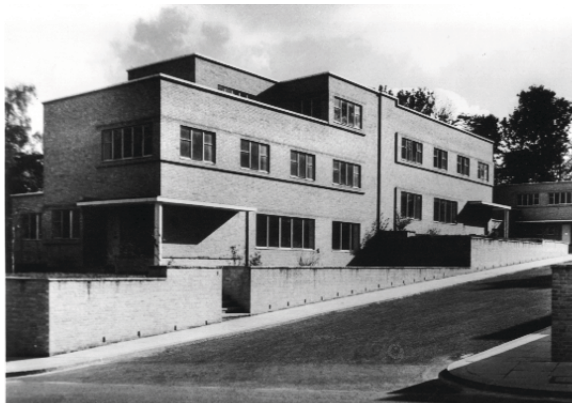
No. 1 Frognal Close, London NW3

2012



1938

2003

Site plan and north-west elevation

Frognal Close: listed house refurbishment

Contract value: £600,000
Commenced: January 2003
Completed: 2005

Project
This Grade II listed, modern movement house is one of a group of six designed by Ernst Freud in 1937. Having recently bought the building, the client's brief was to change the configuration of the main living spaces to suit a family of today, whilst retaining the distinctive quality of the building. The scope of work can be summarised as:

- Maintenance and repair
- New landscape setting, including alterations to boundary walls
- Repair, cleaning and repointing of brickwork
- Alterations to the external fabric of the building, including new window and door openings
- Internal alterations
- Refurbishment and complete renewal of services.


Frognal Close after completion of refurbishment

Appointment
AAB architects was appointed as architect and lead consultant early 2003, following a competitive interview arranged by the RIBA Client Advisory Service. As practice principal, Alice Brown was responsible for the delivery of full architectural services (Stages C-L), and advised the client regarding the need for specialist consultants and contractors.

'She immediately understood the building and didn't want to change it too much' (client interviewed by Grand Designs 2007).

Over a three year period, Alice acted as project architect on a day to day basis, with assistance from AAB architects staff. INGealtoir was appointed as structural engineer, Freeman Beesley as services engineers and Elizabeth Banks Associates as landscape architects.

AAB architectscarried out the following activities:

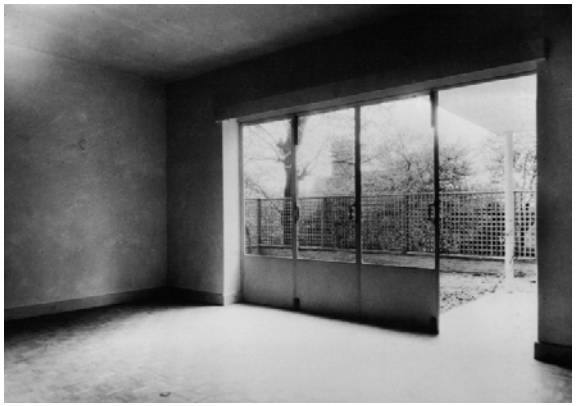
- Carrying out detailed surveys of the building and arranging surveys by others, including structural and services engineers
- Research into the original design
- Collaboration with landscape architect to develop a landscape strategy
- Outline, detailed and final design
- Preparation and submission of two listed building consents, conservation area con sents and planning applications (5no.)
- Negotiation with the LA conservation officer and English Heritage to obtain approvals
- Specification of repair works
- Negotiation of contracts with a specialist facade cleaning contractor, and main contractor
- Contract administration and site inspection
- Review of contractor's method statements
- Instruction of variations to the contract in respect of repairs
- Preparation of maintenance manual

Throughout the project it was necessary to bear in mind the client's budget and programme requirements. The client was keen to carry out works that would enhance the original qualities of the building and to carry out works to ensure it's long term protection; in most cases the work that proposed by AAB architects was carried out. The main exception to this was the replacement of the non-original aluminium windows.

