M134 Glasgow School of Art

Introduction

The Glasgow School of Art is Mackintosh's most celebrated building, recognised since the 1930s as a work of international importance. Built in two major phases, it comprises studios and workshops for teaching; a library and museum; accommodation for the Headmaster (Director); professors' studios; and a variety of secondary spaces for administrative and other purposes.

Authorship: During the first phase, the building committee dealt with John Keppie, and in contemporary official records Mackintosh is only identified as the designer of the second phase. On grounds of style, however, it has generally been accepted that Mackintosh designed the entire building, although his role was not publicly acknowledged until he became a partner in 1901.

Alternative addresses: Dalhousie Street Scott Street Garnethill

Cost from job book: Phase1 (E. part): £21,600 13s ½d; Phase 2 (furniture and alterations): £232 18s 5d; Phase 3 (W. part, including Library): £25,584 10s 2d

Cost from other sources: A circular of 1907 appealing for subscriptions to complete the building gives the cost of the E. part as £29,131, including £6000 for the site. [1] According to the School Finance Committee minutes, payments to contractors for the W. part from 10 November 1906 to 20 October 1910 amounted to £25,455 13s 6d; architects and measurer's fees for the same period were £2142 6s 0d, and the cost of 'fittings', £1030 13s 6d. [2]

Status: Standing building

Current name: The Glasgow School of Art

Current use: School of Art (2014)

Listing category: A

Historic Scotland/HB Number: 33105

RCAHMS Site Number: NS56NE 210

Grid reference: NS 58435 65970

Chronology

1894

16 March: The Governors of the School of Art appoint a committee to report on the accommodation needed in a proposed new building, and to enquire about the price of ground 'in Renfrew Street or elsewhere in a central position'. [1]

2 May: Probable cost of new School, including site, is £21,000. An application has been made for financial assistance from the Bellahouston Trustees. [2]

1895

25 January: Bellahouston Trustees agree to buy the Renfrew Street site for £6000 and present it to the School, with an additional £4000 for the building fund, on condition that the School raises a further £6000. [3]

6 September: The Parks and Galleries Committee of the Town Council agree to make a grant of £5000 to the School 'for a plain building affording accommodation equal to that at present in use [in the Corporation art gallery, Sauchiehall Street]', on condition that the entire £21,000 required is raised. [4]

1896

8 January: Subscriptions amounting to 'considerably over £5000' have been promised to the building fund. [5]

26 February: Total cost of the project is now estimated at more than the £21,000 already secured. [6]

16 March: The Governors resolve to ask Francis H. ('Fra') Newbery to prepare guidelines for the planning of the new building, including 'the required dimensions of class rooms ... together with suggestions as to the size of windows and the application of artificial light &c.', and to indicate 'how much of this accommodation might immediately be constructed'; to appoint a Building Committee consisting of James Fleming, Leonard Gow, Robert H. Leadbetter, David

Tullis, Patrick S. Dunn, Seton Thomson and Bailie Bilsland; to invite a maximum of eight Glasgow architects to take part in an architectural competition for the new School, their names to be decided by the Building Committee; to limit the cost of the building to £14,000, and disqualify any competitor who exceeds the budget by more than 10%; and to appoint Sir James King and Sir Renny Watson to assess the plans, 'with power to call in such professional aid to guide them in their decision as they may think necessary'. [7]

11 May: A block plan prepared by Newbery has been approved by Thomas Armstrong, Director of Art at South Kensington. [8]

1 June: The Governors approve the Building Committee's proposal to increase the number of invited architects from eight to twelve. [9]

12 August: The Governors consider a joint letter from the invited architects, dated 24 July, stating that the accommodation required cannot be provided for the sum of £14,000, and requesting that the terms of the competition be changed. The letter is signed by T. L. Watson; John A. Campbell; John James Burnet; H. & J. Barclay; John Honeyman & Keppie; Alex N. Paterson; William J. Anderson; William J. Conner & Henry Mitchell; Alexander McGibbon; James Salmon & Son; Malcolm Stark & Rowntree; and H. E. Clifford. The Governors refuse, emphasising that 'it is but a plain building that is required'. [10]

27 August: Following further representations from the architects on 17 and 20 August, the Governors agree to amend the terms of the competition. The architects are asked to indicate what part of their proposals could be erected for £14,000, and what the cost of eventual completion would be. The deadline is extended from 15 September to 1 October [11]

1 October: Deadline for competition entries. [12]

1897

13 January: The competition entries having been judged anonymously. The architects of the winning entry are identified as John Honeyman & Keppie. [13]

February: Competition entries exhibited in Corporation Galleries, Sauchiehall Street. [14]

25 February: A grant towards the cost of the new building is to be sought from the Department for Science and Art, South Kensington. The School Secretary is instructed 'to get the necessary plans from the Architect'. [15]

7 October: Plans approved by Glasgow Dean of Guild Court. [16]

11 October: Tenders for the new building have been received, and the Governors agree to accept them. Lighting will be by electricity rather than gas. Stone will be either Giffnock or Whitespot. [17]

3 November: Ground has been broken. [18]

17 November: Barricade erected round site. [19]

1898

January–February: Working on foundations. [20]

18 March: Scaffolding for crane blown over; one man injured. [21]

3 May: Steam crane in position. [22]

25 May: Platform erected for foundation stone ceremony. [23]

27 May: Excavation for W. wing in progress. [24]

July: Walls of E. wing complete; roof under construction. [25]

August–September: Plasterwork and 'finishing' in progress. [26]

22 September: 'Work stopped only East portion of Building finished'. [27]

1899

18 April: Mackintosh travels to Brighton, evidently to visit the new Municipal School of Science and Technology and see its electric lighting. [28]

12 May: Governors are informed that 'the Draughtsmen of the Architects' (Messrs Honeyman & Keppie) office had combined to make presentation of 5 trees & suitable protection for them to be planted at the corner of the New School in Dalhousie Street.' [29]

29 June: Plans for temporary building for technical studios on site of unbuilt W. wing approved by Glasgow Dean of Guild Court. [30]

6 October: Photographs of the new School have been requested by H. E. Hedley, Secretary of the forthcoming Glasgow International Exhibition, 'to include in a series of views to advertise Glasgow in America.' [31]

26 October: Work on temporary building for technical studios 'practically complete'. [32]

20 December: Official opening. [33]

1901
11 September: Tour of the building, organised by Patrick Geddes and conducted by Mackintosh, for a summer school organised by the International Association for the Advancement of Science, Art and Education. [34]

1902
8 January: All outstanding accounts for the first phase of the new building have been paid, with the help of a loan of £2500 from James Fleming and an additional grant from the Bellahouston Trustees. [35]

March: Members of the Edinburgh Architectural Association inspect the School of Art on a visit to some of 'the more important among recently-erected buildings' in Glasgow. [36]

1903
16 January: Unveiling of marble memorial panel to James Fleming on landing, with polished steel surround by Mackintosh. [37]

24 November: John Keppie and Francis Newbery are requested by the Finance Committee of the School to prepare drawings and estimates for: 1) constructing an extra escape stair; 2) partitioning off part of the Museum to give extra space for the Antique class; 3) increasing accommodation for the shop; and 4) providing furniture for the Headmaster's room. [38]

1904
25 February: The Finance Committee considers 'estimates and drawings by Mr Mackintosh' for the Headmaster's room. He is to be asked to produce simpler designs. [39]

15 March: Mackintosh's designs for furnishing the Headmaster's rooms 'were again examined and the style of the furniture generally approved with some slight modifications'.

9 June: Estimate for new staircase by 'Messrs Honeyman & Keppie' received by the Finance Committee. [40] This presumably relates to the design for a spiral stair in the angle of the S.E. wing and the main block, for which an undated drawing by Mackintosh survives. [41] The scheme was eventually abandoned when superseded by the two new staircases included in final phase of the building. [42]

1906
31 January: John Keppie (now a Governor of the School) agrees to prepare a sketch plan and an estimate of the cost of completing the building, so that an application for funding can be made to the Scotch Education Department. [43]

29 March: First phase of the School building discharged by Glasgow Dean of Guild Court inspector. [44]

9 August: Tender accepted for flooring basement modelling rooms. [45]

27 September: Committee for completion of the School building appointed, comprising: Sir Francis Powell, Bailie William Burrell, Bailie Archibald Campbell, Bailie Thomas Dunlop, John James Burnet, William Forrest Salmon, Patrick S. Dunn, James Fleming, George Herriot, Henry Bowie Fyfe, David Barclay, Thomas McArly, Robert J. Dunlop and Hugh Reid. [46]

19 October: Plans for completion sent to Scotch Education Department. [47] Final payment for basement flooring. [48]

1907
1 February: Honeyman, Keppie & Mackintosh formally appointed architects for completion. [49]

February/March: Grant of £15,000 awarded by Scotch Education Department. [50]

2 May: Plans have been approved by Building Committee. [51]

12 June: Plans and specifications formally approved by Governors. [52]

14 November: Plans approved by Glasgow Dean of Guild Court. [53]

15 November: Work begins on site. [54]

1908
January–March: Basement in progress. [55]

5 February: Governors object to the 'extravagant manner' in which the sub-basement porch and entrance in Scott Street have been carried out, which is not in accordance with the agreed plans. [56]

8–29 April: Second storey in progress. [57]

7 May–16 June: Third storey in progress. [58]

16 June: 'Gutting' of E. wing in progress. [59]

7 July: Installing beams for concrete floor in E. wing. [60]

14 August–6 October: Putting new roof on E. wing. [61]

31 August: 'The old roof of the School has been removed and the new roof and also new fireproof floor are complete so far as the mason, joiner, steel and asphalt works are concerned'. [62]

15 October: Roof of 'portion to Scott Street' in progress. [63]

2–28 December: Roof in progress. [64]

22 December: Drawings by Mackintosh for new board room, shop and office in studio immediately E. of entrance hall 'generally approved' by Building Committee. [65]

1909

January–July: Working on interior. [66]

8 February: Following advice from the North British & Mercantile Insurance Co., the Building Committee agrees to replace some timber window frames on the S. elevation with metal ones, and to make other changes to lessen the risk of fire spreading from the neighbouring Hengler's Circus. [67]

29 September: The Librarian suggests that 'a Librarian's box or office be provided in the South East corner of the Library, so that privacy and good daylight without the use of Electric Light be had'. [68]

18 October: 'Work completed'. [69]

3 December: The Library and Materials Committee recommends to the Building Committee that 'as the Library was insufficiently heated and that the books might suffer, three radiators should be placed in the West Windows.' [70]

15 December: Formal opening of the completed School.

1910

'The Glasgow School of Art (Three Interiors)' exhibited at Glasgow Institute of the Fine Arts (730).

1911

'The Glasgow School of Art (West End)' exhibited at Glasgow Institute of the Fine Arts (892) under Mackintosh's name.

15 May: 'The Architect' – presumably Mackintosh – presents a scheme before the Finance Sub-Committee for installing an electric lift in the well of the main staircase, but it is decided to adopt a different location. [71]

1913

'The Glasgow School of Art – interiors' exhibited at Royal Scottish Academy (450).

1914

15 January: 'The Architect' – presumably Mackintosh – opposes a proposal to install a window in the E. wall for the Animal Room, because he considers it 'possibly dangerous to the structure'. [72]

June: Mackintosh attends his last meeting as a Governor of the School. [73]

1915

18 March: A letter to Mackintosh about the proposed Animal Room window receives no reply. A Subcommittee of the School Committee decides to proceed with the alterations. [74]

24 June: Glasgow Dean of Guild Court approves plans by John Honeyman & Keppie for new door and window to Animal Room in Dalhousie Street. [75]

29 September: Alterations to Animal Room complete. [76]

1920

Entrance hall subdivided with 'screens and doors'. [77]

1920s

Original plenum system of heating and ventilation taken out of use and replaced with piped hot water and steam radiator system. [78]

1923

15 October: A new doorway has been made at the back of the lecture room. [79]

1924

15 December: The School shop is to be moved to classroom 25, and the School office extended into the shop. [80]

1936

September: 'The panelling around the stairway [of the Glasgow School of Art] has been scraped of its dark Jacobean staining and left a lighter colouring.' [81]

1947

25 April: Opening of the Mackintosh Room (the original Board Room in the S.E. wing) containing a permanent display of furniture designed by Mackintosh, probably the first such anywhere. [82]

1972

Detailed survey of the building carried out by Geoffrey G. Wimpenny of Keppie Henderson, prior to a phased programme of work costing around £200,000. [83]

1973

'It has been agreed to carry out over the next few years a comprehensive overhaul and renewal where necessary of the fabric and services of the Mackintosh building. This most extensive and costly programme will include renewal of wiring and plumbing and possibly of the entire heating system.' [84]

1976

The building is partly surrounded by scaffolding while pointing of stonework, replacement of rotted woodwork and replacement of roof coverings proceeds. The 'hen run' and conservatory have been rebuilt, 'the curved end section of the Hen Run having been glazed right to the floor as originally'; in the entrance hall, screens and doors added in 1920 have been removed and 'the office and the Janitor's box area is now being reinstated', based on Mackintosh's 1910 drawings, rediscovered in 1975. This programme of work is 'a more intensive continuation of work which has been proceeding over the years, such as the relocation of the School shop in which we used sections of panelling from Miss Buick's Restaurant, the introduction of fire doors in the corridors ... and the construction of balconies in some of the studios.' [85] A former architecture studio on the ground floor has been divided up to form offices, and repairs to the roof are in progress. [86]

1978

The original roof lights in the seven first-floor painting studios, which were covered over during the Second World War, have been uncovered. [87]

1979

Autumn: 'Currently undergoing an extensive programme of conservation, the next major phase of which involves the entire rewiring of the lighting and power circuits. In the process it is hoped to get rid of the unsightly switchgear which disfigures some of the main corridors, an unfortunate legacy of the last rewiring some 25 years ago ... This phase will be followed by a complete overhaul of the central heating system. For reasons of fire prevention it is unlikely that the original system of heating by hot air will be restored.' [88]

1981

£70,000 is to be spent on repairing and renewing electrical and gas mains, the work to be carried out by Keppie Henderson; light fittings, made to Mackintosh's designs, have been installed in the Director's room; and the former store room above the library has been converted to house a new display of Mackintosh's furniture. [89]

1982

The Sculpture and Ceramics departments have moved out of the basement and sub-basement and these spaces have been cleaned and redecorated for use by First Year students. [90]

1983

'Repair and restoration programme underway.' [91] Unspecified 'restoration of the stonework' reportedly carried out. [92]

1984

May: 'Part one of a two-stage programme of renovating the entire heating and wiring of the Mackintosh building begins this summer. The oil-powered boilers in the basement and the old bulky radiators will be removed and replaced by a less obtrusive gas calorifier system designed by Keppie Henderson. The warm air heating system designed by CRM will be reinstated in the Mackintosh Room. In the Museum, not only is heating to be installed, but the roof will be double-glazed and extra track-lighting fitted to complete restoration and up-grading of this space. All the electrical wiring will be replaced throughout the building.' [93]

1985

Summer: 'Main door to be 'completely restored and reinstalled'. [94]

Winter: Doug Stonelake wins architectural competition for pedestrianisation of Renfrew Street opposite the School. [95] Not carried out.

1988

Summer: Handrail added to 'inner wall' of West Stair. [96]

1994

£400,000 to be spent in 1994–5 on 'replacing the entire roof.... replacing all the skylights and other areas of secondary glazing, and renewing all the lead-work.' A further £400,000 to be spent in 1995–6 on work which will include 'the continued internal refurbishment of the Mackintosh building including the installation of a new fire alarm system.' [97]

2000

Spring: Mackintosh Research Centre opens in basement. [98]

2006

November: Glasgow School of Art awarded £4,466,000 by Heritage Lottery Fund towards its Mackintosh Conservation and Access Project. The project includes a full programme of timber and stone repairs, restoration of original features and removal of inappropriate additions, and relocation of the Mackintosh furniture galley to the basement. The work will be carried out in stages, up to 2010. [99] Architects for the project are Page & Park and ZM Architecture. [100]

2007
July: Commencement of £8.4m Mackintosh Conservation and Access Project. Ground-floor toilets refurbished. Spaces in basement prepared for Mackintosh Furniture Gallery and Interpretation Gallery. Repairs carried out to stonework, timber and light fittings in Library, and to stonework in Museum and on W. and E. staircases. [101]

2008
September: Second phase of Mackintosh Conservation and Access Project completed. New areas opened in basement for Archives and Collections Centre, Mackintosh Furniture Gallery, Mackintosh Interpretation Centre and Shop, all designed by ZM Architecture. [102]

2009
Completion of Mackintosh Conservation and Access Project. [103] Major funders: Heritage Lottery Fund, The Monument Trust, European Regional Development Fund, Glasgow City Council, Historic Scotland, The Hugh Fraser Foundation, The Garfield Weston Foundation, Scottish Enterprise Glasgow, The Gannochy Trust, Professor Nick Kuenssberg, The Estate of Ernest & Mary Shaw and The Robert Barr Charitable Trust.

2014
23 May: West wing severely damaged by fire and interior of library destroyed.

Description

The Glasgow School of Art is Mackintosh's most celebrated building and has been recognised since the 1930s as a work of international significance. It was built in two stages, 1897–8 and 1907–9.

