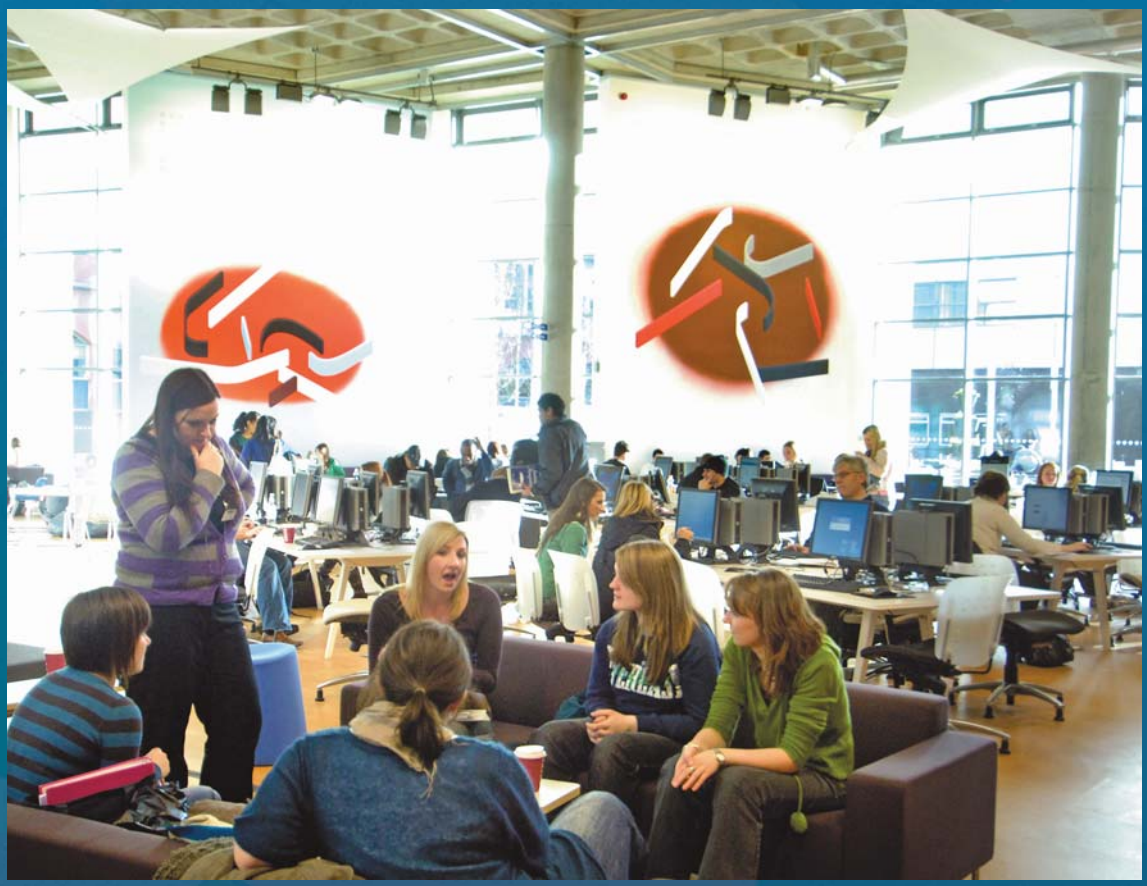
smg space management group

UK Higher Education Space Management Project

Implementing SMG guidance



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Implementing SMG guidance

Contents

Summary

1. The purpose of this guide is to help higher education institutions (HEIs) to take forward and put into practice the advice and tools developed by the UK HE Space Management Group (SMG). It emphasises that space management should not be viewed solely as an 'estates' issue. Instead, it needs to be carefully integrated with institutions' strategic and financial planning. Strong leadership and organisation, combined with good, up-to-date information on estate performance, underpin successful space management. The following checklist is provided to assist HEIs in their approach to implementation.

Space management checklist

1.	Is there a space management champion?
2.	Is there a space management committee?
3.	Is there a space management policy approved by the senior management team?
4.	Is the policy subject to annual monitoring and review?
5.	Is the space management policy clearly linked to the institution's estate strategy?
6.	Is the space management committee consulted on the space implications of strategic plans?
7.	Is space management regularly reported to the governing body?
8.	Is an annual check made against the SMG cost and benchmarking model?
9.	Is up-to-date information available on space provision and usage (such as size of the estate, breakdown by space type and user, condition, functional suitability, actual and planned usage, number of workplaces and space costs)?
10.	Is the SMG inefficiency multiplier used to assess the opportunity costs of current or planned levels of usage?
11.	Are space needs regularly assessed for both current and future activities, using an approach such as the SMG 'Space Need Indicator Framework'?
12.	Are SMG good practice principles followed for incorporating space efficiency into refurbishment projects, or for new or replacement buildings?
13.	Have the SMG good practice principles for space charging and central timetabling been considered?
14.	Are the techniques of post occupancy evaluation applied following the implementation of space management proposals?

Introduction and objectives

2. Over the last three years, the UK higher education (HE) Space Management Project (SMP) sponsored by all the UK funding councils for HE has provided 10 published reports, two interactive models (with user guides) and a user-friendly website where all the SMP reports can be found (www.smg.ac.uk).

