

STARA GLASS



Since more than 60 years, the best tradition of works in the field of glass industry

Hydragroup

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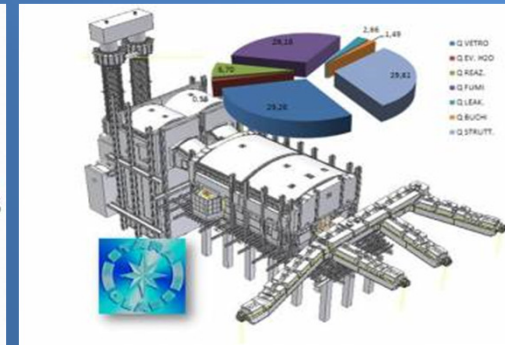
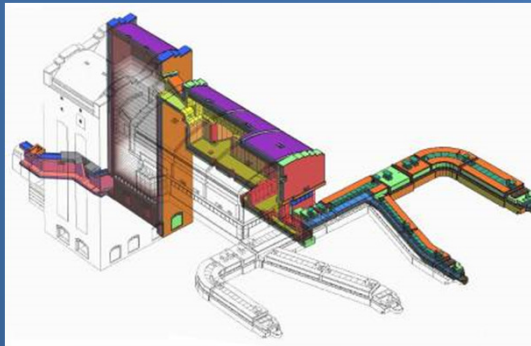


For glass market, Stara Glass coordinates the specific activities carried out by other Hydragroup companies



Stara Glass offers to the Customer:

- Turnkey jobs
- Furnace design
- Hybrid heat recovery systems
- Plants
- Materials supply
- Construction and demolition
- Plant start-up and running
- Maintenance at high temperature
- Research & Development
- Other services



Turnkey jobs



Seves China plant: design and work execution

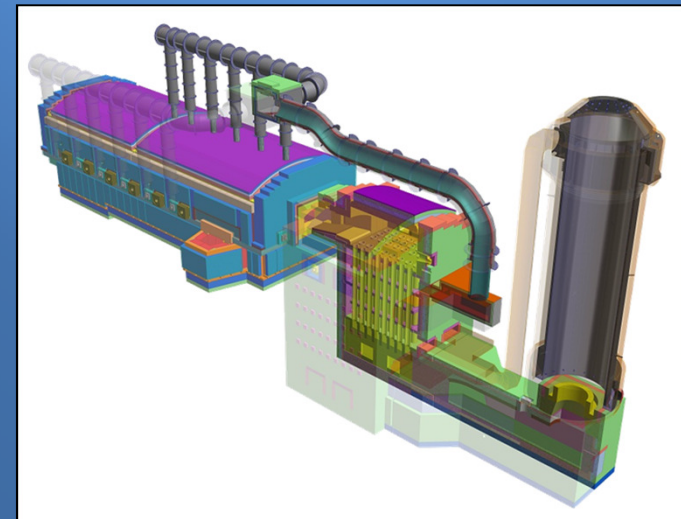
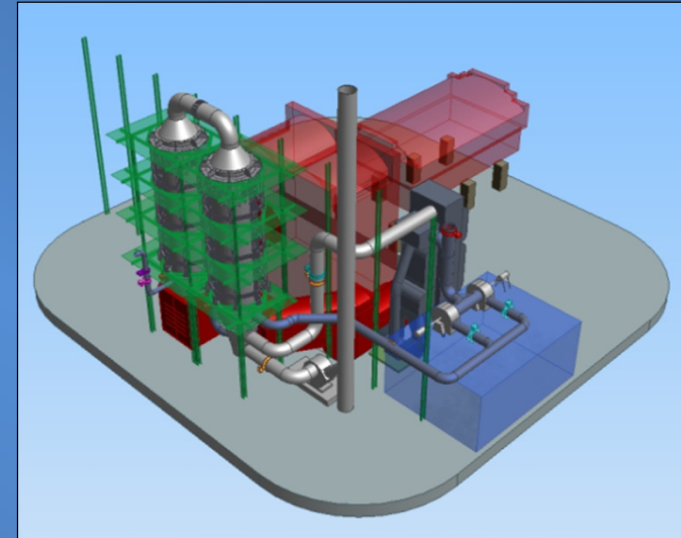
Stara Glass can satisfy the requests of Customers that intend to assign job orders for a complete turnkey service. Stara Glass has been working for all these years with the most important European groups and it is now expanding its activities to Asia, South-America and Middle East markets.

