

Theatres and Tumour Unit, RJAH

Complete	Area	Client	Architect
2016	UK England	Kier Construction Northern	Gilling Dod Architects

The Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust (RJAH) is a leading orthopaedic centre of excellence. Located in Oswestry, Shropshire, the hospital provides a range of musculoskeletal surgical, medical and rehabilitation services.

This project, for the development of a new theatre ward and tumour out-patient department, added four new clean-air theatres, a high dependency unit, an admission-on-day-of-surgery unit and a ten bed ward to the hospital's facilities. The new-build extension is connected to the existing hospital building via a link bridge designed to improve the flow of patients, staff and supplies around the hospital.



Services provided

Sandy Brown was appointed by Kier Construction to provide acoustic advice on the proposed development of the Theatre and Tumour Unit. Our acoustic design was developed by taking into consideration the requirements of Health Technical Memorandum HTM 08-01. This included:

- environmental noise surveys of the site to establish background noise and set noise emission levels for the new development.
- environmental noise ingress and performance of the building envelope
- internal sound insulation to ensure separation between spaces
- sound absorptive treatment to control reverberant noise build-up and aid speech intelligibility
- control of noise and vibration from mechanical plant
- acoustic commissioning measurements



Special acoustic features

The facilities provided are fully air conditioned. Extensive building services equipment is located in a plant area directly over in-patient accommodation. A key design issue was therefore noise control and vibration isolation of plant. Sound insulation performances provided by floors and walls separating the plant area from patient areas were limited by structural and spatial requirements. Plant noise criteria were therefore set within the plant area based on the sound insulation achievable and equipment and noise attenuation measures were selected accordingly.

Acoustic privacy between consultation rooms and adjacent spaces was an important part of the design to meet the requirements of HTM 08-01. Partitions and doors were detailed to achieve required levels of sound insulation and the mechanical ventilation system was used to provide suitable ambient noise levels.

As with many hospital and healthcare buildings, clinical and operational needs take precedence. Part of the design input was to ensure that the client and design team were cognisant of acoustic standards that could be achieved, for example where seals cannot be used to doors, and the implications of these. Early acoustic input into the design of layouts helps to ensure problematic adjacencies and costly design solutions are avoided.



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