3. This guide has been compiled to assist UK higher education institutions to implement the advice and tools developed by the UK HE Space Management Group through the Space Management Project. It has been written by Kilner Planning, and Bernard Dromgoole at HEFCE.

4. The objectives of this guide are to:

- help HEIs to realise the business benefits of effective space management in delivering buildings, both existing and new that are good quality, fit for purpose and sustainable
- foster discussion about the space implications of institutional plans and potential changes in academic delivery
- contribute to creating a high quality learning, research and support environment
- give space a higher profile within institutions and ensure that staff are familiar with ways of assessing academic and support space needs and satisfying them effectively and efficiently
- consider ways in which strategic and operational space management measures can be incorporated into existing structures
- identify how project management techniques can assist in managing a range of projects.

Scope of the Space Management Project

5. The project has developed guidance on many aspects of space management. At a strategic level, it provides links between space management and institutions' strategic and financial planning. The SMP has also developed practical guidance and interactive tools to assess space needs, promote effective utilisation and embed space efficiency within building design.

6. The following topics have been researched:

a. What is **current space management practice** across the sector? Do good practice recommendations on space management methods help to improve space performance?

b. What is the **financial provision** necessary for an estate to be maintained in a state that is fit for purpose and in good condition?

c. What are **key drivers of the size of the estate**, and how can HEIs assess what size of estate is affordable?

d. What are the potential impacts on space of **future changes in higher education**?

e. Could space management **methods used in other sectors** contribute to UK HE guidance?

f. How can **space efficiency in building design** be promoted?

g. What are the **guidelines for a strategic approach to space utilisation** and how can this space management measure be linked to how much and what type of space is affordable?

h. Is it feasible to provide updated **space norms** for the sector, along the lines of the former University Grants Committee (UGC) norms?

i. What can we learn from **case studies** of individual institutions' space management practice and experience?

7. The research has also led to the development of two interactive space management tools:

a. A model that enables HEIs to:

- calculate the full annualised cost of their estates
- model and benchmark the size of their estates (available at www.smg.ac.uk/the_model.html).

b. A framework for calculating indicative space needs, based on an HEI's staff and student numbers, particular academic portfolio and methods of delivery (available at www.smg.ac.uk/resources.html).

8. The links between the research areas are shown in Figure 1.

9. Full reports on the research, together with the SMG model and space need indicator framework, are available on the Space Management Group's

