Aberdeen Association of Civil Engineers.

14th December, 1900.

GENERAL MEETING.

General Meeting, called for the purpose of discussing the incorporation of the Members of the Civil Engineering profession, in Aberdeen and District, into an Association, Mr. James Barron, M. Inst. C.E., was called to the Chair.

Mr. Barron having taken the Chair;

Mr. G. G. Jenkins moved the following resolution:—"That the Members of the Civil Engineering profession, in Aberdeen and District, be incorporated into an Association, for the purpose of promoting and encouraging the acquisition of knowledge, in matters relating to the profession of a Civil Engineer."

Mr. R. Gordon Nicol seconded the motion, which was carried by acclamation.

It was further unanimously agreed to ask Mr. Patrick M. Barnett, M. Inst. C.E., to become the first President of the Association.

ADDRESS OF PATRICK M. BARNETT, PRESIDENT.

5th February, 1901.

The Honorary Secretary stated, that at the General Meeting held on 14th December, 1900, it had been unanimously agreed that Mr Barnett should be asked to become the first President of the Association, and the Members were indebted to him, for the kind manner in which he had accepted office.

The President then delivered the following Address to the Members:—

Gentlemen,—My first duty on taking the chair on this occasion, is to express my sincere thanks to the Members of the Association, for the great honour they have done me, in electing me to the honourable position of their first President—a position which I feel myself very unqualified to fill; and in accepting it, I must crave your forbearance and sympathy, should I come short of, or fail in, the proper performance of the duties.

There are other members of the Association present, who would have filled the position with more credit to themselves, and with greater satisfaction to the Members, than I can hope to do.

My selection has no doubt arisen from the consideration, that my connection with Engineering has extended over, perhaps, a longer period than can be claimed by other Members of the Association.

Having, as requested, accepted the position, I can only further say Gentlemen, that I will endeavour, to the best of my ability, to discharge the duties devolving upon me as your first President.

And now Gentlemen, before proceeding further, I am sure of your entire sympathy and concurrence, in asking you to record in the Minute of this the first meeting of the Association, the sincere and deep regret which we "the Members," in common with our fellow countrymen feel, at the great loss, which in the providence of God the whole Nation has sustained, in the death of our late beloved Sovereign, Queen Victoria, who, during her whole life and long reign, by her noble example and great influence, did so much, not only to raise the moral tone of the Nation and Empire, but also to increase the prosperity and happiness of her people, by the lively personal interest she took, in everything having this object in view.

It is only now, when she is removed, that we begin to realise in some measure how much we owe to her for the great progress made, not only in Art, Science, and Literature, but also in the Commerce of the World, as well as for the large share, which this Nation has been able to command, of international traffic.

The whole Nation and Empire (as a reference to the Press abundantly testifies), are mourning her decease.

In no part of her Dominion did Her Majesty show greater interest, than in Scotland, and specially in her Highland home, where for several months annually, during the past 40 years and upwards, she enjoyed (comparatively free from the cares of State) the healthful and bracing air off the Deeside hills and moors, and spent a considerable portion of her time, in performing many personal and gracious visits and acts of kindness to her humble Highland subjects and neighbours, which will never be forgotten.

In this connection, you will pardon me saying, that personally the Queen's visits to Aberdeen and Deeside have had to me peculiar interest, as on the occasion of her first visit to Aberdeen in September, 1848, I was at the dock gates when her yacht was passing through into the dock, and as her yacht reached Aberdeen a day earlier than expected, there were not more than a dozen people, besides the dock gate officials, present. I also witnessed the ceremony of landing on the day following.

On her second official visit, when she drove from Haddo House on the 15th October, 1857, and was presented with the keys of the City by Provost Webster at the then boundary of the city in King Street, I was stationed among the special constables lining the street quite near.

Her Majesty's next official visit was made on the 13th October, 1863, when she unveiled the statue of Prince Albert, on which occasion I found myself within a few yards of the statue.

I have also had the privilege of accompanying the Royal train, conveying Her Majesty to and from Ballater, on every occasion (four journeys annually), with the exception of three journeys, during the last 33 years, and it is a matter of great thankfulness to the directors and officials of the Great North of Scotland Railway Company, that her journeys have been accomplished without mishap of any kind.

And now Gentlemen, with these preliminary remarks, my chief difficulty arises in knowing what I should say, on the subject of Engineering.

I cannot better define the profession of a Civil Engineer, than by quoting from the first Charter of the Institution of Civil Engineers, Incorporated 3rd June, 1828, as "being the Art of directing the Great Sources of Power "in Nature for the use and convenience of Man, as the means of production "and of traffic in States, both for external and internal trade, as applied in "the construction of roads, bridges, aqueducts, canals, river navigation and "docks, for internal intercourse and exchange; and in the construction of "ports, harbours, moles, breakwaters and lighthouses, and in the art of "navigation by artificial power for the purposes of commerce, and in the "construction and adaptation of machinery, and in the drainage of cities "and towns."

At the date of the first Charter of the Institution, the number of Members of all classes was 156.

At June, 1887, the number of Members of all classes had increased to 5,174, and at 1st October last, the number of all classes was 7,272, as follows:—

Honorary Members	18
Members	2,018
Associate Members	3,998
Associates	305
Students	933
Total Number	7,272

It must not, however, be concluded that the increase of over 7,000 to the Membership of the Institution, during the period of its existence, shows the actual increase in the number of engineers during that time, for I have no doubt, that only a small proportion of the engineers in actual practice in 1828, may have joined the Institution, and that several years had elapsed before they did so.

