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St Stephens House, Westminster, SW1

Telephone WHItehall 2071

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Why Aberdeen granite is booming

Many of the most important new buildings are faced with polished granite slabs

BOWATER HOUSE, KNIGHTSBRIDGE, IS A BREATHTAKING EXAMPLE OF THE USE OF POLISHED GRANITE. THE WINDOW APRONS ARE IN GREY CREETOWN; THE LENGTHY MULLIONS IN BLUE PEARL; AND THE FINS ON THE SECTION CONNECTING THE TOWERS IN PETERHEAD

ABERDEEN and granite are as firmly linked in our minds as Shetland and wool or Edinburgh and rock. Despite changes in architectural taste, the grey stonework of the Granite City with its spires, turrets, and quays still never fails to be impressive and is perhaps one of the most powerful arguments for uniformity of texture. Union Street, Aberdeen, especially when the sun shines after a shower of rain, provides a glistening advertisement of the qualities granite has to offer the architect: strength and massiveness that is yet graceful, confident simplicity, and – by no means the least consideration – durability and cleanliness.

Aberdeen stands on the edge of an enormous area of granite known to geologists as the 'Hill of Fare Complex'. The largest quarry, Rubislaw, from which some three-quarters of the city is built, now lies within the suburbs. Instead of a cutting into a hillside, Rubislaw, like most Aberdeenshire quarries, consists of an immense oval pit with sheer, almost vertical sides; the surface dimensions are 900 ft. long and 750 ft. wide and the pit now sinks to no less than 450 ft.

The best quality stone is found in 'posts' or masses separated from each other by veins of inferior rock. The quarried stone is hoisted to the surface by means of 'Blondins' – travelling cradles slung from cables; the largest can lift as much as 20 tons.

The chief Aberdeenshire quarries being worked today are as follows:

CORRENNIE – salmon-pink, coarse grain, full of sparkle

KEMNAY – silver-grey, medium grain, varied texture

PETERHEAD – almost flesh-coloured, coarse grain, interspersed with brownish-grey patches

RUBISLAW – greyish-blue, fine grain, specked with black

SCLATTIE – greyish-blue, but somewhat lighter than Rubislaw, medium grain

Originally these quarries concentrated on producing ashlar and various other qualities of dressed stone, but in recent years, largely owing to heavy labour costs, this side of the industry has declined very considerably and even locally far fewer houses are being built of granite. Nevertheless, something like a boom is occurring in Aberdeen granite for it has become one of the most popular materials for cladding. In particular, stone from Rubislaw and Peterhead is providing the smooth, glossy elevations to be seen on many of the major buildings of the 1950s and '60s. One must also add the grey granite from Creetown in Kirkcudbrightshire.

The reasons for granite's new-found popularity are not difficult to understand. Scarcely any other stone takes such a magnificent polish or reflects light so brilliantly; is as resistant to erosion by the atmosphere; is so cheap to maintain – it is easy to wash and never flakes; or can be supplied in such a variety of colours and finishes (e.g. polished, egg-shell, gloss, shotted, etc.).

The Aberdeen stone manufacturers have not allowed their understandable pride in the local products to prevent them from appreciating the attractions of the colours and textures found in granite imported from other countries, especially Scandinavia. They justly claim to cater for every taste. Among the most popular imported varieties are:

Blue Pearl (Norway) – large grey crystals like brush-strokes, full of blue pearly lights, specked with black.

Emerald Pearl (Norway) – similar to above, but darker and emerald rather than blue.

THE VAST OVAL PIT OF RUBISLAW QUARRY IS 450 FT. DEEP. TWO QUARRYMEN ARE DESCENDING IN THE 'BLONDIN'

Imperial Red (Sweden) – large dark brownish-pink crystals intermingled with light-grey, specked with black.

Bon-Accord Black (Sweden)– very dark, fine grain, mottled with grey.

Merlin Grey (Sweden) – fine grain, light in colour with black and sparkling specks.

