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A BUILDING TRANSFORMATION CASE STUDY

IBIS London Earls Court — Multiple Roof Replacement

The Ibis London Earls Court is nestled in the vibrant heart of the Earls Court district, towering above the surrounding residential neighbourhoods and offering outstanding views across the city. It offers easy access to the city's top attractions, including a short walk to Chelsea Football Club.

Project Description

Currently undergoing a full refurbishment, when finished the hotel will encompass 12-storeys of multi-branded, 3 and 4-star modern accommodation across its 500+ rooms. Offering a range of newly updated options, the Ibis and Mercure brands provide a cost effective and quality range for their clients to choose from, while still dominating the skyline and providing unmatched views from the upper floors.

Having worked with the hotel team and owners across other properties throughout the last 10 years, we were asked to review the current condition of the roofs. The aim would be to create an understanding of what would be required to align the roofs with the overall refurbishment.

Comprising the main 12-storey tower and a multitude of lower buildings that make up the conference centre, the initial focus of the project was 2 of the 3 upper roofs, located directly above the hotel rooms. From the initial review and surveys it was clear to see that each roof had passed its originally intended lifespan, with localised repairs and overcoating having been undertaken in the past. Both roofs were now at the point where they required a fresh start and would need to be fully stripped and replaced.

Project Overview

With the hotel having originally been built in 1973 and then undergone an update and renovation in 2006, the original roofs of the tower were approaching their 50th year when we were first asked to comment on their condition.

From the initial inspection it was clear that over the years each roof had undergone numerous and repeated repairs, as well as a full recoating and the application of solar reflective film in one case. These interventions had helped to prevent leaks and prolong the lifespan over the years.

At this stage and with the roofs having had quick fixes and repairs over the years, the leaks were becoming unsustainable and the roof had gone past its originally intended lifespan. The onsite team had been able to avoid the need for replacement by undertaking the repairs, but with the internal refurbishment and investment underway, the repairs were no longer viable and a long-term solution was needed.

Having met with the hotel's General Manager and Singaporean owners to discuss their thoughts and vision for the hotel, it quickly became clear that short-term solutions were definitely no longer an option. Due to the high levels of investment that were taking place for the internal refurbishment, the client did not wish to suffer the ongoing effects of the leaks,

especially where the rooms immediately below the roofs had been turned into high-end, luxury suites.

In order to create the initial understanding of each roof's condition, it was agreed that the first phase of works would involve a full roof condition survey, including a third roof that did not form part of this roof replacement works. In fully surveying the roofs and creating the understanding of their condition we were able to identify the number, type and severity of all defects, points of water ingress and then easily work towards providing options and solutions for their replacement.

Among the issues that were identified, the most severe defects included the complete failure of the uppermost EPDM membrane that covered the roof, cracks in the leadwork, various defects to the masonry, degraded finishes surrounding the roof system, poor historical repairs, missing mortar to joints and large cracking of the current coating system.

With all of the key data points collected and now in a position to confirm with the client that the roofs definitely needed replacing, we were able to work closely with roofing manufacturers to provide a specification and scope of works, providing the client and property with the most appropriate, long-term and future-proofed solution for the new roof.



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We managed to ensure that the suppliers were fully on board and in a position where they were happy to provide long-term warranties, core sampling, adherence and crosshatch testing, so we were then able to provide the client with a range of specialist products that would achieve their goal of waterproofing the roof areas whilst also providing a reassuring warranty.

Over the course of 18 months, from initial discussions to finalising the scope and bringing all relevant parties on board, the client was ready to move forward with the project and the full strip-up and replacement of the roofs could begin.

