short space of ten years, no less than ninety-seven vessels, principally steamers, were built in the yard. The works were sold in 1864 to the Humber Ironworks and Shipbuilding Company.

Mr. Samuelson then took general engineering works in Neptune Street, Hull, and amongst other work built the North Bridge over the River Hull. This is an hydraulic draw-bridge, which is pulled back into the roadway when required to be opened. He also constructed machinery for the blast furnaces of Messrs. B. Samuelson and Company at Middlesbrough, and travelling rolls for their Britannia Mill, the latter now owned by Messrs. Dorman, Long and Company. This latter machinery was in regular use until 1892, when it was removed and electric power substituted. The works in Neptune Street were sold in 1873 to Messrs. Amos and Smith. Mr. Samuelson then practised as a Consulting Engineer and Marine Surveyor and Valuer, in which capacity he enjoyed a high reputation. He was also Engineer to the Humber Conservancy Commissioners from 1891, and only three days before his death he attended a meeting of that body, when some important proposals made by him for the improvement of the River Humber were considered. Mr. Samuelson was a Member of the Institution of Naval Architects, and was formerly a Member of the Institution of Mechanical Engineers; he was also the first President of the late Hull and District Institution of Engineers and Naval Architects, which was formed in 1885. He was extremely active, even to the day of his death, which took place suddenly at Hessle on the 26th February, 1903. He became a Member of the Town Council of Hull in 1853 and was Sheriff in 1857 and Mayor in 1858. He was the first colonel of the Royal East Yorkshire Volunteer Artillery stationed at Hull, which body he was instrumental in forming. He was a Justice of the Peace for the East Riding of Yorkshire, and Chairman of the Hull Charity Trustees.

Mr. Samuelson was elected a Member of the Institution on the 2nd December, 1862.

JOSEPH MILLER WILSON, son of William Hasell and Jane (Miller) Wilson, was born in Phœnixville, Chester Co., Pa., on the 20th June, 1838. After some preliminary education at private schools he entered the Rensselaer Polytechnic Institute in September, 1854, and having graduated there he studied analytical chemistry for two years with Professor F. A. Genth, of Philadelphia, with the idea of adopting it as a profession. He had

also a strong inclination for engineering, and some work which he did in 1859 on the line of the Pennsylvania Railroad decided him to enter the service of that Company in March, 1860, as an Assistant Engineer. In 1863 he was appointed Resident Engineer of the Middle Division of that road, and in 1865 Principal Assistant Engineer over the whole road, in special charge of bridges, his title being afterwards changed to Engineer of Bridges and Buildings. He retained that post until 1886, the duties of the department being gradually enlarged and extended until it included all the lines of the Company from New York on the east to Pittsburg and to Erie on the west, and from Canandaigua on the north to Quanti, Va., on the south. He also acted as Engineer of Bridges and Buildings on the Philadelphia, Wilmington and Baltimore Railroad. In 1869, as a reward for ten years' service, he was granted special leave of absence in Europe, it being felt that the engineering knowledge there gained, in connection with a pleasure trip, would be of vast service to the Pennsylvania Railroad Company. Through the solicitation of his father, Mr. W. H. Wilson, then Chief Engineer of that line, Mr. Henry Pettit, Mr. Wilson's assistant, was allowed to accompany him. Returning after six months, in the latter part of the same year, the work was taken hold of with renewed vigour, and the line is now studded with monuments of Mr. Wilson's handiwork.

When the great Philadelphia Centennial Exhibition began to be discussed, Mr. Wilson's attention was early turned to it, and long before the competitive plans were asked for, he visited the locality, made studies, prepared sketches of the buildings, and discussed them with the officers of the commission. When competitive plans were asked for, Mr. Wilson joined Mr. John McArthur, Jun., in the competitions, gaining, with him, one of the premiums. The plan of Messrs. Vaux and Radford having been accepted, however, for the main building, Mr. Wilson abandoned all thought of taking an active part in the Exhibition, and continued his duties with the Railroad Company. Afterwards, at the earnest request of Mr. Henry Pettit, and having been granted permission by the Railroad Company, on a strong appeal from the officers of the Centennial Board of Finance, Mr. Wilson was induced again to take an interest in the buildings of the Exhibition, his peculiar abilities and high reputation in constructive details being specially required. Mr. Henry Pettit and he were elected "Joint Engineers and Architects for the Main Exhibition Building and the Machinery Hall." A total revision of the plans was necessary. The columns, trusses, etc., were modified, towers

were added, the building enlarged, and all details made. In all of these labours Mr. Wilson took an active part. The Machinery Hall particularly was, in many respects, his special design, the plans being all prepared under his superintendence. The successful completion of these buildings and the admirable way in which they answered all requirements is well known. The Centennial Commission awarded Mr. Wilson and Mr. Pettit joint medals and diplomas for their work.