Figure 1: Principal links between SMP research areas

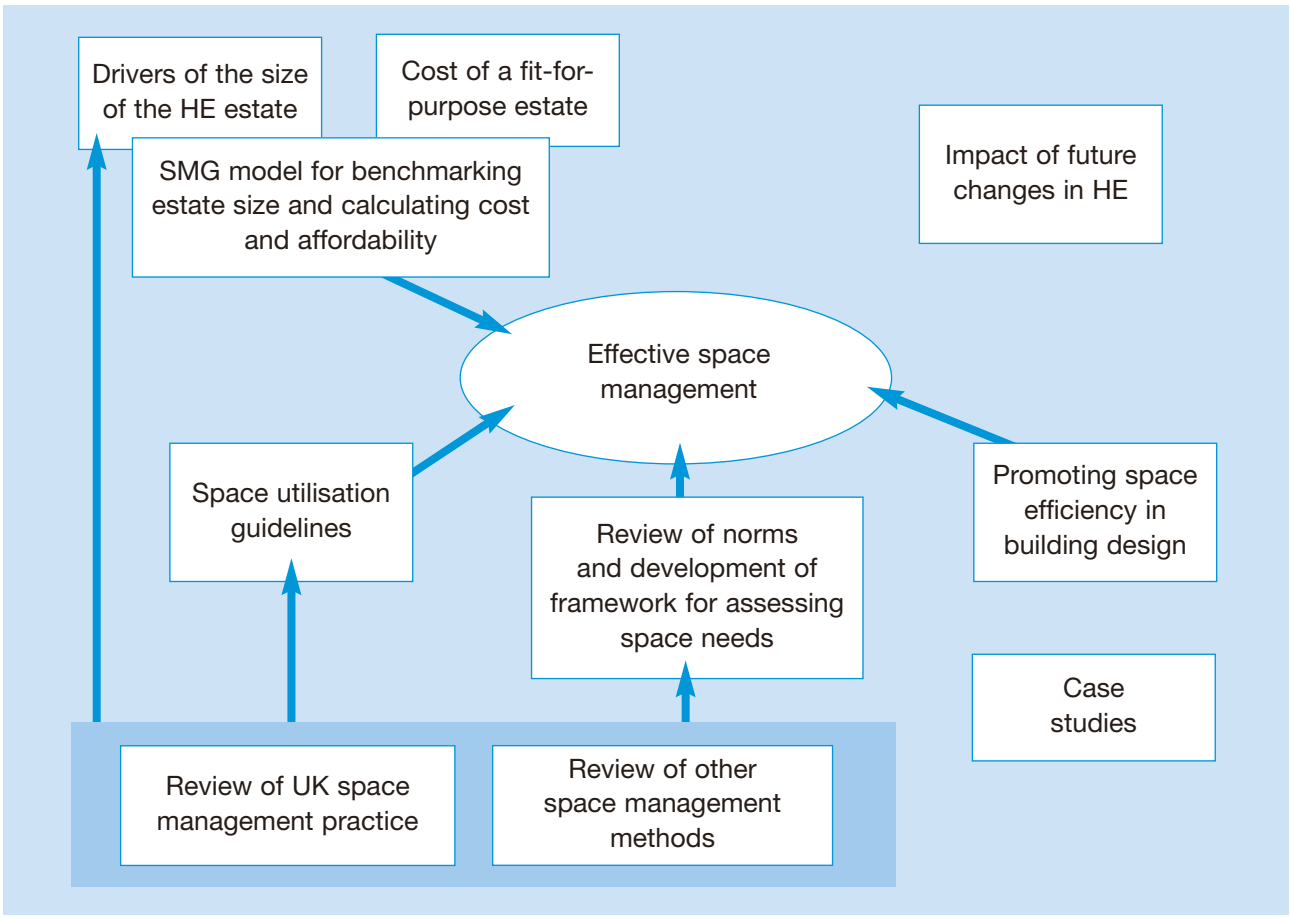
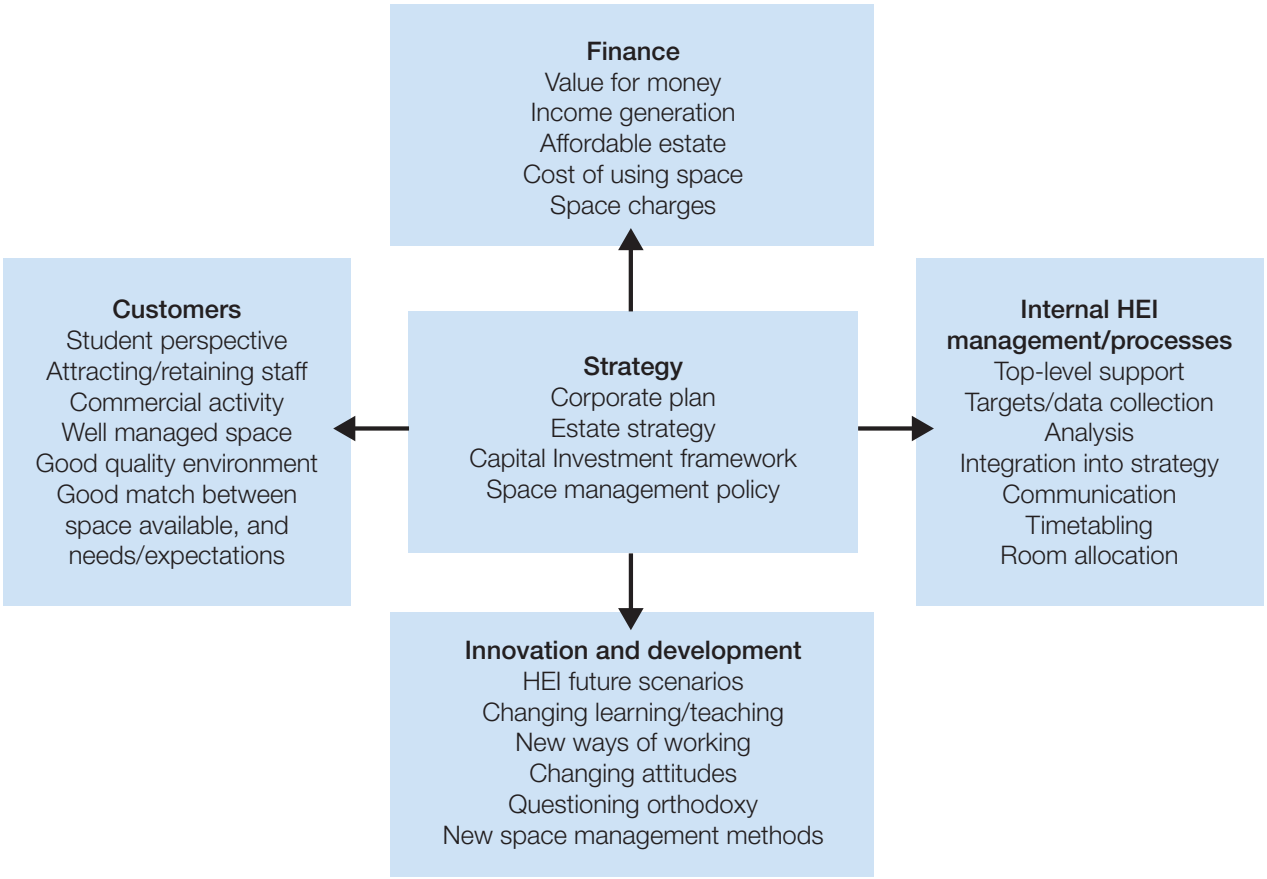


Figure 2: Key factors affecting space management



website (www.smg.ac.uk). The reports are listed with their URLs at the end of this guide.

