

Part 2. Managing facilities

1 Operational management

Overview

This section considers the management of the supply of facilities services. The operational facilities organisation, procurement, delivery, performance management and customer care are highlighted along with health and safety requirements and business continuity planning. Sustainable management of buildings and the orderly management of property assets are discussed.

1.1 Introduction

The FM strategic and delivery team should be linked within the organisational structure to the business they support, with a capability, either directly or through their outsourcing contracts, to supply services of a quality to meet operational needs at a competitive cost. Best practice calls for quality driven delivery at a competitive cost – not the lowest cost. The facilities team should be looking ‘over the horizon’ to see what sector and operational changes may require the adjustment of their services, workplace or locations and be planning strategies to meet changes in operational direction.

1.2 Organisation

The structure of the FM department depends on the size of the organisation it supports and the business sector involved. These will determine what services are demanded, the number of locations to be serviced and the corporate policy about outsourcing versus in-house service provision. The availability of suitably qualified and experienced staff will play a part in determining the structure and organisation of the team and the delivery methodology.

The key determinant of structure is the proportion of services to be provided in-house. It is suggested by some that day to day operational services should be subcontracted to external suppliers. This frees up the FM team to manage strategic and organisation-critical services and focus on customer service. A FM Customer Relationship Manager (CRM) or Account Manager (AM) should interface with each business unit, establishing a communication link and building a relationship that will facilitate valuable conversations in future planning rounds about service provision changes. These customer support functions may also be outsourced, which would be the case if a Total Facilities Management (TFM) contract was put in place.

1.3 Managing delivery

An example of a possible delivery structure to provide FM services to an organisation is shown in Figure P2 (1). In this example, the FM organisation delivers operational FM services through external providers and the performance is overseen by the in-house FM CRM/AM who meet regularly with the business unit managers. Service provision will be adjusted to meet changing day to day circumstances and the ‘internal customer’ may do this through the FM Help Desk. Delivery quality is measured by the ultimate customer through surveys and interviews by the FM CRM/AM.

Both the in-house FM team and external suppliers will jointly benchmark performance, and feedback from the internal customer will provide qualitative views to inform the procurement team about adjustments to the delivery quality and any changes needed to the supplier contracts.

The services identified as critical to the business units may well continue to be provided directly by the in-house FM team. For example, these could be security or specialist services to secure areas over which the organisation wishes to retain full control for strategic reasons. Such services will be subject to performance measurement and qualitative assessment so that the organisation has an on-going awareness of the cost and quality comparables from both external and internal suppliers.

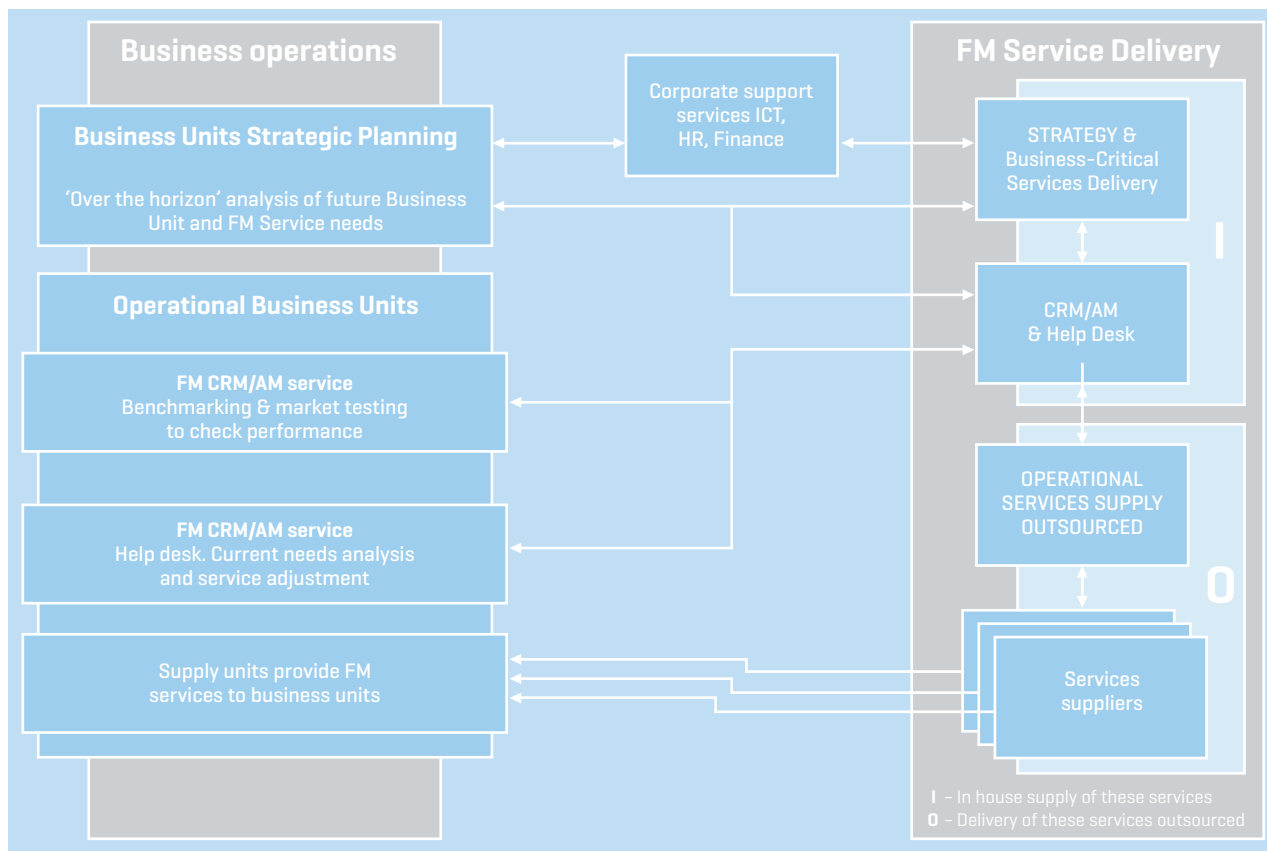
At a strategic level, the FM team is tasked with maintaining and improving communication links across the organisation, as well as supplying some services directly. The ability to ‘see over the horizon’ in conjunction with the business; anticipating business-led change as well as new regulation, advances in technology or new legislation, is important in keeping one step ahead of the competition and ensuring the accommodation portfolio responds quickly to change. This corporate agility could provide valuable weeks of advantage in getting products and services to the market ahead of competitors.

1.4 Improving performance

Quality in the supply of services is difficult to measure, with the impression of service being based on a balance between customer expectation and perceived delivery quality. However, delivery improvement can really only be achieved if reliable performance metrics are available to the FM team and organisation.

The accepted methodology for measuring performance beyond the purely financial is the Balanced Scorecard¹. Many organisations, however, measure FM delivery only on financial metrics, often just on cost alone but financial measures give no indication of the effectiveness of accommodation on the workforce or on business performance.

Figure P2 (1): The delivery of facilities services and corporate connections



It is good practice to concentrate on a limited range of metrics, being a mix of financial and quality indicators to provide measures of performance over time and to provide operational targets for the different FM teams, whether operational, customer relations or strategic specialists. These will be reviewed regularly within the FM group and reported periodically to the senior management team. Trend lines will establish a performance graph, which will show financial and non-financial performance. In this way, regularly collected metrics will assist the FM team to improve their performance and highlight to senior managers that facilities management has an effect on the bottom line.

1.5 Customer care and service

Customer care is a continuous process, commencing with assessing the customer's needs and designing a solution which is deliverable and within budget. The facilities manager needs to remember that what the immediate customer wants above all else is the provision of services and an environment which enables comfortable and productive activity.

However, the facilities team will have some difficulty in satisfying different 'levels' of customer. Is their customer the occupant of the work station they see before them (the individual), the manager around the corner (the

department) or the occupants of prime offices on the top floor (the corporation)? Each has different expectations and it is down to the diplomatic skills of the facilities manager to give an appropriate message to each, and as far as possible, to meet the expectations of all three customer levels. For facilities service suppliers to organisations directly serving retailers, it is the external customer who is paramount.

The question of exactly who is the customer is most important where a procurement group is involved with an outsourcing programme. It is rarely the procurers who will be the ultimate customer and it is essential that they have an early and detailed specification-setting dialogue with the main customer group. The supplier's CRM or AM will need to engage with these ultimate customers to establish a working relationship as well as with the procurement group.

It is very important to provide a consistent level of service to customers so that they know what to expect, and to train staff in the delivery policies and processes which will ensure the required consistency. One of the key contact points is the Help Desk or Customer Service website where customers can register their requests for service or register a complaint. This should be managed meticulously, with careful and accurate feedback about the actions being taken and when results are likely to be seen. It is an added advantage where large staff numbers are involved in service delivery, to have a 'help facility' for delivery staff to check how they should respond to or deal with particular situations.

The follow-up after a complaint or customer comment is equally as important as the 'fix'. Even where the requests cannot be met, the customer needs to know and an appropriate response invariably meets the need for customer satisfaction.

Measuring customer satisfaction is crucial to making decisions and implementing change in organisations. It is essential to use survey methodologies in order to capture relevant and accurate results. The survey, which will be online, should be easy to answer and administer and have the backing of the senior management team. A good response rate will provide reliable management information, which might point to further service delivery changes to increase customer satisfaction. It is also possible to use social media, with limited access facilities, to directly poll staff about the working environment and workplace services, with potentially immediate results.

It is absolutely essential to communicate results to the whole organisation, together with a considered plan to deal with the main issues arising from the survey. This sets expectations and the perception that time taken to complete the surveys is worthwhile. The communications should be tailored to the audience – there will be a different style of message to survey participants compared to the report to senior managers. However, in each case the good and the bad must be reported with the plan for change where this is necessary.

