

SMM 1's Origins

CELEBRATING THE CENTENARY OF QUANTITY SURVEYING'S FIRST NATIONAL
STANDARD METHOD OF MEASUREMENT

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SMM 1's Origins

Celebrating the Centenary of Quantity Surveying's First 'National' Standard Method of Measurement

Introduction

The first edition of the standard method of measurement (SMM 1) was published by the RICS 100 years ago in 1922. The New Rules of Measurement (NRM) published in 2014, represent the tenth¹ version of a document that is used to assist with the prediction of the cost of buildings, procurement, and the cost control of construction operations.

In the year of SMM 1's centenary, we think it is appropriate that attention should be given to this seminal work in Quantity Surveying's history and acknowledge the efforts of the people who prepared it.

This article sheds some light on the problem which SMM 1 was intended to solve and the work of a Joint Committee in the creation of the first 'national' standard method of measurement (SMM 1).

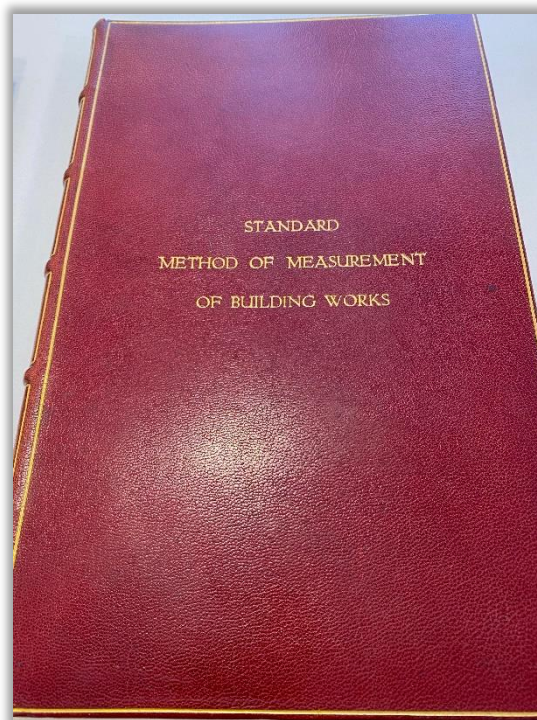


Figure 1 – SMM 1

Builders' estimating problems

The origins of SMM1 can be traced back to the 19th century, which also witnessed an increase in the number of people defining themselves as professionals and the rise in importance of professional regulation. This was the period of establishment of professional bodies for example -the Chartered

¹ Comprising SMMs 1 to 7, plus two editions of SMMs 5 and 7, plus NRM.

Institute of Building (CIOB) 1834, Royal Institute of British Architects (RIBA) 1837, Royal Institution of Chartered Surveying (RICS) 1868, Institution of Civil Engineers (ICE) 1818 and, National Federation of Building Trade Employers (NFBTE) 1878. These organisations, headquartered in London, had influential semi-autonomous regional centres whose main purpose was the promotion of their profession's contribution to the social and economic development of their respective regions.

At this same time, construction industry clients considered that the use of open competition was the most effective way to promote efficiency and equity in the selection of contractors. On the supply side, contractors were increasingly using subcontractors to undertake specialised aspects of projects and, in recognition of the difficulty in obtaining reliable tenders for these elements, they needed to develop more effective approaches. At this time specialised trade associations in NW England, examples being brickwork, joinery, stonework and roofing, published guidance in the form of pamphlets on inclusions within tenders and approaches to be taken to the measurement of work from architect's drawings. This trade guidance was the start of the formulation of standard approaches to the measurement of building.

Examples from the Late 1800s of Different Approaches to the Quantification of Masonry

If formulation of measurement was the objective, a question arises as to who should undertake this ancillary but important part of procuring a building.

For a long time (how long, is the subject of our further work) builders relied upon quantities prepared by others as the basis upon which resources were assessed and a tender prepared. However, without a set of measurement rules to follow, quantification was varied (not just units of measurement, but what and how items were measured) meaning that the person doing the estimating was frequently left in some difficulty as to the meaning of each item. Consequently, rigorous, and accurate tendering was challenging² and often led to post contract disputes. To exemplify this issue, we have analysed copies of Bills of Quantities from the late 1800s which illustrate the different approaches to measurement of masonry. These documents came into our possession through happenstance and enquiry as explained below.

Differences in quantification in a Victorian Memorial, College Building, Library and Church

The first example is provided by Thomas Taylor, Surveyor, who provided the BQ for Manchester's Albert Memorial in 1864, designed by Thomas Worthington, Architect, as a tribute to Prince Albert (Queen Victoria's consort)³.

² SMM 1's Preface goes into more detail about the problems builders faced and is reproduced in the Appendix.

³ *Bill of Quantities of the Several Works required in the Erection and Completion of the Albert Memorial, Manchester*

Two more masonry examples are provided by the architect Alfred Waterhouse⁴. In 1883, he designed and caused to be quantified, additional buildings for Owen's College⁵, Manchester⁶. And for the same client, in 1894, the Christie Library⁷.

The fourth example is from William Waddington & Son, Architects, who in 1898 provided the design, but also, perhaps less expectedly, the Bills of Quantities, for a new Wesleyan Church⁸.

In the same era, mighty industrialists in Manchester constructed the Ship Canal whose design, quantification, and construction (and cost overruns) are told another day⁹.

What can the quantification of the masonry in these four instances tell us about the state of quantity surveying in the late 1800s and foretell about SMM 1 which was not published until 1922?¹⁰

The 'Preambles'

When comparing the four documents, one of the first differences to note is that three of the BQs include what QSs would now consider to be 'measurement preambles' prior to the quantification of the masonry. However, whilst each preamble provides an explanation of how, in general, masonry has been measured, there are significant differences between them.

For example, in the BQ for the Wesleyan Church, stone is described as 'measured net', but no explanation of what 'net' means in this context is provided. In contrast, the BQs for Owen's College and Christie Library also state that the stone is measured net but provide further explanation as to its meaning.

⁴ The same architect who in the late 1860s designed Manchester Town Hall, now regarded as one of the finest examples of Neo-Gothic architecture in the UK.

⁵ Founded in 1851 and Manchester University's forerunner (<https://www.manchester.ac.uk/discover/history-heritage/history/victoria/>).

⁶ *Estimate for Erecting and Completing Additional Buildings for Owen's College in the Oxford Road, Manchester*

⁷ *Quantities of the Labor and Materials required in the Erection and Completion of the Christie Library*

⁸ *Bill of Quantities of Labor and Materials required in the Erection of a New Wesleyan Church, Hindley, nr Wigan*

⁹ Quantified under the direction of Sir Edward Leader Williams, Engineer in Chief of the Manchester Ship Canal and comprising 37 separate BQs. The final cost of the canal was £15 million, 'more than half as much again as the first estimates but, through no fault of the directors and engineers, it took six years instead of four to complete.' (Owen, D. *The Manchester Ship Canal*, Manchester University Press, 1983:45)

¹⁰ We are grateful to Alan Comish FRICS, of Stockport College of Technology and UMIST who provided the BQs of the Albert Memorial and Wesleyan Church, and Mr. Jeremy Parrett, Special Collections Archivist, Manchester Metropolitan University, who provided the two Owen's College BQs.

Owen's College:

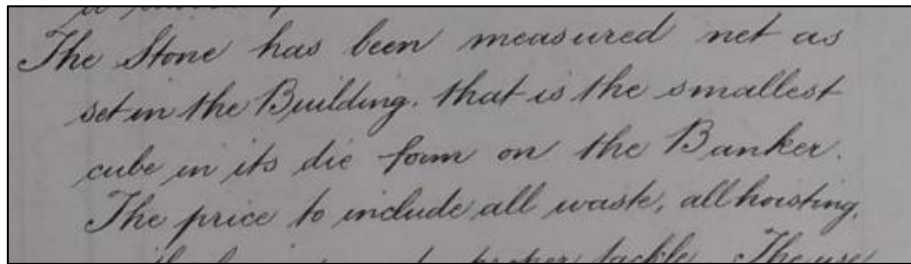


Figure 2 – Extract from Owen's College BQ, 'measured net'

This extract reads:

'The stone has been measured net as set in the building, that is the smallest cube in its die form on the Banker' (Owen's College)

Christie Library:

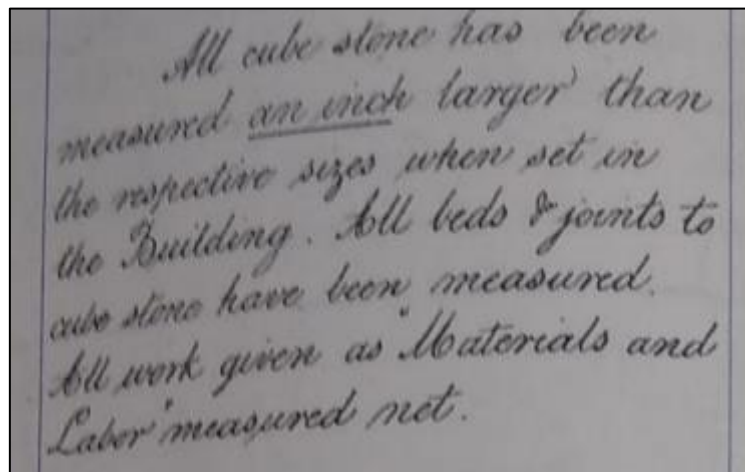


Figure 3 – Extract from Christie Library BQ, 'an inch larger'

This extract reads:

'All cube stone has been measured an inch larger than the respective size when set in the building. All beds & joints to cube stone have been measured. All work given as Materials and Labor measured net' (Christie Library)

Whereas it is possible to make some sense of the net measurement of masonry for the Christie Library (the QS allows an extra inch for each block of stone – horizontally and vertically; or perhaps in the length of wall?) – well it seems it is not quite so clear as first assumed. However, the measurement of stone in Owen's College is less clear.

