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“An index of real effect”: Early Photographic Reproductions in Australia’s Building Press

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Abstract

This paper examines the appearance of half-tone photographic imagery within Australia’s building press in the late nineteenth century. In June 1888 the Building and Engineering Journal of Australia & New Zealand started publishing images of buildings that had been reproduced from photographic negatives, with the Australasian Builder and Contractors’ News following suit later that year. Although the publication of line drawings remained dominant, the new photo-mechanical imagery heralded a mode of architectural illustration that excited editors for its authority as “an index of real effect”. Considerably more expensive to reproduce than line drawings, half-tone images allowed for a more realistic portrayal of buildings in terms of composition, materiality, decoration and detail. Even though photography of local architectural subjects pre-existed the late 1880s, it was at this time that the architectural photograph entered the space of mass reproduction within the building press in Australia, thus beginning a new tradition of architectural representation in that country. This paper identifies what these images were, who they were connected to, and the enthusiasms and challenges that surrounded their appearance.

In her study of photography in the architectural practice of Henry Hobson Richardson, Mary N. Woods pinpoints the specific figures, commentators, technologies and media sites pertinent to the appearance of some of the earliest photographic images to appear in the American architectural press.¹ She explains how Richardson understood the visual results of different technologies of photographic reproduction and this gave him the advantage of securing and benefitting from as best quality images of his work that could be published in architectural portfolios and in architectural periodicals, especially that of the *American Architect*. This paper undertakes a similar study in its examination of the appearance of the first photographic reproductions to appear within Australia’s building press. Woods’ analysis dates back to the 1870s, whereas the first photographic images to be reproduced

in the building press in Australia date from 1888 within the *Australasian Builder and Contractors' News* and the *Building and Engineering Journal of Australia & New Zealand*.²

A central theme of Woods' study is that of the "photograph as tastemaker", which is derived from the view of the editors of the *American Architect* that over the course of the late nineteenth century the mass reproduced photograph had "supplanted the critic as the arbiter of architectural taste."³ This thesis however is not so easily tested in this paper, due, firstly, to the limited period under focus, 1888 to 1892, which is characterised by the sporadic publication of photographic reproductions in the journals, and secondly, the range of images that did appear were too heterogeneous in nature, emanating from a variety of sources, to possess the power or unity to constitute a formulation of taste on their own. Despite this difference, like Woods' study this paper describes editorial views about the value and appeal of photographic reproduction and the challenges that were associated with it and identifies those architects who were ahead of their peers in the photographic reproduction of their work.

The *Australasian Builder and Contractors' News* and *Building and Engineering Journal* appeared in what is historically known as the "boom period" of nineteenth-century Australia, an unprecedented time of urban growth concentrated on city land development and building activity. As Stuart King and Julie Willis have described, this period has been of varying interest to architectural historians because of the eclectic and richly textured nature of the architectural creations of the time, sometimes understood as constituting a "boom style".⁴ What has eluded historians however is the role played by the two journals in the circulation of images during this period, catering as they did for the thirst for information about new building projects, technology and architectural responses. This paper goes some way in addressing this consideration by focusing on the advent of photographic reproduction in the journals and the enthusiasm that surrounded it as a new mode of architectural illustration.

Illustrations and the colonial building press

A previous study of mine identified the significance of tender information as a currency and condition of existence of Australia's building press across the second half of the nineteenth century.⁵ Another feature that grew in significance were visual illustrations of new buildings, either projected or completed, which were initially printed from wood engravings produced by commercial engravers and printers such as Calvert Brothers and De Gruchy & Leigh. Published in Melbourne, the early building periodicals contained one or two illustrations of quality per issue, notably of cottage designs, which involved elevations and plans, and of

facades and perspectives of prominent new city buildings. In 1869 the short-run *Building Times* quickly distinguished itself through its elaborate double-page illustrations, including a De Gruchy engraving of what it claimed was the first “correct” drawing of Melbourne Town Hall to be published.⁶ With the appearance of the *Australasian Builder and Contractors’ News* and the *Building and Engineering Journal*, in April 1887 and June 1888 respectively⁷, the space given to illustrations increased dramatically. Each journal had a section devoted to the description and illustration of new buildings, the latter of which typically consisted of either reproduced drawings of buildings situated in their urban or garden setting, or buildings shown in elevation and plan, or single interior views of a building. Smaller illustrations were embedded into articles themselves and were also used in some of the larger advertisements that were published.

