

Building as machine

Kevin Donovan sees the Commissioners of Irish Lights Headquarters in Dún Laoghaire as an instrument of communication and vigilance



In the foyer of a new building in Dún Laoghaire Harbour, stand a number of Fresnel lenses, long since decommissioned from lighthouses. Utilitarian yet sculptural objects, these large composites of faceted and bowed glass are designed to capture the oblique rays from a light source and transform them into a beam to be projected out over the sea. Thus, from a single point, an object of extreme constructional and material efficiency may allow the wide maritime landscape to be made safer for navigation. These lenses seem to be metaphors for their new home, the headquarters for the Commissioners of Irish Lights.

Responsible for the superintendence and management of the aids to navigation around the coast of Ireland, the Commissioners of Irish Lights worked with Scott, Tallon and Walker Architects from 2002 to 2008 to consolidate their former administrative offices in Pembroke Street, Dublin with their workshop facilities, already on their site in an older set of buildings at Dún Laoghaire Harbour. This site on Crofton Road is bounded to the west by a row of granite coastguards' cottages and an officer's house from the mid 19th century. To the south runs the Dart railway line parallel to Crofton Road and its 19th-century terraces. The cuboid form of the Royal Irish Yacht Club terminates the view to the east while, to the north, the site looks out over the marina to Howth and beyond again to the horizon where the sky meets the Irish Sea.

The scheme devised by Scott, Tallon and Walker is composed of two volumes, one a circular administration building and (Fig 1), behind it on the dock, a rectilinear engineering operations facility (Figs 2&4), connected to its sister building by a glazed corridor. The perfect, Platonic geometry of these objects (a cylinder and a cuboid), seems to reflect the forms of other buildings around the harbour, such as the tower of the coastguards' cottages, the Royal Irish Yacht Club, the former railway terminus, the harbourmaster's house and the twin lighthouses at the end of Dún Laoghaire's east and west piers. In common with these other object-buildings, the Commissioners' headquarters appears to be a single point of control in the bigger system of the harbour, and, indeed, the waters beyond.

Like the Fresnel lens, the cylindrical administrative building presents itself as a carefully made glass object. The curved exterior glazing is pushed tight to the outer face of the building. This has the effect of asserting an unexpected solidity, the glass catching and reflecting the light. As the day and the season shift, however, a delicacy is revealed as the transparent properties of the material are engaged and discrete glimpses are permitted into and through the interior spaces and out into the harbour beyond.

Sitting as it does on

1 Commissioners of Irish Lights Headquarters, Dún Laoghaire Harbour, Dublin

2 Commissioners of Irish Lights Headquarters: Engineering Operations Building

3 Detail view of the internal stair and atrium in the Commissioners of Irish Lights building

4 The circular headquarters is linked to the engineering operations building via a glazed corridor

5 Detail view of the PV brise-soleil

6 Detail view of the skylight from the atrium stairwell

7 Reception area in the headquarter building

8 External circulation stair

the quay with the great cylindrical buoys recovered from Ireland's seas for maintenance, this curved glazed screen with its conical lantern, its mast and collar of photovoltaic panels seems not so much a building as another type of maritime machine, an instrument of communication and vigilance. The idea that a building might display the characteristics of a machine is, of course, not new; Le Corbusier famously referred to his houses as 'machines for living', whilst Jeremy Bentham, a founder of University College London, described his design for a centrally-planned prison, a ring of cells with a single point of supervision in the middle, as 'a machine to grind rogues honest'.

The metaphor in each of these examples casts a rather sinister shadow, suggesting that the users of such buildings might in some way be 'processed' or even abused by the system imposed by their built environment. In the Commissioners' headquarters, however, to relate the building to a machine is to suggest quite the opposite effect. Firstly the relationship between the structure of the building and its spaces bears direct and positive comparison to the lighthouse lens. Integral to both is a steel frame, made so as not to impede vision. In the case of the lighthouse, the open weave of the metal astragal enclosing the light source ensures that



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the beam is not obstructed in its broad sweep over the water. Similarly, in the Commissioners' offices the floor slabs are slotted into a steel frame, brought delicately to the ground on slim columns, painted light grey and on a regular plan which tend to disappear as one's eye is drawn out through them over the low office furniture to the horizon beyond. The floors are open plan with some rooms to the edge acoustically screened in glass. The main effect on the interior

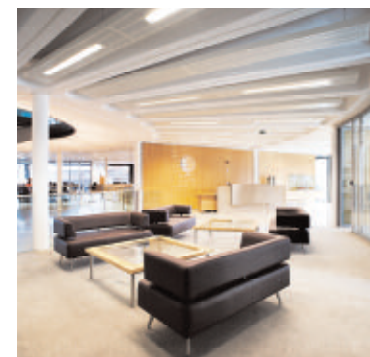
is, thus, one of lightness and transparency with a strong visual connection to the horizon.