The figures for 1887 and 1900, however, show that the numbers joining the Institution, are steadily on the increase.

Since 1828, the demands made on the profession have enormously increased in all departments, and it has been found necessary for civil engineers to restrict their attention, and to devote their energies in a great measure, to special branches of Engineering.

We have now, as you are aware, Harbour Engineers,
Railway Engineers,
Electrical Engineers,
Mining Engineers,
Sanitary Engineers,
Mechanical Engineers,
Hydraulic Engineers, &c.,

in each of which branches of Engineering, there is full scope for the best skill of the civil engineer.

The progress made in all departments of Engineering during the last century, and in works for the development of the resources of the world, and of the United Kingdom in particular, has been very marked, specially in the construction and improvement of railways, harbours, water and sewage works, and in the application of electricity as a means of communication, motive power, and lighting.

With regard to Railways, it may be interesting to note, that the length of railways constructed at December last within the United Kingdom, was 21,700 miles, of which there were—

In England and Wales	15,044	miles.
In Scotland	3,480	,,
And in Ireland	3,176	,,

The total capital, £1,152,317,501—

In England and Wales	£950,719,607
In Scotland	161,505,871
In Ireland	40,092,023

The number of passengers carried during the year 1899 (exclusive of season ticket holders), was 1,106,691,991, and the total receipts from all sources, £101,667,065, and the net revenue, £41,576,378, or an average of 3.61 per cent. on the total capital.

The working expenditure proportion per cent., to gross receipts was—

In England and Wales	60
In Scotland	54
In Ireland	57

When it is kept in view that railways were practically unknown in 1828, and that they were not mentioned in the first Charter of the Institution, and that their initiation and construction involved many, at that time, novel problems to be solved and worked out, it is to the honour of the engineers of the period, that they were able to grapple with those difficulties, and to so successfully overcome them.

Many of the bridges and other works constructed remain, and will continue to exist for generations to come, monuments of their great skill, and I would now mention a few of the bridges in illustration.

The Britannia Tubular Bridge, over the Menai Strait, designed by Mr. Robert Stephenson, and constructed about 1846, having four spans, two of 460 feet each, and two of 230 feet each.

The Royal Albert Bridge, over the River Tamar Saltash, carrying the Cornwall Railway—I. K. Brunel, engineer, erected in 1859, having 17 spans of 69 feet each, and two spans of 245 feet.

The Runcorn Viaduct, carrying the London and North-Western Railway across the Mersey—Mr. William Baker, engineer, constructed in 1863, having three spans of 365 feet each, and other spans of 101 feet, lattice girders.

In Scotland, we have two notable examples of more recent construction, in the Tay and Forth Bridges.

The Tay Bridge, of which Mr. W. H. Barlow was the engineer—the total length being 10,500 feet, and consisting of 85 spans, including 13 spans of 245 feet each, with a headway for vessels passing under of 70 feet. (Opened in 1887.)

The weight of iron used is said to be 25,000 tons, and the cost stated at nearly £1,000,000, including cost of the first bridge.

The Forth Bridge, of which Mr. John Fowler and Mr. Benjamin Baker were the engineers—with a total length of 8098½ feet, or upwards of 1½ miles, having—

2	spans of	1710	feet each.
2	,,	689¾	,,
10	,,	168	,, south end.
5	,,	168	,, north end,

total weight of steel in the bridge, over 50,000 tons.

Both the Tay and Forth Bridges were (as you are aware), constructed by Mr. William Arrol.

There are, I need scarcely say, many other bridges and structures which, if time permitted or occasion required, might be mentioned to show the vast and lasting benefits, which by their skill, engineers of the last century have carried out for the use and convenience of the public, not only in the United Kingdom, but also in all parts of the world.

The Institution of Civil Engineers is, and has been, of great benefit to those connected with it, especially to those Members, Associates, and Students resident within easy reach of London, who are able to attend the regular meetings and to either take part in, or to listen to, the discussions on the papers read, and also, though in a lesser degree, to the Members non-resident, through the printed Proceedings supplied to them, which contain the most complete and reliable information and descriptions, of all important works carried out at home and abroad, as also the criticisms by those in a position to discuss such matters with intelligence and knowledge of the subjects, gained by theoretical and practical experience.

As, geographically, Aberdeen is outwith the limit of easy access to the meetings of the Institution, it occurred to Mr. Simpson our worthy Honorary Secretary, to suggest for the consideration of those practising the profession of Civil Engineering, their assistants and pupils, the desirability of forming an Association in Aberdeen, on practically similar lines to those adopted by the Institution in London.

The proposal has been cordially approved, as is shown by the present meeting.

In Aberdeen, we have civil engineers practising in nearly all the branches of the profession, and evidences of their work may be seen in, and for considerable distances around the city, and from the syllabus prepared for the present session, there is every reason to anticipate that the Association will prove a benefit to all those connected with it, and specially to the younger members.

Mr. James Barron, Vice-President, moved—"That the best thanks of the Association be accorded the President for his interesting Address, and that his permission be asked to allow it to be printed in the Minutes of Proceedings of the Association."

Mr. William Dyack, Vice-President, seconded the motion, which was heartily carried.

The President briefly replied, and the reading of the first ordinary paper of the session, occupied the remainder of the evening.