Origins

The School was established in 1845, encouraged by the importance of design-based industries to the local economy. By the 1890s it was one of the leading art schools in Britain, but despite its reputation it was inadequately housed in cramped rooms above the Corporation art gallery in Sauchiehall Street. Better accommodation was needed, and under the leadership of Francis H. ('Fra') Newbery (1855–1946), a young and dynamic Headmaster appointed in 1885, [1] the goal of a new, purpose-built school took shape.

The 1896 competition

In January 1895 the Bellahouston Trustees, administrators of a Glasgow charity, agreed to buy a site on the S. side of Renfrew Street for £6000 and present it to the School, with an additional £4000 towards the building fund. [2] A grant of £5000 was promised by the Town Council in September. [3] Having secured further subscriptions from private donors, the School Governors resolved in March 1896 to appoint a building committee, and to have Newbery draw up a brief in preparation for an architectural competition. [4]

The competition conditions set out the requirements for the new building in great detail. [5] They were developed from national guidelines issued by the Department of Science and Art, South Kensington, but adapted to suit Glasgow's unusually large student numbers. [6] From the Department's guidance came such basic requirements as the need for the main studios to face N., and to be interconnected as well as being accessed from a corridor. The conditions also followed the Department in specifying that the height of the tops of the studio windows should be at least three-quarters the depth of the rooms, something which materially influenced the eventual design. Most importantly, by specifying a budget of just £14,000, it was made clear that the building must be a simple one. [7]

Because of its long N. side to Renfrew Street, the rectangular site was ideal for a building consisting largely of N.-facing studios. Sloping steeply downward from N. to S., it was bounded on the S. by pre-existing buildings. As the School had no control over future developments here, the conditions stipulated that there should be no windows 'in line with the building line' on the S. side.

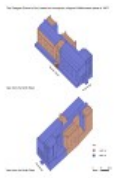
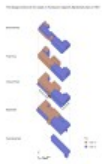
Invited to compete were 12 leading Glasgow practices: William J. Anderson; H. & D. Barclay; John Burnet, Son & Campbell; H. E. Clifford; Campbell Douglas & Morrison; John Honeyman & Keppie; William Leiper; Alexander McGibbon; Alex N. Paterson; James Salmon & Son; Malcolm Stark & Rowntree; and T. L. Watson. [8] Leiper declined to take part in the contest, and William J. Conner & Henry Mitchellwere invited in his place. [9]

In July 1896 the architects wrote a joint letter, protesting that it was not possible to provide the required accommodation within the available budget, to which the Governors responded by emphasising that it was 'but a plain building' that was required. [10] After a further representation, however, the deadline was extended to 1 October, and the architects were asked to indicate what part of their proposals could be erected for the £14,000 immediately available, and what the cost of eventual completion would be. [11] In the end, only 11 sets of plans were sent in, Campbell Douglas & Morrison having decided not to take part. [12]

Designs were submitted anonymously, identified only by a 'seal, sign or motto', with the architect's name in a sealed envelope. [13] The contest was judged by Sir James King and Sir Renny Watson. Neither was an architect (although Watson was an engineer), and they were given powers 'to call in such professional aid to guide them in their decision as they may think necessary'. [14] There is no evidence that they actually made use of external advice, but they certainly sought Newbery's opinion. [15] All the designs were then sent to South Kensington, where Thomas Armstrong, Director of Art, and E. Robert Festing of the Science Museum independently selected the same set of drawings that King and Watson had chosen. [16] When the accompanying envelope was opened, it was identified as John Honeyman & Keppie's entry, and they were named as winners in January 1897. [17]

Honeyman & Keppie's design

John Honeyman & Keppie's competition drawings do not survive, but their winning design must be closely reflected in two sheets of plans, sections and elevations submitted to the Department of Science and Art in March 1897, to accompany an application for a building grant. [18] With modifications, this design was approved by the Glasgow Dean of Guild Court in October the same year. The W. part of the School was not built until 1907–9, when it was extensively redesigned, but in its elevation to Renfrew Street it remains faithful to the 1897 design.

Authorship

Due to its highly individual character, the design has always been accepted as Mackintosh's: as early as 1901, Lewis F. Day named him as architect in a review published in the *Art Journal*. [19] Because he was only an assistant in John Honeyman & Keppie's office in 1897, however, the building committee dealt with John Keppie, and Mackintosh's name is almost absent from the official record. In the 'Description and Schedule of Contents' submitted with the design, the Schedule is written in his easily recognisable hand, [20] but apart from this, his involvement in the project barely emerges from the mass of paperwork it generated. [21] When the second phase of the School was completed in 1909, after Mackintosh had been made a partner, his role as architect was publicly acknowledged in terms that imply he was responsible for the first phase too. But documentary evidence for the respective contributions of Mackintosh and Keppie – and indeed Honeyman – to the first phase is notably lacking. [22]

The 'Description and Schedule of Contents' highlights a number of features that show a particularly sympathetic understanding of student life. [23] It explains that the library has been moved from the basement location suggested in the competition conditions to an upper floor, as this makes it 'more available for all departments'; that the top-lighting of the first-floor corridors leaves 'all the wall space available for exhibition purposes'; and that a student common room, although not called for in the conditions, has been provided as 'a place of meeting for the students between the hours of study', which could also serve as 'the head quarters of the School of Art Club, and be available for meetings, lectures etc. under the auspices of the society'. Sensitivity to student experience is something Mackintosh as a recent student at the School would almost certainly have brought to the project, but it might equally be due to Keppie, who had studied there before him.

Plan

The plan is a shallow E, rising from a rectangular basement that fills the site. It comprises a narrow central entrance block with longer studio ranges to each side. The centre contains the headmaster's office and private studio, along with heating and ventilation plant, while in a shallow projection behind – the central arm of the E – are the main stairs and a first-floor museum. From this core, corridors along the S. side give access to the N.-facing studios. The outer arms contain, at the S.E. corner, staff rooms, a board room and a staff studio; at the S.W. corner, a lecture theatre and library. The E-plan allows parts of the basement on the S. side to be top-lit.

Exterior

The N. front, set back from Renfrew Street behind a sunken basement area and a low boundary wall with railings, clearly expresses the three-part internal division. The flanking studio ranges are not equal (there are three bays in the E. wing, four in the W., and the two westernmost bays are narrower than the rest) but the imbalance is not obvious as the façade can only be seen obliquely. The ashlar walls are shaded by exceptionally deep eaves, and their flatness is only relieved by the rounded jambs of the huge studio windows and a slight swelling around the first-floor lintels. The windows themselves are square-headed and 'free from mullions and small panes', as the conditions demanded. Wrought-iron brackets at the base of the first-floor windows are the only decoration, but they originally served a practical purpose, to support the window cleaners' planks.

Sandwiched between the smooth, sheer studio wings is the more three-dimensional entrance block. It is composed like a terraced house: bay window on one side and front door on the other, approached up steps that swell and contract between sinuous S-plan walls. The windows here come in a variety of shapes and sizes, with a projecting balcony to the headmaster's first-floor office and a recessed one to his studio on the floor above. [24] An octagonal stair turret links the two, and reaches higher to make a lively roofline. The moulded architrave round the main door flows into an allegorical relief above, showing a pair of kneeling maidens flanking a rose tree. This, the only sculptural decoration on the building, was carved from a model made by Mackintosh. [25]

The E. elevation of snecked rubble is even more arresting in its contrasts than the N. front. Divided into two halves by the vertical line of a drain pipe, the right side is an almost windowless cliff of masonry with an odd little gabled feature in the middle of the parapet (the openings at the bottom are later insertions; originally there was just one very small window). The left side is full of incident. A door here gives access to the basement, where simple two- and three-light windows light what was the caretaker's house. A broad arched window on the floor above belongs to the male staff room, and above this a pair of tall, shallow bow windows embedded in the thickness of the wall lights the original board room. To the right, an octagonal turret emerges half way up the facade, growing from an oriel window.

The roughcast S. front is difficult to see because of neighbouring buildings, and it was significantly altered when the W. wing was added in 1907–9 (see below).

Style and sources

The drawings submitted to the Department of Science and Art in March 1897, and those approved in October by the Glasgow Dean of Guild Court, include a number of historicist features that were abandoned in the building itself. For example, they show the studio windows linked under continuous classical cornices, and the main entrance flanked by classical columns. Perhaps these features were included to reassure committee members who would otherwise have balked at the absolute plainness of the design. Possibly they reflect the involvement of Honeyman or Keppie, and it may always have been Mackintosh's intention to jettison them once the commission was secured. It is also possible, however, that Mackintosh's own ideas evolved in the course of the project, moving more decisively away from historical precedent.

Nevertheless, the executed design makes use of a range of historical sources. Scottish fortified tower houses of the 16th and 17th centuries are an important influence, with their small windows irregularly placed in sheer, forbidding walls, and their corbelled projections high up. Specifically, the oriel in the E. elevation seems to derive from the famous example at Maybole Castle, Ayrshire, which Mackintosh had sketched. [26]

The stark S. elevation with its three big projections is similar in composition to the S. front of Fyvie Castle, Aberdeenshire, and its roughcast – like Fyvie's – is a venerably Scottish building material. By contrast, a sketching tour Mackintosh made in the south of England in 1895 seems to have provided details from vernacular English buildings too: the canted bay window to the left of the entrance clearly relates to his sketch of an old house at Lyme Regis in Dorset, and the part-embedded octagonal turret may be adapted from the same church tower at Merriot in Somerset that influenced the design of Queen's Cross Church. [27]

In the 'Description and Schedule of Contents' that accompanied their competition entry, 'the Authors of the design' stated that they had tried 'to make the building express the purpose for which it is intended by a frank acceptance of the requirements and a moulding of these into such forms as they think has produced a result which is pleasing in proportion and in which the useless expenditure of money on mere embellishments has played no part.' [28]

This is close to the doctrine expounded by Ruskin and others earlier in the 19th century, that the exterior of a building should be determined by its interior arrangement. The School of Art abides by this principle up to a point: the big studio windows declare their purpose, and the windowless half of the east elevation similarly reflects the lighting requirements of the studios. But there is also a good deal of artifice and contrivance about the design, and many features cannot be explained simply in functional terms. The relative elaboration of some of the windows, for example, is no guide to the status of the rooms they light (the prominent first-floor canted bay, above and to the left of the main entrance, actually belongs to the headmaster's lavatory), and the iron lintels of the ground-floor studio windows are covered with cement to look like stone, a surprising choice for an architect who had absorbed Ruskin's ideas on the truthful use of materials.

In several respects the School shows the influence of contemporary architects, particularly those of the Arts and Crafts movement and Free Style, who in their different ways were trying to escape the imitative historicism of so much Victorian architecture. The entrance block bears a strong resemblance to 10–12 Palace Court, Bayswater, London, a pair of houses of 1889–90 by the Scottish architect James MacLaren, which has the same motif of an off-centre door and bay window linked by a first-floor balcony, and the same broad, arched window above the door. Mackintosh would almost certainly have known MacLaren's building from an illustration published in the *Architect* in 1892. [29] Large, plain windows (and a curvy parapet like the ones above the headmaster's studio and on the E. elevation) are found in a design for studios by C. F. A. Voysey, published in 1892, while a precedent for the distinctive boundary wall along Renfrew Street is provided by Arnold Dunbar Smith and Cecil Claude Brewer's Passmore Edwards Settlement of 1895–8 in Tavistock Place, London. [30] Recessed bow windows are found in designs of the 1890s by Halsey Ricardo for a London office building, and by Henry T. Hare for a house at Stafford. [31]

Ultimately, however, the most important influences on the design were the very specific requirements of the brief (which determined the size of the great studio windows), and the overriding need for economy (which ruled out elaborate ornament). Given these restrictive factors, it would be extremely interesting to know how John Honeyman & Keppie's winning design differed from the other ten competition entries, but no record of what they looked like has come to light. [32]

Its exceptional character is best appreciated by comparing it with other art school buildings of similar date. The basic plan, with N.-facing studios accessed from a S. corridor, is similar to the art schools of Manchester (1880) and Liverpool (1881), but these English examples are elaborately historicist – classical in the case of Liverpool, Gothic in the case of Manchester – and the size and shape of their windows is largely determined by the chosen historical style. The same goes for the Birmingham School of Art (1884–5; 1892–3), where the N.-facing studio windows, though impressive in size, are set deep within Gothic surrounds. Such comparisons show just how much the design of the Glasgow School was shaped by practical considerations, and in this it more closely resembles certain late 19th-century industrial and office buildings. Among art schools, the closest precedent is probably the severely utilitarian – and much earlier – National Art Training School of 1863 at South Kensington, by Francis Fowke, where Newbery himself had studied. [33]

Interior

The entrance hall was transformed in 1907–9 (see below), but plans drawn prior to this record its original appearance. It was divided in half lengthways: the main entrance led straight ahead into a broad passage, while the other half was partitioned off to form the School office (overlooking Renfrew Street from its canted bay window) and a shop where students bought their art materials.

Beyond the hall is the staircase, which rises visibly from the basement to the first-floor museum. On the half-landing between the ground and first floors, a marble relief by George Frampton (1860–1928) of James Fleming, Chairman of the Governors and the man largely responsible for raising the funds to build the School, is dated 1901. [34] It is set like an overmantel in a polished steel surround, with coloured botanical motifs below and a pair of tapering columns on either side. From its style, this frame was clearly designed by Mackintosh: John Honeyman & Keppie paid George Adam & Son £39 for the metalwork on 26 April 1900. The lower flights of stairs have balustrades of pierced boards, like those at Queen's Cross Church and Ruchill Free Church Halls, while the upper ones have simple balusters of square section, making a cage-like shaft reminiscent of staircases designed by Voysey. Where the staircase emerges into the museum, posts at the four corners stretch up to meet the open timber roof.

The museum is effectively a large landing – the competition conditions stated that it 'need not be a special room, but might be a feature in connection with the staircase' – which opened directly into the first-floor corridors until the later installation of fire doors. The roof trusses are of the same family as those Mackintosh designed for Ruchill and for the hall at Queen's Cross, with tie-beams clasped between pairs of flat timbers instead of king posts.

The competition conditions stressed that the corridors leading to the studios were to be more than just passages: they had to be at least 10 feet (3.05 m) wide, and suitable for displaying plaster casts of sculpture and mounting exhibitions of students' work. Mackintosh's rough panelling provided a practical surface for hanging works of art, and on the first floor of the E. wing, where it would have been possible to have windows in the S. wall, he chose instead to light the space from above like an art gallery, with skylights of an unusual curvilinear shape. The studios themselves are bare and functional, and flooded with light from the immense windows.

Much of the interior is simple and functional, and few rooms call for individual comment. In the S.E. wing, the original board room is lit by a pair of tall, narrow, bow windows at each end. The way the curve of the glazing continues into the panelled embrasures is a device Mackintosh would repeat a few years later in the drawing room of his House for an Art Lover design. There is a grand carved stone chimneypiece with Glasgow style decoration, but otherwise the room is quite plain, with the same exposed steel beams as the studios. In the headmaster's office on the first floor of the central entrance block, the arched window sits in a recess with a vaulted ceiling. This is the first appearance of a feature Mackintosh would repeat in the principal bedroom at The Hill House, and in the rooms he designed for exhibitions in Dresden and Berlin.

The most striking decorative details are the jewel-like stained glass inserts in many of the doors, but in general the interior is as unshowy as the exterior. Panelling is mostly of butt-jointed vertical boards, roughly finished ('from the saw', say the drawings for the 1907–9 extension). The original colour of the woodwork is uncertain. A very dark brown stain which allows the pattern of the grain to show through may have been used, and such a finish can still be seen where it has not been overpainted in black. However, a description published in a local newspaper at the time of the opening in 1899 says the timber was painted an 'artistic green'. [35]

The 1897 drawings show a number of decorative features that were not carried out, possibly for reasons of economy. The floor of the entrance hall was to have been laid with a geometric pattern of "slabs of Arbroath pavement enriched with designs in coloured marble', [36] such as Mackintosh had seen in Italy, and in the Museum a frieze of figures was to have filled the area of wall between the panelling and the roof.

Materials, construction and services

There is nothing unusual about the materials or constructional techniques used in the first phase of the building. The walls are of conventional masonry – stone for the N. and E. fronts, and brick for the internal walls and the roughcast S. elevation. It was agreed that the contractor, John Kirkwood, could chose whether to use stone from Giffnock or from Whitespot in Ayrshire. [37] The roughcast was to be of Portland Cement, and the roofs were to be covered with Ballachulish slates. [38]

Floors are of timber supported on steel beams. Only in the entrance hall, which is directly over the boiler house, are the spaces between the beams infilled with concrete to reduce the risk of fire. When the Glasgow Dean of Guild Court considered the plans, the Master of Works objected to the corridors not being fire-proof, and approval was only granted on condition that these areas were laid with 'double flooring as a preventive of fire'. [39] This 'double flooring' appears to have consisted of an extra layer of maple blocks. [40]

The original heating system was by hot air, forced through ducts by a fan in the basement. Large claims have been made for the supposedly innovative character of this system, [41] but John Honeyman & Keppie themselves in their 'Description and Schedule of Contents' described it as 'almost too well known to require advocacy' and commented that it had already been 'applied with success to many well known buildings in Glasgow'. [42]

According to the terms of the competition, lighting was always intended to be by electricity. A consulting electrician was employed, W. B. Sayers, and in April 1899 Mackintosh paid a visit to Brighton in Sayers's footsteps, evidently to inspect lighting arrangements at the Municipal School of Science and Technology there, which had opened the previous year. [43]

Critical reception

The School was officially opened on 20 December 1899. Only the E. wing and entrance block had been built, but the foundations of the W. wing had been laid, and a temporary shed for the technical studios had been erected on this part of the site. There was minimal coverage of the new building in the architectural press, perhaps because it was so obviously incomplete. Newspaper reports of the opening included only general remarks about the practicality of its plan and its fitness for purpose.

