

# The organisation and conducting of a space utilisation survey

## 1. Benefits of a space utilisation survey

Planning the space requirements of a college or university should be made on the basis of data generated by a space utilisation survey. This type of study offers a number of benefits.

1.1 Suppliers of timetabling software may claim that space utilisation levels can be calculated on the basis of their software. This claim is not justified.

1.1.1 Timetable data reflects predicted enrolments and group sizes. Teaching staff identify planned expectations for the preparation of timetables. It may be reported at the beginning of an academic year that the planned number of students has not been recruited.

- At the beginning of the teaching year timetablers are under intense pressure and do not have the resources necessary to simultaneously change the schedules of different courses.
- Teaching staff know that timetables for expected numbers of students will support a smaller number of enrolled students.

It is these factors that explain the over-booking of teaching rooms. Timetables often show the rooms are in use when an inspection shows the rooms are empty.

1.1.2 Institutions often book groups into rooms that are larger than a declared room capacity. This is partly explained by the fact that room capacities often reflect the furniture available for students rather than a room capacity based on a relevant space norm.

Calculating seat occupancy levels based on groups larger than the room capacity increases overall space utilisation levels and this inflates space needs.

1.2 The modelling of space requirements is based on workable timetables that can retain all scheduling constraints identified by an institution. All student options are protected.

1.3 Teaching rooms that are identified as surplus to existing requirements can be used to identify possible enrolments associated with expected teaching hours and a target space utilisation level.

1.4 The improvement in space utilisation levels reduces the required income per used student workplace and assists the funding of viable research projects.



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1.5 Improving the financial position of institutions should involve such considerations as the:

- 1.5.1 co-ordinated and objective review of space requirements;
- 1.5.2 assessment of course design and delivery systems to ensure they are compatible with available course income;
- 1.5.3 evaluation of research projects to ensure they achieve their planned objectives within the available funding support.

1.6 A possible extension of the hours in the teaching week could increase available student workplace hours by up to 30%. The modelling of possible future space needs can take such factors into account based on workable timetables. It is the responsibility of the institution to take into account the impact of such study hours on adult students and the transport requirements needed between the place of study and the residences of students.

The saving of the capital and operating costs achieved at Queen Margaret University, Edinburgh extended across the entire higher education sector may save an estimated £3.7 billion.

## 2. Limitations of timetable data

The use of timetable data has a number of negative consequences:

- 2.1 the over-estimation of space requirements;
- 2.2 the inflation of capital costs for chosen estate scenarios;
- 2.3 the distortion of space utilisation levels;
- 2.4 the increase in the income required per used student workplace and course costs.

The use of data from a space utilisation survey avoids all these distortions concerning the use of space.

## 3. Establishing accurate space utilisation data

Space utilisation surveys should be undertaken during a period of peak demand for teaching accommodation. It is suggested surveys are undertaken:

- 3.1 in late October or early November when the early volatility of student numbers on course is reduced;
- 3.2 in late January and early February there is a second peak in teaching hours when a space utilisation survey can be undertaken.

These periods of peak demand give an advantage to an institution when calculating space efficiency levels and space needs. The timetable demand for teaching accommodation should always be checked for the week selected for a space utilisation survey.

Colleges and universities can calculate the timetabled hours per week during the teaching year. The actual teaching hours per week may not be accurate but a table or graph can show the relative demand for accommodation with considerable precision.

4. It is essential that the data collected in a space utilisation survey is complete and accurate. There are a number of steps that can help ensure these requirements are achieved.

- 4.1 Survey staff operate without constant supervision and must be conscientious and reliable. The following calculations are based on a possible rate of pay.

In April 2016 Britain will introduce a national living wage of £7.20 per hour for workers over 25 years of age. An employment agency may charge in the order of £17.25 per hour. At this rate of pay a surveyor will be paid £759 for a 44 hour week. A team of 9 surveyors for 400 rooms would represent a total of £6,831. Stellae does not add an additional fee on to the salaries of surveyors.

An institution undertaking the organising of its own space utilisation survey would reduce the consultancy fee and be able to reclaim VAT at 20%. An option remains available to employ Stellae for the conducting of a survey.