Aside from the measurement of the stone, Owen's College is unique in the way it guides the tenderer on the quantity of beds and joints to be priced:

'It (stone) is also to include the cost of all plain beds and joints and preparatory faces which may be taken to average three feet super per foot cube all faces measured'

Christie Library, despite its design, and perhaps its tender documentation prepared by the same architect takes a different approach to beds and joints, which are measured separately.

The BQ for the Albert Memorial, does not include similar measurement preamble, set aside from the quantification of the masonry.

Quantification

Turning now to the quantification of masonry as it is described in the four BQs. It is immediately apparent that the major difference here is that in three cases stone is generally measured by volume and in the fourth instance by surface area.

Taking the measurement of stone by volume first and beginning with Albert Memorial:

<i>Feet</i>		
4600	<i>Cube</i>	<i>'Moor End Stone, including hoisting (total height 74 feet) and setting bedding and pointing with fine strong mortar'</i>
306	<i>D°</i>	<i>D° (in large stones 5'9" x 5'8" x 2'4")</i> <i>(BQ, Albert Memorial)</i>

Figure 4 – Extract from Albert Memorial BQ, Moor End Stone (ft³)

In the case of the Memorial above, information about the height of the work is provided and also what are considered to be 'large stones'.

Owen's College quantifies masonry by volume and area. Additional information regarding the height of some of the work is also provided; note that the work at certain heights is described as 'Extra only':

<i>Feet</i>		
37358	<i>- cube</i>	<i>Stone as above described including plain beds & joints</i>
53	<i>-</i>	<i>D° in scantling lengths</i>
14798	<i>-</i>	<i>Extra only for hoisting stone from 40'0" to 80'0" from level of Quadrangle</i>

Figure 5 – Extract from Owen's College BQ (ft³)

Owen's College stone is measured ft³ and the description reads:

'Stone as above described including plain beds & joints

Extra only for hoisting stone from 40'0" to 80'0" from level of Quadrangle'

There are several instances in the College BQ which measure a volume of stone as 'Extra only' for hoisting different thicknesses and within different height classifications. Certain 'labours' are also measured and examples of these are included in the extract from the Christie Library below.

Some of the masonry in the Owen's College is measured by its surface area (ft²) as shown below for Ashlar work to chimney shafts:

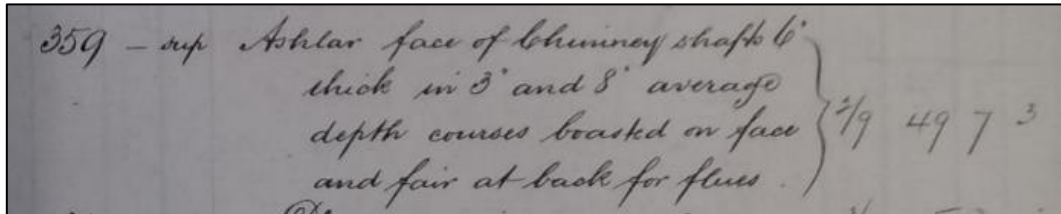


Figure 6 – Extract from Owen's College BQ (ft²)

As with the Memorial and College, the measurement of masonry in Christie Library BQ is also given in cubic feet, as illustrated below. However, the description does not make any reference to the height of the work or any hoisting of the stone.

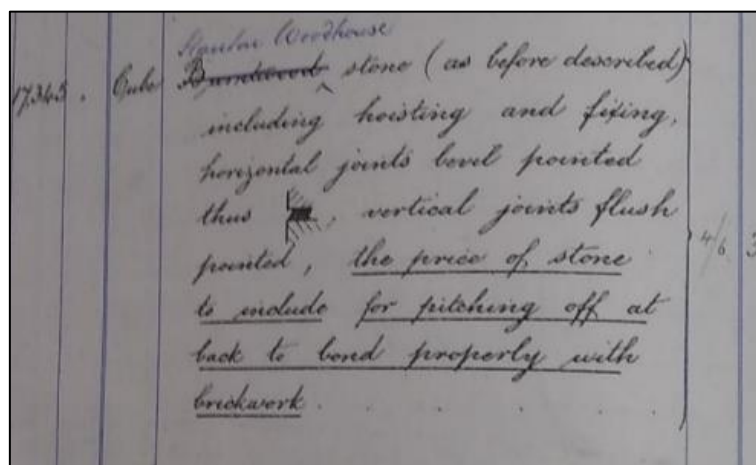


Figure 7 – Extract from BQ, Christie Library (ft³)

The extract reads:

'Stanton Woodhouse Stone (as before described) including hoisting and fixing, horizontal joints level pointed thus [sketch] vertical joints flush pointed, the price of stone to include for pitching off at back to bond properly with brickwork

The difference in quantification of the Wesleyan Church appears to be significant, when compared to the Memorial, Library and College in that none of the masonry is measured by volume. Instead, linear and area measurement predominate; setting aside the enumeration of mitres and returns and the detailed description and sketches associated with gable corbelling, doorcases, windows, etc.

The first items quantified in the Church BQ are a plinth course followed by several string courses. Each measurement description is accompanied by a sketch:

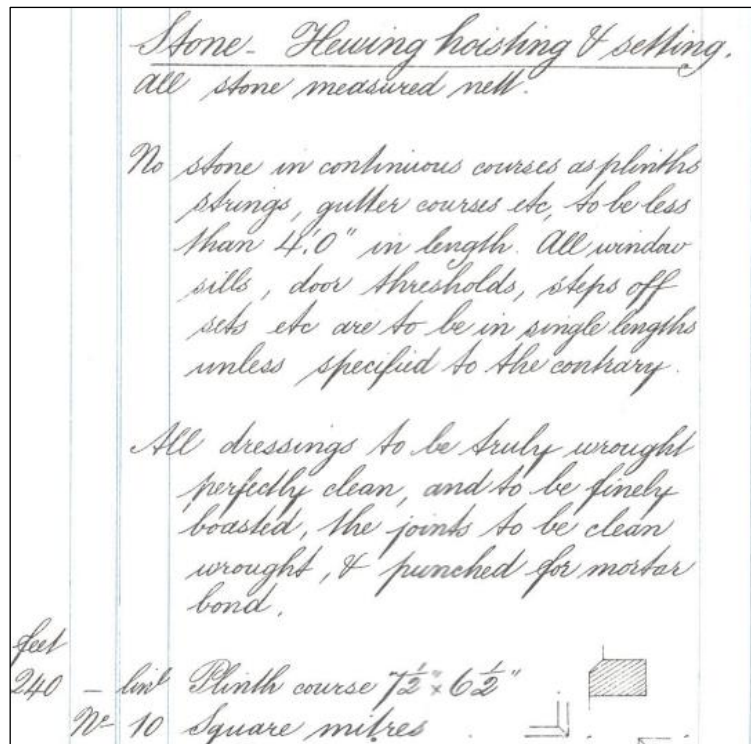


Figure 8 – Extract from BQ, Wesleyan Church (ft)

The extract reads:

'Stone – Hewing, hoisting & setting

All stone measured net

No stone in continuous courses plinths, strings, gutter courses, etc., to be than 4'0" in length. All window cills, door thresholds, steps, offsets etc., are to be in single lengths unless specified to the contrary.

Plinth courses 7½" x 6½" [sketch]

Square metres [sketch]'

As well as these items, the Church is also constructed with 'parpoint walling'¹¹, measured in square yards and as shown in the extract below:

¹¹ 'Walling consisting of small square stones laid in tolerably regular courses, with through-stones at intervals of 5 or 6 feet, the whole well grouted.' Illustrated Glossary of Practical Architecture and Civil Engineering, Brees, S.C., London, MDCCCIII (1853)

Yards	feet		
773	-	-	<p><u>Parpoint Walling</u> <i>Step Parpoint walling with parpoints 4 to 2" thick & 6" on bed as per previous description backed off for brickwork (measured nett)</i></p>
22	-	-	<p><i>D^o in chimney tops 6" on bed as before squared back side for flue</i></p>

Figure 9 – Extract from BQ, Wesleyan Church (ft²)

This extract reads

'Parpoint Walling

Parpoint walling with parpoints 4" to 2" thick and 6" on bed as per previous description backed off for brickwork (measured net).

Do in chimney tops 6" on bed as before squared back side for flue'

In this instance, the thickness of the walling varies within the overall quantity measured. In addition, the mason is required to perform certain tasks to accommodate brickwork.

In summary...

The four BQs provide examples of different approaches to quantification and measurement of masonry.