The following year, the *Studio* published an illustrated article which focused on the School as an educational institution, but which included this appraisal of its new home:

The building has been designed to meet the requirements of the school, and in no instance has a regard for appearance been allowed to interfere with these special requirements. Embellishments have been carefully concentrated, and gain in value from their juxtaposition to plain surfaces. The great windows to the north are a conspicuous feature of the elevations, and the projecting roof gives sufficient light and shade to emphasise the scale. All details have been carefully worked out, and the building possesses an unique character due in some measure to requirements and situation, but in the highest degree to the treatment of the subject by the architects.*Studio*, 19, 1900, pp. 51–6.
One thoughtful notice appeared in the Glasgow-based trade publication, *Building Industries* (accompanied by a weak perspective drawing made by a student at the School):

The building is unfortunate in some respects. It is a class of design that looks more to advantage on paper than in built reality. Busy Sauchiehall Street is close by and from a commanding point of that street (at the south east corner of Douglas Street junction) the new building is taken in the rear, so to speak, and taken very much at a disadvantage. Wayfarers stop, and marvel that the authorities have permitted the running up of a house of correction, or poor house, on such a site, – for popular guessing, at first, is divided between the two. From our point of view [i.e. the N.E.] the new building fares better, but even here it is not calculated to be pleasing to the general. To the general it does not suggest a School of Art, or a school of any kind. Nevertheless, there is character in the building, and plenty of it. The architects evidently set to their task with definite ideas to work. The originality is unquestionable. If the germ conception was that of indicating, through the physiognomy of the elevation, that the mastery of excellence in art is a thing to be acquired laboriously, and in no other way, – then its working out has been attended with considerable success. A view of the eastern façade, particularly, suggests something of the fortress order, – a hold, or keep, which, if it would be captured from without, must infallibly exact the utmost diligence and application on the part of the assailant, and not only exercised

in proper form of a siege, but persisted in for, probably, a considerable space of time. The northern or Renfrew Street façade differs from the other, but it is alike in this respect, that it is full of problems which are altogether unsolvable at the first glance. The building is only partly built, and this should be kept in remembrance. Definite judgement may be withheld until the edifice can be viewed as a whole. The internal planning is excellent, and indeed all that can be desired for an institution of that kind. *Building Industries*, 10, 16 January 1900, pp.146–7, 153.
In a review of the Glasgow International Exhibition 1901 in the *Art Journal*, Lewis F. Day compared the plainness of the School's temporary stand at the Exhibition, designed by Mackintosh, with its building in Renfrew Street: 'A similar severity is to be observed in Mr Mackintosh's permanent building for the Glasgow School of Art – planned apparently on lines nakedly utilitarian, yet everywhere revealing the marked individuality of the artist.' [46]

Extension and alterations, 1906–9

Additional accommodation

In 1901 the School of Art was raised to the status of a Central Institution under the Scotch Education Department. It no longer operated under the South Kensington system of the Department of Science and Art, and assumed a regional and national role rather than a merely local one. [47] The need to accommodate the Glasgow School of Architecture – established in 1904 by the merger of architecture teaching at the School of Art and at the Glasgow and West of Scotland Technical College – put further pressure on its already overcrowded classrooms. The Technical Studios were still inadequately housed in their temporary shed; there was no lecture theatre; and according to the architect R. Rowand Anderson, the library was 'little more than a recess off the main corridor'. The part-built School could not cope with the growing demands on its limited facilities, and by 1906 the need to complete it had become urgent.

In September that year a committee was set up, and preliminary drawings prepared by Mackintosh were discussed at informal meetings held in the Glasgow Art Club. [48] The following month, sketch plans were sent to the Scotch Education Department in support of a bid for funding, and in January 1907 an appeal leaflet was published, illustrated with a drawing by Alexander McGibbon showing the School in its unhappily truncated state. [49] John Keppie had been a governor of the School since 1904, representing the Glasgow Institute of Architects, and in this capacity he was involved as early as January 1906 in estimating the cost of the proposed extension. [50] When Honeyman, Keppie & Mackintosh were formally appointed architects the following February, he resigned from the board. [51]

The foundations of the W. wing had been laid in accordance with the competition-winning plans of ten years earlier, but much more space was now required. In the scheme approved by the Glasgow Dean of Guild Court in November 1907, the new W. range of studios facing Renfrew Street followed the original plan, but the S.W. wing was completely reconfigured as a six-storey tower with the double-height library on the first floor and the lecture theatre in the basement. An attic storey was proposed above the E. and W. studio ranges, accessed by two new fireproof staircases at the rear. And in the basement, extra accommodation was to be provided by extending the studios into the sunken area within the boundary railings, and roofing over the space with raking glass skylights.

Supervision of work

At its first formal meeting on 15 January 1907, the Building Committee determined that to prevent overspending the architects must not be allowed to depart from the agreed plans without the committee's sanction. [52] They were no doubt thinking of the overspend on the first phase of the School, which had created a deficit of more than £4500. This had not been cleared for over two years, and only then with a loan of £2500 from James Fleming and an additional grant from the Bellahouston Trust. [53] They probably also had in mind the case of Scotland Street school, where Mackintosh had implemented works not authorised by the Scotch Education Department. For the School of Art, the Terms of Appointment he was required to sign included an undertaking that the practice would not 'instruct any extra work or any alterations on the plans or specifications as endorsed by the Committee'. [54]

While Mackintosh was responsible for design matters, financial management of the project seems to have rested with Keppie: according to a draft of conditions for contractors, prepared before 10 September 1907, it was Keppie rather than Mackintosh who had the final say in any dispute. [55]

Building work began in November 1907, and on 5 February 1908, some of the Governors visiting the site were shocked at the 'extravagant manner' in which the sub-basement porch and entrance in Scott Street had been carried out, which was not in accordance with the agreed plans. [56] Mackintosh was called before the Building Committee, where he admitted that he had 'misapprehended his position' in taking it upon himself to depart from the plans. [57] After this early confrontation, there seems to have been no further major disagreement (and in fact two months later it was established that the extra cost of the porch had been more than offset by savings made elsewhere). The Committee, while generally approving cost-saving measures when Mackintosh proposed them, was also willing to approve increased spending on occasion.

S.W. wing

Exterior

Like the E. front, the W. is composed of contrasting halves. [58] The upper part of the left side is blank snecked rubble, with just a tiny deep-set window for the life model's changing space in the first-floor corner studio. The lower part is ashlar, with three oriel windows – a motif familiar from Huntly Castle, Aberdeenshire – under shallow bowed canopies linked by strange little hoods. The right side is all ashlar, and here the three oriels are repeated but carried up for the full height of the S.W. wing, with immensely long vertical strips of glazing that light the double-height library and the room above. This towering composition stands on one of Glasgow's steepest streets, which adds to its apparent height and fortress-like character.

The soaring windows are glazed with grids of small square panes, and framed by crisp mouldings that step in and out or up and down in a series of right-angled turns, a pattern that may derive from such Scottish castles as Crathes, Aberdeenshire. Mackintosh intended the surrounding stonework to include 'a series of emblematic figures, representing art, sculpture, architecture, and music'. [59] According to Thomas Howarth, the subjects were to have included Andrea Palladio, Benvenuto Cellini and St Francis of Assisi. [60] By December 1908, however, the £1000 allowed for carving in the original estimates was instead being offset against other costs. [61] The sculpture was not in the end carried out, and cylinders of uncarved stone stand in place of the figures, giving the facade a more abstract character than was originally planned. The three niches between the ground and first floors were apparently not intended for statues, being shown empty on the drawings; square panels of carving shown on the drawings below three of the ground-floor windows were not carried out. As built, the richest decoration is the elaborate stepped moulding around the basement door. The treatment of this entrance, condemned as extravagant by the Governors, [62] reflects the fact that it provided public access to the basement lecture theatre, public lectures being an important element in Newbery's vision of the School as a civic institution. [63]

Since it stands on the very edge of the site, the S. elevation could have no projecting windows, but Mackintosh used oriels here too, embedding them in the thickness of the wall. Unlike the W. elevation, the S. is roughcast, with ashlar used only for the central library window, framed between elongated empty niches (according to the drawings, these too were meant to contain carved figures). The E. elevation is virtually invisible from the street, but projecting from it is a conservatory in connection with the top-floor flower-painting studio: a conservatory was included in the first phase of the building, at the E. end of the museum, and when the extension was begun it was dismantled and stored for re-erection. [64] It is not clear if it was eventually reused.

In its stark geometry and its radical transformation of traditional motifs the S.W. wing is unique in contemporary British architecture, and yet there are parallels. The elongated oriels recall the tiers of utilitarian bay windows commonly used at the rear of multi-storey Glasgow office buildings (though Mackintosh defied convention by using them on his principal facade rather than putting them out of sight at the back). The way in which familiar elements such as oriels and niches are distorted or used in unfamiliar ways recalls the work of two London-based architects, Charles Holden (1875–1960) and J. J. Joass (1868–1952), a Glasgow-trained Scot. Like the School of Art, Joass's Royal Insurance building in Piccadilly and Holden's British Medical Association headquarters in the Strand are tall buildings articulated by the piling up of stretched and disjointed elements, although the source of these elements is the classicism of Michelangelo rather than Mackintosh's 17th-century Scottish tower houses. Closer to the vernacular roots of the School of Art, and possibly a direct influence on it, is Holden's Tudor bay-windowed design for the Bristol Central Library, won in competition in 1902 and completed in 1906, which Mackintosh would certainly have known through illustrations in the architectural press. [65]

Just how far Mackintosh stood outside the mainstream classical tendency of British architecture at this date can be seen by comparing the S.W. wing with other roughly contemporary art school schemes. E. A. Rickards's Hull College of Art (1904) is richly Baroque, drawing on continental as well as English models; J. M. Dick Peddie and George Washington Browne's Edinburgh College of Art (1906), with its pavilion roofs, is in a French-influenced Beaux-Arts style; while Willink & Thicknesse's extension to the Liverpool School of Art (1910) reflects the kind of Regency and Neo-Grec classicism promoted by Charles Reilly, Professor of Architecture at the University of Liverpool.

Interior

The library was the outstanding interior in the 1907–9 phase of the School; it and the bookstore and studio above were severely damaged by fire in May 2014; all of the contents and wooden fixtures were destroyed.

The library's double-height balconied space was constructed from timber and inserted within the tower-like masonry walls of the S.W. wing. The gutted interiors of 16th- and 17th-century Scottish tower houses, with evidence of their vanished timber interiors in the form of corbels and square holes for beams, may have suggested this conceit to Mackintosh (an illustration of Threave Castle in McGibbon & Ross's *Castellated and Domestic Architecture of Scotland* is a more archaeological and less imaginative exercise of the same kind).

Two steel beams in the library floor determined the position of the two rows of timber posts that supported the balcony. It would have been impractical, however, to have the balcony fronts in line with these posts: the balcony would have been too deep, the central well too narrow. So Mackintosh set the balcony behind the posts, and extended the beams on which it rests to meet them. To add complexity, he introduced short lengths of balustrading between the posts and the balcony, with simple notched carving picked out in colour. And he extended the balcony fronts downwards at intervals, with pendant panels of pierced carving, very like the gallery fronts at Queen's Cross Church. The timber ceiling, which appears to be supported by the same posts that carry the balcony, was in fact suspended from above.

The distinction between timber interior and masonry shell was clearest where the balcony ran across the three oriel windows that rise uninterrupted behind it. The drawings approved on 1 October 1907 show that a balcony with four sides was agreed at the outset, but by December 1908 it was being blamed for a rise in the cost of the library fittings. On 29 January 1909, Mackintosh was asked to omit the side in front of the windows, but argued successfully for its retention.

As soon as the library came into use in Autumn 1909, it was discovered that the huge expanse of glass in the oriels made the space difficult to heat. The Librarian, James J. F. X. King, who had been an opponent of the balcony and for practical reasons had criticised the division of the windows into small panes, reported that 'the cold in the Library was so great that the Students would not stay in the room', while the assistant librarian 'was off work for a week with cold contracted in the School'. [66] It was recommended to the Building Committee that three radiators be installed at the bottom of the three oriels. [67] This arrangement was ultimately adopted, but whether it went ahead immediately is not clear. It seems unlikely that Mackintosh would have accepted the change lightly, since the radiators make it difficult to experience the extraordinary view up into the polygonal shaft-like spaces he had contrived between the soaring vertical windows and the horizontal floor plates. He quickly informed the Building Committee that he regretted supplying an estimate for the radiators, [68] and early in 1910 Honeyman, Keppie & Mackintosh carried out a thorough testing of the heating system throughout the building. They concluded that it was satisfactory, but conceded that the library windows caused problems which might eventually be solved only by double glazing them. [69]

There was a further dispute about the siting of the glazed enclosure for the Librarian. On 26 January 1909, the Building Committee heard King's complaint that in its proposed location against the E. wall it would be 'useless' without artificial light, and on 8 February they decided to omit it. [70] On 28 September, King asked that 'a Librarian's box or office be provided in the South East corner of the Library [next to one of the S. windows], so that privacy and good daylight without the use of Electric Light be had.' [71] This was the location ultimately adopted.

Above the library was the book-store, its floor – the library ceiling – suspended from the floor above by wrought-iron ties. The polygonal lightwell shafts continue upwards to this level, enclosed by glazed screens that project into the room. Above the book store was a studio used originally for flower painting. Its pitched roof was supported by posts and beams rather than trusses, in a manner strongly reminiscent of Japanese timber construction. Below the library is what was originally the senior architecture room, with windows in its W. and S. sides. Below this, in the basement, is the lecture theatre, a square room with tiered seating radiating from the lecturer's corner platform.

The studios and corridors in the 1906–9 extension follow those of the first phase, except that the first-floor corridor has S.-facing windows rather than top lighting (there being a further corridor above in connection with the new attic). Mackintosh provided these windows with deep embrasures containing seats, transforming the corridor into a series of intimate, informal meeting places for students.

Attic and related additions

Building the new attic storey entailed removing the original hipped roof of the E. studio range and inserting a steel and concrete floor on a level with the tops of the first-floor windows. This reduced the height of the first-floor studios, except at the front where the attic was set back, and where large skylights gave additional light to the first floor. The attic is flat-roofed and glazed all along its north side, regardless of internal divisions, and it carries further the severely functional character of the original N. front. The fireproof floor appears to have been an amendment to the scheme approved by the Glasgow Dean of Guild Court on 14 November 1907. It was the subject of a second submission, approved on 14 May 1908.

The purpose of the attic seems to have evolved during the course of the project. It was first intended to house individual studios for diploma students and professors recruited by Newbery to teach at this advanced level, as well as studios for visiting artists. [72] The April 1907 drawings show the E. half subdivided into '*loges*', the French term for one-man work spaces where competitive designs could be produced in isolation as part of the Beaux-Arts training system. In the end, however, this half was used briefly as a single, large architecture studio, and then, by the time it was photographed by Bedford Lemere, early in 1910, as an embroidery room. [73]

To give access to the new attic, Mackintosh provided two fireproof concrete staircases. One was built against the inner face of the S.E wing, enclosing the two bow windows at the W. end of the board room. Instead of blocking these, Mackintosh preserved them and carried the steps in front of them. The other stair forms part of the W. wing. Both stairs have bowed half landings that project into the first-floor corridor to become internal balconies. The walls are decorated with austere patterns of square tiles set in cement, and at the head of each stair is a wrought-iron grille, recalling the yetts – or gates – found in fortified Scottish tower houses.

Linking the two staircases and giving access to the attic studios is a complicated sequence of spaces. The W. stair opens into the 'loggia', a long, low-roofed room directly over the first-floor corridor. It is divided into bays by brick arches, with studio doors on the N. and bay windows on the S. giving views over the city. The loggia leads into the 'pavilion' (popularly known as the 'hen run'), a fully glazed corridor projecting precariously from the S. elevation on iron brackets as it threads its way between the headmaster's studio and the museum roof. The glazing was destroyed during the 2014 fire, but the structure survived. From here it would not have been possible to continue eastward without sacrificing the original top-lighting of the first-floor corridor. Instead, Mackintosh chose to take his circulation route inside the E. range of attic studios, where a passage is carved out that leads to the E. stair. From within and without, these additions have an accretive, improvised character, informal, but at the same time complex and ingenious.

Entrance hall and board room

On the ground floor, Mackintosh made some significant changes to the first phase of the building, which had not formed part of the scheme approved by the Glasgow Dean of Guild Court in November 1907. The studio immediately E. of the entrance was subdivided to create a new Board Room (replacing the original one in the S.E. wing) plus a shop and office, with a mezzanine above for storage. This in turn made it possible to create a more spacious entrance hall

by doing away with the old shop and office partitions there. These changes were the subject of drawings submitted to the Building Committee on 22 December 1908, and were estimated to cost £205, plus £50 for furnishings. [74] Like the store over the library, the mezzanine is suspended from above by wrought-iron hangers, in this case attached to the original steel beams that carry the first floor. The job-book entry refers to the acceptance of a tender from Redpath, Brown & Co. on 4 June 1909 for 'Steels & Hangers for New Shop & Offices including fitting up'.

