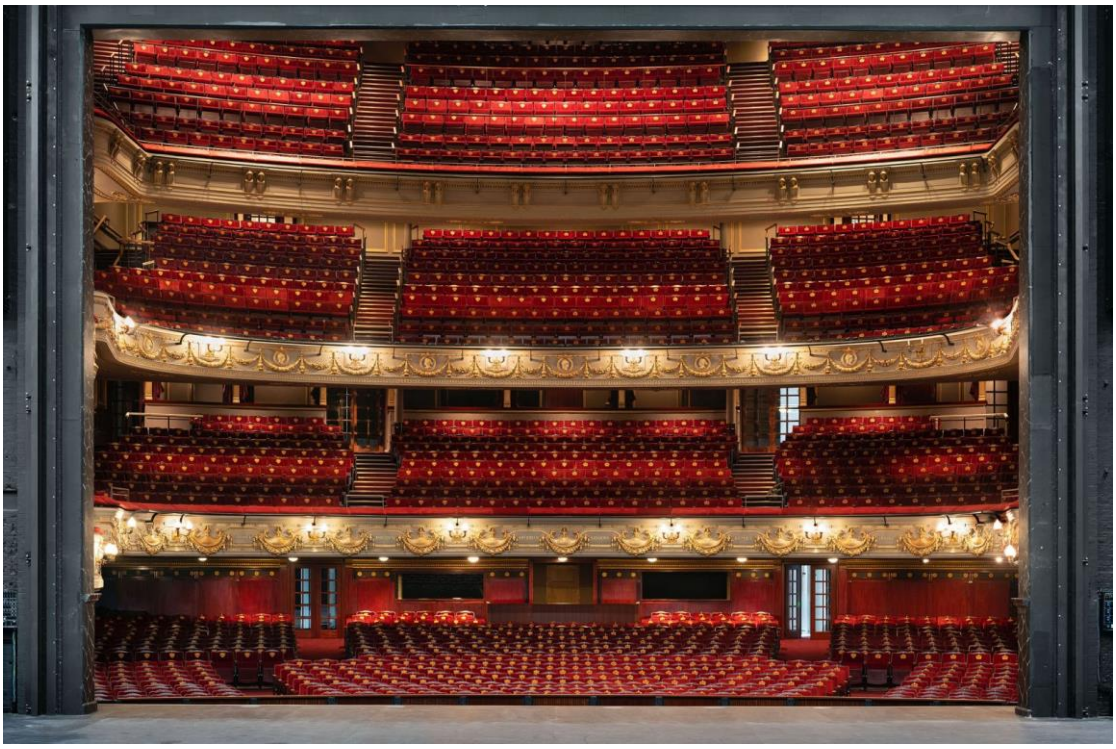


EXCLUSIVE BUILDING STUDY

A visual feast: Theatre Royal Drury Lane by Haworth Tompkins

The success of the retrofit of this 209-year-old building – home to the new *Frozen* production – is in its very invisibility under the opulence, writes *Rob Wilson*

14 SEPTEMBER 2021 BY ROB WILSON AJ PHOTOGRAPHY BY PHILIP VILE

‘It was not so much surgery, more a deep tissue massage,’ explains Haworth Tompkins’ co-founder Steve Tompkins with a grin about the work his practice has just completed on the newly renovated Grade I-listed Theatre Royal Drury Lane. The project was suitably christened last week with the UK première of the musical of *Frozen*. He describes the project as a case of ‘realignment, reconnection and freeing-up’ of the theatre’s internal spaces and workings after years in which these had become, in his words, ‘silted up’.

