



ABOUT ARCHITECTURE

An Essential Guide in 55 Buildings

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Portal at the megalithic temple complex of Ħaġar Qim, Malta, as photographed in 1960. The architecture dates from more than 3,000 years BCE and is regarded as one of the most ancient religious structures on Earth.

Introduction

Architecture is the art and science of designing buildings and places. While the built environment directly affects us all, the process behind its construction can sometimes seem somewhat baffling. The aim of this book is to demystify that process. Rather than starting from a style or theory, location or period, it presents extant buildings from across the world, built at different points throughout history, and brings out some of the personalities and stories involved in making them.

This is a different way into architecture. The book is organised by building type – that is, by the particular use or mix of uses it was designed for. The way that the various types arise and evolve helps to explain what architecture does, and makes it a perennially fascinating subject. Since there are very many building types, and this must be a concise guide, I have chosen a basic 11 types, in a sequence that broadly follows our life patterns: how our towns and cities are organised, where we live, learn and work, how we get around and interact with others and finally, how we relax.

Beyond the function of buildings is of course something else: their expression. This is the art of architecture and relates to what buildings look like, how they sit in the city or open landscape and how we respond to them aesthetically. The requirements of architecture were reduced to just three words by the early-seventeenth-century English diplomat and scholar Sir Henry Wotton (1568–1639), paraphrasing a work of the Roman architect/engineer Vitruvius (c.80–15 BCE): ‘Firmness, Commodity, and Delight’.¹ That is, a building must be well built, useful and pleasing. Everybody agrees with this, if not always with what constitutes ‘delight’.

That formula, however, sidesteps the pressures of human society that lead to this or that building type. So while taking Wotton/Vitruvius as read, we can overlay today’s three main determinants: society, technology and style, in that order. Society decides what it wants (useful and desirable buildings and places) and can afford to build; technology allows it to build as humbly or ambitiously as it wishes and in accordance with or overcoming environmental factors; style determines the aesthetic appearance of the finished article. Looking back across architectural history, these three together provide the necessary information to understand why any building looks and works the way it does.

Society concerns the way we live, behave, trade, fight and are governed. Societal habits and pressures, concentrations of power and wealth, government edicts, the influence of religion, wars and persecution, riches amassed from foreign (often colonised) lands and the ugly proceeds of slavery, patterns of agriculture and industrialisation – have all fed into the way we shape our places and our buildings. Above all, for architecture to flourish, societies need long periods of relative stability.

Technology brings in the complementary skills of the engineer and environmentalist. The disciplines of architecture and engineering did not become formalised and separated until the early nineteenth century. Indeed, all but the smallest buildings have always been collaborations between people with

Blackwell

Cumbria, UK (1898–9)

ARCHITECT(S): MACKAY HUGH BAILLIE SCOTT (1865–1945)

STYLE: ARTS AND CRAFTS



The period of Arts and Crafts architecture from the late-nineteenth to the early-twentieth centuries is, by some reckoning, the summit of Western domestic design thus far. This movement was partly a reaction against the modern world – especially the world of mass-production – and partly about planning new ways of living. It was a call to arms for traditional craft skills combined with an upper-middle-class notion of good taste.

Wealthy private clients with servants were essential: this was the last great era of the country house. In America, Frank Lloyd Wright was a keen Arts and Crafts exponent, taking things to extremes in his sprawling, low-roofed ‘Prairie Houses’. His contemporaries moved in different directions – Charles Rennie Mackintosh (1868–1928) in Scotland and England towards art nouveau (even latterly jazz age), Edwin Lutyens (1869–1944) in England towards inventive classicism, Adolf Loos (1870–1933) in the Czech lands towards ultra-plain exteriors and rich, interlocking interiors. Baillie Scott, of the same generation as all of these, was a less stylistically restless type. His best work was at the more traditionalist, externally plain end of the Arts and Crafts Movement, often called

A wealthy country retreat, Blackwell reflects an Arts and Crafts-inspired aesthetic for living.



Blackwell contains richly decorated interiors with some exaggerated details.

