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OCEAN TERMINAL DURBAN : OFFICES FOR PORTNET

INTRODUCTION

Portnet's new offices in the Ocean Terminal Building create a unique corporate environment. From an elevated position in the centre of Durban Bay, its occupants have an unequalled view of a real working port. Luxurious ocean liners dock at arm's reach; Panamanian cargo ships arrive laden with maize, and leave a week later, visibly lighter. A single ninety-by-twelve metre window frames this panorama, and provides a surreal backdrop to the various offices.

Completed in 1960, at the peak of the mailship era, this magnificent Brazilia-style complex provided a customs hall the size of a football field, with a soaring concrete roof balanced above a central row of nine metre high off-shutter concrete Y-columns. Buildings at either end of the hall contained restaurants, toilets and offices, and a twelve storey office tower stood alongside. This entire complex was sited on the roof of a two storey fruit pre-cooling shed, with parking areas and passenger viewing galleries, and telescopic gangways connecting to the liners berthed alongside.

With the demise of the mailships, the complex passed into virtual disuse. Maintenance was costly, and without an apparent use, the Ocean Terminal was a sad reminder of a lost era.

The commercialisation of Transnet, and the creation of Portnet as a seperate business unit, provided the stimulus for change.

Anxious to rationalise and consolidate his staff in an appropriate corporate setting, the Port Manager appointed Protekon to investigate the feasibility of converting the terminal into an office complex.

The Architects were confronted with a number of challenges.

5500 square metres of fully serviced, flexible office space was required to house a staff of 300 people in various cellular and landscaped offices. To provide this within the deep plan of the hall, and give individual workstations the desired degree of privacy without creating a claustrophobic warren, was particularly taxing.

A clear hierarchy of circulation routes was critical, coupled with the need to allow natural light to penetrate deep into the central spaces, and a desire to give every office a view to the exterior.

The task of fundamentally altering one of Durban's most magnificent modern buildings, without detracting from this magnificence, was daunting.

The brief further required that an interim alternative passenger facility was required.

This was to provide a large space at a low capital cost, capable of accommodating the various customs and embarkation functions of the liners using Durban as a port of call.

In consultation with the relevant authorities, a marquee was designed and manufactured, and erected on the adjacent roofdeck.

A tension structure was chosen for its ability to withstand high winds, and its relative freedom from guy ropes and poles.

DESIGN SOLUTION

A new entrance was built with suspended canopy and timber steps, into what was previously the arrivals foyer. The extensive mosaic murals decorating the walls were cleaned up, and an entrance counter provided .

A conference facility, visitors centre, display of Port history and current events, and staff recreation area are being developed in the north restaurant wing, adjacent the new entrance.

The entrance foyer also leads into a double volume central street. This forms the main circulation route, giving sign-posted access to all offices. It is spanned by three overhead bridges. Stairs from the street lead up to the bridges, and down to a lower level services area in what was previously the baggage tunnel.

The distinctive curve of the west edge of the street was designed to allow views to both sides from the very centre of the complex. This has proved to be a valuable orientating device for staff and visitors.

Two mezzanine floors, with a total area of 2000 square metres, were added, one on either side of the row of central columns. The mezzanines were set back from the perimeter walls, forming double volume edge spaces, giving deep daylight penetration and views out across the bay.

The resulting layout provided the required floor areas, and allowed for a range of office types and orientations.

A secondary circulation system in a figure-of-8 pattern on both levels further subdivided the office floors and created the required ratio of cellular to open offices.

MEZZANINE CONSTRUCTION

In order to minimise the load imposed on the existing foundations, a lightweight structural solution was required for the mezzanine floors. A powerfloated 100 mm concrete slab, acting compositely with steel beams, was used. The main steel I-beams, at 7,5 metre centres, spanned 10 metres from the central concrete columns to additional steel columns bearing on the existing structural column grid.

Where structurally permissable, cut-outs were made in the web of exposed I-beams, to decrease the visual weight of the structure.

A suspended ceiling within drop-in acoustic tiles was fixed below the mezzanine slab, creating a deep plenum space to accommodate the various services. A fascia of natural anodised aluminium panels, to various profiles, was used to complete the mezzanine structure.

BRIDGES, STAIRS AND HANDRAILS

Two timber and steel bridges link the mezzanines at each end. A deliberately crude, yet carefully detailed aesthetic was chosen, both to reduce costs and to make reference to modern ship detailing.

Teak and other hardwoods salvaged from the many customs counters and baggage racks was reused as handrailing, decking and stair treads.

Ballustrades to public areas were fitted with stainless steel cables and turnbuckles; those to workspaces received infill panels of obscure safety glass in aluminium framing.

Wherever possible, materials were used to display their inherent or natural finishes. This technique ensured that the new work was seen as discreet yet interdependent with the off-shutter concrete and aluminium and glass finishes of the existing Customs Hall.

