

Towers of Strength: Brewery architecture at home and abroad

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The architectural history of British breweries: An outline

Early brewing was carried out at homes and on farms, and also in monasteries, producing beer for travellers, pilgrims, and monks; monastery accommodation eventually became commercial, the forerunners of inns. Ale brewing at inns and taverns took place from the mid 13th century; beer was introduced into London from the Low Countries in the early 15th century. Early beer brewers came from the Low Countries and settled in London, near Kent, a source of hops. Demand for ale and beer steadily increased in the 15th century and 16th century; beer was also brewed in universities, schools and country houses.

By the 18th century the purpose-built brewhouse had become an integral part of the offices typically found at the large country house, although its production of steam and smells meant that it had to be sited well away from family quarters; it was often placed close to the bakehouse and laundry. Brewing required good ventilation, thus the structure was normally a good two storeys in height, with large, unglazed louvred windows and often a ventilation lantern on the roof ridge. The height of the brewhouse also allowed full advantage to be taken of gravity during the brewing process, as pumps were either non-existent or inadequate. Country house breweries were still being built in the mid 19th century, and brewing carried on until the early years of the 20th century. Architecturally, these early vernacular brewhouses set the pattern for the industrial breweries of the future: often muted classical in style, with fenestration, ventilation and height marking it out. Later buildings were defined by requirements of power and refrigeration.

Brewing began on an industrial scale in early 18th century London. The earliest of the city's large-scale commercial breweries was probably the Anchor in Southwark, which became Barclay Perkins; a new brewhouse was built there, almost on the site of the Globe Playhouse, in 1700. By 1740 the 'great common brewhouse' had become a relatively well-known sight in London, although most of them were constructed later in the century. The availability of steam-powered malt mills, and pumps to raise the wort back to the copper for boiling, made large-scale brewing even more economical. The provision of labour-saving, modern brewing equipment and ample storage space were key elements in the new industrial breweries, but the central London brewers were often constrained by narrow sites. They had to expand by taking in adjacent properties or building upwards. Ample storage space was necessitated not only by the need to house adequate supplies of malt and hops, but to accommodate the porter vats, in which the beer matured for a year or more. Initially, brewers managed with cellars and tun rooms full of butts (large casks containing 108 gallons), but the large single vessel was a more economic solution to the problem. The use of vats became commonplace after 1760. By the time Barclay, Perkins & Co's Anchor Brewery, Southwark, became the first to break the 300,000

barrel annual production barrier in 1815, breweries - then amongst the largest structures in London - had become a tourist attraction, although it was lack of human activity - due to its replacement by steam power - which tended to impress.

The final great brewhouse of this era (and the first large-scale Victorian brewhouse) was Goding's Lion Brewery, Belvedere Road, Lambeth, built in 1836-37 by Francis Edwards (1784-1857), who has a strong claim to have been the first specialised brewers' architect. The main brewhouse faced the river, with subsidiary buildings around a yard to the rear, opening out on to Belvedere Road through a gateway topped by a lion. The brewery ceased production in 1923 and was demolished in 1949 to make way for the Festival Hall, but the lion from the river frontage found its way to the east side of Westminster Bridge.

Burton upon Trent 1850s-70s

Outside London, the earliest large-scale industrial brewhouses appeared in Burton during the 1850s-70s. Burton's ales enjoyed a national reputation for high quality from the 17th century, but the town's breweries were still small businesses compared with the great London brewers. There were only five breweries left in Burton by 1822: Allsopp, Salt, Bass, Worthington and Sherratt. This reflected a general rationalisation of the brewing industry, and a need for large scale equipment. The popularity of Burton pale ale increased after 1830, and the Birmingham to Derby Railway came through Burton in 1839; there was a transformation of both town and brewing industry in the next 30 years. In 1840s the output of Burton's breweries increased from 70,000 to 300,000 barrels per year, mainly due to the expansion of Bass and Allsopp. The breweries became more efficient; there were 15 breweries in the town by 1851.