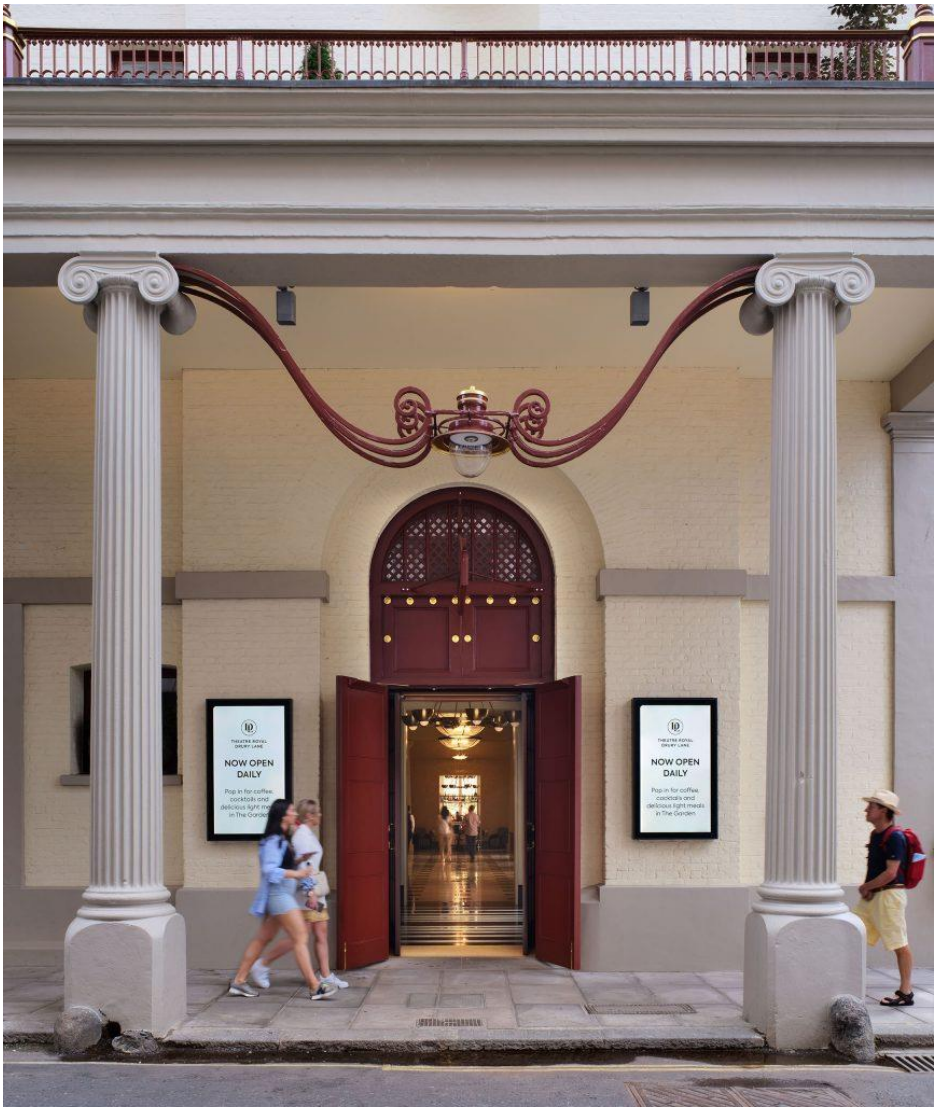
This ‘silting up’ was due in particular to the decision in the 1920s to replace the theatre’s original classic horseshoe-shaped auditorium, designed in 1812 by Benjamin Dean Wyatt, with a wider more curvaceous one. Like a cuckoo in the nest, this effectively squeezed out its surrounding service spaces, in particular destroying the logic of the original circulation.

But any expectations of this being a classic Haworth Tompkins’ archaeological strip-back and reveal job are instantly dispelled by the full-on gilded plush-fest that greets you when you enter, not just in the auditorium (‘we had to learn a lot about swags,’ laughs Tompkins) but in the grand suite of front-of-house spaces, the final finishes and fit-out for which the practice worked on with Alexander Waterworth Interiors.

It’s a sumptuousness, though, that’s not surprising for what after all is the jewel in the crown of musical impresario Andrew Lloyd Webber’s theatre empire. Lloyd Webber’s passion and taste for slightly camp High Victorian and Pre-Raphaelite art is well known. Indeed several examples from his and wife

Madeleine's art collection, many of them originals, are displayed around the theatre, further gilding the lily. Indeed, it is equally the sheer passion of the couple for the stage that underpinned the dogged determination to push on with this £60 million project against the background of a global pandemic, which for a while last year brought the very future of theatre into question.

The Theatre Royal Drury Lane is – together with the Haymarket – one of the two last remaining Restoration theatres, opening under Charles II's patronage in 1663 after the lifting of the Puritans' ban on theatre. It was originally the largest too, at one point boasting over 3,500 seats. 'It was a real "People's Palace" of its day,' says Tompkins.



