ROUGH-CASTING IN CANADA.

ROUGH-CASTING, or as it is sometimes called, slap-dashing—both words of which are synonymous with the French *hourdage*, rough work, and *ravalement*, having a similar meaning, writes Mr. Fred. T. Hodgson in Architecture and Building—is a method of plastering the outside of buildings much used in the northern part of Canada, because of its being durable, cheap and well adapted to keep out cold winds during our long winters. The methods of applying rough-cast and the mixing thereof do not materially differ from the methods adopted in Northern Europe or even in the North-Western States, but it is these minor differences, perhaps, that make the rough-casting done in Canada superior, so far as durability is concerned, to much that is done in other parts of the world.

There are frame cottages near the city of Toronto and along the northern shores of Lake Ontario that were plastered and rough-casted exteriorly over forty years ago, and the mortar to-day is as good and sound as when first put on, and it looks as though it was good for many years yet if the timbers of the building it preserves remain good. Rough-cast buildings are plentiful in every province in the Dominion from Halifax to Vancouver and from Lake Erie to Hudson Bay, and when well built, and the rough-cast properly mixed and properly applied, the result is always satisfactory. It is quite a common occurrence in Manitoba and the North-west territories in the winter to find the mercury frozen, yet the intensity of frost does not seem to affect the rough-casting in the least, though it will chip bricks, contract and expand timber and render stone as brittle as glass in many cases, and the effect on iron and steel is such as may prove dangerous if exposed to sudden and unexpected strain.

In preparing a frame or log building for rough-casting, care must be taken in putting down the foundation. A good stone or brick foundation is, of course, the best, but where rough-casting is intended, stone or brick foundations are seldom used because of their cost, and the builder is compelled to use posts of wood. Here the posts are generally made of white cedar, which has a lasting quality of thirty-five or forty years, if sound when used. The posts are put in the ground from 3 to 5 feet, the deeper the better, as they should be deep enough in any case to prevent the frost from forcing them upward. When a sufficient number of posts have been properly placed a line is struck on them the proper height from the ground and the tops levelled off. The sills are then placed—all joints being broken on top of posts—and the whole made level. These sills and all the other timber, scantlings and lumber, should be well seasoned, if possible, for the greatest enemy to the plasterer is unseasoned timber; shrinkage of joists, posts and scantling, not only breaks the bond of the mortar, but causes great cracks in corners and angles, that no amount of pointing or patching can ever make good.

When the frame is up and the rafters on and well secured, the whole of the outside should be covered with good, sound, common inch stock pine, hemlock, spruce or other suitable lumber, dressed to a thickness. If put on diagonally so much the better, but this is not absolutely necessary if the rough-casting is to be of the best quality, as will appear hereafter.

When it can be done it is best to get all partitions set in place and lathed, the roof on and all necessary outside finish or grounds put in place and made ready to receive the lath. The carpenter must prepare his finish or grounds for finish to accommodate the extra lath, as the walls will be thickened accordingly.

For the cheaper sort of rough-casting in one or two coats, the following method of lathing is employed:—Nail laths on the boarding—over paper or felt, if paper or felt is used—perpendicularly 16 inches from centre to centre if 4-foot laths are used, or 18 inches or 1 foot from centre to centre if 3-foot laths are used. The whole surface to be rough-casted will require lathing this way. When done lath as is ordinarily done with No. 1 pine lath, breaking joints every 15 inches. Put five nails in each lath, driving each nail home solid, coat over with mortar, well haired, and that has been made four or more days, smooth and straighten as well as possible with a darby. When done and while yet soft the rough-cast is thrown on it with such force as to drive the pebbles or small stones deep into it. The mixture or dash, as it is called, is composed of fine gravel, clean washed from all earthy particles and mixed with pure lime and water till the whole is of a semi-fluid consistency. This is mixed in a shallow tub or pail and is thrown upon the plastered wall with a wooden float about 5 or 6 inches long and as many wide, made of half-inch pine and fitted with a wooden handle. While with this tool the plasterer throws on the rough-cast with his right hand he holds in his left a common whitewash brush, which he dips into the rough-cast and then brushes over the mortar and rough-cast, which gives them when finished a regular uniform colour and appearance.

For this sort of work the following proportions will answer: To one barrel of prepared gravel use a quarter barrel of lime putty; mix well before using. This may be coloured to suit the taste by using the proper materials, as given further on. It must be understood that the foregoing is the cheapest sort of rough-casting, and is not recommended where more durable but more expensive work is required.

