One of London’s landmark hotels has undertaken a complete restoration and recreation with the help of Fire Design Solutions (FDS). The five-star Corinthia Hotel stands on the site of the former Metropole Hotel in Westminster after a lengthy remodelling process undertaken by main contractor Ardmore Construction Limited. As part of this restoration, The Corinthia retains many original features such as its ornate Northumberland Avenue entrance and Grand Ballroom, while incorporating contemporary features to preserve an air of modern luxury.

Ardmore initially appointed sister company FDS Consult (FDSC) to provide fire design advice and a fire strategy for the development. Utilising Computer Fluid Dynamics (CFD) Modelling Analysis, FDSC was able to optimise the building programme by recommending the most practical methods of protecting the structure from fire, whilst gaining approval for the justification of intensive and open plan bedrooms and suites – providing cost savings during the construction phase and maximising usable space. FDS Consult was able to justify the removal of a potentially costly sprinkler system within the residential element of the development as part of this optimised building programme.

Following the consultancy phase, FDS was required to design, supply and install a mechanical smoke ventilation system to meet building regulations but that did not compromise the hotel’s aesthetics. The system features two smoke shafts with fans fitted at roof level to serve the hotel’s 11 floors, as well as a louvered vent situated at the top of the stairs with associated pressure sensors.

Further commissions saw FDS provide smoke venting solutions to the hotel’s luxury residencies and apartments. The adjoining apartment building, which boasts 12 residential appartments, required the design and installation of a fan assisted single speed mechanical smoke ventilation system.

The mechanical smoke ventilation system comprised two shafts, a louvered vent at the head of the stairs and fans at the top level. The concept for the system was justified using CFD modelling, which FDS included within a concept smoke management report for the approving authority and the fire service. Further cost and space savings were also made by FDS, who reduced the size of smoke vent shafts to the fire fighting staircases from 3m2 down to 0.6m2 per floor, providing additional saleable space.

Gerard Sheridan at Fire Design Solutions Limited, said: “The client’s aim with the Corinthia was to restore one of London’s most iconic hotels to its former glory, and the key to that was incorporating spacious, luxurious bedrooms. FDS Group helped greatly with this by providing a comprehensive fire strategy plan that allowed us to achieve design freedom and an effective and modern smoke venting solution.”