Ardex Australia: Architectural Design Report

1.0 Introduction

The Ardex Australia Industrial facility is a 27 470 sqm warehouse and office building at Kemps Creek's newest industrial estate "The YARDS" Mamre Road, Australia's new home for industrial innovation. A connected place where people and progress come together to experience the rewards of sustainable design, unlimited scale, and unrivalled access.

The proposed development to construct, fit out and operate a manufacturing facility and associated warehouse facility at 657-769 Mamre Road, Kemps Creek (proposed Lot 12) which will be occupied and operated by Ardex will provide a space for manufacturing, storage, and distribution of construction products. Located centrally within the estate on Lot 12, with frontages to two internal estate roads, it is one of the first developments in the Estate and a prominent building that will help to set the character and standard of excellence within the Estate and the broader Industrial landscape.

Figure 1.1 Location Plan

2.0 Design Excellence

Recognising the aims of the NSW Government Architect in delivering quality design outcomes for the NSW community, the Ardex Facility development is summarised below within the framework of the seven objectives of "Better Placed" *(GANSW, 2017)* NSW Government Strategy.

2.1 Better Fit

Within the context of the The Yards Industrial Estate and the immediate social and geographical context, strategic planning considerations are employed on the site for best outcomes for amenity, contextual integration, and visual impacts. As Ardex Australia has a requirement for silo tower elements, there is a deliberate positioning of this building centrally within the estate away from the main thoroughfare of Mamre Road. The scale of the industrial building form is addressed by positioning the higher tower elements away from main estate road frontages.

2.2 Better Performance

The Ardex warehouse and office are designed to a 6 Star Green Star certified rating, using the current Green Building Council of Australia's Green Star Design and As-Built rating tool. This is an essential initiative in such a large building, and mandates the inclusion of specific materials, processes, and equipment. The design mitigates excessive energy consumption with measures such as solar PV panels, water conservation with rainwater reuse and onsite rainwater storage, and responsible construction material uses such as FSC certified timber and low VOC paints throughout.

2.3 Better for Community

The building is planned such that the public face of the building is mainly on the Southern side of the development. This was an important consideration as the facility fronts the East-West axis road that connects the estate to the mixed-use amenity area labelled "The Yards Hub". With extensive use of glass and a resulting feel of transparency that softens the industrial character at the lower scale and beyond to the Estate. It is also setback from the boundary more than 20m with landscaped parking area creating space and openness at the front of the building. The entrance to the Facility is through the office through a deep wide recess giving the feeling of permeability.

2.4 Better for People

We have employed an occupant-first approach to the workplace at the Ardex facility. The building occupants have been prioritised throughout design, as such the building has been crafted as an opportunity for enhanced occupant wellbeing. Specifically in the office design, outdoor areas, and landscaping. Spaces within the office and at its perimeter are opportunities for enhanced wellbeing with wholistic landscape elements integrated into the façade and onto the roof terrace. Spaces within the office are planned to maximise natural light, views, and thermal comfort. Outdoor areas are also landscaped and designed as places for occupant relief. The warehouse awnings are on the Northern side of the warehouse and reduce heat load for the entire warehouse improving thermal comfort for warehouse workers.

2.5 Better Working

Functional, logical, planning is always a requisite of Industrial Facility design by nature of their uses. Ardex Australia manufactures product from raw materials and stores inventory of that product for distribution. The warehouse has been designed as a customised facility with specialised internal spaces that are arranged for optimal efficiency and useability.

2.6 Better Value

The functional and operational objectives of Ardex Australia inform the warehouse layout ensuring the facility is compatible with long term occupancy. Six Star Green star initiatives meet ESD responsibilities but also reduce operating costs for Ardex. This is done through building design but also on going modelling and monitoring as a value-added property management.

2.7 Better Look and Feel

To enhance the quality of our buildings and offering to our customer we collaborated with Architects Bligh Voller Nield (BVN) in creating a new direction for the overall design quality of the Ardex industrial office and warehouse. This collaboration encompasses enhanced planning, building form, materials, and aesthetics.

Visually and aesthetically, the design aims to be coherent, legible, and attractive. The office form is characterised by a well-proportioned and distinct glass volume and deep façade recesses that speak to openness and transparency to soften the industrial aesthetic. The warehouse facades employ diagonal banding and colour contrast as a strategy to break down the scale and mass of the building visually. The following sections address the design approaches for this facility in more detail.

3.0 Design Principles (Clause 31 WSEA SEPP)

3.1 High Quality Design

From the outset, the brief for the facility sets a high standard for design, pursuing an occupant centric approach, and operationally, an aim to create a more sustainable footprint meeting Greenstar requirements for Environmentally sustainable design.