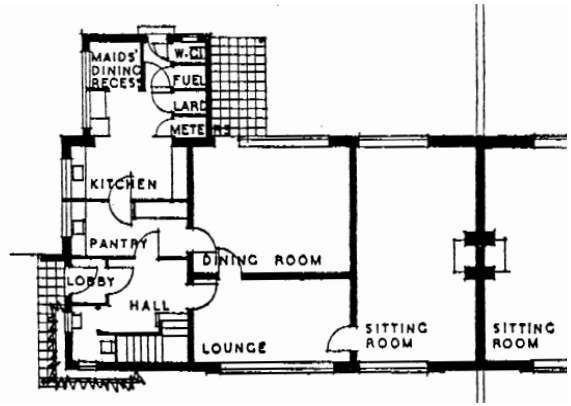
Significant achievements included:
- Improving the setting of the building, with new hard and soft landscaping
- Improving the external appearance of the building, and agreeing a method of cleaning with English Heritage
- opening up the internal spaces to allow more flexible use of the space.

The listed building consent application was strongly supported by the Twentieth Century Society, but some amendments were requested by the LA Conservation Officer, particularly in relation to new window and door openings and opening up the interior, which were altered prior to approval.

No. 1 Frognal Close (left) with original steel windows



No. 1 Frognal Close: dining room



original ground floor plan

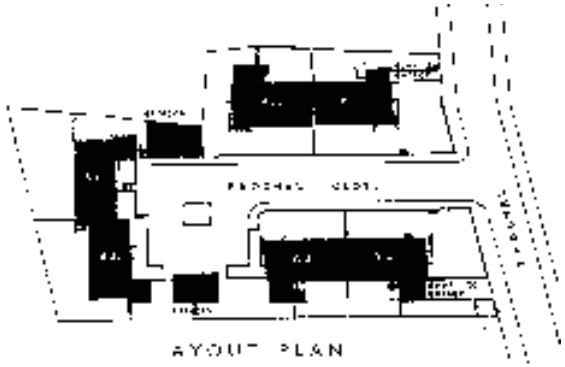
Original building

This enclave of six brick houses was designed by Ernst Freud in 1936-7. They are part of a group of important modern buildings erected in this area in the 1930s, a group which includes Sun house (1935), Hill house (1938) and 66 Frognal, designed by Connell Ward Lucas in 1938, and slightly further afield, 1-3 Willow Road by Erno Goldfinger (1940).

The semi-detached blocks, with front doors and canopies at each end, suggest an enclosed court-yard. The raised brick band around the upper storey and the nautical feel of the entrances are very much of the period. The large windows set into buff brick are reminiscent of Mies van der Rohe's brick houses at Krefeld of 1930.

Freud (1892-1970), who trained in Vienna and Munich, came to London in the 1930s, where he set up in practice. His work included houses and flats, a number of refurbishments including his own house in St Johns Wood, and well as furni-ture design. In the design of living spaces for indi-vidual clients, as well as for himself, he generally opened up the plan to create long views and a sense of openness. The original ground plan of no. 1 Frognal Close plan (left) shows the cellular arrangement of 'lounge', dining and sitting rooms that still existing in 2001. The lounge was the smallest and most awkward space to use. In the proposals we have created a sense of linked spaces, as perhaps Freud may have done without the constraints of a speculative developer client.

As was typical of the time, the kitchen area was originally divided into a lot of small spaces, and most of these partitions had been removed by 2003.



original site plan, showing all six houses

View of no. 1 from Frognal, 2003

Poor quality hard landscaping materials, 2003

Research

We located various original material regarding the building and the architect, including:

- photographs from the RIBA archive
- publications including:
  - The architect's Journal 1938
  - Decoration', November 1935

We also inspected the interiors of no. 2 and no. 5; the former had the original stair, and the latter an original fire surround.

Unfortunately the architectural publications did not reveal a great deal about the design intent, and gave a quite prosaic description of the project, together with a list of building materials. It is necessary to see the building in the context of modern movement houses in the immediate area, as well as on the Continent, in order to realise its architectural lineage.

artificial stone	Girlings Ferro-concrete
patent flooring	Noel Wood-Mosaic Co
patent flooring	Turners Asbestos Cement
grates and mantels	Pontifex and Emanuel
electric light fixtures	Tucker and Edgar Ltd
electric heating "Dulrae"	Richard Crittall & Co
Savestane sinks	A Johnson & Co
sanitary fittings	SG Ross & Co
door furniture	WN Froy and Son Ltd
casements	Crittal Manufacturing Co.
kitchen fittings	Modern Kitchen Equipments Ltd

1-6 Frognal Close was built in 1938 by H Meckonik. The same contractor returned in 1958 to carry out alterations to no. 1 Frognal Close, including removal of radiant heating panels from the ceilings, installation of central heating and extension of the garage.