Keys to successful implementation

10. Implementing changes in space management policy and practice can be challenging. Space management is not just an 'estates issue' – it requires the engagement of senior managers with responsibilities for institutional, academic and financial planning. Space management needs to be seen in the broader context of how best to balance different interests and competing demands. To this end, it can be viewed as part of a 'balanced scorecard'.[1] The balanced scorecard approach to strategic management looks at ways of balancing the following different perspectives within an organisation:

- customer perspective
- financial perspective
- business (or internal HEI management) perspective
- innovation and development perspective.

11. Figure 2 sets out the key factors that have an impact on space management.

12. Most or all of the elements shown in Table 1 need to be in place to develop a successful space management policy and pave the way for its implementation.

Table 1: Key elements of a successful space management strategy

Strong, interested leadership	Top-level support is vital to successful implementation. It helps to have a space management committee or group, chaired by a pro-vice chancellor (pro-VC) or someone in a similar position (the space management champion). This committee should have responsibility for both developing and implementing the space management policy.
Integration with institutional and financial planning	The work of the space management committee benefits from close integration with the development of institutional strategic plans and academic and financial plans, including those for learning and teaching, research and marketing.
Space management policy	A strategy addressing current and future institutional needs and affordability sets the framework for implementing specific projects and proposals. Its development also provides an important opportunity for consulting with user groups.
Sound, sufficient information	Data to support the space management policy and its successful implementation should at a minimum include: size of the estate and breakdown in terms of space type and user, condition, functional suitability, actual and scheduled usage, number of workplaces and space costs.
Consultation and partnership with space users	Consultations are essential to understand from users' perspectives what types of space work well and why and – conversely – what is unsatisfactory and why. It also helps to explore with users how their space needs might change, and seek their views of different options for the future. Cultural issues about space ownership are often identified as a barrier to more effective use of space. Developing a transparent space management system based on robust methods and analysis is a valuable route to getting buy-in and building trust.
Evaluation of outcomes	Building in a review of the outcomes provides the opportunity to evaluate the costs and benefits of the steps taken and use the experience gained.

[1] The balanced scorecard is an approach to strategic management developed by Robert Kaplan and David Norton of Harvard Business School.

Approach to implementation

13. Each HEI has its own space management objectives. The systems, tools and techniques most appropriate for an individual HEI vary according to its internal management structure, methods of resource allocation and particular characteristics of its estate. In general, however, the main steps in developing and implementing a space management plan are common to most institutions, and are shown in Figure 3.

14. The contribution that SMG guidance can make to each of these stages is as follows.

Step 1: Assessment of existing space performance

Assessing quality and the cost of space

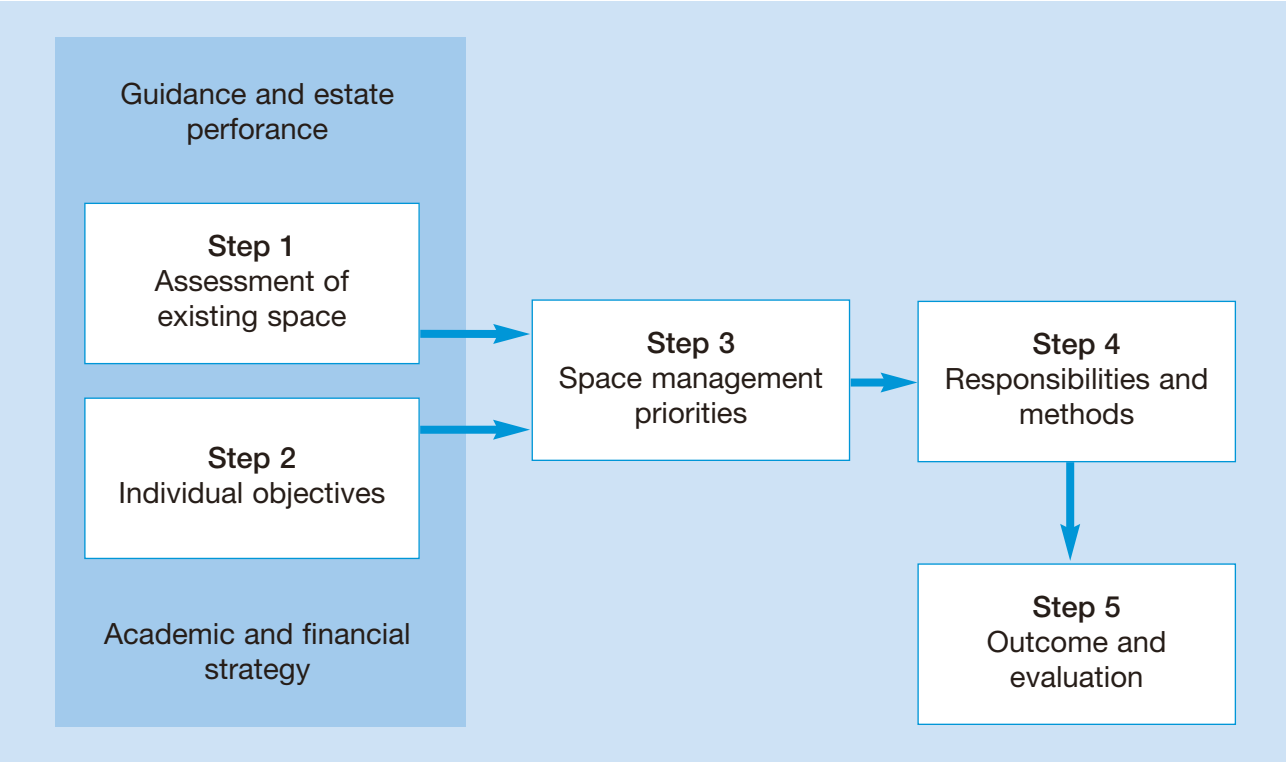
15. The SMG's research on the cost of space and the affordable estate can be used to get a measure of the annualised cost per square metre of having an estate that is kept fit for purpose, in good condition and regularly remodelled and replaced on a rolling basis. This can then be compared with current and planned levels of expenditure to determine whether there is a gap between the two and, if so, the scale of the difference. It can also be used to help to inform what size of estate is affordable. The SMG cost model and user guide is available for HEIs to download from the SMG website (www.smg.ac.uk/the_model.html) to carry out this type of analysis. The model is updated annually following the publication of Higher Education Statistics Agency and Estate Management Statistics data.