Between 1850 and 1880 Burton's brewing industry trebled in size every ten years in terms of output and employment. Brewery engineering firms also developed to satisfy local need. Bass was the largest brewing company in the world by 1876, with an output of 900,000 barrels per year. Growth slackened in Burton c1880. London firms opened breweries in Burton, and unit production size increased further. By 1888, the average production of a Burton firm was more than double that of London firms. Then came amalgamations and rationalizations at the end of the 19th century; 21 firms by 1900, 4 by 1950.

The massive Allsopp's New Brewery (1859-60), the Ind Coope Brewery (1859) and the Bass New Brewery (1864) all displayed the repetition of round-headed windows coupled with blank arcading, which typifies the Burton industrial style of brewery architecture. A certain variety was introduced by the use of centrally-pivoted sections within the windows, allowing for easy and variable ventilation; this design was first developed in Burton. Eventually the town came to be dominated by these large industrial classical piles, but there was also a sprinkling of other, more decorative structures including chimneys, water towers and several square brewhouses. The latter squat towers belonged to the smaller firms, who had no need of vast fermenting rooms, and tended to be later in date than the large breweries; the present Marston's Brewery, and Everard's Brewery (built as the Trent Brewery in 1881 by Leicester architect J. B. Everard) are surviving examples of this style. Similar but now demolished small brewhouses include Charrington's Abbey Brewery (built

in 1872 by Martin & Hardy), Bindley & Co.'s Brewery (built in 1873 by Everard) and Eadie's rebuilt Cross Street Brewery (1883-8).

Expansion in the 1870s

Apart from London and Burton, breweries in the early years of the 19th century were small-scale, growing from the 1850s. Originally breweries were designed and built by their owners and local builders; no specialist brewers were initially employed, this too was a later development. The brewers, ie the brewery owners, were all-rounders, knowing about brewing, plant design, brewery construction, selling beer and quite possibly general trading and banking too. But around 1840 came the rise of early specialist designers, some professionalisation of industry on both the brewing and the design and engineering side.

There were a few early 19th century architect-cum-engineers who specialised in breweries. Robert Davison at Truman Hanbury Buxton was perhaps the first professional brewers' engineer - he was also an inventor or designer of brewing plant, as were many brewers at this stage. Although by the 1860s more architects were taken on to the permanent staff of breweries, the architectural style of the typical brewery had altered only slightly since the start of the century. An example is Henry Lovibond's Cannon Brewery, Fulham; this was put up in 1867, but in stylistic terms could have been erected 60 years earlier. Bullard's Anchor Brewery in Norwich, which underwent substantial expansion between 1850 and 1868, had a facade of brick with minimal classical decoration and rows of round-headed windows, although this hid a fireproof structure and decorative ironwork.

Architecturally, the new breweries built in the 1870s were generally rather more decorative than those of the 1860s; indeed, some made use of the then newly-fashionable Queen Anne Revival style. The Falcon Brewery, built for William Okell at Douglas, Isle of Man in 1874, is a good example. The Italianate style was used for occasional breweries, but more often, the style was used for brewery chimneys alone; the Italianate campanile model had become fashionable for industrial chimneys during the 1860s.

The ornamental brewery, 1880-1905

There was a gentle rise in brewery construction activity during the 1870s, while the major boom in brewery construction occurred throughout the 1880s; this, in turn, was followed by a lean period during the early 1890s and then a further rise in activity around the turn of the century. The peak year for activity was 1885, with thirty-four major brewery building works completed, while the average throughout the 1880s was twenty-two such events per year. Of course, in addition to this level of major construction work, much small-scale building and a great deal of plant renewal was also taking place. Total number of significant sites around 600, while major sites, on the scale of a Tadcaster brewery, around 100.