Bluehill Grey (Sweden) – similar to above but smoother grain and less contrasting in colour.

Silver White (Norway) – fine grain, light grey, specked with black.

Ebony Black, No. 25 (Sweden) – very fine grain and relatively even texture.

Best Quality Ebony Black (Sweden) – similar to above but superior.

Balmoral Red (Finland) – brownish-pink, medium grain, with dark grey mottling.

Parson Grey (South Africa) – light grey with black mottling.

It may appear strange, ironical even, that Balmoral Red comes from Finland, but quarrying is only a small part of the modern granite industry. Cutting, polishing, and the other processes of preparation described in the last issue of *Stone* are far more complex operations and occupy many more man-hours. To get the best results from the virgin rock requires rare skill and craftmanship and in Aberdeen they possess an accumulation of 'know-how' that is second to none.

below BON-ACCORD BLACK PROVIDES AN EFFECTIVE FACING (LEFT) FOR THIS BRANCH OF THE NATIONAL PROVINCIAL BANK IN SOUTHSEA; THE COLUMNS IN BLUEHILL GREY WERE TURNED ON LATHES IN ABERDEEN

THE KEMNAY SILVER-GREY IN MARISCHAL COLLEGE, ABERDEEN, MAKES A CONVINCING REPLY TO THOSE WHO THINK OF GRANITE AS ONLY A HEAVY, PONDEROUS MATERIAL

below EBONY BLACK COMBINES WELL WITH GREY GRANITE ON FRIENDLY HOUSE, AN OFFICE BLOCK IN EAST LONDON

They have also moved with the times. In recent years the Aberdeen masons' yards have become highly mechanised so that they can produce stone with the finest finishes at realistic prices. The time taken on traditional dressings such as rough-picked, single-axed, fine-axed, is speeded up with the use of pneumatic tools. Aberdeen can also deliver supplies quickly, though they will admit ruefully that 'the impossible *does* take a little longer'.

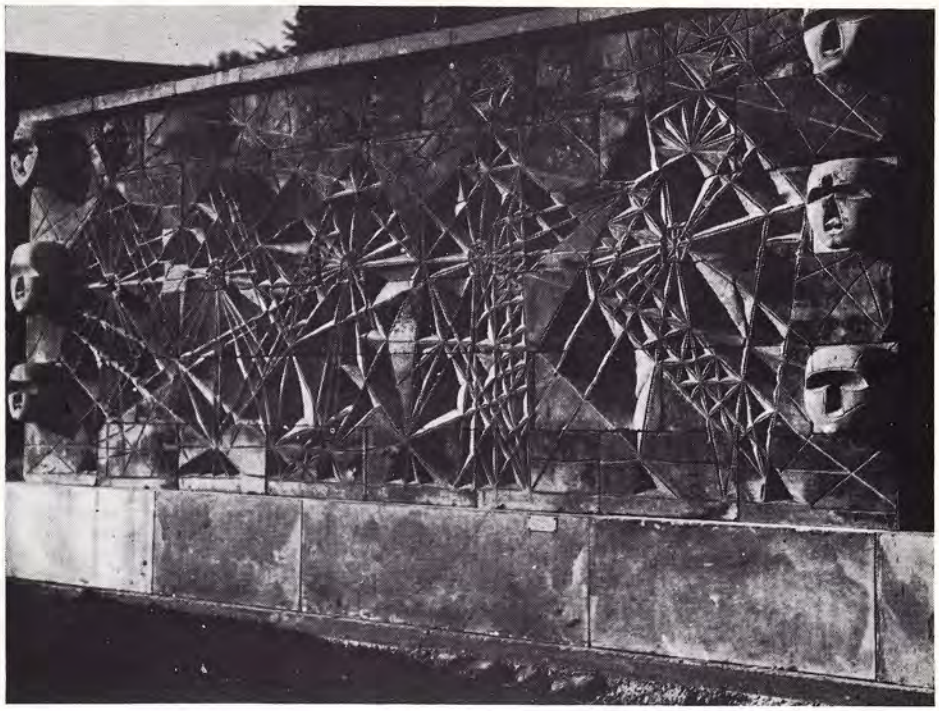
Granite is relatively easy to handle, but the advice of the expert should always be sought when deciding which variety to use, the kind of finish, and the methods of fixing. It is advisable for the architect to consult a firm who are specialists in granite. This can reduce costs. For example, architects often stipulate slabs of a standard thickness (say 1½ in.) but in certain buildings no harm is done if the thickness is irregular within agreed limits, and if so, this can mean a reduction in the time spent in sawing.

