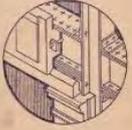


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Association for Preservation Technology
International
Australasia Chapter

BUILDING TECHNOLOGY HERITAGE
LIBRARY SCANNING

PROJECT REPORT

Catalogue N°10.

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**Association for Preservation Technology International
Australasia Chapter**

**BUILDING TECHNOLOGY HERITAGE LIBRARY SCANNING
Miles Lewis Collection**

Project Report

Meher Nishchal Bahl

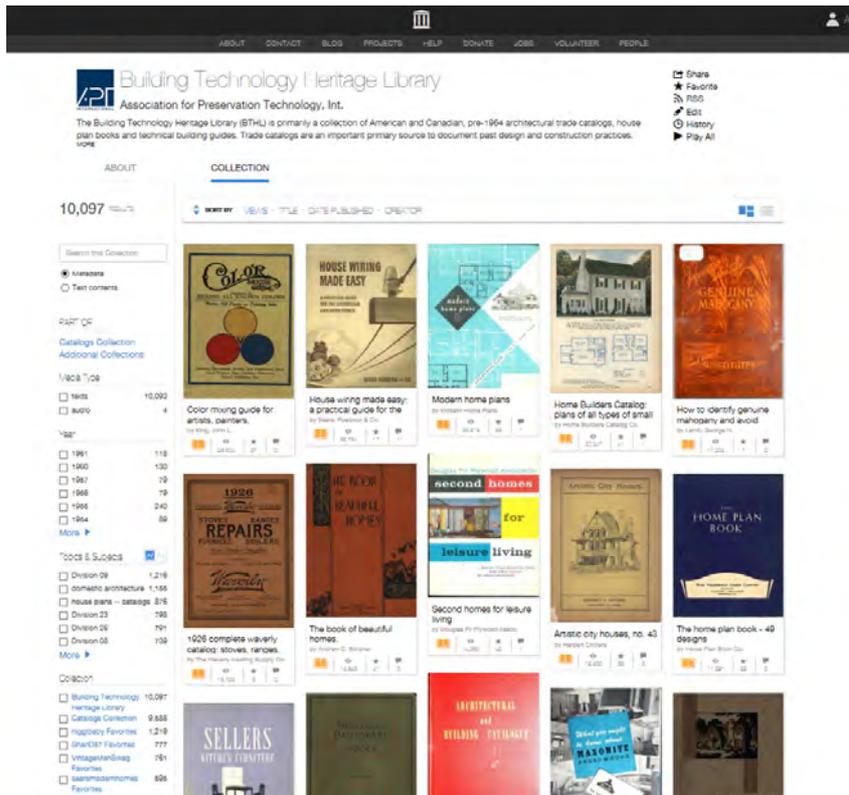
03.04.2020

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1. The Project

The Association for Preservation Technology International [APT] maintains a very extensive on-line Building Heritage Library containing digitised versions of technical and trade literature freely available for the use of architectural conservators and historians:



Snapshot of the Building Technology Heritage Library as hosted on the Internet Archive
<https://archive.org/details/buildingtechnologyheritagelibrary>

Although the collection is in principle international, the material so far collected is predominantly North American. In seeking to rectify this, Mr Mike Jackson, co-chair of the APT Building Technology Heritage Library, identified in the collection of Professor Miles Lewis, Melbourne, about 400 relevant items which have not so far been copied by the APT nor, so far as searches reveal, by any other body. He approached both Lewis himself and the APT Australasia Chapter with a view to capturing this material.

The APT Australasia Chapter agreed to advance the proposal, though the identified publications in the Lewis collection are by no means all Australian.

2. The Association for Preservation Technology

The Association for Preservation Technology International (APT) is a multidisciplinary, membership organisation dedicated to promoting the best technology for conserving/preserving historic structures and their settings. APT members come from more than thirty countries and include preservationists, architects, engineers, conservators, consultants, contractors, craftspersons, curators, developers, educators, historians, landscape architects, students, technicians, and other people directly involved in the application of methods and materials to maintain, conserve, and protect historic structures and sites for future use and appreciation.

The APT's mission is to advance the application of traditional and contemporary technology appropriate to the conservation of the built environment and to nurture the cultural resources that contribute to its significance.

The web site is <http://www.apti.org/index.php?src=&submenu=>

There is a small Australian membership, and an Australasian chapter convened by Dr Donald Ellsmore.

3. The Building Technology Heritage Library

The Building Technology Heritage Library (BTHL) is a free, online digital library. The content includes architectural trade catalogues, house plan books and technical building guides which are in the public domain (pre-1964 in USA terms). These materials can aid in the preservation and conservation of older structures as well as other research goals.

The initial focus of the Building Technology Heritage Library has been the architectural trade catalogue. These catalogues have excellent descriptive and technical content and are of particular value to heritage professionals. They are also difficult to access. There are only a few specialised research collections in North America and their content was not being reprinted or digitised by any other institution. By coordinating the conversion of these to online documents the APT makes rare materials available to everyone, and helps to avoid the duplication of items from various collections.

3.1 Sources

The BTHL contains materials from a variety of private and institutional collections. These materials are rarely available in architectural and professional libraries. The first major architectural trade catalogue collection was that of the Canadian Centre for Architecture (CCA), which encompasses more than 3,400 catalogues from the early 19th century to 1963. In addition to the architectural trade catalogues, the initial contributions include a large number of house plan catalogues, which are of great interest to owners of older houses. The CCA collection also contains a number of European catalogues, which provide an international dimension to the BTHL. The American materials on the BTHL end in 1963, as materials after this date are still under copyright protection by the original publishers.

3.2 Hosting

The BTHL is hosted by the Internet Archive (www.archive.org), which was founded to build an on-line library offering permanent access to historical collections of digital materials to researchers, historians, scholars, and the general public at no charge. Materials placed on the BTHL are in the public domain.

3.3 History of the BTHL

The BTHL was initiated on the APT website in 2006. That autumn, the first thirteen catalogues were made available on the APT Digital Archive of Building Technology. The goal of the project was stated: 'This new digital archive will greatly expand the availability of rare and hard-to-find materials related to the construction and finishes of historic structures and become a valuable research tool for design professionals, building conservators, and preservationists.' Over the next year the site grew to thirty documents, which was the beginning of what would become a much larger project. In 2010 the APT and the Canadian Centre for Architecture (CCA) initiated a project that added more than 3,400 architectural trade catalogues from the CCA collection. During 2018 the content of the BTHL exceed 10,000 documents by the addition of material from the Lewis collection.

3.4 Building Technology Heritage Library Usage

The BTHL has seen steady growth in content and use, and thousands of documents are now being viewed each day. For the preservation community, it has become a primary research tool accessible from anywhere in the world. The original goals of the project have been far surpassed in both the comprehensive set of documents and the user-friendly interface supported by the Internet Archive. APT has now reached a point where other libraries are contacting it with a view to contributing their material. The BTHL has proved to be an unqualified success for APT and a great service to the world's building conservation community.

3.5 The Australian Project

Mike Jackson first contacted Miles Lewis in May 2017, since when a number of options have been explored. Lewis was not prepared to ship the collection to the USA for scanning, and was not prepared to be the manager of the project or to handle the funds. However he offered full cooperation, and obtained an overhead scanner at his own expense to facilitate the work.

The APT Australasia Chapter was prepared to be the sponsoring organisation, but because it had no office establishment or capacity for detailed administration it was proposed to do the work by contract for a set number of hours,

As at August 2017 Jackson estimated that there were over 400 items in the Lewis collection suitable for scanning, viz:

- 166 Australian trade catalogues and technical publications

- 211 non-Australia publications
- 29 Other early publications of 'noteworthy historic value', with more yet to be checked out

He was working from the on-line catalogue last updated in 2009, and as the library has been considerably augmented since then the numbers will have increased. He quoted a figure of US\$12 average to a document from US experience, and subsequently estimated that one person can scan and upload two documents per hour, based on an average of 70 pages. But these calculations were not directly applicable to the items identified in the Lewis collection which were on average much larger (one, for example, with over 1200 pages). Moreover some are in very large format and difficult to handle.

Stage 1



Collage of cover pages of documents scanned in stage 1

The first stage of the project officially started on the 3rd of January 2019 at Osbert Lancaster Memorial Bibliographic Institute, Professor Miles Lewis's library. Out of the over 400 identified materials, the scanning started with catalogues consisting a couple of dozen pages and went up to publications of up to a thousand pages. While, the scanner at Professor Lewis's library

was fit for smaller, flatter catalogues, it turned out unsuitable for more complex materials. The work was then completed at the University Digitisation Centre.