The brewing site was not just the brewery. There was packaging: racking and bottling plants, a cooperage and storage areas; while distribution required drays (now trucks and tankers), with either stabling or garages. Stables could be immense, and up to three storeys in height. There were also the brewery offices, perhaps a house for the head brewer, usually a brewery tap and possibly some housing for

brewery workers. All these diverse buildings were often arranged around a courtyard, with easy road and often rail (or waterway) access. By the 1890s the number of potentially architecturally significant brewery sites, that is sites with substantial structures like those at Tadcaster or Hook Norton was probably around 600, with about 100 of these being major sites. Apart from sheer weight of numbers, the location of many breweries in town and city centres made them of additional significance in townscape terms. Some breweries, especially those of the smaller producers, were still designed and built locally by a combination of the contractor and the brewery's own engineer. However, many of the new breweries of the 1870s onward were built by a new breed of architects and engineers who specialised in the construction and fitting out of breweries. Their market was national rather than local or regional, and some also manufactured brewing plant, thus giving a complete design, building and fitting-out service to their clients.

Davison, Inskipp & Mackenzie

Of the three major London firms of brewers' architects established before or during the 1870s, the most senior was Davison, Inskipp & Mackenzie. Robert Davison, who worked for Truman, Hanbury, Buxton & Co. during the 1830s, established the practice in the late 1840s, going into partnership with George Scamell (who worked at Truman, Hanbury, Buxton & Co in the 1860s) during 1864-70. Later George Inskipp, who had been Davison & Scamell's office manager, went into partnership with Davison, and the pair were joined by Mackenzie, at which point the practice became known as Davison, Inskipp & Mackenzie. Apart from the large-scale alterations to Allsopp's New Brewery, Burton (1867), their works include the reconstruction of Adnams' Sole Bay Brewery, Southwold, in 1897 and additions to several of the country's best known breweries, including Greenalls at St Helens and Warrington, and Ansell's at Aston, Birmingham. In London, the twin landmark turrets at Courage's Anchor Brewery and Taylor Walker's Barley Mow Brewery were also designed by the practice during the early 1890s, although generally their work was more functional than decorative. The appearance of the brewery - or rather, the potential customer's perception of its appearance - was indeed becoming of increasing financial importance to brewers. A romanticised view of Adnams' Sole Bay Brewery in Southwold soon began to appear in its advertising material after the brewery was rebuilt by Inskipp & Mackenzie in 1897.

Scamell & Colyer

After working with Robert Davison, George Scamell went into partnership with Frederick Colyer around 1879, and the practice of Scamell & Colyer continued into the early years of the twentieth century. Scamell's work *Breweries and Maltings* (1871), later revised by Colyer, rapidly achieved classic status and was highly praised by *The Builder*, whose exasperated reviewer commented 'If the brewers could come to one consistent system of brewing, the arrangement of a model brewery would be much simplified'. Part of the reason for the book's success lay in its straightforward cost estimates for the construction of breweries, set out in pence per cubic foot for various types of brewery; these were criticised as being overprescriptive and impractical, but probably appealed to architects with little experience in brewery design. Scamell & Colyer's works included the well-known

pair of Walker's Clarence Street Brewery, Burton (1882), and John Smith's Tadcaster Brewery (1883); both emphasised external decoration, especially intricate ironwork.

Arthur Kinder & Son

The third major London practice, Arthur Kinder & Son, was set up by Arthur Kinder prior to the 1870s; his son Harold Kinder was taken into partnership in 1891, and the practice was still in existence shortly after the First World War. The firm's numerous works, generally small breweries and additions throughout the 1870s and 1880s, increased in scale during the latter part of the century, and include the large, sturdily functional tower breweries put up in 1899 for Hall & Woodhouse at Blandford St Mary and at Crosswell's Cardiff Brewery. Smaller London practices include Harrap & Duffield (Nine Elms), Henry Stock (Young's Ram), Henry Stopes (Cockermouth) and R. C. Sinclair (Springfield, Wolverhampton).

William Bradford

The leading figure amongst those brewers' architects interested in the architectural style of breweries turned out to be William Bradford (1845-1919), who established his practice in London in 1879, having initially worked in America. Bradford's first known work was a small addition to the Hope Brewery in East Grinstead during 1879, but he soon became involved with larger contracts, notably the Swan Brewery, Fulham for Stansfeld & Co in 1881-2. This 50Q brewery cost around £30,000 and included a 120 foot high chimney. His Bridge Wharf Brewery in Lewes, built during 1881-2 for Harvey's, was smaller, but otherwise typical of his early, lightly decorative, style.

