The Canadian Society of Civil Engineers.

INCORPORATED 1887.

ADVANCE PROOF—(Subject to revision).

GENERAL ADAPTATION OF ELECTRIC MOTORS TO MANUFACTURING PLANTS.

By C. H. Darrall.

(Read before the Electrical Section, January 10th, 1907.)

Motors in such continually increasing numbers are being used in our manufacturing establishments with such successful results, and have stood the test of practical working under so many different conditions, and for such long periods of time, that the trial stage is now past.

When power is transmitted by belts and shafts for industrial purposes, the percentage of the total horse power output of the engine which is actually useful at the productive machine (barring the limited use of ball-bearing line shafts), varies from 22% to 77%. It should be noted that these percentages are figured on the basis of horse power required to drive the shafting and belting when running light. There is good reason to believe that these losses increase with the increase of load.

As contrasted with these complications and losses, the electric drive offers numerous advantages. The system is easily installed and flexible and reliable. It is readily extended and maintained. Both generators and motors have a high efficiency, and most of the apparatus requiring skilled attention may be concentrated in the power plant.

The electric drive readily affords small sub-divisions of power so that it becomes practicable to use motors either for individual