GENERAL FUSION – FUSION DEMONSTRATION PLANT

Why architecture matters here

It matters because nothing shows a commitment to the future like architecture. We build because we believe in a future. We build in order to make ideas a reality.

Fusion has the potential to provide the planet with low-cost, carbon zero energy for ever. This potential has been understood by the scientific community for decades. Now, with the prototype Fusion Development Plant, this ambition not only takes a step closer to being realised, but it can also be communicated to the public.

And the architecture of this building, its first home, is the best way to communicate fusion's possibilities.

This is what architects do: they message big ideas through buildings without the need for words. Buildings represent social ideas and political intentions and are the greatest symbols of new concepts. Our intention is to inspire the public about fusion's potential, to introduce a sense of awe for such a pioneering technology and, in doing so, to remove the fear.

As the first magnetised target fusion facility to be built in the world, this work needs to be seen. The architecture of the prototype plant needs to capture the technological optimism of fusion to solve the energy problems of the world.

It is a statement of belief in a future where we can use technology to work with natural resources to provide solutions and prevent cataclysmic climate change caused by the continued burning of fossil fuels.

The Fusion Development Plant will speak to different audiences: governments, investors, the scientific community, the energy and fusion industries, the academic world, the general public and children – the inheritors of the world we are shaping.

The facility is more than just a silent container. It will be designed to capture the imagination of these diverse communities. Anyone and everyone will be invited, with places to meet, learn, debate. Schools will come here for education programmes. Institutions, like the University of Oxford, will come here to develop partnerships. Government will use it to demonstrate their commitment to clean energy. International charitable foundations will announce their biggest donations here. Ideas of reaching out will be a vital part of the design. Great architecture can do this and solve exceptionally technical briefs, so that both can be easily accommodated within the same facility.

As fusion facilities can be built almost anywhere, from the urban to the suburban to the rural, sensitivity and harmony with the geography of its context is essential, so that it appears robust yet sits lightly in the landscape.

As almost all visitors will need to make a special journey to the facility, we will carefully curate that experience. We will generate anticipation and a moment of wonder on arrival. We will balance a feeling of friendly openness with necessary security and safety.

We need balance in architecture to provide pleasure and serenity, to be both familiar and new – to make people feel equilibrium and a sense of revelation, all at once.

The housing of the reactor will take on a symbolic form. It will tell the extraordinary story of the potential held within it, an expression of its energy and its power. It will reveal, perhaps even showcase, the hardware of this prototype plant.

Through thoughtful design, we will demonstrate that everything is connected and that everyone is working together in collaboration. It goes without saying that the facility will be extremely efficient in all aspects, including logistics, servicing and the process of producing fusion energy itself.

This is just the beginning. The ideas developed, refined and perfected here will find their way into the full-scale roll-out once this prototype is shown to succeed.

As Paul Goldberger wrote, “Every so often come innovations so powerful that they force their way through and make us see the world differently.” Fusion is one such innovation.

This is the start of an innovative quest to harness the power of nature to create a star on earth. Architecture will help to realise it.