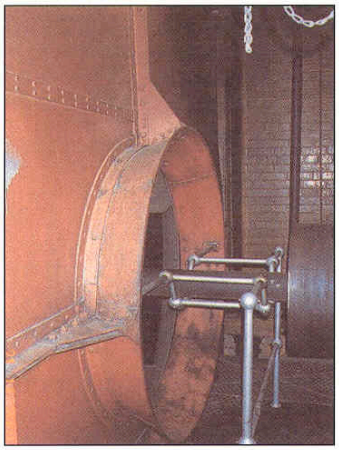
WARMING & VENTILATING OF VICTORIAN & EDWARDIAN SCHOOLS

Belfast Municipal Technical Institute, built 1900-07 [VA, plate 97]
Architect Samuel Stevenson

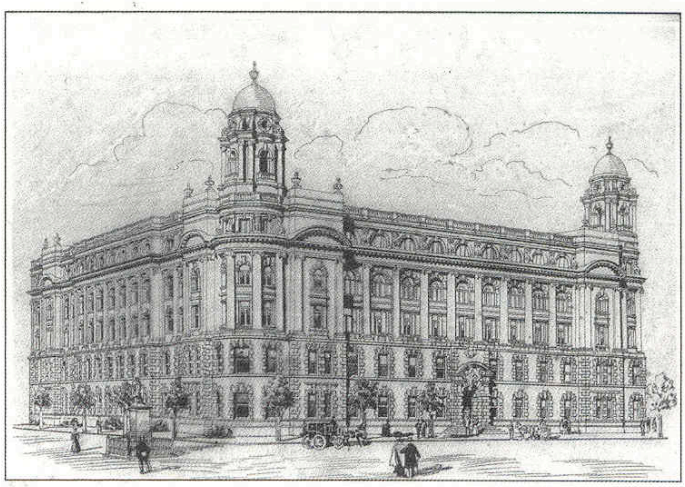
WARMING & VENTILATING OF VICTORIAN & EDWARDIAN SCHOOLS

Musgrave "Ulster" fan nameplate

Henry Musgrave


Fan inlet

MUNICIPAL TECHNICAL INSTITUTE, BELFAST

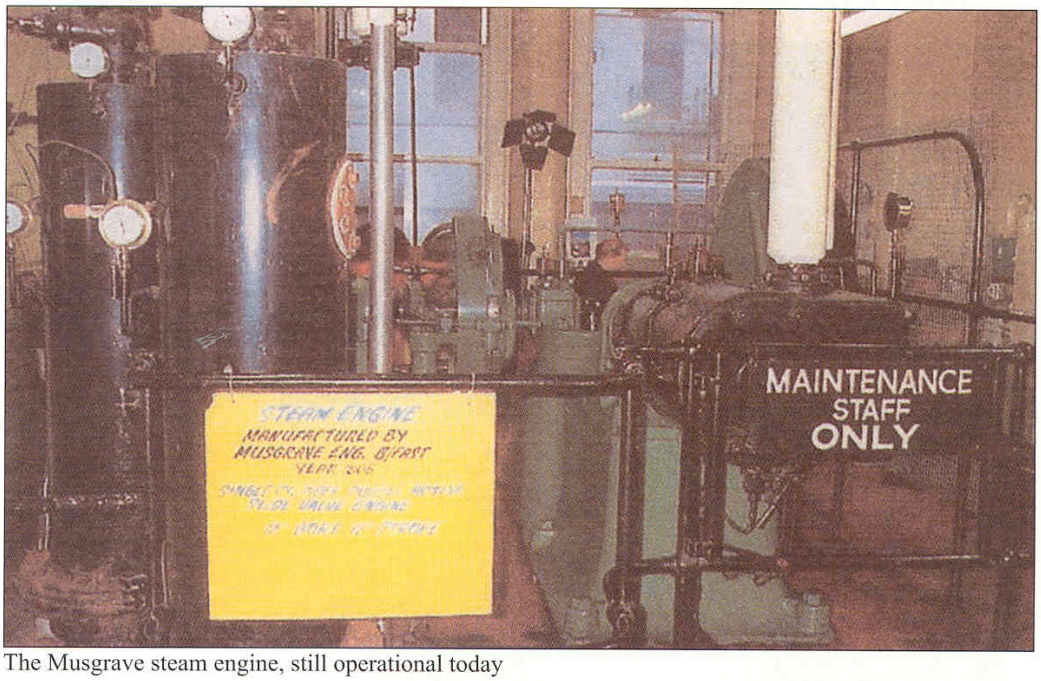


Municipal Technical Institute, Belfast, 1900-7

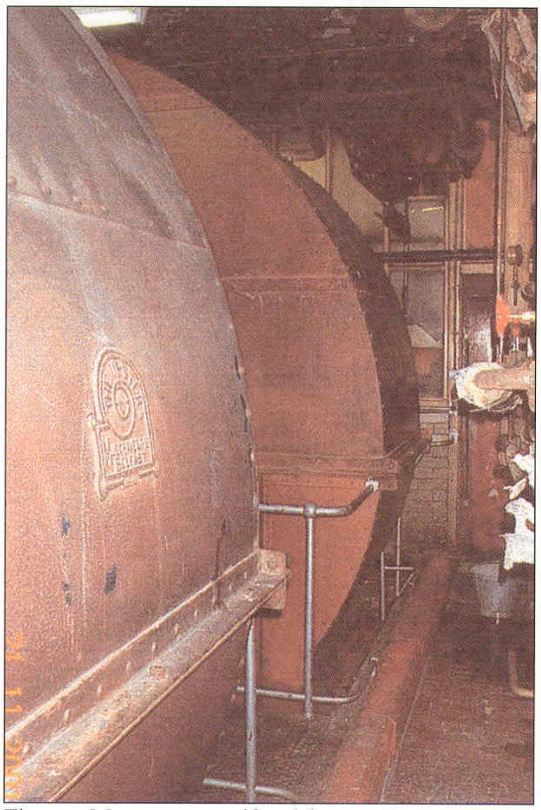
The choice of architect, Samuel Stevenson, without competition, and the choice of style, provoked much controversy. Stevenson had designed the enormous Gallaher factory. The completed Institute was attacked as a straight crib from the War Office in London, considered by many to be a deplorable building. The Heritage Group has discovered the Estimate for Heating & Ventilating submitted by Musgrave & Co Ltd, dated 14th August 1905. Their main quotation proposed using their "Fan" system, renewing the air within the building up to four times per hour, delivering 140,000 cu ft/min and giving individual control of the temperatures and air volumes to each room. The scheme was based on using a Tempering Coil of 5200 sq ft with a Main Heating Coil of 4000 sq ft, both supplied with hot water by forced circulation. Two Musgrave "Ulster" centrifugal fans with 11 ft diameter wheels would be driven by a single horizontal steam engine with alternative provision for driving from a 42 or 50 hp electric motor. The scheme included 60 air inlet gratings, 150 extract gratings, 4 main dampers and 128 patent "Curtain" air regulating valves. The Musgrave Tender amounted to £2660. Various options were offered, including a Musgrave Patent Rainbow Washer for £220. This was actually a 9ft diameter spinning disc humidifier, of the type supplied to Glasgow Technical School. An alternative bid, using steam for heating, came to £1570. Much of the original installation survives, including fans, the steam engine, the washer, gratings and heating apparatus.

Belfast Municipal Technical Institute heating & ventilation [BSH, p.22]

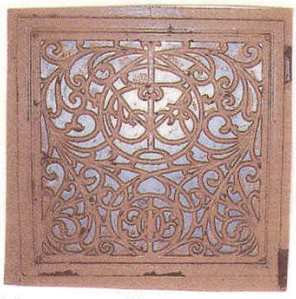
WARMING & VENTILATING OF VICTORIAN & EDWARDIAN SCHOOLS



The Musgrave steam engine, still operational today


The two Musgrave centrifugal fans

Roof ventilation turret


Musgrave grille

Belfast Municipal Technical Institute heating & ventilation [BSH, p.23]

WARMING & VENTILATING OF VICTORIAN & EDWARDIAN SCHOOLS

BELFAST

