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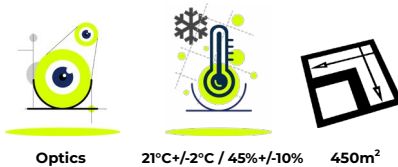
**Contamac**<sup>TM</sup>  
EMPOWERING YOUR VISION

## THE CLIENT

Contamac – the world’s largest independent manufacturer of contact and intraocular lens materials. The business produces bespoke ocular formulations using their clients’ own specifications and is the leading innovator in the development of specialist polymers and biocompatible materials for medical applications.

## THE BRIEF

Guardtech were tasked with the design and construction of an ISO7 optical cleanroom in an existing building that required repurposing. This included a full, comprehensive design of all mechanical & electrical services for the building as well as the related process equipment.



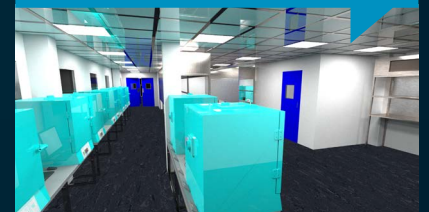
## WHO WE ARE

From Our Company on [contamac.com](http://contamac.com)...

“Our 3,250m<sup>2</sup> headquarters in Saffron Walden – just outside the university city of Cambridge – features an ISO7 (Class 10,000) cleanroom and state-of-the-art manufacturing, research and laboratory facilities.

“They allow us to produce bespoke ocular formulations to clients’ own specifications and to collaborate with the wider scientific community to create new biocompatible materials and applications.”

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## THE TECH SPECS

*A controlled environment designed, installed, cleaned and commissioned by Guardtech built to the following specification:*

◆ **Structural:** [GT Shell Plus](#), [PIR Wall Panels](#), [GT Lid Plus](#), [Ceiling Grid & Tiles](#), [GT Access Pro GRP Doors](#), [GT Deck Plus Vinyl Floor](#), [Capped & Coved](#).

◆ **Electrical:** 13amp double sockets flush mounted. Three-phase power.

◆ **Mechanical:** Filtration provided by H14 HEPA filters powered by bespoke air handling units, chiller and low temperature hot water.

◆ **Monitoring:** Environmental monitoring system measuring pressure, temperature and humidity.

◆ **Transfer equipment:** Bespoke HEPA-filtered cleanroom goods lift and trolley hatch.

◆ **Extraction:** Process and in-room fume and heat extraction from hard-pipe connection and LEV arms.

◆ **Furniture:** Bespoke Trespa workbenches on grade 304 stainless steel frames, 16 laminar flow workbenches, stainless steel stepover benches, laminar flow garment stocker, stainless steel sink unit with Dyson Airblade taps.

## THE CHALLENGES

**Ceiling void:** This project saw Guardtech develop a two-storey building that was originally an office block. The whole of the second floor had to be raised to accommodate a ceiling void capable of facilitating all of the services required.

**HVAC & filtration:** Contamac had severely restricted space for the plant, which would need to be housed externally. In addition, strengthening of the floor significantly restricted the ceiling voids of both the upstairs and downstairs cleanrooms. A specific design study was commissioned to evaluate the

most appropriate form of air handling equipment to meet the temperature and humidity conditions required by the client, while also meeting the airflow demands of the ISO7 classification of the cleanrooms.

**Cleanroom staircase:** The client needed to access both the upstairs and downstairs cleanrooms without having to undress and then dress again in cleanroom clothing, so the two controlled environments needed to interface without compromising one another. Guardtech created a changing room that housed a staircase leading to the upstairs area – this allowed a single change area to serve both cleanrooms.

Guardtech pressurised the staircase in such a way that it maintained classification, yet did not compromise the differential between the changing room and the two levels of cleanroom. They achieved this using balance pressure dampers and creatively configured air supply to the staircase and adjoining lobbies. This required extensive design work which had to be factored into the HVAC design study that was conducted.



## THE CHALLENGES

**Structural:** Within the design study Guardtech undertook, structural calculations were conducted to assess the load of the cleanroom and the process equipment. This highlighted that the existing floor would not sustain the load imposed, therefore the floor had to be strengthened before the cleanrooms could be installed.

Significant design planning was conducted around the process flow, as this was a new process and space planning was essential to ensure that the cleanroom being on two levels actually worked for the process that would be housed.

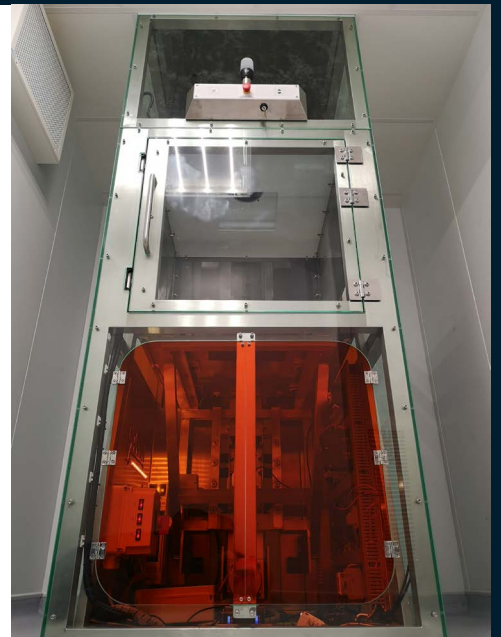
**Bespoke cleanroom lift:** The client required heavy product to be moved from floor to floor in a non-compromised condition, but without manual handling no such solution was readily available. Guardtech worked with Felcon to design,

install and commissioned a cleanroom-compatible goods lift which did not compromise cleanliness or pressure cascades. This HEPA-filtered cleanroom lift needed to maintain a positive pressure during transition. An upstairs and downstairs lobby was therefore fashioned to ensure that the pressure regimes of the lower and higher cleanrooms was not compromised by the opening and closing of the lift doors.

## THE RESULT

Guardtech were delighted to be a part of a project which allowed them to show off their adaptability, creativity and problem-solving skills, as well as testing their years of cleanrooms expertise. It also meant that they produced arguably one of their most striking controlled environments to date. Commercial Director Mark Wheeler reserved special praise for the Design and Installation teams for their impressive collaboration skills.

"This project really tested us as a team – particularly the issues with



the floor, staircase and lift – but the Design and Installation teams worked incredibly well together to devise innovative solutions.

"This has to be one of the most stunning jobs we've completed to date, and it was a pleasure to produce something so brilliant for a client that produces such high-quality products. My thanks to everyone involved in turning around such an excellent project in such a professional manner."