1.6 Procuring services

The success of the facilities management operation depends on the quality and reliability of suppliers whose staff will be customer-facing and so will be representing the FM in-house team. The choice of supplier and the scale of the contract is critical so a decision-making process should be followed which ensures a balance between cost, quality, risk sharing, experience, capability and culture. The latter is of great importance; depending on the extent of the contract, suppliers will be partners with the organisation, taking the place of employees, so the 'cultural fit' must be exact or very close.

The facilities manager should produce a detailed definition of what services are required and, ideally, invite suppliers to workshops to discuss process, pricing and capabilities. If an in-house procurement team is involved in the choice of external contractor, their often price-driven approach must be tempered to ensure that the cultural fit, quality of services and the need to establish a partnership relationship are weighted and scored into the decision-making process, along with price.

Partnering on an 'open book' basis may produce a service most aligned with the organisation's operational needs, and accountability can be assured if there is initially a full competition on the choice of partner and periodic price benchmarking, as well as a defined contract period and agreed performance measure audits as the contract proceeds.

Such a solution should mean a minimum of oversight by the facilities team and a flexibility of supply of services to deal with peaks of demand, with the result that the in-house facilities manager should have time to devote to customer relationship building.

1.7 Service levels – specifications and SLAs

Service specifications and service level agreements [SLAs] are essential documents in the management of facilities. They set down the output-driven guidelines for customers and service providers in terms of the quality, methodology and timeliness of supply and are used whether the services are supplied in-house or by external service providers. These formal documents establish:

- the essential customer service requirements and minimum acceptable standards
- the service quality and performance (the outputs) expected by the customer
- performance measures for the services; and
- the agreement for the supply and acceptance of the services.

It is recommended best practice to prepare accurate service specifications and SLAs so that contracts will be better managed and not subject to misunderstanding and misinterpretation. A mark of quality by the supplier [ISO 9000/9001.20080] should be considered essential by the client and be achieved by the in-house facilities team. This will ensure that a quality service level is in place against which agreed performance and improvement targets can be set.

1.8 Finance and facilities

The facilities manager will be involved, at the very least, with the preparation of budgets, an operational income and expenditure account for the portfolio, a system to pay suppliers and the benchmarking of immediate-term and whole-life costs. Taxation plays an important role in the finances of the facilities team, whether VAT on supplies and services, capital allowances on plant and machinery or the depreciation of capital assets.

These are specialist areas with considerable amounts of cash involved and in most businesses the accounting team will look after such financial responsibilities. In smaller organisations, best practice dictates that the financial administration should be outsourced to an external accounting practice.

1.9 Health and safety

The accommodation owned or occupied by all organisations used by employees, customers or visitors must comply with all relevant health and safety legislation and other regulations. The principal legislation in the UK

is the *Health and Safety at Work Act 1974* but specific legislation covers industrial buildings and all construction work in the UK is controlled by the *Construction (Design and Management) Regulations 2007 (CDM)*. The legislation and regulation applies to the client organisation and is not 'subcontracted' by outsourcing to a facilities management supplier.

All UK organisations with a staff of five or more must have a health and safety policy, which is regularly reviewed, and designate a nominated person to be responsible for implementation. The nominee must be given authority to cover administrative procedures to deal with all aspects of health and safety within the workplace and carry out risk assessments as necessary. The facilities team, whether in-house or external, will be key players in this health and safety planning regime and must be involved with risk assessment exercises to help the organisation test their compliance with legislation and regulation.

It is essential for the facilities team to be aware of and be fully conversant with all current health and safety regulations. Most jurisdictions will have an array of regulations which mirror this listing and it is essential for the facilities manager to be aware of local requirements, where necessary using indigenous facilities suppliers and consultants to ensure all requirements are being met.

The principal UK legislation and regulations are as follows:

- *Chemicals (Hazard Information and Packaging for Supply) Regulations 2002*: require suppliers to classify, label and package dangerous chemicals and provide safety data sheets for them.
- *Construction (Design and Management) Regulations 2007*: cover safe systems of work on construction sites.
- *Control of Major Accident Hazards Regulations 1999*: require those who manufacture, store or transport dangerous chemicals or explosives in certain quantities to notify the relevant authority.
- *Control of Noise at Work Regulations 2005*: require employers to take action to protect employees from hearing damage.
- *Control of Substances Hazardous to Health Regulations 2002 (COSHH)*: require employers to assess the risks from hazardous substances and take appropriate precautions.
- *Dangerous Substances and Explosive Atmospheres Regulations 2002*: require employers to control the risks to safety from fire and explosions.
- *Disability Discrimination Act 2005*: requiring action to be taken to ensure disability equality.
- *Electricity at Work Regulations 1989*: require people in control of electrical systems to ensure they are safe to use and maintained in a safe condition.
- *Employers' Liability (Compulsory Insurance) Act 1969*: requires employers to take out insurance against accidents and ill health to their employees.
- *Equality Act 2010*: codifies the complicated Acts and Regulations which formed the basis of anti-discrimination law. These were, primarily, the *Equal Pay Act 1970*, the *Sex Discrimination Act 1975*, the *Race Relations Act 1976*, the *Disability Discrimination Act 1995* and three major statutory instruments protecting discrimination in employment on grounds of religion or belief, sexual orientation and age.
- *Fire Precautions (Workplace) Regulations 1997/1999*: covering risk assessments, emergency lighting and equipment.
- *Gas Safety (Installation and Use) Regulations 1994*: cover safe installation, maintenance and use of gas systems and appliances in domestic and commercial premises.
- *Health and Safety (Display Screen Equipment) Regulations 1992*: set out requirements for work with Visual Display Units (VDUs).
- *Health and Safety (First Aid) Regulations 1981*: cover requirements for first aid.
- *Health and Safety (Safety Signs and Signals) Regulations 1996*: give directions about workplace safety signage.
- *Management of Health and Safety at Work Regulations 1999*: require employers to carry out risk assessments, make arrangements to implement necessary measures, appoint competent people and arrange for relevant information and training.
- *Manual Handling Operations Regulations 1992*: cover the moving of objects by hand or bodily force.
- *Personal Protective Equipment at Work Regulations 1992*: require employers to provide appropriate protective clothing and equipment for their employees.
- *Provision and Use of Work Equipment Regulations 1998*: require that equipment provided for use at work, including machinery, is safe.
- *Regulatory Reform (Fire Safety) Order 2005*: placing a duty on individuals within an organisation to carry out risk assessments to identify, manage and reduce the risk of fire.
- *Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR)*: require employers to notify certain occupational injuries, diseases and dangerous events.
- *The Health and Safety Information for Employees Regulations 1989*: require employers to display a poster telling employees what they need to know about health and safety.
- *The Working Time (Amendment) Regulations 2003*: establishing working time limits to all non-mobile workers in road, rail, air, sea, inland waterways and to workers in the healthcare sector.
- *Work at Height Regulations 2005/2007*: applying to all who work at height where there is a risk of a fall liable to cause personal injury.
- *Workplace (Health, Safety and Welfare) Regulations 1992*: cover a wide range of basic health, safety and welfare issues such as ventilation, heating, lighting, workstations, seating and welfare facilities.

Facilities teams will be aware, in particular, of the hazardous nature of materials such as asbestos and the care needed to deal with airborne bacteria (Legionella), as well as the potentially hazardous dust created during building, fit-out works or through many industrial processes. Industry-standard procedures for dealing with these and any other hazardous activities and materials must be ‘visibly’ and operationally established.

Fire safety, risk assessments, means of escape and evacuation plans, emergency exits, emergency lighting and fire fighting equipment are all key subjects for the facilities team.

Facilities managers should be aware of the corporate and, potentially, the personal legal consequences of deficiencies in process or personal performance with many of these health and safety-related processes². In all these cases, there must be procedures in place to protect the organisation, its staff, visitors and customers as well as the operational facilities teams whether in-house or external suppliers.

1.10 Business continuity planning

Business Continuity Management (BCM) is the process by which an organisation plans to deal with emergency incidents which might otherwise prevent it from achieving its operational objectives. The purpose of the BCM process is the identification of potentially disruptive incidents and the planning of measures to reduce the likely impact. BCM should be implemented in all organisations as a management system, hence the term Business Continuity Management System (BCMS).

The principal task is to prepare a Business Continuity Plan (BCP) as outlined in Table P2 (1).