Overall, the planning of the facility aims to resolve the functional requirements of the Ardex business, resolving spatial relationships that the business demands. This ensures the efficiency of the operations and longevity of occupancy. Warehouse, manufacturing, and silo towers can be thought of as components of a system for operations at the functional level, however they have been positioned on site in relation to the wider context and amenity. The components are volumes that have been positioned in the estate with reduced impacts to Mamre road and internal estate roads. The taller elements of the towers pushed to parts of the site that will reduce their prominence.

Office internal spaces are thoughtfully designed with openness, with predominant glazing serving to connect people to place. Conversely, the extensive glazing provides the internal workspaces with abundant natural light, demonstrating a commitment to wellness.

3.2 Materials and External Finishes

The building presents a palette of coloured, banded, prefinished metal cladding to both warehouse and towers, and painted precast concrete dado wall at ground level. This industrial backdrop is softened with the curtain wall glazing of the office and detailed with concealed mullions and surface fritting to the glass, presenting a refined façade language. Solid aluminium panel cladding further adds to the refinement of the façade with a high-quality metallic finish, providing a sleekness to the design.

3.3 High Quality Landscaping

The brief for the landscape design has provided a direction for integration of landscaping in the project as a design element, rather than an appendage to the design strategy, especially in the office design. At the main entry mature forecourt and outdoor areas, trees and green walls feature, On the roof planter beds are positioned along the entire front and side perimeter of the roof, with planting and trees added to the outdoor roof terrace design.

At the ground level, tree planting has been maximised where possible in areas such as the car park, with wide canopy trees providing shade cover. Within the boundary setbacks landform is used to elevate the landscape, and water sensitive plants have been prioritised in mass planting areas at road frontages and peripheral landscape areas. Where hardstands are visible from the road frontage, screen planting, dense shrubs and hedges are used.

3.4 Scale and Character

The warehouse component is predominantly a low height volume at 13.7m at the roof ridge. Facades are “banded” with alternating diagonal sections of contrasting colour to reduce bulk and scale and is in keeping with similar developments within the estate and locally.

The silo tower components are positioned to the rear and side of the site, being tall and prominent structures, this was the best location on site for them using the warehouse volume to help mitigate its prominence from Mamre Road and the internal estate roads.

4.0 Building Design

The brief for the Ardex facility provided opportunity for atypical industrial building forms not usually seen on Western Sydney Industrial estates. Overall, the facility is articulated with higher and lower elements of contrasting materials. The higher tower elements create interest and variation to the building form, the office, which is primarily glass, adds transparency to what are mainly solid walls of the warehouse.

Warehouses are inherently large structures and consideration for how they are placed and treated in the landscape and wider context is an important design response. The Ardex Australia warehouse is a structure 13.7m high at the roof ridge and 10.5m high at the eaves. In our strategy, façade design is used to address the appearance of the large warehouse volume to improve the amenity of the estate and surrounds.

4.1 Warehouse Façade Design

Diagonal banding in contrasting tones are used on prominent elevations of the Ardex Facility to visually break up the building mass and bulk. Warehouse facades are up to 13.7m high and 140m long on estate road frontages. Façade banding is logically proportioned according to the banding proportioning principle illustrated in figure 3.12, creating a repeating pattern segment of varied band widths, stepping down in width from large to small. When implemented on the Ardex facility, the bands are rotated 15 degrees from vertical and this variance further breaks up the volume as the eye is encouraged to move along elevations rather than being static. The result is that the warehouse volume appears reduced, avoids a monolithic appearance, and bulk is mitigated as shown in figure 3.13.