Benchmarking the size of the estate

16. In parallel with this assessment, the benchmarking component of the SMG model can be used to compare the size of an HEI's estate with the average or most efficient quartile predictions generated by the model, based on a range of key drivers such as income, location and number of sites. The purpose of this benchmarking is to identify at a strategic level any significant variations in terms of overall size of the non-residential estate or the following categories:

- core teaching
- teaching offices
- research space
- library space
- other support areas.

Figure 3: Steps in developing and implementing a space management plan



Analysing space utilisation

17. A full understanding of how space is used is an important element of the performance assessment. Utilisation studies can provide this information and raise questions about the most effective use of resources. If space is under-used, is it needed or could the resources it is consuming be put to better effect elsewhere, for example for staffing and equipment?

18. Space utilisation data should be collected on actual use (usually through surveys) and scheduled use. The results can be used to inform space allocation and address mismatches in supply and demand. This is already the practice in many institutions.

19. The data can also be used at a strategic level to model the effect of setting target utilisation usage rates on the amount of space predicted at any given rate. The SMG's 'inefficiency multiplier' tool can be used to do this and to assess the opportunity costs associated with current performance. The multiplier links utilisation rates, the amount of space being provided for each square metre in use at a given utilisation rate, and the associated costs for each square metre in use. An extract from the multiplier is shown in Table 2. The costs listed in the model are the average costs calculated by the SMG cost model based on data for 2004-05. If desired, HEIs can replace these with their own calculations from the model or with the actual costs being incurred.

20. The principles of this approach can be applied to a range of types of space, such as learning and teaching spaces, offices and many kinds of research space. The information and analysis can also be used to inform estate strategy preparation as part of a cost-benefit analysis of estate performance.

Step 2: Institutional objectives

21. Step 2 focuses on understanding the space implications of institutional objectives – for teaching, research and support – and methods of delivery.

Planning for the future

22. A key theme of the SMG's work is the importance of planning for the future as well as for effective space management of current activities. Thinking about how much and what type of space will be needed in the future is a

Table 2: The inefficiency multiplier – linking usage rates, space provision and the cost of space

Usage rate %	Total m² provided for each m² in use	Sustainable economic provision for each m² in use (£)	Total economic provision for each m² in use (£)
5	20.0	3,248	4,306
10	10.0	1,624	2,153
15	6.7	1,083	1,435
20	5.0	812	1,077
23	4.3	706	936
25	4.0	650	861
30	3.3	541	718
35	2.9	464	615
40	2.5	406	538

Source: SMG Report 'Space utilisation: practice, performance and guidelines'

major challenge for HEIs. The SMG report, 'Impact on space of future changes in higher education', is intended to stimulate debate and approach space utilisation from the perspective of how academic activity might change in the future – for example, numbers of students and staff and the composition of the academic portfolio. It also considers issues such as developments in pedagogy, equipment needs, room layouts, times of teaching and staff working environments that might have an impact on the location, amount and type of space needed.

Assessing space needs

23. The core issues of how much and what type of space is needed are discussed in the SMG report 'Review of space norms', available on www.smg.ac.uk/resources.html. This study developed a method to assist HEIs in calculating indicative space needs for academic and administrative space requirements. The method shares much of the general approach that underpinned the former UGC and Polytechnics and Colleges Funding Council space norms. However, it allows for the diversity of practice across the sector in a way that the earlier norms did not, by enabling HEIs to estimate space needs based on their own particular profiles of academic activity and delivery methods.

24. The principles of the method are explained in the report on space norms. In addition, a 'Space Need Indicator Framework' spreadsheet is available for HEIs to download (from the SMG website at www.smg.ac.uk/resources.html) along with a user guide. The framework is intended to help HEIs to generate indicative space predictions for types of space and by student full-time equivalents for all or part of their institutions.

25. The method can be used to:

- understand the capacity of the estate
- assess the balance between demand and supply for different types of space
- start from first principles to gain an insight into how much and what type of space is needed to meet current requirements
- model the effect of potential changes in student and staff numbers, academic profile and delivery methods.