Addition of materials from Professor Lewis's library contributed majorly in extending the reach of the BTHL from being a primarily American collection to including documents from other parts of the world. During the first stage, as a part of Professor Lewis's collection, a 1904 tile, terracotta and fireplace catalogue from a French company: Emile Muller & Cie was added to the BTHL as its 10,000th upload. It was carefully selected as the milestone catalogue. It is beautifully illustrated and gives an overview of ceramic tile and architectural terracotta available at the start of the 20th century in France.

Stage 2



Collage of cover pages of documents scanned in stage 2

After the successful run of stage 1 of the project, funding for stage 2 was sought even before stage 1 ended. Stage 2 of the process was majorly revolving around completing scans and applying the learnings from stage 1 to achieve better results in stage 2. For the same amount

of hours spent scanning in both stage 1 and stage 2, the process proved to be more streamlined with an approximately 4000 extra pages scanned in the second stage.

During stage 2, we were approached by Luca Milano from Italy, who had inherited glass transfer panels from his aunt in Paris. These glass transfers were made essentially of impregnated paper, which were stuck to windows to imitate stained glass. He was not aware of what the material actually was, but on the bottom found the name 'Levens', which directed him to one of the scans uploaded during this process. Another international interaction was sparked through the project with a Usonian wallpaper expert, Bo Sullivan. He owns the largest known collection of Lincrusta catalogues. He contacted Mike Jackson about what he called the 'fabulous recent post' of Professor Lewis's Beck Lincrusta catalogue on the BHTL. It resembles one in the Getty collection but has extra pages which make it 'the best reference available for Lincrusta patterns at their peak, that I am aware of.' Professor Lewis has since been in correspondence with Mr Sullivan about various wallpaper matters. Seeing widespread application of the recently digitised collection proves the success of the project and also its reach to audience worldwide.

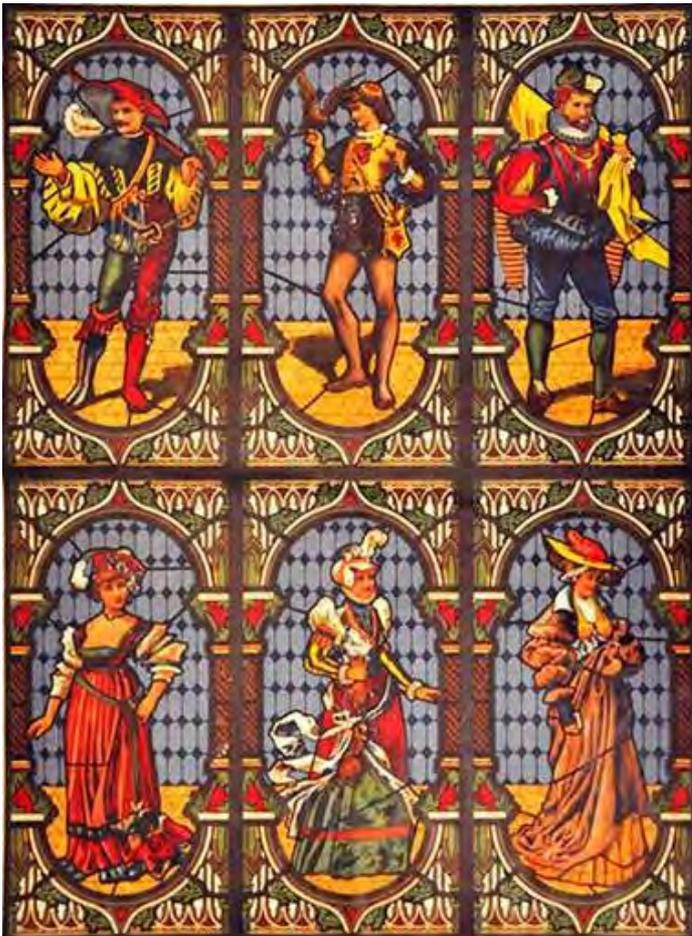


Image of the glass transfers as forwarded by Luca Milano

3.6 Copyright

Under Australian law, copyright expires seventy years after the death of the creator, but the situation is more difficult when the creator is a corporate entity. Most of the trade literature will have been produced by companies now defunct. Good practice is to make an attempt to contact the author or heirs, but in the event of no response, to proceed. In the unlikely event of an objection the document is simply taken down off the web. There will be a few companies which exist or whose successors are known (for example, the Powerhouse Museum in Sydney acquired all the Wunderlich company's material, and possibly holds the rights to the Wunderlich materials in the Lewis collection).

4. Funding

4.1 Stage 1

The initial budget for stage 1 was based upon the funding of 400 hours of work, in the knowledge that this would be unlikely to complete the task, but that it could be expected to establish what more might be needed. Upon this basis an application for support was made to the Vera Moore Foundation for:

400 hours scanning @ \$50	20,000
5% contingency	1,000
Administration fee 5% of \$21,000	1,050
Total	\$22,500

The Vera Moore Foundation granted the funding sought in full. The administration fee was allowed for in the belief that it might be necessary for an incorporated body to hold the funds, rather than APT Australasia, which is not incorporated. Fortunately this proved not to be the case.

4.2 Stage 2

After the success of stage 1, funding for another 400 hours of work was sought from the Vera Moore foundation, without the administration fee for the second stage.

400 hours scanning @ \$50	20,000
5% contingency	1,000
Total	\$21,000

4.3 The Vera Moore Foundation

The Vera Moore Foundation (business name: The Trustee for the Vera Moore Foundation) is a discretionary services management trust registered with the Australian Charities and Not-for-Profits Commission (ACNC). It was established in 1998, and aims to support the general

community in Australia. It has in the recent past been a regular supporter of architectural history related projects based in Victoria.

Its details are:

ABN: 28701176116

Address:

Level 11, Suite 2, 379 Collins St

Melbourne VIC 3000

Australia

5. Project Process

Over the course of the project the workflow has been iterated on continuously as deemed fit on a case by case basis. As mentioned previously, originally the digitisation was to be done at the Osbert Lancaster Memorial Bibliographic Institute, Professor Lewis's library but soon after the start of the project, it turned out to be impractical to carry out the digitisation at the location as the scanner present was not suitable for an array of documents. The scanning was then moved to the University of Melbourne's Digitisation Centre. The centre provides self service facilities for students and staff to carry out scanning. The range of scanning equipment present at the digitisation centre is apt for accommodating the varying nature of the documents in the collection.

The basic workflow for the upload of the documents was already defined by APT International for the Building Technology Heritage Library. This included naming conventions, metadata creation and uploading the document. The main challenge during the project was to understand the process of digitisation and produce scans of high quality, which meant identifying the right scanner for each document, devising tips and tricks depending on the physicality of the material and post processing the scans. It is also essential to understand to what point one can produce perfect scans without compromising its physical condition.

5.1 Contractor



Miles Lewis and Meher Bahl at the Osbert Lancaster Memorial Bibliographic Institute (Lewis's library) during the first stages of the project.