‘vernacular’ because it draws most obviously on a familiar rural domestic visual language.

Blackwell demonstrates that he was as fluent and inventive in his handling of spaces as his better-known contemporaries. His brief was to build a holiday home for a well-to-do family, the Holts. Sir Edward Holt (1849–1928) was a brewer and politician who did much to improve conditions in his native Manchester. This was a time when such families habitually moved base with children and servants in the summer months.

Set high on a hillside overlooking Lake Windermere, with the Coniston Fells in the distance, Blackwell has a glorious location. Outside its white-rendered gabled wings and stone bay windows are topped with slender conical chimneys and the house is surrounded by terraced gardens. Inside, the main rooms – hall with gallery and inglenook fireplace (an inglenook being an intimate part-enclosed space by the fire), dining room and drawing room – flow into each other in a way reminiscent of early Wright in the Mid-West, or Mackintosh’s slightly later Hill House outside Glasgow. Upstairs there are eight bedrooms, two with dressing rooms, and (normal for the time) just two bathrooms for the whole house.

The contrast between the very male main hall, with its medieval-revival feel, and the very female white drawing room with delicate, almost art nouveau columns around its own inglenook, shows Baillie Scott at his best. As was an article of faith with Arts and Crafts architects, he designed the house in every detail, outside and in, down to the doorhandles.

The Arts and Crafts Movement looked both backwards and forwards. On the one hand was traditionalism, which fed into the doctrine of ‘honesty’ in building; an approach that came to be widely known as truth to materials. This often expressed itself in a pared-down style, with fewer and better fripperies (furniture, wall hangings, coloured glass). After all, traditional buildings, especially rural ones as built by their revered crafts folk, were nothing if not functional. So Arts and Crafts, being the antidote to Victorian ‘over-richness’, was taken by some historians to be a forerunner of modernism, and thus a transitional style. But Arts and Crafts houses were far from being copies of historic buildings. They were often heavily stylised, with exaggerated details – oversized roofs and turrets were a speciality. However, the fact that some Arts and Crafts houses (by no means all) were relatively plain and increasingly fluidly planned did not mean that they were necessarily anticipating the modernist sea-change in architecture that was coming. This was a time of much international cross-talk in architecture, fed by magazines, books and exhibitions. America, Britain and mainland Europe, even Japan, were all in on the conversation. This was an evolution of traditional forms rather than the clean-slate modernist revolution. Nonetheless, a visit to this house makes you realise why – along with



The more delicate White Drawing Room at Blackwell has an art nouveau feel.

Lutyens – Baillie Scott’s work was admired by some of the new generation of more overtly modernist architects. Architects always have more in common than matters of style might suggest, and that commonality shows itself most clearly in interiors.

Having originally trained as a farm manager before switching to architecture, Baillie Scott somewhat eccentrically based himself on the Isle of Man. This does not seem to have hampered his business or his style. He was unfortunate to lose his archive of drawings and correspondence twice – once in a fire in 1911, and again in the London Blitz of 1941. Consequently his work is much less well documented than it should be.

Blackwell is the indulgence of the arts-conscious, *fin-de-siecle*, self-made business magnate. It now seems a lost world of wealth, craftsmanship, optimism: a stratum of society that was to be devastated by the First World War. The Holts were no exception. Their eldest son died in the trenches and this grand holiday home, containing painful memories, lost its appeal for the family. Remarkably it survived various changes of use thereafter, including a long spell as a girl’s school, with its interior details intact. Finally it was restored and opened to the public in 2001.

The Beinecke Rare Books and Manuscript Library

Yale University, USA (1960–63)
ARCHITECT(S): GORDON BUNSHAFT (1909–1990)
STYLE: INTERNATIONAL MODERNIST



The centre of any good university should be a library, the physical embodiment of human knowledge. One of the masterpieces of American mid-century architecture, the Beinecke Library at Yale demonstrates how sophisticated and subtle the steel-framed building could be in the post-war years. In its abstract richness it shares ambitions with the highly decorative commercial buildings of late-nineteenth-century Chicago and New York. This was a real test for post-war modernist architects: were they up to the task of building an enduring, even monumental centrepiece to an august and architecturally conservative institution?

