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Stone sculpture for modern buildings

An experienced architectural sculptor, Bainbridge Copnall, M.B.E., F.R.B.S. discusses its potentialities and gives some very practical advice.

DURING the last thirty years or so architectural opinion has fluctuated widely on the importance of sculpture as a factor in the design of a building. Recently, during the last two or three years, the value and merits of sculpture have been very generally recognised, and throughout the country sculptors seem to have almost as much work as they can cope with. It may be no exaggeration to say that architectural sculpture may be about to enjoy a renaissance.

At long last it seems that architects have come to the conclusion that triangular, rectangular, and rounded functional forms need more than mere changes of material or original cantilevering; that inanimate blocks of space-holding walls are not sufficiently satisfying and that, constantly repeated, they fill the eye with boredom. Some focal-point is needed to infuse life into the arrangements of stone, steel and other materials: alternatively, what is known as a 'swing stop', a 'running chain', or a visual link of some sort, can effect the same purpose.

The sculptor or expert decorator should, ideally, be brought into the picture at an early planning stage. His advice is well worth having on the positioning of the design's 'accents', the costing, and the time needed to complete the sculpture or decoration. Once these essentials have been agreed it is generally best to leave him well alone to carry out his design and work out the constructional details.

To the sculptor each building on which he works is a separate and different experience. His job is to enliven it but an experienced man, one who is in tune with contemporary conditions, is a realist: he is familiar with the requirements of construction, proportion, weathering, flood-lighting – and, of course, costing. With modern methods, it is usually possible to provide a satisfactory scheme of decoration within a reasonable, practicable budget. Any sculptor who wants to make large sums of money for the minimum amount of work only cuts the throats of his fellow craftsmen.

The chief way of saving expense is to shorten the time required to carry out the project, and there are several ways of doing this. The elimination, for example, of maquettes and third-scale models saves weeks, particularly as the enlargement of the models to full-scale is a slow process.



INCISED CARVING WITH PNEUMATIC-HAMMERS FOR BLACKFRIARS HOUSE
(ARCHITECTS: R. SEIFERT AND PARTNERS)

In their place solid, almost three-dimensional drawings, strengthened by black chalk, can be used: if drawn full-scale, they can be traced on to the blocks of stone which can then be carved direct. If the work is free-standing, the elevation, sides, and back can be similarly drawn and traced.

Another time-saver is the pneumatic-hammer. When used by sculptors who understand its value and have persevered until they have become accustomed to the initial strangeness of the vibration, this is a sensitive tool. It can cut down time by as much as four hundred per cent, save

labour, and produce finer work; thus it enables the sculptor to work to the demands of the scaffolding timetable.

The good modern sculptor does not ask to be pampered. He does not expect to be treated as a member of a separate, rarified race, apart from the other craftsmen employed on the building. Together with his assistants, he undertakes most of the carving himself and costs should not be increased by the work being handed over to outside contractors.

The choice of stone for the sculpture or decoration depends on many factors: the materials



FULL-SCALE DRAWINGS ARE CHEAPER THAN MAQUETTES. A CARVING FOR A BALCONY IN MARBLE, DEPICTING SIR LAURENCE AND LADY OLIVIER (ARCHITECTS: R. SEIFERT AND PARTNERS)

used in the building itself, the size and theme of the sculpture, and so on. In London, for example, the stone chosen should weather well and keep its colour and texture: among those I know from personal experience to be suitable are Portland stone, Cornish and Scottish granite, Red Mansfield, Bramley Fall – though glyptic, this absorbs dirt but is strong: a grit-stone, it is pleasant to carve – and, of course, marble. Discolouration of the stone surfaces in reliefs on buildings can be almost completely eliminated by the careful addition of water channels, carved either behind or on top of the work; these drain the water into swiftly running streams that empty themselves away from the lower surfaces by means of bird-beak cutting. The surfaces of the actual carvings should be closed as much as possible with abrasives, sanding-discs, or chisels.

The effect of floodlighting is something which every contemporary sculptor must bear in mind. Nothing looks worse than meaningless shadows that obliterate the forms above or around them. Though in daylight certain shadows may give a desired effect, this may be ruined at night unless consideration is given to the results of floodlighting. As with proportion, the problem can be worked out partly by reasoning and partly by geometric appreciation – diagrams can be extended on the original scale drawings. Should the size of the work entail the employment of several assistants, it is possible to contour the diagrams in a different colour, thus making them almost fool-proof.