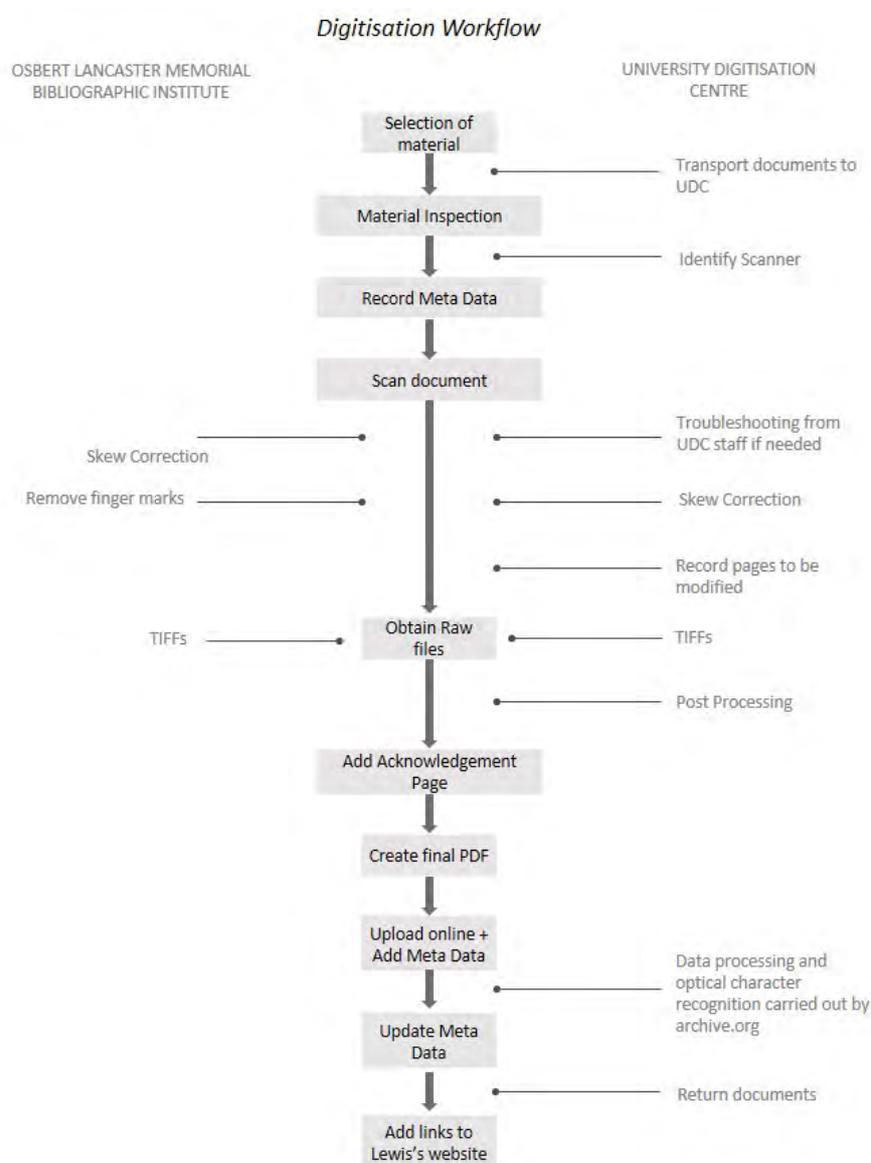
A contract was entered into between APT Australasia and Meher Nishchal Bahl for the provision of 400 hours of scanning work. Bahl had previously digitised archives for the Architecture, Building and Planning Library at the University of Melbourne.

The contractor's primary responsibility is the care of the material. Although there has inevitably been some wear and tear caused by the scanning process, only one book had

suffered specific damage, a split spine, and this has been repaired by Scribe Bookbinding of Carlton.

It had been envisaged that the scanning would take place at Lewis's Library, but this soon proved impracticable, as will appear below, and the work has been completed at the University of Melbourne's Digitisation Centre.

5.2 Digitisation Workflow



Project workflow and its adaptation to Professor Lewis's library and the UDC (Source: Author)

5.2a MATERIAL SELECTION

Around 400 items were identified by Mike Jackson in the library of Professor Miles Lewis. These were selected as they have not so far been copied by APT nor, so far as searches reveal, by any other body. The books were provided in stages, following the list prepared by Jackson. When the digitisation was carried out at the UDC, it had to be first transported from Lewis's library to the UDC. The digitisation centre has secure compactors to safely store the rare collection.

5.2b MATERIAL INSPECTION

Prior to scanning, the document's condition is assessed for major fails in the structure. Like a condition report for a built structure, the assessment provides clues for what parts of the document need special care while scanning and how robust will it be on various scanners.

5.2c RECORD METADATA

The metadata is recorded in accordance with the information provided by Professor Lewis about each document. The metadata fields are generated according to the field present at the internet archive. I first created a base document to collate the metadata for all objects at one place and then individually fill it up on the internet archive while upload. Standard metadata fields for the project are:

1. Company / Author
2. Title
3. Year
4. Pages
5. Size (height x width)
6. Is it a trade catalog?
7. Keyword/Subject
8. Contributor
9. Publisher
10. Coverage / place

Company / Author	Title	Year	Digitisation date	Pages	Size (HxW)	TRADE CATALOG	Keyword / Subject	Notes	Contributor	Publisher	Coverage / place
Gold	Neon: a Handbook for Electrical Engineers, &c.	1934	9-Jul	196	22.5 x 14 cm		Neon Tubes; Electric signs; signage		Miles Lewis Collection	Crosby Lockwood & Son Ltd.	London
C Allsop	Practical Electric Bell Fitting	1889	9-Jul		19.5 x 12.5 cm		Telecommunication, Electric engineering, Electronics, Bell Fitting, Pushes and Switches		Miles Lewis Collection	E. & F. N. Spon	London
W Urquhart	Electric Light Fitting	1890	11-Jul	298	19 x 12.5 cm		Electric lighting -- Catalogs, Division 26, light fixtures		Miles Lewis Collection	Crosby Lockwood & Son Ltd.	London
N Hasluck	Electric Bells	1900s	9-Jul	168	17.5 x 10.5 cm		Telecommunication, Electric engineering, Electronics, Bell Fitting, Pushes and Switches		Miles Lewis Collection	E. W. Cole	Melbourne
George Farmiloe & Sons	General Catalogue, Revised ed	1885	12-Jul	524	19 x 12.5 cm		General catalog; sanitary fittings -- catalogs; pipes and gutters; tools -- catalogs		Miles Lewis Collection	Same as Author	London
British Reinforced Concrete Engineering Co. Ltd.	B.R.C. Structures: a Photographic Record of the Use of Reinforced Concrete in Modern Building Construction	1923	11-Jul	380	21.5 x 17.5 cm		concrete, Division 03, concrete structure; reinforced concrete; structural concrete		Miles Lewis Collection	Same as Author	Manchester
oulton & Co, Limited	Catalogue of Fitted Sanitary Appliances	1904	10-Jul	416	20 x 13 cm		Sanitary Appliances; Toilet facilities; Plumbing -- catalogs, Fixture, Accessories, Sanitary Ware		Miles Lewis Collection	Same as Author	London
deal Boilers & Radiators Limited	Ideal Boilers Radiators Accessories	1938	8-Jul	240	18.5 x 11 cm		boiler, Division 23, HVAC, heating boilers, cast-iron boilers; boiler accessories		Miles Lewis Collection	Same as Author	Hull
deal Boilers & Radiators Limited	Ideal Boilers Radiators Accessories	1956	8-Jul	226	18.5 x 11 cm		boiler, Division 23, HVAC, heating boilers, cast-iron boilers; boiler accessories		Miles Lewis Collection	Same as Author	Hull
elay Automatic Telephone Company Limited	The "Relay" Automatic Telephone System	1920s	8-Jul	32	28.5 x 21.5 cm		Telephone -- Handbooks, manuals; automatic telephone		Miles Lewis Collection	Same as Author	London
ohler Co.	Kohler of Kohler [catalogue]	1917	8-Jul	72	20.5 x 14 cm		Plumbing -- catalogs; Fixture; Accessories; Enamled Plumbing ware		Miles Lewis Collection	Same as Author	Kohler [Wisconsin]
ohler Co.	Enamled Plumbing Ware for Factories etc.	1918	8-Jul	40	28 x 21.5 cm		Plumbing -- catalogs; Fixture; Accessories; Enamled Plumbing ware		Miles Lewis Collection	Same as Author	Kohler [Wisconsin]
ortland Cement Association	Concrete in Architecture	1927	8-Jul	72	28 x 21.5 cm		Concrete; Division 03; Architectural Concrete		Miles Lewis Collection	Same as Author	Chicago
he Trussed Concrete Steel Co Ltd.	To the Foreman on the Job, &c.	c1935	8-Jul	52	18.5 x 12.5 cm		Concrete, Reinforced concrete, concrete forming, Division 03, metal forms, Division 05, metal, structural steel		Miles Lewis Collection	Same as Author	London
United States Department of the Interior, Bureau of Reclamation	Concrete Manual, 6th edition	1956	10-Jul	528	18.5 x 11 cm		concrete -- catalogs, Division 03, cast-in-place concrete, structural concrete, architectural concrete		Miles Lewis Collection	Same as Author	Denver, Colorado

Snapshot of the metadata spreadsheet with various columns filled.

The subject headings are based upon those which have been used in the US work previously, viz:

1. the US Library of Congress headings
2. the Construction Specifications Institute modern nomenclature
3. popular tags that go beyond the typical professional topics

In a lot of trade catalogues, it is noticed that the dates are missing. In such cases the date of the catalogue should be roughly assumed from the graphics and print of the same. The field for subjects is a crucial one as it gives keywords that people can easily search for. The BTHL keywords include the standard subject headings used by the Library of Congress and an additional nomenclature used by the Construction Specifications Institute (CSI). The nomenclature sets up a standard system, based on that of the USA.

