the cost of maintaining the building - which will probably go on increasing in the years ahead - might justify demolishing the building when, in connection with the extension of the Council of Europe on the Avenue de l'Europe site at Strasbourg, a solution is sought that is fully satisfactory from the town-planning, architectural, functional and economic points of view.

(signed) Amatucci (signed) Lange

Rome, 20th December 1966 Bonn, 20th December 1966