A key step in the planning is the preparation of the Business Impact Analysis (BIA), which determines recovery priorities based on an assessment of the effect on the organisation of the cessation of one or more of its operations. The activities include:

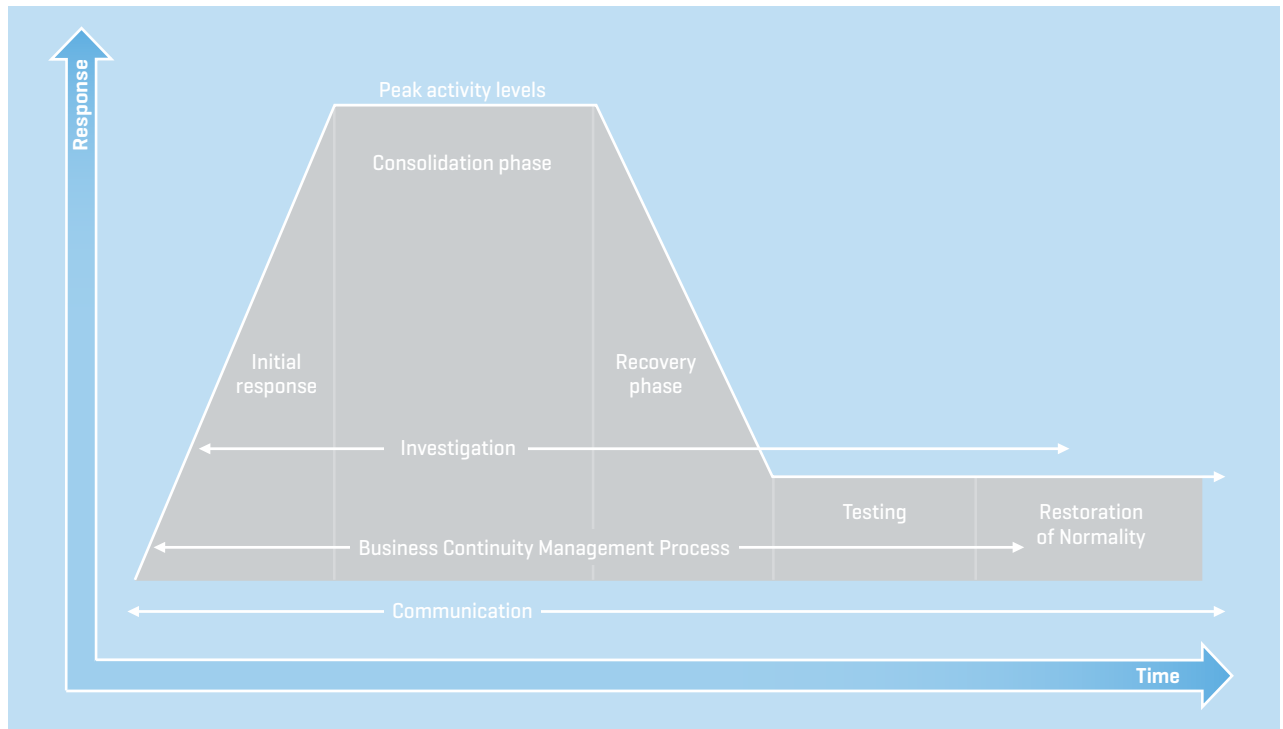
- identification of operations which support key products and services
- assessing the impact over time of stopping any one operation
- an estimate of the maximum allowable period of disruption – this is the period after which the organisation’s viability is threatened because of the damage caused to the organisation by the interruption to operations
- the maximum period within which ceased activities must be resumed
- the time required to resume all normal operational levels
- the prioritising of recovery plans to focus on critical activities and services; and
- identifying imperatives to enable recovery of priorities, in particular, required external resources.

The information for the BIA will be sourced from around the organisation by interview and through staff questionnaires. The analysis of this information will enable the BIA to be prepared, identifying those operations which are critical to the continued well-being of the organisation and the time required to re-establish their normal operational status.

Table P2 [1] : Business Continuity Plan template

Process	Content and actions
Preparation of an Incident Response Schedule	Consisting of notification and escalation arrangements, outline procedures for dealing with the most common incidents, contact and check lists.
Business Impact Analysis (BIA)	The BIA will determine priorities for recovery and recovery objectives based on likely impacts of a cessation of all or some operations over varying timescales.
BCM strategies	Analysis of a range of recovery strategies taking account of pre-existing resilience and the importance of different products and services in priority for restoration.
Recovery procedures	The plan made up of the emergency response, incident management and recovery processes.
Continuing processes	Plan testing, maintenance, audit and reviews on a regular sequence to ensure the plan remains relevant and up to date.
BCM becomes a normal business process	Education of all staff and senior management team as well as suppliers, and as necessary, customers.

Figure P2 (2) – the BCM process through an emergency incident



These critical operations should be subject to a risk assessment carried out by operational managers, the facilities and IT teams, to identify what actions would reduce disruptive impacts and/or the time to return operations to normality. This analysis completes the BIA.

The planned response has four components – the initial response, consolidation and recovery phases and a communication plan – see Figure P2 (2). The initial response or emergency phase deals with the immediate actions taken to limit damage and/or safeguard life. The consolidation or incident management phase is concerned with limiting organisational damage, managing business impact and planning for recovery. The business recovery phase plans the capability to recover by allocating resources and restoring an acceptable level of service.

The communications plan is of great importance to ensure all staff and, particularly, customers and suppliers are aware of the emergency and the plans to return to normality. Announcements should be made as soon as the emergency occurs, to be followed by regular updates as the Business Continuity Plan is put in place. The plan will rely on the initial incident response schedule of key contacts and the contact ‘tree’ which will run through the BCP. The messages should be communicated by senior managers to principal customers and down the management line to other customers and suppliers as well as to staff.

The Business Continuity Plan should be tested throughout the organisation, if necessary via a complete ‘dress rehearsal’ of an emergency. Any required adjustments should be made following these tests and a system of regular audits and updates established so that as circumstances or the operations change, the BCP is adjusted accordingly.

The plans and processes make up the Business Continuity Management System (BCMS), which should be integrated into the normal business planning processes and become an organisational ‘way of life’. The FM team is a key member of the BCMS process in drawing up the plans, particularly for the BIA and the recovery plans. Its role will be substantially greater if tasked with drawing up the whole BCMS. In whichever role the facilities team finds itself, it will be required to prepare strategies to deal with an array of practical issues, ranging from replacement accommodation, ICT set up, replacement furniture, stock, equipment, and temporary catering, as well as, perhaps, plans to transport staff to replacement locations.

As a subset of the corporate BCMS, the FM team should prepare plans in great detail to ensure that they know exactly what is expected of each facilities team member in emergencies ranging from loss of power to the loss of a building, or the failure of the whole business ICT system. Such planning may seem extreme but it could make the difference between organisational failure and recovery should a catastrophe occur.

The quicker normality is restored, the less risk there is to the organisation and lasting damage is avoided. This process is potentially a huge contribution to organisational performance.

It should be remembered in BCM strategy preparation that events such as pandemics might have a dramatic effect on the capability of an organisation or their suppliers to provide services, thereby potentially endangering business continuity.

For additional information, see the RICS paper, *Business Continuity Management, Planning for Business Resilience*.

1.11 Sustainable property

Sustainability and environmental management are important operational criteria for all organisations and directly affect the corporate social responsibility (CSR) measures which most businesses report on to investors. It is not the function of this guidance to look at this topic in any detail. References will be found in the Further Reading section in Part 3, Appendix 4.

The main issues relating to buildings and impacting on facilities managers are:

- **energy sources** – buying from renewable sources
- **energy usage reduction** through more efficient heating, lighting and insulation, and building control mechanisms
- **construction materials** – buying materials from renewable sources and evaluating materials on the basis of their embodied energy characteristics – see RICS ‘Ska’ rating data³ for environmental scoring of fit-out works
- **water** – recycling and rain water capture
- **waste management** – separation and recycling; and
- **pollution** – more efficient boilers and vehicles.

The most effective way to improve environmental performance is to reduce the amount of space occupied. A distributed workplace and flexible workstyle strategy will bring reductions in the amount of office floor-space required and at the same time cut the amount of travel by staff to and from office centres. This mixture of real estate, fit-out, workplace and workstyle strategies will reduce accommodation and facilities costs and assist with the sustainability targets set in the organisation’s CSR strategy.

1.12 Property management

Many facilities managers become involved with property management issues or have an overall responsibility for managing an organisation’s property portfolio. Unless there are in-house personnel with property experience and/or qualifications, it is advisable to outsource this activity to appropriate specialists.

Property management expertise is particularly important in the management of leasehold properties, to deal with such matters as lease renewals, sub-lettings, compliance with repairing obligations and the operation of break clauses, assignments, alterations, dilapidations, rent reviews and the minutia of occupying leased premises. Agency advice is required for the acquisition and disposal of property, particularly to ensure that no onerous liabilities are acquired or retained in such transactions. The preparatory work for transactions associated with EPCs, condition surveys and other physical details will probably be carried out by the facilities team.

Facilities managers looking for more information on commercial property management may wish to consult the RICS guidance *Real estate management* (GN99/2013)⁴.

1.13 Specialist services

There are many operations carried out in the public and private sectors which require specialised servicing, for example, health care, IT, utility or transport. Services such as maintaining the environment and utility supply security in a data centre or acute medical wards require critical environment management (CEM), calling for specialist staff (and training) whether the organisation chooses to carry out this work in-house or through a specialist outsource. It is often the case that such facilities service management is retained in-house because it is crucial to the business.

1.14 Conclusion

The variety of operational issues discussed in this section emphasises the wide and diverse role which the facilities manager is asked to perform. Such is the scope of the role that subcontracting, at the very least, some of the day-to-day activities of the facilities team should be regarded as a desirable strategy. This will allow the facilities manager and members of the team to devote time to the more strategic and critical elements of service planning and delivery for their organisation.

Endnotes

- Note 1 Balanced Scorecard – see Part 1, paras 5- 5.4
- Note 2 See the *Corporate Manslaughter and Corporate Homicide Act 2007*. Companies and organisations can be found guilty of corporate manslaughter as a result of serious management failures resulting in a gross breach of a duty of care.
- Note 3 See www.rics.org/uk/knowledge/more-services/professional-services/ska-rating-/about-ska-rating/
- Note 4 RICS GN99/2013 – *Real estate management*. This can be accessed at: www.rics.org

2 Maintenance management

Overview

The maintenance of facilities and plant is an important aspect of the job for many facilities managers because breakdowns and outages can be very costly to an organisation. An established regime for maintenance and workplace safety is a recommendation for all facilities teams to follow.