Setting of the building

By the early 2000s the severity of the external appearance of the buildings has been considerably softened by the growth of the surrounding landscape. To some extent this was of benefit, but in the case of no. 1 Frognal Close the planting and hard landscaping had evolved in a piecemeal way which detracted from the design of the building, for example the conifers either side of the entrance. It was agreed early on that the whole garden needed to be replanted to enable the lines of the original boundary walls to be seen, as in the original photographs, and for the elevation of the house to be visible above.

Another change in the external appearance of the buildings at Frognal Close has been the replacement of the original Crittall windows, in all but one case with aluminium rather than steel. The aluminium windows at no. 1 Frognal Close differ from the original in the glazing pattern, with larger areas of glass and smaller opening lights, and the addition of relatively crude hardwood sub-frame and cills. The replacement of all the windows at was considered, but the client decided against this as this would have resulted in taking out windows that were in reasonably good condition.

The client was very keen to clean the brickwork, which also needed to be repaired and repointed. This led to detailed discussions with English Heritage, who were in the first instance resistant to the idea (see page 5).

The first phase of the project was to plant a yew hedge in line with the boundary wall, which could be regularly clipped to keep a crisp profile. The opportunity was also taken at this point to fully scaffold the building and to clean, repair and repoint the brickwork.

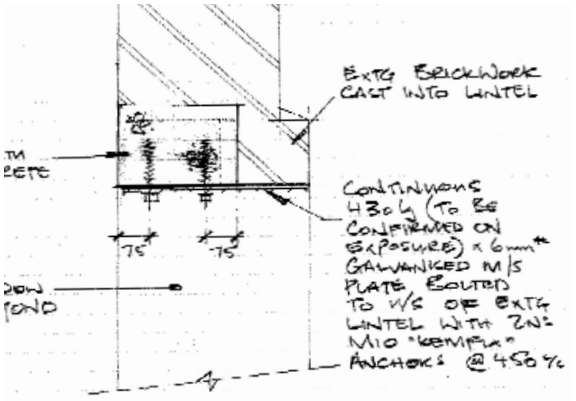
Rear elevation: flue and vines were removed

Rear elevation prior to cleaning and paint stripping

Existing cracks visible after cleaning (north elev)

Brickwork repair internally (Helix bars)

New opening showing facing brickwork and inner skin



SE's details of window head reinforcement

Existing brickwork

The brickwork is an important aspect of the building design, with the horizontal emphasis of the window openings, projecting brick bands and porthole windows. It was therefore a priority to carry out works to improve its appearance, to address maintenance issues, and to remove clutter from the facades, including pipes, cables, flues and Virginia creeper (new pipes and cables were re-routed internally or in a concealed manner).

The brickwork is made up of two leafs: the inner in a common red brick is 1/2 to 1 brick thick, with the outer 1/2 brick skin of 50mm high buff-coloured facing bricks, probably imported from Holland. The facing brickwork has been constructed with snapped headers.The raised bands of brickwork were formed by stepping out the external skin. The projecting brick bands were finished along the top edge with a cement fillet, which had failed in some locations, causing water penetration.

There are no movement joints in the building, and there were therefore some cracks due to thermal movement, and possibly also settlement due to some nearly trees, which were removed on the structural engineer's advice. There were cracks to the internal leaf around lintel bearings, which became apparent during the alteration work; repairs were carried out using Helix stainless steel bars in the mortar joints. The head of the ground floor openings, where new doors were installed, were reinforced with steel plates bolted to the existing concrete lintel to support the nib of facing brickwork.

The brickwork had been locally repointed which resulted in an uneven appearance. Some areas had been painted, which need to be stripped.

