

CANADIAN
ELECTRICAL NEWS

AND
STEAM ENGINEERING JOURNAL.

VOL. II.

TORONTO AND MONTREAL, CANADA, NOVEMBER, 1892.

NO. 11.

THE GUELPH ELECTRIC LIGHT COMPANY.

THE Guelph Electric Light Company has been doing business for a little more than five years, and so rapid has been the development of its business that three times during that period increased accommodation has had to be provided for its requirements. The last move in this direction was made early last spring when the company determined upon erecting a new building, which would meet its present and future necessities. This new building took the form of an addition to the buildings heretofore occupied by the company. The old buildings originally did duty as a flouring mill, being known as "Allan's Mills." They are situated close beside a branch of the Speed river, and in proximity to the two railway stations.

Considerable difficulty was experienced in obtaining a good foundation for the new building as the site, originally the river bed, had become filled up with decayed vegetable and other material of an elastic nature.

The foundation, which is of stone built in cement, is about $4\frac{1}{2}$ feet in thickness, and is carried to a considerable distance below the surface of the ground. There are two stone piers supporting the superstructure, and a number of others supporting the engines and shafting.

The whole building is of stone, the walls varying in thickness from 27 inches at the basement, to 22 inches above the dynamo room. The buildings are irregular in shape, the size of the new main portion being 45x63 feet, and of the old portion, 42x63 feet. The height of the ceilings is 7 feet clear in the condensing room, and 10 feet 6 inches in the other stories.

On the second floor, used as engine and oil rooms, there are oak posts resting on stone piers, supporting the upper floors; The dynamo room floor is constructed of $1\frac{1}{4}$ inch pine, supported by 14 feet 6 inch x 14 inch joists, which in turn are supported throughout their entire length by trussed girders. Where timbers come adjacent to one another or to the piers, sufficient space is provided to prevent vibration by contact, a point which was insisted on by the engineer.

The walls are built in cement and plastered on the inside; the ceiling is lathed and plastered on the roof boarding between the rafters, making the roof, in the opinion of the underwriters, fire proof. The roof of the newly erected part of the building is shingled, the shingles having been dipped in mineral paint, and

afterwards painted over their entire surface. A wire tower, 14 feet square, occupies the north corner of the building.

The extension of 42x63 feet above referred to, used for boiler house, coal room, store room, repair shop and wheel house, is only one story high, and is roofed with iron.

The machinery has now been in operation about a month, and it is considered that during that time the building has been subjected to as great a strain as it is likely to be called upon to endure at any time in the future, owing to the fact that there has been more vibration than there will be after the machinery, shafting, etc., has been got into perfect working order.

Some particulars concerning the nature of the plant and the manner in which it is arranged will no doubt be of interest. The motive power consists of both steam and water. The water is brought a distance of about fifty yards from the river Speed by means of a stone race-way, which passes right



NEW CENTRAL STATION, GUELPH ELECTRIC LIGHT COMPANY.

through one end of the building, and enters the wheel house at the south corner. The head of water is 14 feet. There was originally in this wheel house, an old penstock, 12x5 feet; this has been replaced by a new one 12x14 feet, two-thirds of the space required for which had to be blasted out of solid rock, the space around the water wheels had also to be deepened in the same manner, to allow of the free exit of the water.

There are two turbine water wheels, each 33 inches in diameter, of the Little Giant pattern; one of these is a new wheel which has taken the place of a 17 inch wheel.

The volume of water varies considerably at different times in the year, and the amount of available power varies from 120 to 30 horse power. While the writer was inspecting the wheel house, the drive was started up, and an opportunity afforded of noticing how smoothly and noiselessly the wheels operate. When water is abundant, the smaller of the two engines with which the station is furnished, is used as an auxiliary to the water power, and as governor of the speed of the water wheels.

The boiler room contains two boilers, each of 75 horse power capacity. These boilers are encased in brick work.

The basement of the newly constructed building is occupied by the condensing apparatus, and is divided from the race by a 4 feet wall. The supply of water for condensing purposes is drawn from the race into a brick tank, and from this tank the