Figure 4.12 Banding Proportioning Principle

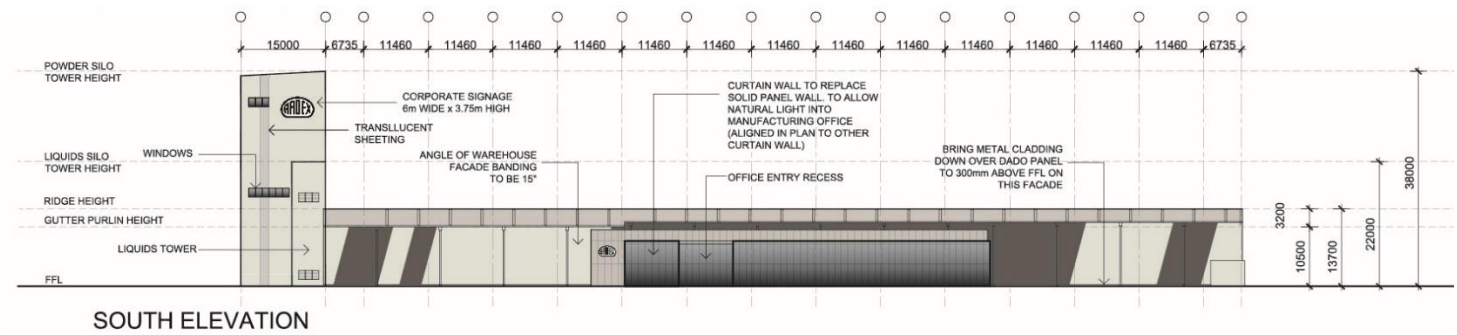
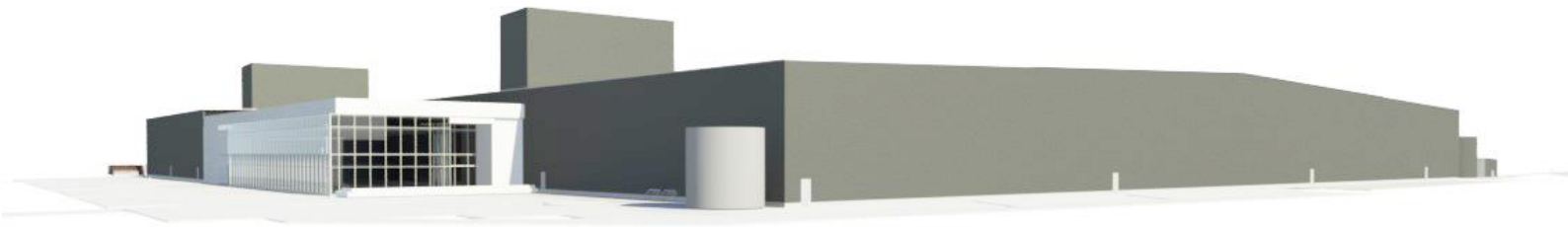


Figure 4.13 Ardex Warehouse Banding – Applied Diagonally

4.2 Building Form

An operational requirement of Ardex Australia was the necessity to accommodate various cylindrical silos for raw materials for production of their products. The appearance of these silos is hidden from view, contained within two clad tower structures that result in a less imposing appearance when viewed from the estate and beyond. Each of the towers house silos that contain raw materials related to adjacent manufacturing processes in the warehouse. For Ardex their requirements called for a “Powder” silo tower of 38m high and a “Liquids” silo tower of 22m high.

Crucially, the towers are positioned away from road frontages as much as practicable. The towers have been positioned on the Western end of the warehouse so are furthest away when the building is viewed from the two road frontages, as a result these towers are visually shielded by the volume of the warehouse building.



4.21 Volumetric Study - Towers shielded by the Warehouse Volume from road frontages

4.3 Tower Facade

In addition to the position of these towers on site, there has been careful consideration for the colour selection for the cladding of the two towers. For tall structures, lighter colours will contrast less against the sky than darker ones, with the effect of reducing their prominence (see figure 3.21). Colorbond “Cosmic” was chosen for this reason and is one of the lightest cladding colours available.

Windows and louvres positioned on both towers to provide ventilation and natural light serve as elements to divide the tower walls vertically.

4.21 Precedents: Clad structures in lighter coloured materials.

4.22 Ardex Australia Silo Towers: Light coloured cladding

5.0 Office Design

In collaboration with Architects Bligh Voller Nield (BVN) the concept for the office design was developed with an approach to craft a coherent, legible, and attractive office building that provides high amenity for its users. Key elements in the design are a distinctive glazed volume, deep recesses for entry and outdoor recreation areas, and integration of landscaping and greenery as an essential element for promotion of wellbeing (figure 4.12).

Green vegetated walls feature in the recesses of the office to soften hard edges, with contrasting texture and colour while providing natural visual stimuli to create enhanced environments for building users. Tree planting is employed at the entry, outdoor area as well as at the roof top terrace further integrating greenery into the building fabric.

Extensive use of glazing on the Southern office façade, enables penetration of ample natural light and allows vistas to the estate. This public face of the building engages with the public domain through visual connections and elevates the character of the development beyond one that is merely “Industrial”. This is an important consideration as the East-West axis road that connects the estate to the mixed-use amenity area runs along the Southern frontage of the development.

Figure 5.11 Ardex Office from Southern Road Frontage

Figure 5.12 Integration of landscaping into the office.

6.0 Conclusion

We believe this development will help to set the character and standard of excellence within The Yards Estate and the broader Industrial landscape. It is a development that aims at achieving a building that was “better” than what came before it, to achieve design excellence for its users and the community.