In 1885, Bradford prepared a paper on brewery construction for the First Brewers' Congress in London; this included some of the few remarks made by any brewery designer on brewery architecture, as opposed to engineering or construction. He suggested that many brewers cared little about the appearance of the brewery, a matter which he felt should be left entirely to the architect. Bradford continued:

'In passing through a town your attention is usually attracted by two or three buildings of large size towering above the rest, and they are generally the church, municipal buildings, and brewery, and, as a rule, the brewery is a most hideous-looking structure, without the slightest attempt at design from an architectural point of view; and, in many instances, the appearance could have been made really imposing with very little, if any, additional cost.'

The architectural style of Bradford's breweries was always basically Queen Anne Revival, but this varied from a delicate, decorative version early in his career to a harsher format, with large areas of brickwork broken up by blind arcading, at the turn of the century. William Bradford added a compact red-brick tower to McMullen's Hertford Brewery in 1891, although this was adjacent to the original brewery, if not exactly on a greenfield site. Complete with its ornate ironwork crown, it is typical of his small-scale later works. The Star Brewery at Nottingham, a 150Q brewery built for Shipstone's in 1900, is a good example of his later style. Typically for a late 19th or early 20th century brewery, its architecture emphasises the company trademark, in this case a star. William Bradford & Sons built a new and

ornate brewery for Courage's at Alton in 1904, and in the same year extended Cobbold's Cliff Brewery, Ipswich, in the practice's usual style, but these were amongst the last of their major works. The Bradford practice was also responsible for the new brewery built for the Mansfield Brewery Company in 1907.

Bristol

In Bristol, within a region well known for its production of industrial machinery, the major brewers' architectural and engineering practice was George Adlam & Son, which was established around 1800 and finally went out of business in 1965.

Although better known as plant manufacturers and suppliers, the firm managed to design some impressive breweries, adapting a functional version of Queen Anne Revival style by adding decorative ironwork, polychromatic brickwork and half-timbered lucams. Their most flamboyant works date from around the turn of the century and include a particularly ornate 60 quarter brewery built for Green's of Luton in 1900, the more delicate Westlake's Brewery at Cwmavon (1900) and the 150 quarter tower scheme at Benskin's Watford Brewery (1901). One of the last of the great ornamental brewhouses to be erected was George Adlam & Sons' new 60 quarter brewery for Green's of Luton, completed in 1900. This was a typical Adlam design, with half-timbered lucam, ironwork crest (bearing the brewer's name), heavy cornice and large Diocletian windows. Larger still was the 150 quarter Cannon Brewery, built for Benskin's Watford Brewery by Adlam's in 1901. More typical contracts in the early years of the new century were for smaller breweries of less than 30 quarter capacity. Also Bristol-based were Llewellyns & James, brewers' engineers and architects active from the early 1880s into the 1890s.

Manchester, Newark and Newcastle

Manchester was a lucrative base for brewers' architects during the 1870s, as it was home to more brewers than any other English city apart from London. Brewers' architects and engineers Gregory & Haynes were based in Salford from the 1860s onward and practised mainly in the north of England, where they carried out many small-scale works during the 1870s. Although the firm were really engineers rather than architects, they were capable of building complete, if small, breweries.

Warwick's Northgate Brewery, built at Newark in 1882, was designed by a non-specialist brewers' architect, William Bliss Sanders, who had just designed the local hospital; the long run of open lancet arches along the base of the brewhouse gives the yard a distinctive look, along with a great slab of a Queen Anne Revival chimney. Its office boasts a handsome Queen Anne Revival exterior behind which is fine woodwork, a curved counter and a grand staircase. Offices were often given a more ornate, or at least a more formal, architectural treatment than less visible areas of the brewery.

