



Retrofit and sustainability

IN PRACTICE

Cutting the carbon cost in character and period building refurbbs

Joshua Scott, associate director at dMFK, describes the practice's 'build less' approach to heritage, conservation and environmental performance on three recent large-scale refurbishment projects

York House



The Covid pandemic simply accelerated a trend that was there before – office buildings need to work harder and workspace needs to be more agile to respond to the rapidly changing ways we work, engage, and collaborate. Occupiers are increasingly knowledgeable about environmental quality, wellness, biophilic design and energy use and there has been a clear shift away from high-density offices, driven by people demanding higher-quality, balanced environments as they return from extended periods working from home. The ‘great resignation’ highlighted the need to deliver better workplaces that respond to the changing needs of a more agile, independent and environmentally educated workforce.

At dMFK, a big part of our skill and experience is in reimagining existing buildings at all scales. We seek out dormant qualities in buildings to inform restoration and we help reposition their architecture for an extended life cycle. Industry metrics for sustainability and environmental performance have primarily focused on operational energy as a path to delivering better buildings. This is driven by project timeline assessment as a snapshot within a building’s lifespan, coupled with limited monitoring beyond completion. The climate emergency has forced a more holistic view of the carbon cost in buildings and it is clear this can be significantly improved by a retrofit or ‘build less’ approach.

With our York House scheme in King’s Cross we transformed an anonymous and introverted 1980s office building into an exemplar workspace for The Office Group with significant reductions in embodied carbon and greatly improved operational energy use, reflecting the key goals of the RIBA’s Sustainable Outcomes Guide. The building has been refocused to engage with its surrounding environment through bold new extensions and existing fabric alterations. With Webb Yates Engineers, we designed new CLT and glulam structures scribed around the existing rough-cast castellated concrete floor slabs, significantly reducing carbon cost and minimising the weight of the extended envelope, and therefore avoiding the need to reinforce the existing superstructure. External permeability was achieved through a new perforated brick lattice, set at a 45° angle to create a self-supporting façade that delivers a balance of occupational privacy and silhouetted views connecting passers-by with the vibrant office interior.

As a practice, dMFK is ambitious in its approach to heritage and conservation and focuses on evolving the building’s story to protect its future, rather than on slavish preservation. Hamilton House in London’s Blackfriars is a Grade II-listed building designed by Sir William Emerson and was purpose-built as an insurance

York House



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company headquarters in 1880. Our client, Dorrington, purchased this exceptional building as an operational business centre, though it had been poorly fitted out over the years, with layers of ceilings and linings forming dark, claustrophobic and disjointed spaces. The building's occupation was steadily declining; rents were low, despite its prime location on Victoria Embankment; and it needed meaningful improvement to deliver competitive workspace. With the City of London we have unpicked and transformed the original building as part of a phased delivery. Each floor has been stripped back and refurbished while the wider office areas remained in occupation. Beneath the layers of fit-out lay original historic details including terrazzo floors, cornices and mouldings.

Externally, ornate stone façades were restored and – important for a listed building – permission was granted for new double-glazed timber windows where originals proved to be beyond reasonable repair. This decision reflects progressive planning attitudes when discussing perceived heritage loss in relation to the path to net zero, as a balanced approach can avoid the delivery of obsolete assets that simply preserve the status quo.

The project's floor-by-floor, incremental refurbishment approach has been unconventional and at times challenging to manage. The works were carried out under a traditional contract, rather than D&B, allowing the team more flexibility to respond and test ideas, but also to maintain an income stream for the client and to offer tenants the opportunity to remain in the building. However, the set-up allowed us to test and peel back layers of the building and discover opportunities for re-use that might not have been possible via other procurement routes, where unforeseen cost uplift and delay can be prohibitive in the decision to repair and refurbish or replace. This kind of contingency can sometimes force the conversation away from sustainable decision-making and opportunities to increase the design life of pre-existing materials can then be missed. We embraced such discoveries at Hamilton House: extensive original terrazzo concealed under layers of non-original flooring; 2m ceiling voids that hid decorative plaster arches; concealed lightwell openings; and extensive original detailing that is now exposed to realign the interior with the evident exterior quality.

Although heritage projects might be more costly, they deliver value over extended timescales, as their assets are less susceptible to shifts in design aesthetic or fashion. At Voysey House in Chiswick we are fully refurbishing CFA Voysey's only commercial project, built in 1902. The Grade II*-listed building was

Hamilton House



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originally designed as an extension to the Sanderson Wallpaper works and was converted into offices following a fire in the adjacent factory in 1928. The building is a local landmark and developer Dorrington has appointed dMFK to deliver a high-quality, modernised office space focusing on improvements to environmental performance while preserving the building's historic character. The proposal reinstates Voysey's original 50 x 100ft plan, with its division into 20ft bays that were sized to accommodate wallpaper lengths. The expressed structure, vaulted metal soffit and weathered timber factory floors are to be refurbished, creating a generous, light, triple-aspect workspace and breathing new life into the existing fabric.

Non-original single-glazed windows will be removed and the remaining original cast-iron windows repaired and reglazed with Fineo double-glazed high-performance units that are 7.7mm in depth with a centre pane U-value of 0.7 W/m².K, improving the total window performance from 6.4 W/m².K to 2.4 W/m².K.

New windows will be fabricated from period-matched steel arrowhead profiles, also glazed with Fineo, to deliver competitive thermal performance for the sizable openings while respecting Voysey's design intent. This system removes any requirement for internal secondary glazing, which was shown to have a negative visual impact on the external appearance of the building due to the sizeable transoms and framing required.

Once complete, the internal and external quality of this heritage asset can be safeguarded for the foreseeable future as an energy-efficient, flexibly serviced office designed to embrace tenant life cycles.

Lastly, the quantity of waste generated by the vagaries of office fit-outs and changing taste is a huge issue. We should be seeking to extend the design life of commercial fit-outs, creating longevity and timelessness in design. This must become a bigger part of the briefing conversation. It should be factored into how new buildings or large-scale refurbishment projects are assessed, aiming to meaningfully extend usable life through built-in flexibility, reconfiguration and viable repurposing of materials. This, coupled with an effort to move away from short-term, high-waste, refurbishment cycles driven by lease expiry or new occupation, can greatly reduce the culture of waste beyond the conventional completion of projects.

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Voysey House



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