In January, 1876, in conjunction with his brother, he organized the well-known firm of Wilson Brothers and Company, Civil Engineers and Architects, which firm is still in existence. Mr. Wilson was Chairman of the Board of Expert Engineers on Washington Aqueduct Tunnel and Reservoir, acting under a joint Commission of Congress in 1888–89, and also Chairman of the Board of Expert Engineers to examine and report on the railroad terminal question and station, at Providence, Rhode Island, in 1888. He was one of the expert engineers appointed to examine and report on the condition of the elevated railroads in New York City, and on the designs for the New York and Brooklyn Suspension Bridge approaches. He was Consulting Engineer of the Philadelphia and Reading Railroad Company, and had charge for that Company, as between it and the City of Philadelphia, of all the work on the Pennsylvania Avenue Subway. He was one of the expert engineers to examine and report on the improvement of the water supply of the City of Philadelphia in 1899, the work being now carried out in accordance with that report, and in 1891 he reported on the question of rapid transit to the Railroad Commissioners for the City of New York.

Mr. Wilson was the architect of the original Pennsylvania Railroad Broad Street Station, Philadelphia; his firm were the architects and engineers of the Reading Terminal Station, in Philadelphia, the new station recently finished at Richmond, Virginia, for the Chesapeake and Ohio and the Seaboard Air Line Railroads; the Drexel Building, Philadelphia; the United Gas Improvement Company's offices, in Philadelphia, and numerous other buildings for that Company; the Drexel Institute, the Presbyterian Hospital, the Norristown Lunatic Asylum and the Holmesburg Prison in Philadelphia, and of many other important structures.

Mr. Wilson was also the architect of the Baltimore and Potomac Passenger Station at Washington, D.C., and of various stations on the Pennsylvania Railroad and its branches. The bridges designed and erected by him comprise all the work on the Pennsylvania

Railroad for many years, up to 1886, when he resigned from the service of the Company, including the Mount Union Bridge,[1] and considerable work on other lines the number being too great to mention specifically.

Mr. Wilson was a frequent contributor to technical literature. He wrote the "Mechanical and Scientific" and the "Historical" articles for the "Illustrated Catalogue of the International Exhibition of 1876"[2]; historical Papers on the International Exhibition of 1876 for *Engineering*[3]; a Paper for the Institution of Civil Engineers[4] on Port Perry Bridge, in 1880; a Paper on "American Permanent Way" for the British Association, which was read at the Montreal Meeting of 1884; a Paper on "Bridge Specifications" for the American Society of Civil Engineers, in 1886; a Paper on "Schools, with Particular Reference to Trades Schools, especially those of France and England," for the Franklin Institute, in 1889–90; a Paper on "The Philadelphia and Reading Terminal Railroad and Station in Philadelphia," for the American Society of Civil Engineers, in 1895; and several articles from time to time for technical journals.

Mr. Wilson was a Member of the American Society of Civil Engineers; a Fellow of the American Institute of Architects; President of the Franklin Institute from 1887 to 1897; President of the Engineers' Club of Philadelphia for the year 1888; a Member of the American Philosophical Society; and a Fellow of the American Association for the Advancement of Science. He received the degree of Master of Arts *honoris causâ* from the University of Pennsylvania in 1877; medals and awards at the International Exhibition of 1876 in Philadelphia for designs of bridges and buildings; and a Telford Premium from the Institution of Civil Engineers for the Paper already referred to.

Mr. Wilson was married in 1869 to Sarah Pettit, daughter of Judge Thomas McKean Pettit, of Philadelphia. He died suddenly in his office in Philadelphia on the 24th November, 1902.

He was elected a Member of the Institution on the 7th March, 1876.

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[1] Minutes of Proceedings Inst. C.E., vol. xxxix. p. 62.
[2] Published by Gebbie and Barrie, Philadelphia.
[3] *Engineering*, 1875–76.
[4] Minutes of Proceedings Inst. C.E., vol. lx. p. 309.