CEILINGS AND PARTITIONING

Due to the varying ceiling conditions in the double volume spaces and beneath the existing sloping roof, certain novel ceiling applications were called for.

Those offices on the upper level that required total enclosure were fitted with suspended ceilings. In order to reduce the number of ceiling hangers, a secondary grid of painted steel beams were hung from the concrete roof, and the ceilings suspended from these.

Where ceilings were not required on the upper level, lighting was fitted to a system of trunking, again fixed to painted steel beams.

Pelican demountable partitions were used throughout, either to doorhead height or floor-to-ceiling.

A variety of vinyl finishes were used to distinguish between different space usages.

Extensive use was made of glazing in internal partitions, to ensure a visual transparency. A general design principle was that partitions in the north-south axis would be transparent, and those in the east-west axis would be opaque. User privacy was controlled with the use of obscure film and vertical/venetian blinds.

Executive offices were fitted with fully glazed shopfronts overlooking the views; the west wall to the central street was formed by a facetted shopfront on a 75 metre radius.

For the eastern wall to the central street, a particularly fine existing period shopfront was removed, refurbished, and replaced in a modified form between the concrete Y-columns.

FLOOR FINISHES

In the public areas and central street, the existing terrazzo tiles were retained, after extensive grinding and re-sealing. Due to the difficulty of matching this finish, panels of ceramic tiles were used for all remedial work.

Offices and passages were fitted with carpet tiles - grey and charcoal being used in various combinations and patterns. Executive offices received bordered broadloom carpets.

FURNITURE

Existing furniture was used extensively in the offices. The interior design thus had to be robust enough to cope with furniture of different styles and finishes.

Portnet is fortunate to have a significent collection of historical furniture of a nautical flavour, and this has been imaginatively displayed in executive and reception areas.

Additionally, new conference tables and the main reception counter were made by Portnet staff to the Architect's design, using oak and teak obtained during the demolitions.

It is intended that the extensive public areas within the complex be used to display items of historic interest. Display screens have been provided.

A number of artworks adorned the Terminal - these are being restored and re-incorporated as decor. These include a large South African coat of arms (mounted on the front facade) to welcome visitors; mosaic murals; and abstract and realist sculptures.

AIR CONDITIONING

Although naturally ventilated, the Customs Hall had extreme heat-load problems due to the thin concrete shell roof and extensive areas of glazing to all elevations.

To overcome the former, an insulated ceiling was fitted to the underside of the roof. Solar film was applied to all windows, and an existing aluminium sun screen on the west facade refurbished.

A central chilled water air-conditioning system combined with ice bank thermal storage facilities, was installed.

Technical difficulties forced the abondonment of a proposal to use the sea for heat dissipation. Instead, cooling towers were fitted at wharf level.

The main plant room, with chilling plant and ice tanks, was located in the shed below the customs hall.

Fan-coil units were placed on either end of the baggage tunnel, immediately below the hall. From these, twin ducts rise to spreader ducts at each end of the hall. Twelve exposed circular ducts are suspended overhead, with regularly spaced supply air outlets.

A secondary system of air handling units with flexible ducting to ceiling outlets provides cooling to the enclosed offices beneath the mezzanines.

A further system of console units caters for the air-conditioning requirements of upper level enclosed executive offices and boardrooms.

ELECTRICAL

Small power supply to all workstations is generally reticulated in three tier power skirting. This makes provision for electrical, phone and computer networks.

Difficulties of reticulation in the existing lower floor slab meant that power was fed both up and down from the mezzanine plenum.

Low brightness fluorescent light fittings, with parabolic reflectors, were used in all offices. In double volume spaces, these were fixed to a suspended grid of trunking.

Tubelight was used to accentuate circulation and reception areas.

Existing large bowl pendant fittings were refurbished and re-lamped, and refitted in clusters over the central street.

CONCLUSION

The success of the project is largely due to effective interplay of the refurbished magnificence of the original structure, and the practical and economical utilization of everyday components in the new work.

Certain criticisms were levelled at the design for 'underutilization' of the volume of space available; however, it is precisely this spatial generosity that makes the working environment unique.

The range of space types, and the flow of spaces experienced by a visitor moving from the entrance foyer, along the street, up to the bridge and to any particular office, is breathtaking.

Prior to the execution of this project, Portnet's staff was scattered among a number of unremarkable offices in various buildings in Durban's CDB.

The Ocean Terminal was a forlorn white elephant, and a desolate maintenance problem.

Today the changed circumstances are apparent. Life has returned to the Ocean Terminal. The Port of Durban's corporate identity within the Transnet group has been made physically and organisationally tangible. One of Durban's finest modern architectural assets has been revitalised and converted into extremely useful office space at approximately half the cost of an equivalent new building.

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