Step 3: Identifying institutional space management priorities

26. This step brings together key findings from the performance assessment of the existing estate and future needs (based on institutional objectives) to determine space management priorities. These will vary according to HEIs' circumstances, but may focus on addressing some or all of the following:

- overall surplus or shortfall of accommodation
- mismatch between demand and supply for different types of space
- deficiencies in fitness for purpose and condition
- poor flexibility and adaptability
- planning for the long-term financial sustainability of the estate.

Many of these issues will be closely linked with the institution's estate strategy.

Step 4: Responsibilities and methods

27. Once the priorities are identified, Step 4 focuses on how best to address them. A key message here is that space management is not an isolated task. To be most effective, it needs close integration with other aspects of institutional management. Achieving this is the task of the space management champion with support from the space management committee.

Space management champion

28. The space management champion should hold a senior position, such as pro-vice chancellor. Space management champions need to provide strong and interested leadership, and to do this they need to be well informed about the range of space management data, guidance and tools available through the SMG and other relevant sources.

Space management committee membership

29. The space management committee must be an institutionally recognised body, with authority to deal with space management issues. The institution should seriously consider the composition of the committee, with respect to need, but should include many of the following:

- the space management champion to chair the committee (pro-VC or similar)
- appropriate representation by deans from academic faculties or schools
- director of estates supported by development, facilities, maintenance and timetabling staff as required
- director of finance to advise on capital and revenue resource planning
- director of planning to advise on academic programme development
- campus representatives (if appropriate)
- student services
- student registry
- director of learning resources
- director of IT.

The co-opting of institutional specialists onto the committee for the duration of a project or set of projects should also be considered. Such may include specialist academic librarians, building security managers and specific IT specialists.

Guiding principles for the space management committee

30. It is useful for the committee to adopt many or all of the general principles, as follows:

- space is a costly and essential resource
- the institution owns the space and needs to manage it effectively
- the institution is driven to provide a high-quality academic achievement
- high-quality facilities and services, within value for money, are essential to provide a good academic and social experience for students
- space management policies and standards should be easily understood, transparent and available to all
- financial constraints are an inevitable aspect of life in any organisation
- staff recruitment and retention are critical to continual institutional stability and growth
- the only permanent feature is that there will always be change.

Terms of reference

31. No committee can operate effectively without adequate terms of reference. These need to be carefully considered, approved and form a comprehensive remit for the group. Different institutions may require different approaches, but space management committees are recommended to:

- develop and monitor the implementation of a space management policy and general principles of effective space utilisation
- define standards for working accommodation for all staff and students
- have clear responsibilities and procedures for implementing change
- communicate institutional space management policies clearly to users
- receive considered and approved (in principle) academic strategies, and assess and comment on how these may be achieved within the space management policy and prescribed financial constraints
- develop and review annually a timetabling policy and management
- consider proposals for major building projects after reviewing investment and option appraisals and the estate strategy
- receive advice and reports on teaching and learning strategies and space needs, and make recommendations on how these may be met

- consider new and existing proposals on reactive, planned and preventative maintenance needs and budgets
- review space usage critically, and on an annual basis, reflecting the objectives of strategic plans
- report findings to the vice-chancellor and senior management team
- cascade implementation recommendations to practitioners within appropriate departments
- secure staff training in applying space management tools and guidance where necessary
- review the practical outcomes of space management policies and recommendations at senior management level.

It is also appropriate for the committee to make regular progress reports to the institution's governing body.

32. Space management may be part of the remit of an estates planning and development committee. In this case, additional 'estates' matters need to be incorporated into the remit and terms of reference:

- develop and review annually the institution's estates strategy
- oversee the management of major building programmes
- monitor the performance of the estate using appropriate metrics and key performance indicators
- oversee prioritisation of the estates capital plan.

Methods

33. The institutional space management priorities that were identified in Step 3 are arrived at through a process of benchmarking performance, analysing data and modelling needs. A review of this process on an annual basis is recommended.

34. Where delivering these priorities entails refurbishing existing buildings or creating new or replacement space, the SMG report 'Promoting space efficiency in building design' (available at www.smg.ac.uk/resources.html) provides keys to space efficiency through building design and good practice principles for introducing space efficiency. The principles include:

- incorporating space efficiency concepts into the estate strategy
- systematic collection of space utilisation and cost data, and subsequent analysis and recommendations to senior level
- incorporating requirements for space efficiency in project briefs, feasibility studies, option appraisals and design reviews
- developing and maintaining a clear decision and communication structure for building projects, including user groups
- promoting the benefits of versatile spaces and the right furniture
- including space efficiency in post occupancy evaluation (POE).

35. Where the priorities focus on maximising effective usage within existing space, the SMG report 'Review of practice' (available at www.smg.ac.uk/Phase_1_reports.html) includes good practice in space management principles for space charging and central timetabling. SMG's research found that HEIs with charging systems and/or central timetabling systems, including all teaching space, have significantly less space than those which do not, allowing for a range of external drivers affecting estate size.

Managing space management projects

36. Managing a varied range of space management projects can be challenging, and it is useful to keep in mind generic good practice principles for project management.

37. Unprecedented change has become a way of life for many organisations, and HEIs are no different. Projects bring together resources, technology, skills and ideas to deliver business benefits and achieve objectives. Good project management helps to ensure that projects are achieved in a structured manner within budget, within programme and to the desired quality.