2.1 Introduction

The maintenance and repair of buildings and plant, as well as fixtures, fittings and other working equipment is a major responsibility for facilities managers. It is their role to ensure that the portfolio is statutorily compliant. It is important for senior managers to understand this and to realise that regular planned maintenance reduces the risk of breakdown and potentially damaging failures of facilities. Furthermore, the testing and maintenance of equipment and plant at the prescribed frequencies, and the recording of the results, are important steps in the health and safety regime. It is also important for the facilities team to be aware of the health and safety, employment and training standards of all contractors, ensuring that the disciplines and processes are regarded by all as 'business as usual' and to ensure that sub-contractors are similarly compliant.

2.2 Types of maintenance

Maintenance is a combination of the technical and associated administrative actions needed to keep a facility in a condition enabling it to perform effectively in support of the occupying organisation's operations.

Maintenance may be planned or unplanned. Planned maintenance is organised and carried out in accordance with a predetermined programme. It may take the form of an inspection when no physical work is required or works may be carried out to prevent later failure or deterioration. Unplanned or reactive maintenance is a responsive reaction to a failure of the facility often involving a repair which will return the building, plant or system to an acceptable operational status.

Preventative maintenance, rather like car servicing, is carried out to ensure, as far as possible, that no breakdown will occur. Such programmes may be a basic check of essential plant through to a comprehensive investigation and testing to manufacture's recommendations. For critical plant, a regular full service with parts replacement as required should prevent emergency breakdowns occurring.

2.3 Condition assessments

It is recognised good property management practice to carry out regular condition surveys of all buildings within a portfolio, or at least those facilities which have a key operational role and where failure would have substantial corporate implications. The results of such inspections will provide information to enable accurate operational planning and financial budgeting as schedules of future maintenance works are built up across a portfolio. The inspection analysis will also form part of the strategic review process for the whole operational portfolio, so that buildings which perhaps have a limited organisational life do not, for example, have large sums expended on refurbishments with paybacks beyond their expected 'portfolio life'.

2.4 Managing delivery

Planned maintenance programmes are best controlled using software which links to the asset register for each facility and highlights the operational importance and servicing requirement for each piece of plant. This will ensure an efficient use of time by visiting operatives and the completion of records enabling the performance of the facility to be tracked.

The remote sensing of the performance of plant and machinery within large buildings is an important element in improving the efficiency of the facilities team and in servicing the building as upcoming problems are identified. Whether these technologies should enable the replacement of planned visits by inspectors/surveyors is a matter for discussion. However, it is likely that the frequency of visits to check on some plant items can be reduced where buildings are remotely monitored.

The execution of maintenance works, whether planned or unplanned, deserves detailed consideration since it has the potential to cause expense and delay if not managed efficiently. While the facilities team may manage a number of contractors, a preferred solution might be to outsource the servicing and maintenance roles to a 'total support contractor' to whom maintenance requirements are directed and who will organise the appropriate unplanned incident response or planned maintenance service as required by the organisation. These arrangements ensure that the appropriate contractor or engineer is commissioned to visit each building and the facilities team will receive reports of condition and/or required repairs as inspections and maintenance works proceed. They will also be in a position to assess performance against their maintenance budgets and adjust the works required dependent upon the occupation strategy for each facility.

Table P2 [2] Operating and Maintenance Manual template

Part 1 Introduction	Contents, use of the manual, emergency information, contacts listing, contractual and service information, utilities suppliers and contacts.
Part 2 Health and safety	Confirmation of the legislation applicable. Risk assessments. Waste disposal information.
Part 3 Building description	Overall description of the building with outline design and construction parameters.
Part 4 Operating procedures	Overview of procedures for operating the building with BMS explanation and set down procedures. Routine inspections. Fault finding and remedial actions. Emergency procedures.
Part 5 Manufacturer's full listing	Full asset register including a complete plant listing, with plant serial numbers linked to supplier information 'addresses', including contact listings. Spares listings.
Part 6 Maintenance regime	Maintenance procedures for the building and M&E equipment and other mechanical plant. Links to manufacturers' handbooks/information and to supplier care contacts. Regular maintenance task programme listing.
Part 7	Full commissioning and certification data.
Part 8	Full sets of as built drawings.

2.5 Risk assessments, safety and maintenance

Risk assessment practices do have the effect of reducing workplace injuries. As well as highlighting risks resulting from poor practice or fit-out, they highlight outstanding maintenance and repair. Again, software driven check assessments may be carried out which track conditions such as office environment, cleaning quality, trailing leads, noise and the control of hazardous substances. The facilities team may rank the risks on a prioritised basis and work through the listing as time and resources allow.

Effective maintenance programmes will help to ensure a safe working environment. Facilities managers have a legal duty, on behalf of the senior team, to ensure safe working conditions and compliance with legislation and regulation must be included in contracts and service level agreements (SLAs). Regular reports on health and safety performance should be provided by contractors and by the facilities team to senior management.

2.6 Building operating and maintenance manual¹

The increasing complexity of buildings and sophistication of plant, machinery and controls means that operation and maintenance manuals for all but the smallest of buildings are essential information for the facilities management team. For new buildings, the developer's architect should provide this manual to the owner. In most cases, occupiers of parts of buildings will not require the whole manual but the facilities manager will require a section dealing with the operation of the occupied areas.

These manuals define the procedures to efficiently operate and maintain buildings and will include detail about the structural specification, mechanical and electrical systems, air conditioning and heating and all other plant and control items, as well as the utility supply capacities and locations. A typical template for this information manual is shown above. The document should be available both electronically for multiple and remote access and in 'hard copy' at the building.

2.7 Conclusion

Property maintenance budgets, rather like the principal facilities management budget, are subject to 'raids' by the internal financial community when the organisation's overall performance is poor. However, the potential corporate cost of facility failure or of a health and safety incident resulting from a downgrade of maintenance is impossible to predict or measure. The facilities team should ensure that the maintenance budget is preserved to protect the image, reputation, operational integrity and legal status of the organisation. Maintenance is not an activity to be shelved; the consequences of doing so can be catastrophic or at least business damaging.

Endnotes

Note 1 *Facilities Management Manuals – a best practice guide.* CIRIA, 2002

3 Managing office workspace

Overview

The very important role of providing and managing an effective and productive workplace is discussed along with the problems associated with measuring productivity and keeping occupiers and the organisation secure.

3.1 Introduction

It is recognised that optimum workplace management aims to create the right balance of environmental ambience and working technology to suit the requirements of the occupiers. However, there is much more to the facilities management role than providing space and managing ICT to the building. The accommodation must support various work modes and the differing working environment needs of individuals and working groups. The facilities team are called upon to manage the ‘working experience’ of occupiers rather than just providing functioning workstations and workspace.

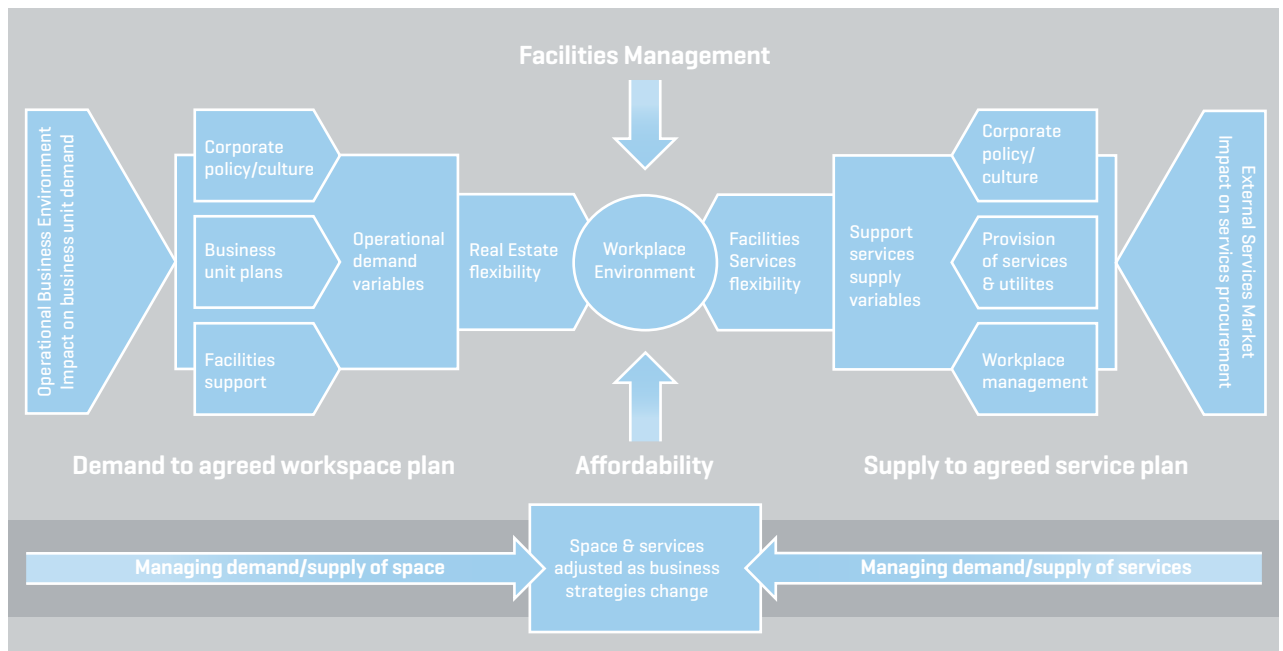
3.2 Space and service management

The management and allocation of space is of prime importance in creating effective workspace and managing the accommodation budget. The facilities team are the managers of the ‘tension’ between the demand for and supply of space and services in the office and for reconciling these forces to create the right workplace environment. This is illustrated in Figure P2 (3).

On the left, the illustration shows market conditions, corporate vision and mission, business performance and pricing affecting the operational requirements for space and services. This ‘demand’ will be within the price/cost parameters set in the budget for the year and the organisation’s longer term strategy for accommodation and services. The ‘flexing’ of space and service needs should not be a surprise to the facilities team who should have an understanding of the organisation’s operational strategies from regular meetings with managers.

