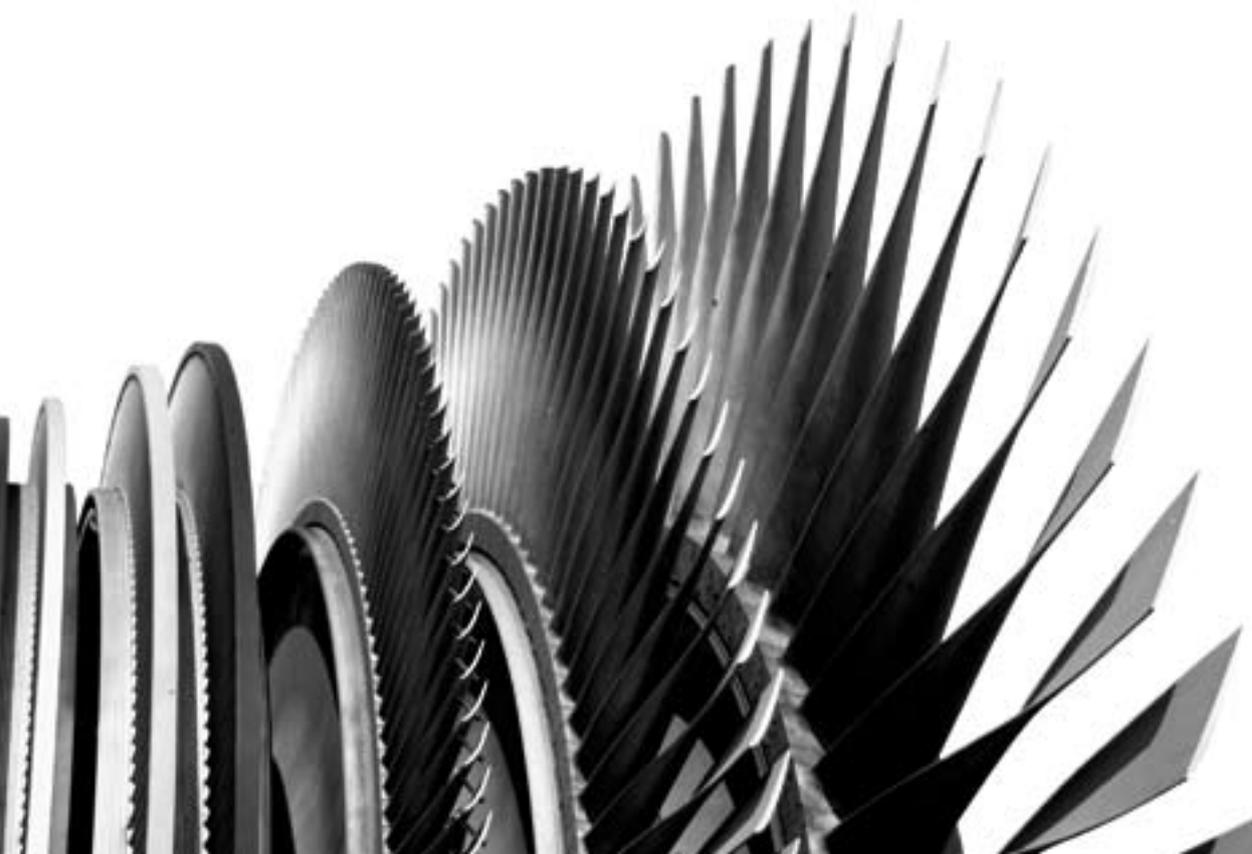


optar

Precision technology for the power industry



WHO WE ARE

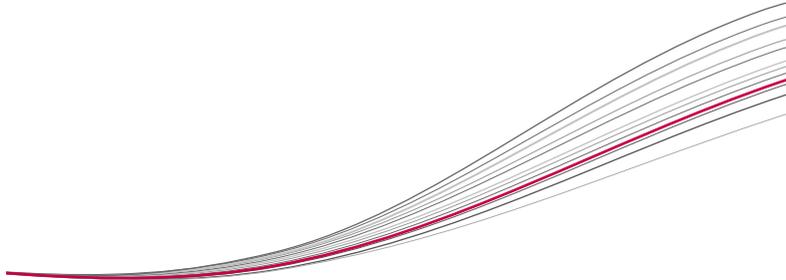
Optar Technologies Ltd, based in Gloucestershire, UK is a specialist rotating machinery engineering company offering cold side performance products and services for gas turbines and compressors.