The cladding for each building has to be 'tailor-made', especially when it comes to soffits, sills, and reveals. There are few technical limitations to what can be done with granite, but more intricate work involves more manual labour and is therefore more costly. Here again consultation between architect and manufacturer can lead to economies.

The only reliable and completely convincing catalogue of any building material are the buildings in which it can be inspected. For evidence of Aberdeen granite's durability and timeless quality one might start by taking the enquirer round the Granite City itself to view St. Machar's Cathedral whose stones date back to the fourteenth century; then Telford's splendid Union Bridge over the Denburn Valley, whose design makes it hard to believe that it was built in the days when the mason's only tools were blocking hammers and scabbing or dressing picks; perhaps most impressive of all are the slender towers of Marischal College, built of Kemnay's silver-grey, a graceful answer to those who maintain that granite is only a ponderous heavy material.

In London examples include Tower, Blackfriars, Kew, and Putney Bridges; the Savoy Hotel. In Liverpool Aberdeen granite can be viewed in St. George's Hall. Then there are the docks in Portsmouth, the Bell Rock lighthouse, the foundations of the Forth and Tay bridges . . . and, further afield, the Paris Opera House . . .

To add to the list would be misleading as well as academic, for readers will naturally be more interested in the contemporary uses of granite. Immediately there comes to mind a dozen or so of the most important post-war buildings in London. Bucklersbury House in the City; the new Shell Mex building; offices for Esso and the Legal & General Insurance Co. in Victoria Street; the new Head Office of Barclays Bank; Bowater House, Knightsbridge. For the clean lines, bright colours, and massive planes of the modern idiom granite is hard to compete with.



'The Dance' in Portland Stone

THE VIGOUR OF THE LIVING STONE IS CONVEYED DRAMATICALLY BY THIS RECENTLY SCULPTURED WALL BY PROFESSOR A. H. GERRARD. IT IS 6 FT. HIGH AND 16 FT. LONG

Glossary for Stone wallers

The British Standards Institution issues a *Glossary of Terms for Stone Used in Building*.* It includes the following list of terms under the heading 'Walling', some of which may be unfamiliar to the reader:

Brought to courses – Walling, similar to uncoursed rubble, which is roughly levelled up to courses at intervals, varying in height according to the locality and the type of stone used. See 'Random rubble', 'Squared rubble'. NOTE. The course heights usually correspond with the heights of the quoin and jamb stones.

Core – A filling of undressed stone used in the interior of a wall.

Course – A continuous layer of stones of uniform height.

Coursed rubble – Rough squared stone walling in courses to suit the heights of cornerstones or rybats.

Damp-proof course – A layer of material impervious to moisture, e.g. slate, interposed between other materials to prevent the passage of water by capillary action or otherwise.

Dry walling – Walling without mortar.

Dyke (Scotland) – A rubble boundary wall.

Galleted (Garnetted) – Having small stones inserted into the mortar face joints in unjointed walling, usually for decorative purposes but sometimes to wedge the larger stones in position.

Knapped flint – Flint cobbles or nodules split across and used in walls with the split face showing.

Lacing course – A course of bricks, dressed stone, tile or other material built into walls of random rubble or flint to give added stability and strength.

