Tall buildings

The tower is one of those stereotypical built forms to which a powerful mythology attaches through their construction, use, associations and symbolism, both in history and in fiction, be it the Tower of Babel, Rapunzel or The Fountainhead.

Commonly an instrument of political or military control and authority and freighted with a dark flipside of imprisonment and isolation, it's a form that has also become associated with mercantile power, as literal and symbolic mounds of accumulated capital and the engineering gymnastics that capital pays for, seen alike in Renaissance Siena or contemporary Shanghai. The skylines formed by towers come in turn to represent symbolically the cities themselves.

But towers have also always been functional instruments: for calling to prayer, or to house a peal of bells. And their vertical form has been useful environmentally, enabling a stack cooling effect for interiors, as seen in windcatcher towers.

They have also been showpieces of structural engineering ever since the technical advances of 19th century Chicago and the new heights and density of function that building tall allowed.

But today the tower form and in particular the glassy modernist towers of the past half-century that advances in engineering and materials technology permitted are now under scrutiny for the toll they take on the environment, not least tectonically, given the carbon-intensity of heavyweight engineering they require. At the same time the density of occupation they offer promises to be less attractive in a post-Covid era.

So what is it to design and build a tower today? In our building studies in this issue we feature three recent or completing towers either in the UK or by UK-based architects. We talk about their contexts, clients and carbon footprints with their designers.

In the City of London, we visit 100 Bishopsgate, an office tower, part of the City Cluster, that has been 15 years in the making. Its designers, Allies and Morrison (with Arney Fender Katsalidis), intended to add to, rather than elide, the grain of the city at its base.

In New York City, we look at David Chipperfield Architects' first completed new build project in the city, The Bryant, a 32-storey residential and hotel tower, and talk to project architect Mattias Kunz about designing in the historic high-rise environment of Manhattan and the very different conditions of building in the States.

Our third study takes us by contrast to the Norfolk countryside to visit an inspired 'steampunk' retrofit by Tonkin Liu, converting a disused water tower into a home. We hear how the design is closely allied to views out over its flat, windswept landscape setting.

To begin with, we flag up a crop of comparable current projects by UK architects: two other newly minted office completions in the City of London by PLP and KPF; a brace of towers by Foster + Partners and RSHP coincidentally completing in New York; and a couple of innovative towers in the UK – by Nissen Richards Studio and Denizen Works – both designed to engage with their landscape contexts.

Rob Wilson

The up and the coming

Here's a snapshot of some towers recently or currently sprouting: two further additions to the City Cluster of tall office buildings in London's Square Mile, adding to its 'toy box' of shapes; two mixed-use residential projects by UK architects currently completing in New York City, both reacting to the context of historic 20th century towers; and two viewing structures designed to look over landscapes: an archaeological site in Suffolk and a botanical garden in Scotland

22 Bishopsgate, London EC2, by PLP Architecture

22 Bishopsgate is the tallest new skyscraper in the City of London and can accommodate up to 11,500 people.
Over 10 per cent of its internal area is devoted to a so-called Vertical Village of amenity spaces spread through the building. These include an Active Commuter Hub, with 1,700 bicycle parking spaces; The Market, with six different eateries; The Exchange, with co-working areas and broadcasting booths; and a fitness zone and spa with medical facilities. At the top is a public viewing gallery.
Organised around a core, the office space can be open-plan or cellular and is designed to accommodate up to four tenants per floor. Floor-to-ceiling heights are at least 3m on most floors. A low-iron glass closed-cavity façade with movable, operable blinds in the cavity allows 55 per cent light transmission into the interior, an increase of 60 per cent over standard insulated glazing.
22 Bishopsgate is WiredScore Platinum certified and designed to achieve a BREEAM Excellent rating.

PROJECT DATA
Start on site June 2016
Completion December 2020
Gross internal floor area 196,838m²
Height 278m
Storeys 62
Construction cost Undisclosed
Architect PLP Architecture
Client Lipton Rogers Developments for AXA Investment Managers – Real Assets
Structural engineer WSP
M&E consultant WSP
Annual CO_2 emissions
Regulated: 2,578 tonnes
Unregulated: 4,724 tonnes

LEFT: NATHANIAL MOORE; OPPOSITE: TIMOTHY SOAR

The Scalpel, 52 Lime Street, London EC3, by KPF

Kohn Pedersen Fox's City of London tower received planning permission in 2013 after being slammed by English Heritage which had concerns over the building's impact on the Tower of London. Nicknamed 'The Scalpel' in an article in the FT in 2012 owing to its shape, which tapers to a point at a height of 190m, the 57,000m² tower sits next to Rogers' Grade I-listed Lloyd's Building and was completed last year.
The building's angular shape was designed to allow it to be built along Leadenhall Street without interfering with any of London's protected views. Its façade leans back so that it is hidden behind St Paul's Cathedral when viewed from Fleet Street.
Awarded a BREEAM Excellent rating, the project is clad almost entirely in high-performance glass with its lift and core placed on the south façade to shade interior spaces. The simple geometric form is reinforced by its bright metallic fold lines.