The first photographic image to appear in the journals was of a model of a harbour steamer as the subject of a paper by Henry Selfe.⁸ The first photographic images of buildings graced the inaugural issue of the *Building and Engineering Journal* in June 1888. Selected perhaps to represent the geographic ambitions of the journal, these were images of the Royal Exhibition Building (which was being prepared as a venue for the upcoming Melbourne Centennial Exhibition) (Figure 1), St Mary’s Cathedral in Sydney, the Roma Street Railway Station in Brisbane, an aerial view of Launceston, and a “very characteristic” Maori carving, all reproduced with the permission of William C. Woolcott of the Tourists’ Bureau in Sydney.⁹

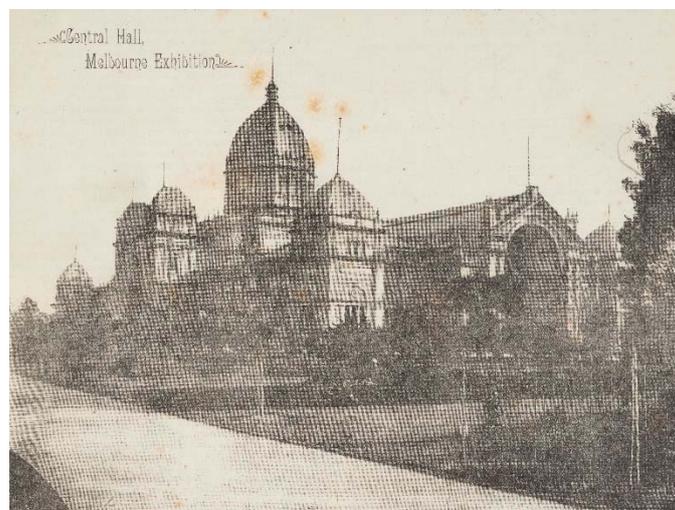


Figure 1. Royal Exhibition Building, Melbourne
(*Building and Engineering Journal*, June 16, 1888, 1,
State Library of New South Wales)

The fact that the *Building and Engineering Journal* began its life so heavily loaded with photographic reproductions expressed the course it was to take in becoming a leading site

for architectural photography. It promised to be “a practical, progressive, and independent journal” that catered for the needs and interests of the building and engineering trades through direct and unbiased communication.¹⁰ It was published by the Sydney printing firm of Jarrett & Co., which had released a steady stream of quality booklets and pamphlets throughout the late 1870s and 1880s.¹¹ The firm’s move to new premises in Clarence Street was accompanied by the appearance of the new journal as well as Jarrett & Co.’s entry into the architectural and building job printing marketplace. An advertisement for its services ran:

Architects Contracts, Skeleton Specifications, Clerk of Works Reports, and other Professional and Building Trade Forms Printed or Lithographed direct from the Manuscript. PLANS LITHOGRAPHED. Line drawings accurately copied by Photo Lithography. Paintings, Washed Drawings, or Existing Structures, exactly reproduced in Monochrome by a special PHOTO PROCESS.¹²

This “special” process was also responsible for the photographic illustrations featured in the *Building and Engineering Journal*, which, in terms of the first issue, the editors confessed were “not as yet so perfect in detail as we desire, but that is a mere question of manipulation, and we can guarantee to our readers that in future issues they will be greatly improved in this respect, and the selection of subjects be carefully made.”¹³ They were prepared to dedicate the necessary resources to realising the potential of the reproduction of photographic images of actual buildings as a mode of architectural illustration, stating:

The immense value of the photographic reproduction of drawings has long been recognised, because by that means every line as drawn by the artist is exactly shown in the copy. The advantages from an architectural point of view of the photographic reproduction of actual structures is no less marked, but hitherto the great difficulty and expense of such work has much limited, and in many cases altogether barred its application. We have however, determined to produce a paper in some degree worthy of Australasia, and for that reason will spare no trouble and expense in our illustrations, and by the introduction of large scale views of executed details, as well as those of entire buildings, will try to make these photo reproductions practically useful, as well as artistically beautiful.¹⁴