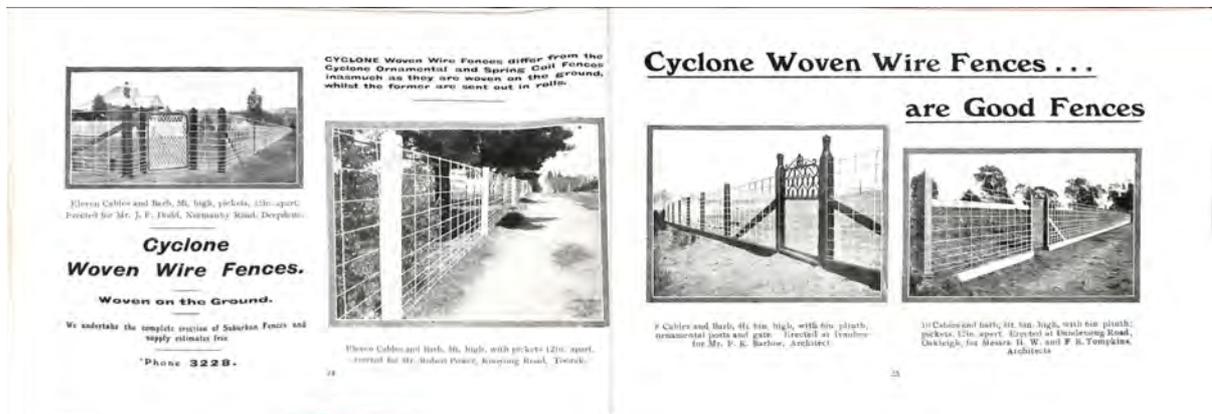
5.2d SCAN DOCUMENT

Fujitsu Scansnap Overhead Scanner

The Fujitsu Scansnap Overhead Scanner

<https://www.fujitsu.com/au/products/computing/peripheral/scanners/scansnap/sv600/>

A Fujitsu ScanSnap overhead scanner was bought by Lewis (at his own expense) on the recommendation of Mike Jackson, but it proved completely unsuitable. It is a very cheap machine which can in principle scan flat sheets, but pages which do not lie flat are seriously distorted. Even flat sheets, if they have folds, must be weighed down with a sheet of glass and scanned through that. The machine is quite unsuitable for rare books, which often cannot be forced to lie flat without suffering damage.



The Cyclone Fence and Gate Book. No. 16. (Source: Author)

A machine for scanning rare books must have an angled cradle in which the book can rest. The pages can be turned with the minimum of handling and damage. The open book can be photographed from directly above, in which case it is necessary to separate the two images and remove distortions. Much better is have two cameras operating simultaneously, one angling in from each side at right angles to each page. This gives the least distortion and the best penetration of the gutter at the centre. As the pages are commonly still not lying flat it is desirable to have the equivalent of the sheet of glass. This will be two sheets of glass or plastic fixed at an angle the same as that of the cradle, and counterweighted so that they can be easily lowered and raised.

To buy a suitable scanner would have exceeded the budget of the whole project, and to rent one proved impossible. Fortunately Ben Kreunen, Technical Support Officer at the University of Melbourne Digitisation Centre, agreed to provide the necessary facilities. The Centre provides facilities for students and staff, and Bahl is a postgraduate student, Lewis an emeritus staff member. This arrangement meant working in with other users of the equipment, but that has not proved to be a substantial problem. It also meant transporting the books to and from Lewis's library, which has been done by Uber as and when required. It further meant that Lewis was not present as the scanning proceeded and was in no sense supervising the work, as had originally been envisaged.

The University Digitisation Centre boasts of state of the art equipment catering to an array of material. During the first stage of the project, two such equipments were used for scanning. One being the Zeutschel OS 16000 Advanced Plus Flatbed Scanner, mostly used for non-fragile documents with flexible spines, and the Zeutschel OS 12000 V cradle scanner, mostly used for fragile documents. Apart from also using the above scanners in the second stage, the scanning of large format items began with the Zeutschel OS 14000 A1 scanner and scanning with high quality camera equipment was also taken forward for intricate documents.

Zeutschel OS 12000 V

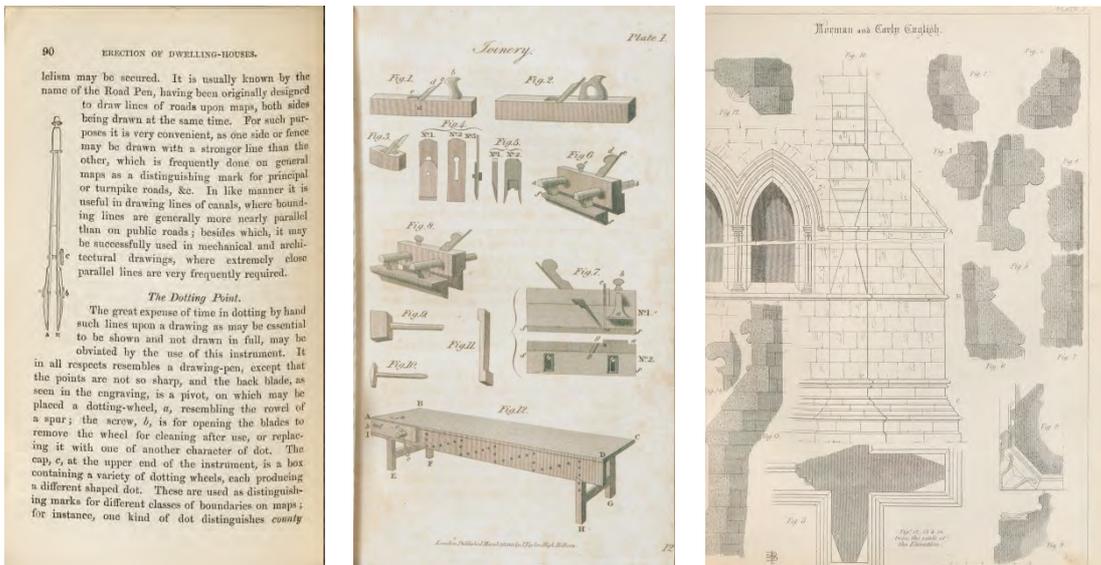


The Zeutschel OS 12000 V Scanner

<https://www.zeutschel.de/en/produkte/scanner/farbscanner/os-12002-v-din-a2.html>

The Zeutschel OS 12000 V cradle scanner was used for rare collections that required extreme care. As the maximum opening angle is 90°, the books do not lie flat open and the pages are turned with minimum damage to the book and its spine. The scanner present at the UDC did not have a glass plate to hold the pages down, which resulted in some inevitable curve present in the scan. As the book lies on the cradle opened at an angle, there is a high chance of shadow cast on either side by the book, as shown in the image below. Books with full bleed

prints were difficult to scan as it was difficult for the scanner to reach the end of the page towards the centre. The pages were held manually to prevent them from turning which increased the time spent in scanning the document.



(L-R) Scan of pg. 90 of *The Erection of Dwelling Houses* by S H Brooks demonstrating curve in the scan. Scan of plate 1 of *Mechanical Exercises; or the Elements and Practice of Carpentry &c* by Peter Nicholson demonstrating the shadow cast by the adjacent page. Scan of *The Mason's, bricklayer's, Plasterer's and decorator's Practical Guide* by Robert Robson demonstrating the loss of data towards the left due to the print being full bleed.