The main focus of Optar is to improve and maintain performance through the operating cycle of the shaft compressor.

Optar have successfully completed OEM and retrofit projects both in the UK and worldwide. This includes duct work, silencers and filter houses for a substantial refinery expansion; a 7 day filter house removal and replacement project, and technical services reviews.

Our customers value Optar's ability to offer Project Management for a wide range of services on time and on budget.

We continue to push the boundaries of GT air intake filtration as well as introducing safe gas pre-heating technologies.



At Optar we value our customers' business and aim to form a partnership to achieve optimum efficiency and improve performance to gain cost-effective solutions for gas turbines within the power industry.



Optar have a clearly laid out philosophy which can be found in our ISO9001 manual and in all aspects of our work. This is the hierarchy of the Optar Business Policy:

- Safety
- Quality
- Commercial Success

Safety – Delivering a safety focused service to our customers is a procedure that Optar considers to be the most important on every project undertaken. Consideration for the safety of its customers' personnel, Optar personnel and not least, safety for the environment.

Quality – Optar is committed to pursuing world class quality in the field of precision engineering and related practices. We are an ISO registered company and in compliance with the ISO 9001: 2000 British Standard, all projects are supported by a fully audited and controlled quality management procedure.

Commercial Success – our customers' achievements lead to our success. Our aim is to optimise our customers' performance and commercial success which in turn, means success for Optar.

WHAT WE DO

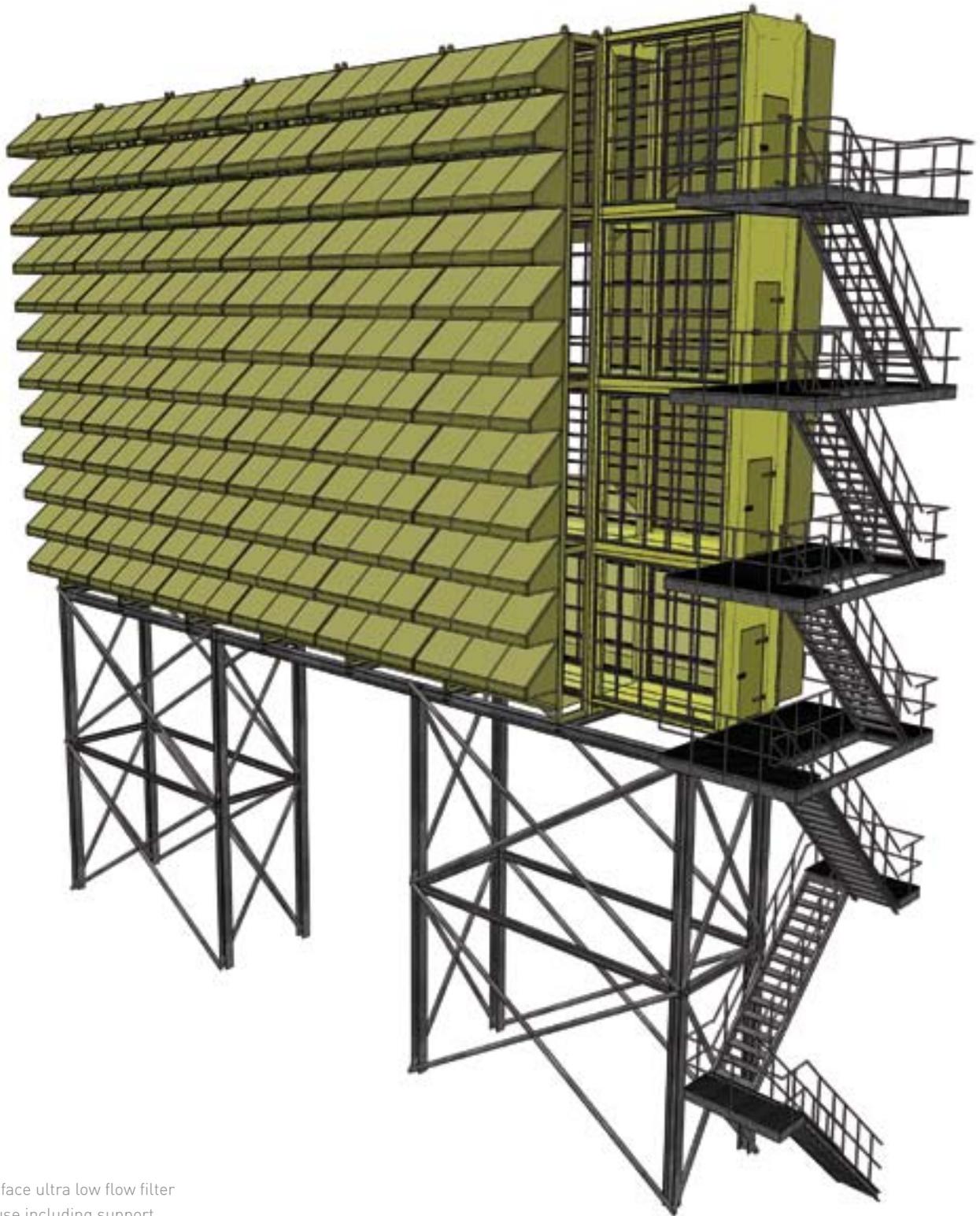
Optar design and build rotating machinery filter houses as well as maintaining GT Air Intake systems. Maintenance includes the supply of filters through to filter house design upgrades.