The best mode of doing this work, as practiced in the lake district of Ontario, is about as follows:—Have the frame of building prepared as indicated in the foregoing, with partitions all put in and well braced throughout and well secured. Lath diagonally with No. 1 pine lath, keeping 1½ inches space between the lath. Nail each lath with five nails and break joints every 18 inches. Over this lath again diagonally in the opposite direction, keeping the same space between the lath and breaking joints as before. Careful and solid nailing is required for this layer of lathing, as the permanency of the work depends to some extent on this portion of it being honestly done. The mortar used for the first coat should have a goodly supply of cow's hair mixed in with it, and should be made at least four days before using. The operator must see to it that the mortar be well pressed into the key or interstices of the lathing to make it hold good. The face of the work must be well scratched to form a key for the second coat, which must not be put on before the first or scratch coat is dry. The mortar for the second coat is made in the same way as that required for the first coat, and is applied in a similar manner, with the exception that the scratch coat must be well damped before the second coat is put on, in order to keep the second coat moist and soft until the dash or rough-cast is thrown on. The rough-casting is done exactly in the same manner as described for the cheaper sort of rough-cast work.

A building finished in this manner, if the work is well done, possesses many advantages over the ordinary wood-covered structure. It is much warmer, being almost air-tight so far as the walls are concerned. It is safer, as fire will not eat its way through work of that kind for a long time. It is cleaner, as it will not prove such a harbour for insects. It may be made as handsome as desired, for, before the rough-cast is dashed, it may be laid off in panels of any shape by having strips or battens tacked over the soft mortar, which may be removed after the rough-casting is done and the coloring finished. It is much superior to the so-called brick veneered house, as it is much warmer, more exempt from fire and cheaper.

For 100 yards of rough-casting in the manner described the following quantities will be required:—1,800 lath, 12 bushels of lime, 1½ barrels best cowhair, 1¾ yards of sand, ¾ yard of prepared gravel and 16 pounds of hot cut lath nails, 1¼ inches long. The gravel should be sifted through a half-inch mesh screen, and should be washed before mixing with the lime putty.

To color 100 yards in any of the tints named herewith use the following quantities of ingredients:—For a blue-black mix 5 lbs. of lamp-black in the dash. For buff use 2 lbs. of green copperas, to which add 1 lb. of fresh cow manure, strain all and mix well with the dash. A fine terra-cotta is made by using 15 lbs. of metallic oxide mixed with 5 lbs. of green copperas. A dark green color is made by using 5 lbs. of green copperas and 4 lbs. of lamp-black. Many tints of these colors may be obtained by varying the quantities given. The colors obtained by these methods are permanent; they do not fade or change with time or atmospheric variations. Many other colors are used, but few stand like the ones named. A brick color may be obtained by the use of Venetian red and umber mixed in whisky first and then poured into the dash until the proper tint is obtained.

The following are the officers elect for the ensuing year of the Ontario Society of Artists:—Hon. President, Hon. G. W. Allan; President, M. Matthews; Vice-President, W. Revell; Secretary, Robert F. Gagen; Auditor, James Smith. Executive Council—C. M. Manly, W. D. Blatchly, Miss G. E. Spurr, W. E. Atkinson, A. C. Williamson, R. J. Hovenden, F. M. Bell-Smith. Industrial Exhibition Committee—T. M. Martin, F. M. Bell-Smith.

IN Germany the liability of employers for accidents to workmen rests chiefly on the law of insurance, which dates from 1884. All employers are obliged to insure their work-people and clerical staff, even when the employment is temporary and unpaid. There are special associations for different industries, and the statutes must be approved by the Imperial Insurance Office. Injuries include those which are internal as well as external, loss of intellect, memory or nerve. When compensation is claimed, it is necessary to trace the injury to some specific cause, and not to the mere normal exercise of the occupation. Generally the person who is to gain or lose most by the undertaking is held to be the employer. Thus, in building contracts, it is not the capitalist who advances the funds, but the master builders, carpenters, &c., who are responsible. Employers' contributions to the associations are proportionate to their annual expenditure in wages. The amount of compensation is based on the wages received by the workman during a year. So long as he is completely incapacitated, he is to be allowed two-thirds of his wages. For partial disablement he obtains a fraction of that maximum proportionate to the extent of the injury. In case of death, twenty days' payment (in no case less than 30 marks) are to be granted towards funeral expenses. The widow, until her remarriage, is allowed about 20 per cent. of her husband's wages, while 15 per cent. is allowed for every child under fifteen who has lost one parent, and 20 per cent. if it has lost both. The total compensation to widow and children must not exceed 60 per cent. of the deceased's wages. In case of remarriage she receives as composition three times the amount of her annual allowance. If the deceased was the sole support of parents or grand-parents, they may receive 20 per cent. of his wages during their lifetime.