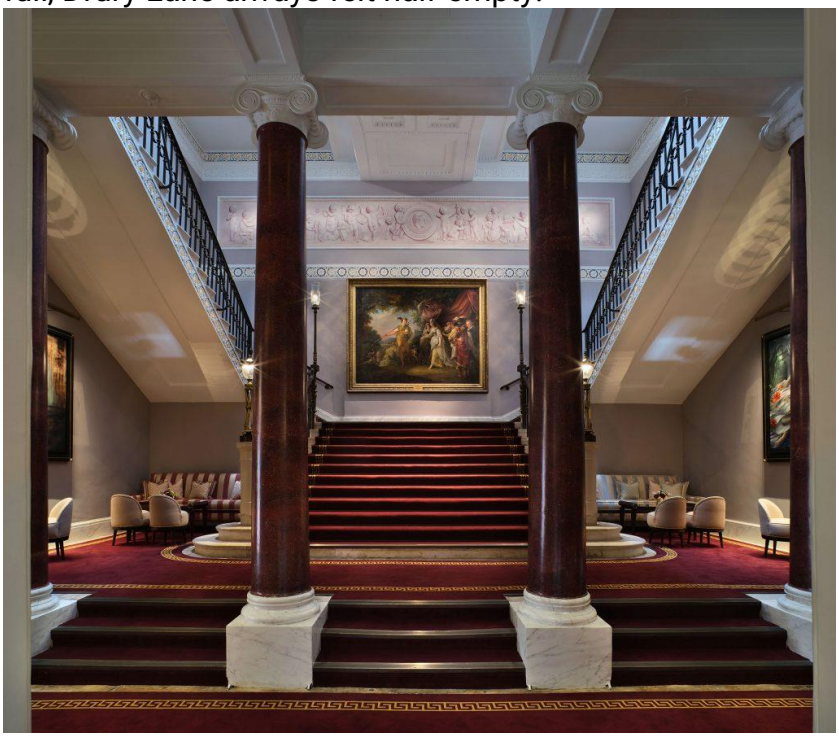
Following a rebuilding and a couple of burnings down, the present Wyatt incarnation is actually the fourth on the site. Its plain, almost Soanian brick and plaster box-like exterior, which only later acquired its grand wrap-round colonnade, always hid an opulent interior. In particular, the circulation spaces, with a vestibule leading to a triple-height central domed hall off which two

grand stairs rise, are akin in scale to a small opera house. As one of the oldest continuous sites of British theatre and one of the biggest – allowing it to stage spectacular productions, in particular 20th-century musicals such as Oklahoma, My Fair Lady and Miss Saigon – 'the Lane' as it became known over the years, has become almost the spiritual home of the West End stage.

It was said that on quieter nights while the similarly sized Palladium would feel half-full, Drury Lane always felt half-empty

However, the legacy of the insertion of the 1920s auditorium remained, compromising both circulation and auditorium. The former was fragmented, with the stalls no longer accessible by the main entrance but only via long basement corridors entered directly off the street. 'It meant sneaking in the backway for half the audience,' says Tompkins, and created a sense of them-and-us hierarchy.

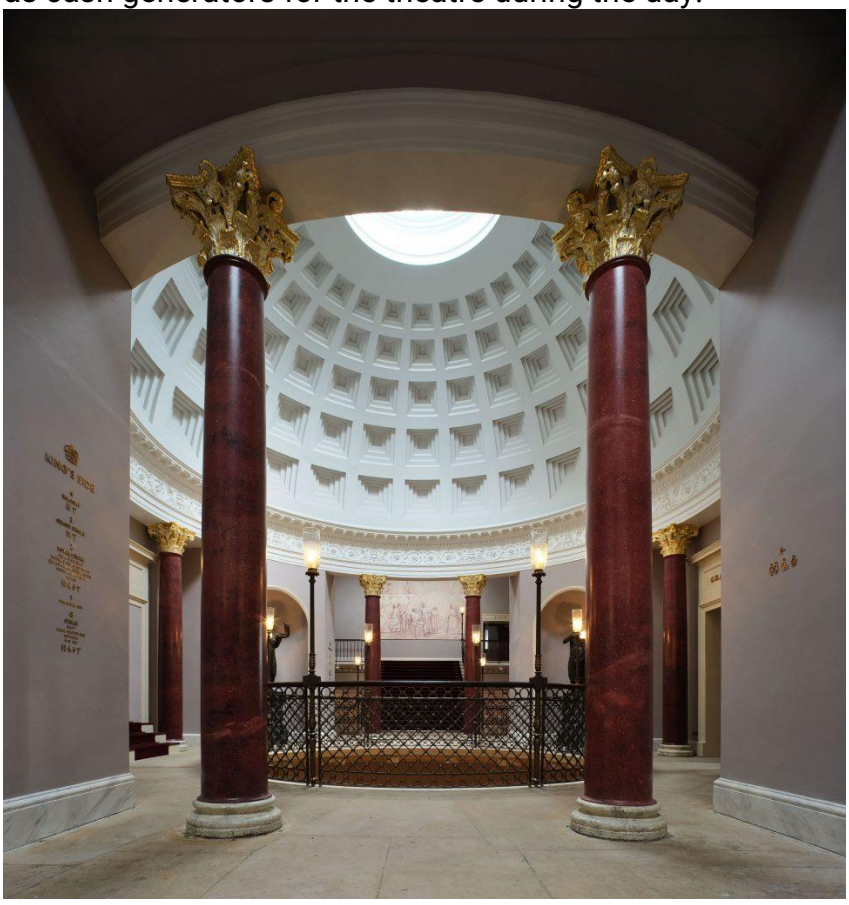
Meanwhile, in the auditorium, there was an unusually wide area between stage and audience, particularly for those in the circle and balconies, which didn't curve round to embrace the stage. It was an arrangement Tompkins says may have been due to the new influence of cinema at the time. This 'dead zone' as he terms it, lined by boxes, was a killer for atmosphere; it was said that on quieter nights while the similarly sized Palladium would feel half-full, Drury Lane always felt half-empty.