Lastly, what of the subject matter and theme? This is something on which it is impossible to generalize. It has, of course, to be agreed with the client and architect – unless, that is, they are willing to offer the sculptor a free rein – but inevitably the one who has to give it the most thought is the sculptor himself. He cannot rest until he has found an interpretation that is both practical and really satisfies him. Perseverance in reaching this, allied with the ability to make his work live and sing, as well as to be true in proportion, tone, balance, and behaviour, is the mark of the true architectural sculptor.

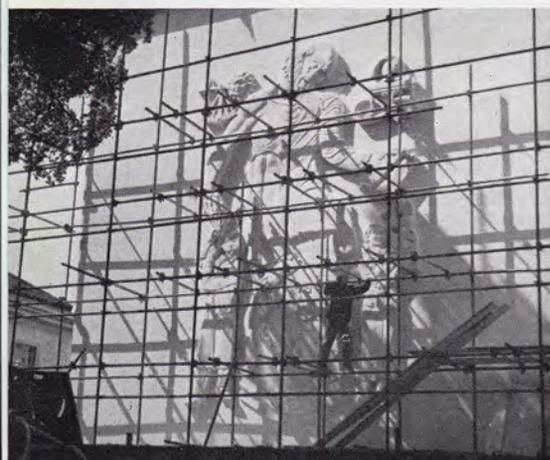
The illustrations to this article are taken from the work of the author



Left: DRAWINGS CAN BE TRACED ON TO THE STONE WHICH CAN THEN BE CARVED DIRECT. STARTING WORK ON INCISED FIGURES ON THE TRANSPORT AND GENERAL WORKERS' BUILDING IN BRISTOL (ARCHITECTS: WHITE AND TRAVISS)

Below, left: THE AUTHOR INSPECTS THE CARVING ON THE WALL OF THE NEW WELSH TECHNICAL COLLEGE AT CARDIFF (ARCHITECT: SIR PERCY THOMAS, P.P.R.I.B.A.)

Below: DETAIL OF MARBLE PANEL FOR A BALCONY (ARCHITECTS: R. SEIFERT AND PARTNERS)





De Lank Granite

SOURCE De Lank, St. Breward, Bodmin, Cornwall.

GEOLOGY Early carboniferous.

COLOUR Light silver-grey.

CHARACTERISTICS Fine grained, even textured, and uniform in colour. Water absorption is practically nil.

AVAILABILITY Unlimited quantities.

SIZES Up to 15 ton crane capacity.

FINISH All grades from rock-face to highly polished.

PHYSICAL PROPERTIES Weight: 165 lb. per cu. ft. Crushing strength: 25,700 lb. per sq. in. Specific gravity: 2.65.

WHERE USED Recent examples include: Tilbury Dock extension, Essex; Scottish Life Assurance, Birmingham; Royal Insurance, Exchange St., Manchester; Gotch House, Harp Alley, London; F. W. Woolworth & Co., Briggate, Leeds; Barclays Bank, Sutton, Surrey; St. John the Baptist College, Oxford; Alliance Assurance Co., Ipswich; Leicester Temperance Society, Charles St., Leicester; Commercial Union Assurance Co., High St., Bristol; the Nestle's Co., Hayes, Middlesex; Harlow New Town, Essex; Dominion Buildings, South Square, London; Co-operative Wholesale Society, Middleton; Lloyds Bank, Fishergate, Preston; Leeds Permanent Building Society, Moseley St., Manchester; Swansea Docks Extension; F. W. Woolworth & Co., Oxford St., London; National Provincial Bank, Wakefield, Yorkshire.

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.