For the creation of these photo reproductions Jarrett & Co. used a photo-engraving process that involved projecting a negative through a transparent screen of finely gridded lines onto a photosensitive plate. This generated a pattern of micro dots on the plate that reflected the dark, light and grey areas of the original. This plate was then treated for printing, creating an image that appeared to the eye to possess the same qualities of the original in terms of line and tone. In trying to explain this, the editors of the *Building and Engineering Journal* invited its readers to closely inspect the published photographic images with the use of a magnifying glass to discover “that what seems to be the line of a column, or the finish of a cornice, is in reality no line at all, but only an effect produced by the contrast of light and shade, just as in the photographic original from which it was taken.”¹⁵ This was otherwise known as half-tone printing, a process that allowed for the mass reproduction of photographic images in the print media. Conceived in the 1850s, this process gave birth to the first printed photograph to appear in a newspaper, an image of Steinway Hall in Manhattan, published in New York’s *Daily Graphic* in December 1873.¹⁶ Half-tone images made their debut in Australian newspapers in the late 1880s. The first ‘news’ photograph appeared in the *Sydney Mail* in September 1888 portraying a railway accident at Young in New South Wales.¹⁷ In July that same year, the *Illustrated Sydney News* published its first photographs, portraits of James Martin, President of the NSW Cyclists’ Union, and C. R. Wood, amateur cycling champion of New South Wales.¹⁸ The *Building and Engineering Journal* and the *Australasian Builder and Contractors’ News* belong to this moment in history as two of the first periodicals in Australia to publish half-tone photographic reproductions. While the introduction of this process heralded the beginning of the demise of the illustrated newspaper genre in Australia¹⁹, for the building press, half-tone photographic reproduction was considered a kind of epistemological breakthrough in the way knowledge of architecture and buildings could be obtained.

“An index of real effect”

Mary N. Woods describes how the editors of the *American Architect* considered the photographs they published as objective and accurate representations of buildings.²⁰ The photograph had the capacity to represent the “reality” of a building more than what an architectural rendering could: “it focused attention on the completed building rather than on the draughtsman’s skills and artistry.”²¹ This same view was held by the editors of the *Building and Engineering Journal*, who, in referring to photographic images in their publication, stated:

These reproductions, then, are—in fact, must be—truthful pictures of every detail of the actual building, and for that reason are more valuable as an index

of real effect than is any drawing, wherein, as our readers know, even an inferior design may be made to *look* well by superior draughtmanship.²²

Another way the editors described the type of photographic reproductions they published was “Photo-Nature” and “reproductions from Nature”.²³ Here they echoed ideas that were associated with the use of photography within the scientific disciplines where photography was seen to provide a faithful record of external reality which could be used for the analysis of different phenomena.²⁴ The photograph could record things that lay beyond the limits of human observation and by the 1870s photographic technology was able to capture movement.²⁵ For the editors of the *Building and Engineering Journal* the “Photo-Nature” of its reproductions related to the documentation of buildings in a way that provided a clear and truthful view of their actual composition, materials, decoration and details. There was also the possibility of publishing images of the hidden elements of buildings, such as their structural framework, as photography could be used to record and document stages or events of construction. The monochromatic nature of the photographic reproduction however did possess its limits. For instance, the photographic images of the interior of Melbourne’s new Federal Coffee Palace that were published in August 1888 were said to “convey to some extent the beauties of the grand staircase though lacking the colour which renders the reality so charming.”²⁶

The notion of the photographic reproduction as “an index of real effect” was tangentially treated by Edgar C. Bell, a member of the Amateur Photographic Association of Victoria, who presented a lecture on the topic of photography to the Victorian Architectural and Engineering Association in October 1888. Bell explained the different branches of photography: portrait and landscape photography, photo-telescopic and stereoscopic photography, “instantaneous” photography and architectural photography. “Architectural subjects”, he said, “are in some cases the simplest to deal with, but in others many difficulties crop up.”²⁷ Among the challenging aspects were determining the optimum standpoint from which to photograph a building to reduce visual distortion within the image and studying the most effective time of day to take photographs in relation to light conditions and the appearance of shadows. In this way Bell articulated the ways an architectural photograph contained implicit acts of framing and degrees of control. He concluded his paper by briefly discussing the idea of the “apparatus that cannot lie”, stating how the “active individual” behind the camera had the power to manipulate and “twist” the apparatus “until the true is rendered false so that we cannot believe it.” The architectural photograph was a good example, where “vertical lines of a building appear parallel. They all seem plumb to the eye, yet there must be a vanishing-point for them as for horizontal lines. The

operator swings the camera back, taking a diagonal section of a cone of rays, so as to falsify the truth for our understanding.”²⁸

Bell's lecture was well received and subsequently published in both the *Building and Engineering Journal* and the *Australasian Builder and Contractors' News*. Even though he raised some critical issues about the way the camera and image could be manipulated in the practice of photographing buildings, these were minor notes to the general positivism that underpinned the discussion. The editors of the *Building and Engineering Journal* also upheld a positivism about photographic reproduction as a way of allowing readers to see and get a greater measure of buildings through the medium of the press. A key issue was the clarity and visual appeal of photographic imagery and this involved not only the use of reliable and up-to-date photo-engraving and printing technology but also the supply of quality photographic material from external sources. There is no evidence to suggest that the editors commissioned photographs for the journals, rather readers were invited to send in photographs of “any important or characteristic work” for publication. This constituted the principal source of supply, but not the only one. The following sections describe these sources and the types of photographic images that appeared in the late 1880s and early 1890s.