The board room has a low, beamed ceiling and wood-panelled walls with Ionic pilasters. Superficially, it looks like any number of solid, conservative, Edwardian board rooms, but the detailing is very unorthodox. The flutes of the pilasters are partly filled in with solid squares and rectangles to make a complex pattern, oddly reminiscent of the punched cards used in mechanical player pianos. This undermining of classical norms has been interpreted as Mackintosh's mischievous response to the contemporary rise of Beaux-Arts orthodoxy, to which the whole building stands in opposition.

The redesigned entrance hall is divided lengthways by massive square piers and roofed with barrel vaults, evoking the same kind of castle architecture as the E. front and S.W. wing. However, the piers and vault are evidently made of plaster rather than solid masonry, and there is nothing above them that requires the mighty substructure they imply. Mackintosh was here more interested in appearance than function: he seems to have been aiming for an impression of weight and strength that would contrast with the light and lofty rooms elsewhere in the building – an example of the 'discontinuity' that Alan Crawford has described as a defining characteristic of the Glasgow School of Art. [75]

In the basement, the life modelling room is top-lit because it sits between the central and S.E. arms of the E plan, and has an open timber roof with simple and massive trusses. They make a contrast with the trusses in the corresponding anatomy room at the E. end of the basement, which formed part of the building's first phase.

Materials, construction and services

In general, the extension and alterations of 1906–9 employ materials and constructional techniques that are unexceptional for their time. The risk of fire, which had caused concern when the first phase was built, remained a source of anxiety. In December 1908, while the building was still under construction, the North British & Mercantile Insurance Co. recommended the replacement of some of the timber window frames in both the old and new parts of the S. elevation with metal ones, to lessen the risk of fire spreading from the neighbouring Hengler's Circus. They also urged various changes to the new modelling room: the blocking up of a vertical area of glazing where the S. wall met the roof, the raising of this wall to protect the roof, and the replacement of the roof itself with one made of 'hard metal and wired glass'. [76] The Building Committee agreed to make these changes at an estimated cost of £100, though Mackintosh's timber trusses were spared. George Ferguson & Sons were duly paid £27 15s 9d on 2 February 1909 for 'Taking out 17 wood & putting in 17 iron sashes'.

Lead was to have been used for the new roofs, but on 9 April 1908 Mackintosh obtained the committee's approval to use asphalt instead. [77] This was one of several economies effected as the job progressed. Others were the substitution of lighter steel members for those originally specified, and the use of cement instead of glazed brick on the retaining wall of the basement area. [78]

A summary of constructional techniques and materials is contained in a draft specification for insuring the completed building, sent to the Scotch Education Department (Science and Art Branch) by the British & Mercantile Insurance Co. on 11 November 1909. [79] According to this, 'The floors [are] of ordinary construction with the exception of the foresaid sections of the basement floor [i.e. the heating plant room, of fireproof construction], the top floor of the building facing Renfrew Street which is constructed of concrete on iron with glazed lights to the floor below, the front of the said top storey being constructed of glass on timber framework and the top floor of the building facing Scott Street which is constructed of concrete on iron. The buildings are heated partly by hot air on the Plenum System and partly by low pressure steam pipes and radiators and partly by secure ordinary and gas fires and lighted wholly by incandescent electric light.'

Construction of the final phase provided an opportunity to reconsider aspects of the original heating system. On 14 November 1908, either the School Secretary or Newbery himself wrote to Honeyman, Keppie & Mackintosh to point out that the exisitng air inlets, controlled by registers, were a source of unpleasant draughts for the students and – particularly – the life models. [80] It was recommended that in the new part of the building, pivoted hoppers should be used to control the flow of air and direct it upwards. These wedge-shaped devices can be seen throughout the W. part of the School.

Critical reception

Publishing a sketch of the proposed extension in 1907, the *Glasgow Herald* included these observations by 'a correspondent':

The building, whether studied internally or viewed from the outside, may be said to be, in more senses that one, the latest development in architectural thought, but when all is said and done there is little doubt that as a workshop it thoroughly meets all the demands, and the six years that have been spent in the portion now standing have found out few faults in the outer structure or in the inner arrangements. So much is this the case that the new half is virtually to be a repeat of that now standing. Certain changes in external treatment appear, but the spacious, well-lighted rooms that now exist are to be repeated, and the whole building when completed will be another noteworthy addition to the wealth of architectural art in Glasgow. The design is from the firm of Honeyman, Keppie and Mackintosh, the work being carried out under the personal supervision of Mr Mackintosh. And it may perhaps be a practical testimony to the character of the education given that Mr Mackintosh is an artist who received his early training in the school, and who by this, his latest work, adds to his reputation as an architect and gives an added lustre to his Alma Mater. Living and working in the school as a pupil, and having a knowledge at first hand of the requirements of an art school, Mr Mackintosh has conceived these requirements as from the inside outwards, and he has embodied his knowledge and experience in a building that sums up the necessities of the art education of today in a spirit that testifies to the beautiful in the essential.*Glasgow Herald*, 26 June 1907, p. 4.

At the official opening on 15 December 1909, Sir John Stirling Maxwell said of Mackintosh that 'he would deserve well of his generation were it only because he had made them think. He had shown that it was possible to have a good building without plastering it over with the traditional, expensive, and often ugly ornament. Mr Mackintosh had the real faculty of being able to adapt a building for the purpose for which it was really intended. The Glasgow School of Art was a conspicuous success of that kind.' [82] His remarks may have been aimed at students who subscribed to the Beaux-Arts classicism taught at the School since the appointment of Eugène Bourdon as Professor of Architecture in 1904. For them, the new extension seemed an anachronism, and it had already been described by an anonymous student in the *Vista*, the magazine of the Glasgow School of Architecture Club, in the following terms:

When the School of Art was finished, we wondered if Mr Mackintosh felt forlorn or relieved at having this child of his imagination off his hands. Of course that would depend on whether it was a child of joy or sorrow to him, a prodigy or a freak. In our opinion – but, silence is the better part of discretion. There are, however, things which can be said about the child. The finest is, that it expresses what it professes to be. There are about it elements of mystery quite typical of the teaching of art, and it baffles the common man in the way all new art does, at the same time satisfying him, that though artists still study old masters, they are doing up to date work.

If Mr Mackintosh aimed at doing something bizarre, we would congratulate him on his success while condemning it on principle. But we think better of him, and it may be that Mackintoshian ideals are not to be expressed in the ordinary language of architecture. Let the public beware before they comment; like the writing of old on the wall, the meaning may be a horrid one when the right man arrives to translate it. The hackneyed anecdote about the man who thought the School of Art was a prison, is rather a compliment than otherwise; it recognises the serious expression of the building, for, notwithstanding the play of fancy (or is it humour) shown, the design is a serious effort – may be tragically so!

While the strength of Mr Mackintosh's architecture lies perhaps in its mystery, his system of decoration has its strength or weakness in its obviousness. His method is one of permutations and combinations applied to simple forms. This algebraical basis must account for the lack of romance in new art interiors. Coming fresh to the system, one finds interest in noticing that the details of a repeated ornamental motive are never the same, then it grows clear that the motive itself was selected in order that its internal arrangement might allow of endless different combinations, so that once the motive is selected an office boy or a trained cat can do the rest.

That some of these effects can be obtained economically is the advantage of the system; it is the advantage of his whole system. We do not mean to imply that the School of art is a cheap building, but it is a plain building, and the interior is refreshingly free from the modern architect's ruination, machine-run mouldings. Above all things, it is an interesting building, and this is the next best to being beautiful.*The Vista: The Quarterly Magazine of the Glasgow School of Architecture Club*, 1, no. 4, Autumn 1909, pp. 100–1.

In the previous issue of the *Vista*, a writer signing himself 'H. L. H.' – almost certainly H. L. Honeyman (1885–1956), John Honeyman's son and a recent student at the School – described with gentle mockery the new E. staircase and the room at the E. end of the top floor, which was then being used as an architecture studio:

This staircase is one of the most pleasing specimens of L'Art Nouveau in Glasgow, and strikingly illustrates the consequences of adherence to the aphorism, "by elimination we arrive at perfection." We wish, however, that sundry jutty windows – relics of the time before this staircase was added to the older structure – had been eliminated, for we not infrequently wedge our shoulders under their ledges, and if we do not step warily we may break a window by putting our foot in it. As we ascend, wide openings in the outer wall afford magnificent views of Glasgow, seated Rome-like on her seven hills, but when we reach the summit we are too exhausted to appreciate either the stairhead's mystical hoop-iron decoration, or the beauty of the scenery; so ... we enter the present location of the architectural students. Imagine an apartment, spacious and extraordinarily long, at one end a wall partly covered with open-joint lining, at the other a variety of cupboards, stucco "orders," &c., on a background of gray washed kulm partition; on one side a brick wall, where under small quaint arches lurk smaller quainter windows, on the other one of the largest windows in Scotland [which] displays a mesh of wooden astragals.*The Vista: The Quarterly Magazine of the Glasgow School of Architecture Club*, 1, no. 3, April 1909, p. 79.

Honeyman, Keppie & Mackintosh had the new building comprehensively photographed by the leading London-based architectural photographers Bedford Lemere & Co., perhaps in the hope that it would be featured in the illustrated architecture journals, but it seems to have been largely ignored by the professional press. The earliest positive criticism so far discovered comes in Charles Marriott's 1924 book *Modern English* [sic] *Architecture*, which includes a photograph of the exterior of the library wing and briefly refers to the School as 'an early and successful attempt to get architecture out of building, making decorative features of structural forms'. [85] The first substantial appreciation comes in 1936, in Nikolaus Pevsner's *Pioneers of the Modern Movement: from William Morris to Walter Gropius*. [86]

Another early reference, interesting for its emphasis on the perceived modernism of the School, is contained in the undated typescript of a lecture on Aesthetics by Patrick Geddes (1854–1932). According to Geddes, 'The real artist is he who, like Mackintosh in the Art College of Glasgow (one of the most important buildings of Europe) gets his effects within the sternest acceptances of modern conditions. For here never was concrete more concrete, steel more steely, and so on.' [87]

As for Newbery, when asked to provide a reference for Mackintosh in connection with a commission for the School Board of Partick, he chose to stress the practicality of the building rather than its aesthetic qualities: 'I quite see how that from the art side Mr Mackintosh's work may not make the full appeal I think it should, but as a designer for working accommodation, I know few to equal him. This School of Art is the best workshop I know of, and that in education is saying all that can be said'. [88]

Overall, however, the building was met with a lack of attention and acclaim immediately on completion, which is at odds with its unassailable reputation since the mid-20th century.

Alterations and conservation

In January 1914 Mackintosh opposed a proposal to insert a window and an external door in the Animal Room at the N.E. corner of the basement: A year later, having left Glasgow, he failed to reply to a letter on this subject, and it was decided to go ahead with the alteration anyway, to a design by Keppie. [89] This is the most significant external change since Mackintosh's direct involvement with the building ended. The original glazing of the windows in the W. facade has been replaced (early photographs show horizontal opening lights at intervals), though when this happened is not recorded.

That the School has survived relatively unaltered is due to the recognition, from an early date, of its fitness for purpose and its architectural significance, and the decision to expand by building on adjacent sites. In the 1920s, a large new building was erected on the N. side of Renfrew Street, and expansion in the 1960s and 70s resulted in the construction of further new buildings for departments previously housed in the Mackintosh building: the Bourdon Building (for Architecture) on the W. side of Scott Street, spanning Renfrew Street; and the Newbery Tower, on the N. side of Renfrew Street at the N.W. corner of Dalhousie Street. In 2011 the Newbery tower was demolished, and a new building for the School was begun on the same site, designed by Stephen Holl Architects of New York, and completed in 2014.

In 1972 a survey of the Mackintosh building was carried out by Geoffrey G. Wimpenny of Keppie Henderson, and a programme of refurbishment commenced. [90] According to Wimpenny, this was 'a more intensive continuation' of work that had been going on for some years, which had already led to the introduction of fire doors in the corridors and the construction of balconies in some of the studios. Exact dates and details of the work done as a result of the 1972 survey are not recorded, but a short account published by Wimpenny in autumn 1976 and references in the Newsletters of the Charles Rennie Mackintosh Society and Annual Reports of the School give some useful information. By late 1976, the 'hen run' and conservatory had both been rebuilt, alongside the ongoing pointing of stonework, replacement of rotted woodwork and replacement of roof coverings. In the same year, partitions introduced to the entrance hall in 1920 were removed, and the arrangement shown on Mackintosh's 1910 drawings (rediscovered in 1975) was reinstated. Between 1976 and 1978, the skylights of the first-floor studios, blocked during the Second World War, were reopened. [91] In 1984, renewal of the heating and electrical systems was due to take place, though whether this went ahead is unclear. [92]

In 1994, a second major programme of repairs commenced, scheduled to last two years, which entailed the replacement of the entire roof and renewal of lead-work. [93]

In 2006, the Heritage Lottery Fund awarded a grant of £4,466,000 to the Mackintosh Conservation and Access Project, an ambitious scheme to repair and conserve the building along with its archives and other collections, and improve access for scholars and the public. [94] Architects for the project were Page & Park. Work started the following year and was completed in 2009. [95] The most significant change was the conversion of much of the N. side of the basement to house an Archives and Collections Centre, Mackintosh Furniture Gallery, Mackintosh Interpretation Centre and Shop, all designed by ZM Architecture.

In May 2014, fire severely damaged the west wing. Discussions are currently (2014) underway about the scope and extent of reconstruction.

People

Clients:

- Glasgow School of Art

Contractors:

- George Adam & Son
- John Anderson
- H. L. Anderson & Co.
- Anderson & Munro
- James Boyd & Sons
- James Brown
- Bryden & Middleton
- William Buchanan
- James Cormack & Sons Ltd
- Alexander Cousland & Son
- James Cuthbertson & Son
- William Douglas & Sons
- John Drysdale
- Dykes Bros
- Engine, Boiler & Employer's Liability Insurance Co.
- George Ferguson & Sons
- P. & R. Fleming
- William Forbes
- Galbraith & Winton

- John Gardner & Co.
- Glasgow Corporation
- James Grant
- J. & W. Guthrie & Andrew Wells
- Haddow, Forbes & Co.
- Holmes & Jackson
- Henry Hope & Son
- James Hutcheson
- William Kemp & Co.
- Kesson & Campbell
- John Kirkwood
- The Lithic Flooring Co.
- Limmer Asphalt Paving Co.
- Walter Macfarlane & Co.
- Alex Martin
- Daniel McCallum
- McCulloch & Co.
- R. A. McGilvray
- William McGeoch, Kemp & Co.
- John Montgomery
- James Morrison
- The National Telephone Co.
- George Neilson
- Osborne & Hunter
- Robert L. Paterson & Co.Robert L. Paterson & Co.
- David Rattray
- Redpath, Brown & Co.
- W. B. Sayers
- Robert Scott
- Robert Scott & Son
- R. Smith & Co.
- Moses Speirs & Son
- A. & P. Steven
- M. Stewart & Co.
- Wylie & Lochhead

Other:

- Sir James King
- Francis H. ('Fra') Newbery
- Sir Renny Watson

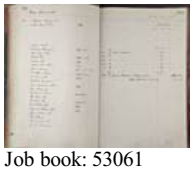
Job Book

The job books of Honeyman & Keppie (later Honeyman, Keppie & Mackintosh) are now held by The Hunterian, University of Glasgow and include four volumes related to the Mackintosh period. The books were used by the firm to keep a project-by-project, day-by-day record of contractors, suppliers and expenditure. The name of a project and/or client is usually at the top of the left-hand page, followed by information about tradesmen who tendered. The name of the measurer (quantity surveyor) is usually at the top of the right-hand page, followed by information about payments to contractors and suppliers. All of the data for M134 is entered in the tables below.

Page numbering is not consistent in the job books. Sometimes a single number refers to a double-page spread and sometimes each page is individually numbered. Here, each image of a double-page spread is identified by the number given at the top of the left-hand page. (Images of all of the pages from the four job books can be found at Browse Job Books, Visit Book and Cash Book.)