Whether it is supply only, or installation or a full design, manufacture and installation project, we are committed to achieve your objectives. We will help you to achieve your goals with the maximum reliability, efficiency at a realistic and controlled cost.

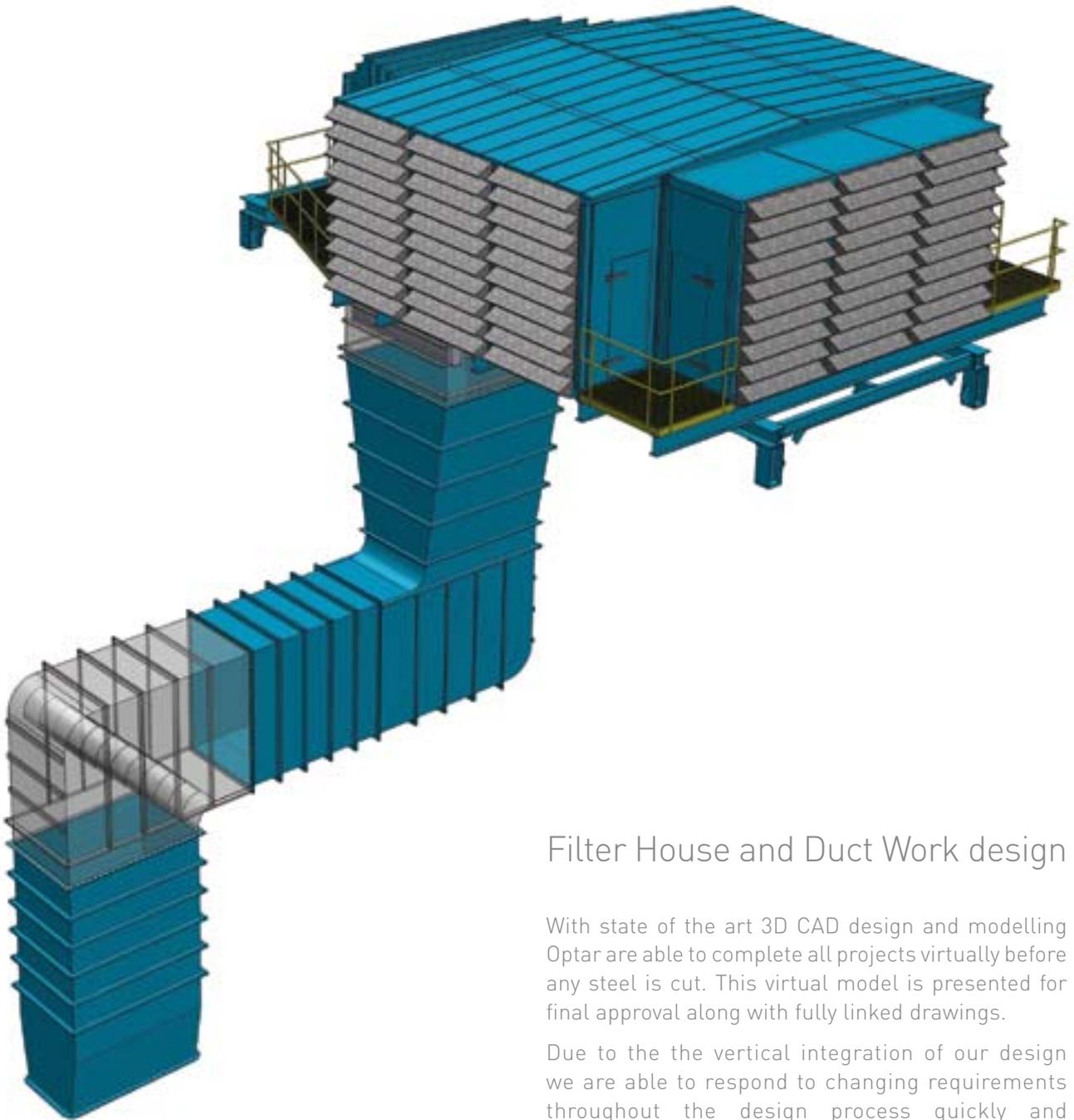
We aim to develop a trusting and long-term relationship with our customers and position ourselves to offer advice at any time on any aspect of GT Air Intake systems in the power industry.