For quantification, the different units used are volume (cubic feet), area (square feet, square yards) and linear (feet) for ostensibly the same or similar items.

For measurement, quantities are sometimes described as 'net', and the accompanying explanation, when provided is not always clear.

Interestingly, whilst we do not yet have access to SMM 1, in SMM 3 the measurement of masonry distinguishes between walling greater than 18 inches thick, measured in cubic yards, otherwise it is measured in square yards. Therefore, new rules were introduced (perhaps in SMM 1) to make the quantification of masonry more uniform.

Isolated attempts to improve uniformity

Our research has found a lack of uniformity in the measurement of building works. Prior to SMM 1 several attempts were made to address the issue. This included the Bolton Master Builders Association who in 1887 published *'The Standard Mode of Measurement agreed upon by the*

*architects and the builders of the Bolton district as a general statement of the methods proposed to be used in taking quantities and measuring up works*¹².

Clearly, matters had not improved enough, or at least not travelled as far as Manchester, because almost 30 years later in 1913, Mr. Paul Ogden, recent president of the Manchester Society of Architects called for *'regulation regarding taking out quantities'*¹³. A year later, and also from within Lancashire, a *'Draft suggestion for uniformity of customs in Bills of Quantities'*, was issued by the Preston Society of Architects, Surveyors and Civil Engineers in conjunction with Preston Building Trades Employers' Association¹⁴.

Around the same time, surveyors were also concerned to address the lack of uniformity in the measurement of building works arising from *'the diversity of practise, varying with local custom and even the idiosyncrasies of individual surveyors.'*¹⁵ This is because, builders had complained that *'the estimator was frequently left in doubt as to the true meaning of items in the bills of quantities [...], a circumstance which militated against scientific and accurate tendering.'*¹⁶

As a result, the Surveyors' Institution and, the Quantity Surveyors' Association frequently had to settle disputes in connection with measurement and as a result took initiatives to deal with the lack of uniformity. This included the preparation of pamphlets (unpublished) recommending the method of measurement for three trades, and also circulars offering opinion as to the correct method of measurement for items where disputes had arisen.

Clearly, all of these efforts were intended to solve the 'lack of uniformity' problem, but perhaps something more concerted on a national level was needed? In 1912, members of the Surveyors' Institution and the Quantity Surveyors' Association established a committee tasked with *'drawing up a comprehensive set of Standard Rules of Measurement of Building Works'* (in a 1935 interview given by another committee member, Frank Woods, he describes how this committee was formed to *'Formulate a Method of Measurement in the case of certain of the Building Trades with a view to its official recognition and general adoption'*¹⁷). Six years after the surveyors-only committee was formed, in 1918, representatives of the building trades were added to the committee (although a slight difference to these dates arises from other sources described below). The fact that the preface identifies the place of work of these people suggests an attempt was made to better understand 'local custom' perhaps provide surveyors who might act as ambassadors for the new rules in different parts of the country.

Therefore, we can see how a committee comprising surveyors and builders and drawn from different parts of the country had the potential to prepare a document whose use would bring greater uniformity in the quantification of building works.

¹² National Builder, September 1935, p. 51-52 'The Standard Method of Measurement of Building Works', 'Interview with Mr. Frank Woods, Vice-Chairman Of The Joint Committee For Standardisation Of Building Measurements, by a Representative of the National Builder.

¹³ Manchester Courier and Lancashire General Advertiser 7 Feb 1913. Refer also to quotation under 'Frank Woods'.

¹⁴ National Builder, September 1935, p. 51-52, op. cit.

¹⁵ Preface, SMM 1

¹⁶ Preface, SMM 1

¹⁷ National Builder, September 1935, p. 51-52, op. cit.

We know that the Joint Committee met 62 times between 7 May 1919 and 17 October 1922¹⁸ (and sometimes each other's houses) but we are unsure exactly where the meetings were held, except they were probably in London¹⁹.

Joint Committee

The Joint Committee had 15 members. Ten people were nominated by organisations with links to the construction industry and five others also became involved.

Surveyors' Institution and the Quantity Surveyors' Association	NFBTE and IOB	'Other' Surveyors	'Other' Contractors
<ul style="list-style-type: none"> • F A H Hardcastle, ARIBA, FSI • Thomas Bare, FSI • R C Gleed, FSI • Arnold E. Harris • Walter Lawrance, FSI • Morgan H. Young 	<ul style="list-style-type: none"> • R. Friend, Rugby • W. Lacey, FIOB, London • Stanley Miller, Newcastle • Frank Woods, Bolton 	<ul style="list-style-type: none"> • Arthur G Cross • W E Davis • J E Drower, CBE, FRAS • Henry Riley 	<ul style="list-style-type: none"> • Sir Walter Lawrence, London

Table 1 – SMM 1 Joint Committee

We know from images kindly provided to us²⁰ that the National Federation of Building Trade Employers presented souvenir copies of SMM 1 to members of the Joint Committee. Whereas not all 15 members are listed, it is interesting to note that of the 12 names that do appear, two were not, according to SMM 1's preface, committee members.

¹⁸ From an 'illuminated testimonial' provided by the Midland Federation of Building Trades Employers and quoted in Richard Friend's obituary, *The Advertiser*, 31 July 1931

¹⁹ According to Stanley Miller's obituary (*Shield Daily News*, 18 May 1931)

²⁰ Mr. Richard Steer and Mr. Chris Lacey (Acknowledgements)

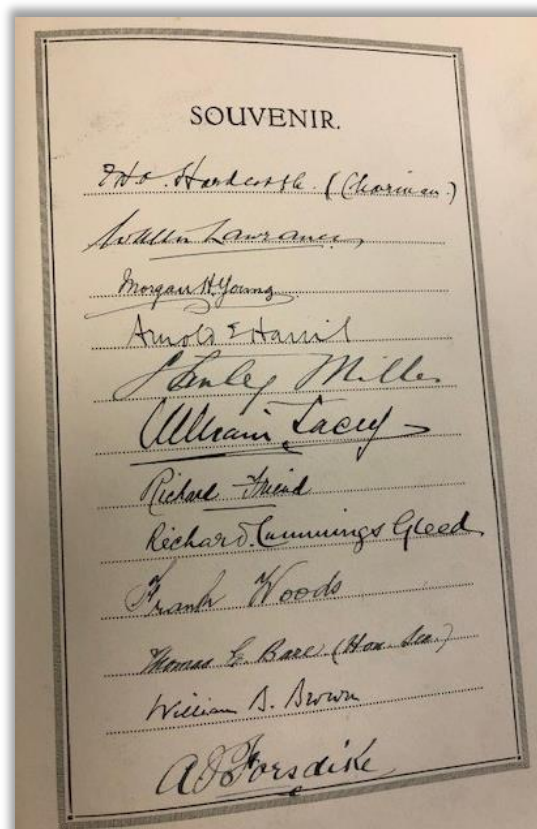


Figure 10 – Signatures of the Joint Committee

It is the last two names that are anomalous. Unfortunately, we have not been able to trace William B Brown, but A. J. Forsdike, held several prominent roles in the construction industry including: president of Yorkshire Federation of Building Trades Employers in 1911, President of NFBTE in 1921, President of IOB in 1926, 'every office of the Sheffield, Rotherham and District Building Trades Employers Association'²¹. It is perhaps because of presidency of the NFBTE in 1921 that he had some involvement in SMM 1, but no other records of his or William Brown's involvement have been found.

Profiles of the committee members are provided below, listed in the same sequence as they appear in SMM 1. Personal details have been taken from census data and local newspapers, including family background where there is a link to the construction industry; obituaries have also been informative. Sometimes, information about project involvement is available and this has been included to better illuminate the nature and character of the quantity surveyor's role, at this time. These profiles are broad in scope and not focussed solely on quantity surveying. They do not shed much light on how the measurement rules were devised, and try to illuminate busy people, without today's means of communication or travel, making their successful collaboration on such a complex task even more remarkable. Note has also been made where members of the original Joint Committee continued to serve in a similar role on subsequent editions of the Standard Method of

²¹ Obituary, Sheffield Independent, 29 December 1927

Measurement. This is perhaps worth mentioning not only because of the importance of achieving continuity between editions but also to show their dedication to the surveying profession.

Committee Members

Frederick Henry Appleton Hardcastle, ARIBA, FSI (Chairman)

Frederick Hardcastle was born in Bradford in 1846²² and had moved to London with his parents by the time he was 16²³. In 1864 Frederick attended evening classes at Kings College, London and was awarded a certificate of honour in mathematics²⁴. We do not know when he became a member of the Surveyor's Institution, but he was an associate of the RIBA by the time he was 39 in 1885²⁵.

Little information has been found about his quantity surveying experience, but we know that in 1886, he prepared the Bills of Quantities, for the Commissioner of Public Baths and Washhouses for 'Building of Baths and Washhouses at the corner of Silchester and Lancaster Roads, Notting Hill', London²⁶.

Frederick Hardcastle had business interests outside surveying and was interested in politics. He was a director of the 'Nineteenth Century Building Society'²⁷, and was elected Vice-Chairman of the General Committee of the National Liberal Club²⁸ and re-elected to the same position two years later²⁹.

