

Case Study - Kinetics RIM-C Floating Floor



Bristol Civil Justice Centre

Client	Bristol Civil Justice Centre
Contractor	Miller Construction
Isolation Area	137m ²

In brief

Developed by Miller Construction, the new build civil justice centre in Bristol comprised of eight civil courts, six hearing rooms and one family proceedings room. A six storey building, the plant room housing all associated equipment to service the centre, including chillers, pumps and air conditioning units, was situated on the roof. Effective isolation of the area was essential to prevent the vibrations from becoming structural noise and travelling into the building, which could potentially have caused interference with court proceedings and intelligibility of evidence.

Project scope

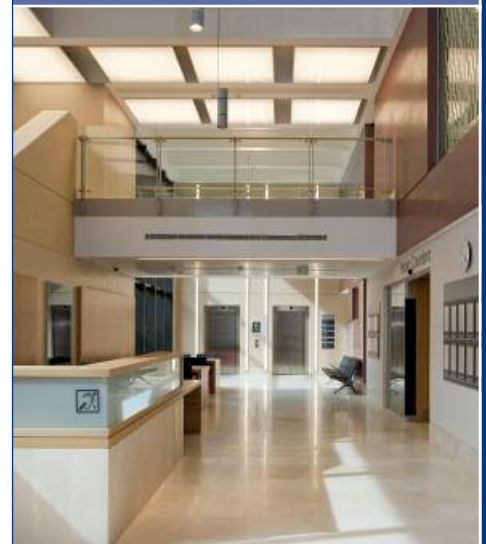
The high performance Kinetics RIM-C (Rollout Isolation Material) system from CMS Vibration Solutions was specified by acoustic consultants, Deane Austin Associates, to deliver complete isolation of the plant room floor concrete slab.

Used to isolate a total area of 137m², the Kinetics RIM-C system was constructed by first laying the Kinetics Isolation Pads (KIPs) in fibreglass matting at 600mm centres and flanking the area with Perimeter Isolation Board (PIB). The critical 100mm air void was subsequently created by installing a C-section channel and timber batten. Finally, plywood and a damp proof membrane were used to cover the area before the concrete slab was cast on top.

As a pre-compressed fibreglass isolator, it is the KIP component of the system which enables Kinetics RIM-C to maintain a constant natural frequency over a wide range of static and dynamic loads. Moreover, there is no appreciable degradation in the isolation performance during the projected lifetime of the floor.



**Kinetics RIM-C system
was used to isolate a
rooftop plant room at
Bristol Civil Justice
Centre.**



Results

Offering excellent impact and airborne noise ratings, the system achieves its performance by 'floating' the concrete floor slab and creating an air void between it and the sub structure. At Bristol Civil Justice Centre, a 100mm void was a critical factor in the system design, which achieved a natural frequency of 14Hz on-site.

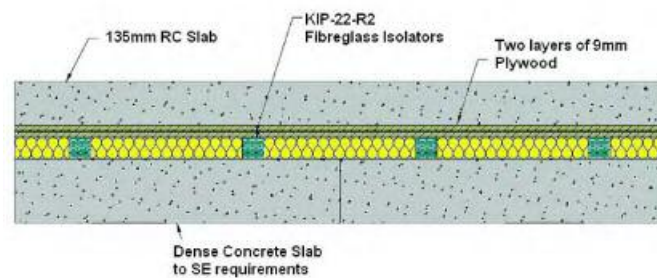
Jim Herbert, technical sales manager, CMS Vibrations, concludes: "With access to the broadest range of anti-vibration and structural isolation systems on the market, we are able to provide the most cost effective and high performing solution to any vibration challenge – backed up by unrivalled technical support. In the case of Bristol Civil Justice Centre, we were able to offer detailed design guidance and see this through to installation."

Benefits

- Excellent dampening and isolation characteristics
- Fast, simple and cost effective to install
- Can be designed to withstand any load range
- Natural frequency constant over a wide load range
- Effective over the lifetime of the installation



Example Floor Build up



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