



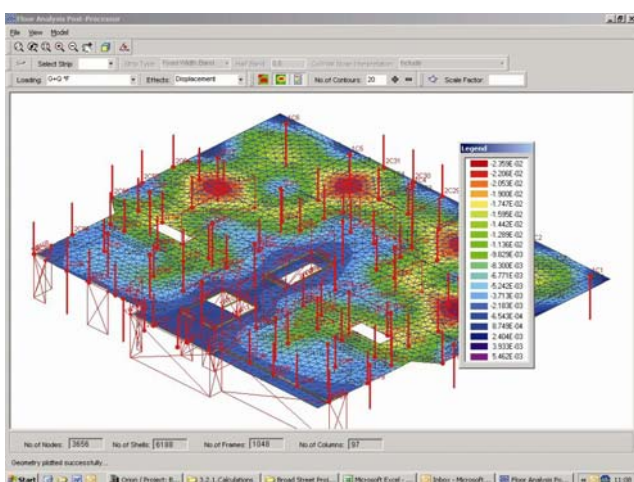
Orion benefits The Rolton Group

The Rolton Group is a multi disciplinary engineering practice widely known for their excellence of engineering solutions that are grounded in the practical realities of the commercial world. Like CSC, the Rolton Group has a passion for excellence and a commitment to continuous improvement.

Rolton Group recently used CSC's Orion software for the design of the striking new Centro apartments at Broad Street in Northampton. The development consists of three buildings, featuring more than 20 different apartment styles, with secure underground parking.

The construction required to support the structure is complex. The pillars in the underground level are aligned to allow for parking bays. Above them, the pillars in the first two storeys are then designed to be concealed, as far as possible, within the apartment walls. For the remaining five storeys, the loads are borne by the walls of the apartments.

Rolton Group's Jaroslav Michalik is an expert in concrete construction techniques. He used CSC's Orion software to work out the specification for a slab strong enough to take the loads back to the columns and down to the foundations.



▶ Rolton's FE slab analysis in Orion

Stuart Holroyd is a civil engineer and a senior associate director at Rolton Group. He managed the project. He explains: "This was a really complex project from an engineering point of view. Because of the development's proximity to Broad Street, we used poured concrete shafts as reinforcement, to make sure the highway didn't collapse under very complex vertical and horizontal loading. Using Orion allows us to work out the stresses involved and unravel all that complexity in a finite element model. This gives us a very accurate view of what happens to the forces in the structure and where the reinforcement needs to go to match those forces."

Concrete is becoming a popular material for many brownfield developments, particularly those with irregular geometry, because of the ability to mould it into irregular shapes. Using modelling software gives the engineer the flexibility to change the design according to the wishes of the architect or the developer without impinging on deadlines.

Major Orion benefits to The Rolton Group

- ▶ Orion provides a unique central 2D/3D modelling environment from which automatic FE analysis, design and drafting are derived.
- ▶ Multiple tender schemes can be assessed in a fraction of the time taken by general purpose software. Subsequent detailed design drafting time is dramatically reduced and changes are handled automatically by simply amending the central model or loading. Orion updates the rest, enabling you to provide a responsive service to demanding clients.
- ▶ Detailed calculations, structural plans, beam and slab elevations, material quantities and column schedules are produced automatically, making Orion the finest productivity tool for concrete building systems.