The following information about M134 has been extracted from the job books:

Job book: 53061
Page: 121


Job book: 53061
Page: 123

Job book: 53061
Page: 125

Job book: 53061
Page: 127

Job book: 53061
Page: 129

Job book: 53061
Page: 131

Client: Glasgow School of Art

Measurer: Robert Scott
Measurer address: Wellington Street

Tenders:

Contractor	Type	Address	Date	Value	Accepted
P. & W. Anderson	mason work	no data in job book	no data in job book	£12,439 11s 0d [1]	no
Anderson & Henderson	mason work	no data in job book	no data in job book	no data in job book [2]	no
George Barlas & Co.	mason work	no data in job book	no data in job book	£12,769 0s 0d	no
Alex Eadie & Son	mason work	no data in job book	no data in job book	no data in job book	no
James Goldie & Son	mason work	no data in job book	no data in job book	£12,830 0s 0d	no
Green & McCallam	mason work	no data in job book	no data in job book	£13,016 0s 0d	no
Guthrie & Co.	mason work	no data in job book	no data in job book	£12,250 12s 8d	no
John Kirkwood	mason work	no data in job book	no data in job book	£7457 16s 2d [3]	yes
Peter McKissock & Co.	mason work	no data in job book	no data in job book	no data in job book [4]	no
Morgan & Son	mason work	no data in job book	no data in job book	£12,174 0s 0d	no
Morrison & Mason Ltd	mason work	no data in job book	no data in job book	£13,194 0s 0d	no
Robert Murdoch	mason work	no data in job book	no data in job book	£12,292 0s 0d	no
John Paterson & Son Ltd	mason work	no data in job book	no data in job book	£12,478 18s 11d	no
John Porter	mason work	no data in job book	no data in job book	£12,300 0s 0d	no
William Shaw & Son [5]	mason work	no data in job book	no data in job book	£11,477 2s 0d	no
Shaw & Campbell	mason work	no data in job book	no data in job book	no data in job book	no
Alex Muir & Sons	mason work	no data in job book	1898	£12,522 0s 0d	no
Anderson & Henderson	joiner work	no data in job book	1898	£7669 16s 3d	no
Alex Eadie & Son	joiner work	no data in job book	1898	no data in job book	no
Guthrie & Co.	joiner work	no data in job book	1898	£8203 1s 9½d	no
Morgan & Son	joiner work	no data in job book	1898	£8281 0s 0d	no
William Shaw & Son	joiner work	no data in job book	1898	£8194 0s 0d	no
James Morrison	joiner work	no data in job book	1898	£3300 0s 0d [6]	yes
William Allan & Cowan	joiner work	no data in job book	1898	£9432 7s 8d	no
William Cowan & Son	joiner work	no data in job book	1898	£7797 0s 0d	no
Matthew Henderson	joiner work	no data in job book	1898	no data in job book	no
James Herbertson & Sons	joiner work	no data in job book	1898	£8050 0s 0d	no

John Cochrane Jr.	joiner work	no data in job book	1898	no data in job book	no
Hutcheson & Grant	joiner work	no data in job book	1898	£8059 18s 9d	no
Thomas Kay & Co.	joiner work	no data in job book	1898	no data in job book	no
George Laird & Son	joiner work	no data in job book	1898	£7433 13s 6d	no
William McCall & Son	joiner work	no data in job book	1898	£8259 0s 0d	no
Archibald McFarlane & Son	joiner work	no data in job book	1898	£7402 0s 0d	no
James Mabon & Co.	joiner work	no data in job book	1898	no data in job book	no
Thomas Brown	joiner work	no data in job book	1898	no data in job book	no
D. Millmaker & Co.	joiner work	no data in job book	1898	no data in job book	no
Hunter & Marshall	joiner work	no data in job book	1898	no data in job book	no
A. & D. MacKay	slater work	no data in job book	no data in job book	£659 0s 0d	no
John Anderson	slater work	no data in job book	no data in job book	£324 12s 1d [7]	yes
James Cuthbertson	slater work	no data in job book	no data in job book	£642 16s 6d	no
J. McOwat & Son	slater work	no data in job book	no data in job book	£592 0s 0d	no
Archibald Black	slater work	no data in job book	no data in job book	£612 8s 0d	no
A. M. Ross & Son	slater work	no data in job book	no data in job book	£626 11s 6d	no
William Anderson	plumber work	no data in job book	no data in job book	£736 8s 6d	no
Brown & Young	plumber work	no data in job book	no data in job book	£786 0s 0d	no
Cairns & Laing	plumber work	no data in job book	no data in job book	£707 17s 4d	no
Fyfe & Allan	plumber work	no data in job book	no data in job book	£707 2s 5d	no
James Ingleton & Co.	plumber work	no data in job book	no data in job book	£709 0s 0d	no
Renfrew Brothers	plumber work	no data in job book	no data in job book	no data in job book	no
Moses Speirs & Son	plumber work	no data in job book	no data in job book	£552 3s 7d [8]	yes
Colin Turner	plumber work	no data in job book	no data in job book	£749 17s 0d	no
John Paterson & Co	plumber work	no data in job book	no data in job book	no data in job book	no
Victor Devine	plumber work	no data in job book	no data in job book	no data in job book	no
James Johnstone & Son	plumber work	no data in job book	no data in job book	£737 0s 0d	no
James Cormack & Sons Ltd	heating	no data in job book	no data in job book	£1454 0s 0d	yes

James Cormack & Sons Ltd	heating	no data in job book	22 August 1900	£27 0s 0d [9]	yes
Osborne & Hunter	electric lighting	no data in job book	no data in job book	no data in job book	yes
R. A. McGilvray	plaster work	no data in job book	1887 [10]	£258 13s 10d [11]	yes
George Rome & Co.	plaster work	no data in job book	1887 [12]	no data in job book	no
William Forbes	plaster work	no data in job book	1887 [13]	no data in job book	no
Mitchell & Davies	plaster work	no data in job book	1887 [14]	no data in job book	no
D. & J. Mackenzie	plaster work	no data in job book	1887 [15]	no data in job book	no
Tonner	plaster work	no data in job book	1887 [16]	no data in job book	no
C. & J. Malloch	glazier work	no data in job book	1887 [17]	no data in job book	no
William Meikle & Son	glazier work	no data in job book	1887 [18]	no data in job book	no
McCulloch & Co.	glazier work	no data in job book	13 October 1887 [19]	£271 6s 0d	yes
J. & W. Guthrie	glazier work	no data in job book	1887 [20]	no data in job book	no
Robert L. Paterson & Co.	glazier work	no data in job book	1887 [21]		no
James Hutcheson	gasfitter work	no data in job book	1887 [22]	no data in job book	no
William Bryden & Son	gasfitter work	no data in job book	1887 [23]	no data in job book	no
John Bryden & Sons	gasfitter work	no data in job book	1887 [24]	no data in job book	no
H. Tosh, Sons, & Cross	gasfitter work	no data in job book	1887 [25]	no data in job book	no
William Laidlaw	gasfitter work	no data in job book	1887 [26]	no data in job book	no
William Anderson	gasfitter work	no data in job book	1887 [27]	no data in job book	no
Brown & Young	gasfitter work	no data in job book	1887 [28]	no data in job book	no
Cairns & Laing	gasfitter work	no data in job book	1887 [29]	no data in job book	no
Charles Cameron	gasfitter work	no data in job book	1887 [30]	no data in job book	no
Fyfe & Allan	gasfitter work	no data in job book	1887 [31]	no data in job book	no
James Ingleton & Co.	gasfitter work	no data in job book	1887 [32]	no data in job book	no
Renfrew Brothers	gasfitter work	no data in job book	1887 [33]	no data in job book	no
Moses Speirs & Son	gasfitter work	no data in job book	no data in job book	no data in job book	yes
Colin Turner	gasfitter work	no data in job book	no data in job book	no data in job book	no
John Paterson & Co.	gasfitter work	no data in job book	no data in job book	no data in job book	no

James Johnstone & Sons	gasfitter work	no data in job book	no data in job book	no data in job book	no
Victor Devine	gasfitter work	no data in job book	no data in job book	no data in job book	no
J. & A. Law	cast iron work	no data in job book	no data in job book	no data in job book	no
M. McCulloch & Co.	cast iron work	no data in job book	no data in job book	no data in job book	no
Christie & Smith	cast iron work	no data in job book	no data in job book	no data in job book	no
Kesson & Campbell	cast iron work	no data in job book	no data in job book	£298 9s 6d [34]	yes
P. & W. Maclellan	cast iron work	no data in job book	no data in job book	no data in job book	no
P. & R. Fleming	cast iron work	no data in job book	no data in job book	no data in job book	no
Rudolph A. Stoffert	cast iron work	no data in job book	no data in job book	no data in job book	no
Bladen & Co.	cast iron work	no data in job book	no data in job book	no data in job book	no
Bladen & Co.	steel work	no data in job book	no data in job book	no data in job book	no
Rudolph A. Stoffert	steel work	no data in job book	no data in job book	no data in job book	no
P. & W. Maclellan	steel work	no data in job book	no data in job book	no data in job book	no
P. & R. Fleming	steel work	no data in job book	no data in job book	£585 11s 11d [35]	yes
Elder & Co.	steel work	no data in job book	no data in job book	no data in job book	no
Galbraith & Winton	marble work	no data in job book	no data in job book	£228 1s 8d	yes
W. B. Sayers	consulting engineer	no data in job book	no data in job book	no data in job book	yes
George Adam & Son	iron work	no data in job book	15 July 1898	£15 0s 0d [36]	yes
James Morrison	windows	no data in job book	15 July 1898	£87 11s 3d [37]	yes
John Gardner & Co.	lightning conductor	no data in job book	21 February 1899	£12 0s 0d	yes
Bryden & Middleton	iron work	no data in job book	27 March 1899	£9 17s 6d	yes
A. & P. Steven	lift	no data in job book	27 March 1899	£54 10s 0d [38]	yes
James Hutcheson	speaking tubes	no data in job book	27 March 1899	£14 2s 0d	yes
John Orr & Son	painter work	no data in job book	no data in job book	£359 14s 0d	no
George Sellars	painter work	no data in job book	no data in job book	£354 15s 0d	no
Charles Carlton & Son	painter work	no data in job book	no data in job book	£369 17s 8d	no
J. W. Guthrie & Wells Ltd	painter work	no data in job book	no data in job book	£352 10s 5½d	no
McCulloch & Co.	painter work	no data in job book	no data in job book	£334 19s 10d	no

A. & J. Scott	painter work	no data in job book	no data in job book	£368 10s 1d	no
David Rattray	painter work	no data in job book	no data in job book	£282 6s 3d [39]	yes
C. T. Bowie & Fisher	painter work	no data in job book	no data in job book	£371 1s 0d	no
George Adam & Son	wrought iron	no data in job book	no data in job book	£76 0s 0d [40]	yes
Bryden & Midleton	wrought iron	no data in job book	no data in job book	£77 14s 0d [41]	no
Thomas Main	grates	no data in job book	24 July	£8 0s 0d [42]	no
William McGeoch, Kemp & Co.	grates	no data in job book	24 July	£9 0s 6d [43]	yes

Payments (trades):

Name	Type	Payment out sum
John Kirkwood	mason work	**First installment**: 26 February 1898 **Final installment**: 10 September 1901 £10,732 14s 1½d [44]
James Morrison	joiner work	**First installment**: 15 November 1898 **Final installment**: 10 September 1901 £4232 19s 11d
James Morrison	joiner work	**Payment date**: 10 September 1901 £15 4s 8d [45]
John Anderson	slater work	**First installment**: 18 February 1898 **Final installment**: 25 December 1898 £324 18s 7d
Moses Speirs & Son	gasfitter work	**First installment**: 18 February 1898 **Final installment**: 10 September 1901 £1214 7s 10d
R. A. McGilvray	plaster work	**First installment**: 20 June 1899 **Final installment**: 10 September 1901 £424 6s 2d
McCulloch & Co.	glazier work	**First installment**: 10 August 1899 **Final installment**: 27 July [1900] £464 6s 6d [46]
Osborne & Hunter	electric lighting	**Payment date**: 10 April 1900 £1052 2s 9d [47]
Kesson & Campbell	cast iron work	**First installment**: 1 November 1898 **Final installment**: 10 November £252 14s 2d
P. & R. Fleming	steel work	**First installment**: 20 June 1898 **Final installment**: 10 November 1899 £554 2s 8d
W. B. Sayers	consulting engineer	**First installment**: 1 November 1900 **Final installment**: 21 November 1900 £82 0s 0d [48]
George Adam & Son	iron work	**Payment date**: 11 November 1897 £15 0s 0d [49]
John Gardner & Co.	lightning conductor	**Payment date**: 16 March 1899 £12 0s 0d
George Adam & Son	iron work	**Payment date**: 26 April 1899 £25 4s 0d [50]
A. & P. Steven	lift	**Payment date**: 14 September 1899 £54 10s 0d [51]
George Adam & Son	iron work	**Payment date**: 9 November 1899 £83 15s 0d [52]

William McGeoch, Kemp & Co.	grates	**Payment date**: 9 November 1899 £9 0s 6d [53]
Bryden & Middleton	iron work	**Payment date**: 9 November 1899 £9 17s 6d [54]
George Adam & Son	metalwork	**Payment date**: 26 April 1900 £39 0s 0d [55]
George Adam & Son	metalwork	**Payment date**: 26 April 1900 £2 10s 0d [56]
George Adam & Son	metalwork	**Payment date**: 26 April 1900 £12 10s 0d [57]
James Cormack & Sons Ltd	heating	**Payment date**: 26 April 1900 £1454 0s 0d [58]
James Cormack & Sons Ltd	heating	**Payment date**: 26 April 1900 £22 10s 0d [59]
David Rattray	painter work	**Payment date**: 15 January 1901 £281 9s 6d
James Hutcheson	speaking tubes	**Payment date**: 5 September 1901 £35 16s 10d [60]
James Cormack & Sons Ltd	heating	**Payment date**: 10 September 1901 £27 0s 0d [61]

Payments (suppliers):

Name	Service	Payment date	Payment sum
Engine, Boiler & Employer's Liability Insurance Co.	Insurance	26 May 1897	£2 2s 0d
John Drysdale	'½ expense of laying 15" sewer in Dalhousie St.'	27 May 1897	£9 11s 11d
Glasgow Corporation	'Corporation Water: extension of 3" [illegible] meter [illegible]'	31 October 1899	£10 3s 7d
Anderson & Munro	'experimental electric lighting'	10 November 1899	£10 10s 0d
Alexander Cousland & Son	'wire netting' and 'extra wire hooks'	25 December 1899	£18 19s 6d
J. & W. Guthrie & Andrew Wells	Mosaic in lavatories.	26 April 1900	£1 15s 10d
George Neilson	'Inspection of School.'	26 December 1900	£2 11s 6d
Holmes & Jackson	'Carving'.	26 December 1900	£10 18s 0d

Measurer fee payment: £100 0s 0d [62] (26 February 1898)

Phase 2: Furniture for Headmaster's Room, alterations to shop, basement flooring, etc., 1904–6

Job book: 53062
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Client: Glasgow School of Art

Tenders:

Contractor	Type	Date	Value	Accepted
Alex Martin	furniture	15 August 1904	£22 16s 0d [63]	yes

Alex Martin	furniture	15 August 1904	£10 0s 0d [64]	yes
Alex Martin	furniture	15 August 1904	£8 10s 0d [65]	yes
Wylie & Lochhead	furniture	4 November 1904	£9 0s 0d [66]	yes
James Morrison	joinery	10 May 1905	£29 16s 0d [67]	no
William Buchanan	joinery	10 May 1905	£29 0s 0d [68]	yes
Kirkwood	joinery	no data in job book	£618 0s 0d [69]	no
James Morrison	joinery	7 June 1906	£66 12s 10d [70]	yes (9 August 1906)
James Morrison	joinery	7 June 1906	£158 0s 0d [71]	no
William Buchanan	joinery	7 June 1906	£67 13s 11d [72]	no
William Buchanan	joinery	7 June 1906	£172 15s 10d [73]	no

Payments (trades):

Name	Type	Payment out sum
Alex Martin	furniture	**First installment**: 21 September 1904 **Final installment**: 23 January 1905 £37 13s 6d [74]
Wylie & Lochhead	furniture	**Payment date**: 15 December [1904] £11 5s 0d [75]
William Buchanan	joinery	**Payment date**: 22 January 1906 £30 9s 2d
James Morrison	joinery	**Payment date**: 19 October 1906 £69 9s 0d [76]

Payments (suppliers):

Name	Service	Payment date	Payment sum
James Grant	'lining Technical Studios etc'	1 December 1904	£75 0s 0d
McCulloch & Co.	'Glass Work'	22 January 1906	£7 5s 6d
McCulloch & Co.	'Painter Work'	22 January 1906	£1 16s 3d

Phase 3: W. part, 1907–9

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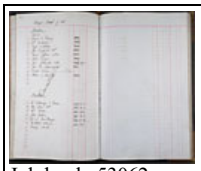
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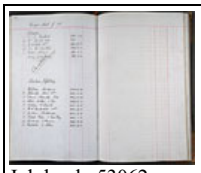
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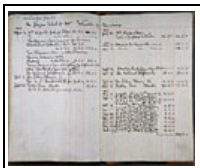
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Client: Glasgow School of Art

Measurer: Robert Scott & Son
Measurer address: 115 Wellington Street

Tenders:

Contractor	Type	Address	Date	Value	Accepted

P. & W. Anderson	mason	no data in job book		£10,615 0s 7d [77]	no
George Barlas & Co.	mason	no data in job book		£9486 0s 0d [78]	no
James Goldie & Son	mason	no data in job book		£10,380 0s 0d [79]	no
Green & McCallum	mason	no data in job book		£9848 0s 0d [80]	no
John Kirkwood	mason	no data in job book		£9875 0s 0d [81]	no
Morgan & Sons	mason	no data in job book		£10,114 17s 10d [82]	no
Morrison & Mason	mason	no data in job book		£9761 8s 10d [83]	no
Robert Murdoch	mason	no data in job book		£9595 0s 0d [84]	no
John Paterson & Sons	mason	no data in job book		£10,969 0s 0d [85]	no
John Porter	mason	no data in job book		£9119 3s 4d [86]	no
Shaw & Campbell	mason	no data in job book		£9491 18s 1d [87]	no
Alex Muir & Sons	mason	no data in job book		£9582 0s 0d [88]	no
J. H. White & Sons	mason	no data in job book		£10,792 0s 0d [89]	no
M. Stewart & Co.	mason	no data in job book		£9003 13s 2d [90]	no
Morgan & Sons	joiner	no data in job book		£7250 0s 0d [91]	no
William Shaw & Sons	joiner	no data in job book		£6849 0s 0d [92]	no
James Morrison	joiner	no data in job book		£6495 0s 0d [93]	no
Mathew Henderson	joiner	no data in job book		£6300 0s 0d [94]	no
James Herbertson & Sons	joiner	no data in job book		no data in job book	no
John Cochrane	joiner	no data in job book		£6066 4s 11d [95]	no
James Grant	joiner	no data in job book		£6896 0s 0d [96]	no
George Laird & Sons	joiner	no data in job book		£6361 0s 0d [97]	no
William McCall & Sons	joiner	no data in job book		£6570 0s 0d [98]	no
William Baxter	joiner	no data in job book		£6177 0s 0d [99]	no
James Mabon & Co.	joiner	no data in job book		£6092 13s 0d [100]	no
William Lightbody & Sons	joiner	no data in job book		£6050 14s 5d [101]	no
Hunter & Marshall	joiner	no data in job book		£7100 0s 0d [102]	no
Anderson & Henderson	joiner	no data in job book		£6362 2s 3d [103]	no
Archibald McFarlane & Son	joiner	no data in job book		£6447 0s 0d [104]	no
Alex Ferguson	joiner	no data in job book		£6263 12s 7d [105]	no
J. & G. Findlay	joiner	no data in job book		£6461 0s 0d [106]	no
Allan & Cowan	joiner	no data in job book		£6550 0s 0d [107]	no
George Ferguson & Son	joiner	no data in job book		£5762 13s 0d [108]	no
Brown & Young	plumber	no data in job book		£2287 0s 0d [109]	no
William Anderson	plumber	no data in job book		£2327 0s 0d [110]	no
Fyfe & Allan	plumber	no data in job book		£2310 0s 0d [111]	no
James Ingleton & Co.	plumber	no data in job book		£2355 0s 0d [112]	no
Moses Spiers & Sons	plumber	no data in job book		£2123 0s 0d [113]	no
Colin Turner	plumber	no data in job book		£2429 0s 0d [114]	no
James Johnstone & Son	plumber	no data in job book		£2199 19s 1d [115]	no
James M. Symington	plumber	no data in job book		£2316 0s 0d [116]	no
Victor Devine	plumber	no data in job book		no data in job book [117]	no
Robert S. Renfrew	plumber	no data in job book		£2300 0s 0d [118]	no
McGilvray & Ferris	plasterer	no data in job book		£697 15s 5d [119]	no

George Rome & Co.	plasterer	no data in job book		£649 13s 6d [120]	no
William Forbes	plasterer	no data in job book		£645 10s 4d [121]	no
John Forbes	plasterer	no data in job book		£796 8s 3d [122]	no
D. & J. MacKenzie	plasterer	no data in job book		£630 15s 9d [123]	no
Mitchell & Davie	plasterer	no data in job book		£645 12s 4d [124]	no
George Smith	plasterer	no data in job book		no data in job book	no
A. & D. McKay	slater	no data in job book		£294 16s 8d [125]	no
John Anderson	slater	no data in job book		£265 5s 0d [126]	no
James Cuthbertson	slater	no data in job book		£239 16s 3d [127]	no
McOwat & Son	slater	no data in job book		£260 3s 0d [128]	no
Archibald Black	slater	no data in job book		no data in job book	no
A. MacKenzie Ross	slater	no data in job book		£283 12s 6d [129]	no
Arrol Bridge & Roof Co.	cast iron and steel work	no data in job book		£2749 1s 1d [130]	no
J. & A. Law	cast iron and steel work	no data in job book		£3059 6s 6d [131]	no
M. McCulloch & Co.	cast iron and steel work	no data in job book		no data in job book	no
Christie & Smith	cast iron and steel work	no data in job book		no data in job book	no
Kesson & Campbell	cast iron and steel work	no data in job book		no data in job book [132]	no
P. & W. MacLellan	cast iron and steel work	no data in job book		£2577 6s 3d [133]	no
P. & R. Fleming	cast iron and steel work	no data in job book		£2624 2s 9d [134]	no
Rudolph A. Stoffert	cast iron and steel work	no data in job book		£2654 19s 7d [135]	no
Bladen & Co.	cast iron and steel work	no data in job book		£2508 16s 4d [136]	no
Elder & Co.	cast iron and steel work	no data in job book		no data in job book [137]	no
Robert Murdoch & Co.	cast iron and steel work	no data in job book		no data in job book	no
McCrome & Anderson	cast iron and steel work	no data in job book		no data in job book	no
The Glasgow Steel Roofing Co. Ltd	cast iron and steel work	no data in job book		no data in job book	no
Redpath Brown & Co.	cast iron and steel work	no data in job book		£2447 3s 2d [138]	no
Miller & Sommerville	cast iron and steel work	no data in job book		£2605 14s 9d [139]	no
Fleming Brothers	cast iron and steel work	no data in job book		£2714 0s 0d [140]	no
C. & J. Malloch	glazier	no data in job book		£595 1s 6d [141]	no
William Meikle & Son	glazier	no data in job book		£571 0s 0d [142]	no
McCulloch & Co.	glazier	no data in job book		£620 9s 5d [143]	no
J. & W. Guthrie	glazier	no data in job book		£599 0s 0d [144]	no
Robert Paterson	glazier	no data in job book		£490 0s 0d [145]	no
City Glass Co.	glazier	no data in job book		£494 0s 6d [146]	no
William Anderson	electric lighting	no data in job book		£1058 16s 10d [147]	no

Johnston Park & Co.	electric lighting	no data in job book		£1294 10s 10d [148]	no
Claud Hamilton Ltd	electric lighting	no data in job book		£1329 15s 10d [149]	no
Allan Arthur & Ure	electric lighting	no data in job book		£1349 15s 0d [150]	no
Osbourne & Hunter	electric lighting	no data in job book		£1357 4s 11d [151]	no
W. R. Underhill & Co.	electric lighting	no data in job book		£1366 16s 6d [152]	no
Andrew Hutchison	electric lighting	no data in job book		£1405 8s 8d [153]	no
Telford Grier & MacKay	electric lighting	no data in job book		£1484 1s 8d [154]	no
Anderson & Munro	electric lighting	no data in job book		£1699 18s 2d [155]	no
Malcolm & Allan	electric lighting	no data in job book		£2115 17s 5d [156]	no
M. Stewart & Co.	mason	no data in job book		£9003 13s 2d	yes (10 October 1907)
M. Stewart & Co.	mason	no data in job book		£115 0s 0d [157]	yes (12 May 1908)
M. Stewart & Co.	mason	no data in job book		£120 0s 0d [158]	yes (10 November 1908)
M. Stewart & Co.	mason	no data in job book		£2 5s 0d [159]	yes (12 November 1908)
M. Stewart & Co.	mason	no data in job book		3s per square yard [160]	yes (11 February 1909)
M. Stewart & Co.	mason	no data in job book		£48 16s 0d [161]	yes (17 May 1909)
George Ferguson & Sons	joiner	no data in job book		£5762 13s 11d	yes (10 October 1907)
George Ferguson & Sons	joiner	no data in job book		£16 0s 0d [162]	yes (no data in job book)
James Boyd & Sons	conservatory	no data in job book		£34 5s 0d [163]	yes (14 December 1908)
Henry Hope & Son	steel casements	no data in job book		£250 0s 0d	yes (15 December 1908)
George Ferguson & Sons	joiner	no data in job book		£27 15s 9d [164]	yes (2 February 1909)
George Ferguson & Sons	joiner	no data in job book		£97 7s 6d [165]	yes (5 April 1909)
James Brown	metalwork	no data in job book		£37 9s 6d [166]	yes (5 April 1909)
Redpath, Brown & Co.	steel work	no data in job book		£2447 3s 2d	yes (10 October 1907)
Redpath, Brown & Co.	steel work	no data in job book		£2447 3s 2d [167]	yes (10 October 1907)
Redpath, Brown & Co.	steel work	no data in job book		no data in job book [168]	yes (7 August 1908)
Redpath, Brown & Co.	steel work	no data in job book		£13 12s 6d [169]	yes (9 November 1908)

Redpath, Brown & Co.	steel work	no data in job book		£43 16s 4d [170]	yes (4 June 1909)
Moses Speirs & Son	plumber	no data in job book		£2123 0s 0d	yes (10 October 1907)
Moses Speirs & Son	plumber	no data in job book		£8 17s 6d [171]	yes (23 June 1908)
Moses Speirs & Son	plumber	no data in job book		£125 0s 0d [172]	no data in job book (no data in job book)
Moses Speirs & Son	plumber	no data in job book		£45 0s 0d [173]	no data in job book (no data in job book)
Moses Speirs & Son	plumber	no data in job book		£6 17s 6d [174]	yes (no data in job book)
James Cuthbertson & Son	slater and roughcasting work	no data in job book		£239 16s 3d	yes (10 October 1907)
William Forbes	plaster work	no data in job book		£645 10s 4d	yes (10 October 1907)
Haddow, Forbes & Co.	tile work	no data in job book		£4 9s 0d [175]	yes (7 September 1908)
Haddow, Forbes & Co.	tile work	no data in job book		£14 2s 10d [176]	yes (7 September 1908)
Robert L. Paterson & Co.	glazier work	no data in job book		£490 0s 0d	yes (10 October 1907)
Osborne & Hunter	electric lighting	no data in job book		£1326 4s 6d	yes (25 June 1909)
Osborne & Hunter	electric lighting	no data in job book		£99 13s 0d [177]	yes (11 August 1909)
James Cormack & Sons Ltd	heating and ventilating	no data in job book		£1552 16s 10d	yes (20 February 1908)
James Boyd & Sons	heating and ventilating	no data in job book		£1592 4s 8d	no
Mackenzie & Moncur	heating and ventilating	no data in job book		£1743 18s 4d	no
James Cormack & Sons Ltd	heating and ventilating	no data in job book		£25 0s 0d [178]	yes (6 August 1908)
James Cormack & Sons Ltd	heating and ventilating	no data in job book		£12 5s 6d [179]	yes (30 October 1908)
James Riach	painter work	no data in job book		£239 12s 11d [180]	no
James Riach	painter work	no data in job book		£88 9s 9d [181]	no
John Orr & Sons	painter work	no data in job book		£241 0s 0d [182]	no
John Orr & Son	painter work	no data in job book		£81 3s 0d [183]	no
George Sellars	painter work	no data in job book		£232 19s 0d [184]	no
George Sellars	painter work	no data in job book		£89 0s 0d [185]	no
Charles Carlton & Son	painter work	no data in job book		£199 10s 0d [186]	no
Charles Carlton & Son	painter work	no data in job book		£92 0s 0d [187]	no
Guthrie & Wells	painter work	no data in job book		£240 15s 6d [188]	no

Guthrie & Wells	painter work	no data in job book		£90 6s 9d [189]	no
McCulloch & Co.	painter work	no data in job book		£200 0s 0d [190]	no
McCulloch & Co.	painter work	no data in job book		£82 19s 0d [191]	no
A. & J. Scott	painter work	no data in job book		£247 18s 9d [192]	no
A. & J. Scott	painter work	no data in job book		£95 0s 0d [193]	no
William Douglas & Sons	painter work	no data in job book		£229 17s 0d [194]	no
William Douglas & Sons	painter work	no data in job book		£68 6s 0d [195]	yes (26 August 1908)
Bowie Fisher & Co.	painter work	no data in job book		£211 18s 6d [196]	no
Bowie Fisher & Co.	painter work	no data in job book		£76 1s 0d [197]	no
Macfarlane & Smith	painter work	no data in job book		£199 0s 0d [198]	no
Macfarlane & Smith	painter work	no data in job book		£72 11s 9d [199]	no
H. L. Anderson & Co.	painter work	no data in job book		£178 12s 0d [200]	yes (31 March 1909)
H. L. Anderson & Co.	painter work	no data in job book		£80 0s 0d [201]	no
J. B. Bennett & Sons	painter work	no data in job book		no data in job book [202]	no
J. B. Bennett & Sons	painter work	no data in job book		£90 0s 0d [203]	no
J. M. Newlands	painter work	no data in job book		no data in job book [204]	no
J. M. Newlands	painter work	no data in job book		no data in job book [205]	no
Robert Henderson	painter work	no data in job book		£236 0s 0d [206]	no
Robert Henderson	painter work	no data in job book		£70 0s 0d [207]	no
M. Stewart & Co.	mason	no data in job book		£175 0s 0d [208]	no
William Anderson	mason	no data in job book		£130 0s 0d [209]	no
Daniel MacCallum	mason	no data in job book		£219 0s 0d [210]	no
Crittall Manufacturing Co.	metalwork	11 Finsbury Square, London	9 March 1908	£3 16s 6d [211]	no
George Adam & Son	metalwork	Glasgow	9 March 1908	£3 10s 0d [212]	no
George Adam & Son	metalwork	no data in job book		£21 0s 0d [213]	yes (7 April 1908)
Daniel McCallum	mason	no data in job book		£40 0s 0d [214]	yes (6 May 1908)
Anderson & Munro	lightning conductor	no data in job book		£10 0s 0d [215]	yes (25 June 1908)
Anderson & Munro	lightning conductor	no data in job book		£20 0s 0d	yes (no data in job book)
Limmer Asphalt Paving Co.	asphalt	no data in job book		£189 1s 6d [216]	yes (25 June 1908)
George Adam & Son	metalwork	no data in job book		£2 2s 0d [217]	yes (6 July 1908)
George Adam & Son	metalwork	no data in job book		£11 5s 0d [218]	yes (31 July 1908)
George Adam & Son	metalwork	no data in job book		£9 15s 0d [219]	yes (31 July 1908)
George Adam & Son	metalwork	no data in job book		£2 5s 0d [220]	yes (31 July 1908)
Walter Macfarlane & Co.	iron	no data in job book		£15 18s 0d [221]	yes (7 August 1908)

George Adam & Son	metalwork	no data in job book		£16 0s 0d [222]	yes (9 September 1908)
Alexander Cousland & Son	wire work	no data in job book		10s 6d [223]	yes (23 September 1908)
George Adam & Son	metalwork	no data in job book		£5 17s 3d [224]	yes (3 December 1908)
George Adam & Son	metalwork	no data in job book		£50 0s 0d [225]	yes (25 December 1908)
George Adam & Son	metalwork	no data in job book		£30 2s 0d [226]	yes (5 February 1909)
R. Smith & Co.	metalwork	no data in job book		£44 7s 6d [227]	yes (17 May 1909)
Bryden & Middleton	gates	no data in job book		£5 15s 0d [228]	yes (19 September 1909)
H. L. Anderson & Co.	painter work	no data in job book		£120 0s 0d [229]	yes (28 July 1909)
William Douglas	painter work	no data in job book		£128 0s 0d [230]	no
H. L. Anderson & Co.	painter work	no data in job book		£15 4s 0d [231]	yes (28 July 1909)
H. L. Anderson & Co.	painter work	no data in job book		£2 10s 0d [232]	yes (28 July 1909)
William Kemp & Co.	grates	no data in job book		£26 15s 0d [233]	yes (13 April 1909)
George Ferguson & Sons	joiner work	no data in job book		£115 19s 0d [234]	yes (13 April 1909)
George Ferguson & Sons	joiner work	no data in job book		£8 11s 0d [235]	yes (no data in job book)
The National Telephone Co.	telephone	no data in job book		£58 0s 0d	yes (no data in job book)
The Lithic Flooring Co.	flooring	no data in job book		£12 19s 0d [236]	yes (2 December 1909)
Dykes Bros	clocks	no data in job book		£19 10s 0d [237]	yes (25 September 1909)

Payments (trades):

Name	Type	Payment out sum
M. Stewart & Co.	mason	**First installment**: 29 March 1908 **Final installment**: 15 July 1909 £7100 17s 10d
M. Stewart & Co.	mason	**Payment date**: 25 January 1910 £72 1s 9d [238]
M. Stewart & Co.	mason	**Payment date**: 16 July 1909 £48 16s 0d
George Ferguson & Sons	joiner	**First installment**: 19 June 1908 **Final installment**: 1 October 1908 £5982 6s 7d [239]
George Ferguson & Sons	joiner	**Payment date**: 29 July 1910 £172 15s 6d [240]

