

ORACLE RIVERSIDE – PROPOSED SECURITY FENCING WORKS FIRE ENGINEERING REVIEW

JL9404/ap/03jll
25 March 2024

INTRODUCTION

It is proposed to provide security measures to the existing 7 storey Riverside Car Park Building at the Oracle Shopping Centre. The proposed works include anti-climb fencing and fall-arrest netting as illustrated below.

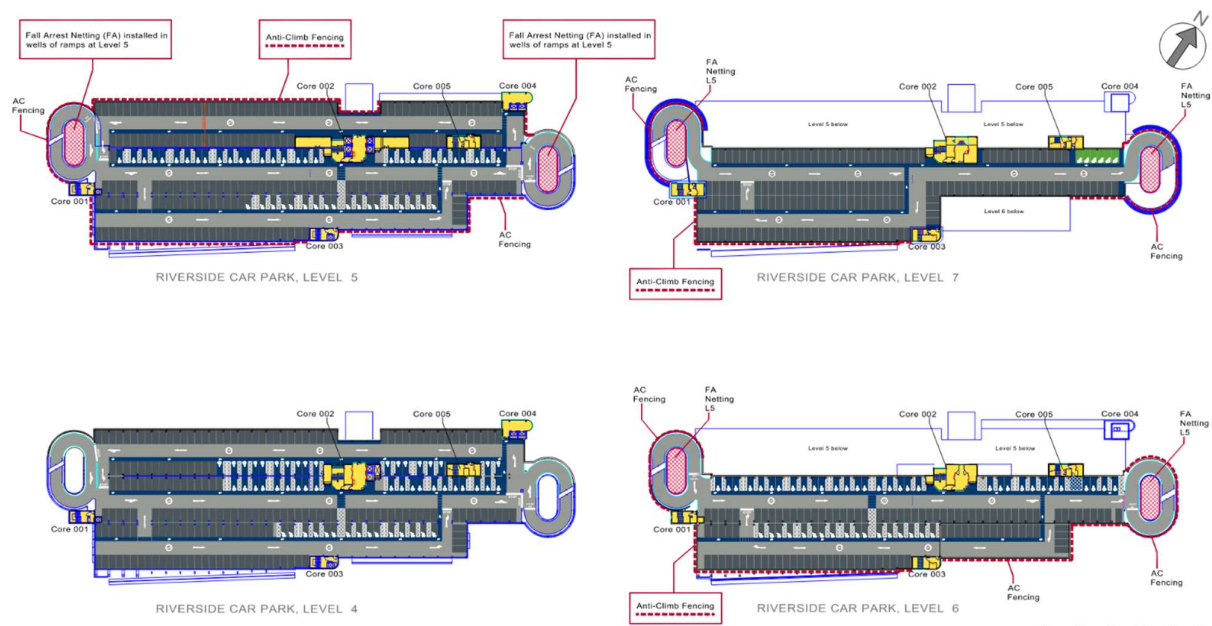


Figure 1 : Proposed Security Fencing Works

Jensen Hughes have carried out a fire engineering review of the proposal to identify impact on firefighting access to the building in general and EV charging locations, in particular, as well as compliance of the proposed materials with relevant guidance. This report is intended for the client and design team readership and for submission to or discussion with the planning authority.

PROPOSAL

As noted in Figure 1, the proposed security works include anti-climb fencing and fall-arrest netting. It is proposed to use a Webnet system for both the anti-climb fencing and fall-arrest netting. The Webnet product is formed of 316 marine-grade stainless steel.

Fencing works are proposed to be provided to Levels 5, 6 and 7 as shown in Figure 1 above. Webnet security fencing will be fitted on top of, supported from or on the inside face of the existing parapet and structure of the car park.

EXISTING GENERAL FEATURES OF THE BUILDING

The Riverside car park is an open-sided car park building with 7 storeys above the ground level. Fire resistance of the structure is not confirmed, but based on the site inspection conducted by Jensen Hughes in 2023, the building was either constructed of concrete or of steel protected by concrete. This suggests that the fire resistance of structure is likely to be significantly higher than the minimum 15 minutes, which is recommended for open-sided car parks. The building is also provided with three firefighting shafts as existing.

IMPACT ASSESSMENT

Proposed Materials

The proposed Webnet security fencing system is fully non-combustible, as it is made of stainless steel. On this basis the proposal should have no impact on fire risk and the proposed material is compliant with current guidance.

Fire Fighting Access and Fire Fighting Facilities

The proposal does not involve works that would have an impact on firefighting access and fire service access routes will be unchanged. The Figure below shows access to the site and locations of the stair cores of which Core 001, Core 003 and Core 005 are constructed as firefighting shafts.