The Newcastle Breweries' Haymarket Office was built in 1901 by the local architectural practice Joseph Oswald & Son, who often did public house work for the Breweries. Inside, the entire ground floor was faced with Leeds-made glazed faience in shades of brown, green and buff, which included the Breweries' name and logo; especially impressive were the open arches of the clerks' and accountants' room. This type of interior tile scheme, often included in late nineteenth-century bank,

insurance company and utilities offices, is a rarity in a brewery context. Breweries tended to reserve displays of ceramics for their public houses, although glazed bricks were essential for the brewhouse interior, where cleanliness was a necessity. Here white glazed bricks were the norm, but dados might be detailed in patterned coloured bricks, as in the fermenting room at Cain's Mersey Brewery, where the archways and window surrounds were also picked out in colour.

Scotland

Of the two major Edinburgh practices, that of Robert Hamilton-Paterson was established in 1870 (and still active in 1906), while Peter Lyle Henderson - known in Scotland as 'the Brewers' Architect' - was in practice from 1878. Henderson worked on many pubs as well as several breweries in the Edinburgh and Glasgow areas; his basically functional approach to brewery construction was lightened by occasional forays into the Scottish Baronial style. He was responsible for instigating the movement of Edinburgh breweries to the greenfield site of Craigmillar, south of Arthur's Seat. The attractions of Craigmillar were a good water supply and access to the railway; seven breweries moved there around the turn of the century, their sites contained within a single square mile. Henderson built Murray's Craigmillar Brewery in 1888; this development included a terrace of cottages for the workforce. On the brewhouse, along with the usual blind arcading, is a fret pattern frieze in white brick, and the base of the stack shows a similar pattern. Polychromatic brick was not uncommon in breweries, but was generally restricted to red and blue brick in window surrounds. One of these was Drybrough's, whose Craigmillar Brewery was built by Robert Hamilton-Paterson in 1892. Back in the city centre was the Edinburgh Brewery of Thomas & James Bernard, which was built in 1888 and designed by the local architects H. J. Blanc and James Gordon. This is an excellent example of the courtyard arrangement of the various brewery buildings, with the offices - on a busy street corner - being given an attractive Scottish Baronial treatment.

Summary

Many of the remaining British breweries have been redeveloped as housing, some are 'attractions' like Devenish in Weymouth, many more simply disappeared, following losses in war and mergers within the industry. The notable points of British industrial-scale brewery architecture between 1880 and the early 1900s are the central location in towns and cities, the ornamental exterior, a substantial tower often with an elaborate ironwork crown, much use of trademarks, and minimal interior ornament apart from in the offices.

Brewery architecture abroad

Pilsener lager, a golden-coloured, bottom fermented beer stored or 'lagered' during fermentation for a long period in cool conditions, was first produced around 1842 at Pilsen in Bohemia, the western end of the Czech Republic. The original Plzensky Prazdroj Pilsen Brewery still brews, its buildings dating from 1842 and 1892, with more recent additions; most notable are the double-arched triumphal gateway of 1842 and the water tower. An earlier tower brewhouse can be seen at the Velke Popovice Brewery of 1874; this is just south of Prague. The nineteenth century surge

in railway construction allowed Pilsener-style lagers, also brewed in Bavaria, to be transported around Europe, and emigration ensured that beers in Pilsener, Bohemian or Bavarian style - and the breweries to produce them - were soon found in North America and eventually throughout the world; a few lager breweries were even built in Britain.

Before the 1860s, breweries were built on a relatively small, almost domestic, scale, but the late nineteenth century boom in the popularity of lager saw the rise of industrial-scale breweries. European examples tend to have plain, almost Burton-style, exteriors with ornament concentrated inside, often in the brewhouse itself. The Weilemans-Ceuppens Brewery moved from the centre of Brussels to a suburban site in 1879, expanding greatly (architect Bordiaux) during the 1880s when they began to brew 'Munich-type' beers. Further expansion followed in the early 1900s and in 1930 with the modernist brew house (architect Adrien Blomme); the latter is currently being converted to an arts centre. Another notable early twentieth century brewery is at Dortmund, the Dortmunder Union Bräuerei, dating from the 1920s; only the landmark brewhouse remains.