Secondly, and, again, like the Fresnel lens, curved and faceted glass are paired for technical effect. The bowed screen that wraps the building is lined on the interior with angled, glazed panels, the interval forming a thermal void that makes up part of the building's ventilation strategy. In this void are placed the cedar venetian blinds that automatically temper the effect of the sun. Linked back to the building management system, they are deployed or alter their angle with that of the sun, shading the interior and making a dynamic filter of the facade.

This brings to mind a third image of the building as machine; the mechanical and electrical services within the administration facility are designed so as to achieve the greatest levels of sustainabil-

ity by employing the very range of technologies used by the Commissioners of Irish Lights themselves in the delivery of their service to the maritime industry. Thus, the building is a robust device to gently but efficiently temper the interior (to provide efficient, comfortable and usable space), whilst ensuring that the integrity of the local environment as a whole is unaffected. The twin facade helps keep the building warm in winter and cool in summer and also seals it acousti-

cally from the ferry-bound traffic on the Harbour Road and the working areas on the buoy bank. A supply of fresh air is drawn through this external facade, aided by the central lantern of the building which acts as a chimney. This air is drawn across the building through a false floor, also used for electrical cabling, and expelled, when stale, through the lantern. Fans in the false floor distributing the air through the spaces are powered by the photovoltaic panels on the roof. Furthermore, the interior spaces are dependent on the water of the adjacent marina for the adjustments of their heating and cooling. The concrete floor slabs, exposed on the ceiling, carry embedded coils through which fresh water, having first passed through a chamber of seawater to bring it to the required temperature is conducted to maintain an even temperature and condition the space below. By means of heat exchangers, the tempering effect of the sea can be used to raise or lower the internal temperature as required; in the winter the floor slabs act as giant radiators. All of these sustainable technologies are linked through an automatic management system which may be overridden by any user to locally affect his or her environment. In other words, while a general thermal and acoustic environment is set up for the functioning of the building, this can be inflected for the individual wellbeing of each inhabitant.



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The engineering operations building, though different from the office facility in form and function, continues the machine metaphor by invoking the mid-century work of Ludwig Mies van der Rohe. Like Mies' famous Chemical Engineering and Metallurgy building at the Illinois Institute of Technology in Chicago, this engineering facility is made of a frame that uses standard, mass-produced steel sections laid out on a regular three-dimensional grid. Individual spaces are then made inside by placing blockwork panels in the frame. Thus, the spaces are arranged entirely on the basis of the required adjacency of functions to be carried out (testing, repairing, repainting etc). The resultant sense of a very pragmatic and efficient building is compounded by the expression of the steel frame on the interior; as one walks in these calmly northlit spaces past the exposed columns and beams one feels part of the machine of maintenance and renewal that keeps the sea safe.

The image of a machine to describe the building should not suggest to the reader that it is sterile or devoid of softness. On the contrary, the materials of the office interiors and meeting rooms engage the user with their colour and tactility (Fig 7). The meeting tables and chairs by Duff Tisdall Design are carefully crafted in oak as is the panelling system that divides

the spaces of the topmost storey. The helical staircase that hangs at the building's centre (Figs 3&6) has generous treads of polished pink stone that slow the visitor's pace and reflect the ambient brightness as does the warm granite on the nearby cottages. The polished granite floor is paved in a radial pattern that continues out into the landscaping to the edge of the site, and appears again, rougher hewn, in the cladding to the engineering operations building.

As the day closes on Dún Laoghaire Harbour, the sun's last rays, low in the western sky, cut through the prism on the quayside and die away. The blinds retract, the lights appear, and the building becomes a point in this place of surface and horizon. The effect is unmistakably that of a beacon, signalling the Commissioners' presence and their watchful eye on the waters around Ireland. ■



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Images courtesy of Scott Tallon Walker Architects.

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