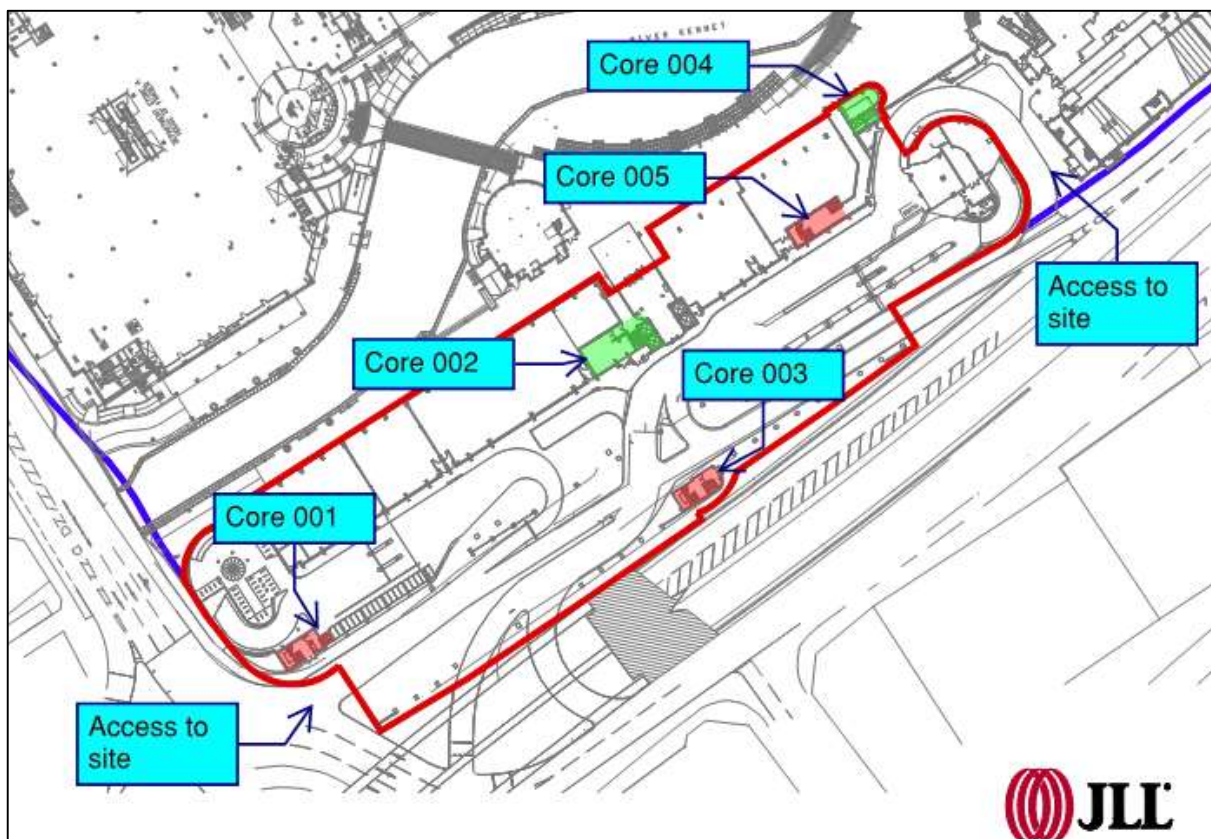


Figure 2 : Stairs to the car park7

The building is provided with firefighting shafts as existing to support firefighting operations from within the building. The firefighting shafts include firefighting lifts and dry fire mains. There is no expectation that firefighting at the levels concerned, which are quite high, would be from the external e.g. using high reach appliances. Therefore the proposed fencing work has no impact on firefighting facilities. As there are no changes in layout, hose coverage should remain as existing conditions.

EV Charging Location

As existing, EV charging points are located at Level 7 as shown in Figure below.

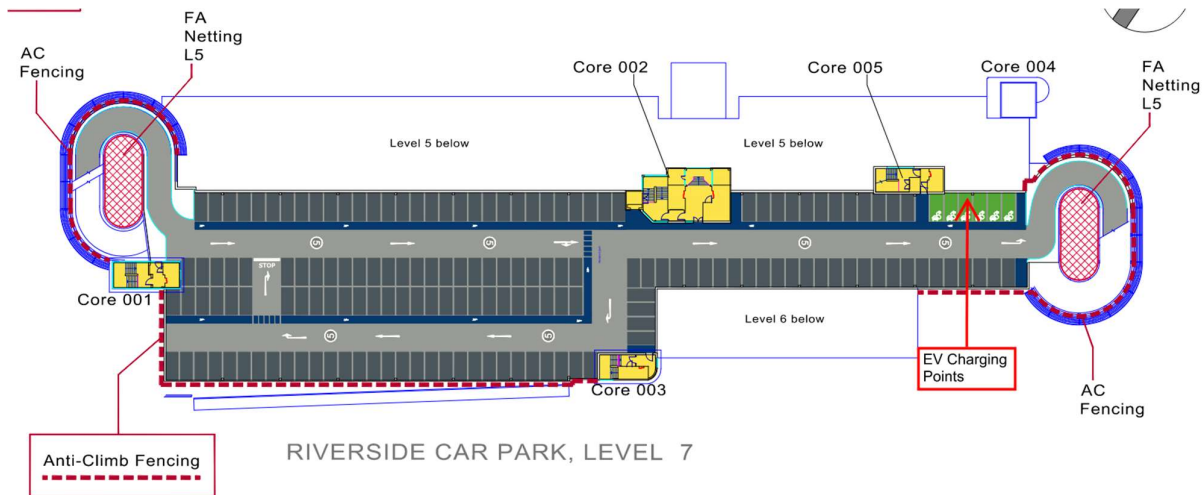


Figure 3 : Level 7

There is no anti-climb fencing proposed to the EV charging point location, which means that there is no impact on existing conditions. In addition, Core 005 is a firefighting shaft which is in close proximity to the EV charging location. If a fire were sufficiently severe that firefighters chose not to use Core 005, Core 003 could be used as an alternative. The fact Level 7 is uncovered also offers an advantage to firefighters as there should be no build-up of heat and smoke. Therefore, firefighter access to the area housing EV chargers will remain adequate.

Impact on Ventilation Conditions

According to current guidance, each level of open-sided car parks should have permanent natural ventilation achieving at least 5% of floor area. As the proposed works involve infilling of openings with the fencing system, it will marginally reduce the free area available for smoke and fume venting from the car park as a whole at the levels concerned. However, any impact is likely to be very minor and the level of ventilation is expected to remain more than adequate. This will be confirmed through calculation in later design stages after planning.

CONCLUSIONS

Based on the above, the proposal should have no impact on existing conditions or firefighter access arrangements. The proposed fencing system is of non-combustible materials and firefighting conditions within the car park should remain suitable and as per the original design.