Optar provide a wide range of project management and support services to gas turbine and compressor OEM and aftermarket customers; from the design, supply, installation and maintenance of advanced gas turbine air intakes to the procurement of 100 pad coalescers.

Providing high quality support before, during and after all projects undertaken is a key management requirement of Optar.



Uniface ultra low flow filter house including support structure with full access.

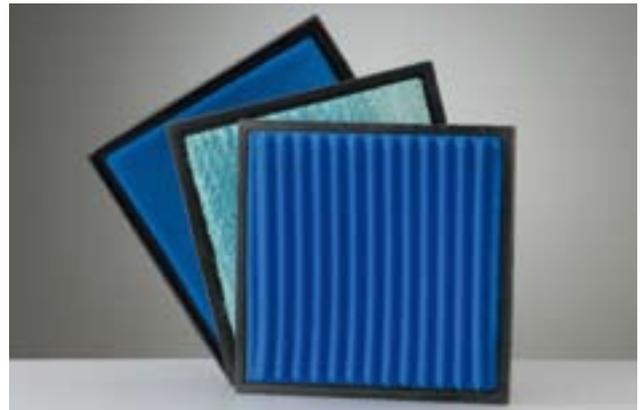
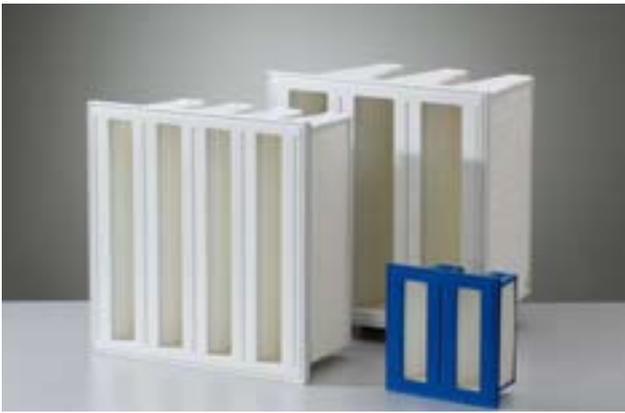


Triface medium velocity filter house with duct work and silencers.