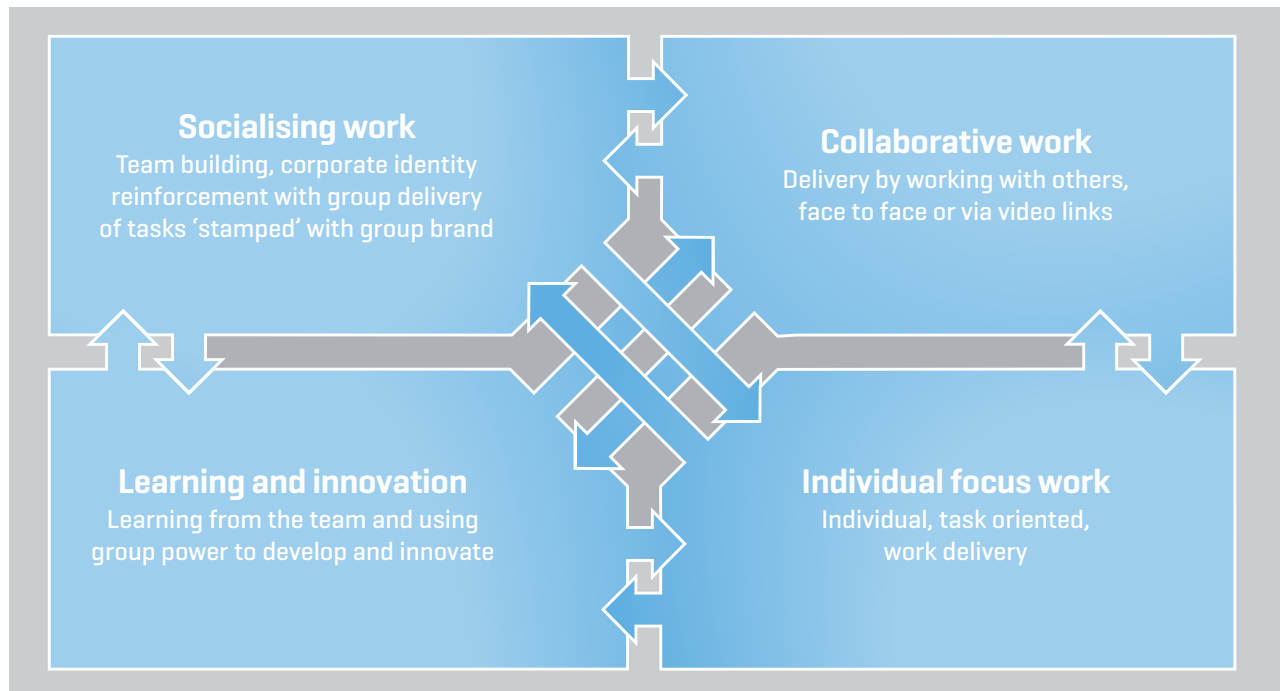
On the right, the facilities team are procuring services in the external marketplace. This example assumes levels of outsourcing of service provision. Again the supply of services should be in accordance with the strategies and plans previously agreed for the supply of services.

Figure P2 (3) – Managing demand/supply of space and services



Source: Then 1996¹

Figure P2 (4) – A variety of work settings



The final workplace environment, in terms of space allocated and services provided, will be delivered in accordance with the plans and processes laid down in the delivery strategies and plans (see Part 1 of this guidance).

It is important to reiterate that the facilities team should have early visibility of operational plan changes so that it can respond to workspace demand needs. It is also assumed that the fit-out adopted will provide a degree of flexibility so that physical workspace changes can be achieved without delay. The agility required in most organisations to bring new products and services to market makes a swift response to workspace changes of great importance and an opportunity to gain competitive advantage.

3.3 Design of the workplace

Research output from Gensler² shows that the adoption of generic open plan office layouts, with even the best workstations and with state of the art technology will not suit every peripatetic worker who turns up to use the space. Indeed, such arrangements, whatever their quality, may please very few.

The Gensler output shows that knowledge workers require a number of different working modes (settings) in order to achieve optimum productivity. These are identified as: individual focus, collaborative, learning and innovation, and socialising modes. An indication of exactly what these four activities mean is shown in Fig P2 (4).

Further research through 2010 until 2012 across a large number of workspace occupiers has shown that the importance of the 'individual focus mode' has often been overlooked in the drive for open plan workspace, so while some individual 'thought' spaces are designed into new layouts, there is often a considerable under-provision of such accommodation. The conclusion reached is that workplace strategies which omit adequate provision of individual focus space, with possibly too much collaborative space, will result in decreased effectiveness for both. This is because the frustration built up by the inability to work without interruption in individual spaces reflects into other work areas, producing poor productivity throughout.

3.4 Workspace remodelling to optimise performance

It seems, therefore, that much of the space that is laid out in open plan offices suits a 'generic occupier', giving every impression of being effective and, indeed the space packs in the workstations and appears to offer an optimum workplace, but actually suits very few.

As discussed, the focus mode worker, seeking a space for quiet uninterrupted working often finds an under provision of such space. There are many and continuing complaints that too many interruptions from noise, colleagues and communication equipment occur in standard layouts. This is not difficult to fix and some organisations are providing individual working cells which users can modify to suit their needs. Are we moving back to the individual office with the space and usage inefficiencies this implies? While there may be a slight possibility of this, focus spaces are not permanently allocated and the occupants are invariably mobile individuals whose occupation will be transient.

Generic, one-size-fits-all workspaces tend to choke-off thought workers, stifling innovation and invention by forcing people to work in pre-determined workspaces, which for some are 'uncomfortable' and lack the inspirational atmosphere which creates the productive activity that organisations are seeking. Alternatively, they may seek to work elsewhere and lose the benefits of collaboration, learning and socialising, which are also important workplace activities.

The requirements for the collaboration, learning and socialising modes are recognised in standard open plan layouts. However, there are changes needed here too, with a steadily growing requirement for the virtualisation of these three working modes, so that specialised facilities with quiet areas/rooms are required to enable longer conference calls to be taken without interruption. The creation of a collaborative environment for focused thought during a 'virtual gathering' requires the 'right' space to enable effective interaction.

The key lesson is that facilities managers should listen to the users of workspaces, hear their views on what is good, what is needed and what can be omitted. The facilities manager should see how other organisations are designing office space and track the global office fit-out trends for businesses in similar sectors. Through on-going collaboration with the users of the workspace, a design to suit a number of different modes will be devised which should support the majority of the occupying population.

It should be possible to achieve the most efficient and effective layout for each organisation without too much business-specific designing of the workspace or excessive fit-out costs. It is as well to remember that corporate waste of valuable working time by valuable staff far outweighs the marginal increased cost in achieving a favourable working environment for the majority.

3.5 Workplace effectiveness

The elusiveness of an office effectiveness and productivity measure has been a problem for organisations for 20 years. Studies have shown on a macro scale that temperature, ventilation, air quality, humidity, acoustics and lighting levels do have a direct and measurable effect on the performance of office occupiers. Building management system and sensor technologies enable environmental conditions to be controlled and balanced by the facilities team and while the cost of doing so may be significant, the cost of an unproductive office environment will be very much higher on the 'significance scale'.

The facilities team should also pay particular attention to ergonomics to ensure occupiers are not working in a way which might endanger their health through muscular-skeletal disorder. The Health and Safety Executive and the Institute of Ergonomics provide detailed information on this subject³. The value of a safe working environment cannot be over-emphasised both in terms of the organisation's legal responsibilities but also from an overall welfare and productivity perspective.

The key question remains: is the productivity of an office worth measuring given the difficulty? As mentioned earlier, the cost of staff and the building means that any indicator which throws light on the payback for this level of investment must be worthwhile. The facilities team, through their performance measurement surveys and the balanced scorecard approach to qualitative measures, will provide valuable feedback. In recent surveys, in answer to the question: 'The design of my workplace is important to me', 90.1% of respondents answered 'yes', indicating a strong interest in the workplace environment. Of more significance is this question: 'The design of my workplace enables me to work productively' to which 53.7% agreed. These results come from Leesman⁴ which specialises in measuring workplace effectiveness. Their surveys focus on the occupant's response to the physical office environment and the facilities services provided. The survey continues with questions probing the impact of workplace design on corporate image and culture and the enjoyment, community activity and productivity of the workplace.

Whether facilities managers use the results of their own occupier surveys or those from external consultants to gauge office effectiveness and productivity, it is time to make this topic a worthwhile part of on-going facilities management strategies.

3.6 Workplace security

This is a big subject and it is not the purpose of this section to provide anything more than an overview of the considerations which facilities managers should give to security.

Overall organisational security should be considered when occupiers are in the process of assessing the suitability of a building for their operations. Adjacencies, neighbouring or sharing occupiers, stand-off areas, the district and its communications, utility supply diversity and other vulnerabilities should be scored when decisions on location are being made. The specification, quality and durability of the structure are also of great importance when considering the suitability of a building from security and occupational protection perspectives.

At building level, personal and corporate security considerations will include access controls (physical, manned and electronic), intruder detection, CCTV and duress alarms, bio recognition and other technological means of asset and personal protection, which will track the location of people and physical objects within the building and its precincts.

The key balance is to ensure that security to the required level exists and to provide occupants with the knowledge that their well-being is top priority and that all reasonable steps have been taken to keep them safe. The facilities team, in partnership with senior managers, should liaise with staff to assess what level of security will be provided and the degree of 'intrusion' which will be tolerated to keep the organisation, its assets and staff in a secure condition.