Survey expenses may be 5% of the total fee regardless of the British location of the college or university.<sup>1</sup>

It is not considered appropriate to pay the minimum pay rate. This may result in surveyors being late, absent or even be associated with the invention of space utilisation data.

- 4.2 The careful recruitment of surveyors should help to ensure that staff can:
  - 4.2.1 allow for the possible temporary absence of a surveyor for a permanent job interview or for illness. The survey team should have a plan to cover the temporary absence of a surveyor. This means that surveyors must have a known procedure which does not jeopardise the collection of accurate data;
  - 4.2.2 work as a team to survey for example 400 rooms. This number of rooms may require 8 surveyors. The employment of 9 or 10 surveyors increases the required total salary but does provide insurance for the possible absence of a surveyor and will ensure the collection of complete and accurate data;
  - 4.2.3 keep to the supplied room schedules and count reliably the occupancy of teaching and learning spaces;
  - 4.2.4 work as a member of a survey team and adjust to a modified room schedule if a surveyor is absent;
  - 4.2.5 transfer the data from the hourly survey sheet to the mastersheet for each surveyor.

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<sup>1</sup> Software to support the conducting of a space utilisation survey is being prepared. If computers are used on-site insurance may increase costs.

The pay of an absent surveyor is distributed between colleagues who have maintained the collection of accurate data.

## 5. Planning a space utilisation survey

The planning of the space utilisation survey needs to be based on a collection of building plans. Proposed routes should be plotted and walked to ensure there are no fire or security doors that may disrupt the survey routes.

Each surveyor should be supplied with:

- 5.1 guidance notes supporting the conducting of the survey; (*Appendix 1*)
- 5.2 data collection sheets to be completed for each hour of the survey; (*Appendix 2*)
- 5.3 a mastersheet to be completed by each surveyor for each hour of the survey; (*Appendix 3*)
- 5.4 building plans showing the route to be followed by an individual surveyor. (*Appendix 4*)

Samples of each of these documents accompany this paper.

## 6. Each surveyor involved in the space utilisation survey is supplied with:

- 6.1 a building plan showing the layout of the route;
- 6.2 an hourly datasheet which includes instructions on how to follow the required route;
- 6.3 a walking of their route with the survey planner and guidance from the data collection sheets and building plans.

## 7. The training of surveyors<sup>2</sup>

The introduction to the space utilisation survey occurs on the Friday preceding the survey week. This training session should ensure all surveyors are familiar with the following tasks or procedures.

- 7.1 Their survey route should be between 40 and 50 rooms. Routes may involve different numbers of rooms for various reasons;
  - 7.1.1 transfers between different buildings can increase walking time and reduce the number of possible survey rooms;
  - 7.1.2 room capacities vary and a surveyor counting students in a library or learning centre will require more time than a surveyor visiting a classroom of twenty workplaces with twelve students.

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<sup>2</sup> It is assumed that space utilisation surveyors are staff recruited from a reliable employment agency. It is cheaper to redeploy existing staff from the institution if they are available. They will be more familiar with the room stock. The training of surveyors should always follow the recommended procedure.

- 7.2 Each surveyor should be familiar with the guidelines for the survey, the hourly survey sheets and the master data sheet.
- 7.3 Each survey route should be walked by the surveyors especially when they are not familiar with the buildings. The surveyors should walk their route with the consultant who has planned the route during the training session on Friday prior to the survey. The consultant should have previously checked that the route is not disrupted by fire or other doors that might limit the success of the survey.
- 7.4 Each surveyor has a route map, a description of the route on the survey sheet and will have walked their survey route. Each surveyor should be confident they know exactly what tasks they need to complete when they begin their survey at 9.00 am on Monday morning.
- 7.5 Most classes change on the hour. For this reason surveys start at ten past the hour when class changes are completed. The survey route should be finished by 45 minutes past the hour. The short break should be used to transfer data from the hourly survey sheet to the mastersheet and for possible refreshments.
- 7.6 The start time of the survey assumes most room changes occur on the hour. If changes occur mainly at another time the start time of all the hourly surveys should be adjusted for the entire survey.
- 7.7 The survey team should have an office or spaces where they may transfer data from their hourly data collection sheets to their mastersheets.
- 7.8 Identify in the institution an individual member of staff or a lockable location where surveyors may leave their documents overnight. If a surveyor is absent it is essential their papers are available for a replacement surveyor.