These were the two key issues Haworth Tompkins set out to correct when it was appointed to the job in 2013, while simultaneously doing a thorough renovation and environmental upgrade of the fabric. After initially drawing up a conservation management plan in order to 'tackle the vast legacy of Wyatt' and based on intensive research and analysis of the Grade I-listed building, the practice made what Tompkins describes as two key 'propositional moves'.

One of these was to increase the 'porosity' of the building to the street – 'we even drew up a kind of Nolli plan of the theatre,' explains Tompkins, reconceptualising the building's main front-of-house spaces like extensions of the public realm, accessible outside of theatre hours.

The central entrance vestibule is now flanked and connected through on one side to a shop – currently stuffed with *Frozen* merchandise – which can also be entered off Catherine Street, and on the other side to a new cocktail bar. Named the Cecil Beaton – a nod to the designer of the sets and costumes of My Fair Lady – it can also be accessed off a large covered passageway to the south, once a service passage but now a café/restaurant. It's all part of the strategy for the theatre's front-of-house spaces to be both well-used and act as cash generators for the theatre during the day.

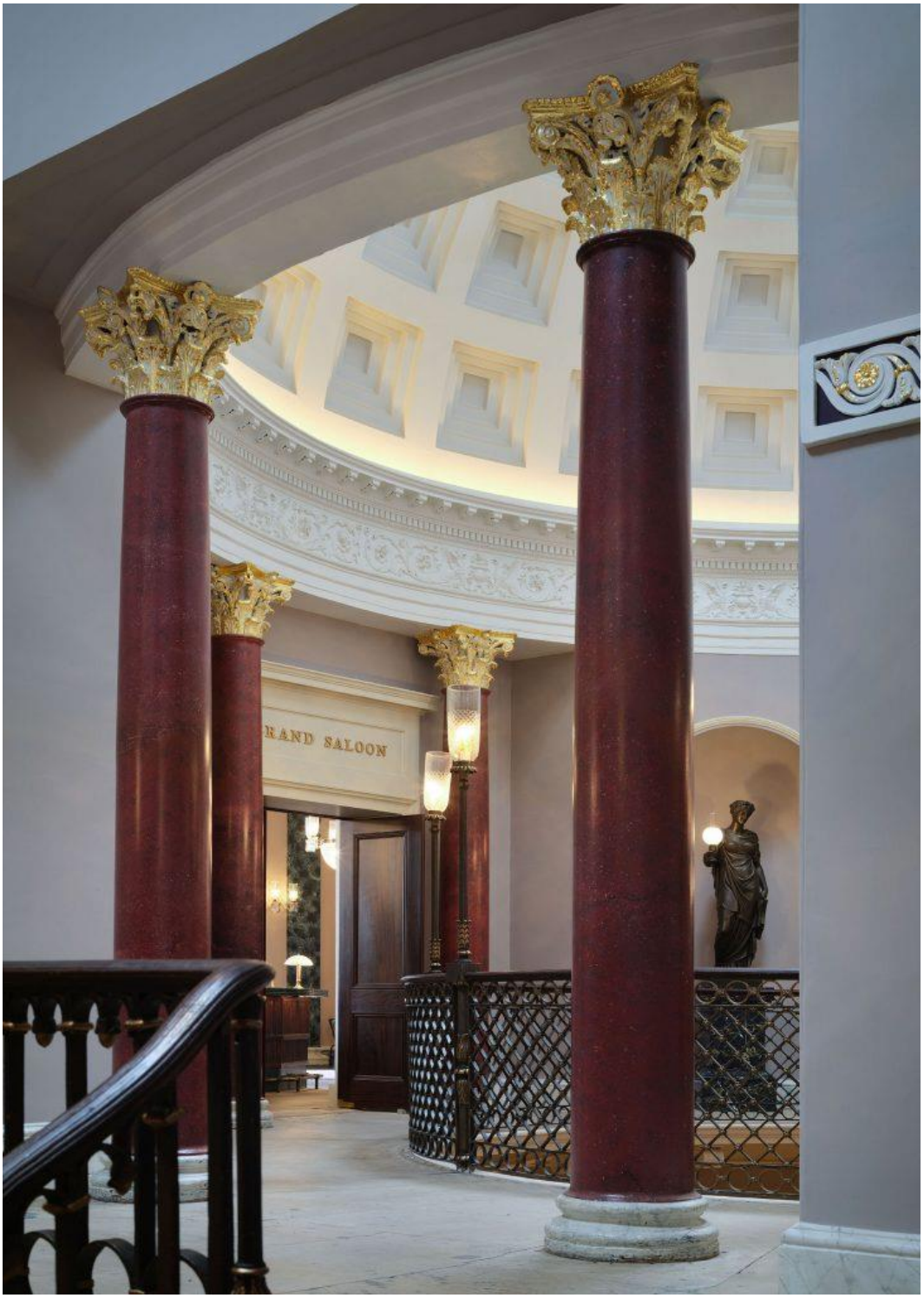


The entrance vestibule leads into the central Classically coffered and domed space, now spectacularly regilded and restored, ringed by a first-floor balcony, toplit from its newly restored glazed central oculus. Lined now by statues and busts of theatre greats, including Garrick and two Shakespeares, looking a little quizzically at each other, nothing more could further underline Lloyd Webber's intention to re-establish this theatre as a sort of pantheon of British theatre.