Images of new buildings

Once photographic reproductions started to appear in the journals it was not long before the first photographic images of newly completed buildings were published. This began with two images of the Gordon Coffee Palace on King Street in Melbourne, designed by George de Lacy Evans, and published in the July 1888 issue of the *Building and Engineering Journal*.²⁹ One image was of the street facade of the building and the other was a close-up view of the main entrance showing the details of the decorative features and structural piers. This was followed in August by a photographic feature on the new Federal Coffee Palace in Melbourne, designed by Edward George Kilburn and William Ellerker in association with William Pitt. Kilburn had photographed the building himself and provided his own negatives to the journal, which consisted of a perspective of the overall building (Figure 2), an image of its arcaded entrance, four interior views and one of the iron framework of the dome that was erected above the building's corner turret.³⁰ The double-page perspective view was a high-quality reproduction which the editors noted “affords an excellent and truthful idea of the whole exterior of the block.”³¹

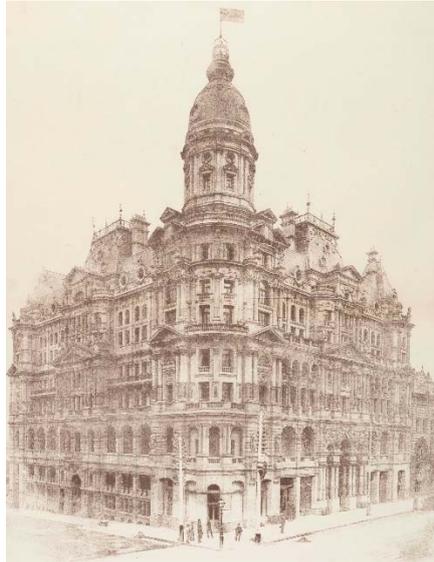


Figure 2. Federal Coffee Palace, Melbourne
(*Building and Engineering Journal*, August 11, 1888, 94-95,
State Library of New South Wales)

Another large photographic illustration of a new commercial building was of the 138-foot, nine-storey 'Prell's Building' on the corner of Queen Street and Flinders Lane in Melbourne, published in July 1889 (Figure 3).³² Designed by F. M. White and Son, this was one of the loftiest office buildings in Melbourne at the time, consisting of about 140 rooms serviced by four passenger elevators. Printed over a double-page spread, the quality of this reproduction was not as high as that of the Federal Coffee Palace perspective, with some of the street features appearing as if they were hand drawn.

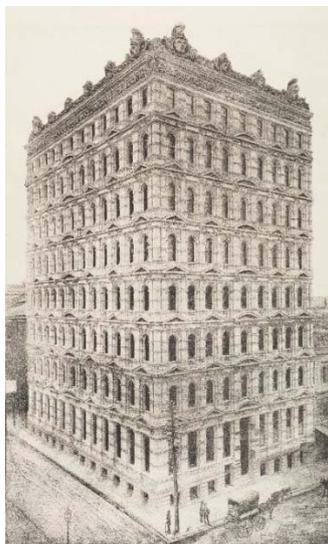


Figure 3. 'Prell's Building', Melbourne
(*Building and Engineering Journal*, July 6, 1889, 3-4,
State Library of New South Wales)

Aside from commercial edifices, other types of buildings were illustrated photographically, including new churches and residential buildings. Images of these buildings showed the pattern and texture of brick walls and tiled roofs and the visual contrast of different materials. The strength of the photographic image to represent these things as opposed to a lithographic illustration was cast into stark relief in October 1888 when the *Building and Engineering Journal* published a photograph of the new Our Lady of the Sacred Heart Church in Randwick, by Sheerin & Hennessy (Figure 4a), and a drawing of the 1867 Collins Street (Tercentenary) Independent Church, by Reed & Barnes, with the distinctive brickwork of the latter only slightly shown in parts of the image (Figure 4b).



