



# What is J0?

J0 stands for 'Jalon Zero' (J0) and is a French term meaning 'milestone zero'.

Achieving J0 on Unit 2 at HPC signifies the completion of the foundation, or 'Common Raft', for HPC's second reactor.

Completing the Common Raft means that work can now start above ground on Unit 2's permanent reactor buildings. It is a hugely significant construction milestone - delivered despite the significant challenges of Covid-19.

# Why is it so significant?

## J0 on Unit 2 is significant for several reasons

- **Delivery despite challenges:** HPC has adapted, finding safe ways of working and focusing on critical areas during the Covid-19 crisis. The Project reduced the on-site workforce by half to enable social distancing. Critical workers were retained - including those with the necessary skills to complete the large concrete pours to maintain Unit 2's critical path.
- **Continuous Learning:** A huge amount of knowledge was gained in delivering J0 on Unit 1, which has transferred directly to Unit 2. Improved steel reinforcement installation rates and the ability to pre-empt and solve problems more quickly has resulted in more efficient delivery.
- **Delivering to time:** Unit 2's J0 delivery date of mid-2020 was set in a Project schedule in 2016. The journey has been complex involving many smaller milestones, thousands of people and hundreds of companies. Achieving J0 on Unit 2 demonstrates that HPC is being delivered to schedule.
- **Start of permanent buildings:** Now the foundation is complete, work can begin on Unit 2's permanent buildings. The focus now shifts from below ground activity to construction above ground.

**J0 U2**  
in numbers

Reinforcement  
**4,569**  
tonnes

Total weight  
of the  
**COMMON**  
**RAFT**  
**49,000**  
TONNES

Total concrete  
volume  
**20,693**  
m<sup>3</sup>





Nuclear Island Unit 2 over time

# What is the COMMON RAFT?

The Common Raft is a thick, reinforced concrete platform on which all of reactor's Nuclear Island buildings will sit. The buildings include the reactor itself, fuel building, and electrical and safeguard buildings.

The Common Raft ensures the nuclear significant systems passing between buildings are anchored to one stable platform, ensuring connections are maintained in the unlikely event of any ground movement.

## Concrete and rebar

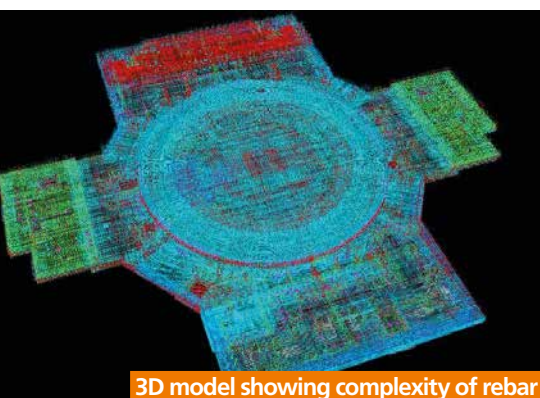
The Common Raft is a cross-shaped structure (see 3D model below) and it will take a total of five concrete pours to attain J0. Pours have occurred in the four outer segments with the final, largest pour, in the centre of the raft. The first pour occurred in December 2019 with subsequent pours in April and May, with the final pour of 9,000m<sup>3</sup> completed in late May 2020. HPC has its own concrete production plant, operated by our contract partner Bylor.

The large concrete pours have again demonstrated the necessity of having a production facility on site. Boom concrete pumps are used, which have a remote controlled articulating arm to place the concrete. Team members guide the last portion of the boom to accurately place the concrete between the rebar. Over the past year, teams on Site have placed and tied together over 4,500 tonnes of reinforced bar on the Common Raft. The concrete is then poured amongst the rebar creating the high strength, reinforced nuclear-grade concrete necessary for Unit 2's enormous foundation.



Maximum concrete thickness **4m**

Concrete being poured into the rebar on site



3D model showing complexity of rebar

## Maximising learning

Learning is valuable in nuclear construction. Experience gained by teams working on J0 for Unit 1 has been directly mapped across to Unit 2. The results are impressive with rebar installation rates 25% faster.

When the Unit 2 works encountered a problem with the late delivery of sumps, teams were able to use the knowledge gained on Unit 1 to re-sequence works. The changes cut the time between arrival of the sumps and the concrete pour from 10 weeks to 10 days, and the works were completed on time. Not only was a problem solved, but this time saving can be taken forward to Sizewell C.