This rotunda is flanked by two grand stair halls. On one side, these serve a further enfilade of opulently restored rooms on the first floor over the entrance. Traditionally used just for pre-performance milling, refreshments and interval drinks in the evening, these will now also function as a grand tea-room during the day.

To the other side, the stair halls link into the back of the auditorium. It's here that the most significant structural work and reset of the building has occurred – 'redemocratising the access'. In particular, a new linking corridor elegantly curves round, providing access at ground level to the stalls. Space for this was created by shaving a section off the back of the auditorium at the expense of 200 seats.

One would think this would represent too large a loss of potential revenue for the theatre. But according to Tompkins, where previously many seats had compromised views, the thorough 'massaging' of the geometries of the auditorium space and sightlines, conducted with the help of consultant Charcoalblue, means 'there are no bad seats now' so potential revenue from tickets has not been affected.

In addition, a new lift has been inserted. While no doubt massively complex to achieve, given the simple functional logic that all these connective tweaks reinforce, from a visitor's point of view, it has all appears quite seamless.



Similarly, the other major ‘massage’ to the front of the auditorium, where the front edge of the balcony has been reset and brought forward to soften and eliminate the ‘dead zone’ between the audience and the stage, looks like it

was designed that way. This reset has also allowed for its new leading edge to be reinforced and packed with services and lighting.

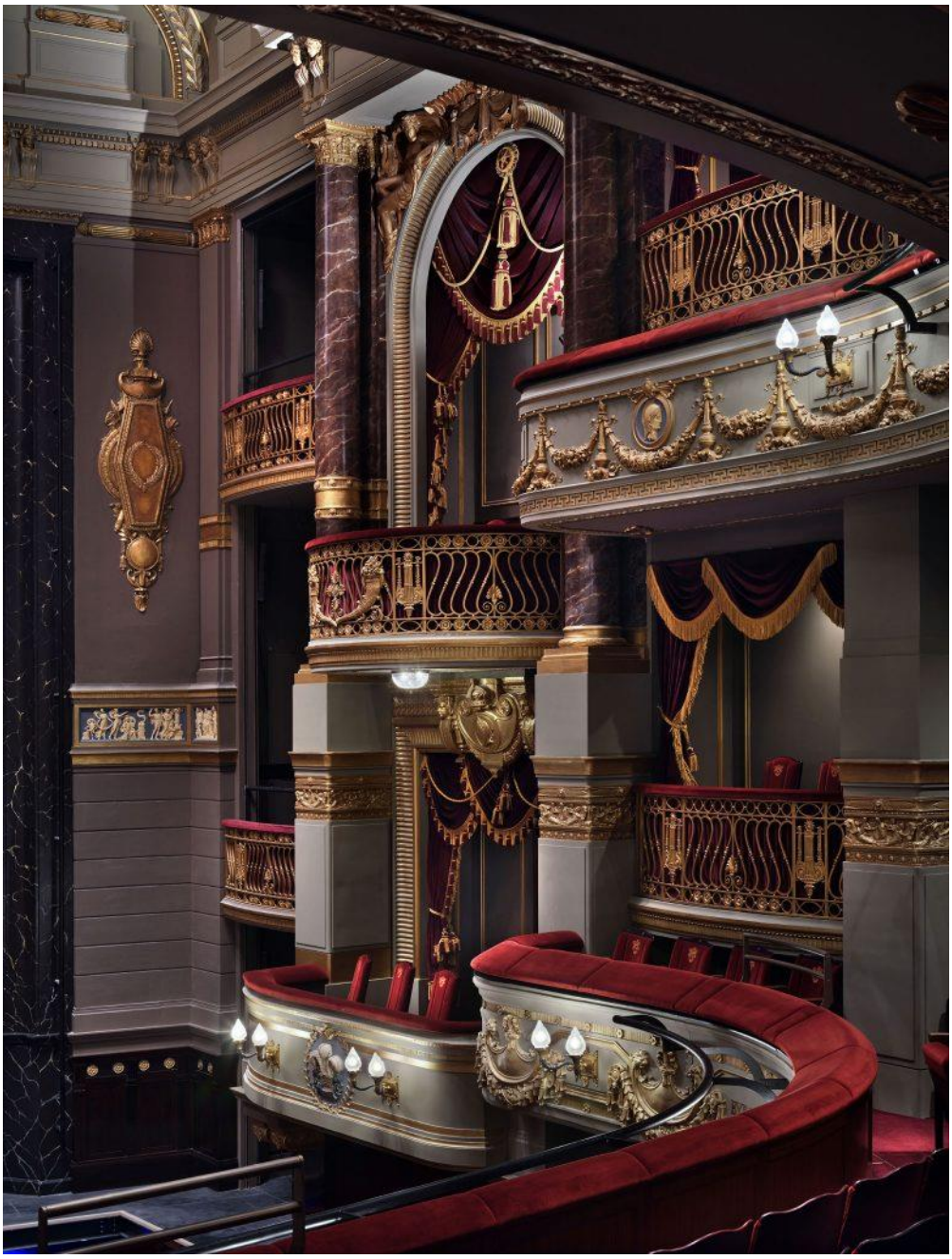
The mechanics of the stage itself have also been overhauled, with a new strengthened grid and flying system in the fly tower above, enabling it to take far higher loading. And below there's a new flexible two-storey stage structure, which can be much more nimbly removed and changed – replacing the historic but half-seized up hydraulic Victorian stage machinery that had still been in place.