Henry Hope & Son	steel casements	**First installment**: no data in job book **Final installment**: 18 March 1909 £221 8s 9d
Redpath, Brown & Co.	steel work	**First installment**: 7 April 1908 **Final installment**: 16 July 1909 £2123 3s 11d
Redpath, Brown & Co.	steel work	**Payment date**: 12 November 1909 £49 4s 8d
Moses Speirs & Son	plumber work	**First installment**: 17 February 1909 **Final installment**: 22 January 1910 £1685 3s 9d [241]
Moses Speirs & Son	plumber work	**Payment date**: 16 March 1910 £42 14s 9d [242]
James Cuthbertson & Son	slater and roughcasting work	**First installment**: 4 February 1909 **Final installment**: 16 July 1909 £162 14s 9d
William Forbes	plaster work	**First installment**: 9 May 1908 **Final installment**: 16 July 1909 £698 0s 3d
Haddow, Forbes & Co.	tile work	**Payment date**: 16 October 1908 £4 9s 0d
Haddow, Forbes & Co.	tile work	**Payment date**: 16 October 1908 £14 2s 10d [243]
McCulloch & Co.	tile work	**Payment date**: 12 November 1909 £1 10s 0d [244]
Robert L. Paterson & Co.	glazier work	**First installment**: 11 December 1908 **Final installment**: 22 January 1910 £621 0s 2d [245]
Osborne & Hunter	electric lighting	**First installment**: 9 September 1908 **Final installment**: 1 November 1909 £2045 6s 0d
James Cormack & Sons Ltd	heating and ventilating	**First installment**: 1909 **Final installment**: 17 January 1910 £2018 13s 10d
James Cormack & Sons Ltd	heating and ventilating	**Payment date**: no data in job book £1 0s 6d [246]
H. L. Anderson & Co.	painter work	**First installment**: 16 July 1909 **Final installment**: no data in job book £394 19s 11d
William Douglas & Sons	painter work	**First installment**: 26 November 1908 **Final installment**: 16 July 1909 £172 14s 8d
William Douglas & Sons	painter work	**Payment date**: 1909 £7 17s 8d [247]
George Adam & Son	metalwork	**Payment date**: 11 June 1908 £21 0s 0d [248]
Daniel McCallum	mason work	**Payment date**: 7 September 1908 £40 0s 0d
Anderson & Munro	lightning conductor	**First installment**: no data in job book **Final installment**: 16 July 1909 £13 7s 6d
Limmer Asphalt Paving Co.	asphalt	**First installment**: 18 September 1908 **Final installment**: 16 July 1909 £296 16s 2d
George Adam & Son	metalwork	**Payment date**: 30 October 1908 £25 7s 0d [249]
Walter Macfarlane & Co.	metalwork	**Payment date**: 23 September 1908 £15 18s 0d [250]

George Adam & Son	metalwork	**Payment date**: 2 February 1909 £18 0s 0d [251]
Alexander Cousland & Son	metalwork	**Payment date**: 30 October 1908 10s 6d [252]
George Adam & Son	metalwork	**Payment date**: 2 February 1909 £1 5s 0d [253]
George Adam & Son	metalwork	**Payment date**: 2 February 1909 £5 14s 0d [254]
George Adam & Son	metalwork	**Payment date**: 3 April 1909 £50 0s 0d [255]
George Adam & Son	metalwork	**Payment date**: 3 April 1909 £30 2s 0d [256]
R. Smith & Co.	metalwork	**Payment date**: 3 April 1909 £7 0s 0d [257]
R. Smith & Co.	metalwork	**Payment date**: 7 July 1909 £45 5s 0d [258]
Bryden & Middleton	gates	**Payment date**: 15 March 1910 £6 5s 6d [259]
H. L. Anderson & Co.	painter work	**Payment date**: 25 January 1910 £233 4s 9d [260]
William Kemp & Co.	grates	**Payment date**: 22 July 1909 £26 15s 0d [261]
George Ferguson & Sons	joiner work	**Payment date**: 20 April 1910 £220 0s 0d [262]
Alexander Cousland & Son	wire work	**Payment date**: 30 September 1909 £10 11s 0d
The National Telephone Co.	telephones	**Payment date**: 15 October 1909 £58 0s 0d
The Lithic Flooring Co.	flooring	**Payment date**: 24 December 1909 £12 19s 2d
Dykes Bros	clocks	**Payment date**: 15 February 1910 £70 10s 6d

Payments (suppliers):

Name	Service		
John Montgomery	Clerk of Works	**First installment**: 30 November 1907 **Final installment**: 17 March 1910	£334 16s 0d [263]

Measurer fee payment: £400 0s 0d [264] (6 February 1908 and 21 July 1909)

Documents

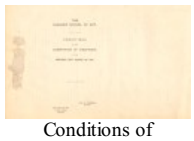
Conditions of Competition, 1896, p. 1

Conditions of Competition, 1896, p. 2

Conditions of Competition, 1896, p. 3

Conditions of Competition, 1896, p. 4

Conditions of Competition, 1896, p. 5


Conditions of Competition, 1896, cover

'Description and Schedule of Contents' accompanying John Honeyman & Keppie's competition entry, 1896 (cover)

'Description and Schedule of Contents' accompanying John Honeyman & Keppie's competition entry, 1896, p. 1

'Description and Schedule of Contents' accompanying John Honeyman & Keppie's competition entry, 1896, p. 2

'Description and Schedule of Contents' accompanying John Honeyman & Keppie's competition entry, 1896, p. 3

'Description and Schedule of Contents' accompanying John Honeyman & Keppie's competition entry, 1896, p. 4

'Description and Schedule of Contents' accompanying John Honeyman & Keppie's competition entry, 1896, p. 5

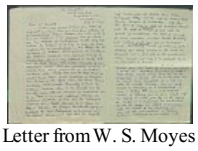
'Description and Schedule of Contents' accompanying John Honeyman & Keppie's competition entry, 1896, p. 6

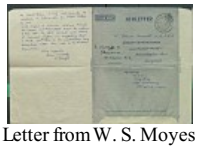
'Description and Schedule of Contents' accompanying John Honeyman & Keppie's competition entry, 1896, p. 7

'Description and Schedule of Contents' accompanying John Honeyman & Keppie's competition entry, 1896, p. 8

Site plan issued with Conditions of Competition, 1896

Conditions of appointment of Honeyman, Keppie & Mackintosh, signed by Mackintosh, 1907


Letter from W. S. Moyes to Thomas Howarth, 22 July 1947, p. 1


Letter from W. S. Moyes to Thomas Howarth, 22 July 1947, p. 2

Images

The Glasgow School of Art, film by Pittiwaf Nelson for Glasgow Museums, 1996

Alexander McGibbon, Glasgow School of Art (half-built) from N.W., 1907

Drawing of library wing under construction, by Muirhead Bone, c. 1908

Reconstruction of interior of Threave Castle, MacGibbon and Ross, The Castellated and Domestic Architecture of Scotland, vol. 1, 1887

View from S.E., photograph by Annan, c. 1910

Interior of the Loggia, photograph by Annan, c. 1910

W. corridor, first floor, photographed by Annan, c. 1910

Part of the Museum, photograph by Annan, c. 1910

E. corridor, first floor, photographed by Annan, c. 1910

Main staircase, photograph by Annan, c. 1910

Museum, looking E., photograph by Annan, c. 1910

Library wing from S.W., photographed by Annan, c. 1910

Main entrance, photographed by Annan, c. 1910

National Art Training School, South Kensington, by Francis Fowke, 1863

Interior of library, photograph by Bedford Lemere, 1910

Headmaster's room, photograph by Bedford Lemere, 1910

Professor's studio, photograph by Bedford Lemere, 1910

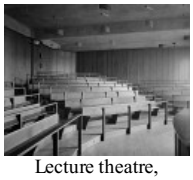
Studio at E. end of attic, photograph by Bedford Lemere, 1910

Loggia, photograph by Bedford Lemere, 1910

Studio above library, photograph by Bedford Lemere, 1910

Detail of E. stair, photograph by Bedford Lemere, 1910

Detail of W. stair, photograph by Bedford Lemere, 1910


Lecture theatre, photograph by Bedford Lemere, 1910

Modelling studio, photograph by Bedford Lemere, 1910

Basement modelling studio, photograph by Bedford Lemere, 1910

Life modelling studio, photograph by Bedford Lemere, 1910

Basement corridor, photograph by Bedford Lemere, 1910

First-floor corridor looking W., photograph by Bedford Lemere, 1910

Original board room converted to studio, photograph by Bedford Lemere, 1910

Architecture studio at N.W. corner of ground floor, photograph by Bedford Lemere, 1910

New board room, photograph by Bedford Lemere, 1910

Balcony in front of library windows, photograph by Bedford Lemere, 1910

Interior of library looking W., photograph by Bedford Lemere, 1910

Museum, looking W., photograph by Bedford Lemere, 1910

Entrance hall, looking N., photograph by Bedford Lemere, 1910

Entrance hall, looking S., photograph by Bedford Lemere, 1910

N. front

First-floor studio window

Centre of N. front

N. front

E. elevation

Oriel and turret, E. front

E. elevation

W. front

W. entrance

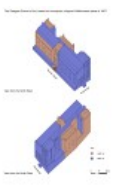
Detail of W. front

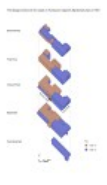
S.W. wing

View from S.W.

Detail of S.W. wing

Carving over Renfrew Street entrance


Axonometrics from N.W. and S.W. showing building phases


Floor plans of 1907

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20: Glasgow School of Art Archives: Governors' minutes, GOV 2/4.

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23: Glasgow City Archives Collection: Glasgow Dean of Guild Court, Register of Inspections, D-OPW 25/64, p. 3.

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25: Glasgow City Archives Collection: Glasgow Dean of Guild Court, Register of Inspections, D-OPW 25/64, p. 3.

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27: Glasgow City Archives Collection: Glasgow Dean of Guild Court, Register of Inspections, D-OPW 25/64, p. 3.

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30: Glasgow School of Art Archives: invoice for travelling expenses, GOV 5/7/69. W. B. Sayers, consulting electrician, had already visited this new building on 17 March (Glasgow School of Art Archives: bills and receipts, GOV 5/7/107).

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41: Glasgow School of Art Archives: Governors' minutes, GOV 2/5.

42: Glasgow School of Art Archives: Governors' minutes, GOV 2/5.

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44: Glasgow School of Art Archives: Finance Committee minutes, GOV 2/5, 9 November 1906.

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120: Glasgow School of Art Archives: Secretary's and Treasurer's letters, SEC 2, letter from E. R. Catterns to Renny Watson, 27 October 1896. Newbery could not have failed to recognise Mackintosh's design from the graphic style of the attached 'seal'.

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124: Lewis F. Day, 'Decorative and Industrial Art at the Glasgow Exhibition (third notice)', *Art Journal*, 1901, pp. 273–7.

125: Glasgow School of Art Archives: Description and Schedule of Contents of design for Glasgow School of Art, GOV 5/4/10.

126: Mackintosh wrote one of the numerous certificates authorising payments to contractors, though it was signed by Keppie: Glasgow School of Art Archives: bills and receipts, GOV 5/7/8. In April 1899 he claimed travelling expenses for a visit to the Municipal School of Science and Technology in Brighton, apparently to see its electric lighting, following a visit there by consulting electrician W. B. Sayers: Glasgow School of Art Archives: bills and receipts, GOV 5/7/69; Glasgow School of Art Archives: bills and receipts, GOV 5/7/107.

127: It may be significant that when Patrick Geddes organised a group visit to the School in connection with the 1901 International Exhibition, it was conducted by Mackintosh rather than Keppie: Volker M. Welter, 'Arcades for Lucknow: Patrick Geddes, Charles Rennie Mackintosh and the Reconstruction of the City', *Architectural History*, 42, 1999, pp. 316–32.

128: Glasgow School of Art Archives: Description and Schedule of Contents of design for Glasgow School of Art, GOV 5/4/10.

129: The long, narrow window in the turret was originally shorter. It was lengthened as part of the 1907–9 changes.

130: Hermann Muthesius, 'Die Glasgower Kunstbewegung: Charles R. Mackintosh und Margaret Macdonald-Mackintosh', *Dekorative Kunst*, 5, March 1902.

131: The Hunterian, University of Glasgow: GLAHA 53012/22 and 53012/23. The similarity is more marked in the drawing submitted to the Glasgow Dean of Guild Court for approval.

132: British Museum, 1981,1212.32, reproduced in the *British Architect*, 44, 29 November 1895, following p. 380; The Hunterian, University of Glasgow: GLAHA 41071.

133: Glasgow School of Art Archives: Description and Schedule of Contents of design for Glasgow School of Art, GOV 5/4/10.

134: *Architect*, 48, 22 July 1892, after p. 56.

135: *British Architect*, 38, 2 December 1892, following p. 413; *Building News*, 68, 17 May 1895, p. 688; *Building News*, 68, 21 June 1895, pp. 865–6; *Building News*, 69, 9 August 1895, pp. 189, 209.

136: *British Architect*, 29, 18 May 1888, following p. 353; *British Architect*, 45, 24 January 1896, following p. 59.

137: There is no record of Watson and King's deliberations, and although all 11 entries were exhibited in the Corporation Galleries in February 1897, there are no reviews that describe them: *Glasgow Herald*, 2 February 1897, p. 7.

138: George M. Rawson, *Francis H. Newbery and the Glasgow School of Art*, unpublished PhD thesis, University of Glasgow, 1996, p. 247.

139: The marble relief was not unveiled until 16 January 1903: *Scotsman*, 17 January 1903, p. 11.

140: *Evening Times*, 21 December 1899, p. 2. Disatisfaction with the original colouring is suggested by a request from the Building Committee during construction of the W. wing in 1909, that 'all the stained wood in the new building should be kept light in tone': Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/4, 30 April 1909. On 30 September 1936, the *Scottish Daily Express* reported that 'The panelling around the stairway [of the Glasgow School of Art] has been scraped of its dark Jacobean staining and left a lighter colouring.'

141: Glasgow School of Art Archives: Description and Schedule of Contents of design for Glasgow School of Art, GOV 5/4/10h.

142: Glasgow School of Art Archives: Governors' minutes, GOV 2/4, 11 October 1897.

143: Glasgow School of Art Archives: Description and Schedule of Contents of design for Glasgow School of Art, GOV 5/4/10.

144: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/1, 7 October 1897.

145: Glasgow School of Art Archives: Governors' minutes, GOV 2/4, 11 October 1897.

146: George Cairns, 'The Glasgow School of Art: the missing link of environmental systems history', *Charles Rennie Mackintosh Society Newsletter*, 66, Winter/Spring 1995, pp. 5–10.

147: Glasgow School of Art Archives: Description and Schedule of Contents of design for Glasgow School of Art, GOV 5/4/10.

148: Glasgow School of Art Archives: bills and receipts, GOV 5/7/69, GOV 5/7/107.

149: *Studio*, 19, 1900, pp. 51–6.

150: *Building Industries*, 10, 16 January 1900, pp.146–7, 153.

151: *Art Journal*, 1901, p. 277.

152: George M. Rawson, *Francis H. Newbery and the Glasgow School of Art*, unpublished PhD thesis, University of Glasgow, 1996, p. 268.

153: Glasgow School of Art Archives: Governors' minutes, GOV 2/5, 27 September 1906. Glasgow School of Art Archives: Director's correspondence, DIR 5/2, letter from Newbery to J. J. Burnet, 7 September 1906; letter from Newbery to Mackintosh, 10 September 1906; letter from Newbery to W. F. Salmon, 9 October 1906; letter from Newbery to Mackintosh, 16 October 1906.

154: Glasgow School of Art Archives: Governors' minutes, GOV 2/5, 29 January 1907. Glasgow School of Art Archives: appeal leaflet, GOV 5/3/13. McGibbon is identified as author of the sketch in the minutes of the Extension Committee (soon renamed the Building Committee) GOV 5/1/3, 13 Nov 1906.

155: Glasgow School of Art Archives: Governors' minutes, GOV 2/5, 31 January 1906.

156: Glasgow School of Art Archives: Governors' minutes, GOV 2/5, 25 February 1907.

157: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/3.

158: Glasgow School of Art Archives: Governors' minutes, GOV 2/5, 18 September 1901, 7 November 1901, 8 January 1902.

159: Glasgow School of Art Archives: agreement signed by Honeyman, Keppie & Mackintosh, GOV 5/5/3a.

160: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/3, 10 September 1907.

161: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/3, 7 February 1908.

162: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/3, 26 February 1908.

163: As originally designed in 1897, the W. elevation had the same left-right division as the E., with almost all the windows confined to one side. The library windows were relatively small and arranged in two tiers, reflecting the internal balcony.

164: *Glasgow Herald*, 26 June 1907, p. 4.

165: Thomas Howarth, *Charles Rennie Mackintosh and the Modern Movement*, London: Routledge & Kegan Paul, 2nd edn, 1977, p. 84. Presumably they were chosen for their relevance to an art library: Palladio's *Four Books of Architecture* and Cellini's treatises on goldsmithing and sculpture are seminal texts in European art; St Francis, though not primarily a writer, exercised a profound influence on art through his poetry and teachings.

166: Glasgow School of Art Archives: Building Committee minutes, GOV/1/4, 2 December 1908.

167: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/3, 7 February 1908.

168: George M. Rawson, *Francis H. Newbery and the Glasgow School of Art*, unpublished PhD thesis, University of Glasgow, 1996, p. 252.

169: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/3, 30 April 1908.

170: Holden's design was illustrated in the *Builder*, 89, 2 September 1905, after p. 254 .

171: Glasgow School of Art Archives: Bulding Committee minutes, GOV 5/1/4, 26 January 1909. Glasgow School of Art Archives: Governors' Minutes, GOV 2/7, Library and Materials Committee, 3 December 1909.

172: Glasgow School of Art Archives: Governors' Minutes, GOV 2/7, Library and Materials Committee, 3 December 1909.

173: Glasgow School of Art Archives: Building Committee Minutes, GOV 5/1/4, 9 December 1909.

174: Glasgow School of Art Archives: Building Committee Minutes, GOV 5/1/4, 19 April 1910.

