

yet, nowhere are they so perfect as in hundreds of the cities and towns of America, where they are being used today. In the latter, some of which are seventeen years old, all are in good condition and proving highly satisfactory, and so it has come to stay.

The cost of vitrified brick pavements in most of the nearer cities and towns in this country, all complete, material, labor and foundation, without grading, is from \$1.75 to \$2.25 per square, being among the cheapest known.

This is what we might call an ideal street of the future down the thoroughfare of some large city. It will be a metal floor of iron, covered with an elastic substance, upon which vitrified brick will be paved, and supported with columns, with a large open subway beneath for electric street cars, pipes and wires. The busy world is making great strides in this direction, and the intelligence and enterprise in this country will accomplish wonders; and who knows what the future will bring forth in the next twenty years to come?—*Paving and Municipal Engineering.*

EASY METHODS OF LAYING SERVICE PIPES.

At the September meeting of the New England Water Works Association, H. G. Holden, superintendent of the Nashua, N. H., water works, stated that owing to the sandy-loam soil in that city he was enabled to put in his service pipes at very little expense. In the principal part of the city it is customary to dig a trench from the main to the sidewalk, approximately as long as the proposed service, which is now always galvanized iron, and then tap the main for a corporation cock. A piece of one-inch hose, about twenty feet long, is then connected by a union to a corporation cock, and at the other end by another union to a length of galvanized pipe. When everything is ready water is turned on at the corporation cock and the pipe pushed into the earth for its entire length. It is then disconnected and another length added, which is pushed in by the same means. In this manner it is often possible to run as far as fifty feet and save tearing up a lawn. Two men will frequently put in four services in a day, and Mr. Holden estimates that nine-tenths of the supply pipes are thus put in. At Springfield, in this State, the soil is also a sandy loam, and much the same manner of laying services has been used there. The pipes used are tinned wrought iron, from one to two inches in diameter. Galvanized iron could not be used, as the pipes so made became filled with rust in two years. J. C. Hancock, superintendent of the water works in that city, recently stated that it was possible to push the pipe from a trench, sometimes for seventy-five or eighty feet, through the earth. Often it was possible to do this without using water. Sometimes it has been found expedient to bore a hole with a long sand auger, and insert the pipe in this.

CONSTRUCTION OF SMOKE FLUES.—One of the greatest evils in brick work, is the careless, imperfect building of smoke flues. There should be no sharp angles or turns in a smoke flue. It should be uniformly and smoothly "pargeed," and no offsets should be left where mortar can lodge and choke the flue, and all smoke flues should be at least six inches, from any wood work. Now that terra cotta is cheap and easy to get, it should be used for smoke flues, whenever and wherever practicable.

TEST FOR LEAD TIN IN LINING.—The testing of tin piping, or other similar articles for the purpose of determining whether lead is present, is very simple, and may be done by anyone. The *modus operandi* is as follows:—On the tinned surface place some strong nitric acid, and,

with a splinter of wood, rub it over a surface as large as a five-shilling piece, allow it to dry, then two drops of potassium iodide should be dropped on the same place. If the tin contains lead, a bright yellow crust of iodide of lead will form on the spot.—*Specialties.*

GLASS ENAMELLED BRICK.

A company for the manufacture of glass enameled brick is about to be organized at Pittsburgh, Pa. The patentees of the process are two glass workers of the South Side, and it is claimed by them that the brick will be much superior to those used at present. The enamel can be used to any thickness and several colors can be obtained. The works of the company may be located at Saltsburg, Pa. The capitalization will likely be \$50,000.

THE CENTRAL BRIDGE WORKS

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WM. H. LAW, Proprietor and Engineer.

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RAILWAY AND HIGHWAY BRIDGES

Viaducts, Piers, Roofs, Turntables and Girders in Steel and Iron.

Tension members forged without welds. Riveting done by hydraulic or compressed air machines. Specialties: Good workmanship and strict adherence to specifications and drawings.

CAPACITY, 2,000 TONS PER ANNUM.

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CIVIL AND SANITARY ENGINEER,

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R. E. H. BUGKNER,

39 Adelaide St. East, TORONTO.

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Roofs and Trusses.



HYATT'S FILTERS,

CROWN, EMPIRE and Nash WATER METERS

Cast Iron Pipes and Specials,

VALVES, HYDRANTS,

SEWER PIPES, ETC.