Parpend ashlar (Scotland) – Ashlar faced on both sides, as for parapet walls.

Polygonal (Rag walling) – Walling built of stones of irregular shape which may be roughly pitched to fit the adjacent stones.

Random rubble – Walling built of irregular unsquared stone not in courses. When it is levelled up, about every 12 in. in height, it is called 'Random rubble brought to courses'.

Rubble – Stone of irregular shape and size.

Sneck – A small stone in squared rubble work to make up the bed for bonding.

Snecked – Rubble walls in which the stones are squared but of irregular size, with small stones or snecks introduced to break the courses. (Called 'Snecked rubble' in Scotland).

Squared rubble – Walling built of irregular squared stone not in courses. When it is levelled up, about every 12 in. in height, it is called 'Squared rubble brought to courses'.

Square flint facing – A wall in which each flint is cut to a uniform regular size, generally 4 in. square and laid in courses.

Weathering – Working the top face of a stone to a plane surface inclined to the horizontal for the purpose of throwing off rainwater.

*Obtainable from British Standards Institution, 2 Park Street, W.1. (B.S. 2847:1957, price 7s. 6d. net).:

Location of principal quarries throughout the British Isles

Doulting Stone

SOURCE Doulting, near Shepton Mallet, Somerset.

GEOLOGY Limestone, Great Oolite series of the Jurassic system (approximate age: 145 million years).

COLOUR Deep cream.

CHARACTERISTICS Fairly coarse grain with interesting texture and large plates of calcite. The nature of the texture does not lend itself to very delicate work with fine arrises. In exposed places it can be subject to wind erosion. Can be used both externally and internally.

AVAILABILITY Output from quarries is approximately 20,000 cu. ft. per year.

SIZES Blocks are obtainable up to 6 ft. long and 2 ft. 6 in. high. The majority of output from the quarry comprises stones of rather less height.

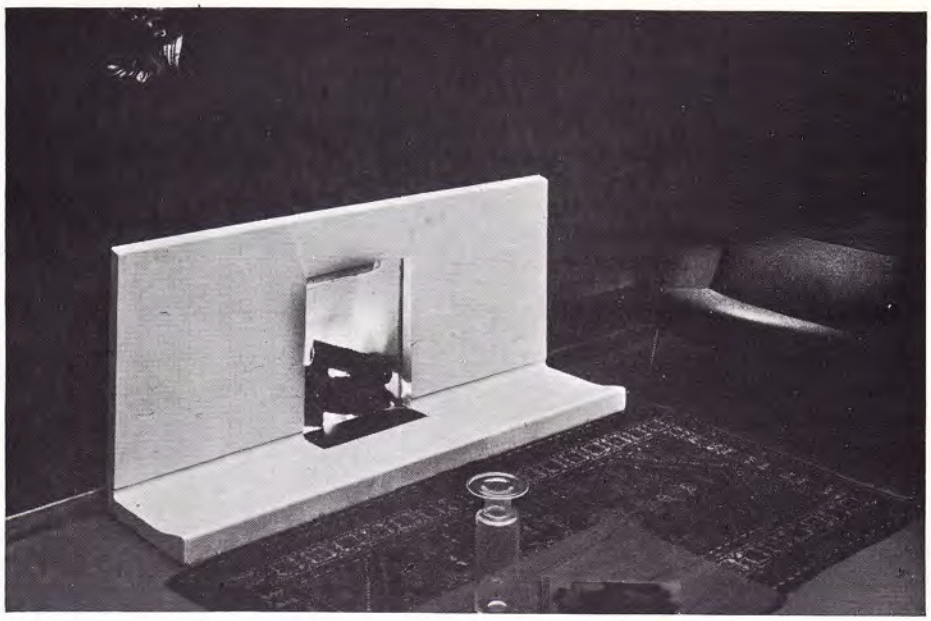
FINISH Most usual finishes are rubbed and tooled.

