The rationalisation of teaching facilities

1. In a period when capital funding to support the development of college estates is limited, there are a number of possible consequences.

1.1 Reducing capacity and space resources to increase space utilisation to target levels can reduce capital funding and space costs.

1.2 Renovating sound buildings to meet the needs of new courses can minimise capital investment.

1.3 Modelling the renovation of new buildings on the basis of effective timetables can save space requirements.

Space modelling based on space utilisation survey data can take into account the structural support systems and window spacings of existing buildings. These capabilities minimise capital investment levels.

2. The space modelling process is based on a number of assumptions.

2.1 Classes are scheduled over the whole day between 9.00 am and 5.00 pm.

2.2 The scheduling of classes is, as far as possible, evenly spread across all the days of the week.

2.3 The classes of individual departments are focused on a core set of rooms.

2.4 Surplus rooms can be clustered to facilitate the disposal of resources or can be used to support additional enrolments at target levels of space utilisation.

2.5 Surplus rooms are identified on the basis of established timetabling constraints that retain student study options.

The graph in this paper identifies surplus classrooms in an existing college. A more complex modelling process is used to support the possible modification of specialist facilities.

The current set of 115 classrooms has a room frequency level of 47% and a seat occupancy level of 49%. Overall space utilisation is 23%. The disposal of 49 surplus classrooms raises the room frequency level to 79%. Seat occupancy increases to 56%. Space utilisation for the set of classrooms increases to 45%.

The retention of all the surplus rooms could support the enrolment of 1010 students with an average of 15 guided learning hours per week at a space utilisation level of 40%. This option is only viable if the college has already identified the realistic possibility of enrolling the additional students.

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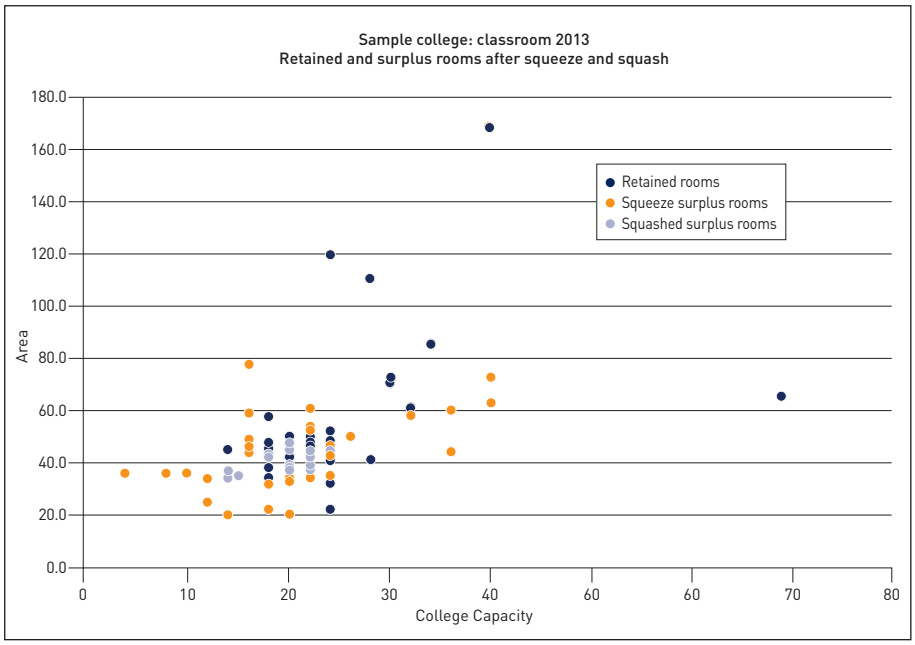
The squeeze process involves the moving of classes within a defined set of rooms to maximise room frequency and the match between group sizes and room capacities. No groups clash unless they do so in the original timetable. The modelled data is based on peak demand for classrooms in the teaching year.

The squash process involves the user allowing a percentage of the original bookings to float to a new slot. This procedure may involve additional clashes but they are very unlikely to create difficult timetabling problems.

Figure 1: The rationalisation of classrooms in a sample college



Stellae developed the first automatic scheduling system for universities and colleges. The system was used in many institutions including the universities of Aberdeen, Manchester, Southbank and Queen Margaret University, Edinburgh. Colleges that benefited from the use of the system included Wigan and Leigh, Coleg Gwent, Leicester and York. The system was awarded Crown Copyright in 1988.

The software has been refined and developed into a system able to model any estate or curriculum scenario. Modelling is based on workable timetables and cost effective levels of space utilisation. The modelling system has been used to support a wide variety of strategic plans including the development of estates, changes in the pattern of course provision and changes in student enrolment levels. The system supporting the rationalisation of estates is based on the successful space modelling system developed by the consultancy team.