Frognal Close: listed house refurbishment

Reconstructed canopy and repointed brickwork

Cleaning brickwork
The original brick had become very dirty from air pollution over the previous 70 years. Through discussion with English Heritage about the importance of clean brickwork to the image of modernity that was intended in the original design, we obtained listed building consent for cleaning the brickwork with a light acid wash. A proprietary product containing hydrofluoric acid was used, washed off with water. The brickwork was also treated for efflorescence, and to kill plant growth. Tests were carried out prior to treatment of the whole building, to enable the degree of cleaning to be agreed. The process was carried out under carefully controlled conditions to ensure that the brickwork was all subject to the same process. Repointing was then carried out using a mortar to match the existing, with a buff coloured sand. The joints were lightly recessed to set off the crisp arrises of the bricks.

The red hardwood sub-frames and cills were painted with a colour to match the brickwork, and the sloping cement fillet to the top of the projecting brick bands were replaced if necessary and painted with an acrylic paint (Flexicryl).

Yew hedge after 9 years growth (2012)

Brickwork cleaning and repair underway

Tests of cleaning carried out

Proposed north-east elevation and part section

Frognal Close: listed house refurbishment

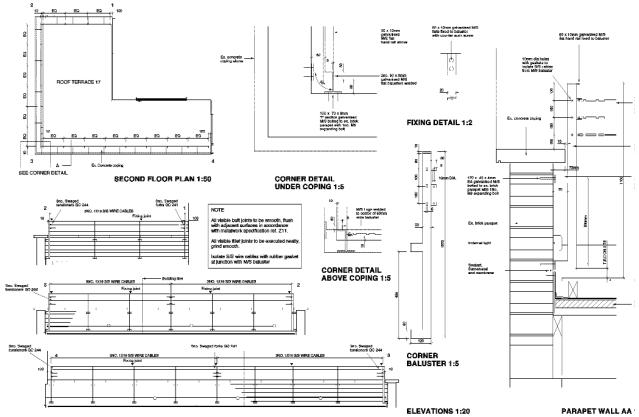
2nd floor terrace, new door opening and balustrade

External works
Works carried out to improve the external appearance and setting of the building included:

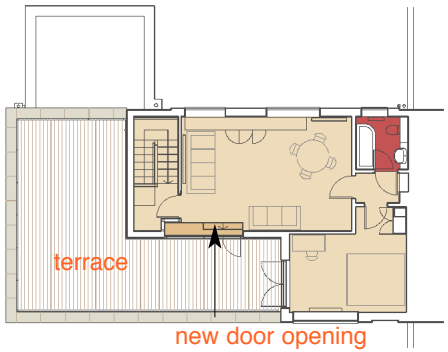
- Removal of non-original brickwork piers, trellis fencing and wrought-iron railings
- New steel balustrades with stainless steel cable panels to minimise visual impact, to boundary walls and terrace parapets
- new buff sandstone paving to complement colour of the brickwork, laid to rectilinear pattern
- new steel pedestrian and vehicular gates to boundary, finished in mid-grey polyester powder coating
- new hardwood decking.

Access to the external areas was improved by the creation of new door openings at ground and second floor levels, with aluminium sliding-folding doors.