At 66, Frederick Hardcastle was one of the older members of the Joint Committee when it was established in 1912. As well as being its chairman, he also appears to have played a significant part in drafting the rules of measurement. According to Frank Woods (another member of the Joint Committee, interviewed by the National Builder in September 1935³⁰), he '*was a stickler for correct and uniform phraseology which was so necessary in the document we were producing*'. The same interview also notes that Frederick Hardcastle met with Thomas Bare (Honorary Secretary), on Saturday afternoons following a Joint Committee meeting so that they could agree the minutes together.

Frederick Hardcastle would have been 72 when the builders were invited to join the Committee in 1918, and 76 years when SMM 1 was published. He died in 1926 only four years after its publication and is buried in Putney Vale Cemetery and Crematorium.

Thomas Edwin Bare, FSI (Honorary Secretary)

Thomas Bare was born in in Suffolk in 1849³¹. His father was a carpenter.

²² West Yorkshire Non-Conformist Records 1646-1985

²³ 1861 census

²⁴ London Evening Standard, 14 May 1864

²⁵ Post Office Directory, 1885

²⁶ West London Observer, 13 March 1886

²⁷ South London Chronicle, 7 January 1882

²⁸ Western Daily Press, 27 May 1909

²⁹ Pall Mall Gazette, 14 June 1911

³⁰ National Builder, September 1935, p. 51-52, op. cit.

³¹ Suffolk Baptism Index 1538-1911

It is not known how Thomas Bare became interested in quantity surveying, although his father's trade may have caused him to think about the building industry more generally. His census entries compellingly inform that 'architecture' was in his thinking; at 22 he described himself as an 'Architects Clerk'³² but in his early thirties this was supplemented with surveying, and he described his occupation as 'Surveyor & Architect'³³. By 1891 and when in his forties, perhaps architecture was once again uppermost in his mind when completing the census and he described himself as an 'architectural surveyor'. In the same entry he stated that he was an 'Employer' (other options in this part of the census are 'Worker' and 'Own Account'), meaning that he was sufficiently busy to have others working for him³⁴. Certainly, others were working for him 10 years later, in 1901, whilst still calling himself and 'architectural surveyor', his son Arnold E Bare, is included in the census as 'pupil to architectural surveyor'³⁵.

We also know from Frank Wood's interview that Thomas Bare was a partner in 'Bare, Leaning³⁶ and Bare'³⁷. It is likely that he went into partnership with his younger brother Robert, who was also a quantity surveyor³⁸.

Little information has been found about Thomas' quantity surveying or project experience, but he was very fortunate not to be killed in a serious accident known as the Charing Cross Disaster which occurred at Charing Cross Station on 5 December 1905, in which eight people were killed. Thomas was on one of his regular visits to the site of the Avenue Theatre adjoining the station when the accident occurred³⁹:

'[...] the table stood ready with plans laid out, for the weekly meeting which it had been the practise of the architect, Mr. Detmar Blow, and his assistants to hold every Tuesday. Mr. T. E. Bare, surveyor to Mr. Cyril Maude, was discussing matters with the architects when the roof crashed in, and there fell on the table a stone six feet square and two feet thick and weighing 4½ tons.'

A Board of Trade enquiry reported how during maintenance work on the station roof, a length of about 77 feet fell⁴⁰:

Two complete bays of the roof, together with the large windscreen at the river end of the station, collapsed. This part of the western station wall above platform level, which carried the bays in question, was thrust outward by the falling roof, overturned and crashed bodily through the adjoining wall and roof of the Avenue Theatre. The theatre was in course of reconstruction time, and a large number of men were engaged on the work.

³² 1871 census

³³ 1881 census

³⁴ 1891 census

³⁵ 1901 census

³⁶ It is possible that this is the same Leaning who wrote a book in the late 1800s on 'Quantities' referred to by Frank Woods which gave 'authoritative sanction to a movement that had been simmering in various parts of the country for years.' Interview, National Builder, September 1935, op. cit.

³⁷ Frank Woods' interview, National Builder, September 1935, op. cit.

³⁸ 1901 census shows Robert Bare living at no. 66 Lebanon Gardens, Wandsworth, at the same time as Thomas Bare was living at no. 64

³⁹ The Graphic, 16 December 1905, p. 815

⁴⁰ Board of Trade Report, Charing Cross 1905

Thomas Bare was interested in politics and shooting. He was a member of the Conservative and Unionist Association⁴¹ and vice-president and auditor of the Alperton-Wembley Rifle Club⁴².

As to his role in drafting SMM1, Thomas Bare was Honorary Secretary to the Joint Committee and according to Frank Woods (another member of the Joint Committee, interviewed by the National Builder in September 1935⁴³), he met with Frederick Hardcastle, on Saturday afternoons following a Joint Committee meeting so that they could agree the minutes together. The importance of Thomas Bare's work is captured in this extract from Frank Wood's interview:

'Mr. T. E. Bare (of Bare Leaning & Bare) was appointed hon. Secretary, and of him I find this entry made in my rough notes of proceedings, August 11, 1919: -

The minutes of this date are in the handwriting of T.E. Bare for the first time, that later became so familiar to us all in his letters and agendas [...] there is vitality and a certain liveliness in his minutes, for he faithfully recorded the arguments of both sides of the question and was so careful to get the exact wording and meaning of a decision.'

Like Frederick Hardcastle and Morgan Young, Thomas Bare had an office on Southampton Street, Bloomsbury⁴⁴.

Thomas Edwin Bare died on 25 January 1925⁴⁵, only three years after SMM 1 was published. He was 76 when he died.

Richard Cummings Gleed, FSI



Figure 11 – Richard Cummings Gleed (Image)⁴⁶

⁴¹ Harrow Observer, 19 December 1913

⁴² Harrow Observer, 16 April 1920

⁴³ Frank Woods' interview, National Builder, September 1935, op. cit.

⁴⁴ London Gazette, 1907

⁴⁵ England & Wales Government Probate Death Index 1858-2019

⁴⁶ Image provided by family history prepared by Ms. Jean Hearn (permission sought)

Richard Gleed was born in Islington in 1849⁴⁷. Like others on the Joint Committee, Richard Gleed's early career included several disciplines that today are considered distinct and discrete. For example, in 1881 Richard Gleed described himself an 'Architect and Building Surveyor'⁴⁸, and ten years later a 'Quantity Surveyor and Architect'⁴⁹. Interestingly, in his first occupation (aged 21) he was a 'Surveyor'⁵⁰, and the first instance we are aware of that he was exclusively a quantity surveyor was in 1901⁵¹.

Aside from information obtained from censuses, we know that in the 1880s Richard Gleed became chairman of the Quantity Surveyor's Committee of the Surveyor's Institution and in 1885 established 'Gleeds' specialising in quantity surveying services⁵².

In 1919, at the age of 70 Richard Gleed had become a member of the Joint Committee, as one of the representatives of the Surveyor's Institution⁵³. He was also a member of the committee which prepared SMM 2, published in 1927.

Richard Cummings Gleed died on 1 April 1928⁵⁴, six years after SMM 1 was published. He was 79 when he died.

Arnold Elsmere Harris



Figure 12 – Arnold Elsmere Harris (Image)

⁴⁷ Church of England Births & Baptisms, 1813-1920

⁴⁸ 1881 census

⁴⁹ 1891 census

⁵⁰ 1871 census

⁵¹ 1901 census

⁵² Gleeds 'Our History' (Gleeds.com)

⁵³ National Builder, September 1935, p. 51-52, op. cit.

⁵⁴ England & Wales Government Probate Death Index 1858-2019

Arnold Elsmere⁵⁵ Harris was born in Smethwick, Birmingham in 1854⁵⁶. His father was an architect and a magistrate.

In the early part of his career, Arnold Harris worked as an 'Apprentice to Architect'⁵⁷ an Architect⁵⁸ in partnership with his father William, and Henry Martin in the firm 'Harris, Martin and Harris', architects and surveyors. In 1889 the partnership was dissolved⁵⁹ and at the age of 35 Arnold went into business with his father as 'Harris and Harris'⁶⁰. Two years later this partnership was also dissolved upon the retirement of his father William Harris, and at the age of 37 Arnold continued the business himself, latterly recording his occupation as 'Architect and Surveyor'⁶¹.

In 1909, Arnold Harris was elected a member of the Institution of Civil Engineers⁶², and had offices on the first floor of King's Court, owned by the Birmingham Town Properties Investment Corporation Limited⁶³. At this time, he was a Chartered Surveyor⁶⁴.

In 1908, a year before his election to the ICE, he was appointed Clerk to the Birmingham, Tame and Rea District Drainage Board⁶⁵. In this capacity, he took over from his father who had held the position for over 30 years (since 1877). Arnold himself was Clerk for over 21 years, and in 1927 on its fiftieth anniversary, documented its history. A local newspaper reported under the heading '*What Men of Vision Did For Smethwick*' that the document gave '*the story of fifty years of harmonious and successful cooperation between local authorities, widely dissimilar in size, wealth and population, but working together for common interests and with common benefits to all concerned.*'⁶⁶. The foreword to the brochure was written by Neville Chamberlain (Conservative Minister of Health at time, who became Prime Minister in 1937). Arnold also found time to be appointed as treasurer to the Birmingham and Midland Homeopathic Hospital (1913)⁶⁷ and was also a Justice of the Peace⁶⁸.