Operational energy use has been slashed by 57%

More generally a major M&E upgrade in 2013, meant the main plant did not require replacing, but operational energy use has still been slashed by 57 per cent. This is both through active measures, such as changing all the lighting to LEDs and more efficient monitoring and metering of power and water use, as well as through many passive fabric-focused ones. All roofs, windows and some exterior walls have been thermally upgraded – although the main Grade 1 1812 skin itself could not be insulated for heritage reasons. Where possible during the restoration, existing materials were reused or repurposed, from timber linings to ironmongery, while reclaimed hardwood has been used for any new fitted furniture.

As with many successful heritage renovations and restorations, it is difficult to fully grasp all that has been achieved given the sensitivity with which all the layers have been reset.

Throughout the whole process, architectural historian Simon Thurley advised. Indeed together with the Lloyd Webbers, he assisted in enriching the visible historical layers by helping to source artworks and ephemera from auction houses that relate to the theatre's history. New artworks have also been commissioned, including eight grisaille wall paintings by Ian Cairnie in the stairwells, depicting famous musicals.



It's all a bit OTT but together it's an incredible visual feast as you walk around. This is a theatre building as a drama in its own right. One really gets the sense not of the weight of history, but of a legacy that clearly for client, architects and team working on the project was enlivening and inspiring rather than a burden.

This is a theatre building as a drama in its own right

Where many contemporary retrofit projects revel in peeling back and revealing the structural and decorative layers of a building like a palimpsest – akin somewhat to the flayed bodies of Gunter von Hagen's Body World displays – here it's like the body of the theatre has been resewn back into its opulent showtime costume, ready for the curtain to rise.

Architect's view

The retrofitting of the Grade I Theatre Royal Drury Lane balances the protection of its heritage significance and the upgrading of its fabric and systems as far as possible. Our primary target has been to minimise embodied carbon by limiting the amount of new fabric needed to fulfil the client brief, working with the existing building to remove layers of obstruction and accretion rather than adding new elements. However, our work has also resulted in a projected 57 per cent reduction of the building's operational carbon footprint, mainly due to improved lighting and HVAC installations.

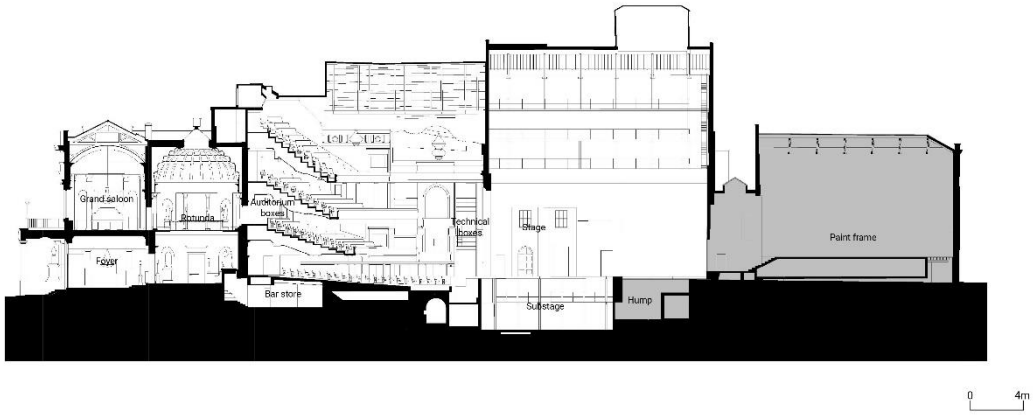
The previous version of the building was expensive to run and energy-hungry, closed to visitors outside show hours and hard for producers to adapt for incoming shows. Alongside whole-life carbon and power usage, the overall sustainability of the project (under our metric of Affect/kgCO_2) will be measured in its new capacity to attract visitors, audiences and producers to the theatre throughout the day and evening for generations to come.
Key interventions include:

- **Fabric elements such as windows, doors, available walls, roofs etc upgraded to meet Part L2B. Much of the 1812 external skin was not possible to insulate for heritage reasons.**

- **Improved efficiency of the auditorium and Grand Saloon ventilation systems and controls. Much of the plant was recently upgraded and so has not been replaced.**
- **New heat reclamation where appropriate, and interventions to improve the efficiency of existing heat reclaim systems.**
- **Heating, hot water, lighting, small power and high energy loads monitored via meters to enable anomalies to be identified and energy improvements to be optimised.**
- **All lighting upgraded, installing LEDs throughout the public and back-of-house spaces with daylight and occupancy control where appropriate.**
- **Flow rates to sanitary taps restricted to reduce waste. Water-efficient fittings used to reduce water consumption.**
- **Use of existing reclaimed hardwood for fitted furniture and bar counters.**
- **Adaptation and repurposing of existing timber linings, fittings, ironmongery and decorative elements throughout the building rather than refabrication.**
- **Renewables: A feasibility study on renewable energy sources concluded that their installation would not be possible due to the heritage constraints of the Grade I listed building and the lack of available roof space.**

Steve Tompkins, director, Haworth Tompkins

Section AA



Client's view

The iconic Theatre Royal Drury Lane, at the centre of the West End, has been the home of the spectacular and 'super' musical for many years.

Its unrivalled scale throughout, from the foyers to the auditorium and to the stage itself has put it in a league above all other West End theatres. When the next large musical was headed for London, the Lane was always a firm favourite among producers but it came at a premium. Mounting a production was costly and challenging due to the limitations around the stage house within its wooden grid, ageing infrastructure and raked stage.

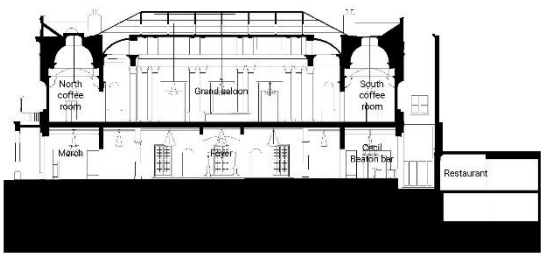
The auditorium lacked the intimacy created so successfully at Matcham's Palladium, and the large impressive Georgian front-of-house spaces had been lost to many turn-of-the-century interventions. It could only be enjoyed by ticket holders an hour before the performance.

Five years ago, Andrew and Madeleine Lloyd Webber began a project to restore the theatre, bringing it back to its former glory. The design team, led by Haworth Tompkins, had the unenviable task of wrestling, interrogating and landing the approach that would peel back hundreds of years of theatre history to restore this Grade I-listed national treasure while answering the needs of the building, the demands of the modern musical, the aims of the Lloyd Webbers and the commercial aspirations of the business. In essence, they had to really understand the building's DNA and the client's needs, which is something Haworth Tompkins excel at.

Today, after a colossal project, The Lane, which reopens this summer, retakes its rightful place at the centre of London theatrical landscape. With doors open daily to all, and a blockbuster musical set to open in the next two weeks, together, we have created something very special – in fact peerless – in British theatre.

Dan Watkins, project director, Theatre Royal Drury Lane

Section BB



Engineer’s view

A key aspiration from the client was to increase the load capacity of the grid and flying system within the stage house. This would allow the theatre to compete with other venues for the ever-increasing load demands of modern show productions. The existing roof structure that supported the grid and flying system dates back to the early 1900s. Alterations to the roof and grid had previously been undertaken but its capacity was insufficient to meet the client’s brief. Cost, programme and logistical challenges, as well the issue of working on a Grade I-listed building, meant that removing and replacing the existing structure was unfeasible.

This resulted in extensive strengthening works to the existing roof trusses. New steel members were combined with the existing, while on-site welding was used to increase the capacity of the original connections. A grillage of steelwork spanning between the primary roof trusses formed the new grid and supported the upgraded flying system.