Figure 4a (left). Our Lady of the Sacred Heart Church, Randwick, Sydney
Figure 4b (right). Collins Street (Tercentenary) Independent Church, Melbourne, 1867
 (*Building and Engineering Journal*, October 20, 1888,
 State Library of New South Wales)

The role of Edward Kilburn in supplying the *Building and Engineering Journal* with negatives of contemporary work is worth a further note here. Not only did he provide negatives of his own practice's work, he also contributed a negative of a photograph he had taken of the Congregational Church in Malvern, by Billing & Son, which was claimed by the editors to have produced a superior print with "very beautiful detail."³³ He was also responsible for contributing the negatives of the first photographic images of interiors of new buildings to be published in the journals, of the Federal Coffee Palace and an image of the billiard room within his own residence, 'The Elms', in North Brighton in Melbourne (Figure 5). Possibly selected to illustrate the built-in pipe organ (built by Kilburn himself), the publication of this singular image unaccompanied by other

images of the house was a complete display of representational modernity: a modern domestic space shown through the modern means of photographic reproduction.

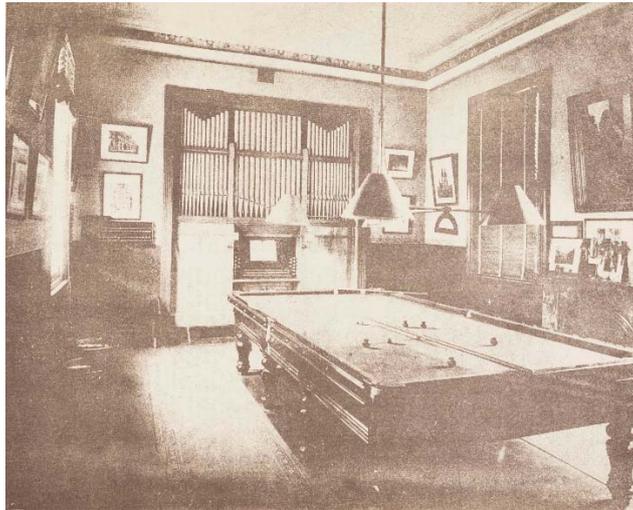


Figure 5. Billiard room and organ, 'The Elms', North Brighton, Melbourne
(*Building and Engineering Journal*, September 1, 1888, 158,
State Library of New South Wales)

Son of the photographer, Douglas Kilburn, Edward would have been exposed to photographic techniques and technology at an early age and by the late 1880s he was leading the architectural profession in taking photographs of his own work and the work of others and supplying negatives to the press for publication. His attraction to photography as a way of documenting buildings was also clearly seen in the many photographic images of American architecture he acquired during his travels in the United States in 1889.³⁴ Apart from the instances when Kilburn was mentioned as the source of images, there was little information provided on the provenance of the other images of new buildings that were published in the two journals in the late 1880s. It can be assumed that commercial photographers were likely involved in the production of some of the original images, commissioned either by architects, builders or their clients to photograph a building for use as a record and also for publicity purposes.

Foreign buildings

Although principally focussed on domestic affairs, both the *Building and Engineering Journal* and the *Australasian Builder and Contractors' News* also aimed to present news and information from other countries, and for this they cited and re-printed articles and excerpts from British, European and American periodicals. This desire to be engaged internationally was also reflected in their visual content, both in the reproduction of architectural drawings and photographic images. However, access to and the availability

of engravings and photographic negatives of foreign buildings had an impact on this. Early photographic representations of foreign buildings tended to feature historic buildings and were mostly dependent on the photographic collections of local contributors. Leading the way was the *Building and Engineering Journal* which in 1888 published photographic reproductions of a variety of buildings in Belgium, France, Italy and England. The descriptive commentary that accompanied each of the images indicates that the writer (likely one of the journal's editors) had a good understanding of the buildings, their details and surroundings. For the writer, the publication of these images was an opportunity to present certain opinions and pedagogical advice that benefitted from the ability of photographic representation to capture buildings in detail. For example, "Modern Brussels" (rather than the older parts of the city) was considered worthy of "careful study", especially the Bourse which "though in parts it may shock the taste, and outrage the *amor prope* of the classic architect, yet the general effect is very fine, and the details and workmanship of high order"³⁵ (Figure 6a). Another building considered worthy of "careful study" was Venice's Ducal Palace despite concerns about the overall proportion of the upper part of the building³⁶ (Figure 6b).