MUNICIPAL TECHNICAL INSTITUTE.

ENGINEER'S WEEKLY REPORT

No. 7.

ENGINEER'S WEEKLY REPORT,

For week ending Saturday, 22nd January, 1921

INSTRUCTIONS.—(a) For purposes of this Report the Meters are to be read between 8.0 a.m. and 10.0 a.m. on Mondays.
(b) The readings of the separate Electricity Meters in Switch-board Room are to be entered in the Electricity Log Book, and only the ***totals*** written in this book.
(c) The Engineer's Report and the Electricity Log Book must be duly entered up and presented to the Principal for examination at 12.0 noon each Monday.

Readings of Meters on 1st August last
Reading on Monday, this week
Reading on Monday, last week
Consumption for week ...
Total Consumption since 1st August last ... ...

VENTILATING AND HEATING.

Subject of Report.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday	Totals and Averages.
Temperature of Outside Air at 9 a.m.	46°	43°	44°	51°	52°	44°	46·6
Temperature of Air entering Fans at 9 a.m.	65°	61°	62°	62°	62°	62°	62·3
Boiler Working {Marine (M) or Lancashire (L)} —State which ...	L	L	L	L	L	L	
Purifying Appliances Working Time Started ...	8·0 am	8 30am	8 30am	8 30am	8.30am	8 30am	
Purifying Appliances Working Time Stopped ...	9.30pm	9.30pm	9.30pm	9.30pm	9.30pm	4.30pm	
Purifying Appliances Working Time Hours worked	11·05'	10·30'	10·30'	10·30'	10·30'	5·30'	58 35'
Fans Running ... Time Started ...	8·0 am	8 30am	8 30pm	8 30am	8 30am	8 30am	
Fans Running ... Time Stopped ...	9.30pm	9.30pm	9.30pm	9.30pm	9.30pm	4.30pm	
Fans Running ... Time Hours worked	11·05'	10·30'	10·30'	10·30'	10·30'	5·30'	58 35'
Fans driven by {Engine (E) or Motor (M)} —State which ...	E	E	E	E	E	E	
Weight of Coal received (in tons)	—	8	4	4	6	2	24
Weight of Coal consumed (in tons)	3½	3¾	3½	2¾	2½	2	18
Coal consumed since 1st August last	259 tons.						

Readings of Meters on 1st Aug. last
Reading on Monday, this week
Reading on Monday, last week
Consumption for week ...
Week's Consumption for Light and Power ... ...
Week's Consumption for Lighting ...
Total Consumption since 1st August last ... ...

ENGINEER'S STAFF.

Employed as	Name of Employee.	Remarks (if any) on duties, &c.
Mechanic	W. Holmes ...	H & V. Switchboard. Sinks Chem Lab. Lanterns
Electrician	R Haslett ...	Switchboard Lanterns Arc lamps B 14
Fireman	R Close ...	Engineroom & Boilerhouse

Belfast Municipal Technical Institute, Engineer's Weekly Report 1921 [BMTI]

WARMING & VENTILATING OF VICTORIAN & EDWARDIAN SCHOOLS

Belfast Municipal Technical Institute steam engine [CHGW]