

Case study: McBeath

Overview

Health services company, McBeath, commissioned Cleanrooms Australia to construct a cleanroom facility that would allow the company to double its production capability and set it up for more than a decade of success. To do so, Cleanrooms Australia transformed McBeath's initial plans for a two-room single-level factory into a sophisticated three-level PICs-compliant cleanroom facility.

Background

After building up several successful compounding chemist shops in Sydney's Castle Hill district, McBeath identified an opportunity to expand its production of Cytotoxic cancer treatment drugs to assist hospital pharmacies meet growing patient needs on Australia's east coast.

McBeath acquired a 122-square-metre warehouse in Baulkham Hills as the future site for a sophisticated Cytotoxic compounding operation that was to encompass a cleanroom facility, support offices and additional warehouse areas.

After reviewing other Cytotoxic compounding facilities built by Cleanrooms Australia McBeath approached Cleanrooms Australia to provide a design concept and quote for this or the construction.

The solutions

Cleanrooms Australia created a new design that encompassed the addition of a mezzanine level to expand the floor space of the warehouse, provide better staff access to the amenities, and include fire design requirements.

The new design provided additional ground floor space for office inventory, room for goods to be delivered through the rear door, and an extended cleanroom preparation area. The design also included an exterior aspect that captured an expansive district outlook and copious natural light in the preparation and production areas.

In the new plan, Cleanrooms Australia also proposed the construction of a floor above the cleanroom to accommodate the HVAC equipment inside the warehouse, and recommended the installation of a goods lift.

As Cleanrooms Australia's design allowed for the positioning of the chiller inside the warehouse with a system of ducts and fans, it achieved the dual functions of condensing the refrigerant in the chiller and also ventilating the entire warehouse.

The critical factors

McBeath initially put forward a proposed design for a two-room, single-level layout that Cleanrooms Australia determined would be too large for the acquired site. Cleanrooms Australia also identified issues with poor staff access to the proposed amenities and the need for a wider passageway for the fire escape.

McBeath's original plan also called for HVAC equipment to be enclosed externally, which, after investigation by Cleanrooms Australia, was found to be in violation of body corporate rules.

The proposed position of the air-cooled chiller also presented a noise issue, warehouse ventilation problems and lack of access for repairs.

The process

Cleanrooms Australia created an initial 3D design of McBeath's proposed plan to demonstrate its unsuitability, and – with the client's agreement – submitted a new design draft that addressed the identified challenges.

Cleanrooms Australia then provided a workable quotation and contract for the new design. Since all identified challenges were addressed in the new design prior to the quoting process, this meant there would be no major cost variations due to unforeseen issues.

With the project underway, Cleanrooms Australia engaged structural steel suppliers for the construction of the mezzanine level, and after a minor pause in the build while McBeath waited on necessary council approvals, the project was completed on time and on budget.

The results

Cleanrooms Australia took the original two-room ground floor design and expanded it into a three-storey PICs-compliant operation with:

- 100 per cent outside air to the critical compounding suite
- Particulate and pressure controlled temperature and humidity
- Autonomous BMS operation
- SMS and email alert and alarm notification system
- Eco-friendly and economic power usage design
- Negatively and positively pressured sterile environments
- Remote sensor collection of quality control data

Conclusion

The new facility designed and constructed by Cleanrooms Australia enabled McBeath to meet its initial sales commitment. McBeath was able to subsequently grow its operations in future years by simply upgrading the premises when necessary to accommodate additional TGA licensing requirements.

As a result, McBeath was nominated as one of the top companies supplying Cytotoxic preparations in Australia and has since been acquired by Slade Industries.