38. As far as project management is concerned, space management projects can be divided into two categories. Firstly, they can involve physical space in building(s), such as providing a new academic centre or extending/rationalising space for a growing/declining academic department or school. Secondly, projects can be to implement strategy and/or new policies or procedures in a faculty or across the institution, such as providing a new centralised timetabling system or a project for better data gathering and analysis of teaching space.

39. Effective project management basically has four stages, summarised below with their main components.

Initiating projects:

- project mandate and mission statement or 'headline' to the project
- roles and responsibilities
- stakeholder analysis – it is necessary to list the stakeholders and try to understand their likely perspective and how they will react to the project
- business case, which should be derived from, and form an extension to, the project mandate and initial plan (costs)
- project scoping, which is often done in conjunction with a risk management and stakeholder analysis
- project structure – this is key to developing the method to apply to the project to enable its successful completion
- initial risk assessment.

Starting projects:

- ongoing project risk management, with reviews
- good planning, to reassure all involved that the work is under control and you know what you are doing
- resourcing projects – this can be a frustrating experience, and the potential issues should always be highlighted within any risk analysis
- project files
- task analysis
- building the team
- good communication.

Running projects:

- planning
- controlling changes – embedded in the project culture must be a view that project change is a vehicle for improving deliverables, rather than a problematic process
- ongoing evaluation and reporting on progress throughout the project
- quality management
- monitoring.

Finishing projects:

- project review.

Step 5: Outcome and evaluation

40. This is an important stage in implementation. It is an opportunity to obtain feedback and evaluate the costs and benefits of the steps taken, so that the information gained can be used to positive effect in future initiatives and projects. Evaluation can help to ensure that:

- future projects of a similar nature can be undertaken with knowledge of the issues that have arisen previously
- the knowledge and experience within the institution is enhanced for the benefit of the whole organisation
- staff can tap into the information and experience gained by other professional staff
- staff can learn from successes and mistakes when working on other similar projects.

41. The principles of post occupancy evaluation can be applied to implementing space management policies and projects. Appendix 1 provides a summary of POE and sources of guidance.

Published reports from the Space Management Project

Title	Authors	Available at:
Space management project: summary	Kilner Planning	www.smg.ac.uk/documents/summary.pdf
Phase 1		
Review of practice report	Kilner Planning and London Economics	www.smg.ac.uk/documents/reviewofpractice.pdf
The cost of space report	Kilner Planning and London Economics	www.smg.ac.uk/documents/costofspace.pdf
Drivers of the size of the HE estate	Kilner Planning and London Economics	www.smg.ac.uk/documents/drivers.pdf
Phase 2		
Impact on space of future changes in higher education	Professor Ronald Barnett and Dr Paul Temple, Institute of Education, University of London	www.smg.ac.uk/documents/FutureChangesinHE.pdf
Managing Space: A review of English further education and HE overseas	Kilner Planning and London Economics	www.smg.ac.uk/documents/FEandoverseas.pdf
Promoting space efficiency in building design	AMA Alexi Marmot Associates	www.smg.ac.uk/documents/PromotingSpaceEfficiency.pdf
Space utilisation: practice, performance and guidelines	Kilner Planning	www.smg.ac.uk/documents/utilisation.pdf
Review of space norms	Kilner Planning and London Economics	www.smg.ac.uk/documents/spacenorms.pdf
Case studies	Kilner Planning	www.smg.ac.uk/documents/casestudies.pdf

Appendix 1: Post project evaluation – Project review and post occupancy evaluation

Post project evaluation

1. Institutions are required constantly to remodel, refurbish and build new space as the estate is reconfigured to match new institutional needs and aspirations. These new spaces generally need to be available for student use in the shortest time possible. Reinventing the wheel potentially for different institutional staff, consultants and contractors who will be working on the total project can be time consuming and resource intensive. Post project evaluation can assist in limiting the time and resource allocation with reference to a body of knowledge or database built up on previous projects, hence reducing the 'learning curve'.

2. Post project evaluation examines the successes of previous projects, the challenges involved and how they were dealt with and aspects that may be done differently, with hindsight, in the future. A few basic pointers at the outset are:

- How time consuming post project evaluations are depends largely on the instigating organisation. A short evaluation can provide useful markers for the future, but a more intense evaluation will obviously provide greater depth and level of knowledge.
- Consultants and contractors should be made aware of the potential clients' intention to carry out a post project evaluation in the Invitation to Tender documentation, so providing awareness before they cost the project. Where applicable, institutional staff involved will also need to be made aware in the first instance.
- It is essential to make it very clear to all participants that the evaluation process is non-recriminatory and merely diagnostic otherwise some organisations will not wish to be represented. The review needs to be seen as a positive action to ensure that the organisation and others connected learn from their own experiences. More importantly, the review must be used to incorporate positive feedback and input into future actions. Feedback and input should be obtained from those members of staff involved in a project, to enable others to learn from good practice being implemented or from challenges identified.
- The information gleaned from project closure and review must be made appropriately available. It must provide analytical data for review, and detailed information where appropriate.
- To obtain the required feedback, meetings should be set up with the staff involved. These meetings should be conducted in a proactive, friendly atmosphere where staff can give their valuable comments and feedback by identifying aspects of the project that went well and could (should) be used as good practice for other similar projects. Aspects of the project that were not executed as expected should be used as excellent learning experiences for staff involved in the meeting and others who wish to learn. Lastly it can be used to improve any processes used.