Arnold Harris' professional experience was not limited to quantity surveying, and in 1912 he addressed the members of the Warwickshire and Worcestershire Provincial Committee of the Surveyor's Institution on 'The Valuation of Licensed Premises for Compensation'⁶⁹.

In 1919 at the age of 65, Arnold Harris became a member of the Joint Committee⁷⁰. He was also a member of the committee which prepared SMM 2 (1927).

Arnold Elsmere Harris died on 23 August 1929, seven years after SMM 1 was published. He was 75 when he died and is buried at Key Hill Cemetery, Birmingham.

⁵⁵ 'Elsmere' was his mother's maiden name (England & Wales Marriages, 1837-2005)

⁵⁶ England & Wales, Civil Registration Birth Index, 1837-1915

⁵⁷ 1871 census

⁵⁸ 1881 census

⁵⁹ London Gazette, 18 October 1889

⁶⁰ London Gazette, 1891

⁶¹ 1901 census

⁶² ICE ('membership book?') p. 143

⁶³ Rate Book from 1911

⁶⁴ 1911 census

⁶⁵ Birmingham Daily Gazette, 18 January 1908

⁶⁶ The Smethwick Telephone, 1 October 1927

⁶⁷ Birmingham Mail, 8 April 1913.

⁶⁸ Birmingham Daily Gazette, 10 April 1915.

⁶⁹ Lichfield Mercury, 5 April 1912

⁷⁰ National Builder, September 1935, p. 51-52, op. cit.

Walter Lawrance, FSI

Walter Lawrance⁷¹ was born in Finsbury, London in 1862⁷². His father was a builder.

In common with other members of the Joint Committee and perhaps reflecting the slow emergence of the quantity surveying profession, or indeed his own uncertainty, Walter Lawrance did not begin his working life as a quantity surveyor at all. The first information we have about his career is when he was 19 and a 'solicitors surveyor's clerk'⁷³, ten years later he was a 'surveyor'⁷⁴. Walter Lawrance may have turned from quantity surveying altogether, because by the time he was 39 he was a land surveyor⁷⁵. However, in 1910 he had become a quantity surveyor, working out of offices in Bloomsbury (notably another QS in this part of London), London⁷⁶.

We have only been able to find one example of Walter Lawrance's quantity surveying experience in public records. In 1928, he is credited with the preparation of Bills of Quantities in a public notice to builders in relation to the erection of 'Section Headquarters for the 130th Anti-Aircraft Search-Light Company, at R.E. Ongar'⁷⁷.

In 1913, at the age of 51, Walter Lawrance had become part of the first surveyor's-only committee and was in his late 50s by the time the Joint Committee was formed in 1919. He was also a member of the committee which prepared SMM 2, published in 1927.

Walter Lawrence died in 1932, 10 years after SMM 1 was published. He was 70 when he died.

⁷¹ There were in fact two people on the Joint Committee with almost identical names. Walter Lawrance, born in 1862 and Sir Walter Lawrence, born 1872. To add to the potential confusion, SMM 1's preface reproduced in SMM 7 appears to have misspelled the surveyor 'Lawrence' with an 'e' rather than 'a'. We have drawn this conclusion on the basis that the surveyor Lawrance worked on both SMM 1 and SMM 2 and the name is spelt with an 'a' in both prefaces reproduced in SMM 3.

⁷² Baptism record

⁷³ 1881 census

⁷⁴ 1891 census

⁷⁵ 1901 census

⁷⁶ Post Office London Directory.

⁷⁷ Chelmsford Chronicle, 9 March 1928

Morgan Henry Young

Figure 13 – Morgan Henry Young (Image)

Morgan Young was born in Camden, London, in 1853⁷⁸. His father was an architect and a surveyor; by the age of 18 Morgan was working for his father's business⁷⁹.

With Mr. Peter Ruault, Morgan Young founded the firm Ruault & Young. We do not know when this occurred, perhaps as early as 1891, in which year, the firm of Ruault & Young are credited with preparing the quantities for the rebuilding of Derbyshire Royal Infirmary⁸⁰.

Morgan's father was a Master in the company of Armourers' and Brasiers', one of London's Livery Companies which are the origin of today's weights and measures and consumer protection laws. Perhaps this was what encouraged Morgan himself to become interested and in 1874 he was admitted to the freedom of the city of London in this company. Morgan himself was the company's Master in 1902, 1903 and 1908⁸¹. It was in this capacity in 1908 that he attended 'The Cutlers' Feast' in Sheffield, according to the Sheffield Daily Telegraph 'one of the city's oldest and most honoured institutions' bringing to the city 'as guests of the Master and Mistress Cutler some of the foremost men of the time'. Not only were the guests at the feast in 1908 treated to 'lavish hospitality', but also 'The Pankhurst Incursion' of 'suffragette-unemployed combination appeared on the scene', including Emily Pankhurst, amongst others⁸².

Morgan may have had some political ambitions. In 1904 he put himself forward in County Council election for the borough of Hampstead⁸³. Morgan was also one of the 'Mangers' of St. Augustine's Boys' School⁸⁴.

⁷⁸ Baptism record

⁷⁹ 1871 census

⁸⁰ Derby Daily Telegraph, 30 November 1891

⁸¹ Tonbridge School Register, 1553-1910

⁸² Sheffield Daily Telegraph, 30 October 1908

⁸³ Kilburn Times, 12 February 1904

⁸⁴ Kilburn Times, 20 October 1905

In relation to Morgan's project and quantity surveying experience, our research has found that with Mr. Peter Ruault he founded the firm Ruault & Young. We do not know when this occurred, perhaps as early as 1891, in which year, the firm of Ruault & Young are credited with preparing the quantities for the rebuilding of Derbyshire Royal Infirmary⁸⁵.

In 1894 Ruault & Young provided quantities and form of tender for a proposed convalescence home at Clacton-on-Sea⁸⁶. One year later, Morgan Young was appointed as QS for the new Leopold Road School, for a fee of 1.5% ("*after a protest from Mr. Grant as to the sum being too large*")⁸⁷. Whilst this newspaper article names Morgan and not the firm, it could have been an editing oversight, or perhaps he acted on his own as well as in the firm Ruault & Young⁸⁸. Over ten years pass before another reference to the firm's work can be found, this time in 1908, when a payment certificate issued by the architects 'Ruault & Young', is cited by the plaintiff in a court case concerning monies owed⁸⁹.

In 1913, at the age of 60, Morgan Young was part of the first surveyor's committee and in his mid-60s by the time the Joint Committee was formed in 1919. Morgan Young represented the Surveyor's Institution on the Joint Committee.

Like Frederick Hardcastle and Thomas Bare, Morgan Young, had an office on Southampton Street, Bloomsbury.

Morgan Henry Young died on 31 August 1927, five years after SMM 1 was published. He was 74 when he died and is buried in Hampstead Cemetery, Campden, London.

Richard Benjamin Friend (Vice-Chairman)

Richard Friend was born in Wolverhampton in 1865⁹⁰. For the first part of his of his career, he was a builder's clerk⁹¹ becoming a builder's surveyor by the time he was 36⁹² and a builder's manager and surveyor, living in Rugby, in his mid-40s⁹³.

Richard, like others who served on the committees, was interested in politics. In 1919, the same year as he became a member of the Joint Committee, he was put forward as the Conservative candidate for the Southwest Ward of Rugby Urban District Council and was duly elected. He continued to serve on the council and was its chairman in 1928-29 and 1929-30⁹⁴. In addition, he was Rugby's mayor in 1928⁹⁵, and in the same year he also became a magistrate⁹⁶.

⁸⁵ Derby Daily Telegraph, 30 November 1891

⁸⁶ Essex Standard, 26 May 1894

⁸⁷ Kilburn Times, 5 July 1895. Interestingly, the same meeting also appointed 'Mr. Northcroft' to perform quantity surveying services in connection with building works at another school.

⁸⁸ Nevertheless, the address for both Ruault & Young, and Morgan Young, 17 Southampton Street, Bloomsbury Square, London, are the same.

⁸⁹ Hampshire Independent, 21 November 1908

⁹⁰ England & Wales, Civil Registration Birth Index, 1837-1915

⁹¹ 1881, 1891 census

⁹² 1901 census

⁹³ 1911 census

⁹⁴ Obituary, The Advertiser, 31 July 1931

⁹⁵ Rugby Advertiser, 20 April 1928

⁹⁶ Rugby Advertiser, 4 May 1928

In addition to his work on Rugby Council, Richard Friend was also a keen cricketer and member of Rugby Cricket Club. He was its chairman⁹⁷ and treasurer at different times, and on the field a captain of the Second XI and wicket keeper for First XI⁹⁸. In 1925 (aged 60) he broke his ankle which was duly reported by a local newspaper 'The Accident to Mr. R. B. Friend':⁹⁹

Before the Council proceeded to the usual business, the Chairman referred to the unfortunate accident which Mr. Friend had met with at cricket on Saturday, and said he was sure he was expressing the views of the whole of the Council in proposing that the Clerk send Mr. Friend a letter setting out their regret and wishing him a speedy restoration to health.'