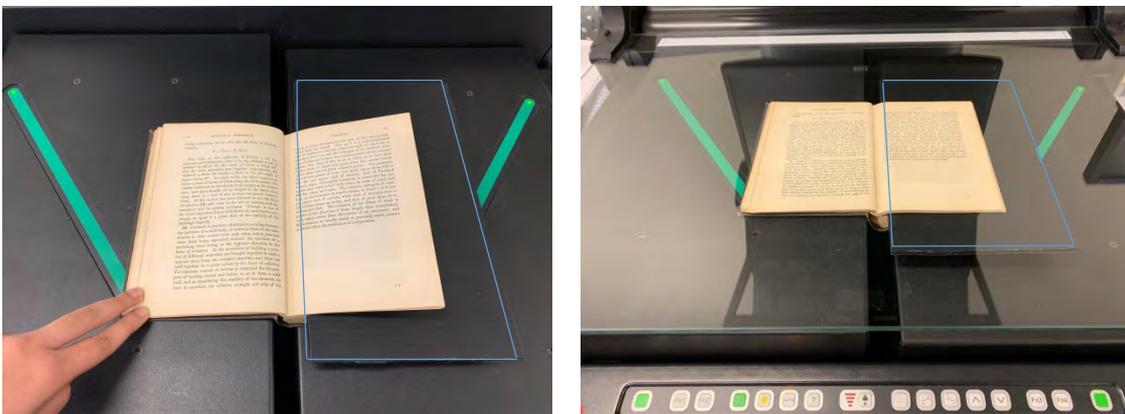
Zeutschel OS 16000 Advanced Plus



The Zeutschel OS 16000 Advanced Plus Scanner

https://www.zeutschel.de/en/produkte/scanner/farbscanner/os-16000-advanced_plus.html

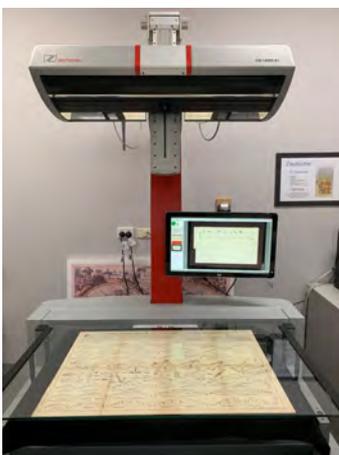
The Zeutschel OS 16000 Advanced Plus was used more widely for the project as it turned out to be the most flexible scanner for all types of documents excluding those that needed extreme care. It consists of a motorised flat cradle which adjusts according to the book and houses the spine as well. The self-opening glass plate made it easier for the documents to lie flat and worked best for curve correction. This also eliminated the problem of shadows and manually holding the pages in place, which is why, this scanner turned out to be much faster than the one above. The main problem arose when the scanner was used to scan larger documents. Having these documents lie flat was almost impossible as the pages would curve towards the spine. It was corrected by inserting a rigid surface between the pages to flatten the pages further, as shown in the picture below.



Inserting a rigid surface in order to flatten the curve while scanning on the flat bed.

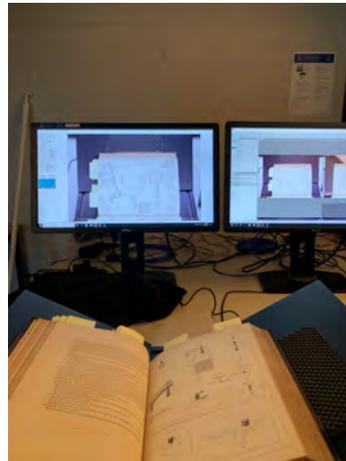
For the both the scanners, scans turned out better for pages that had more text than diagrams and illustrations because the deskew operation in the software detected text better than other parameters to deskew and straighten the scan.

Zeutschel OS 14000 A1 scanner



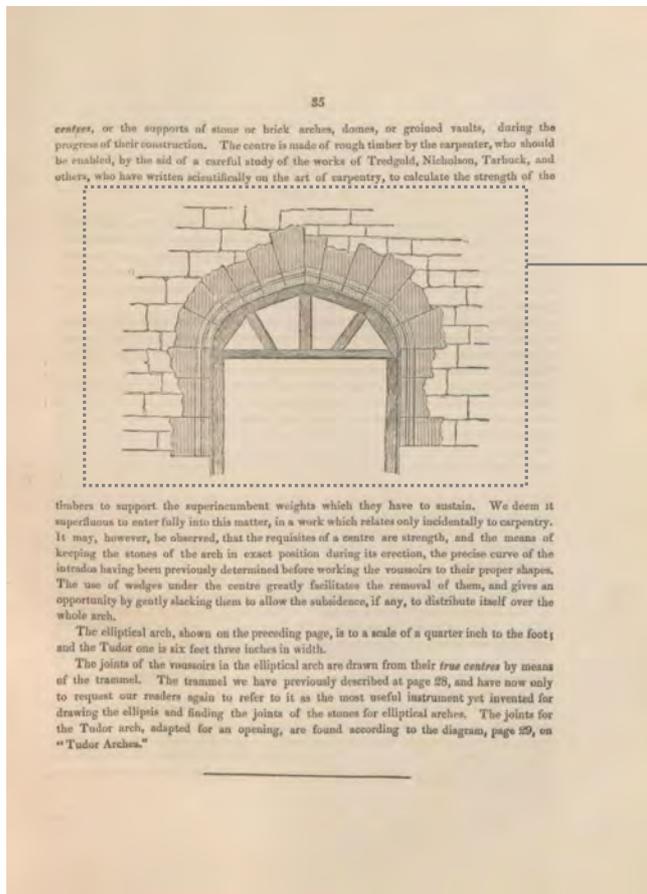
The Zeutschel OS 14000 A1 scanner was used to digitise large format material (larger than A2 and up to A1). Professor Lewis provided 6 elephant folios over the period of time to be scanned. The scanner offers a maximum 600 dpi scan and can produce images of up to 700 Mb. This makes the scanning process extremely slow in comparison to other scanners. Like the Zeutschel OS 16000 Advanced Plus, this scanner also has a motorised flat cradle that adjusts according to book and provides support for the spine. The glass plate makes ensures that the documents lie flat.

Digital Single Reflex Camera



(Source: Author)

For the digitisation of extremely intricate prints that had extreme noise in the scan from other scanners, the UDC's DSLR set up was used. The set up consisted of light screen, a cradle to rest the book on and two DSLR cameras set up at an angle to capture both sides of the book. Similar to the Zeutschel OS 12000 V cradle scanner, the pages have to be manually held in order to flatten the pages. The capture software enables for manual cropping but most have to be post produced in Photoshop. The scans are of a higher quality but curvature is definitely more than the rest. It is the question of drawing quality VS page quality. It is mostly required for pages with illustrations or images.



The hatch in the drawing here contains a lot of noise due to the close nature of the lines within the hatch. It is corrected by scanning with the camera setup.

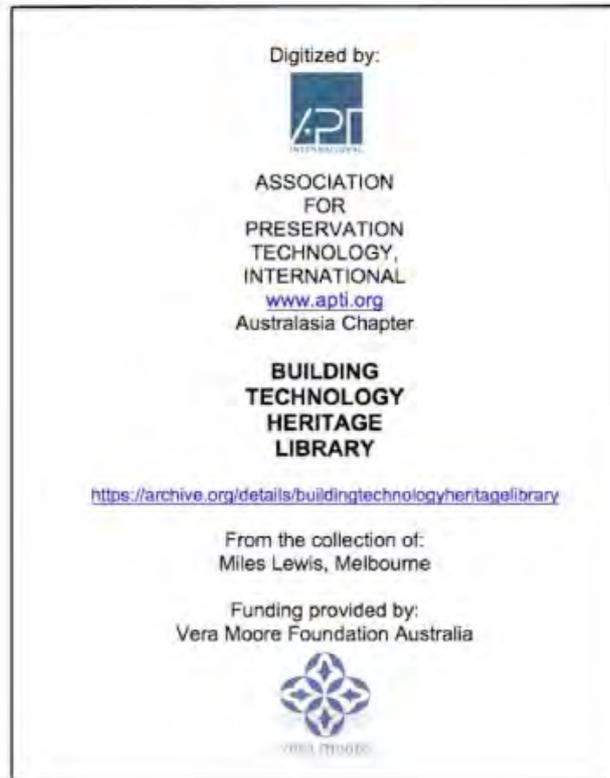
The Mason's, Bricklayer's, Plasterer's and Decorator's Practical Guide. (Source: Author)

5.2e POST PROCESSING

After obtaining the raw .TIFF files, images that require further de-skewing or cloning at the edges are taken into Photoshop for post-production. This ensures that the final compilation of the document is up to a high standard of quality.

5.2f ACKNOWLEDGEMENT

An Acknowledgement page is added at the end of each scan to acknowledge the collection and laying out the project details. The following is the acknowledgement page:



5.2g DOCUMENT UPLOAD WITH PRIMARY METADATA

The document is uploaded online onto archive.org on the Building Technology Heritage Library page under the public domain. Primary metadata is added in the required fields as follows:

Page Title *	Title of the page	
Page URL *	https://archive.org/details/apti-australasia-bthl-stage-1-report	✓
Description *	Add a description of the item page	-
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5.2h UPDATE METADATA

After the data is processed and the optical character recognition is carried out by the Internet Archive, the rest of the metadata must be updated. This includes adding the name of the collection, publisher and the place. This operation means that the uploader has an opportunity to check the metadata again.

5.2i WEBSITE LINKS

Professor Miles Lewis maintains an extensive record of his personal library on his website <https://www.mileslewis.net/>. The end step was to use Adobe Dreamweaver to add links of these scanned documents, present on the Internet Archive, within the personal library.