Hybrid heat recovery systems

Stara Glass developed several ceramic/metal hybrid heat recovery technologies, to maximize glass furnaces' performances in any layout condition

- **Centauro** reaches the performance of a regenerative furnace even where there is no room for a properly dimensioned chamber system
- **Minotauro** and **Ciclope** represent the evolution of Unit Melter technology

To discover how, visit our website



Plants

Stara Glass offers:

- Turnkey plants
- Engineering and dimensioning services
- Supply and building of combustion and cooling plants
- Piping supply
- Certified machines and plants supply (batch chargers with glyph pusher, glass level control, reversal valves, low NOx burners, measurement equipment, etc.)
- Control systems for furnace, working end, forehearth and electrical boosting
- Industrial electrical plants
- Water treatment plants
- Industrial automation and instruments
- Process control
- Signal control by traditional technologies and field bus
- Software for PLC and PC (SCADA/HMI) for plant supervision

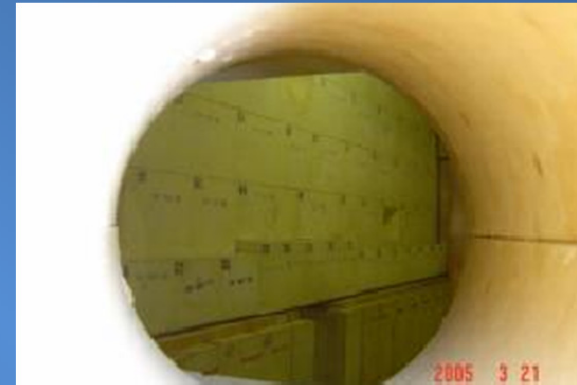


Materials supply

Stara Glass is the Sole agent in Italy for:

- *Saint-Gobain SEFPRO*, world leader in the production of fused-cast and sintered refractory materials for the glass industry
- *Verrerie de Saint-Just*, a company of Saint-Gobain Group, manufacturing frit for colored glass and art glass.

Stara Glass can supply a complete range of refractories required to build a glass production plant



Construction and demolition



Stara Glass can perform any kind of work related to construction and demolition of a glass furnace, with a proved technical expertise and in the respect of safety and environment standards.

Stara Glass obtained the Quality System Managing Certification according to UNI-EN-ISO9001:2008.

Stara Glass produced the documentation for the *World Bank* about *Environmental, Health and Safety Guidelines Update in the field of glass industry*.

Plant assistance and maintenance

The service is performed by personnel highly qualified in the running of glass furnaces, and extremely experienced in joining the best product quality with the lowest consumption and emissions, for environment safety.

Stara Glass' personnel usually works together with the technicians of the glass factory in order to optimize and accelerate the start-up of the plants.



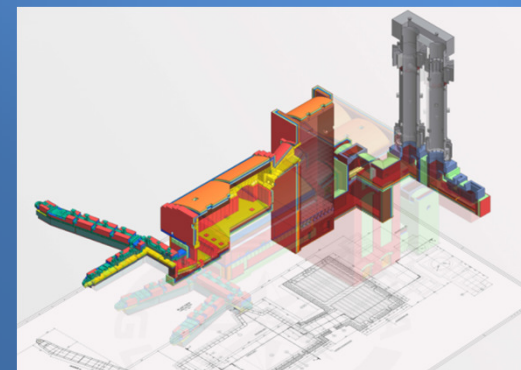
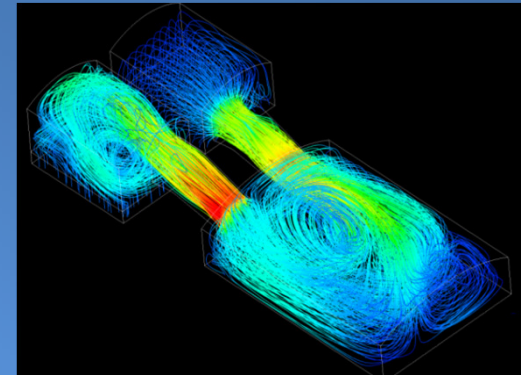
Research and Development

Stara Glass has been deeply engaged in R&D activities in the field of glass furnaces, mainly focusing on the following aspects:

- Increase furnace thermal efficiency
- Reduction of managing costs
- Development of new metallic and ceramic materials to improve the performance and extend the life of glass furnaces and of components operating under critical conditions
- Lowering waste gas pollutions, NOx in particular
- Optimization of furnace mathematical modeling in all their physical and thermo-economic aspects

The most recent successes of Stara Glass R&D department are:

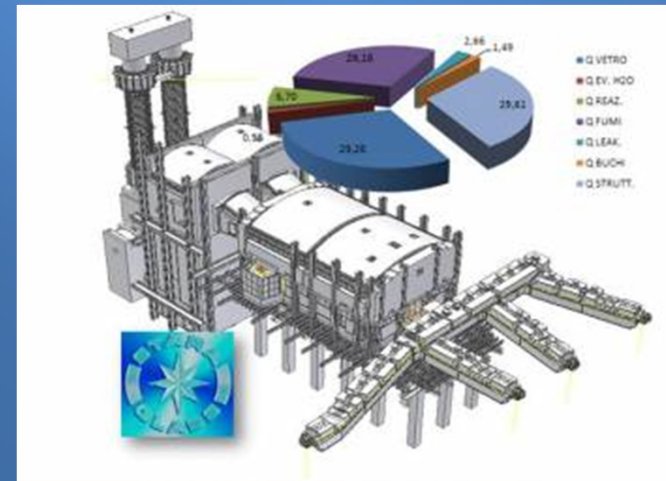
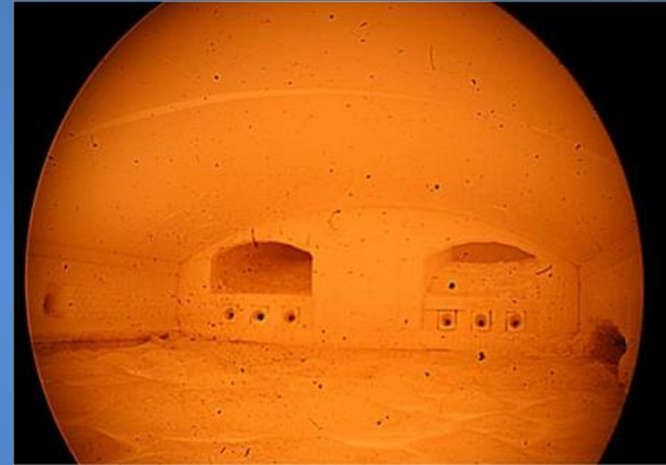
- Centauro, Minotauro and Ciclope hybrid technologies
- SNCR system and Strategic waste gas recirculation system to lower NOx
- CFD studies on chamber and port geometry optimization



Other services

- Stara Glass has the technical personnel and all the equipment that is necessary to compute the **heat balance** of an operating furnace, in order to maximize its thermal efficiency
- Stara Glass can perform video and photographic endoscopies on operating glass furnaces and forehearth
- Stara Glass offers a Technical Due Diligence service, to optimize the whole production