The tower of books, rising from the lower levels, is a building within a building.

Bunshaft was. He made three conceptual masterstrokes. The first is the way he makes the building visually float, setting it above a recessed ground level of darkened glass, its bulk not meeting the ground with columns but perching lightly on just four pyramidal granite staddle stones – like a traditional farm granary – in a way that appears barely to touch them. This looks effortless but required the kind of structural frame engineering normally associated with bridges to achieve.

The second big move is the way the architect deals with the challenge of the low daylight levels needed in a building that houses delicate materials. Bunshaft clad the building in square panels of thin translucent veined Vermont marble, three centimetres thick. He organised these panels on a grid of five levels expressed in a subtly sculpted granite-clad frame, visually held within top and bottom bands of identical proportions. By day the light glows gently inwards, by night the building becomes a lantern. Externally the projecting frame generates a rippling play of light and shadow across the facade.

Thirdly, Bunshaft expresses the collection – mostly stored in two levels of underground stacks – in the form of a metal-framed glass tower of books in the middle of the interior, erupting upwards from the depths. This book tower is a classic modernist bronze-framed building in itself, a miniature skyscraper of the kind Bunshaft's firm, pioneering modernist practice Skidmore Owings and Merrill, was well versed in. Here it retains the proportions of the whole building, but scaled down slightly so that it sits in the space without quite touching the ceiling. This powerful idea swiftly became a point of reference for the architectural profession, openly borrowed for the King's Library of George III in the British Library, London by Colin St John Wilson (1922–2007) and M.J. Long (1939–2018), which opened in 1998. At the Beinecke, the six-storey tower contains 180,000 volumes, the basement levels more than a million, making this



Mid-century modernism in all its richness lands on Yale's 'collegiate Gothic' campus.

one of the largest such repositories and research centres of its kind in the world. Its reading room sits in a basement level, opening up to a sunken courtyard in the plaza in front of the main building.

Seen across the plaza, the Beinecke Library is a cool, mysterious building, perhaps deliberately given that what you see above ground is a kind of marker iceberg for the large expanse of stacks running beneath the plaza. Inside its tones are warm. The view from the entrance is nothing if not dramatic, as your eyes adjust to the reduced light and you gaze up through clear space right to the roof. You take broad stairs down to the basement levels, or up around the glass tower to a mezzanine floor, home to changing exhibitions and events. It is a stately space, an internal public piazza in itself. The materials – dark wood, bronze, light floors, the glowing marble – are good, restrained, and long-lasting.

A rare books library might seem a rarefied environment where few would normally enter, but the Beinecke attracts some 175,000 visitors a year and stages exhibitions, concerts and conferences. A café spills out of the building into the plaza on one side. All this activity led on occasion to some difficulties maintaining the right climatic conditions in the lofty space. This was finally resolved with a full replacement of the building's (by then) antiquated heating and ventilation systems during a thorough and faithful refurbishment of the building in 2015–16.

The grid rhythm of the coffered ceiling exactly matches that of the walls while the bronze-framed glass book tower, like the whole building, carries its weight with magical lightness. However this is no graph-paper exercise. Bunshaft modelled his facade with the eye of a sculptor. The gentle zig-zag undulation of the projecting stone grid softens each square of the facade into an octagon, and doubles up where the grids meet on the corners to make strong vertical elements worthy of the sculptor Brâncuși (1876–1957).

The Beinecke Library sits in the 1902 'collegiate Gothic' and neoclassical context of what is officially Yale's Hewitt Quadrangle though – such is the power of the newer building – it is generally known as Beinecke Plaza, perpetuating the name of the philanthropic family who financed it. While obviously very different in style from its neighbours, its proportions, materials and craftsmanship are such that it works successfully with them as a focus of attention. Opulently cool but far from retiring, it is an expressive building, and what it expresses is that it is the brain of the university, a powerhouse of learning.

¹ A variant of Gothic Revival architecture common in North American universities in the late nineteenth and early twentieth centuries and periodically revived since.