In the latter part of his career and just before SMM 1 was published, Richard Friend was appointed Chairman of Rugby's Water Committee.

Information about Richard Friend's experience in the industry is provided generally by projects executed by J Parnell & Son, including a Rugby School Chapel, the Clock Tower in Rugby town centre, Rugby railway station and even a doll's house for the British Empire Exhibition in Wembley in 1924, and which was placed in Windsor Castle following the Exhibition¹⁰⁰. More specifically, he represented the company and is pictured cutting the second sod at a ceremony for 'Rugby Waterworks New Reservoir at Stanford'¹⁰¹.

By the time he was 56, Richard Friend was President of the NFBTE, and its Midland Federation provided the following testimonial, which notes his attendance at most of the 62 meetings of the Joint Committee¹⁰²:

"The Midland Federation of building trades employers, to Richard Friend, Esq. on behalf of the members of the above regional Federation, we desire to express, however inadequately, our hearty appreciation of the invaluable service you have rendered us especially as a member of the Joint Committee of Method of Measurement. The magnitude of your labours on the committee is revealed by the fact that you attended nearly all the 62 meetings during the period 7 May 1919 to October 17, 1922, on which date the work was completed, but you also occupied the important position of vice chairman. Though you were president of this Federation in 1921 you still managed to find time to devote to the great work you had in hand. Your wide experience in the building trade, your sound judgement, and your shrewd common sense, fully qualified you for the position you hold, and it must be very gratifying to you to know that the result of the committee's labours – 'The standard method of measurement' has been received with such enthusiastic satisfaction by your fellow members. We are deeply grateful to you for your devoted and invaluable work and ask you to accept our warmest thanks.

Richard Friend died on 28 July 1931, nine years after SMM 1 was published. He was 65 when he died.

⁹⁷ Rugby Advertiser, 8 June 1928

⁹⁸ Rugby Advertiser, 21 August 1928

⁹⁹ Rugby Advertiser, 22 May 1925

¹⁰⁰ Grace's Guide to British Industrial History

¹⁰¹ Rugby Advertiser, 10 November 1925

¹⁰² From his obituary reported in The Advertiser, 31 July 1931

William Thomas Sigger Lacey, FIOB

Figure 14 – William Thomas Sigger Lacey (Image)¹⁰³

William Lacey was born in Marlow, Buckinghamshire in 1870, his father was a builder¹⁰⁴.

In 1891, at the age of 21 William Lacey was a joiner¹⁰⁵. At the age of 31, William Lacey was a builder's foreman¹⁰⁶ and had become a 'contractor' ten years later¹⁰⁷. William Lacey the contractor was founded in 1904¹⁰⁸ and successfully tendered for a number of school projects in the early 1900s, including the enlargement of Alperton Council School for £9,741 in 1911¹⁰⁹ and a proposed secondary school in Chiswick for £12,974 in 1914¹¹⁰. In addition, by the time of the next census he described himself as a 'Building Contractor' and also an 'Employer'¹¹¹.

In early 1919 at the age of 49, William Lacey became a member of the Joint Committee. Because of his membership of the IOB, it is likely that he was their representative on the committee. He was also a member of the committees which prepared SMM 2 and SMM 3.

William Lacey died on 14 June 1955 and is buried at St. Peter's Church in Marlow. His company made and donated the reredos and Stations of the Cross that are still on display there. William Lacey the contractor continues to be run by the Lacey family after four generations¹¹².

¹⁰³ Image provided by Mr. Chris Lacey, great grandson (Acknowledgements)

¹⁰⁴ 1939 register

¹⁰⁵ 1891 census

¹⁰⁶ 1901 census

¹⁰⁷ 1911 census, although he was a visitor in Shropshire and not at home in Hounslow, London on the date the census was recorded.

¹⁰⁸ Private communication from Mr. Chris Lacey.

¹⁰⁹ Harrow Observer, 30 June 1911

¹¹⁰ Ealing Gazette and West Middlesex Observer, 1 August 1914

¹¹¹ 1921 census

¹¹² Private communication from Mr. Chris Lacey.

Stanley Miller

Stanley Miller was born in Newcastle in 1873. His father was a builder 'employing 2 men and 2 boys'¹¹³.

After working in his father's business as outside manager for contracts in his mid-40s¹¹⁴, he went into business with Samuel Ferguson as 'S. F. Davidson and Miller, builders and contractors' of Newcastle-Upon-Tyne. In 1913, the partnership between Samuel Ferguson and Stanley Miller was dissolved and Stanley continued in business as Stanley Miller Ltd¹¹⁵. According to his obituary, the firm was responsible for carrying out several important contracts, including the building of the City Hall and baths, the baths at Heaton and Walker, the Heaton Secondary Schools and, the demolition work connect to with the Tyne Bridge¹¹⁶.

Aside from the day-to-day matters of running his building company, Stanley Miller was also active in representing employers' interests and '*Chairman of the Joint Board which met to discuss problems between masters and men*'¹¹⁷. In 1921 he was re-elected as president of the Northern Counties' Federation of Building Trades Employers¹¹⁸ and in 1922 is quoted in a newspaper article arguing for a stabilisation of wages following three reductions in the year¹¹⁹. In 1924 there was a strike in the building industry¹²⁰, and Stanley Miller chaired a meeting Allied Building Trades Associations in Newcastle 'representing every branch of the industry in the district'. He is quoted as saying '*they were in for a fight, and he could promise Mr. Coppock (of the Operatives Federation) on behalf of the Northern Counties employers, to give him a good fight and a clean fight*'¹²¹.

In early 1919 at the age of 47, Stanley Miller became a member of the Joint Committee, and his work was described in his obituary¹²²:

'He was a member of the committee which produced what is known as the standard method of measurement in that trade - a set of rules and regulations governing the system by which builders are paid for their work. That is now the nationally recognised method. Mr. Miller was intensely interested in this particular movement, and wrought hard to get the system universally adopted, and with complete success. The whole work took about three years to bring it to fruition and many were the meetings held in London in connexion with the matter'

Stanley Miller was also a member of the committee which prepared SMM 2, published in 1927.

Stanley Miller died on 17 May 1931, nine years after SMM 1 was published. He was 58 when he died.

¹¹³ 1881 census

¹¹⁴ Obituary, Shields Daily, 8 December 1931

¹¹⁵ Newcastle Evening Chronicle, 16 August 1913

¹¹⁶ Shields Daily News, 8 December 1931

¹¹⁷ Obituary, Shield Daily News, 18 May 1931

¹¹⁸ Shield Daily News, 14 January 1921

¹¹⁹ Newcastle Chronicle, 1 December 1922

¹²⁰ Building Trade Dispute, Hansard (<https://api.parliament.uk/historic-hansard/commons/1924/may/14/building-trade-dispute>)

¹²¹ Shields Daily News, 15 July 1924

¹²² Shield Daily News, 18 May 1931

Frank Woods

Frank Woods was born in Blackburn in 1866¹²³.

In his mid-twenties he worked as a joiner in Bootle¹²⁴ and later as a builder in Astley Bridge, Bolton¹²⁵.

In the late 1800s / early 1900s Frank and his brother John Cooper Woods established 'JC and F Woods'. One of their projects was the new Palladium cinema in Preston, and under the headline 'The Last Word in Cinema Palaces' a local newspaper reported¹²⁶:

'Mr J. C. Woods has literally lived on the job during the erection. Their work is a distinct credit, and a monument to their building skill and enterprise.'

Frank Woods was very involved in various trade associations and was at times treasurer of Bolton and Farnworth Building Trades Employers' Association (1907)¹²⁷ and, president of the Lancashire, Cheshire and North Wales Building Trades Employers' Federation (1911)¹²⁸. In 1913 he attended a dinner hosted by Salford and District Building Trades Employers' Association where one of the speakers raised the matter of regulating building quantification:

*'[...] many of their joint difficulties would be got over if builders and architects met together in consultation three or four times a year. In this regard he thought that there should be some regulations regarding taking out of quantities.'*¹²⁹

In early 1919 at the age of 53, Frank Woods became a member of the Joint Committee. Because of his association with various employer organisations, it is likely that he was the NFBTE's representative on the committee.

As well as being on the committee for SMM 1, Frank Woods was also a member of three other subsequent Joint Committees which prepared SMM 2 (1927), SMM 3 (1935), and SMM 4 (1948).

In 1935, at the age of 69, Frank Woods was interviewed by the National Builder. Aside from the information recorded elsewhere in this document, the interview provided snippets about the building industry, quantity surveying, and indeed 'the times'. The interview begins:

'Q.: Not an intrusion Mr. Woods, I trust?

A.: I don't know. But you're inside the room, anyway, so I'd better regard myself as a victim of circumstances – that's a comfortable chair. You want me to talk about the growth of the movement for the standardisation of the method of Building Measurement...'

Frank Woods died in 1950 two years after SMM 4 was published, at the age of 84.