Filter House and Duct Work design

With state of the art 3D CAD design and modelling Optar are able to complete all projects virtually before any steel is cut. This virtual model is presented for final approval along with fully linked drawings.

Due to the the vertical integration of our design we are able to respond to changing requirements throughout the design process quickly and efficiently with full sets of updated drawings often available on the day of notification of change.



Filter supply, design validation and upgrade – End user

With an increased need to improve filtration on existing plant, Optar provide a full range of support services which include: design validation, including suitability for purpose; structural capability; improvements through flow analysis and DP consideration; and finally detailed payback from efficiency improvements and carbon emission reduction.

Optar can also provide on site support to the filter house end users for standard maintenance requirements. It is appreciated at Optar that 'Foreign Object Damage' to compressors on large rotating plant, not only cause hugely expensive damage to the plant, but the consequential losses can dwarf the cost of the damage. This understanding is why

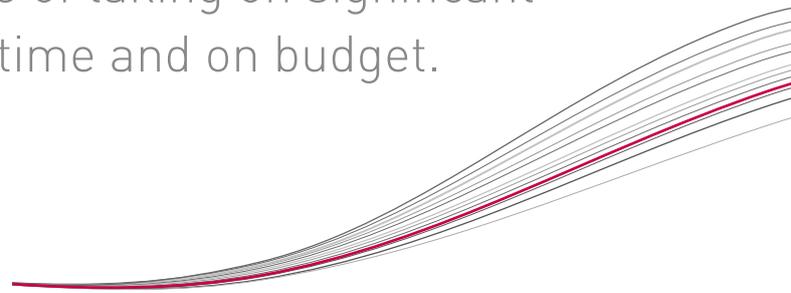
we have been trusted with maintaining some of the largest gas turbine filter houses in the UK as well as offering filter change support in the EU and worldwide.

Optar provide a full range of site support from engineering supervision and maintenance recommendations to turnkey project management of multi filter house maintenance programmes.

Importantly for Optar, we do not limit our focus to the air intake systems but are also aware of the environmental advantages to heating the gas before it enters the GT combustion chamber.

KEY ACHIEVEMENTS

Optar are a serious company who are well aware of the major issues facing power generation and the gas turbine industry. They have worked diligently through ISO standards and site protocols to provide a highly dependable company, capable of taking on significant projects and deliver them on time and on budget.





Optar has been successful in securing a major project to supply two filter houses, silencers and duct work to the largest industrial expansion project ever undertaken. The project has been a success and Optar continues to be involved on future projects with this major internationally renowned organisation.

Optar is on a steady and certain growth path. Optar's experience and expertise in the provision of GT Air Intake systems and solutions has resulted in repeat

business from the UK's leading energy suppliers. This is confirmation that our customers are satisfied with our services and supplies and this alone is an achievement Optar is proud of.

Having gained certification for ISO 9001, our Quality Assurance procedures are constantly monitored and audited to ensure our high level of customer service is maintained and improved where possible.

REFINERY – INDIA



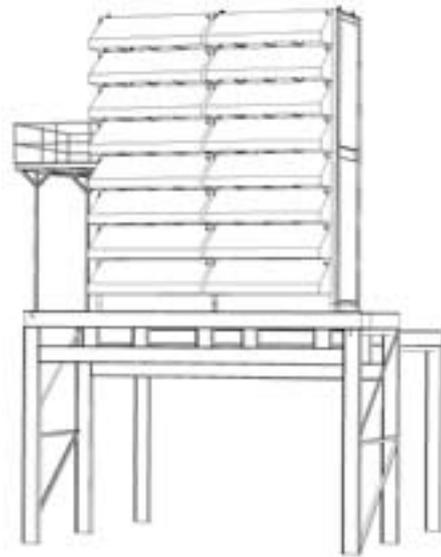
Project Overview – The largest refinery and petrochemicals complex ever built from the ground up is in northwest India and a 3 year expansion plan gave Optar the opportunity to get involved in a project that would create the largest oil-refining operation in the world.