The term 'post project evaluation' in this context is used in a broad sense. There are two main types of post project evaluation: Post completion review and post occupancy evaluation.

Post completion review

3. This is concerned with the actual building project from its initial inception through to 'practical completion' and examines the formulation of the initial brief through the construction process to commissioning and move-in. It does not deal with the actual user perceptions or suitability, but with the building and/or spatial provision.

4. The process should be instigated as soon as possible after practical completion, with a meeting and final report available between three to six months after completion.

5. The depth and range of the review which is necessary is up to the instigating client. The 'De Montfort method' (2002), funded and supported by HEFCE, talks about a project review briefing to all parties followed by a one day meeting with all agreed and relevant companies present to discuss the successes and challenges with an independent facilitator who will provide a report a few weeks later. The report is available from HEFCE (e-mail b.dromgoole@hefce.ac.uk).

6. The De Montfort method is based around one or two intensive days of interviews and data collection with teams involved in briefing, design, construction, occupation and management. The presumption is that much of the information already exists and that the task is primarily:

- observation, interviews and data collection
- checking reliability
- evaluating comparatively in context
- making the information accessible to other institutions.

7. All parties should be asked to review and discuss the following stages, as relevant to them:

Brief / Design – How the team developed the brief on which the design was based, developed and refined including financial management aspects.

Procurement – How team selection, contractual and technical processes were undertaken including time and value aspects.

Cost control – How the funding was determined, alterations accommodated and budgets controlled effectively.

Space use and management – How the team divided and used the space for efficient and effective working, taking into account health and safety, and other relevant legislation.

Environmental and sustainability – How and which environmentally sustainable measures have been incorporated.

Construction – How the construction phase until handover was managed, including financial and change management processes.

Commissioning process – The way in which the final commissioning of the building was managed, including final adjustments and the provision of documentation.

Occupation – The way in which the handover process was managed including the rectification of last-minute snags and the removal/relocation process.

8. The SMG report 'Promoting space efficiency in building design' states that post occupancy evaluation is a 'key element in the feedback loop', and is one of the main aspects of good practice guidance the report highlights. The report lists many good practice guidelines for institutions refurbishing or building new space and is accompanied by 15 case studies. The report is available at www.smg.ac.uk/documents/PromotingSpaceEfficiency.pdf.

9. A completed building project, whether new-build or refurbishment, is the culmination of years of investment of time and energy by a large number of people in different roles and with different organisations. Everybody involved will have learnt along the way and would do some things differently the next time round.

Post occupancy evaluation

10. 'Post occupancy evaluation' is a term more generally used for post project evaluation, but this report uses the term to reflect that 'occupancy' of the space by the end client users has occurred and an evaluation will take place after the users/occupiers have some experience of the space or building.

11. A post occupancy evaluation could include a post completion review (see above), but will also have a major focus on a review of the users' needs and expectations and how these have been met. It could also deal with the longer term project and strategic evaluations.

12. The AUDE/HEFCE report 'Guide to Post Occupancy Evaluation' was produced by the University of Westminster in 2006 and is available on the AUDE website (www.aude.ac.uk/Home.aspx). The work was funded by AUDE and HEFCE as part of a good practice initiative. It embraces the concept that whole-life costing is an important aspect of a building, and that an assessment at some stage after a building or refurbished space is completed is essential.

13. The report looks at the theory and practical application of POE. The theoretical side examines the benefits in the short, medium and long term. In practical terms, the report provides a toolkit with a range of POE tools and techniques.

14. The report considers the three stages of the review process:

- operational evaluation carried out about three to six months after occupation
- project evaluation (after nine to 18 months)
- strategic evaluation (after three to five years).

15. Whilst it is recommended that all these be carried out, it is considered essential for at least an operational or project evaluation to be carried out.

16. The University of Westminster report addresses a number of pertinent questions relevant to end user requirements:

- Does the building perform as intended?
- Have the users' needs changed?
- Which problems need to be tackled quickly?
- How effective was the process from inception to completion?
- What can be learnt for future progress?

17. The toolkit forms the major part of the report. The tools look at:

- structure of the brief
- a statement on the brief/terms of reference
- evaluation techniques
- benchmarking
- preparing a report.

18. One advantage of this methodology is that through the advice and tools, institutions can design a relevant, bespoke POE that reflects the project scope, needs and outcomes required of their various building projects in conjunction with institutional requirements.

19. The AUDE/HEFCE guide and De Montfort method were designed with the UK HE sector in mind. Other POE methodologies are available from the following organisations:

- Construction Industry Council (Design Quality Indicators) www.dqi.org.uk
- ABS Consulting (Overall Liking Score) www.absconsulting.uk.com
- Usable Buildings Trust (PROBE and BUS occupant survey) www.usablebuildings.co.uk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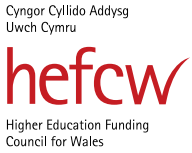
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