¹²³ 1939 register

¹²⁴ 1891 census

¹²⁵ 1901 census

¹²⁶ Preston Herald, 24 December 1915

¹²⁷ Bolton Evening News 12 March 1907

¹²⁸ Widnes Examiner 25 February 1911

¹²⁹ Mr. Paul Ogden, ex-president of the Manchester Society of Architects, as reported in the Manchester Courier and Lancashire General Advertiser, 7 Feb 1913

Arthur George Cross

Arthur Cross was born in Hastings in 1866. His father was an architect and a surveyor¹³⁰. By the time he was 25 he was a QS working out of Hanover Square in London¹³¹.

There is a small amount of information available about his surveying experience. In 1902, at the age of 26, he was appointed by the 'Baths Committee' as QS for the new Haggerston Baths. The committee's deliberations were reported in the local paper which noted:¹³²

'[...] the large experience of Mr. Arthur G. Cross in taking out quantities for this particular kind of work, and the efficient manner in which he has discharged similar duties for other committees.'

A couple of years later Arthur Cross exercised other surveying skills when he was appointed as an assessor by the Law and Establishment Committee of Shoreditch Borough Council in relation to 'The Town Hall Fire', and for a fee of 1½% on the amount of compensation¹³³. The committee met again on 29 August 1904, considered and approved Arthur Cross' assessment of £7,290, and instructed him to submit a claim to the insurance company's assessors. There was some criticism that Arthur Cross' report underestimated the cost of the reinstatement, swiftly put down by a Mr. Hodder. The local newspaper gave this blow-by-blow account:

'The report was adopted on the motion of Mr. Hodder, who remarked but there should have been some reference to the services of the Deputy Town Clerk. The way in which Mr. Milne grappled with the situation reflected the greatest credit upon him.'

Mr. Vandy: we must also include the mayor and councillor Burnell (laughter)

Mr. Winkler: how is it that all your chief officers were away? Would such a thing happen in any large business?

Mr. Hodder: the Deputy was present.

Mr. Winkler: Deputy Fiddlesticks.

Mr. Gates strongly contended the damages were underestimated. From his experience he believed building could not be reinstated for the sum stated.

*Mr. Porter pointed out that the whole claim was presented in detail, and it was idle on the part of novices to go behind the assessors report.'*¹³⁴

Arthur's Cross' interest in measurement and quantification issues arose well before the surveyor's committees were established in 1913. In 1905, at the comparatively young age of 29, he presented his paper 'A Plea For A Uniform System of Measurement in England' to the Quantity Surveyors' Association, which was also reported in the "Builder"¹³⁵.

Arthur George Cross died on 3 November 1936 on the way to Westminster Hospital, London. He was 70 when he died.¹³⁶

¹³⁰ 1871 census

¹³¹ 1901 census

¹³² Shoreditch Observer, 8 March 1902

¹³³ Shoreditch Observer, 10 September 1904

¹³⁴ Shoreditch Observer, 10 September 1904

¹³⁵ National Builder, September 1935, p. 51-52, op. cit.

¹³⁶ Probate record

William Edward Davis

William Davis was born in 1863 in Cranbrook, Kent. His father was a carpenter and joiner¹³⁷.

At the age of 18 he was a surveyor's clerk¹³⁸ a career he continued for the next 10 years¹³⁹. By 1901 he was working as a building surveyor, living in Bournemouth. However, over the next 10 years he had become a Quantity Surveyor and busy enough to have become an 'employer' by the time he was 48 and living in Surrey¹⁴⁰.

No information has been found about William Davis' project or surveying experience. Outside of his career records show that he was Chairman of Carshalton Urban District Council in 1907¹⁴¹.

Outside of his career records show that he was Chairman of Carshalton Urban District Council in 1907¹⁴².

In early 1919 at the age of 56, William Davis became a member of the Joint Committee.

William Davis died in 1926 only four years after SMM 1 was published. He was 63 when he died¹⁴³.

John Edmund Drower, CBE, FRAS

John Drower was born in 1853 in Axminster, Devon¹⁴⁴.

Whereas many of the others on the Joint Committee began their careers in surveying or building in their mid-teens, John Drower was a successful scholar winning numerous prizes. At 14, he was a prize winner in the Oxford and Cambridge Middle Class Examinations at Exeter¹⁴⁵. Two years later he was awarded first class Queen's prize and passed examination in connection with the Science and Art Department of South Kensington¹⁴⁶. Another two years on (he is 18 by now) he is still a student¹⁴⁷ and wins two Queen's prizes for science, School of Science and Art¹⁴⁸.

At some point between the ages of 18 and 28, John Drower became a quantity surveyor¹⁴⁹. In 1895, whilst surveyor for the new church at Cockington, and in 1902, whilst 'architect' for St. Matthews Schools in the same town, he had an office at 16 Great George Street, London, which of course is very closely located to the RICS headquarters at number 12. It was also between these two dates, in 1899, that he was awarded the Freedom of the City of London¹⁵⁰.

¹³⁷ 1871 census

¹³⁸ 1881 census

¹³⁹ 1891 census

¹⁴⁰ 1911 census

¹⁴¹ Croydon Guardian and Surrey County Gazette, 31 August 1907

¹⁴² Croydon Guardian and Surrey County Gazette, 31 August 1907

¹⁴³ West Sussex Gazette, 17 February 1927

¹⁴⁴ 1939 register

¹⁴⁵ Exeter and Plymouth Gazette, 11 October 1867

¹⁴⁶ Western Morning News, 15 June 1869

¹⁴⁷ 1871 census

¹⁴⁸ Exeter and Plymouth Gazette, 20 January 1871

¹⁴⁹ 1881 census

¹⁵⁰ London, England, Freedom of the City Admission Papers, 1681-1930

John Drower was fortunate to have been associated with two famous buildings: as the surveyor for the 'Menin Gate Memorial to the Missing'¹⁵¹, in Ypres, Belgium, and the dome of Saint Pauls Cathedral in London. The latter is an extraordinary story of physical and quantity surveying prowess! In 1913, at the age of 60, John climbed about the structure of the dome to calculate its weight. This feat is recorded in two documents: his obituary and, in a retirement notice of Sir Mervyn McCartney, surveyor of the cathedral¹⁵²:

'The man who made the actual computations was Mr. J. E. Drower, a London chartered surveyor, who crawled into every conceivable corner from the gallery upwards, discovering new orifices and encountering difficulties, none of which baffled him. "We know" he said "a cubic foot of wood or brass or steel or cement weighs; hence it was possible to make the relevant calculations in terms of avoidupois". He estimated the total weight of the Dome and its supports at 67,270 tons.'

His obituary describes 'an outstanding achievement [...] which he accomplished alone in 1913 with nothing more than a foot rule in the way of apparatus'¹⁵³.

It was also in 1913, that John Drower had become part of the first surveyor's-only committee and was in his mid-60s by the time the Joint Committee was formed in 1919. He was one of the representatives of the Surveyor's Institution on the Joint Committee¹⁵⁴.

1919 was a momentous year in John Drower's career for other reasons as well. We have not been able to find out when, but at some point, he was appointed as a representative of the Ministry of Supply. In this capacity he is part of a deputation pressing a claim for more public works in Scotland¹⁵⁵. In the same year he is listed in the World War 1 and World War 2 Shipping and Seamen Rolls of Honour as Assistant Director of Army Contracts¹⁵⁶. Similarly, his role as 'the first Director of Building Materials Supply to the Ministry of Munitions' is quoted in an article reporting his opinion on the proposed 'Wheatley Housing Project'¹⁵⁷.

Some years later, John Drower's attention must have been caught by claim of an extraordinary level of bricklaying productivity which prompted him to write a letter to a Professor Turner on the matter and which was quoted in the Times newspaper¹⁵⁸:

'Professor Turner, who was puzzled to learn that a bricklayer had recently laid 879 bricks in an hour, quotes in the Times a letter he received on the subject from the well-known housing authority Mr. J. E. Drower. Mr. J. E. Drower says that this example of bricklaying can only be regarded as a Tour de force. A man, he says, would have to be supernaturally clever to turn out good work at such a pace, for it means that he lays a brick in 4.10 seconds. Even in the old days of 10 hours, to lay 1300 bricks was

¹⁵¹ The memorial includes the names of more than 54,000 officers and men whose graves are not known. 'The site off the Menin gate was chosen because of the hundreds of thousands of men who passed through it on their way to the battlefields it come right casualties from the forces of Australia Canada India South Africa and the United Kingdom.' (cwg.org)

¹⁵² Yorkshire Evening Post, 9 December 1930

¹⁵³ Obituary notice, Monthly Notices of the Royal Astronomical Society, Volume 106, Issue 1, February 1946

¹⁵⁴ National Builder, September 1935, p. 51-52 'The Standard Method of Measurement of Building Works', 'Interview with Mr. Frank Woods, Vice-Chairman Of The Joint Committee For Standardisation Of Building Measurements, by a Representative of the National Builder'

¹⁵⁵ The Scotsman, 21 June 1919

¹⁵⁶ World War I and World War II Shipping and Seamen Rolls of Honour 1914-1945, as printed by Supplement to the London Gazette, 8 January 1949.

¹⁵⁷ Exeter and Plymouth Gazette, 14 October 1924

¹⁵⁸ London Daily News, 7 January 1925

considered a maximum effort. On the trade union regulations, the number laid in a day is very much lower than this - sometimes only 300. Many examples of bricklaying feats have been given but the point to remember is that they should only be regarded as feats, and no general deductions asked the ordinary brick less capacity should be drawn from them'.

