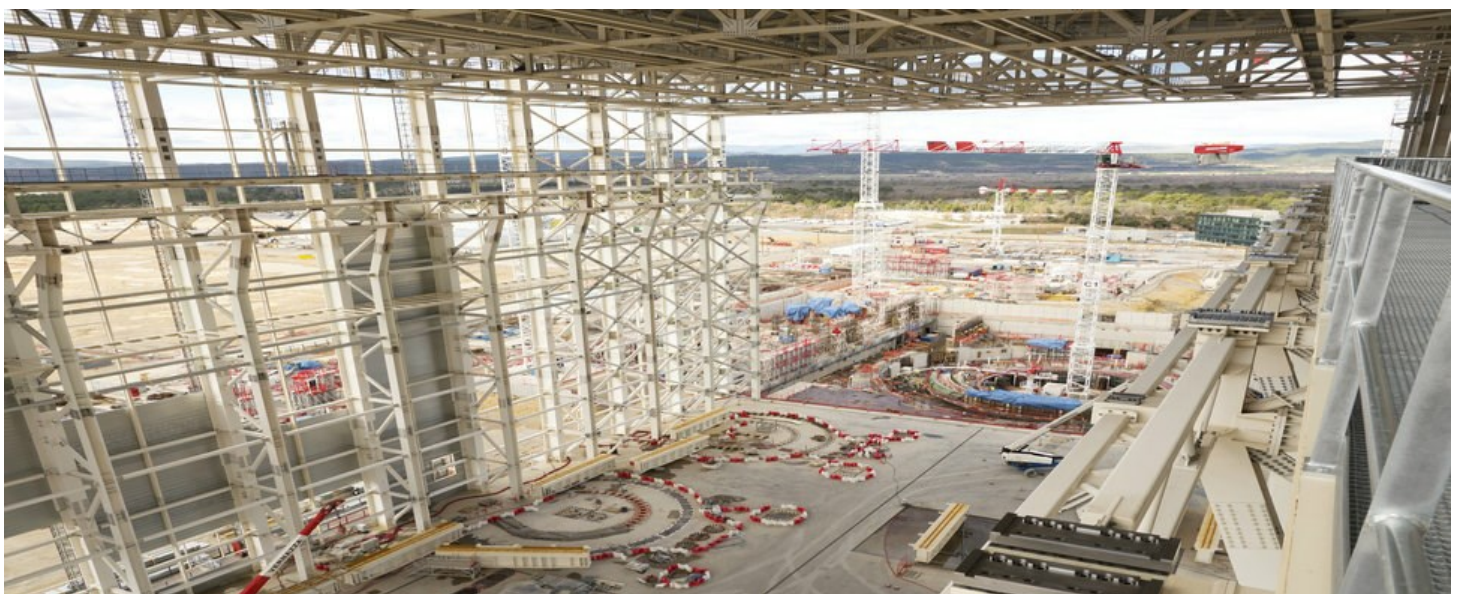


ITER Fusion Reactor







ITER (International Thermonuclear Experimental Reactor) is the world's largest experimental nuclear fusion reactor in southern France which aims to deliver nuclear fusion on a commercial scale, offering safe, limitless and environmentally responsible energy.

ITER is the next step in one of the world's leading energy research programmes, and is bringing together the largest nations in a quest to harness nuclear fusion to meet mankind's future energy needs.

Since 2010, Atkins has been architect engineer, in partnership with engineering giants Assystem, Egis and Empresarios Agrupados, as part of the Engage consortium. The consortium is in charge of delivering 39 buildings and associated infrastructure for the ITER project, including the 50 x 200m Tokamak complex.

The 200-strong integrated team of experts from our Energy and Infrastructure businesses are working together to ensure fusion experiments begin on schedule to help meet the challenge of not only decarbonising but also increasing the world's energy supply.

Engage is responsible for supporting the procurement process and construction planning and supervision for the buildings including service and site infrastructure. The scope of work also covers all disciplines of design: preliminary design; tender design and construction design for nuclear buildings.

On the project, there are several types of confinement and shielding doors all with seismic withstand capability, including:

- 46 remotely controlled port cell doors, with confinement and shielding (up to 350mm thick steel equivalent) with an opening size of four metres by four metres
- 12 remotely controlled lift lobby doors with an opening size of four metres by four metres
- In excess of 600 manually operated doors with shielding, confinement and water pressure requirement with opening sizes up to 1.5 metres wide by 2.4 metres tall.



A gigantic construction site with a miniature vision

A timelapse video of the most recent construction activity at ITER, December 2017. © Sunmade Films.
To find out more about the ITER project, visit the [F4E](#) and [ITER](#) websites. Discover more about the science behind nuclear fusion, the European contribution to ITER, the move towards sustainable energy, and the future for fusion energy [here](#).

KEY FACTS

Location:
Cadarache

Country/Region:
France

Client:
Fusion for Energy (F4E), ITER International Organization

Additional facts:
The world's largest R&D project on a site measuring 1,000m x 400m and containing 39 buildings and structures.

8km of underground tunnels for cables, pipes and other services.

The ITER Tokamak reactor will weigh 23,000 tonnes - three times the weight of the Eiffel Tower - and the temperature inside the reactor will reach 150million degrees centigrade - 10 times hotter than the sun's core.

ITER will produce 500MW of power for 50MW input - current record is 16MW.

The Assembly Building steel structure has a weight of 5,700 tonnes.

The bioshield is made of 600m³ of concrete.

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