The security of the organisation's systems is a specialist area which is normally managed by the ICT team. However, the facilities team may be called upon to deal with this additional responsibility and should consider the security standards set down in ISO 27001:2005⁵. This specifies the selection of appropriate processes and controls to protect the information assets of an organisation.

Other areas to be checked include network and system resilience, cyber espionage and server security, business continuity and disaster recovery testing, power security and an overall system risk analysis.

3.7 Power security

The majority of businesses run 24 x 7 systems which themselves rely on power supplies being available at all times. Before buildings are acquired, organisations should check the availability and adequacy of utility supplies and power diversity. Where operations are corporate-critical, fall-back arrangements should be made by the facilities team to ensure standby power is available through an uninterrupted power supply system (UPS), providing short-term back-up from batteries, or from their own generation plant.

These systems are expensive to run and maintain but compared to the losses which might result from, for example, a banking trading floor power outage, the costs are insignificant.

3.8 Conclusion

This section has considered some of the important issues for the facilities manager in the management of office workplaces. Office design, performance measurement, security and space effectiveness issues demonstrate again the varied role of this discipline. These critical issues will rise up the corporate agenda and the facilities manager needs to be sure that senior managers understand who keeps the business infrastructure 'ticking over'.

Endnotes

- Note 1 Diagram adapted from one appearing in *A study of organisational response to the management of operational property assets and facilities and support services as a business resource – real estate asset management*. (From an unpublished thesis by DSS Then, Herriot University, Edinburgh 1996)
- Note 2 Gensler: *What we've learned about focus in the workplace*. www.gensler.com/uploads/documents/Focus_in_the_Workplace_10_01_2012.pdf
- Note3 *Ergonomics and human factors at work*, at: <http://www.hse.gov.uk/pubns/indg90.pdf> and www.ergonomics.org.uk
- Note4 Leesman Index and Benchmarking Analytics: www.leesmanindex.com
- Note5 ISO 27001:2005: www.27000.org/iso-27001.htm

4 People and organisational capability

Overview

People are the key resource for facilities delivery. Service quality will depend upon the experience and training of the team and this section looks at the education and training of the right candidates for the sector. Assessing the capability and capacity of the facilities team is considered together with the ability of facilities staff to lead cross-organisation projects and deliver corporate change projects.

4.1 Introduction

The various definitions of facilities management discussed in Appendix 1 (see page 48) may give the impression that the facilities manager should be a 'jack of all trades and (perhaps) master of none', but nothing could be further from the truth. However, the problem for busy facilities managers is the prioritisation of the many calls upon their time.

A key part of the job is building relationships with operational managers with the intention of gaining information about their accommodation and services requirements. It is really important for the facilities manager to have an understanding of the business of the occupiers whether they are colleagues in the same organisation or customers of the service provider employing the facilities manager.

While being service-centric is of prime importance, the facilities manager will also have a practical interest in the buildings being managed – what makes them 'tick' – as well as the ICT and utilities infrastructure that keeps them 'alive'.

So, facilities managers need to have excellent management and communications skills, combined with specialist know-how. The role is one which on the one hand is strategic and on the other operational. The facilities manager needs a wide variety of skills to efficiently run a building or a portfolio of buildings, finding ways to make things work for everyone so that quality, sustainable services are provided at a competitive cost. This is an unusually wide role and a range of education and training products has become established to suit the range of jobs in facilities management, from the very technical to the senior facilities management roles in supplier businesses.

4.2 Education and training

There are a number of professional bodies¹ providing education and training in the facilities management discipline at levels ranging from Facilities Services (Level 2) to an MSc or Post Graduate Diploma in Facilities Management (Level 7) – see Table P2 (3).

Asset Skills, the Sector Skills Council (SSC) for facilities management, housing, property, cleaning and parking, role is to develop national occupational standards for employees, which reflect the needs of employers in its footprint. These standards are adopted to create qualifications. It also provides a brokerage service of available training.

Asset Skills is an employer-led organisation, licensed by government and working with business, public and professional bodies, and education and training providers, to ensure that required training needs are met and that courses are easily accessible.

4.3 Core competencies in facilities management training

Analysis of the facilities management role suggests the following principal competencies are relevant to the job:

- **building and workplace management** – building maintenance and performance, environmental services, workspace design and management, technology and communications (ICT)
- **financial management** – accounting, purchasing and supply, budgets, business cases
- **service delivery** – account/customer relationship management, delivery process and systems, contracts, performance metrics
- **compliance** – legal and regulatory requirements, in particular for the health and safety of users of buildings and staff; and
- **general management** – communication, leadership, strategy, change management, procurement and risk management.

These competencies are covered by the various available courses and in addition, Continuous Professional Development courses (CPD) supply the necessary knowledge updates, particularly in the legal and regulatory area, which are essential to the orderly and legal management of a facilities operation.

Figure P2 (3) – Asset Skills Education and Training Matrix for Facilities Management

STANDARD NATIONAL QUALIFICATION LEVEL		Vocationally Related/ Professional Qualifications		Professional bodies	
	L7	MSc or MBA in Facilities Management BIFM Postgraduate Certificate & Diploma in Facilities Management <i>[Job titles include Director of Services, Head of Global Facilities, Deputy Director]</i>		British Institute of Facilities Management (BIFM) Affiliate, Associate, Member, Certified and Fellow levels of membership are available. www.bifm.org.uk	
	L6	Bachelor’s Degree in Facilities Management Other relevant degrees such as Surveying, Planning, Management etc. BIFM Level 6 Qualifications in Facilities Management <i>[Job titles include Regional Director, Head of Department]</i>		Royal Institution of Chartered Surveyors (RICS) As a surveyor with membership to RICS you can use the title Chartered Facilities Management Surveyor provided you meet the RICS criteria and there is an FM pathway into AssocRICS www.rics.org	
	L5	Foundation degree in Facilities Management BIFM Level 5 Qualifications in Facilities Management Higher Level Apprenticeship in Facilities Management <i>[Job titles include Facilities Manager, Area Facilities Manager]</i>		Chartered Institute of Building (CIOB) Student, Associate, Incorporated, Member and Fellow levels of membership are available www.ciob.org.uk	
	L4	BIFM Level 4 Qualifications in Facilities Management Higher Level Apprenticeships in Facilities Management <i>[Job titles include Assistant Facilities Manager, Team Leader]</i>		Chartered Institute of Building Services Engineers (CIBSE) has FM specialist interest groups. www.cibse.org	
	L3	BIFM Level 3 Qualifications in Facilities Management Advanced Apprenticeship in Facilities Management <i>[Job titles include Facilities Administrator]</i>		Opportunities You could find work with a wide range of organisations as an in-house facilities manager. This could be in any area of business including public sector and non-profit making companies, or other large businesses such as law firms and banking. Alternatively, you could be employed by specialist contractors, or by large multi-service companies that provide a full range of design, build, finance and management services. If you have strong administrative skills and experience, you may be able to work your way up to a facilities management position. For example, some people take on wider responsibilities after working in a management job in areas such as building maintenance, cleaning, catering or security.	
	L2	BIFM Level 2 Qualifications in Facilities Services Apprenticeship in Facilities Services <i>[Job titles include Facilities co-ordinator]</i>			
	Personal Qualities and Skills			Suitable previous careers include:	
	Technical knowledge of building service The ability to manage a complex workload Customer Management Skills Legal and Health & Safety knowledge	Problem solving skills IT Skills Good spoken and written skills The ability to manage large budgets		Hospitality Cleaning/Caretaking Engineering Business Services Asset Management Trades – Electrical, Plumbing, Heating & Ventilation etc.	Block Management Surveying Business or Finance Security Catering Land Management Property Development
				FACILITIES MANAGER	

4.4 Reaching the right candidates

It is important for the sector to become more visible as a career opportunity across the age range from school leavers upwards. The messages to potential candidates are unclear, not helped by the confusing multiplicity of definitions of facilities management. A joint approach by the professional bodies to publicise material which will inform those at all levels about the many opportunities offered in facilities management up to degree level candidates, would go some way to promoting the facilities manager within corporate operations, and provide a better understanding of the roles available within the profession.

4.5 Reaching the wider business community

The message about the strategic importance of facilities management in driving value needs to be broadcast to the wider business community through whatever means available. Facilities professionals speaking at business conferences could do much to increase visibility and understanding, while case study material in the business press would create interest and understanding to a generally 'disinterested' general management community.

In these communications, the facilities management profession needs to dispel the impression that facilities contracts are all about minimum price, delivering minimally acceptable quality services and missing delivery targets. While it is difficult in this highly competitive sector to 'retrench from this cost driven rut', particularly in harsh economic times, the future for the sector depends upon a shift of focus to quality, fair price and a core business-enhancing service to its customers.

4.6 Leadership

The facilities manager is well placed to take the lead of the organisation's Core Services Support Group². Leading the agenda in projects involving this group requires an ability to formulate and promote the project and the roles of the various supporting teams as well as what is required from the organisation's operational managers. The leader must have the persuasive power to influence and guide the decisions and strategies others will take in relation to the organisation's resources and services. The ability to 'lead upwards' in terms of influencing senior management is another requisite skill. If this can be perfected, the facilities manager stands a very good chance of promoting the advantages not only of the project, but also of the value of facilities management to the organisation as a whole.

For the facilities manager, taking the time to provide leadership of the group for issues that require the combined efforts of the core support services will add value, in particular, to the profile and status of the facilities team.

4.7 Change management

Some of the projects which require the facilities manager to take on a leadership role will involve organisational change. Change may be taking place, for example, to concentrate the organisation on its key objectives, to 'de-clutter' non-core activities, to flatten the structure or to redesign processes. Whatever the reason, structural change will require a redesign of the delivery units and a change of accommodation and service delivery. These organisation-wide projects will involve the whole of the core support teams and again there is a role for the facilities manager in leading the change management drive. This will certainly be the case if the change project is a prospective outsource of facilities service delivery, with the need to prepare detailed project specifications to assess the business cases for the various options under consideration.

