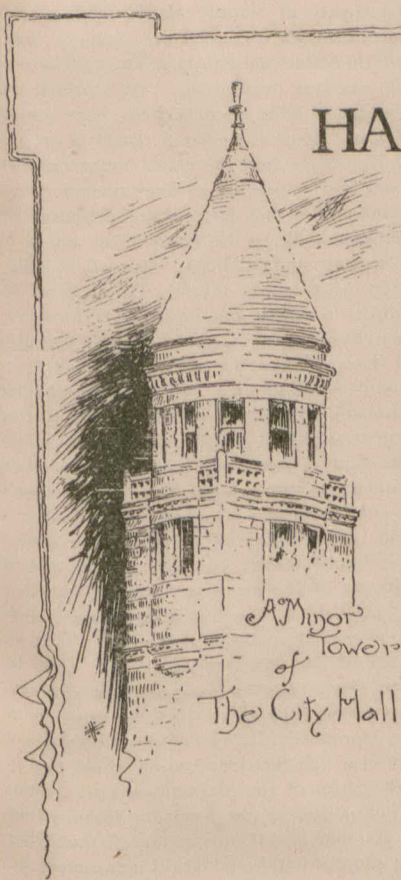


HAMILTON



THE competition for designs for a House of Refuge has been decided by a vote of the aldermen in favor of Mr. Barber, who has recently joined the ranks of local architects in this city. I learn that in this competition there were eight or ten competitors. There were no well-defined rules for the guidance of competitors, and no person with any knowledge of architecture was called in to assist the Council in deciding on the merits of the designs submitted. There is dissatisfaction, of course, as under such circumstances it was a foregone conclusion there would be. Unless architects show their esprit de corps, and unitedly refuse to take part in competitions which are improperly planned, they must expect to suffer disappointment and injustice. As to the merits of the accepted design I have nothing to say, except that the

architect has been so hurried for the purpose of getting the work ready for tender, that it is impossible that he can have been able to do any deliberate thinking on his design. The cost of the building will be in the neighborhood of \$17,000.

Mr. Mills, a local architect, is seeking to recover by legal process from the Hamilton, Grimsby and Beamsville Electric Railway Co., the sum of \$100 for sketch plans for a power house. The defence contend that the plaintiff's claim is excessive. The judge has the matter under consideration.

THE MARITIME PROVINCES.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

The Chignecto ship railroad is again exciting considerable interest. Persons who were favorable to the scheme are more anxious than ever that the railway should be completed. They point out that the completion of the work will prove a great and lasting benefit to intercolonial trade and transportation, that the shipping of the Gulf of St. Lawrence country would be greatly developed by such a road, and that the work of all maritime ships would be greatly facilitated. On the other hand there are those who are opposed to the scheme on the ground that it involves a foolish expenditure of thousands of dollars, and that no adequate commercial advantages could be derived from its construction.

A short history of this great undertaking will no doubt prove interesting to the readers of the ARCHITECT AND BUILDER. This railway was designed as a substitute for the Bay Verte Canal to unite the waters of the Gulf of St. Lawrence with those of the Bay of Fundy. The canal has been agitated ever since the early settlement of the country, and, after a voluminous amount of evidence had been taken, was favorably reported upon by the canal commission. The cost was estimated at from \$7,000,000 to \$14,000,000, according to the design. The work was actually put up to tender by the government, but was postponed, owing to a proposed change of route. After a great deal of talk and correspondence the canal scheme was abandoned, and a few years later a ship railway was proposed as a private speculation, to be assisted, if successful, by a government subsidy for a term of years. English capitalists were induced to consider the scheme. They were favorably impressed with it, and in 1882 an act of incorporation was obtained.

Sir John A. Macdonald gave a good deal of study to the project, and he finally became an enthusiastic supporter of it. He made a personal canvass of public men, and it was largely on account of his influence that the government voted \$170,000 to the company to be paid, commencing one year after the completion of the line, and ceasing if at any time it failed in operation. The company consisted of railway men and capitalists in England with Mr. Ketchum as engineer. The work was commenced in October, 1888, and continued vigorously until July, 1892, when the contractors were obliged to suspend work owing to their connection with Argentina, the financial collapse of the Baring Bros. having shattered their resources. At that time the company had expended \$3,000,000 in the work. It is now more than half completed. Nearly all the rails have been laid. Work on the dock at the Amherst end of the line is well advanced. The massive stone masonry has been very substantially constructed. A great deal of work has also been done at the Lidnish end of the road. The company calculate that \$1,500,000 will complete the job. The money has been subscribed, but the subsidy act has expired and the government has been asked to renew it. It seems to be demurring slightly, just now, but persons who are in a position to give a pretty correct idea about this matter say the extension will be granted. It is pointed out that in view of the fact that the company has expended some \$3,000,000 in the work, and the government has expended nothing, and has therefore suffered no loss by the delay, the country has in no way received any damage by it, and therefore not to grant the company an extension of time, would, to say the least, be unjust on the part of the Dominion Government, when it is considered that the suspension of the work was in no way due to carelessness of the company, but altogether to a circumstance over which they had no control. Mr. Ketchum estimates that of the gulf and bay ports, 600,000 tons of freight would pass over the railway the first year. The traffic would be be-