Stara Glass' target is Customer's satisfaction





Stara Glass: works

Seves Shanghai

Glass bricks and insulator plant: designed and built from the green field

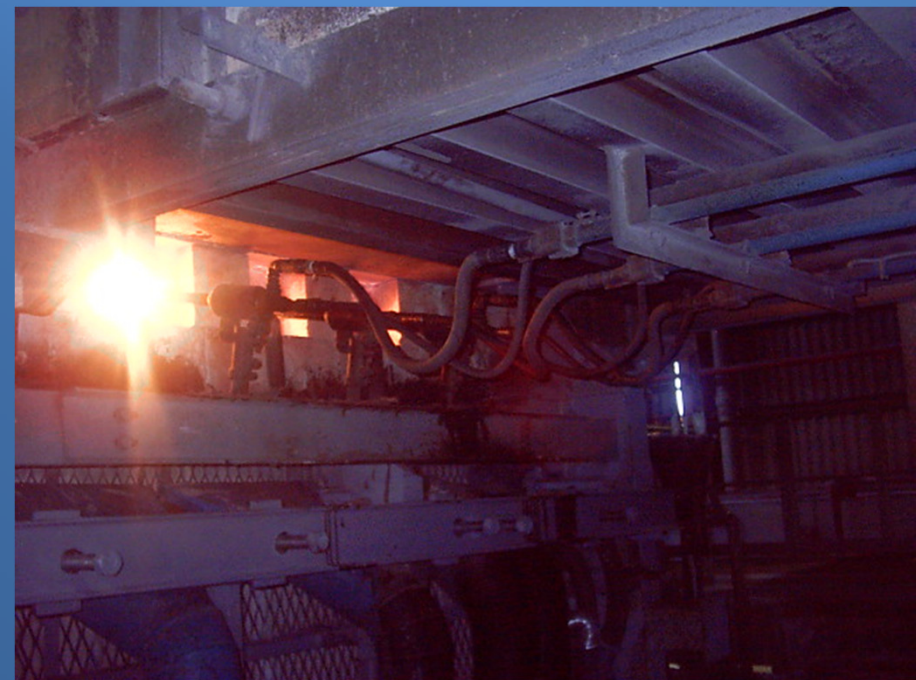




Seves Brasil

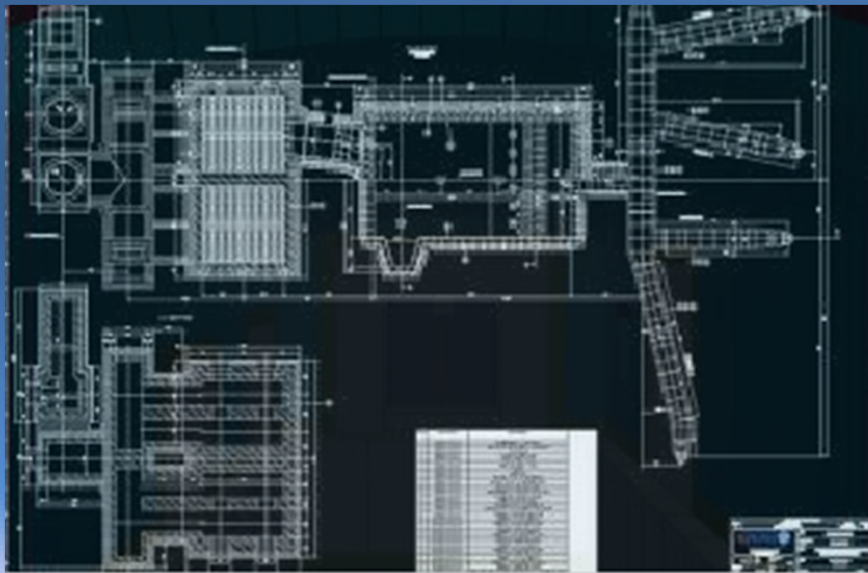
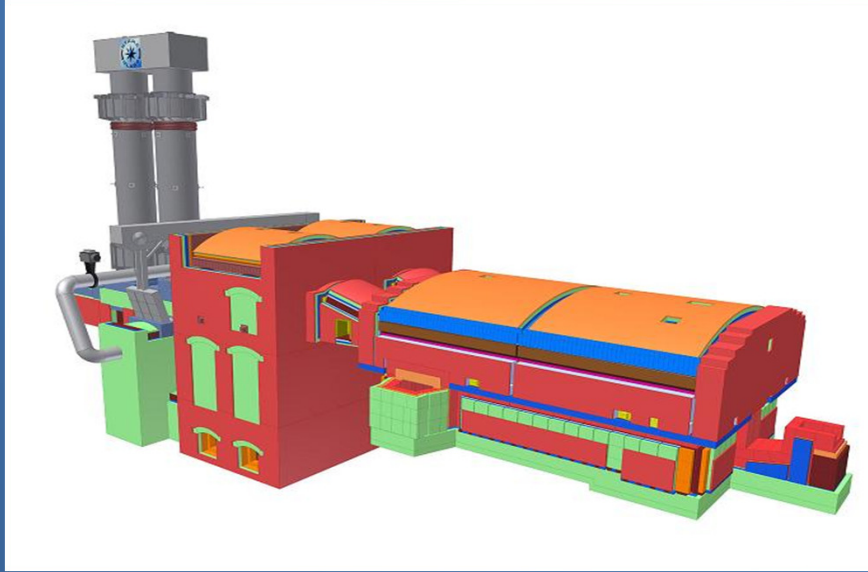
Glass bricks and insulator plant: designed and built from the green field





Bormioli Luigi Milano - Italy

High quality perfumery plant: the first Centauro, the innovative hybrid system for heat recovery









www.staraglass.com