European, and especially German, brewhouse interiors are often tiled and frequently include stained glass windows with brewing imagery. Northern French artisan breweries often have particularly ornate exteriors, making use of colourful ceramic tiles, produced around Beauvais, just south of the main brewing area. One of the most elaborate brewhouses in Europe is at the palatial Feldschlösschen Brewery in Rheinfelden, Switzerland, which was completed in the 1890s, although the interior was altered in 1908. A stained glass window depicts one of the firm's founders, there are marble-faced columns and unusual tiling and mosaic work. Another well-known idiosyncratic and ornate brewhouse can be seen at the Carlsberg Brewery (built 1892-1901) in Copenhagen, designed by Carl Jacobsen (son of Carlsberg's founder) with architect Vilhelm Dahlerup (1836-1907). The brewery sports all sorts of imagery including tile murals of brewery workers and the Elephant Gate, which is supported by four 15 foot tall elephants carved from Danish granite.

North America

German-style lager quickly became tremendously popular in North America, after its introduction by the many German immigrants reaching America in the 1840s. Many of them settled in the midwest, and from the late 1860s (following the Civil War of 1861-5) professional engineers and architects, often trained in Germany, began to specialise in brewery design; Chicago (Illinois), a noted brewing city, was the base of many brewery architects. By the 1880s, breweries were being constructed on a vast scale, with Cincinnati (Ohio) the leading brewing centre until it was displaced by St Louis (Missouri) in the early 1900s. The Windisch-Mulhauser Lion Brewery (now demolished), Cincinnati, was built in 1866 by three brewers with German backgrounds, and the brewery was much expanded before the turn of the century. This pattern was repeated in many other American towns and cities.

The American Brewery, Baltimore (Ohio) was built in 1863 by the German immigrant John Frederick Weissner, then rebuilt and enlarged in 1887. The Lone Star Brewery, San Antonio, Texas, built 1883-4 by a group of businessmen brought

together by Adolphus Busch of St Louis. Its early buildings were wooden, and were replaced from 1895 by brick structures with flat roofs, crenellations and round-headed windows; the former brewery reopened as the San Antonio Museum of Art in 1981. The F. W. Cook Brewery in Evansville (Indiana) was built in 1893 and designed by the architect August Maritzen; it was demolished in the 1960s. Henry Weinhard's City Brewery at Portland (Oregon) was established around 1870 and a new brewhouse added in 1908; the architects were Whidden & Lewis, who were also responsible for many other Portland buildings including the City Hall (1895). What remains of the brewery now forms the centre of the Brewery Blocks Project, a regeneration initiative.

Many of the leading businessmen in Buffalo (New York State) were of German origin. Several small breweries were established there in the 1840s, and by 1896 there were nineteen large firms including Germania, Magnus-Beck, Gerhard-Lang and the German-American Brewing Company. Most of these large breweries were still managed by their German-American founders or their descendants. Decorative elements similar to those found inside German brewhouses also appeared in American buildings: in Detroit (Michigan), the 1912 brewhouse built for Stroh's Lion Brewery by the German firm of Topf & Sons of Erfurt had hand-painted tiling from the local Pewabic Pottery, a nationally-known arts and crafts pottery established in 1903. Appel (1991, p206) suggests that German brewers took pride in making their buildings attractive, symbolising the German impact on American culture.

Charles Centlivre was born in France and emigrated to America in 1847, opening a brewery - known as the French Brewery - in Fort Wayne (Indiana) in 1862. Fire destroyed the brewery in 1889 but it was immediately rebuilt on a much larger scale, with a massive brewhouse and other structures set within a park; the remaining buildings were demolished in 1989.