6. Work accomplished

In total, 363 documents have been scanned, ranging from 1 to 1290 pages. A total of 74,274 pages were scanned by the end of the project. Details of both the stages are listed below.

6.1 Stage 1

206 documents have been scanned and uploaded, their size varying from 1 to 1073 pages, and the total is estimated at 35,133 pages. The material varies in date from 1755 to 1973. It is listed in the appendix below, and is categorised as:

French	11
British	83
Usonian	51
Australian	57
Other	4

6.2 Stage 2

157 documents have been scanned and uploaded, their size varying from 2 to 1290 pages, and the total is estimated at 39,141 pages. The material varies in date from 1753 to 1958. It is listed in the appendix below, and is categorised as:

French	5
British	81
Usonian	20
Australian	48
Other	3

APPENDIX 1: List of Scanned Documents

FRENCH

Pierre Bullet, *Architecture Pratique*, &c. Jean-Thomas Herrisant, Paris 1755.

(ef) C G T Morel-Vindé [Vicomte de]. *Essai sur les Constructions Rurales Economiques contenant leurs Plans, Coupes, Elévations, Détails at Devis établis aux plus bas prix possibles*. Paris 1824.

(ef) Emile Martin. *Pont du Cubzac: Dessins et Description des Piles en Fonte de Fer*. Paris 1841.

[p] Javons & Rivière, *Ornements pour le Bâtiment: l'Architecture en Zinc, Cuivre et Plomb*. Javons & Rivière, Paris [no date] after 1885 [broadside].

Paul Lacroix. *Les Arts au Moyen Age et a L'Époque de la Renaissance*. Paris 1869.

(f) E Fauchois, *Ornements pour l'Architecture, Estampés & Repoussés en tous genres: Zinc, Cuivre, Tôle & Plomb*. Fauchois, Paris 1871.

(p) P Desfeux. *Carton-Cuir pour Toitures et au Carton Bitumé*. Paris 1888.

Comptoir de l'Industrie, L Laurent & Carrée. *Tarif des Fournitures Générales pour l'Industrie*. Reims, no date [c 1890].

A Giseland, *Sur un Nouveau Type de Ferme Parabolique Applicable à la Construction de Ponts Métalliques a Voie et Dessus*. Paris 1891

C Piehl. *Mètre et Attachements, &c (3me Partie)*. Paris, no date [c 1900].

E Barberot. *Traité de Constructions Civiles*. Paris 1900.

E Mourel-Maillard & L Dauchaud. *Mètre et Attachements de Terrasse, Maçonnerie, Carrelage, Ciments et Égouts, Turnell-Maçonnerie (1er Partie)* [18th part of G Oslet, *Cours de Construction*]. Paris, no date [c 1900].

L Dauchaud & C Piehl. *Mètre et Attachements, &c (2me Partie)*. Paris, no date [c 1900].

P Gélis-Didot & H Leffillée. *La Peinture Décorative en France du XIe au XVIe Siècle, 2nd ed*. Paris c1900.

Émile Muller & Cie. *Produits Céramiques pour Constructions et Industries. Céramique d'Art. Catalogue No 2. Construction et Décoration Architecturale*. Paris 1904.

Levens, *Vitraux Adhésifs*. Paris, 1907.

BRITISH

J Durno. *A Description of a New-Invented Stove-Grate*. London 1753.

William Pain. *The Builder's Pocket-Treasure; or Palladio delineated and explained*. New ed, London 1785.

Board of Agriculture [London], *Communications, vol I 2nd ed*. London, 1804.

(p) Jas. Thornton & Son. *Jas. Thornton & Son, Bradford Street, Birmingham, Manufacturers of Wrought Iron Hinges, &c*. Birmingham, no date [?c1810]. Single sheet flier.

Uvedale Price. *Essays on the Picturesque, &c*. 3 vols, London 1810.

Peter Nicholson. *Mechanical Exercises; or the Elements and Practice of Carpentry, &c, &c*. London 1812.

A G Cook, *The New Builder's Magazine, and Complete Architectural Library, For Architects, Surveyors, Carpenters, Masons, Bricklayers, &c, &c*. Thomas Kelly, London 1819.

Peter Nicholson, *The New Practical Builder, and Workman's Companion &c*. 2 vols, Thomas Kelly, London 1823

Nathaniel Whittock. *The Decorative Painters' and Glaziers' Guide*. London, no date (c1827).

P F Robinson. *Designs for Ornamental Villas*. James Carpenter and Son, London 1827.

(f) T F Hunt. *Exemplars of Tudor Architecture, adapted to Modern Habitations*. London 1841.

S H Brooks. *Designs for Cottage and Villa Architecture*. London 1842

(p) Stephenson & Co. *Manufacturers of an improved description of strong iron cattle fence, hurdles, gates, round and square spike railing and all kinds of wrought iron work [folding broadside]*. London, no date

The Student's Guide to the Practice of Measuring and Valuing Artificers' Works. London 1843.

Charles Parker. *Villa Rustica*. 2nd ed, London 1848

Charles D Young. *A Short Treatise on the System of Wire Fencing, Gates, etc. as manufactured by Charles D. Young & Company*. Glasgow 1850.

Charles D Young. *Illustrated and Descriptive Catalogue of Ornamental Cast and Wrought Iron and Wire Work manufactured by Charles D. Young & Company*. Edinburgh 1850.

'Four Treatise [sic] on Building': a bound compilation of Weale's rudimentary treatises, containing Allen, *Cottage Building*, Andrews, *Agricultural Engineering*, Burgoyne, *Blasting and Quarrying*, and Dobson, *Foundations and Concrete Works* (John Weale, London, 1850).

- The Useful Arts Employed in the Construction of Dwelling Houses*. 2nd ed, London 1851.
- W H Leeds. *Rudimentary Architecture for the Use of Beginners, &c.* John Weale, London 1851.
- Every Lady's Guide to her own Greenhouse, Hothouse, and Conservatory, &c.* William S Orr & Co, London 1851.
- Richard Brown. *Domestic Architecture*. London 1852 [c 1843]
- Kelly's Practical Builder's Price Book, &c.* Thomas Kelly, London 1852.
- R S Burn. *The Illustrated London Drawing Book*. London 1853
- A C Smeaton. *The Builder's Pocket Manual*. London 1854.
- C B Allen. *Cottage Building*. 2nd ed, London 1854 [1849-50]
- (p) Charles D Young & Company. *Description (with illustrations) of Iron and Wire Fences, Gates, et, etc, adapted especially for Australia, invented and manufactured by Charles D. Young and company, iron and wire manufacturers, iron founders, contractors, etc.* London, no date [c 1854].
- (ef) [Henry Laxton], *Examples of Building Construction, intended as an Aide-Memoire for the Professional Man and the Operative, &c* (4 vols in 2 [Laxton], London no date [1857-1867])
- [J L Tarbuck]. *The Builder's Practical Director*. Leipzig &c nd, c 1858.
- Robert Robson. *The Mason's, Bricklayer's, Plasterer's and Decorator's Practical Guide*. London, no date, c 1860.
- (ef) E S Eyland, Francis Lightbody & R S Burn. *Working Drawings & Designs Architecture and Building*. Edinburgh, no date, c 1863.
- William Laxton. *Laxton's Builder's Price Book for 1863*. 43rd ed, London 1863
- A Nesbit. *A Treatise on Practical Mensuration*. London 1869.,
- John Blenkarn. *Practical Specifications of Works*. London 1865.
- Villa & Cottage Architecture*. London 1868.
- E L Blackburne [ed]. *Suburban and Rural Architecture. Brick, Stone, Concrete and Fireproof*. London [1869].
- (ef) R S Burn. *Modern Building and Architecture*. London, no date, c 1870
- C J Richardson. *The Englishman's House*. London, no date [1871]

John Birch. *Examples of Labourers' Cottages, with Plans for Improving the Dwellings of the Poor in Large Towns*. London 1871.

Frederick Rogers. *Specifications for Practical Architecture*. London 1873

R S Burn. *Practical Architecture*. London, no date [c 1875]

R N Wornum. *Analysis of Ornament*. 5th. ed, London 1877 [1855]

W Young [ed]. *Spons' Architects' and Builders' Pocket-Book*. London 1878.

Rivington's. *Notes on Building Construction Part 3*. London, 1879

Henry Angel. *Practical Plane Geometry and Projection, &c*. London & Glasgow, no date. Vol II, Plates.

J J Stevenson. *House Architecture*. 2 vols, London 1880.