The thin sheets of veined Vermont marble glow gently in daytime while also keeping direct light off the collection.





The Schwebebahn monorail in Wuppertal, Germany, as seen in 1910. The monorail was designed by Carl Eugen Langen (1833–1895) and constructed between 1897 and 1903. With updated hanging stock it still runs today.

Transport

If a transport system works successfully, the designed experience may be both efficient and, in some instances, exciting. But from a time well before the railways, it has always been something else as well, and that something is to do not with movement but rather, with stopping. The caravanserai (traveller's resting places) of the ancient Asian and North African trade routes such as the fabled Silk Road, medieval European coaching inns and their Far Eastern equivalents, such as the Japanese ryokan, which date back to the eighth century, were all about the break on the journey.

The architecture of transport buildings can relate to the more glamorous features, passed while at high speed – a mighty bridge, say – but it is more likely to be to do with the incidentals of travel: processing of people and goods, security checks, eating, drinking, shopping and the maintenance and preparation of fast machines. A large transport terminal or interchange is a very complex place with a mix of many uses, from industrial to retail. The task that architects, engineers and designers face is to try to make all that complexity seem simple.

The architecture periodically has to play catch-up with the technology, or to choose between available technologies. Engineering becomes key, although this can go awry. The English Victorian engineer, Isambard Kingdom Brunel (1806–1859), might have got it right with his Great Western Railway, his bridges and some of his ships, but he got it entirely wrong when he decided on the technology of the 'atmospheric railway' – trains powered from a pneumatic vacuum tube – for his 32 kilometre South Devon Railway. It worked, but not for long because it was absurdly high-maintenance and prone to failure. Had the system succeeded, the world's railway architecture would have featured, not puffing steam locomotives, but instead, sizeable trackside air-pumping-houses every few kilometres.

Similarly the architects of inter-war airports faced a dilemma. Airships aside (never very common), should they cater for land planes or flying boats? Each had its merits. For a while, many airports were sited and designed so as to accommodate airliners either with wheels or floating hulls. New York's 1939 La Guardia airport, by architects William Adams Delano (1874–1960) and Chester Holmes Aldrich (1871–1940), with its art deco flourishes and Marine Terminal, being a case in point.

One-by-one, the alternative technologies tend to drop away along with their associated buildings: there were never any great hoverports anyway. Monorails (suspended railways where the trains hang from a single rail carried on gantries rather than sitting on two rails on the ground) are forever the future that never quite arrives. Although perfectly practicable, only a handful of proper examples for regular passengers have ever been built, the most famous being the Schwebebahn at Wuppertal in Germany dating from 1901. This is used as an everyday metro system, sailing over streets and river alike, with a variety of

The High Line

Manhattan, USA, 2004–present

ARCHITECT(S): JAMES CORNER FIELD OPERATIONS, DILLER SCOFIDIO
+ RENFRO WITH PLANTSMAN PIET OUDOLF (B.1944)
STYLE: INDUSTRIAL SALVAGE



The line in its abandoned state in autumn 2000, captured by photographer Joel Sternfield (b.1944)

Manhattan has two of the most appealing designed landscapes in the world and they are as different from each other as can be imagined. Central Park, designed by Frederick Law Olmsted (1822–1903) and Calvert Vaux (1824–1895) in 1857 and completed by 1876, is the extraordinary superimposition of a 341 hectare informal, picturesque landscape on originally inhospitable terrain, captured within the rigid boundaries of the expanding New York city grid.

It was driven through with much heavy engineering and many controversies, including the forced removal of informal settlements including Seneca Village, home to many free African-Americans and Irish immigrants. Such were the methods of the time (methods also common in earlier European landscape design and prevalent today for many public works such as airports) but the end result is a lush crafted landscape-with-buildings and place of public resort made all the more impressive by its necklace of surrounding skyscrapers.

The green ribbon of the High Line threads its way down Manhattan’s West Side.



