

**THE INSTITUTION OF STRUCTURAL ENGINEERS
SCOTTISH REGIONAL GROUP**

Briefing note on failures in design and procurement highlighted by Edinburgh Schools and failures in other public buildings.

- **Independent site checking required**
Independent technical supervision of construction work is required by suitably qualified staff with verifiable competency. This should be applied to all key public buildings such as schools, hospitals and local government buildings.
- **Inspections to be risk based**
Risk based verification in place throughout the design and build process. Risks to be calibrated on the consequences of failure and risks to the public.
- **Contracts which focus on build quality**
Stronger client bodies with contracts which **reward good quality** of build and **punish** poor quality. Contractors must **not** be allowed to report on build quality to verifiers of construction on their own construction projects.
- **Communication not linked to commercial pressures.**
Open and full technical communication from site to client bodies.
- **Site training linked to verification of competency**
Improved training for site staff and designers and verification of competency.
- **Danger signs**
Fragmented design and construction with many packages of site work creating interfaces with unclear responsibility.
- **Critical Interfaces**
 - Wall and roof cladding fixings to secondary and primary structure.
 - Glazing and fixings of glazing and windows.
 - Fixing of ceilings and services to structural supports.
 - Restraint of parapet walls.
 - Head restraint to non-structural partitions.
 - Potential for crowd loading in schools.
 - Thinner construction materials and metal cladding creating issues of corrosion and durability.
 - Buildability of multi-layered cladding systems and fixings.
 - Co-ordination of bracing within cavities and cladding restraint ties and wall ties.
 - All secondary structures not part of the primary frame: sports equipment, access structures, cladding panels, lighting rigs, stages, temporary seating structures, plant, tankage, lifting equipment and hoists.

For more information contact:

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