



CITY OF LONDON

Report - Barbican Residential Committee

Brandon Mews - Roof Canopy

To be presented Thursday, 12th March 1987.

To the Right Honourable The Lord Mayor, Aldermen and Commons
of the City of London in Common Council assembled.

1. INTRODUCTION

1.1. Your BARBICAN RESIDENTIAL COMMITTEE do certify that we have had under consideration an evaluation report prepared by the officers in accordance with the procedures set out in the Corporation's Control of Capital Projects Manual concerning remedial works to Brandon Mews.

1.2. Brandon Mews has been subject to severe water penetration problems for a number of years which have persisted despite the remedial works undertaken by the Corporation in 1983 and in 1985. These works related, inter-alia, to the removal and replacement of the multi-layer roof coverings, reconstruction of the paved areas on each side of the 13 "wigwam" structures (including the provision of new expansion joints), the renewal of mastic seals to the expansion joints in the east and west walls of Brandon Mews, and the formation of seals at the junction of the Willoughby House podium and the six bridge-links to Brandon Mews to prevent water penetration from that source.

1.3. The total cost of these works is, subject to final account, £265,000. Unfortunately, due to what is now regarded as being a fundamental flaw in the design of the podium structural slab; the water penetration problems persist and are causing serious inconvenience to the residents.

1.4. Messrs. Atkins, Sheppard, Fidler and Associates, consultant architects, were engaged by the Corporation to examine these problems and put forward possible solutions. Their report has now been received and forms the basis for this evaluation report.

2. EVIDENCE OF NEED

2.1. There are unacceptable levels of water penetration through the roof slab which are causing:—

(a) External damage

The continuing penetration of water through the roof coverings is resulting in the waterproofing membrane being generally ineffective. If no remedial works are carried out deterioration of finishes will continue with saturation of the screed and insulation, resulting in increased vulnerability to frost damage, and paviers will continue to be stained due to salts leaking from the mortar.

(b) Internal damage

Water penetration is visible internally at several weak points in the structure, such as expansion joints, day joints, at window openings in the wigwams and at electrical conduits and ceiling droppers. There is considerable damage to the decorations in some flats, and this will worsen in time if remedial works are not carried out. Internal electrical services would be damaged and internal joinery and fittings would become permanently marred. In two flats water penetration has already rendered them unsuitable for occupation.

3. ANALYSIS OF THE OPTIONS

3.1. Option "A" — Do nothing or defer action

The problems involved in locating and attempting to carry out patch remedial works, with a large number of potential weak spots, would be a time consuming exercise and would probably result in extensive remedial works without resolving the underlying problems. Overall, a decision either to do nothing or defer action at this time would have a threefold effect:—

- (a) deterioration of the structure would continue and accelerate as the extent of the water penetration increased;
- (b) more and more flats would become uninhabitable;

(c) life would eventually become intolerable for the existing tenants.

3.1.2. This option cannot, therefore, be contemplated.

3.2. Option "B" — Renewal of the roof coverings

3.2.1. The consultants have investigated the possibility of breaking up the paviers, laying a Butyl rubber waterproof membrane over the asphalt, and then relaying the paviers. The properties of Butyl rubber mean that it should be able to overcome problems which are causing the defects at present, but the consultants cannot be certain that such a solution will succeed.

3.2.2. The estimated cost of this option is £180,000, excluding staff costs.

3.2.3. Bearing in mind the failure hitherto to deal with these problems, the consultants' reservations, and the need to provide a fool-proof cure to the existing water penetration with a minimum of disturbance to the tenants, the Director of Building and Services does not have enough confidence as to the likely success of this option to recommend its adoption.

3.3. Option "C" — Provision of a roof canopy

3.3.1. There are various possible designs for the provision of a new canopy roof over the existing roof. The most suitable solution within this option is a barrel vaulted canopy roof. This would reduce the height of the canopy roof to a minimum limiting its impact upon those residents who live on the lower floors of residential blocks overlooking Brandon Mews. Barrel vaults would also retain the continuity and unity of design within the residential Estate, repeating the barrel vaulted roofs on all the main residential blocks.

3.3.2. Planning and statutory authorities have been consulted for their initial reactions to this proposal. They had several requirements which they felt would have to be met in order for the scheme to be viewed favourably. These requirements have been incorporated in the canopy roof scheme. The consultants have since received favourable reactions from the Planning Authorities for this scheme.