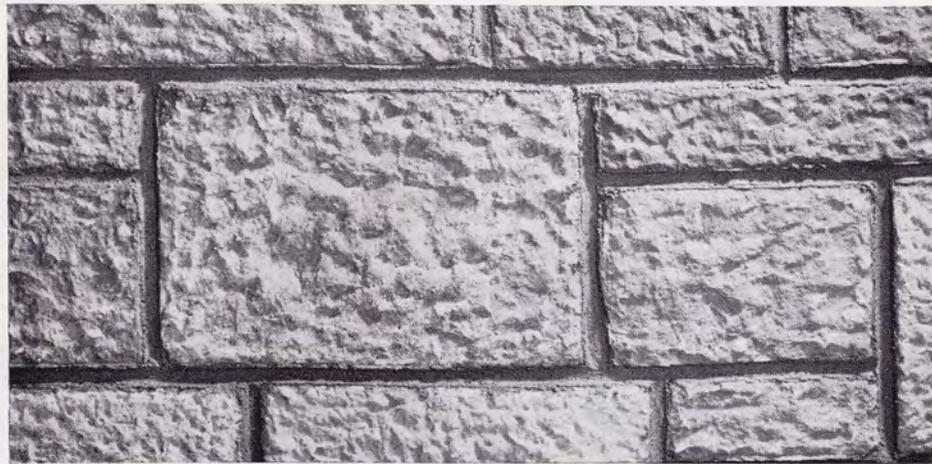
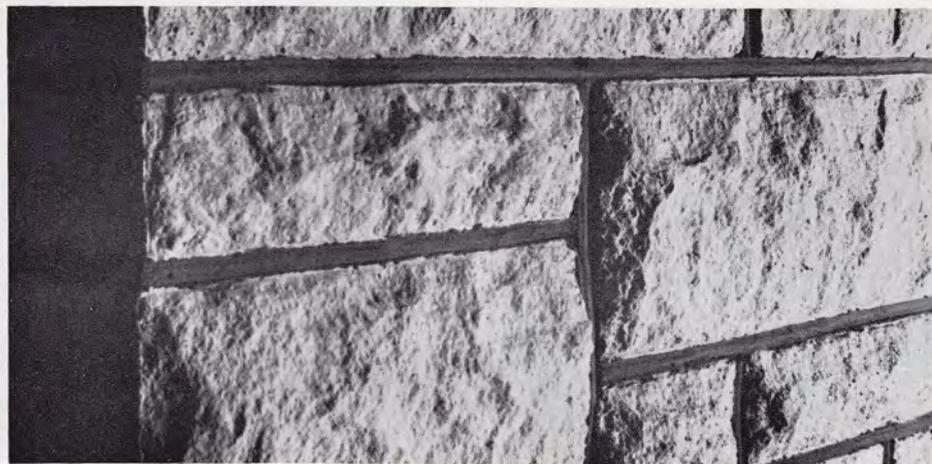
Stone preparation

5—Finishing

This is the fifth in a series of six articles

PRE-WAR textbooks include descriptions of a variety of surface finishes for dressed stones, such as tooled, broached, reticulated, and vermiculated, but these finishes are mostly out of keeping with modern design; and, because they involve considerable hand labour, they are quite uneconomical. Before the days of mechanisation it was usual to leave stones as they were

gives variety and character to the surface. To tool by hand a surface which has been produced by the saw is costly, but light fluting and grooving can also be produced by machines to give some pleasing effects. To reduce expense, it is essential that the grooving goes right across the surface of the stone, as stops raise the cost out of all proportion to their effect.



Top: ROCK-FACED FINISH Below: PUNCH-FACE FINISH

dressed by the mason's chisel. This type of finish was pleasant to the eye and led to a variety of appearances. A rubbed finish – erasing the tool-marks by rubbing with grit-stone or carborundum blocks – could be supplied at additional expense.

In recent times, however, the introduction of fast-cutting circular-saws has made it necessary – or at least it is the practice – to eliminate the saw-marks, which are often irregular, by rubbing the surface of the stone mechanically with carborundum discs and other abrasives. One advantage of the rubbed finish is that in our big cities and industrial towns the stone surface is less likely to hold the dirt and grime.

Now that architects favour simple and severe designs the plain rubbed face, especially over large areas, can be monotonous and many architects look for a rougher finish, something which

Other finishes obtainable without excessive cost are:

Rock-faced: This can only be obtained cheaply in narrow courses of stone up to, say, 6 in. which limits its use to garden and fireplace work.

Punch-faced: A hand produced finish of moderate cost but effective in panels and over small areas.

Coarse-sanded: A coarse or pitted finish produced by rubbing with crushed flint.

Self-faced: Obtainable on some sandstones and on slates by splitting slabs of the material and exposing the natural split face.

Polished: A special finish appropriate to granites and marbles and a few of the harder limestones. Modified forms of it are Honed or Eggshell finishes.