Existing 2nd floor terrace

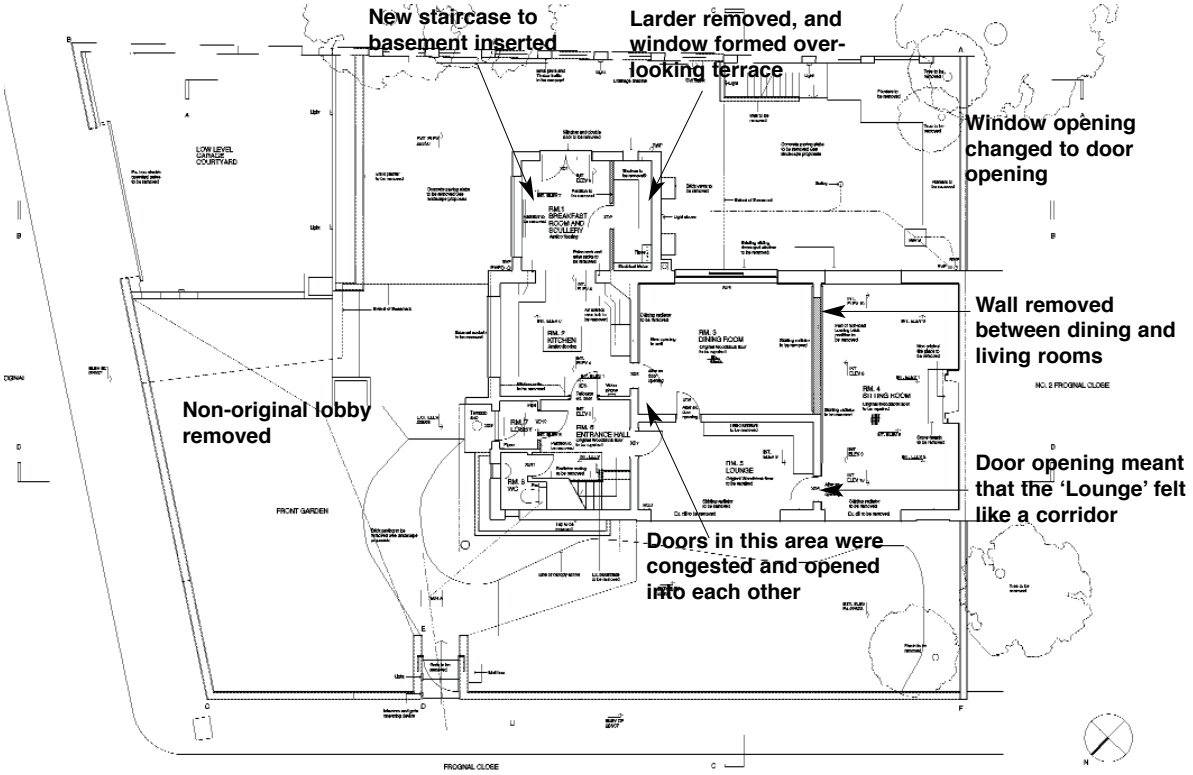


Construction drawing of new balustrade



2nd floor plan

Frontal Close: listed house refurbishment



Existing ground floor plan

Example of original fireplace at no. 5 Frognal Close

Existing living room, 2003

Assessing the building prior to the works
The house has undergone may changes since it was built in 1937, and some have been inappropriate and out of character with the original building, including the fireplace, staircase balustrade, parapet balustrades, a false arch in the kitchen, ceiling covings and light fittings. All these non-original features were removed and replaced in keeping the modern design aesthetic of the house.

In addition some alterations were made to meet the client's need for a more open living space: the main alterations were connecting the dining and living rooms, increasing the width of door openings to the study and kitchen, and installing sliding doors to avoid the problem of doors opening into each other. The door opening between the room labelled on the original plans as the 'lounge' and 'sitting room' was replaced with a glazed panel (see page 5). When consulted during the listed building consent application process, the 20th Century Society caseworker commented "while this creates as private space for working, it also creates a great deal more connection through the rooms, and creates a lighter more inviting space for the main living space".

The society caseworker also said that she was "most impressed by the proposed scheme, which I think represents a great opportunity to bring the house back to its original 1930s feel while altering it to accommodate modern day living and therefore sustaining it's long-term future".

Frontal Close: listed house refurbishment

Dining and living rooms connected, with new fire place

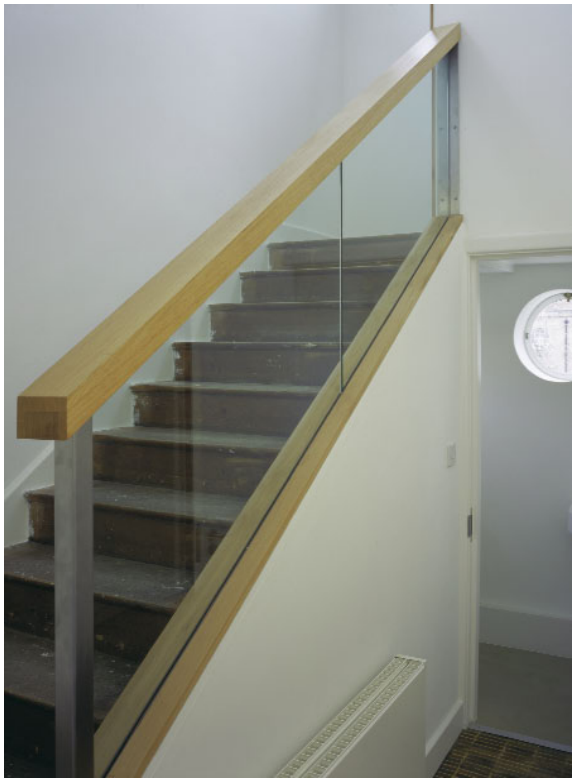
Alterations to living and dining rooms
The dividing wall between the living and dining rooms has been removed. At the request of the LB Camden's planning officer, a downstand and nib was retained to indicate the original position of the wall. An oak board recessed into the floor also marks the location of the original partition.