Brief – Design, manufacture and deliver X2 filter houses, duct work and silencers to site. The filter houses to be integrated into the new system and provide clean air to the compressors for two fluidised catalytic crackers. One of the key parameters for maximum noise levels of 85 dBA – 1 metre from supply plant.

Project Management and Completion – With manufacturing taking place in 3 different countries and being part of the biggest document exchange ever undertaken, Optar successfully presented to the customer 100 tonnes of filter houses and duct work, on time and on budget.

Responsible for over 50% of the profitability of the whole plant, the FCC is considered the heart of the refinery and Optar's filter houses will ensure clean air to the main air blowers – a critical factor in the plant's successful operation.

CHP – UK



Project Overview – This embedded CHP site required excellent availability and a maintained efficiency level for a GE F6 B gas turbine providing steam to the adjacent papermill 24 hrs per day, 7 days per week, 360 days per year.

Optar were consulted and following indepth monitoring and discussions with the customer, a proposal was put forward to replace the existing low grade filter house with a new 40MW gas turbine filter house.

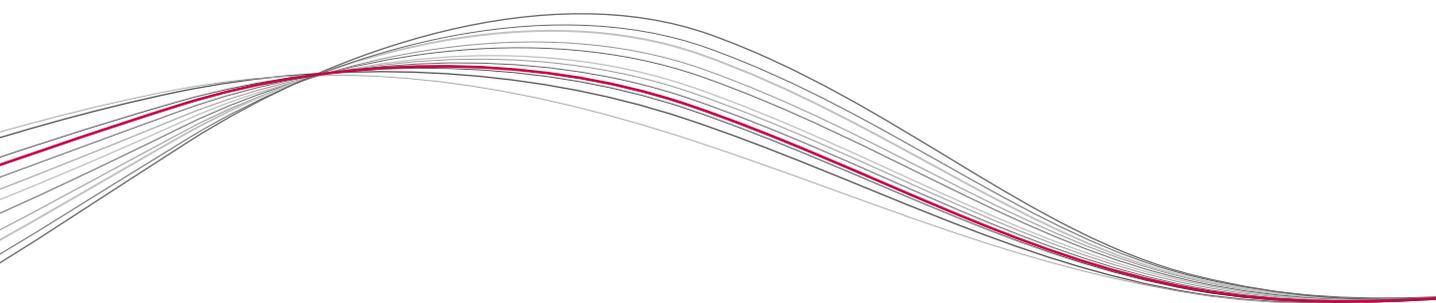
Brief – Optar were commissioned to provide a turnkey package comprising filter house design, manufacture, removal of existing filter house, installation of replacement filterhouse plus supply of filters including final H11 HEPA.

Project Management and Completion – Detailed site knowledge was necessary for this project plus

the ability to react to the unexpected often created when working with old plant and systems. Again, manufacturing took place in 3 different countries and quality assurance was closely observed at all times using Optar's document exchange system.

Due diligence and a high regard for safety was a priority consideration during the removal of the existing filter house. On site testing of structures and lifting materials had to be carried out to ensure the operation was both safe and successful.

To complete the installation of the new filter house, the GT was down for just 7 days, and with such a significant increase in filtration efficiency from existing (F7 grade) to H11 grade, this filter house has been able to pay for itself in under 12 months.



OPTAR TECHNOLOGIES LIMITED

10 High Street, Stonehouse
Gloucestershire GL10 2NA UK

T +44 (0)845 222 2355
F +44 (0)870 131 4522

www.optar.co.uk
info@optar.co.uk

Company No: 2894383
VAT No: 863 1699 93