The huge scale of some of the turn-of-the-century breweries is illustrated by Portner's Brewery in Alexandria (Virginia), established during the Civil War and extending over four blocks in area by 1895. In Milwaukee (Wisconsin), Schlitz coined the slogan 'The beer that made Milwaukee famous' and Pabst became a national giant. Adam Lemp established his lager brewery in St Louis (Missouri) in 1841-2, his son William J. Lemp moving to a new site and expanding the plant until by the 1870s it was the biggest in St Louis. The firm was the first to introduce coast-to-coast distribution of its beers, and the brewery eventually covered five city blocks. Since brewing ceased, it has been used as workshops for artists; the caves still exist, and it is planned to be a national brewing museum. The earliest part of the mammoth Anheuser-Busch Brewery complex in St Louis was designed by the German-born and German-educated architect Edmund Jungfeld for Anheuser & Co in 1869; Jungfeld, who died in 1884, became a specialist brewery architect and employed other significant architects in his practice.

Australia, Africa and Asia

Immigrants from the British Isles played a large part in Australia's brewing history, but the climate made it difficult to make English-style top fermented ales, and it was not until lager was introduced that the numerous small-town breweries - often with

something of the English ornamental brewery appearance - began to disappear and production was taken over by much larger concerns. The brothers William and Ralph Foster came to Melbourne from New York in 1887, bringing with them a German-American brewer who had studied in Germany. They built a lager brewery in Melbourne, using equipment imported from America, and their product was on sale by 1889. It proved popular, and by the 1930s almost all Australian-brewed beer was lager.

In 1870s Australia, the state of Victoria was noted for its beer drinking, and several large-scale breweries were constructed especially in Melbourne, whose first mayor was a brewer. The Yorkshire Brewery (1876) was designed by the architect James Wood, son of the brewery's owner, who had established the firm in 1858. It was one of Wood's earliest commissions, and he went on to become well known for designing gentlemen's town houses. The six-storey polychrome brick tower of the Yorkshire Brewery was the tallest building in Australia for ten years after it was built; the mansard roof is a French-inspired element. The tower has been converted to apartments, but the other buildings, including the stables, have been demolished.

Melbourne's Victoria Brewery was founded in 1854 by the Scottish brewer Thomas Aitken. Its first brewhouse tower was built around 1882 and designed by the architect George Wharton; a second brewhouse has a German-style tiled interior. The castellated lager beer cellars were added in 1895 by architect William Pitt, who also designed numerous non-brewery buildings in Melbourne in a wide range of styles; Pitt collaborated with the German-American brewing expert Augustus Metzler on the design of the cellars. The Victoria Brewery, along with five others, became part of Carlton & United Breweries in 1907. The CUB company architect T. Weaver designed many of the Victoria's 1920s and 1930s buildings. The complex has been converted to apartments. The Carlton Brewery opened in 1864 and expanded quickly thereafter. A new brewhouse tower was put up in 1872; the red brick malthouse of 1904 was designed by H. V. and A. Champion, and is one of the few surviving buildings on the site.

The English businessman Peter Degraeves arrived in Hobart, Tasmania, in 1824 and founded the Cascade Brewery in 1832; a new brewhouse building was added in 1927. The Captain Cook Brewery, Auckland, established in 1860, became the largest in New Zealand. In South Africa, the major breweries were established in the 1880s. The Norwegian Anders Ohlsson founded Ohlsson's Cape Breweries in 1882; the Lion Brewery, Cape Town, dates from around 1900. The American company Wiegand & Copeland started an experimental brewery in Yokohama; this became Kirin. Following this, the Japanese government sent a researcher to Germany, the intention being to establish a Japanese brewing industry; their first brewery was Sapporo.

Conclusion

Aside from in Britain, the industrial-scale breweries of the late nineteenth and early twentieth centuries were lager breweries, strongly influenced by the brewing traditions of German-born and German-educated brewers and their descendants. The interiors of their brewhouses sometimes adopted the same decorative style as the German originals, but by virtue of their often massive size, there were no exact

precedents in architectural terms. However, the use of round-headed windows and crenellations gave a strongly romanesque feel to the buildings. Australian breweries were more eclectic, borrowing from England and France as well as Germany. By the 1930s, new breweries throughout the world were beginning to adopt a form of international modern style. Further work needs to be undertaken on brewery architects, their involvement in non-brewery work and the relationship of breweries to the broader range of industrial buildings in order to draw any firm conclusions.

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