Dining room before works

Door opening from 'lounge' to 'sitting room'

Frontal Close: listed house refurbishment

New kitchen door and window to terrace



New stair balustrade

Refurbishment of kitchen and staircase
The existing staircase did not appear to be original, and may have been replaced in the 1950s. It was fussily detailed with awkward junctions and was not of sufficient height, and it was therefore proposed to be replaced with a simple glass balustrade.

In the kitchen all fittings were removed, together with the false arch and covings. The non-original larder was removed and a new window opening formed over looking the terrace. A new staircase was created to connect to the basement garage area, where a utility area was located, together with a home office. Waterproofing tanking and the introduction of natural light and ventilation were required to make the basement a habitable space.

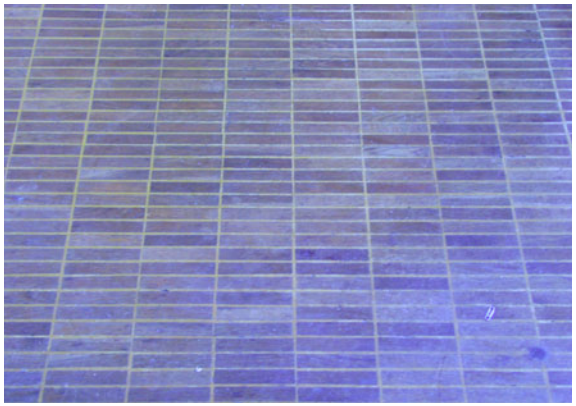
New joinery was generally designed as simple lacquered boxes, coloured to match the wall. Oak veneered board was used as a finish to complement the existing wood mosaic flooring, including to worktops, wall panelling, window and door cills.