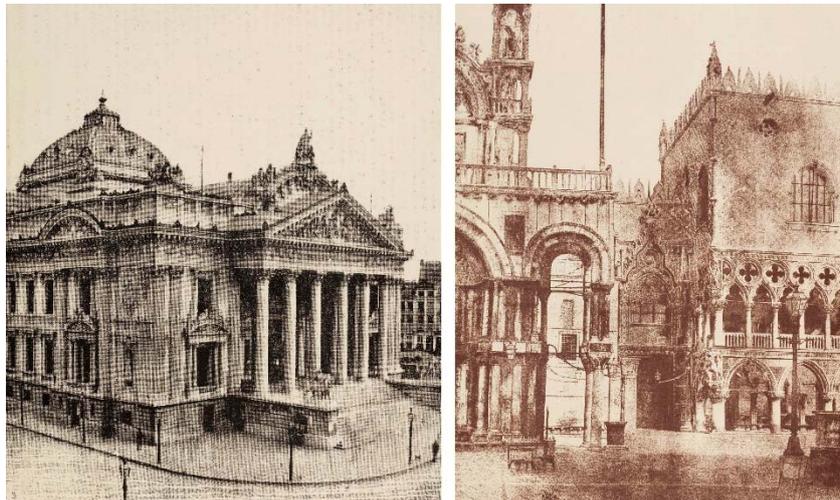


Figure 6a (left). The Bourse, Brussels (*Building and Engineering Journal*, July 28, 1888, 63, State Library of New South Wales)

Figure 6b (right). Ducal Palace, Venice (*Building and Engineering Journal*, August 18, 1888, 115, State Library of New South Wales)

The next surge of photographic images of foreign buildings occurred in 1892 on the pages of the *Australasian Builder and Contractors' News* in connection to the first instalment of a long series of articles written by the architect and vice-president of the Royal Victorian Institute of Architects, Arthur E. Johnson, entitled "Notes on Travel."³⁷ In this series Johnson described the many buildings he and his travel companion, Gerard Wright, had visited

during a trip through Sicily, Italy, Germany and Belgium in 1891. Obtaining numerous photographs of the buildings they saw, Johnson used these images to illustrate a lecture he gave to the Institute as well as providing the collection to the journal's editor to select from for publication with his articles. Unfortunately his photographic prints did not make ideal material for reproduction, for without the negatives, the editor claimed, "even in London or New York" it would be impossible "to do full justice to the character and beauty of these wonderful buildings as depicted in the photographs."³⁸ Nevertheless, staff were prepared to go through the "tedious process required for photographs" to reproduce a selection of images for the journal.³⁹

Other photographic reproductions of foreign buildings were published on a more individual and idiosyncratic basis, such as two images of heavily ornate rooms within the Schloss Neuschwanstein in Bavaria and an exterior view of the Writers Buildings in Calcutta.⁴⁰ Many of these images were provided by the Melbourne and Sydney printing firm of Troedel & Co. who likely had photographic engravings already available.⁴¹

Advertising

The third type of architectural photographic reproduction to appear in the journals was contained in advertisements, specifically in advertisements for Ernest Wunderlich and the first application of his moulded zinc ceiling panels in Australia. These were published in late 1888 issues of the *Australasian Builder and Contractors' News* and featured two views of ceilings within Beale & Co's new piano showroom on George Street in Sydney, with the advertisements also highlighting the name of the showroom's architect, John B. Spencer (Figure 7).⁴² High quality reproductions, Wunderlich had obviously commissioned superior originals for the publicity campaign. Surprisingly though, this was the only use of photographic imagery to be found within the advertising published in the extant copies of the journals from the late 1880s and early 1890s.

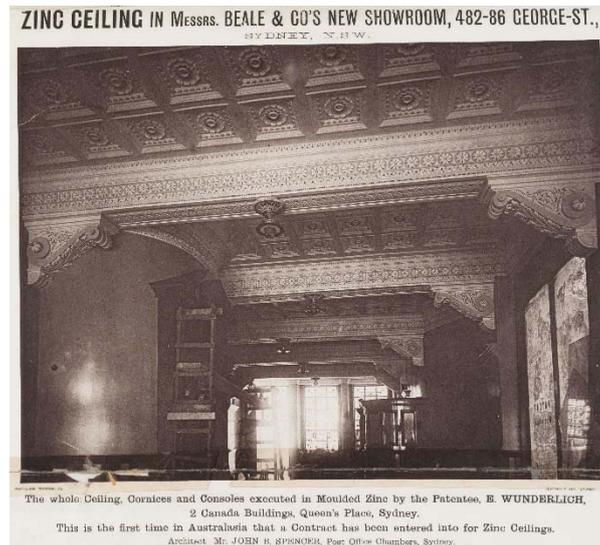


Figure 7. Advertisement for Wunderlich's new moulded zinc ceiling panels (*Australasian Builder and Contractors' News*, November 24, 1888, n.p., State Library of New South Wales)