(f) W & G Audsley. *Outlines of Ornament in the Leading Styles*. London 1881.

E W Tarn. *The Science of Building*. 2nd ed, London 1882

[Francis Young] *Every Man His Own Mechanic*. London, no date [c 1882.]

S H Brooks. *The Erection of Dwelling Houses*. 5th ed, London 1882 (?c 1850). .

Thomas Timmins. *Riveted Girders and Curved Roofs*. London 1882.

Rivington's. *Notes on Building Construction Part 1, 2nd ed*. London, 1883

Thomas Timmins. *Examples of Iron Roofs, 'Vol. 1'*. 2nd ed, London 1883

George Farmiloe & Sons. *General Catalogue*. Revised ed, London 1885.

Frederick Rogers. *Specifications for Practical Architecture*. 2nd ed. London 1886.

(p) Henry Ward, *Brickmaking*. (\Institution of Civil Engineers, London 1886 [offprint from *Minutes of Proceedings of the Institution of Civil Engineers; with Abstracts of Discussions*].

(p) Ashton & Green, Limited. *Ashton & Green, Limited, Slate, Tile, Brick, Cement, Marble, and Iron Manufacturers and Merchants* [catalogue]. London 1887.

R P Spiers. *Architectural Drawing*. London 1887.

Rivington's. *Notes on Building Construction Part 2, 3rd ed*. London, 1887.

F C Allsop. *Practical Electric Bell Fitting*. London 1889.

J W Urquhart. *Electric Light Fitting*. London 1890.

(p) Saml Haskins & Bros. *Catalogue of Revolving Shutters, Shop Blinds, &c.* London, no date [c 1890].

f) Walter Macfarlane & Co. *Illustrated Catalogue of Macfarlane's Castings.* 6th ed, 2 vols, Glasgow, no date [c 1890s]

J E Sears [ed]. *The Contractors' Compendium and Complete Catalogue.* 8th ed, London 1894.

T & W Farmiloe. *T. & W. Farmiloe's Miniature Catalogue.* London 1894.

(p) Francis & Co. *Francis & Co's New Premises, &c* [trade catalogue] London, no date [c 1895].

Eastern Expanded Metal Co. *Expanded Metal and its uses in Fire-Proof Construction.* London 1897.

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Daniel Clark. *Clark's Gully Trap.* Carlisle, 1900s.

Pryke & Palmer. *Illustrated Catalogue.* London, no date [c 1900].

J E Sears [ed]. *The Contractors, Merchants, and Estate Managers' Compendium and Catalogue.* 15th ed, London 1901.

J T Rea. *How to Estimate: being the Analysis of Building Prices &c.* London 1901.

Rivington's. *Notes on Building Construction Part 2, new ed.* London, 1901.

Rivington's. *Notes on Building Construction Part 3, 5th ed.* London, 1901.

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R Melhuish, Sons & Co, *Ironmongery and Electrical Supplies.* R Melhuish, Sons & Co, London 1903

Doulton & Co, Limited. *Catalogue of Fitted Sanitary Appliances.* London 1904.

J C Smith. *Paint & Painting Defects their Detection, Cause & Cure.* Trade Papers Publishing, London 1904.

Laxton's Builder's Price Book for Architects, Builders, Engineers and Contractors. 87th ed, London 1904.

Rivington's. *Notes on Building Construction Part 1, new revised ed.* London, 1904.

Rivington's. *Notes on Building Construction Part 4, 6th ed.* London, 1904.

Stewarts and Lloyds Limited. *Stewarts and Lloyds Limited* [catalogue]. Glasgow 1904.

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- W J Furnival *Leadless Decorative Tiles, Faience, and Mosaic, &c.* Stone [Staffordshire] 1904.
- W S Sparrow [ed]. *The British Home of To-Day.* London 1904.
- H J Skelton & Co. *Structural Steel* [Handbook No 10]. London 1906.
- W S Sparrow [ed]. *Flats, Urban Houses & Cottage Homes.* London 1906.
- G Petit [translated D Grant]. *The Manufacture and Comparative Merits of White Lead and Zinc White Paints.* London 1907.
- G L Sutcliffe. *Modern House Construction v1-6.* London, 1909.
- J W Riley. *Building Construction for Beginners.* London 1912.
- The Trussed Concrete Steel Co, Ltd. *Selected Illustrations Typical of ... Kahn System of Reinforced Concrete.* Westminster 1913.
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- Crittall Manufacturing Co Ltd. *Standard Metal Windows* [catalogue 41]. Braintree [Essex] 1925.
- (f) Crittall Manufacturing Co Ltd. *Windows* [catalogue 36]. Braintree [Essex] 1925.
- Wall Paper Manufacturers Ltd . *Beautiful Rooms Artistically Decorated.* Manchester, no date [c 1925]
- (p) Reeves & Sons, Limited. *Stencilling with Reeves' Stencil Colours, &c.* London 1926.
- Henry Hope & Sons Limited. *Windows, the Eyes of your Home* [list no 55] Hope's, Birmingham 1928.
- Kerner-Greenwood & Co, *The Handbook of Cement Waterproofing.* Kerner-Greenwood, King's Lynn [Norfolk] 1928.
- Randal Phillips. *The £1000 House.* London 1928.

E G Warland. *Modern Practical Masonry*. London 1929.

(p) A Buchanan & W H Hudson, *Building Construction Plates for Students and Others. Part II. Advanced Course*. London, no date [c 1930].

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H B Philpott [ed]. *Modern Houses and Bungalows*. London, no date [c1930]

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Sutcliffe's Portable Buildings. Hebden Bridge [Yorkshire] 1930.

S Gold. *Neon: a Handbook for Electrical Engineers, &c*. London 1934.

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Clyde Young [ed]. *Spon's Architects' and Builders' Pocket Price Book*. 62nd ed, London 1935

The Trussed Concrete Steel Co Ltd. *To the Foreman on the Job, &c*. Trussed Concrete Steel Co Ltd, London, no date [c 1935]

Percy Thomas. *Modern Building Practice, Vol 1: Design & Planning*. London, c1936.

Percy Thomas. *Modern Building Practice, Vol 2: Building Construction*. London, c1936.

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Percy Thomas. *Modern Building Practice, Vol 4: Equipment of Buildings*. London, c1936.

H A Welch, *The Construction of the Modern House*. London 1937.

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(f) W P M Ltd. *Relief Decoration*. Darwen [Lancashire] 1937.

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Newman Tate. *The Builders' Materials*. London 1947.

W R Jaggard & F E Drury. *Architectural Building Construction, Vol 3, 2nd ed. (reprint)*. Cambridge, 1947.

W Kinniburgh & L S Wallace, *A Work Study in Blocklaying*. London, 1948.

Albert Lakeman. *Concrete Homes and Small Garages*. 4th ed, London 1949.

(p) Cement and Concrete Association. *Finishes for Interior Concrete Floors*. London 1949.

W P Matthew [ed]. *Matthew's Cyclopædia of the Home: how to keep your house in good repair*. 2 vols, Virtue & Co, London 1949.

H B Newbold [revised Edgar Lucas]. *Modern Practical Building*. 3rd ed, 4 vols, London 1950 [reprinted 1954]

(p) Michael Nairn & Co. Ltd. *Marble. Plain. Jaspe. Inlaid. Printed Linoleum*. Kirkcaldy [Scotland] no date [c1950].

W F Crittall. *A Metal Window Dictionary*. Braintree [Essex] 1953.

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John Bullock. *The American Cottage Builder*. New York 1854

Z Baker. *The Cottage Builder's Manual*. Worcester [Massachusetts] 1856.

(p) H W Johns, *Descriptive Circular of H.W. Johns' Improved Roofing, Asbestos Roof Coating and Cement, &c*. H W Johns, New York, no date [c 1868].

(p) N A Haldeman & Co. *Iron Roofing* [broadside]. Philadelphia, no date [after 1876]. This is a brochure consisting simply of a two sided sheet folded once, to create four pages.

(p) Porter Iron Roofing and Corrugating Co. *Porter Iron Roofing and Corrugating Co*. Cincinnati [Ohio] no date [C B Wood, catalogue 70, item 147, suggests 1885-90].

D W King [ed]. *Homes for Home-Builders*. New York 1886.

(p) T.C. Snyder & Co. *Illustrated Catalogue, Iron Roofing, Siding, and Ceiling*. Canton [Ohio], no date [1886].

(p) Garry Iron Roofing Co. *Garry's Patent Iron and Steel Roofing*. Cleveland [Ohio] no date [C B Wood, catalogue 70, item 66, suggests 1887].