Existing kitchen, with false arch

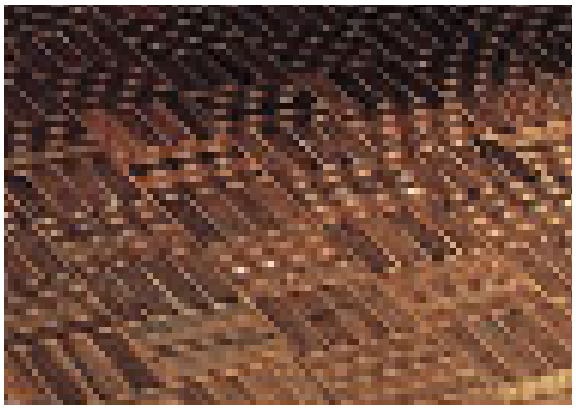
Non-original balustrade

original bath prior to refurbishment

bath re-enamelled, in new location



wood mosaic flooring (Living) prior to refurbishment



wood mosaic flooring (Dining) after refurbishment

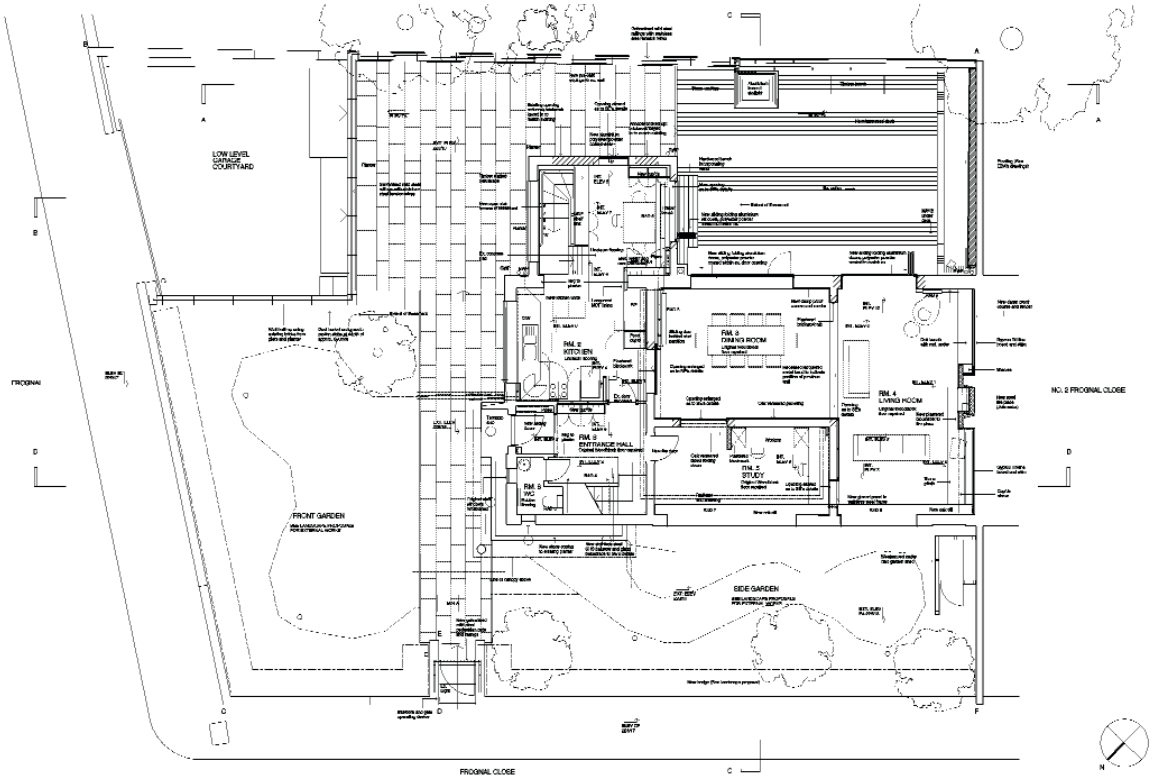
Refurbishment of finishes and fittings
During the refurbishment works the original bath was relocated and re-enamelled (on site). The floor was strengthened in the new location.

The wood mosaic flooring extends through all three living rooms, and the hallway, where it had been subject to most wear and tear. There are two different patterns, mostly stack bonded, but in the dining room rotated squares of th three. The individual blocks were 25 x 110mm x 8mm thick, and had 4mm wide joints of grout. In some places the blocks needed to be patch repaired and re-adhered to the screed.

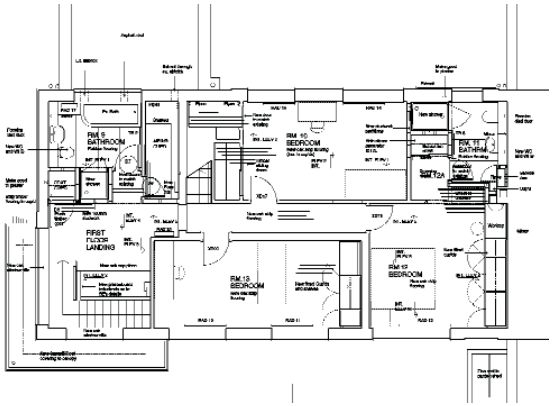
The treatment of the wood mosaic flooring was discussed and samples for repair were carried out. It was decided to minimize the amount of sanding, as this would damage the grout and remove the patina from the face of the timber. The contractor prepared samples using cementitious and epoxy based grouts, which were coloured with pigment to match the colour of the original. Between the different patterns, where the existing wall was removed, an oak strip was set into the depth of the floor screed; this also helped deal with the slight change in level between the finished floor levels in the two previously separate rooms.

The surface of the timber was cleaned with a solvent and the whole surface treated with Osmo's Polyx hardwax oil.