Conclusion

The brief appearance of photographic reproductions in journal advertisements testifies to the expense that was involved in the process of transferring photographic material onto the pages of the journals in the late 1880s and early 1890s. This had been recognised editorially since mid-1888 and by early 1893 the appearance of photographic imagery had dropped to the point where there were only few images of buildings published that year and the next and of a comparatively low quality. The onset of a recession severely impacted the financial position of many architectural and building operatives and the journals themselves as they rationalised their production costs to survive in difficult economic times leading to their amalgamation in April 1895 under a joint name.

Even though an expensive undertaking, interest in photographic reproduction within Australia's building press was initially very strong. Editors were prepared to bare this expense to endow their publications with imagery they understood as being a superior "index of real effect", that is, imagery that provided a clear representation of "actual structures" in terms of their composition, materiality, decoration and detail. They explained this as a kind of epistemological imperative but also one that was driven by the currency photographic imagery lent to the journals in providing them with a seductive representational modernity. Despite this attraction, photographic imagery failed to supersede drawing engravings as the dominant mode of architectural illustration within the journals, due, firstly, to the comparative costs of reproduction and, secondly, to the fact that architects generally remained in the practice of producing drawings rather than

commissioning photographs of their buildings for publication. This paper however has identified some of the first architects connected with the publication of photographs within Australia's building press, especially Edward Kilburn, who deserves further attention for the connection he and his practice had to the photographic image.

It was important that this paper recognise and respect the range and heterogeneity of the first photographic reproductions to appear in the *Australasian Builder and Contractors' News* and *Building and Engineering Journal* and to appreciate the particularity and exceptionality of the images. For these reasons it has not been possible to see or to argue for the existence of a greater unifying theme or themes. Now that this exercise is complete and that the moment of appearance has been reviewed it is possible to understand subsequent developments within the building press and the architectural periodicals that were founded in the early twentieth century in the light of this enthusiastic but difficult beginning.

¹ Mary N. Woods, 'The Photograph as Tastemaker: The *American Architect* and H. H. Richardson', *History of Photography*, 14, 2 (1990), 155-163.

² The name *Building and Engineering Journal of Australia & New Zealand* will henceforth be shortened to *Building and Engineering Journal*.

³ Woods, 'The Photograph as Tastemaker', 155.

⁴ See Stuart King and Julie Willis, 'Mining Boom Styles', in AnnMarie Brennan and Philip Goad (eds.), *Proceedings of the Society of Architectural Historians, Australia and New Zealand: 33, Gold* (Melbourne: SAHANZ, 2016), 334-345.

⁵ Paul Hogben, 'The Tender Information Economy of the Colonial Building Press in Australia', *Fabrications*, 20, 2 (2011), 108-127.

⁶ 'Melbourne Town Hall', *Building Times*, 1, 1 (October 1, 1869), 6.

⁷ The *Australasian Builder and Contractors' News* began publication with a prospectus in April 1887.

⁸ See *Australasian Builder and Contractors' News*, 2, 51 (April 28, 1888), 271.

⁹ 'Our Illustrations', *Building and Engineering Journal*, 5, 1 (June 16, 1888), 1.

¹⁰ 'Editor's Note Book: Our Journal', *Building and Engineering Journal*, 5, 1 (June 16, 1888), 2.

¹¹ Among these were the concert programme for Sydney's International Exhibition of 1879 and a guide book entitled *Beautiful Manly: Its Approaches, Surroundings, Charms and History, with Visitors' Guide to all Places of Beauty, Rest and Sport*, published in 1885.

¹² See advertisement for Jarrett & Co. published in Supplement to the *Building and Engineering Journal*, 5, 203 (July 28, 1888), 1.

¹³ 'Our Illustrations', *Building and Engineering Journal*, 5, 1 (June 16, 1888), 1. The editor of the *Building and Engineering Journal* at the time was John Leck Bruce, an architect who had arrived in Sydney from Glasgow in May 1888. Frederick Charles Jarrett, owner of Jarrett & Co., was associate editor.

¹⁴ 'Our Illustrations', *Building and Engineering Journal*, 5, 1 (June 16, 1888), 1.

¹⁵ 'Our Illustrations', *Building and Engineering Journal*, 5, 203 (July 28, 1888), 51.