PHYSICAL PROPERTIES Density: 150 lb. per cu. ft. Failing Stress: 142 tons per sq. ft. Water absorption: 3.4 per cent.

WHERE USED Doulting Stone can be seen in dressings to the Tower of London; all the facades to Wells Cathedral; interior of St. Anne's Cathedral, Belfast; interior of County Offices, Taunton; interior of Civic Centre, Bristol; interior of Kensington Library; interior of New Government Buildings, Whitehall; facings to bridges on M.2 Motorway.

ADVISORY SERVICE

The British Stone Federation has made a close study of all the problems relating to the use of stone, and has set up an advisory panel which gives architects and others free advice and help on stone matters. Inquiries should be addressed to the Secretary The British Stone Federation 70 Victoria Street S.W.1.



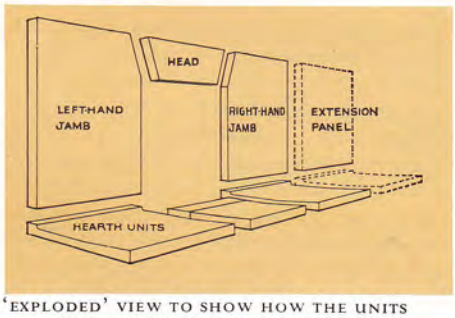
THE STONE UNITS CAN BE ASSEMBLED TO SUIT THE CUSTOMER'S REQUIREMENTS

A new approach to fireplace design

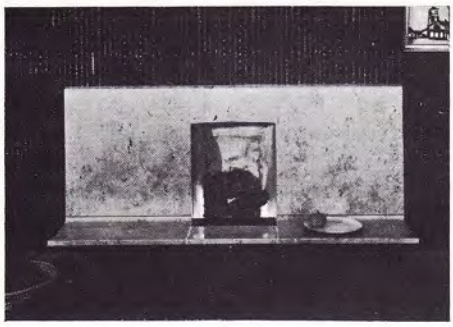
DESIGNERS of stone fireplaces seem to find it difficult to escape from the strong tradition of domestic stonework that in England spans many centuries. Now, however, there comes news of a project for stone fireplaces that are entirely different. Wren Fireplaces of Bath have commissioned John and Sylvia Reid, A/ARIBA, F/FSIA, to design a range of fireplaces on a unit principle. The result is a series of simple interchangeable stones which can be assembled in various ways according to the ideas of the architect, builder, or client.

The units consist of jambs, heads, and hearths in various sizes. A fireplace would normally consist of six units – two jambs, a head, and three hearth stones. In addition, a range of extension panels is listed, and these make it possible to design a fireplace extending to any width, even the whole length of a room. Another feature is the use of a special unit to form an extra opening which can be used as a log-store or decorative opening.

The details of these units allow the beauty of the material to speak for itself. The fireplaces are slender and elegant with the long low look fashionable in modern interiors.



'EXPLODED' VIEW TO SHOW HOW THE UNITS FIT TOGETHER



THE HEARTHS ARE DESIGNED TO BE FITTED WITH EITHER A NORMAL GRATE OR AN UNDER-FLOOR DRAUGHT FIRE

The unit system also has advantages for the dealer and builder. Stone fireplaces normally present a problem as special precautions are needed to ensure that they reach the customer in perfect condition. Wren Fireplaces have tackled this problem quite directly by designing special packs for each unit. The packs protect the stones from dirt and damage, make them easier to handle, store and deliver, prevent deterioration in stock and take up less storage space.

The purchaser is offered a choice of shelly whitbed Portland, Doulting, and Clipsham stones as well as polished Portland. The hearths are designed to be fitted with either a normal grate or an under-floor draught fire of the 'Baxi' type without any special modifications.

The policy of the designers of this new venture is to use natural materials in the modern idiom; the resources of the largest masonry works in Europe are employed to advantage to keep the prices within a most competitive range. More new designs will be on the market later this year.

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