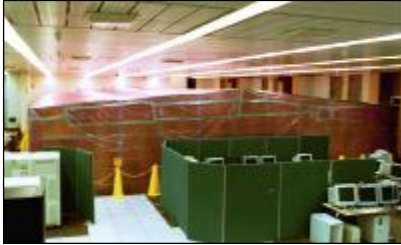


## European Centre for Medium Range Weather Forecasts, Reading



European Weather Centre Building



Temporary enclosure within computer hall



Steel plate bonding



Saw cutting of floor slab into sections



Controlled lifting of slab sections



Removed slab sections within enclosure

### Floor strengthening by steel plate bonding and ground bearing slab replacement within a fully operational computer hall environment

Client	DTI and Ministry of Defence
Consultant	Colin Toms and Partners
Principal Contractor	Balvac
Contract Value	£ 1.6 m
Programme	5 contracts from 1997 to 2001

The European Centre for Medium-range Weather Forecasts (ECMWF) is located in Reading, Berkshire. It is a pan-European facility providing daily, 10 day weather forecasts. The computer hall contains several super computers and multi computer work stations, and operates on a 24 hour basis. The hall is a clean room environment, with an elevated atmospheric pressure to prevent contamination.

Inspections of the suspended RC floor had revealed extensive cracking and further assessment resulted in the conclusion that the floor needed strengthening. Access and operational constraints steered the designers towards plate bonding on the upper surface of the concrete slab, and vacuum assisted resin injection of the cracks to restore structural integrity.

The steel plate bonding process requires abrasive blasting of the concrete surface and anti-peel anchorages at the ends of the plates. The surface preparation and hole drilling processes create noise, vibration, dust and debris and strict control measures and rigorous process selection were required to minimise potential disruption. Protection was provided by temporary sealed and pressure controlled enclosures. Significant enabling and re-commissioning works were required within each work phase to deal with the many services running below the raised floor.

The final phase of work required the removal and reinstatement of a ground bearing slab within the computer hall. This required a more substantial temporary enclosure to protect the live computer hall from saw cutting, demolition, excavation, mini-piling and concrete pouring operations. The slab was successfully cut up, removed and replaced without any disruption to the operation of the centre.

## Balvac

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