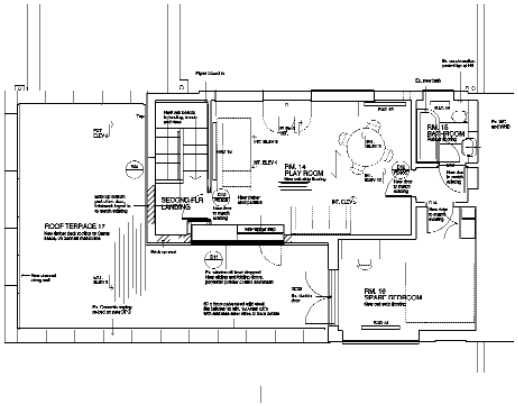
Frontal Close: listed house refurbishment



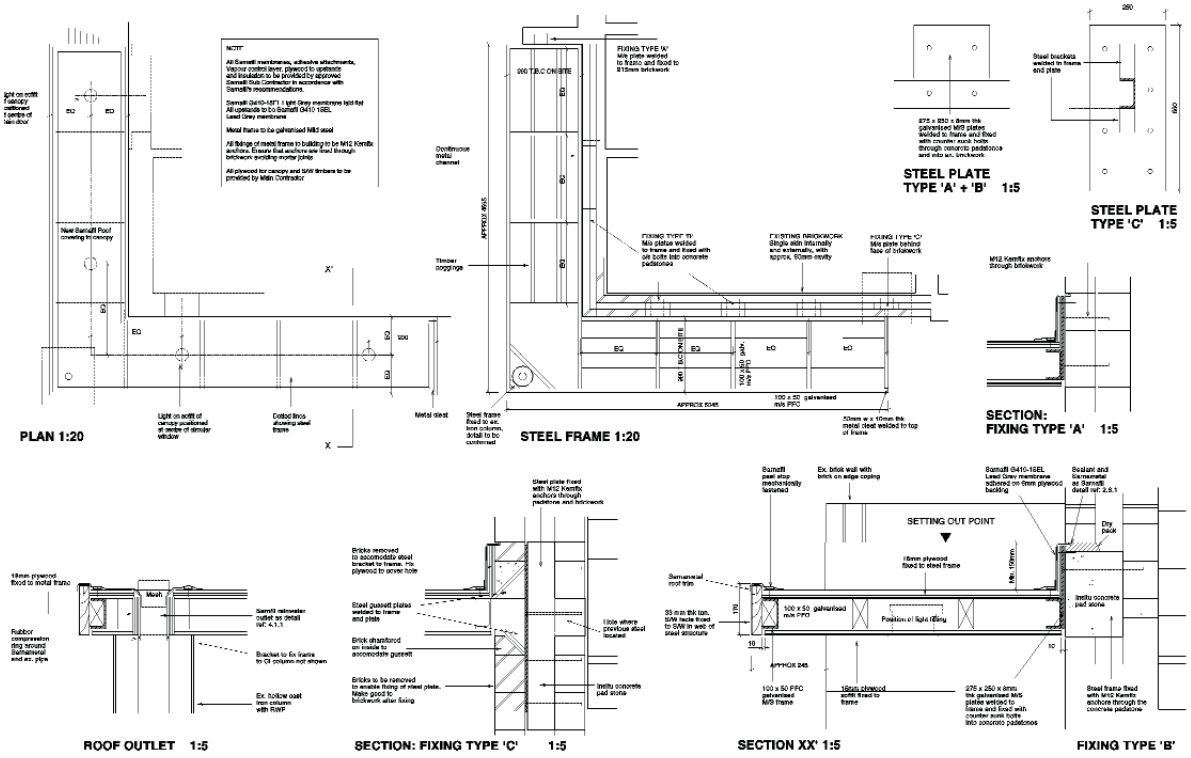
Proposed ground floor plan



Proposed first floor plan



Proposed 2nd floor plan



Canopy

The existing canopy had been clad with UPVC to the sides and soffit, making it appear much thicker than in the original photographs. It had been thought that the canopy may originally have been constructed in concrete, from the appearance in the original photos. On removal of the UPVC cladding however, it was revealed that the canopy was steel framed, bearing on a cast iron column, and infilled with timber studs.

The steelwork was poorly constructed, ie. undersized, distorted and poorly fixed to the brickwork. It was therefore decided to take down the roof of the canopy and reconstruct it with new steelwork, fixed back to concrete padstones cast into the brickwork. The column was retained, and the existing rainwater pipe that ran through it.
The new roofing material is Sarnafil, rather than asphalt, as this is a more durable and less heavy material. The asphalt roof to the second floor level was also renewed with Sarnafil for the same reasons.

UPVC cladding removed exposing structure

Existing canopy removed

New steel framed canopy under construction