Timetable data will over-estimate the space required for teaching. Capital costs and space utilisation levels will be inflated.

## **8. Benefits of accurate space utilisation data**

A space utilisation survey will record the actual rooms in use for each daytime hour of the teaching week. Daytime is normally defined as the period between 9.00 am and 5.00 pm. The courses that may run in the evenings are an important part of the curriculum but the demand for space is usually significantly less than during the day and classes can be readily accommodated.

- 9.** The actual numbers recorded in each teaching or learning space provides the basis for calculating seat occupancy levels. Group sizes must be carefully counted. In a space modelling exercise the group sizes are used to define the capacity of proposed new rooms.

**10.** Space modelling based on workable timetables reassures:

- academic staff that existing or planned courses can be delivered successfully;
- managers responsible for capital investments and operating cost budgets can be confident that planned rooms are appropriate to teaching needs and can support the provision of high quality courses.

The precise and accurate data derived from a space utilisation survey enables the evaluation of space utilisation levels by rooms, room types, buildings, departments or survey slots. The data can also be used to model space requirements based on workable timetables or curriculum scenarios. The provision of space costs makes possible the assessment of the required income per used workplace. It is possible to accurately estimate the potential growth levels for students based on existing or planned accommodation supporting such activities such as teaching and research.

## Appendix 1

# Guidelines for space utilisation surveyors

**[Name of Institution]**

**Space Utilisation Survey [start and finish dates]**

### 1. Reporting instructions

Please report to your designated site ready to commence work at 9.00am. If you are unable to arrive by this time let your team leader<sup>1</sup> know as early as possible.

Team leader: \_\_\_\_\_

Mobile number: \_\_\_\_\_

The collection of a complete set of data for all teaching and related rooms throughout the week is essential. It is for this reason that:

1. each surveyors must report that they have arrived on-site ready to undertake the survey so that if necessary a reserve surveyor can be contacted;
2. each site team acts as a unit and individuals take responsibility for covering a route if a surveyor is suddenly absent;
3. data collection sheets should be left in your base room or at reception so they can be collected by a team member should you not be available.<sup>2</sup>

If you are unable for any reason to complete the planned work or have to withdraw please contact the team leader **as a matter of the greatest urgency**. xxxxx xxxxxxxx is available on his or her mobile number xxxxx xxxxxx or on his or her office number xxxx xxx xxxxx.

### 2. Survey instructions

- 2.1 Visit each of the rooms or spaces on your survey sheet in the order they are listed once each hour between 9am and 5pm. You will thus be carrying out 8 tours each day for 5 days.

Start each tour of your set of rooms at about 10 minutes past the hour. The tour should take approximately 40 minutes. For example, the first tour of the day should start about 9.10am and be completed by about 9.45am.

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<sup>1</sup> Each survey team has a leader responsible for the co-ordinating of on-site operations. An additional payment may be made to the team leader.

<sup>2</sup> All the hourly data collection sheets and the mastersheets will be collected at the end of the week by the consultant.

- 2.2 Enter each room or space, count the number of people present and enter that number on your survey sheet. Enter all the people present, whether or not they are students.

If a space is **empty**, enter a 0 on your survey sheet.

If a space is **locked**, enter a 0 on your survey sheet.

- 2.3 Transcribe the totals (sitting plus standing numbers) from your survey sheets on to the master sheet provided for your set of rooms.

This task needs to be carried out carefully and systematically. The break of approximately 20 minutes between each tour provides the opportunity for you to carry out this task and to keep your records up to date.

- 2.4 Put your completed sheets and data form in the folder provided and leave with your contact at the end of each day.

Make sure that each sheet is labelled with your name, the date and the time.

Feel free to make comments in the relevant column on your survey sheets.

If staff or students want to know more about the survey, ask them to contact (name and job title), who has commissioned the survey.

You will not have a designated meal break so please arrange to eat or drink between tours.