Aside from his career as a quantity surveyor, John Drower's interests spanned literature, China (pottery not the country), astronomy and somehow, he found the time to become a fluent speaker of French, German and Italian. He was made a fellow of the Royal Astronomical Society in 1888.

John Edmund Drower died in 1945, aged 92¹⁵⁹.

Henry Riley

Henry Riley was born in 1861 in Burton-on-Trent¹⁶⁰. His father was a 'hoop maker'¹⁶¹.

Like John Drower, Henry Riley received prizes for his scholarship, including two science prizes from the School of Science and Art, when he was 20¹⁶².

By the time he was 30, Henry Riley was a quantity surveyor and an employer, and had moved from Staffordshire to Wandsworth¹⁶³.

In May 1908 when he was in his mid-40s he wrote a technical paper 'Measuring Concrete' which he presented to members of the Quantity Surveyors' Association. Frank woods described it as '*at least 25 years in front of anything published up to that date*'¹⁶⁴.

It was in 1913, that Henry Riley had become part of the first surveyor's-only committee and was in his late 50s by the time the Joint Committee was formed in 1919. He was one of the representatives of the Quantity Surveyors' Association on the Joint Committee¹⁶⁵.

Henry Riley died in 1940 aged 79¹⁶⁶.

¹⁵⁹ Monthly Notices of the Royal Astronomical Society, Volume 106, Issue 1, February 1946

¹⁶⁰ 1939 register

¹⁶¹ Baptism record for Henry Riley

¹⁶² Burton Chronicle, 24 February 1881

¹⁶³ 1891 census

¹⁶⁴ National Builder, September 1935, p. 51-52, op. cit.

¹⁶⁵ National Builder, September 1935, p. 51-52, op. cit.

¹⁶⁶ Probate record

Sir Walter Lawrence



Figure 15 – Sir Walter Lawrence (Image)¹⁶⁷

Walter Lawrence was born in 1872 in Waltham Holy Cross, Essex¹⁶⁸. At this time his father was a builder and ironmonger and employer¹⁶⁹ although he had previously been a carpenter and joiner on his own account¹⁷⁰.

By the age of 20, Walter Lawrence was working in his father's business, primarily joinery work for schools, hospitals, and other institutions¹⁷¹.

Walter Lawrence's industry experience comes from the company's work which focussed mainly on output from its six-acre joinery factory, built in 1907, and developed into more general construction. The company's output spanned hut sections for army and air force camps, and ammunition containers during the 1st World War¹⁷²; office blocks in London including for the County of London Electric Supply Company (cited as an appreciation of modern architecture¹⁷³), and the Masonic Peace Memorial now called Freemasons Hall, and which became a grade II listed building in 1982¹⁷⁴; a cricket pavilion¹⁷⁵, and even the wooden fuselages for a bomber aircraft the de Havilland Mosquito¹⁷⁶ (it is estimated that approximately 6,500 Mosquitos were built in the UK, most by the Walter Lawrence factory at Sawbridgeworth¹⁷⁷).

¹⁶⁷ Image provided by Walter Lawrence Trophy Ltd (walterlawrencetrophy.com) and used with their permission

¹⁶⁸ 1939 register

¹⁶⁹ 1881 census

¹⁷⁰ Sawbridgeworth Local History Society (sbwhistory.com/walter-lawrence-hitory-01)

¹⁷¹ Sawbridgeworth Local History Society (sbwhistory.com/walter-lawrence-hitory-01)

¹⁷² Sawbridgeworth Local History Society (sbwhistory.com/walter-lawrence-history-01, p.2)

¹⁷³ Westminster Gazette, 8 July 1927.

¹⁷⁴ <https://historicengland.org.uk/listing/the-list/list-entry/1113218?section=official-list-entry>

¹⁷⁵ Herts and Essex Observer, 20 December 1930

¹⁷⁶ Sawbridgeworth Local History Society (sbwhistory.com/walter-lawrence-history-02, p.2)

¹⁷⁷ Sawbridgeworth Local History Society (sbwhistory.com/walter-lawrence-history-02, p.5)

In early 1919 at the age of 47, Walter Lawrence became a member of the Joint Committee, and in 1924 was awarded a knighthood in the New Year Honours list¹⁷⁸.

Outside the industry Sir Walter was a keen fan of cricket, he was president of Sawbridgeworth Cricket Club (the company built their new pavilion, referred to above), and in 1934 inaugurated the Walter Lawrence Trophy, awarded to the player to score the fastest 100 in a first-class innings, and which is still awarded today¹⁷⁹.

The firm of Walter Lawrence was renamed Hall & Tawse after its acquisition in 1992.

Walter Lawrence died in 1939 aged 67¹⁸⁰.

Methodology / Outstanding work / Other areas of interest

Our work has relied largely upon NFBTE records and family histories found on commercial websites.

We wrote to numerous professional organisations and several of the big QS practices whose names cropped up in our early research. Mark Barber, Federation of Master Builders provided a fantastic treasure trove of documents which lead us to spend a couple of days at the Modern Records Centre, University of Warwick. Here we studied minutes of many meetings of that organisation and back copies of the 'National Builder' which ultimately provided the Frank Woods' interview, one of the most evocative sources of SMM 1's history.

Most of the personal histories arose from many hours of detective work using Findmypast and Ancestry, which furnished census entries, newspaper articles and many other sources which were painstakingly compiled and summarised in this document. The individual's efforts are acknowledged below.

We have not been able to access historic records at the RICS and we do not know if minutes of the Joint Committee's meetings still exist. We would like to have seen these records to see how the measurement rules evolved, perhaps from the pamphlets and circulars, prepared by the surveyors and which predate SMM 1. Certainly, there was strong opinions amongst committee members as the services of an arbitrator were used about 20 times (from Frank Woods interview in National Builder).

Finally, whilst we have been careful in our research, we may have made mistakes and will be happy to make corrections as necessary.

Please feel free to make use of our research and kindly acknowledge the source.

Acknowledgements

Mark Barber, Federation of Master Builders, for transporting many historic documents from Preston to Knutsford, so that we could examine them.

¹⁷⁸ The Scotsman, 1 January 1924

¹⁷⁹ Walterlawrencetrophy.com/history

¹⁸⁰ Herford Mercury and Reformer, 17 November 1939

Matthew Dowell, British Architectural Library, RIBA, for his assistance with background information on members of the Joint Committee who were RIBA members as well as surveyors.

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Appendix – Preface to the First Standard Method of Measurement

'For many years the Surveyors Institution and the Quantity Surveyors Association (which bodies are now amalgamated) were accepted as the recognised authorities for deciding disputed points in connection with the measurements of building works. The frequency of the demands upon their services for this purpose directed attention to the diversity of practise, varying with local custom, and even the idiosyncrasies of individual surveyors which obtained. This lack of uniformity afforded a just ground of complaint on the part of contractors that the estimator was frequently left in doubt as to the true meaning of items in the bills of quantities which he was called upon to price, a circumstance which militated against scientific and accurate tendering.

In the absence of any statutory qualifications for surveyors practising in the United Kingdom, any person, up to the present, how's been at Liberty to describe himself as a quantity surveyor, and the public have no guarantee that he is qualified for that office. This fact resulted in the issue of a considerable amount of unskilled work under the designation of bills of quantities.

Both the Surveyors' Institution and the Quantity Surveyors' Association were impressed with the necessity of securing greater accuracy of work and uniformity of method. The later body, in July 1909, with this object in view appointed a Committee who prepared unpublished pamphlets setting out the method of measurement recommended by the Association in respect of three trades. The Surveyors' Institution also issued to its members circulars giving an authoritative opinion as to the correct method of measurement in the case of items in connexion with which disputes had occurred. The desirability of cooperation between the two societies thus became evident, and a Joint Committee was set up in June 1912, upon which was imposed the task of drawing up a comprehensive set of Standard Rules of Measurement of Building Works. In 1918 representatives of the building trades were added to this committee, four contractors being nominated by the National Federation of Building Trades Employers and the Institute of Builders. The Joint Committee were assisted in their deliberations by interviews with representatives of certain trades.

The Standard Method of Measurement of Building Works drawn up and set forth in the following pages is founded upon the practise of the leading London quantity surveyors with certain modifications by way of alternatives, and not involving matters of principle, to suit the practise obtaining in other parts of the Kingdom.

The joint committee was composed as follows: six surveyors as nominated by the Surveys Institution and the Quantity Surveyors Association, and four contractors nominated by the National Federation of Building Trades Employers and the Institute of Builders, viz. Surveyors Messrs F. A. H. Hardcastle (Chairman), Thomas E. Bare (Hon. Sec), R. C. Gleed, Arnold E. Harris, Walter Lawrance, and Morgan H. Young. Contractors: Messrs R. Friend (Rugby, Vice Chairman), W. Lacey (London), Stanley Miller (Newcastle-on-Tyne) and, Frank Woods (Bolton, Lancashire).

Other gentlemen who have served on the Committee for a time are: Surveyors: Messrs. Arthur G Cross, W. E. Davis, J. E Drower and, Henry Riley. Contractor: Mr. Walter Lawrence (London).'