Our Work Included

- An initial full roof condition survey with localised leak investigation, collating the correct information to allow the client to understand which options were suitable moving forwards and would provide them with long-term peace of mind and protection.
- Production of an all encompassing roof condition report, that was presented to and reviewed with the hotel and its owners.
- Test trials with the product manufacturers to identify the roof build up and suitability for overcoating or replacement, ensuring that the correct way forward and products were specified and would provide the client's desired level of cover. The tests included cross-hatch, adherence and core samples, avoiding the potential for early failure and any future warranty issues.
- Communication and negotiations with the local council and Building Control to ensure that all changes aligned with and were designed to meet current regulations.
- The design and implementation of a fully tapered insulation scheme to ensure that any water on the roof would fall to the outlets and avoid ponding.
- Working methodically across the roofs by breaking them down into sections, initially the current substrate was completely stripped back to the deck, with the old system carefully transported to ground level and disposed of. Where possible materials were sent for recycling to help improve the project's sustainability.
- With the substrate now exposed, any anomalies and defects were repaired, providing the best possible surface to which the new system would adhere.
- To the areas where the deck was exposed the initial vapour layer is fitted, forming a waterproofed layer over which the new system can then be laid. With this first phase in place, the tapered system was then laid based on the specific design for each roof, ensuring that water would be encouraged to run towards each outlet.
- The initial primer coat can then be applied to all areas where the insulation has been successfully fitted, followed by the reinforcement which helps to bind each phase whilst also providing flexibility for thermal movement.
- Finally, the top coat can be applied throughout the system and built-up the manufacturer's desired thickness based on the warranty provision, providing the outer layer of the full system and the initial defence against the harsh British weather.
- With the hotel undergoing a full refurbishment, many other trades were already onsite when the project began. This led to close communications with the hotel, the other trades and ourselves in order to avoid conflicts, delays and allow a smooth delivery for all parties.
- As with many of the buildings we work on, the hotel had numerous telephone masts that would affect the area we could work in. Through our proactive planning and communications with our telecoms specialist, where work was programmed in front of the masts we were able to ensure that each mast was turned off for the duration of our works, allowing our teams to work safely.
- In 2 areas of the roof, the phone masts were mounted directly on the deck and required moving before that section of the roof could be completed. The process for 'lifting and shifting' these masts is much more involved than shutting them off and requires months of preparation and discussion with the telecoms providers. With our experience and understanding of this process, as well as where the telecoms companies can delay or cause issues for the project, we were able to successfully deliver the works in the areas where masts were on the deck and no delays occurred.
- The current system was completely stripped up, taking the roof back to the exposed deck, from which we could then begin replacing the manufacturer's approved coating system.
- Through the initial trials, we were able to get an understanding of which areas were damp and any areas that were dry, with the ultimate decision being to replace all areas of the roof, thus ensuring a full warranty throughout.
- As is the case with any internal or external project that required the removal of coatings, we could not be sure that 100% of the substrate would be sound until it was removed and we advised the client accordingly. Thankfully, during the initial strip-up of the current system, no adverse issues were found and the substrate was intact.
- With the size of the roof and its height, much discussion took place around whether to build a scaffold and temporary roof to protect the building whilst the deck was exposed. With feedback from our trusted scaffold suppliers indicating that the cost of the temporary roof would equate to roughly 35% of the overall project cost, we were able to programme the works and successfully deliver the project without the need for the temporary roof, saving the client from having to needlessly spend the money on the structure and instead invest it elsewhere to benefit the building.
- With the successful delivery of the 2 initial roofs, we are now in further discussions regarding the other roofs and additional specialist building envelope services for the hotel.

Project Challenges

As with all projects, one of the most important factors of the delivery was the health and safety of our operatives. Working 12 storeys above the busy London streets, working closely with the hotel's employees and their day-to-day operations, as well as all of the other contractors that were on site, planning accordingly to minimise any disruption to ensure that the hotel could operate as normal was key. Along with these factors, we encountered various challenges throughout the project, including:

- As with many of our projects, the replacement of these roofs which included the application of roofing and coating products, had to be undertaken within strict manufacturer guidelines. The works in this case were delivered through the summertime when it was anticipated that temperatures and rainfall would provide the best climate to align with those guidelines. The British summer can be unpredictable, but through a flexible approach and programming, as well as bespoke delivery schedules for the hotel, the project was delivered with minimal delays and product application within the manufacturer's specified guidelines at all times.



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- Standing tall above all of the surrounding properties, each roof had numerous phone masts placed in key locations that would affect our works. The presence of these masts limited our ability to work safely in certain areas, meaning a proactive approach was required in communications with the mast operators to ensure that they were deactivated during the works in order to avoid any risks to our teams. In addition, 2 masts required a full 'lift-and-shift', which had to be planned 4 months in advance of the project to avoid long-term delays.
- Although the property was going through a full refurbishment, throughout the project the hotel remained open, including during the Wimbledon weeks, requiring our teams to work and ensure that they were out of site, did not disturb the hotel users and ensure that at all times even though we were stripping up the roof, it had to be watertight and no further leaks could occur.
- With the above in mind, although the summer is the best time to begin work early in order to make the most of the longer sunshine hours, this was not possible due to the building being a hotel. We agreed with the hotel team that work would not begin until 9am, with no noisy work until 10am, which limited the hours we were able to deliver the project. By understanding this from the outset and having already forged a strong relationship with the client, we were able to take these timescales on board and deliver the project successfully, whilst minimising any disruption to the hotel's clientele.
- The volume of plant that was present on the roof, including chillers, AC units and large amounts of pipework meant that the working space and clearance from the deck was limited and a bespoke approach was needed, ensuring that all areas of the roof could safely be stripped and replaced in line with the specification and manufacturer's requirements. This was especially important when designing and fitting the tapered insulation.
- With all of the other works being undertaken at the same time, each contractor had their own storage, office and working space, which limited our own ability to create these. Through pre-project meetings and positive discussions with the hotel, we managed to utilise the empty space they had on site, seamlessly creating storage, offices and welfare for our teams, without disturbing others.