3.3.3. Questions had been raised concerning heat build-up, but as a result of further investigations it would appear that the potential problems of heat build-up under the canopy roof are not insurmountable and can be avoided or overcome at the technical design stage without significant additional cost to the scheme.

3.3.4. The construction of such a canopy roof, with steel frame and polycarbonate barrel vaults, presents the optimum solution to the problem of providing watertight dwellings at

Brandon Mews with any possible defects being easy to identify and remedy. It is, therefore, recommended that this option is adopted and the project undertaken as soon as possible.

3.3.5. The total estimated cost of this option is £410,000 at September 1986 prices.

4. FINANCIAL APPRAISAL

4.1. Capital

The capital costs of Option "C" at September 1986 prices are as follows:

	£	£
Canopy roof		350,000
Consultant architects' fees	37,500	
Consultant engineers' fees	17,500	
Corporation of London staff costs	5,000	
Total fees and staff	60,000	
Total cost (September 1986 prices)		<u>410,000</u>

4.2. Revenue

Maintenance to the canopy roof would be limited to cleaning the polycarbonate cladding and metal framing. The metal work would be coated which should obviate the need for repainting, provided it is not scratched, for at least 10 years. Maintenance costs are thus not anticipated to be significant.

The life span of the structure of the canopy roof would be 60 years, although it may be necessary to consider replacing some of the polycarbonate cladding after about 10 years should there be any deterioration due to ultra-violet degradation.

5. DISTURBANCE

5.1. Bearing in mind that the tenants of Brandon Mews have already tolerated two unsuccessful attempts to cure the water penetration into their flats, and that the works undertaken in 1983 caused serious disruption in certain of the flats, it is essential that maximum consideration be given to the effects of the project upon the residents consistent with executing the works as quickly as possible.

5.2. The consultants have observed that disturbance to the residents of Brandon Mews and the surrounding residential blocks from breaking operations, whether from fixings of canopy or breaking up of paviers, will inevitably cause a nuisance. The disturbance from the erection of a canopy roof is likely to be of a much shorter duration and only for limited periods at a time.

5.3. Control over the execution of works on site would be similar to those applied to other works on the Estate. This would involve strict control being exerted on the contractor within the specification and, where possible, the noise level will be reduced externally by mufflers and baffles.

5.4. The hours of work would be restricted to between 8 a.m. and 5 p.m., Mondays to Fridays, with noisy works only carried out below specified levels between 10 a.m. and 4.30 p.m. It will, however, be impossible to reduce the impact of such noisy works upon the residents of Brandon Mews itself as noise will invariably be transmitted through the structure.

5.5. Residential blocks which will be affected by the works are as follows:—

	Number of dwellings
Andrewes House	192
Willoughby House	148
Speed House	114
Gilbert House	88
Brandon Mews	28

Residents of the Postern may also be disturbed occasionally by the works, as may the Guildhall School of Music and Drama.

5.6. Prior to any works being undertaken a general programme would be prepared in order to ensure that disturbance to tenants and other affected parties is kept to a minimum, and also to reduce interference to free access to buildings and podium during the construction works. On site supervision will be utilised during the works to enforce these controls.

6. CONSULTATION

6.1. It will be necessary under the Housing Acts to consult with the Brandon Mews residents as well as with those of adjoining blocks and with the Barbican Association.

7. PROGRAMME

7.1. The project will require a preliminary period of approximately 3 months for tenant consultation and in order to obtain all the necessary planning and building approvals. The key dates are, therefore, estimated as being as follows:—

Approval of Evaluation Report	March 1987
Consultation/Planning Approvals etc.	May 1987
Tenders received	July 1987
Start on site	September 1987
Completion	December 1987

8. RECOMMENDATIONS

8.1. We recommend, with the concurrence of the Policy and Resources Committee, that this report be approved and that,

- (i) a roof canopy (Option C) be provided over Brandon Mews, at a total estimated cost of £410,000; and,
- (ii) all necessary planning and other approvals be sought and consultations undertaken for the project.

8.2. We further recommend, with the concurrence of the Planning and Communications Committee, that deemed planning permission be sought, under the provisions of Regulation 4 of the Town and Country Planning General Regulations, 1976, for the project.

All which we submit to the judgement of this Honourable Court.

DATED this 9th day of FEBRUARY, 1987.

Signed on behalf of the Committee.

P.A. REVELL-SMITH,
Chairman.