THE EXAMINATIONS

OF THE

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

NOTICE IS HEREBY GIVEN that after the close of the year 1893 all gentlemen who desire to qualify for candidature as ASSOCIATE of the Royal Institute of British Architects (except in special cases submitted to and approved by the Council) will be required to enter for the PRELIMINARY Examination, and having passed it, work up through the INTERMEDIATE to the FINAL Examination, which in 1894 will take the place of the present "Examination in Architecture." The only Examinations to which young Architects who are in practice and who desire to become Architects without passing the Progressive Examinations can enter, take place twice in the year 1892 and twice in the year 1893. Those therefore who may not be prepared to enter for the "EXAMINATION IN ARCHITECTURE" before the close of 1893, should take immediate steps to secure registration as Probationers, which they can do by passing the Preliminary Examination or obtaining the GRANT OF EXEMPTION THEREFROM.

ASHTON WEBB, Hon. Secretary.
WILLIAM H. WHITE, Secretary.

The Royal Institute of British Architects, 9 Conduit Street, Hanover Square, London W., 25th January, 1892.

St. George's Patent Sectional

VITRIFIED CLAY SEWER

—AND—

CAST IRON STREET GULLEY.



LEWIS SKAIFE,

Engineer and Contractor,

New York Life Building, - MONTREAL.
AGENT.

Prices of Building Materials.

LUMBER.

CAR OR CARGO LOTS.

	Toronto.	Montreal.
1 1/2 to 2 clear picks, Am. ins.	30 00	40 00
1 1/2 to 2 three uppers, Am. ins.	37 00	40 00
1 1/2 to 2, pickings, Am. ins.	27 00	30 00
3 inch clear	52 50	60 00
1 x 10 and 12 dressing and better	18 00	20 00
1 x 10 and 12 mill run	14 00	15 00
1 x 10 and 12 dressing	14 00	15 00
1 x 10 and 12 common	13 00	14 00
1 x 10 and 12 spruce culls	11 00	12 00
1 x 10 and 12 maple culls	9 00	10 00
1 inch clear and picks	38 00	33 00
1 inch dressing and better	18 00	18 00
1 inch siding, mill run	14 00	14 00
1 inch siding, common	11 00	12 00
1 inch siding, ship culls	10 00	11 00
1 inch siding, mill culls	8 00	9 00
Cull scantling	8 00	9 00
1 1/2 and thicker cutting up plank	22 00	25 00
1 inch strips, 4 in. to 8 in. mill run	14 00	15 00
1 inch strips, common	11 00	12 00
1 1/2 inch flooring	14 00	15 00
1 1/2 inch flooring	14 00	15 00
XXX shingles, sawn, per M	2 30	2 35
16 in.	1 30	1 35
XX shingles, sawn	1 30	1 35

YARD QUOTATIONS.			
Mill cull boards and scantling	10 00		
Shipping cull boards, miscellaneous widths	13 00	13 00	
Shipping cull boards, stocks	16 00	16 00	
Hemlock scantling and joist up to 16 ft.	11 00	12 00	
Hemlock scantling and joist up to 18 ft.	12 00	13 00	
Hemlock scantling and joist up to 20 ft.	13 00	14 00	
Scantling and joist, up to 16 ft.	14 00	15 00	
" " " 18 ft.	15 00	16 00	
" " " 20 ft.	16 00	17 00	
" " " 22 ft.	17 00	18 00	
" " " 24 ft.	18 00	19 00	
" " " 26 ft.	19 00	20 00	
" " " 28 ft.	20 00	21 00	
" " " 30 ft.	21 00	22 00	
" " " 32 ft.	22 00	23 00	
" " " 34 ft.	23 00	24 00	
" " " 36 ft.	24 00	25 00	
" " " 38 ft.	25 00	26 00	
" " " 40 to 44 ft.	26 00	27 00	
Cutting up planks, 1 1/2 and thicker, dry	25 00	26 00	
Cutting up planks, 1 1/2 and thicker, board	18 00	18 00	
Cedar for block paving, per cord	5 00	5 00	
Cedar for Kerbing, 4 x 14, per M	14 00	14 00	

B. M.			
1 1/2 in flooring, dressed, F. M.	28 00	31 00	31 00
1 1/2 in flooring, rough, F. M.	28 00	28 00	28 00
1 1/2 " " dressed, F. M.	30 00	27 00	30 00
1 1/2 " " undressed, F. M.	18 00	18 00	18 00
1 1/2 " " dressed	22 00	22 00	22 00
1 1/2 " " undressed	15 00	15 00	15 00
Cased sheeting, dressed	22 00	22 00	22 00
Clapboarding, dressed	1 00		
XXX sawn shingles, per M	2 65	2 75	3 00
16 in.	2 00	2 00	2 00
Sawnlath	2 00	2 00	2 00
Cedar	2 00	2 00	2 00
Red oak	30 00	30 00	30 00
White	35 00	40 00	45 00
Basswood, No. 1 and 2	18 00	20 00	20 00
Cherry, No. 1 and 2	70 00	70 00	80 00
White ash, No. 1 and 2	25 00	30 00	35 00