If you are unable to carry out a tour, it is essential that you let your team leader know beforehand. If a tour is lost, the reliability of the whole exercise is threatened.

Thanks for your help and good luck.



## Appendix 2

# Space utilisation survey: hourly data collection sheet

**Institution:** \_\_\_\_\_

**Site:** \_\_\_\_\_

**Route 3:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

Room No	Description	Sitting	Standing	Total	Comments
START	Travel in a lift close to the cafeteria on the ground floor. Rise to the 4th floor. Almost opposite the lifts go into a corridor opposite				
4-22	Media Studio				
4-25	Painting-Art Studio				
4-26	Painting-Art Studio				
4-28	Media Studio & Video Editing				
	Exit along the entry corridor and walk down a corridor to the right of the lifts. Turn left at the end of the corridor to <b>4-03</b> Darkroom. Do not enter but check with the member of the teaching staff the number of students present				
4-03	Darkroom				
4-16	Classroom				
4-13	Media Studio				
4-11	3D Workshop				
	Return down the corridor				
4-09	Media Studio				
	Turn left at the end of the corridor and return to the lifts. Go down one floor				
C3-09	Art studio				
C3-08	Art studio				
C3-07	Art studio				
C3-06	Art studio				
C3-05	Library & Study Centre Library Computer Area				
C3-15	Quiet Study Room				
C3-16	Quiet Study Room				
C3-21	Classroom				
C3-18	Classroom				
	Go down to the second floor				

Room No	Description	Sitting	Standing	Total	Comments
2-12	Classroom				
2-13	Classroom				
2-14	IT room				
2-15	IT room				
2-07	IT room				
2-08	IT room				
2-09	Classroom				
	In a circular void double height with some tech and plant facilities. First floor				
1-14	Dance studio				
1-17	Classroom				
1-18	Classroom				
1-19	Classroom				
1-20	Classroom				
1-07	Classroom				
	Circular space				
	Studio 1				
	Studio 2				
	If it is not possible to tell which is studio 1 and studio 2 bracket them together and enter the total number. Do not survey the auditorium. Go down to ground floor				
0-13	Classroom				
0-16	Classroom				
0-11	Classroom				
0-19	Classroom				
0-18	Classroom				
0-17	Classroom				
	Circular space through foyer and then into <b>0-31</b> post/client services foyer including seminar and workshop spaces. Through swing doors to count people in the breakout area.				
0-40	Breakout area				
	Go into the corridor to classrooms				
0-13	Classroom				
0-16	Classroom				
0-11	Classroom				
0-17	Classroom				
0-18	Classroom				
0-19	Classroom				
END					

### Appendix 3

## Extract of a mastersheet for a surveyor

[Institution] Route 1: \_\_\_\_\_

Room No	Description	Monday 2 March 2009								Tuesday 3 March 2009							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
4-22	Media Studio																
4-25	Painting-Art Studio																
4-26	Painting-Art Studio																
4-28	Media Studio & Video Editing																
4-03	Darkroom																
4-16	Classroom																
4-13	Media Studio																
4-11	3D Workshop																
4-09	Media Studio																
C3-09	Art studio																
C3-08	Art studio																
C3-07	Art studio																
C3-06	Art studio																
C3-05	Library & Study Centre																
	Library & Computer Area																
C3-15	Quiet Study Room																
C3-16	Quiet Study Room																
C3-21	Classroom																
C3-18	Classroom																
2-12	Classroom																
2-13	Classroom																
2-14	IT room																
2-15	IT room																
2-07	IT room																
2-08	IT room																
2-09	Classroom																
1-14	Dance studio																
1-17	Classroom																
1-18	Classroom																
1-19	Classroom																
1-20	Classroom																
1-07	Classroom																
0-13	Studio 1																
0-16	Studio 2																
0-11	Classroom																
0-19	Classroom																
0-18	Classroom																
0-17	Classroom																

#### Mastersheet for survey data

This summary contains the total number of room occupants from the hourly data sheets. The mastersheet must be accurate as it will justify the number, area and capacity of modelled teaching and learning space. Mastersheets are enlarged and printed on A3 sheets.

#### Appendix 4

Extract of a building plan showing the survey route