The High Line set out to be something else, making use of redundant industrial infrastructure rather than rural-fringe land. The raw material was an elevated freight railway, abandoned since 1980, which ran down Manhattan’s West Side, bringing meat, dairy and other foodstuffs into the Meat Packing District. The idea to make this into a public promenade was inspired by a Parisian precedent, the Coulée verte René-Dumont, a five-kilometre stretch of abandoned urban railway in south-eastern Paris, reopened as a linear park in 1993. But that is more suburban in character, sometimes elevated, sometimes sunken, sometimes at street level. It lacks the drama, the film-set quality, of Manhattan’s West Side.

Espoused by campaigners and co-founders of Friends of the Highline Joshua David and Robert Hammond, the High Line park/promenade/urban pier was supposed to arise from the communities of Manhattan’s then-declining

Meatpacking District, rather than being imposed on them. It was emphatically not – certainly not at first – an official project, though it depended on official support to provide capital funding along with private donations. It is still run by the non-profit conservancy established by David and Hammond, though now owned by the City of New York. The original concept was to capture in a linear park the atmosphere of this miraculously surviving vegetation-sprouting railroad as it threaded its way between and sometimes through industrial buildings. This was a realm known mainly to urban explorers and photographers, or glimpsed from surrounding buildings.

The project had to acknowledge the obvious paradox of its creation: that by opening such a previously off-limits place up to the public, the charm of its isolation would be lost. I was lucky enough to walk the first section shortly before it opened, so experienced the final days of its being an almost-secret domain. Since it opened, the High Line has become so popular that at busy times it resembles a procession, with little opportunity for calm contemplation among the jostling crowds. It is also true that its gentrifying effect has led to cultural and commercial development along its route, which has pushed up property prices and rents, so increasingly excluding the working-class communities originally associated with the area. Unlike Central Park, then, the exodus of previous residents came after rather than before the construction work, through the operation of capitalism and tourism rather than court order.

In fact the Meatpacking District, which had become an area of louche nightclubs, drug dealing and worse from the 1970s as industry moved out, had been heading upmarket since the fashion and gallery worlds began to colonise it in the 1990s. Old buildings were converted, new ones added. The High Line accelerated the process, as was inevitable with the arrival of such an intriguing visitor attraction. If the park had not been made, the steel railway viaduct would simply have been demolished as southerly sections of it already had been.

The structure was pretty sound: this was not an especially old bit of infrastructure, dating to 1933. Prior to that, the railcars had moved along the streets, often with fatal consequences. The separation of street and railroad levels in this way allowed the urban dreamers of the 2000s to imagine a place of both activity and serenity, a walkway with hanging gardens and places to pause. Architect and landscape architect made the tough framework necessary for the footfall, incorporating sections of old railway track and making architectural spaces; plantsman Piet Oudolf provided the soft landscape that draws on the High Line’s original overgrown appearance. The ambition was duly achieved with the first section opening in 2009 from Gansevoort Street in the south (where the viaduct abruptly terminates, though you can spot fragments of it further south where it used to run through buildings) to 20th Street in the north. Two further phases followed, bringing it round railway yards up to 34th Street. This took it to nearly 2.4 kilometres, with further spurs mooted at the time of writing.

As resurrected, the High Line is a mix of architecture and planting that carries physical memories of its original function.

At its top end it is little more than a walkway: the best parts are further south. Where it broadens and passes over busy 10th Avenue, an amphitheatre is made in the deep steel structure, with windows looking out onto the street life. Elsewhere you can sit out on built-in sun loungers, at one point overlooking the Hudson. Everywhere the planting bursts up through slots in the paving, or covers whole areas away from the path. One of the main appeals of the High Line is that it is anything but a straight corridor. It squirms about to a remarkable extent, a legacy of its 1930s beginning when it had to literally thread a way through a densely built up area. All along the route it changes in character.

Dereliction is always appealing, exploring it thrilling, but for a public park everything had to be re-designed and made accessible. Stairs, lifts and lighting were needed. Key to the success of the High Line is the way it quite casually mixes old with new, highly-designed with left-as-was. It became an idea that cities around the world rushed to emulate in their own leftover fragments of transport engineering but none to date can match the atmosphere created here on the West Side.