¹⁶ See "A Wonderful Process. Our 'Granulated Photographs'", *Daily Graphic*, December 2, 1873, 202. "Granulated photography" was associated with William Augustus Leggo, a Quebec engraver who was responsible for enabling the world's first half-tone photographic reproduction in a weekly pictorial paper – an image of His Royal Highness Prince Arthur published in the *Canadian Illustrated News* on 30 October 1869. See 'Leggo, William Augustus (1830-1915)', in Hannavy (ed.), *Encyclopedia of Nineteenth-Century Photography*, vol. 2 (New York: Routledge, 2008), 840.

- ¹⁷ See Sally Young, 'Press Photography in Australia, 1880-2015', in Fay Anderson and Sally Young with Nikki Henningham, *Shooting the Picture: Press Photography in Australia* (Carlton, Victoria: Miegunyah Press, 2016), 2-3.
- ¹⁸ See 'The Sports of Australia. Cycling', *Illustrated Sydney News*, 25, 7 (July 26, 1888), 10, 12.
- ¹⁹ See Peter Dowling, '1861-1862: Seminal Years in the Publishing History of Illustrated Newspapers in Colonial Australia', *La Trobe Journal*, no. 88 (2011), 26.
- ²⁰ Woods, 'The Photograph as Tastemaker', 155.
- ²¹ Woods, 'The Photograph as Tastemaker', 161.
- ²² 'Our Illustrations', *Building and Engineering Journal*, 5, 203 (July 28, 1888), 51.
- ²³ See 'Our Illustrations', *Building and Engineering Journal*, 5, 1 (June 16, 1888), 1; 'Our Illustrations', *Building and Engineering Journal*, 5, 203 (July 28, 1888), 51.
- ²⁴ From the mid-nineteenth century various applications of photography for the purposes of scientific study were developed. See Ron Callender, 'Scientific Photography', in Hannavy (ed.), *Encyclopedia of Nineteenth-Century Photography*, vol. 2, 1255-1258.
- ²⁵ Callender, 'Scientific Photography', 1257.
- ²⁶ 'Description: The Federal Coffee Palace, Melbourne', *Building and Engineering Journal*, 5, 205 (August 11, 1888), 101.
- ²⁷ 'A Paper on Photography', *Australasian Builder and Contractors' News*, 3, 77 (October 27, 1888), 361.
- ²⁸ 'A Paper on Photography', 361.
- ²⁹ *Building and Engineering Journal*, 5, 203 (July 28, 1888), 58-59.
- ³⁰ *Building and Engineering Journal*, 5, 205 (August 11, 1888), 85, 90-91, 94-95, 98-99, 104.
- ³¹ 'Description: The Federal Coffee Palace, Melbourne', 101.
- ³² *Building and Engineering Journal*, 7, 252 (July 6, 1889), n.p.
- ³³ 'Congregational Church, Malvern, Victoria', *Building and Engineering Journal*, 5, 222 (December 8, 1888), 526.
- ³⁴ Kilburn's American photographs are held by the Architecture, Building and Planning Library at the University of Melbourne, digital copies of which can be found in Miles Lewis' online research database: www.mileslewis.net/kilburn/.
- ³⁵ 'Our Illustrations. The Bourse at Brussels', *Building and Engineering Journal*, 5, 203 (July 28, 1888), 51.
- ³⁶ 'Descriptions. The Ducal Palace at Venice', *Building and Engineering Journal*, 5, 206 (August 18, 1888), 112.
- ³⁷ The entire series was published in instalments across 1892, 1893 and 1894.
- ³⁸ 'Illustrations to Mr. A. E. Johnson's "Notes on Travel"', *Australasian Builder and Contractors' News*, 11, 281 (September 24, 1892), 156.
- ³⁹ 'Illustrations to Mr. A. E. Johnson's "Notes on Travel"', *Australasian Builder and Contractors' News*, 11, 278 (September 3, 1892), 117.
- ⁴⁰ See 'Dining Room of Castle of Neuschwanstein', *Building and Engineering Journal*, 5, 209 (September 8, 1888), 188-89; 'Study in Castle of Neuschwanstein, Bavaria', *Building and Engineering Journal*, 5, 212 (September 29, 1888), 274-275; 'Writers Buildings, Calcutta', *Building and Engineering Journal*, 5, 216 (October 27, 1888), 370.
- ⁴¹ Many of lithographic and photographic reproductions published in the *Building and Engineering Journal* in the late 1880s were credited to Troedel & Co.
- ⁴² See advertisement in the Supplement to the *Australasian Builder and Contractors' News*, 3, 81 (November 24, 1888), n.p.