The existing stage was pioneering in its time for its ability to pivot during performances. However, as it lacked both the load capacity and flexibility for a stage in the modern era, it was considered no longer fit for purpose. The existing stage has now been upgraded with a two-storey, demountable structure; designed to be disassembled to accommodate a variety of show-specific requirements. The primary frame is comprised of lightweight steelwork on a regular grid with bespoke steel and timber decks forming the removable flooring.
Gavin McLachlan, senior engineer, Conisbee

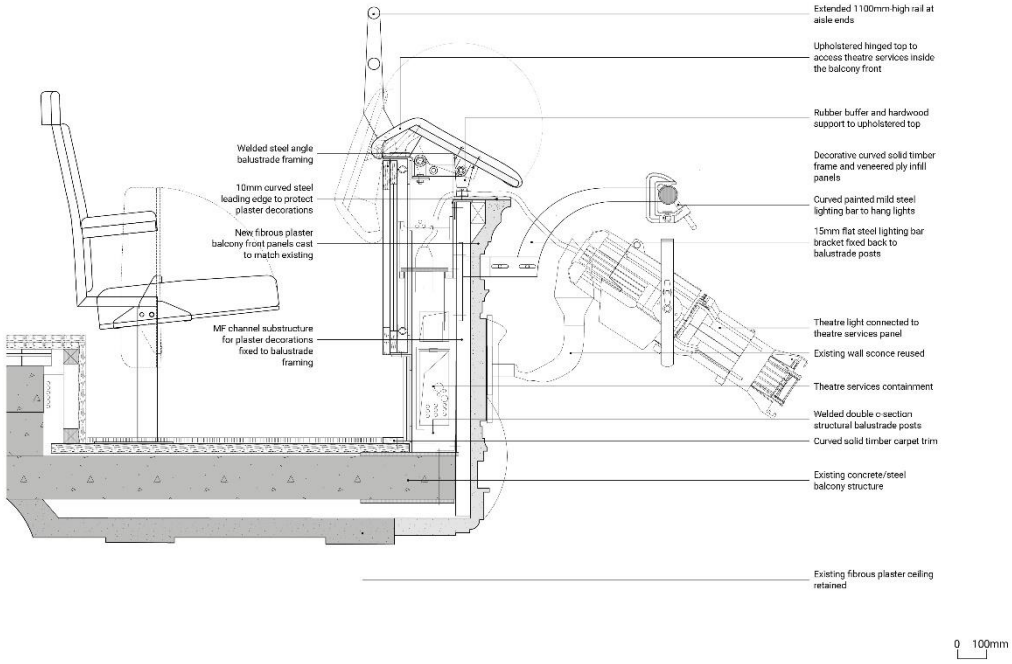
Working detail

One of the main detail challenges in the refurbishment of the auditorium was to reshape the balcony-front geometry to bring audiences closer to the stage and further to create space for state-of-the-art lighting and sound infrastructure ready for 21st-century theatre productions. The solid steel and blockwork balcony fronts with their fibrous plaster decorations were carefully removed after silicone moulds of all the decorations were taken, leaving only the concrete and steel slab edge and the fibrous plaster ceiling below. The slab edge was reshaped with new steel structure where required. Balustrade posts clamping to either the existing concrete or the new steel structure were

set at regular centres. Angle steel framing connects to the balustrade posts and forms the substructure to hold the newly moulded fibrous plaster decorations to the stage side, with timber cladding towards the audience.

Theatre services facility panels are located inside the balcony front, allowing the installation of lighting and projectors on the cantilevering lighting bar. An upholstered hinged lid conceals the infrastructure while giving easy access to the installed kit for maintenance and show change over.
Patrick Haymann, senior architect, Haworth Tompkins

Royal circle front row detail drawing



Project data

Start on site date January 2019
Completion date July 2021
Construction cost £60 million
Gross internal floor area 6700m^2
Client LW Theatres
Architect Haworth Tompkins
Construction manager GTCM
Structural engineer Conisbee
Services engineer Skelly & Couch
Theatre and acoustic consultant Charcoalblue
Lighting consultant BDP
Quantity surveyor Gardiner & Theobald
Project manager Avison Young

CDM adviser PFB Construction Management Services
Fire engineer Trenton Fire
Access consultant David Bonnett Associates
Transport consultant Alan Baxter
Interior designer Alexander Waterworth Interiors

Environmental performance data

Percentage of floor area with daylight factor >2% As grade I-listed theatre building, there are no real opportunities to alter the daylighting
On-site energy generation The primary heating and cooling systems were recently renewed and so did not form part of these works
Heating and hot water load 110 kwh/m^2/yr
Total energy load 146 kwh/m^2/yr (refurb estimated to save 38% of energy load)
Carbon emissions (all) 42.4 KgCO_2/m^2
Annual mains water consumption 1.38 m^3/occupant
Airtightness at 50pa 5 m^3/hr/m^2
Overall thermal bridging heat transfer coefficient (Y value) Not calculated
Overall area-weighted U-value 1.24 w/m^2k
Embodied / whole-life carbon Unknown
Predicted design life in years 200-400