

Case study: Romar Engineering

Overview

Romar Engineering approached Cleanrooms Australia to design and build an ISO 14644 class 7 cleanroom that could operate in conjunction with their existing facility. Cleanrooms Australia proposed and successfully delivered a two-stage project design that allowed Romar to expand their production capacity over time in line with their expanding needs without over-extending their finances.

Background

Romar Engineering is a contract manufacturing company servicing the medical, aerospace and aeronautical industries. The company provides a range of tooling, moulding, assembly and packaging services in plastics, silicones and rubber, and works with clients of all sizes from large multinational companies through to backyard inventors.

The company's manufacturing facility comprises top-of-the-line moulding and machining equipment and an impressive 250sqm ISO Class 8 and ISO Class 7 cleanroom.

Romar approached Cleanroom Australia's to design and build a cleanroom that could be installed next to their existing cleanroom in order to expand their manufacturing facility and increase their production capacity.

The new cleanroom needed to comply with ISO 14644 class 7 requirements and had to be designed to work in conjunction with the existing cleanroom. The new cleanroom was also required to be expandable to cater for future growth.

The solution

Cleanrooms Australia proposed a two-stage project that would be more economical in the short time while still expanding the client's production capacity.

It required a stage-one design that could be incorporated into the final system, while also operating independently until the client was able to progress with the second stage of construction.

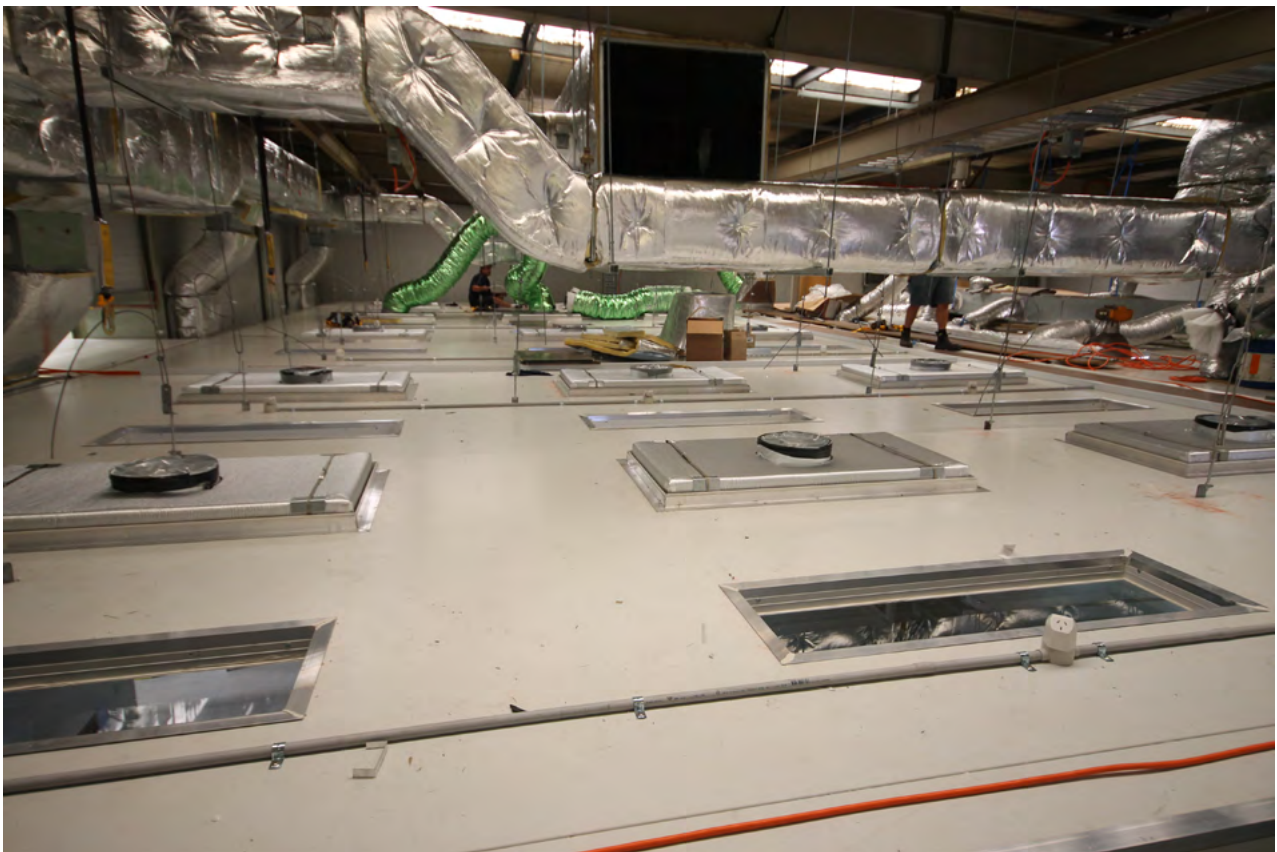
Designed into the project was a requirement that the overall system incorporate a portion of redundancy to allow the facility to continue to operate if there was a mechanical services failure.

The critical factors

The cleanroom had to accommodate presses weighing between six and eight tonnes. That meant the cleanroom needed to be large enough to allow presses to be moved in and out of the room without interrupting production or personnel flow throughout the rest of facility.

The injection moulding heads that sit inside the presses also weigh between 75kg and 1 tonne. We incorporated a crane inside the cleanroom that could lift the moulding heads out of the presses and place them on a trolley for storage in a storeroom inside the cleanroom.

We were also able to successfully provide a display area that Romar could use to give new clients visual insights into their manufacturing process. This required the installation of a picture window into the assembly area.



The process

Cleanrooms Australia underwent our standard construction process for this project. We began with a conceptual design, which was followed by an order of probable cost and quotation. Following acceptance of the quotation, the full detail design was completed and approved, and construction began.

We were also able to work with Romar engineering staff throughout the project to achieve the most economical outcome possible.

After completing construction on stage one, there was a four-year delay before Romar was ready for work to begin on stage two.



The results

Stage one was successfully commissioned and operated for four years without issue. Romar then engaged Cleanrooms Australia to return to complete construction on stage two of the project.

This two-stage approach meant that Romar was able to expand their production capacity over time as needed, while not over-extending their finances or space requirements.

Conclusion

Cleanrooms Australia proposed a two-stage project in order to provide an economical solution that gave Romar the ability to expand their production capacity as needed.

The cleanroom design successfully incorporated the existing facilities with provision made to accommodate heavy machinery, along with an internal crane installed for the easy replacement of injection moulding heads.