PROJECT DATA
Start on site December 2014
Completion September 2018
Gross internal floor area 57,000m²
Height 190m
Storeys 42
Construction cost Undisclosed
Architect Kohn Pedersen Fox
Client WRBC Development UK
Structural engineer Arup
M&E consultant Arup
Annual CO_2 emissions (predicted)
1,015 tonnes

425 Park Avenue, New York , by Foster + Partners

This is thought to be the first ‘full-block’ office scheme on Park Avenue for nearly half a century and stands near Mies van der Rohe’s famous Seagram Building.

It features a tapered steel-frame tower rising to meet three illuminated shear walls, allowing for column-free floorplates within. The building is split vertically into three volumes: a seven-storey base, a recessed central section and a slender section of ‘premium’ floors, all developed through detailed analysis of views of Central Park. Double-height spaces intersect each of the volumes, while the second set-back features an amenity floor with restaurants.

To maximise Park Avenue frontage, the core is placed to the rear, where a glazed lift sits externally, offering views over the East River.

PROJECT DATA
Start on site 2015
Completion 2021
Gross internal floor area 52,000m²
Gross internal + external floor area 64,193m²
Height 206.45m
Storeys 43
Construction cost Undisclosed
Architect Foster + Partners
Executive architect Adamson Associates
Client L&L Holding Company
Structural engineer Foster + Partners, Cantor Seinuk WSP (concept to completion)
M&E consultant Foster + Partners, Flack + Kurtz WSP (concept to completion)
Annual CO_2 emissions Not supplied

VISUALHOUSE

No. 33 Park Row, New York, by Rogers Stirk Harbour + Partners

This boutique residential scheme in Lower Manhattan is made up of 30 apartments with four levels of commercial space at its base.

Located at the corner of Beekman Street and Park Row, its scale bridges between the 10-storey buildings on the former and the latter’s early 20th century towers, offering views north across City Hall Park. Its primary core acts as a unifying vertical structural element, extending up to house rooftop plant. The kite-shaped plan is set out on the diagonal with a strong visual emphasis on the corner.

The façade is composed of prefabricated concrete and metal sections, with its depth and colour intended to respond to the local context and give the building a strong identity. The building’s structural and internal apartment arrangement is expressed in two-storey façade modules, taking the form of deep, articulated loggias with patinated copper side-screens.

While the primary arrangement faces north, these provide shading where needed and privacy to apartments. The flank walls are clad in brick and act as braced stabilising bays.

PROJECT DATA
Start on site 2017
Completion Autumn 2021 (expected)
Gross internal floor area Residential: 5,574m², Commercial: 1,393m²
Height 114m
Storeys 23 (25 inclusive of bulkhead elevator motor room)
Construction cost Undisclosed
Architect Rogers Stirk Harbour + Partners
Architect of record SLCE
Client Centurion Real Estate Partners
Structural engineer GACE
M&E consultant GEA Consulting Engineers
Annual CO_2 emissions Not supplied

Sutton Hoo, Suffolk, by Nissen Richards Studio

Working with the National Trust’s archaeological and visitor engagement teams, Nissen Richards Studio has redesigned the visitor experience of the Anglo-Saxon royal burial ground of Sutton Hoo in Suffolk. The project includes new thresholds, interpretive moments, graphic design and exhibition displays for the scheduled monument, which has 17 burial mounds dating from 625 AD and is completed by a 19m-high new-build viewing tower.

The tower, located at the heart of Top Hat Wood, gives visitors unprecedented views over the Great Ship Burial Mound and is one of the scheme’s stand-out features. The result of experimenting with a number of forms, its design is formed of a slender steel structure clad in charred larch. The stair is constructed with a steel projection on every other landing to allow visitors to stand and see the ascending view in stages. The triple-section cantilevered ramp at the entrance is also a timber-clad steel construction. Setting the height of 19m was the result of ‘bringing a cherry-picker to site and trying out different heights’ says Jim Richards, director at the studio.

PROJECT DATA
Start on site November 2018
Completion June 2020
Total floor area 155m²
Height 19m
Storeys 12 landings, 4 viewing points
Construction cost £2,775,000
Architect Nissen Richards Studio
Client National Trust
Structural engineer Price & Myers
M&E consultant OR Consulting Engineers
Annual CO_2 emissions Not supplied

GARETH GARDNER

Rural views

Vertical gallery and bird hide, Inverewe Garden, Scotland, by Denizen Works

Located just north of Poolewe in Wester Ross, this structure is located in one of the UK’s best-loved botanical gardens.

The open brief for an observation tower to draw more visitors to the garden led Denizen Works to propose a vertical gallery and bird hide.

Its form is designed to intrigue and to function as a landmark and orientation point for visitors. Forming part of a route around the garden, the tower is accessed at the top across a short bridge connecting to a high point in the landscape, affording views across tree canopies. A staircase links down via gallery spaces telling the story of the garden to a further network of paths at the base.

The materiality of the tower is inspired by a sliced tree trunk, with rough and smooth faces. Dark-stained vertical larch cladding, sourced on site, contrasts with smooth pine tar. Internally, the timber sheathing board is left exposed and the tower sits on a bush-hammered concrete base.

PROJECT DATA
Start on site September 2021
Completion December 2021
Gross internal floor area 64m²
Height 24m
Storeys 6
Construction cost £650,000
Architect Denizen Works
Client National Trust for Scotland
Structural engineer Woolgar Hunter
M&E consultant Irons Foulner
Annual CO_2 emissions Net zero (predicted)