

elevators for Dyell & Co., of Souris, and are building a number for the Northern Elevator Co.

MONTREAL, QUE.—J. Alcide Chaussé, architect, has awarded the following contracts: Agriculture school at L'Assumption, Que., five stories, for the L'Assumption college: Masonry, carpenter and joiner's and brick work by day labor, plastering, not let; plumbing and heating, L'Espérance & Terriault; steel work, Canadian Bridge Co. For one brick house, corner St. Catharine and Papineau avenue, for Charles Vezina: Masonry, Belanger & Guernon; brick, E. Morache; plastering, not let; steel work, Imperial Bridge Co. For the reconstruction of the Congregation Chapel, St. Brigid church: carpenter and joiner's work, Joseph Cote; cement plastering work, F. H. Decary; heating, David Ouimet; painting and glazing, Ernest Belanger; bench, Corbeil & Leveille.—R. Findlay, architect, has let contracts as follows for two houses, corner of William and Shannon streets, for H. B. Ames: Masonry, Heggie & Stewart; carpenter and joiner's work, D. Long; roofing, G. W. Reed; plumbing and heating, Padden & Nicholson; brick, McArthur & Son; plastering, S. Gosselin; painting and glazing, G. & R. Fletcher; iron work, Canadian Bridge Co.

HINTS FOR BUILDERS.

The following information of service to contractors is taken from W. A. Sylvester's book on "Modern Carpentry and Building".

SHINGLES.—A bundle of shingles, if full size, should have 25 courses on each end, and be 20 inches wide; or else have 22 courses on one end, and 23 courses on the other, and be 22 inches wide. Four such bundles contain 1,000 shingles, each supposed to be 4 inches wide. They are usually 16 inches long; sometimes in the nicest class of shingles they come 18 inches long. It is poor economy to use an inferior quality of shingles; it costs rather more to lay them than it does good ones, and they make a leaky roof, almost from the first. Spruce shingles are used considerably by some, but are not suitable to make a good roof, as they warp and twist, and very quickly split to pieces. Some soft pine or cedar shingles, best quality, are the cheapest in the end; but even bundles of the best quality will contain some hard, glassy shingles, which will act almost as badly as spruce; they should be thrown out.

It takes about 5 pounds of four-penny nails per thousand shingles; or 3 or 4 pounds of three-penny coarse, which we think are preferable.

One thousand shingles, laid 4 inches to the weather, will cover 111 square feet. One thousand shingles laid 4½ inches to the weather will cover 125 square feet. One thousand shingles, laid 5 inches to the weather, will cover 139 square feet. One thousand shingles (18-inch shingles only, except on walls), laid 5½ inches to the weather, will cover 153 square feet.

The above does not include waste, which must be allowed.

Laths are 4 feet long and come in bundles of 100 each. (We have seen some lots, the bundles of which were short some 20 or 30 lbs.) Ten bundles make 1,000, which will cover about 60

square yards, which requires about 7 pounds of three-penny fine nails.

CLAPBOARDS are usually 4 feet long, and come 25 in a bundle; 4 bundles make a hundred, which requires about 3½ pounds of five-penny nails. One hundred clapboards, laid 4 inches to the weather, will cover 133 square feet. One hundred clapboards, laid 4½ inches to the weather, will cover 150 square feet. This does not include waste, which must be allowed.

SANDPAPER.—No. 00, 100 fine. No. 0, 100 fine. No. ½, fine enough for rubbing down paint or shellac. No. 1, fine for carpenters. No. 1½, generally used. No. 2, 100 coarse.

SHEET LEAD AND ZINC FOR FLASHINGS.—Sheet lead 1/32 inch thick weighs 2 pounds per square foot; 3/64 inch thick, weighs three pounds per square foot (generally used); 1/16 inch thick, weighs 4 pounds per square foot; 3/32 inch thick, weighs 6 pounds per square foot; 1/8 inch thick, weighs 8 pounds per square foot. Sheet zinc comes in sheets 3×7 feet. A sheet of No. 9 zinc (commonly used) weighs 14 pounds, that is about 3/4 pounds per square foot.

TO BEND A GOOSENECK.—Fill the lead pipe full of sand, ram it in well and plug up both ends, bend it carefully over your knee, or around a barrel or smooth tree.

TO BEND BRASS OR COPPER PIPES.—Fill them with melted rosin, bend carefully, and then melt out the rosin.

GLUE AND GLUEING.

There are many varieties of glue, ranging in price from twelve cents to fifty cents per pound. For general use, a good quality of glue can be purchased for twenty or twenty-five cents per pound. Previous to cooking, glue should be soaked in cold water till it becomes quite soft and pliable; the length of time required depends on the kind and quality of the glue; poor, cheap glue will nearly, and sometimes completely, dissolve in cold water, while good glue will require several hours soaking; some kinds require to be soaked twenty-four hours or more, but such glue is not commonly used. When the glue has been soaked sufficiently, drain off what water remains, and set the dish holding the glue into a dish containing water, and set it over the fire to cook. The object of setting the glue dish into water is to prevent the glue from getting scorched. The water cannot get hotter

than 212°, which is not hot enough to injure the glue. To secure the best possible results, the following conditions must be complied with, namely, the glue must be of good quality and newly made; it must be of the proper consistency, neither too thick nor the two surfaces will not come together—nor yet too thin, the glue must be as hot as boiling water can heat it; the work must be properly fitted, and should be as warm as can be borne against the cheek; the room should be very warm, especially in gluing large surfaces and in veneering; the glue should be plentifully applied to both surfaces, and then the work should be clamped together firmly; and the clamps should not be taken off until the glue is hard clear into the middle of the joints. Very large jobs of gluing should set two or three days before the clamps are removed. The consistency of the glue will depend somewhat on the kind of work to be done. For large surfaces the glue may be quite thin and plentifully used. For small work, the glue may be of thicker consistency; but it must be applied hot. For gluing wood endways, the ends should first be sized with a very thin coat of glue; when the sizing gets thoroughly dry, smooth the raised grain with a piece of fine sandpaper used over a straight stick: then coat each end with hot glue, and clamp firmly together; let it set over night, sure. In gluing boards together edgewise, many workmen do not bother to joint them both true, but depend on the clamps to force them to a joint. If the glue is good, the work may hold together some time; but there is always a strain on the glue. Some spell of damp weather may soften the glue a very little, and open goes the joint. Of course, the glue gets the blame instead of the workman, who deserves to be blamed. While many workmen make rubbed joints six feet or more in length, it is a bad practice; no joint longer than two feet ought merely to be rubbed together, and it is safer to apply clamps in every case. In veneering, put a thickness of newspaper between the veneer and the caul. This prevents the glue, which strikes through the veneer, from sticking the veneer to the caul. Some accomplish the same purpose by using sheets of zinc, which they rub with a piece of hard soap or wax. This is better than using paper, as it saves the

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