Structural change of this type creates organisation-wide concern for staff and so it is imperative that the change team takes the time to plan the project meticulously and to design into the process detailed communication events so that everyone is clear about what is planned. Change management is a strategically important operation, refocusing the organisation and enabling it to respond to external competition. Whatever organisational change is contemplated will mean a change in services delivered by the facilities team to workplaces and perhaps to new locations. Outsourcing the facilities function will mean a very fundamental change and a possible transfer of staff to an external supplier.

Such change projects require the skills of a good project manager, with an understanding of the objectives of the organisation to manage the prospective changes. The senior facilities manager, with the ability to efficiently plan the change steps and the consequential organisational and core support service changes, will provide the ideal leader for the project. However, a manager outside the facilities function would be required to objectively oversee the management of the outsourcing of that service.

The efficient delivery of change management projects enables an organisation to compete effectively in a dynamic market and the speed of response will provide advantage over less agile competitors.

4.8 Organisational culture, structure and capability

The culture and attitude of an organisation towards facilities management is a significant factor in the delivery of a successful facilities service. To be optimally effective, the facilities function should be recognised and supported by management as a service which will enhance organisational performance. Only then will fully aligned facilities and business plans be produced and the necessary dialogue take place about upcoming operational changes which will need the support of the facilities team.

In order to enhance organisational performance, the facilities team needs:

- to have good links with, or be a member of, the strategy forming group to understand fully the aims and objectives of the whole organisation including those of the individual business units and to be involved with corporate decision-taking
- to be led by a respected facilities manager who has access to all operational business units
- a clear reporting line to a senior board level member
- a mechanism to 'unload' day to day activity to a service provider, so that strategic, corporate focused activities can continue unhindered
- a link to financial planning so that project business cases can be 'tested' and performance metrics and benchmarking objectively carried through
- a good dialogue with the core support teams and, ideally, an agreement that the facilities manager will take a lead role in organisation-wide projects; and
- the support of the finance and operational teams when the annual planning and budget discussions take place, to ensure mutually supportive strategies and operational plans are developed.

The organisation needs to be 'driven' by a senior manager to ensure these structural imperatives are established for the benefit of the whole organisation. However, the organisation should be sure that the facilities management infrastructure has the capability to carry through these responsibilities.

4.9 Delivery profile matrix

Table P2 (4) illustrates a Delivery Profile Matrix, which aims to measure facilities management practice and identify the capacity and capability of the operation. Each assessment area, shown by darker blue tinting, is broken down into a number of sub-sets and scored individually so that a picture is established of the strengths and shortfalls of the facilities operation. Action plans can then be drawn up to 'plug the gaps' and show where additional training and support may be needed.

Taking the first assessment area of strategy, a selection of the questions leading to the ultimate score of 'competence' might look like this:

1. Are accommodation and facilities management services considered as part of the strategic planning discussions for the organisation and its operating units?
2. Does this extend to detailed discussions about right place, right space, right services, and right cost for each operation?
3. Has the organisation considered a number of solutions to the supply of facilities services – outsourcing in part or in total, for example.
4. Have all options been systematically and objectively analysed?

5. Is there a system for regular reviews of the services supply strategy, to ensure that changes in operations are reflected in accommodation and service supply changes?

In the same way, examples of questions under the assessment area of 'performance management' and leading to the 'competent' score might be:

1. What arrangements are in place to measure the performance of the facilities team?
2. What management process exists for reacting to these performance assessments?
3. In relation to service delivery, what methods are used to check the quality of services delivered to customers?
4. How objectively are these results analysed and what process is adopted to address shortfalls in performance?
5. How does the facilities operation assess its performance compared to other similar operations in the sector and against the performance of external service providers?
6. Is this achieved by benchmarking with other sector organisations, using information that comes from services provided by both in-house and external facilities teams?

This analytical method aims to assess the capacity and capability of in-house facilities management teams as a means of improving their operations or as part of an exercise to consider alternative delivery strategies for the organisation. It is not, of course, appropriate for the analysis of the capability of external suppliers.

This technique is an adaption of the matrix developed by OGC (now the Cabinet Office), to test property asset management proficiency in the public sector. This is the 'output end' of a very detailed questionnaire developed to test the level of in-house capability to provide excellence throughout the range of facilities services. It is designed to be used to 'test' the abilities of the facilities team from a number of different perspectives.

In the Table P2 (4), the score of 'competent' indicates that there is an appreciation of the need for an alignment of facilities with business strategies and that the facilities group has been involved with the creation of such strategies. This is underlined by the 'excellence' scores for delivery plans and operations management, where it is evident that discussions with the internal customer have produced a set of delivery specifications and operational plans to suit the requirements of the business units. This in turn shows a capacity and capability competence within the team who are operating within a set of policies and standards and with a data and a management information system which supports their operations. There is only an 'awareness' of the possibility of delivering change with a present lack of capability but there is in place a 'competence' in performance management and measurement. The review and audit system is scored 'average' and needs some attention. The overall score of 26, against a potential 36, shows that there is room for improvement.

Table P2 (4) : Facilities Management Delivery Profile Matrix

Delivery Profile	Score	Strategy	Delivery plans	Operations management	Capacity & capability	Policies & standards	Data & MIS	Deliver change	Performance management	Review & audit	Score totals
Excellence	4		X	X							8
Competent	3	X			X	X	X		X		15
Average	2									X	2
Aware	1							X			1
Unaware	0										
		A	B	C	D	E	F	G	H	I	26

4.10 Conclusion

The quality of service experienced by customers depends largely on the capabilities and training of the people delivering the service, no matter how good the process and management behind the scenes. So, it is vitally important to source the right people and to train them in a service culture. Training and education opportunities are provided by the professional bodies and higher education establishments and investment by service suppliers in their staff will be quickly paid back.

The requirement for education and training is not confined to the point of delivery. Good quality management must be developed and there are a number of higher education and university level courses available to upgrade management, leadership and change management skills.

One of the problems the sector has is attracting the right candidates and focusing general managers on the importance of facilities management to overall operations. Ensuring that the facilities management message is 'broadcast' in the right arenas is very important and is a topic for all the sector professional bodies to consider.

Endnotes

Note 1 Professional bodies providing facilities-related education and training:

BIFM – www.bifm.org.uk

CIBSE – www.cibse.org

CIOB – www.cio.org.uk

IFMA – www.ifmfoundation.org

RICS – www.rics.org

Courses available at UK universities:

See the websites of the Universities of Brighton, Herriot Watt, Napier, Reading, Liverpool John Moores, Leeds Metropolitan, Salford, Westminster, Central Lancashire, Greenwich, Glasgow Caledonian, Swansea Metropolitan, Sheffield Hallam, the Open University (OU) and University College London.

Courses are also available from the College of Estate Management (CEM).

Note 2 Core Services Support Group: the finance, human resources, procurement, real estate and facilities management teams which support an organisation's operational units.

5 Technology, information and data management

Overview

Facilities management information and data handling systems are discussed together with new technologies which are changing – and will change much further – the way in which buildings and accommodation are designed and managed.

5.1 Introduction

The success of a facilities management operation is absolutely dependent upon a robust and well- designed Management Information System (MIS). This should supply data to the FM team about the operation of individual facilities as well as providing information to highlight the contribution being made by facilities management policies to corporate objectives.

5.2 Operational reviews and reporting

The facilities management information system provides the FM team with two main information flows. The first relates to the day to day management of the accommodation and associated assets, which enable the ‘in the field’ teams to carry out their tasks. The second is analytical information needed to regularly report progress on the management of the accommodation portfolio. These information flows are needed whether the facilities team are in-house providers, sub-contractors or a team dealing with all services through a totally outsourced facilities management contract.

Focusing on the second information stream, the management information system should generate reports on at least two levels:

1. A high level report for senior managers demonstrating the added value to the business of the facilities management operation. This may be reported in a Scorecard format relating to the objectives of the organisation and highlighting where FM has added value, perhaps, for example, in space efficiency through good workplace planning or improvements in sustainability targets through reductions in energy used.
2. Operational reports comparing performance against agreed metrics and for ease of presentation and understanding, showing these in a dashboard format. The reports should be backed up by location specific reports on the performance at each facility against budget, performance targets and showing occupier feedback relating to satisfaction with services delivery.

All reporting should provide performance trends over time or in the case of external providers of services, during the life of their contract. This will give the client and occupier a view of supplier performance against all set targets over a given timeline.

5.3 Technology for facilities managers

Facilities managers are tasked with ensuring that the accommodation portfolio effectively supports people and activities by providing appropriate, quality serviced space in line with the objectives of the organisation. Over the years, facilities managers have used various means to assist them in the task of managing mechanical services in buildings and more recently, developments in digital technology have provided new and exciting opportunities to extend the range of control both within buildings and the control of buildings remote from the managing team.

Increasingly, through the design stage of buildings, the prospective accommodation is modelled to assess its effectiveness to occupy, its efficiency to heat, cool and light and to gauge whether the resultant environment will stimulate innovation and productivity for its prospective occupants.

These technologies benefit the facilities manager by providing a predictive tool against which to measure the building in operation, enabling the infrastructure to be benchmarked against its virtual model, as servicing, maintenance and refits are carried out.

5.4 Technology trends

(A glossary of terms is included in section 5.7)

FM teams are used to CAFM¹ and IWMS² systems, which are useful in facilitating the delivery of services which support operations. The trend is for the interoperability of these pre-existing systems with GIS³, RFID⁴, building control, security and other systems which enable the facilities manager to remotely manage a facility.