(p) A. Northrop & Co. *All about the Iron Roofing and Iron Ceiling manufactured by A. Northrop & Co.* Pittsburgh [Pennsylvania] 1888.

(p) W H H Childs. *The Town and Country Roof*. No place, 1888.

H. W. Johns. *H. W. Johns's Asbestos Materials, Descriptive Price List*. Boston [Massachusetts] 1890.

(p) National Sheet Metal Roofing Co. *Practical Hints to Builders*. New York 1890.

[p] Willer Manufacturing Co. *Catalogue No. 10 Pocket Edition*. Milwaukee [Wisconsin] 1890.

(p) Garry Iron and Steel Roofing Co. *Garry's Patent Iron and Steel Roofing*. Cleveland [Ohio] 1891. Like Porter's, this catalogue includes a weatherboard ['clapboard'] profile sheeting, not in the earlier edition.

(p) Chapman & Soden. *'Cyclone' brand roofing felt*. Boston 1892.

(p) International Rolling Screen Co. *International Rolling Wire Window Screens*. Boston [Massachusetts], no date [c 1895].

American Clay-Working Machinery Co. [illustrated catalogue of]. Bucyrus [Ohio], no date [c 1896].

Expanded Metal and its uses in Fire-Proof Construction. Chicago 1896.

A. & P. Roberts Company. *Steel in Construction as made by the Pencoyd Iron Works, &c.* 11th ed, Philadelphia 1898

(p) The Canton Steel Roofing Co. *Stamped Steel Ceilings* [catalogue C]. Canton [Ohio] 1898.

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F W Devoe & Company. *House Painting*. New York 1899.

(p) Scully Iron & Steel Company. *Stock List*. Chicago 1899.

(p) Beck, Fr, & Co. *Lin crusta-Walton*. New York, no date [c 1900].

Braden Mfg, Co., *Sheet Metal Products* (Braden, Terre Haute [Indiana] no date [c 1905])

G F Barber. *American Homes*. 3rd ed, Knoxville [Tennessee] 1905.

Alfred Peats Company. *Prize Wall Paper Book 5*. New York, no date [1910].

(p) Ducker Company, *Erected without Nail or Screw: Ducker Houses, Sectional and Ready-Made* (Ducker Company, New York no date [c 1910]).

(p) Ducker Company, *Price List, Lista de Precios, Ducker Sectional Buildings (as shown in catalogue.) Edificios Seccionales de 'Ducker' (Casas Portatiles) (segun se demuestran en el catalogo)* (Ducker Company, New York 1910).

(p) [Ducker Portable House Co]. *Instructions for Putting up the Ducker Portable Buildings* [illustrated broadside]. No date.

Fred T. Hodgson [ed]. *Practical Bungalows and Cottages for Town and Country*. Chicago 1910s.

(p) J W Ormsby. *A Canvas Cottage*. Chicago, no date [c 1910].

National Fire Proofing Company. *A Book of House Designs*. Boston 1910.

(f) Edwards Manufacturing Co. *Metal Ceilings and Side Walls*. [catalogue]. Cincinnati [Ohio] 1911.

National Fire Proofing Company. *Fireproof Construction for Houses and other Buildings of Moderate Cost*. 5th ed, Pittsburgh [Pennsylvania] 1911 [1908].

National Fire Proofing Company. *Fireproof Construction ... Natco Hollow Tile*. 6th ed, Pittsburgh [Pennsylvania] 1912 [1908]. O C Hering. *Concrete and Stucco Houses*. New York 1912.

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Kohler Co. *Kohler of Kohler* [catalogue] Kohler [Wisconsin] 1917.

(p) Kohler Co. Seven leaflets apparently of 1917 & 1918: "*Bevo*" Lavatories "*Derby*" Lavatory Enameled Drinking Fountains Enameled Kitchen Sinks Kitchenette Sinks Low Closet Tank "*Viceroy*" Bath Tubs.

Kohler Co. *Enameled Plumbing Ware for Factories etc*. Kohler [Wisconsin] 1918.

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Miller Manufacturing Co. *Miller's "Ready-Built" Buildings*. St Louis [Missouri] 1918.

J W Gerry. *Style Book No. 100 Sanitas Modern Wall Covering*. Boston, no date [c1920].

(p) Kohler Co. *Kohler of Kohler Automatic Electric Plants*. Kohler [Wisconsin], no date [1920s].

(p) The Muralo Company Inc. *Indeliblo Cold Water Paint*. New Brighton [New York], no date [c1920]. Colour card.

Lehigh Portland Cement Company. *Concrete for Town and Country*. Allentown [Pennsylvania] 1922.

(p) Sandusky Cement Co, *Concrete Work Made Easy*. Sandusky Cement Co, Cleveland [Ohio], no date [c1922].

(p) Sandusky Cement Co, *Medusa Waterproof Cement Paint*. Sandusky Cement Co, Cleveland [Ohio], no date

(p) Sandusky Cement Co, *Medusa Waterproofing Paste*. Sandusky Cement Co, Cleveland [Ohio], no date [c1922]. See code on rear page.

(p) Sandusky Cement Co, *Specifications for Medusa Waterproofed White Portland Cement; Medusa White Portland Cement; Medusa Waterproofing (Powder and Paste); Medusa Waterproofed Gray Portland Cement; Medusa Cement Paints*. Sandusky Cement Co, Cleveland [Ohio], no date.

(p) Kohler Co. *Press-the-Button Services from your own Electric Plant*. Kohler [Wisconsin] 1926.

Portland Cement Association. *Concrete in Architecture*. Chicago 1927.

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G A Hool & N C Johnson. *Handbook of Building Construction*. 2nd ed, Vol 1. New York 1929.

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International Correspondence Schools. *Elements of Stone and Brick Masonry*. Scranton [Pennsylvania], c1930.

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(p) C A Strand. *Stran-Steel House at the Century of Progress Exhibition in Co-Operation with Good Housekeeping*. Detroit [Michigan], no date [1933-4]

(p) Sears Roebuck & Co. *Modern Homes*. Chicago, 1934.

A L Guptill. *Color in Sketching and Rendering*. New York 1935,

(p) Sherwin Williams. *Roof & Bridge Paint*. No place or date [USA c 1935]. Colour card.

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(p) Tile-Tex Company. *Marbleized Tile-Tex Floor Tile Excels in Beauty, Durability and Economy*. Chicago Heights [Illinois] no date [c1935].

(p) Tile-Tex Company. *Tile-Tex - the final Floor: Master Specifications, Colour Chart*. Chicago Heights [Illinois] no date [c1935].

(p) Detroit Steel Products Company. *The Home Owner's Blue Book of Fenestra Bonderized Steel Casement Windows*. Detroit Steel Products, Detroit [Michigan], no date [1937]

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Charles Mayes. *The Australian Builders' Price-Book*. 4th ed, Melbourne 1883.

(p) Lord & Hughes' Monthly Circular. *Timber and Building Materials*. Melbourne 1884

Charles Mayes. *The Australian Builders' Price-Book*. 5th ed, Melbourne 1886.

James Nangle. *Australian Building Practice, Part 1*. Sydney 1900.

(p) John Danks & Son Pty. Ltd. *Ideal Hot Water Supply*. Melbourne, 1900s.

P N Hasluck. *Electric Bells*. Melbourne, 1900s.

(p) William Sandover & Co. *Designers and Manufactures of Mantels*. Perth 1900s.

Frodingham Iron & Steel (Foreign and Colonial) Co. Ltd. Perth 1905.

Walter Jeffries. *The Australian Building Estimator*. Sydney & Melbourne 1907

C E Mayes. *The Australian Builders and Contractors' Price Book*. 7th ed, Sydney 1908.

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(p) *The Cyclone Fence & Gate Book No 16*. Melbourne, no date [c 1910].

James Nangle. *Australian Building Practice*. [2nd ed], Sydney 1911.

- (p) James Moore & Sons Pty. Ltd. *Price List 96 August 1913*. Melbourne 1913.
- C E Mayes. *The Australian Builders and Contractors' Price Book*. 8th ed, Sydney 1914.
- (p) George Hudson & Son Ltd. *Cottage Homes*. 8th ed, Sydney 1915.
- R T Baker. *Building and Ornamental Stones of Australia*. Sydney 1915.
- (p) Wunderlich Patent Ceiling Co. Ltd. *You Cannot Afford to Hide the Goods you want to Sell*. Sydney, no date [c 1915].
- (p) Wunderlich Limited. *Ceilings for Every Room in Every Home*. Sydney 1919.
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