175: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/4, 26 January 1909.

176: Glasgow School of Art Archives: Governors' Minutes, GOV 2/7, Subcommittee on Books, Casts and Materials, 29 September 1909.

177: George M. Rawson, *Francis H. Newbery and the Glasgow School of Art*, unpublished PhD thesis, University of Glasgow, 1996, pp. 256–7; *Glasgow Herald*, 26 June 1907, p. 4.

178: Honeyman, Keppie & Mackintosh paid Bedford Lemere & Co. £23 2s 0d on 30 March 1910, probably for their extensive photography of the Glasgow School of Art: The Hunterian, University of Glasgow: John Honeyman & Keppie / Honeyman, Keppie & Mackintosh / Keppie Henderson cash book, 1889–1917, GLAHA 53079, p. 133.

179: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/4, 22 December 1908. Thomas Howarth mistakenly gave the date of this work as 1906.

180: Alan Crawford, *Charles Rennie Mackintosh*, London: Thames & Hudson, 1995, pp. 40–1.

181: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/4, 22 Decemeber 1908, 26 January 1909.

182: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/3, 9 April 1908.

183: Glasgow School of Art Archives: Building Committee minutes, GOV 5/1/3, 9 April 1908.

184: Edinburgh, National Archives of Scotland: ED 26/274.

185: Glasgow School of Art Archives: Director's correspondence, DIR 5/2, p. 279.

186: *Glasgow Herald*, 26 June 1907, p. 4.

187: *British Architect*, 72, 31 December 1909, pp. 494, xviii.

188: *The Vista: The Quarterly Magazine of the Glasgow School of Architecture Club*, 1, no. 4, Autumn 1909, pp. 100–1.

189: *The Vista: The Quarterly Magazine of the Glasgow School of Architecture Club*, 1, no. 3, April 1909, p. 79.

190: Charles Marriott, *Modern English Architecture*, London: Chapman and Hall, 1924, p. 129.

191: Nikolaus Pevsner, *Pioneers of the Modern Movement: from William Morris to Walter Gropius*, London: Faber & Faber, 1936, pp. 158–63.

192: Strathclyde University Archives, Patrick Geddes papers, T-GED 5/3/70. A reference in the same lecture to Geddes having practised gardening for 50 years suggests it cannot have been written much before 1914.

193: Glasgow School of Art Archives: letter from Newbery to Rev. John Smith, 13 May 1912, Director's letters, Newbery 1912–13, N-S, DIR 5/10.

194: Glasgow School of Art Archives: Governors' minutes, GOV 2/9, 15 January 1914; Governor's minutes, GOV 2/10, 18 March 1915.

195: Geoffrey M. Wimpenny, 'Renovation and Restoration of the Glasgow School of Art', *Charles Rennie Mackintosh Society Newsletter*, 13, Autumn 1976.

196: *Glasgow School of Art Annual Report 1977–8*, p. 14.

197: Jocelyn Grigg, 'The Glasgow School of Art', *Charles Rennie Mackintosh Society Newsletter*, 37, May 1984, p. 2.

198: Peter Trowles, 'Glasgow School of Art', in *Charles Rennie Mackintosh Society Newsletter*, 65, Autumn 1994, p. 8.

199: 'HLF supports the GSA', *Charles Rennie Mackintosh Society Newsletter*, 91, Winter 2006, p. 25.

200: Seona Reid, 'Mackintosh Building Centenary', *Charles Rennie Mackintosh Society Newsletter*, 95, Summer 2009, p. 21.

201: Alternative tender, possibly for different type of stone: £12,790 15s 4d.

202: 'returned with thanks.'

203: This is the accepted tender, evidently for erecting the first half of the building only. For the whole building, alternative tenders of £11,610 (in Whitespot stone) and £11,760 (in Giffnock stone) are recorded.

204: 'returned with thanks.'

205: Note in pencil: 'Commerce Street - Joiners'.

206: This is the accepted tender, evidently for the first half of the building only. For the whole building, a tender of £6815 13s 11d is recorded.

207: This is the accepted tender, evidently for the first half of the building only. For the whole building, a tender of £580 8s 0d is recorded.

208: This is the accepted tender, evidently for the first half of the building only. For the whole building, a tender of £680 19s 0d is recorded.

209: For 'heating coil in ladies life class'.

210: Should presumably be 1897 or 1898.

211: This is the accepted tender, evidently for the first half of the building only. For the whole building, a tender of £438 0s 11d is recorded.

212: Should presumably be 1897 or 1898.

213: Should presumably be 1897 or 1898.

214: Should presumably be 1897 or 1898.

215: Should presumably be 1897 or 1898.

216: Should presumably be 1897 or 1898.

217: Should presumably be 1897 or 1898.

218: Should presumably be 1897 or 1898.

219: Should presumably be 1897 or 1898.

220: Should presumably be 1897 or 1898.

221: Should presumably be 1897 or 1898.

222: Should presumably be 1897 or 1898.

223: Should presumably be 1897 or 1898.

224: Should presumably be 1897 or 1898.

225: Should presumably be 1897 or 1898.

226: Should presumably be 1897 or 1898.

227: Should presumably be 1897 or 1898.

228: Should presumably be 1897 or 1898.

229: Should presumably be 1897 or 1898.

230: Should presumably be 1897 or 1898.

231: Should presumably be 1897 or 1898.

232: Should presumably be 1897 or 1898.

233: Should presumably be 1897 or 1898.

234: This is the accepted tender, evidently for the first half of the building only. For the whole building, a tender of £569 0s 3d is recorded.

235: This is the accepted tender, evidently for the first half of the building only. For the whole building, a tender of £1145 0s 7d is recorded.

236: For '12 brackets at windows each 25/-'.

237: For 'windows Steel beams 7 x 3½ 1/6 per ft. beads & screws 1¾ per ft.'

238: For 'hand lift'.

239: 'paid to a/c 14 Oct. 99 £150.'

240: Comprises £9 15s 0d for 'Balcony Railing'; £50 10s 0d for 'Front Area Railing'; £9 for 'Finial Dalhousie St'; and £6 15s 0d for '[Finial] Renfrew St'.

241: Comprises £9 15s 0d for 'Balcony Railing'; £50 4s 0d for 'Front Area Railing'; £10 for 'Finial Dalhousie St'; and £7 15s 0d for '[Finial] Renfrew St'.

242: For 'Grates for Parlour & Bedroom Janitor's House'.

243: Comprises £7 8s 6d for grates for the parlour and bedroom of the Janitor's House, plus £1 1s 0d for two fenders, and 11s 0d for tongs and a poker.

244: Includes £336 3s 2½d for 'measurement & jobbing a/c.'

245: For 'platform foundation stone laying.'

246: Half measurer's fee: £3 10s 0d.

247: Comprises £435 10s 0d for 'wiring of school'; £261 for 'motor transformer & spare armature'; and £359 10s 3d for 'fittings'; less £4 17s 6d for 'items payable by Heating Eng,'

248: For 'fees including outlay'.

249: For 'wrot iron brackets at windows'.

250: For 'wrot iron brackets at windows'.

251: For 'Hand Lift'.

252: For 'lamp at door. railings balcony. & finials'.

253: For 'grates etc in Janitor's House.'

254: For 'iron railing'.

255: For 'Fleming Memorial (Newbery).'

256: For 'Key for Opening ([Newbery])'

257: For '5 Fireplaces'.

258: For 'heating in School.'

259: For heating 'in technical Studios.'

260: For 'Speaking tubes, bells etc.'

261: For 'heating in ladies life Rm.'

262: Probably the first instalment of a larger payment.

263: For '12 chairs' at 38s each.

264: For '1 circular table'.

265: For '2 arm chairs'.

266: For 'Cork carpet [laying?] extra'.

267: For 'Shop alterations'.

268: For 'Shop alterations'.

269: For 'Design for Stairs'.

270: For 'Flooring low modelling rooms' with 3in x 1 ⅛in white pine.

271: For 'Flooring low modelling rooms' with 9in x 3in pitch pine block.

272: For 'Flooring low modelling rooms' with 3in x 1 ⅛in white pine.

273: For 'Flooring low modelling rooms' with pitch pine block.

274: For 12 chairs, circular table and two arm chairs.

275: For cork carpet.

276: For 'flooring of basement'.

277: 'Cancelled'.

278: 'Cancelled'.

279: 'Cancelled'.

280: 'Cancelled'.

281: 'letter enclosed / executed former building'; 'Cancelled'.

282: 'Cancelled'.

283: 'Cancelled'.

284: 'Cancelled'.

285: 'Cancelled'.

286: 'Cancelled'.

287: 'Cancelled'.

288: 'Cancelled'.

289: 'Cancelled'.

290: 'Cancelled'.

291: 'Cancelled'.

292: 'Cancelled'.

293: 'Cancelled'.

294: 'Cancelled'.

295: 'Cancelled'.

296: 'Cancelled'.

297: 'Cancelled'.

298: 'Cancelled'.

299: 'Cancelled'.

300: 'Cancelled'.

301: 'Cancelled'.

302: 'Cancelled'.

303: 'Cancelled'.

304: 'Cancelled'.

305: 'Cancelled'.

306: 'Cancelled'.

307: 'Cancelled'.

308: 'Cancelled'.

309: 'Cancelled'.

310: 'Cancelled'.

311: 'Cancelled'.

312: 'Cancelled'.

313: 'Cancelled'.

314: 'Cancelled'.

315: 'Cancelled'.

316: 'Cancelled'.

317: 'returned with thanks'; 'Cancelled'.

318: 'Cancelled'.

319: 'Cancelled'.

320: 'Cancelled'.

321: 'Cancelled'.

322: 'Cancelled'.

323: 'Cancelled'.

324: 'Cancelled'.

325: 'Cancelled'.

326: 'Cancelled'.

327: 'Cancelled'.

328: 'Cancelled'.

329: 'Cancelled'.

330: 'Cancelled'.

331: 'Cancelled'.

332: 'returned with thanks'.

333: 'Cancelled'.

334: 'Cancelled'.

335: 'Cancelled'.

336: 'Cancelled'.

337: 'returned with thanks'; 'Cancelled'.

338: 'Cancelled'.

339: 'Cancelled'.

340: 'Cancelled'.

341: 'Cancelled'.

342: 'Cancelled'.

343: 'Cancelled'.

344: 'Cancelled'.

345: 'Cancelled'.

346: 'Cancelled'.

347: 'Cancelled'.

348: 'Cancelled'.

349: 'Cancelled'.

350: 'Cancelled'.

351: 'Cancelled'.

352: 'Cancelled'.

353: 'Cancelled'.

354: 'Cancelled'.

355: 'Cancelled'.

356: 'Cancelled'.

357: 'Two Boiler Seats'.

358: 'Fireplaces in Professors Studios'.

359: 'Cement fillet along projection N. side. Deduct £8 for ½ of new screen in Life Room 1st floor.'

360: 'Hom[illegible] Scott Street footpath.

361: 'Supplying 4 clay bu[illegible] (£12 12s). 1 clay stall under chute from corridor (£5 10s), 3 clay stalls at wall in clay room (£13 0s). Carving table at South wall in stone carving room (£7 0s 0d). Do. Do. & slab at north wall in Do. (£7 14s 0d). Slapping wall of corridor for chute & making good (£2 0s 0d). Cutting concrete floor of Life Modelling Room for chute & lift (£1 0s 0d).'

362: For 'Screen between Antique & Life Rm. / M. Stewart & Co to pay £8. 0. 0.'

363: Comprises £23 for Conservatory, £2 for 'Slate Tank' and £9 5s 0d for 'Low pressure Heating apparatus'.

364: For 'Taking out 17 wood & putting in 17 iron sashes'; 'owing to insurance'.

365: For 'Bookcases in Library'. Another note, dated 15 December 1908, says: 'Library fittings £90 extra / see letter from [illegible] 10th Dec. 1908'.

366: For 'Metal Air Ducts'.

367: This figure may include 'Joists for fireproof floors over life room.'

368: Comprises: ten 'Brackets for passage over Museum ' at 30s each; '4" x 3 Angles' at 10½d per foot; '3" x 3" Tees' at 7½d per foot; and bolts and nuts 'as per schedule'.

369: For 'Steels for Passage to Sub-Basement' at 'schedule rates'.

370: For 'Steels & Hangers for New Shop & Offices including fitting up'.

371: For 'Additional height of urinals in new Lavatory / Additional cost of ears for pipes on back wall / Additional for holdfasts for downpipes new portion'.

372: For 'Cleaning'.

373: For 'Gas pipes to Studios & [illegible]'.

374: For 'Alterations Ladies Tea Room'.

375: For '24 tile panels for East Staircase'.

376: For 'Tile work West Staircase'.

377: For 'fittings for Lecture Theatre and Library'.

378: 'Supply or return Professors Studios'.

379: For 'Copper loop between boilers'.

380: For painting 'New Portion'.

381: For painting 'Old Portion'.

382: For painting 'New Portion'.

383: For painting 'Old Portion'.

384: For painting 'New Portion'.

385: For painting 'Old Portion'.

386: For painting 'New Portion'.

387: For painting 'Old Portion'.

388: For painting 'New Portion'.

389: For painting 'Old Portion'.

390: For painting 'New Portion'.

391: For painting 'Old Portion'.

392: For painting 'New Portion'.

393: For painting 'Old Portion'.

394: For painting 'New Portion'.

395: For painting 'Old Portion'. A further £20 is recorded as 'sum allowed for altering & painting Janitors House', and a further £15 as 'sum allowed for Temporary Exhibition'.

396: For painting 'New Portion'.

397: For painting 'Old Portion'.

398: For painting 'New Portion'.

399: For painting 'Old Portion'.

400: For painting 'New Portion'.

401: For painting 'Old Portion'.

402: For painting 'New Portion'.

403: For painting 'Old Portion'.

404: For painting 'New Portion'.

405: For painting 'Old Portion'.

406: For painting 'New Portion'.

407: For painting 'Old Portion'.

408: For 'Building in new & old Boilers and slapping opening between existing and new Boiler House'.

409: For 'Building in new & old Boilers and slapping opening between existing and new Boiler House'. Anderson's tender does not include slapping.

410: For 'Building in new & old Boilers and slapping opening between existing and new Boiler House'.

411: For 'Grill for Sub basement Porch'.

412: For 'Grill for Sub basement Porch'.

413: For fourteen 'Wrot Iron Brackets for 1st floor Windows' at 30s each.

414: For 'Slapping between old & new Boiler Houses'.

415: For 'altering existing lightning conductor'.

416: For 'covering of roofs / do. floor of coal chamber [illegible] 3 year / guarantee'.

417: For six 'Iron Brackets for Front Area' at 7s each.

418: For three 'Balcony Railings' at £3 15s 0d each.

419: For '1 Piece Railing on Stairs'.

420: For '[illegible] Grill E. Stair'.

421: For 'Circular Stair'.

422: For '4 Iron Suspenders for curtain rods'.

423: For 'Wire Guard'.

424: For '13 Brackets for Low Modelling Room / later acceptance 9/6 each'.

425: For 'Iron Railings at front area West Section'.

426: For fourteen 'Brackets at Windows' at £2 3s 0d each.

427: For 'Wrot. Iron Railing Scott Street'.

428: For 'Bostwick Gate at Entrance'.

429: For 'Painter work proposed to be done in East Portion.'

430: For 'Painter work proposed to be done in East Portion.'

431: For 'Glazier Work'.

432: For 'Joiner Work'.

433: For 'Grates for Studios'.

434: For fifty-three Architectural Tables at £1 19s 0d each, and six at £2 2s 0d each. The contractor submitted a 'subsequent offer' of £1 10s 0d each.

435: For four 'opening sashes in North Windows' at £2 3s 0d each. The Job Book also refers to a letter dated 19 March 1909, and to a 'supplementary list' of 'extra fittings'.

436: 'Per A. C. Macdonald 6/6 per yard sq.'

437: '3/- to be deducted from each for dials'.

438: '1st jobbing account.'

439: Various illegible notes in pencil beside these payments, including 'Library fitting'. Half measurer's fee: £9 9s 0d.

440: 'Suplementary'.

441: Half measurer's fee: £1.

442: For jobbing account.

443: 'Not to go in measurement'.

444: For 'Tiles in Lavatories'.

445: Includes half measurer's fee: 12s 0d.

446: For 'jobbing & ½ measurer's fee.'

447: For 'Temporary Exhibition'.

448: For 'Iron Brackets'.

449: For 'Railing'.

450: For 'Iron Stair'.

451: For '4 Hangers'.

452: For 'Wire Guard'.

453: For 'Repairing copper bells'.

454: For '12 Brackets low modelling'.

455: For 'Iron Railings Front Area'.

456: For 'Brackets at Windows'.

457: For 'Ash bogey above Coal Store'.

458: Comprises £44 7s 6d for 'Iron Railing Scott St.', and 17s 6d for iron railing 'between Panorama Wall & Railing'.

459: For 'Collapsible Gate'.

460: Includes £12 17s 9d for jobbing.

461: For 'Grates & Fireplaces in Studios'.

462: For 'jobbing a/c' and 'estimates'.

463: Montgomery received regular monthly payments varying between £12 12s 0d and £4 4s 0d. Between August and September 1908 he received 2s 9d for travelling expenses to Boness.

464: The record of measurer fee payments appears to be incomplete.

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