tween Upper Canada and the Gulf ports on the one hand, and the Bay ports, the Atlantic ports of the United States, and the ports of the West Indies on the other hand. The agricultural and fish products of Prince Edward Island, the coal and iron ores of Pictou, and the small lumber of the north shore would be carried to American markets over this road. From the western provinces would come flour, meal, grain, meats, hides, &c., to St. John, there to be exchanged for southern products and other merchandise. In the way of return trade there would be sugar, molasses, cotton, coffee and other southern products from the West Indies and from South America. Coal from the Cumberland and Joggins, Nova Scotia, mines for the west would also be carried.

A. H. McC.

REMARKS ON ESTIMATING.

THE first thing a young builder should do before commencing to make an estimate will be to provide himself with a list of items requiring to be done on the proposed work, and the styles, qualities and amounts of materials of all sorts necessary to complete the work. Having them on his memoranda, and a goodly supply of catalogues and price lists within reach, he may then commence work at once.

Excavating for foundations will be the first thing to consider, and in order to get at the cost of the work closely, he should know the character of the ground, whether clay, gravel, sand or other material; then he must know what it must cost per yard to remove this, and where the surplus is to be dumped. Drains will next require his attention: the number of feet, size and style of drain, cost per foot laid in place and covered, including all traps, joints, angles and connections. A survey of the site—which the estimator may make himself—will give a correct idea of the grades and the amount of digging to be done, which should be accurately measured and charged up.

Next comes the stonework, including the preparations for the footing, which may be piling, concrete, or simply rammed. In either case, the time and material must be considered and provided for. Cost of footings and putting in place should be a separate item. The stone walls follow, including all dwarf walls, buttresses, piers and separate foundations for chimneys, fire places, etc. Remember, in stonework, the mason measures the outside girth, which gives him the benefit of one thickness of wall at each angle. Provide for damp course between stone and brick, which may be of slate, lead or asphalt, as the specification may direct. Do not overlook relieving arches over all openings, both in stone and brickwork, as they require more time to construct than the ordinary wall. Openings in rubble stone work should be charged up solid, as cutting and waste costs as much as though the wall had no break in it. One cord of stone, of 128 feet, will measure in the wall scant 100 feet. It is better always to allow 96 feet of wall for every cord of stone: this of course means 96 square feet. Worked stone measures the same in wall as on the ground.

The foregoing merely gives an outline of the course to be taken by the estimator. Commencing with the excavating, he should continue until every item required to complete the structure in every particular has been provided for; bearing in mind all the time, that the smallest thing about a building costs money, and if he should overlook any item, by a loose system of estimating, he will find at the close of the work, that his profits will be cut down in proportion, as the architect or proprietor will justly demand that the overlooked items be furnished at the contractor's cost. It will not do to lump the small items, as is frequently done by unsuccessful or careless estimators, for the lump sum may be greatly in excess of actual cost and fair profit, and may cause the estimate to be too high, or it may be too low, thus causing a serious loss.

The successful estimator generally has on his desk, when figuring on a piece of work, what is technically called a "tickler." This may be a small book, or it may be a series of cards, on which are written all the varieties of labor, skilled and otherwise, required upon any style of building, with prices by day or by piece work, when such is available. Also the prices of materials of all sorts and sizes, including lumber in all states, stone, brick, hardware, glass, plumbers' goods, roofing, paints, oils, &c., &c. Having a list of this kind before him, with prices attached, the estimator will not be likely to overlook any item in the proposed building he may figure on.

The items in the "tickler" should commence with: Laying out the ground for foundation; digging drains; excavating for cellar and foundation; drain tiles or pipes, foundations, walls; then all the items required for this work, including concrete and cement for cellar floors, or brick paving, if such is used. The superstructure should follow, with windows, doors, floors, furring, partitions, stucco-work and plastering, &c., and every particular in connection with the work. Then comes the carpenters' and joiners' work, including putting down floors, putting up trim, building stairs, hanging and trimming doors, putting in sashes, weights, pulleys, &c. Painters' and finishers' work follow, including all necessary materials and labor. Then follows heating, bell hanging, lighting, &c.

In a future paper I will submit a form of "tickler," which I think may be found useful to country builders when making estimates of work costing not more than \$3000.

A. Z. Z.

The School Supply Co., of Berlin, Ont., are developing a talc mine near Sharbot Lake. The talc is manufactured into crayons for school purposes.