The Bedford Park Society

From Knowledge Comes Care

Technical note no 4

Roofing

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INTRODUCTION AND DESIGN HISTORY

The purpose of this set of technical notes is to help those involved in works to the houses of Bedford Park to understand the features that give them their special character and architectural value. The overall conservation intent of these guidance notes is to assist sensitive analysis and decision, not to prescribe a single solution. There is often a case for more than one design detail to be appropriate in each circumstance.

At first sight, the design and construction of Bedford Park houses appears to follow a consistent pattern. This is misleading, and the subtleties of each situation need to be appreciated if the architectural integrity of the houses is not to be eroded by incorrect repair, replacement or new construction using inappropriate materials and details. There were original differences even between houses of the same type. That said, the design and construction of the houses in the Bedford Park conservation area as a whole consists of a restricted range of materials, forms and details against which the appropriateness of repair, replacement or new construction can be evaluated.

Some appreciation of how the houses were designed and built over a period of several years will be helpful in understanding the variation in detail. With few exceptions, the architects involved in the development of Bedford Park were not engaged to supervise the construction of the houses. The architects – Norman Shaw et al – determined overall design intentions and nature of details but as there were a number of builders involved over a period of years, the implementation of designs, and (to a large extent) the detailed constructional decisions were left in the hands of the building contractors. Consequently, when replacing lost features or constructing new ones, care must be taken to research details from an appropriate example.

The repair and alteration of historic buildings is a delicate and skilled business, at all scales. The selection of details and methods, and their correct specification, needs considered judgement. Each case presents it's own issues, problems and challenges, and therefore generalisations are dangerous. Skilled craftsmen should be employed and professional advice sought before committing to action that may permanently affect the appearance and fabric of the historic building.

The following notes will give some pointers to the main issues to be considered, the most commonly successful techniques, appropriate detailing and sourcing of materials. It is recommended that the appropriateness of details proposed should be discussed with the local authority Conservation Officer and ideally one of the local expert architects prior to finalising an application for listed building consent or planning permission, and prior to placing orders for any work.

Pitched roofs and tile hanging

The predominant roofing material in Bedford Park is the plain clay tile, which is also used as a wall cladding. The tiles originally used for roofing were a machine made 8"x6" clay tile of red colour, generally consistent in colour, without variegation, and with a smooth surface. Original examples and older replacements have weathered and dirtied to a dark and slightly mottled colour.

Plain Clay Tiles for roofing

The essential aspects of the basic tile are colour and camber. The tiles to be used should be red, of a close match to the colour of the originals. Most importantly they should be *'single cambered'*

(ie bent in one plane only). Together these criteria limit the choice of available tiles. The usually acceptable alternatives are:

Rosemary Red. (Close to the original colour although they look rather bright when new.)
Dreadnought(Darker and browner, but the shape of the tile a less good match).

Plain Clay Tiles for Tile Hanging:
The tiles used for vertical tile hanging differ from those used for roofing, the latter being softer and less regular; generally hand-made. They are also normally more orange in colour and develop quite a different patina to that of the roof tiles. A very good match for the originals can be obtained:

Keymer handmade Tudor Antique: *these are readily available with all the shaped tiles required to match original work: 'club' tiles (which look like fish scales - often used in small areas or rows for decorative effect), corner fittings, etc.*

Ridge Tiles

Various types prevail, and all are available from several suppliers, most notably **Redbank Ltd.** Care should be taken to use the correct profile and size to match the correct house precedent. The main alternatives are: 'roll top'; 'angled'; and 'half round'. The choice of ridge tile should follow the correct house precedent.

Hip tiles

Various methods of forming hips are used. The choice of hip tile should follow the correct house precedent. These are:
Angled hip tiles: a tile forming the corner, lying almost flat in the plane of the roof.
Bonnet hip tiles: Similar but sticking up forming a corrugated profile to the corner.
Half round: Ridge type tiles used along the hip, often smaller than those to the ridge.

Fixing

Roofs are constructed using methods and details entirely standard for the period, and closely worked to in normal working practice today. The tiles should be fixed to 'tanalised' softwood battens using alloy or copper nails. Galvanised nails are sub-standard.

Vertical tile hanging is sometimes fixed to battens, a method which is easy to replace and repair, but sometimes the tiles are bedded in lime mortar, which is fragile. In the latter case, the disturbance of even a few tiles can result in the consequent loss of whole areas of apparently sound tile hanging, so great care has to be taken. Details of edges and abutments of tile hanging to roofs and other construction vary, and the replacement work should follow the details of the original rather than current recommended practice.

Ventilation

Current regulations and modern insulation standards make it essential that roof spaces are ventilated. This can be achieved by the use of ventilating tiles and fittings, effectively weathering and disguising holes in the roof; ventilation at eaves and other edges; and by the use of vapour-permeable roofing felt which can provide the required ventilation without the need for unsightly external fittings. Care should be taken to discuss the options with the person specifying the roof (often the contractor) and to select the most visually unobtrusive option.

FLAT ROOFS

Smaller flat roofs to dormers, porches, etc. were originally in lead, although many have been replaced in zinc and other materials. Large flat roofs to roof terraces and other areas were and are normally covered with mastic asphalt, laid on boarding with lead flashings and aprons.

Lead: For small areas of flat roof, particularly where this was the original material used, there is no better material than lead. Correctly detailed and fitted it has a long life and a high-quality appearance. Development in lead roof detailing has resulted in current good practice differing widely from that of the 19th Century. In this case the current practice should be followed, which often requires alteration to underlying timber construction as well as the leadwork itself. Correct specification of leadwork matches the thickness of the sheets to their situation and size. Expertise should be sought either from a competent contractor of from an architect or surveyor. Excellent guidelines and a directory of contractors are available from the **Lead Sheet Association.**

Zinc: Often used as an economic substitute for lead, zinc can be satisfactory but has a shorter life and is more dependent on high quality workmanship. It is also significantly less easy to repair zinc roofing than it is to repair lead. Contractors should be carefully selected, as this is a trade where there is no alternative to a specialist operative.

Asphalt: Mastic asphalt is laid hot and semi-liquid. A plywood substrate (of suitable quality) is now normal rather than softwood boards. British Standards define good practice, and contractors are readily available. It should be noted, however, that asphalt contractors tend not to excel at or carry

other trades, and are best 'attended on' by a specialist roofer/carpenter/bricklayer/leadworker, etc. where there is a need for associated works to the roof structure, parapets etc.

Other materials: Bitumen felt, copper, fibreglass, etc. are all available as alternatives for flat roofs. In all but very unusual circumstances they are unsuitable for use on houses in Bedford Park. Felt can be used as an alternative to Asphalt without significant visual harm, but it is a very substandard material for such applications.