In the workplace, the impact of gestural interfaces such as Kinect⁵ will change the way occupiers operate. Cloud computing⁶ enables access to corporate information from anyplace, particularly applications like web-based CAD⁷. Digital camera technology assists with, for example, remote security and remote maintenance inspections. RFID⁴ will track assets, enabling immediate inventory updates, asset valuations and improved asset security. BIM⁸ will lead to improved design, servicing capability, more efficient workspaces and energy savings through pre-delivery modelling and it is predicted that Nanotechnology⁹ will eventually have a profound effect on materials, servicing products, energy consumption and much more. Motes¹⁰ provide the technology for remote sensing of, among other things, workplace environments while 5DBIM¹¹ technologies offer the interoperability

of CAFM and BIM systems with time and cost data, to produce the prospect of real time or predictive management of space, equipment, utilities and working environments.

Interoperability, as seen in the BIMStorm¹² process system, MS SharePoint¹³ and the Newforma¹⁴ suite of products, points the way forward to systems which integrate and operate together and can be adapted by users to sit alongside their pre-existing systems.

More recent developments have seen a further advance of BIM: 6DBIM¹⁵ which adds the Operating and Maintenance Phase (that is facilities management) to the BIM process. In the UK, the government sponsored HMG BIM Task Group is working towards the universal adoption of 3DBIM processes on all government building contracts from 2016.

Currently, the traditional property management programmes and accounting systems do not link seamlessly with the facilities-focused systems, but it is to be hoped that the move to interoperability across systems generally will be a development in the short term.

5.5 Technology in the workplace

Where is the workplace? For facilities managers the focus is on both the built and virtual workplace but the balance is ever-changing and supporting the increasingly mobile workforce means an essential partnership must exist at management level between FM, IT and HR managers in order to support staff as, when and where they work.

The key to the mobility and productivity for staff is network connectivity for any device and bandwidth availability to support, for example, a video conference or the viewing of data-rich design drawings. The adoption of wireless networks in and around physical workplaces adds greatly to employee mobility and connectivity.

For the facilities manager, the variability of numbers in the workplace and the unpredictability of when staff will be occupying desking space is a particular problem which makes the sizing of office space a difficult task. The use of sensing devices to register occupation enables the tracking of occupation densities and BAS¹⁶ will enable energy savings when defined sections of an office building are unoccupied. Experience over time may allow floor space to be released, thereby saving on overall accommodation costs.

5.6 BIM for facilities managers

The speed with which BIM is developing suggests that it will soon become a vital part of the facilities management portfolio of aids – see 6DBIM¹⁶ at section 5.7 below. BIM will facilitate the better management of life-cycle building and space management requirements, which will include:

- Project delivery. The use of BIM templates can greatly simplify project delivery, for example, where buildings are refitted with similarly specified finishes on all floors or a retailer is refitting a portfolio of stores in a similar manner. The availability of project information on line with the tracking of design changes and delivery will increase the efficiency of project management, improving completion times and reducing delays.
- Space management. The 3D BIM formats make the planning and subsequent management of space much more efficient.
- Visualisation. The powerful 3D capabilities of BIM and its capability to display potential and actual changes over time (4DBIM) will facilitate work scheduling, the tracing of design 'clashes', change tracking and the training of facilities and engineering personnel.
- The management of security and emergencies. BIM will assist with the analysing and planning for emergency management, escape routes and capacities, blast zones and setbacks and the management of CCTV zones, scope and viewing.
- Collection, analysis and display of data. BIM can be used to collect, analyse and manage static and real time data about how a building is operating, what parts are occupied and enable the better management of space, energy and facilities team resources.

As previously mentioned, interoperability with pre-existing FM systems is an imperative requirement for BIM and once this is successfully delivered, the acceptance of BIM by facilities teams should improve.

5.7 Glossary of technology terms

Ref 1

CAFM Computer Aided Facilities Management. Software aiding the facilities manager in the maintenance and management of accommodation and buildings. This includes the capability to manage, plan and budget, project manage, record condition inspections, maintenance, utility usage and real estate management data.

Ref 2

IWMS The Integrated Workplace Management System is software that integrates five key components, operated from a single platform and database – real estate management, project management, facilities and space management, maintenance management, and environmental sustainability.

Ref 3

GIS Geographic (geospatial) Information Systems are designed to capture, store, manipulate, analyse, manage, and present all types of geographical based data. GIS is the merging of cartography, statistical analysis and database technology. This enables the tracking and tracing, for example, of assets around sites and buildings and the tracking of staff and vehicles in the course of their work.

Ref 4

RFID Radio Frequency Identification is a data collection and tracking technology that uses electronic tags for storing data. The chip tag with an antenna is attached to equipment or infrastructure and transmits data to a reader or to remote sensors.

Ref 5

Kinect This is a motion sensing input device by Microsoft based on a webcam-style device. It enables users to control and interact with hardware without the need to touch screen or keyboard, through an interface using gestures and spoken commands.

Ref 6

Cloud computing Cloud computing is the use of computing resources (mainly software) that are delivered as a service over the Internet. Cloud computing entrusts remote services with the user's data, software and computation. However, it means that the user does not need to be involved with software maintenance and upgrades. Access to corporate resources stored 'in the cloud' is available globally to authorised users from anyplace.

Ref 7

CAD The well-known Computer Aided Design system creates, modifies, analyses, or optimises a design. CAD software is used to increase the productivity of the designer, improve the quality of design and communications through digitising documentation and to create a database for manufacturing building components. CAD output is usually in the form of electronic files for print or machining operations.

Ref 8

BIM Building Information Modelling is a process involving the generation and management of digital representations of physical and functional characteristics of a facility in 3D format. The resulting building information models become shared knowledge resources to support decision-making about a facility from the earliest conceptual stages, through design and construction and through its operational life – hence the application to facilities management. BIM is used extensively in design and construction but is equally useful in refurbishment and refits. Its application to FM situations will develop as interoperability with existing FM systems is better understood and accommodated.

Ref 9

Nano technology Nano technology is the engineering of functional systems at the molecular scale. Constructing or reconstructing building materials opens up the prospect of new materials with longer maintenance free lifecycles.

Ref 10

Motes Motes form an integral part of wireless sensor networks (WSN), which are wireless networks consisting of spatially distributed autonomous devices which use sensors to co-operatively monitor physical and/or environmental conditions – temperature, sound, vibration, pressure, motion or pollutants, at different locations so providing remote information retrieval for the facilities manager who may then respond by adjusting building management systems to save energy or improve working environments.

Ref 11

5DBIM 5D BIM is an acronym for 5D Building Information Modelling, which refers to the intelligent linking of individual 3D CAD components or assemblies with time and cost-related information. The use of the term 5D is intended to refer to the addition of fourth dimension – time and fifth dimension – cost, to the 3D model. The construction of the 5D models enables the various participants of a construction project – designers, contractors, investors, FM managers – to visualise the progression of construction activities and their related costs over time and the subsequent management of the completed building. BIM-centric project management is intended to improve the management and delivery of a construction project of any size or complexity. It assists with the design and execution of the fit-out process and the subsequent management and maintenance of the building. Over time, it will have a considerable effect on facilities management operations.

Ref 12

BIM Storm BIMStorm is a Cloud computing collaborative process that leverages web-based BIM capabilities to enable data sharing among multiple software programs including BIM software, GIS systems, Google Earth, Excel and other sources, and even hand drawings. These online 'data swaps' allow large amounts of business processes to be substantially reduced in duration while improving accuracy by not recreating data at each step of a project. This is another technology with implications for the facilities management sector.

Ref 13

MS Sharepoint Sharepoint uses the 'cloud' to easily store, synchronise and share important content with teams. This may vary from FM building/service information to team management/HR information. The system will gather information from various locations and prioritise work tasks intuitively.

Ref 14

Newforma Newforma Project Centre software is the building and infrastructure industry's most integrated and comprehensive solution for managing all forms of project information, whether at the office, from the cloud, or on the move. It has easy web access and seamless connectivity with other companies using Newforma software.

Ref 15

6DBIM See BIM and 5DBIM above. 6DBIM includes the 'as built' information about a project along with building component, plant and fit-out information as well as the operations and maintenance manuals (the FM information), with warranty data, manufacturer's information and manuals. This database can be globally accessible through a customised proprietary secure web-based environment. The accuracy of 6DBIM aids facilities managers in the operation and maintenance of the facility throughout its life cycle.

Ref 16

BAS Building Automation System. A computerised control system and intelligent network of electronic sensors which monitor and control the mechanical and lighting systems throughout a building, by zone.

5.8 Conclusion

The existing and new additions to the technology portfolio will enable building and facilities managers to oversee portfolios of buildings remotely and to keep track of items of equipment and other assets with relative ease. The same technology has the power to facilitate more flexible working arrangements for many of the customers of the facilities team. Their agile working patterns are very difficult to predict and so present particular challenges to facilities managers tasked to provide the right amount of workspace at a competitive cost. The facilities sector will need to decide how these technologies can be used to enable the more efficient management of buildings and thereby add value to the organisations they are supporting.

Endnotes

- Note 1: See HM Government Website re the BIM Task Force: The Building Information Modelling (BIM) Task Group are supporting and helping deliver the objectives of the Government Construction Strategy and the requirement to strengthen the public sector's capability in BIM implementation, with the aim that all central government departments will be adopting, as a minimum, collaborative Level 2 BIM by 2016. <http://www.bimtaskgroup.org>
- Note 2: See also the RICS Facilities Management Data and Information Paper www.rics.org/global/facilities_management_information_and_data_management_dwl.pdf