Performance management in facility management
Top key performance indicators in FM
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By Sara Bean

By garnering the views of its staff, global telecoms company Three transformed its "tired and dated" Glasgow office into a workspace where "Every Day is Wonderful". On October 13, the project won the 2014 BIFM award for impact on organisation & workplace.

Following the decision to build its sales capability in the UK, global telecoms company Three planned a major recruitment drive for its contact centre for customer services and sales, at its St Vincent Street offices in the heart of Glasgow. The scale of the expansion was ambitious; to increase the headcount from 570 to around 940 within the existing four-storey building.

Although the site had an efficient facilities team with services provided by Eore using a mixture of self-delivery and sub-contracted services for specialist areas such as catering, it was the existing office design that posed a problem.

Diana Kilmartin, director of People Workspace & Strategic Planning at Three, explains: "Two of the key drivers of this project were to improve employee engagement and to immerse our people in our brand. The original layouts of the offices did little to encourage collaboration, with uninspiring and dated décor, poor lighting and inflexible workstations."

A poll of its Glasgow occupants revealed an engagement level of just 46 per cent, which meant that some work was needed to improve the workspace to both attract and retain staff.

Kilmartin says: "It was clear that change was needed, but the opportunity to change and reinvent our Glasgow office was one we relished."

The project objectives included; bringing Three's own brand philosophy of 'Every Day Wonderful' to a tired and dated workspace in which both morale and retention rates were low; improving communication and collaboration between teams; bringing the retail experience to the office environment to assist the sales team with its knowledge of what was being sold; accommodate a dramatic growth in occupancy in line with an aggressive business plan; and

improved levels of staff engagement, where staff would be proud to talk about the office environment outside of work.

To ensure that its people felt valued and aligned to the changes it was important that they were given some sense of control of their new environment. For that reason all occupants were invited to communicate and collaborate with the FM team on what they wanted from the new workspace.

Staff engagement

A series of FM team discovery workshops were held throughout the planning stage, which ran from March to October 2012. The process kicked off with an environment-brainstorming meeting with all staff, then there was a series of discovery workshops using a steering group that, once the design was formulated, was invited to comment on the proposals.

Following the discovery workshops and staff interviews a 'Staff Wish List' of more than 100 items was devised, which resulted in 92 per cent of the occupant's ideas and suggestions being incorporated into the design.

Three took the time to keep staff informed throughout the project. Office design firm IOR presented the design concept to the entire Glasgow workforce, and a mobile app and intranet site were created to update employees during every aspect of the project. Three produced posters and newsletters, used social media such as Instagram and Twitter, and display screens and images captured on a time-lapse camera took an informative, educational and humorous approach that reflected the company's ethos and brand values.

The project began in late October 2012, running over a 39-week period. The refit covered a gross internal area of 6,300 sq m across all four storeys

of the building and was completed to its budget (£3,876,265.51) on time, despite the offices being fully occupied throughout, as well as taking on about 150 new starters. A strong environmental remit ensured a Ska Silver-accredited fit-out, with re-use where possible, energy efficient lamps, light fittings and high frequency lighting, and the installation of occupancy monitoring lighting controls.

Kilmartin explains: "As with any project of this nature, time and cost are always a challenge. For example, we decided to refurbish an additional floor, but had to do this from the original approved budget amount. This had to be achieved without impacting on the visual impact and quality of the project as a whole. It took some time, innovation and creativity, but we did it."

Flexible fit-out

Because the building had to accommodate a growing number of staff both during and following the refit, flexibility was a key driver. Within the main workspace a benching system was introduced, which could accommodate different-sized teams as required, depending on the call centre shift system. This doesn't mean loss of identity, however. All of the staff have their own desk space and are provided with lockers for personal belongings.

Workers can also elect to access technology from anywhere in the building, as the IT and wireless technology were also upgraded. This has helped to improve connectivity with the other Three sites, something that was problematic in the past. New air handling plant and comfort cooling was also installed to meet the increased headcount.

One of the difficulties with the previous layout was the large lobby area in the centre of the building around the lift core, which effectively divided every floor. The solution was to use these areas to offer a range of breakout areas that maximise opportunities for people to communicate, collaborate or learn.

Three types of areas were devised. Inspire is intended to educate employees by encouraging them to connect with technology, and includes space for new product demonstrations and displays.

One of the main employee complaints was the lack of available meeting space, so Discovery is aimed at improving team interaction and learning by offering a

Occupant engagement
How facility managers act as change agents

By Janice Barnes & Rachel Casanova

1315 Peachtree Street (Atlanta Office of Perkins+Will) Atlanta, GA
Photo by Eduard Hueber | archphoto.com

Increasingly, today's organizations are faced with questions about change management, occupant engagement and transition planning. Before diving into who should be leading these initiatives and how to ensure success, it is important to understand the differences between these related but distinct concepts.

Key concepts

Change management is an overarching effort that stems from a decision to make an organizational change, be it physical or otherwise. In order to embrace the change, employees, students, patients and other users of the space must have a firm understanding of:

- What will be changing
- Why it will be changing
- How it will affect the experience or use of space

Once these elements are defined, an action plan should be developed to guide the change — this is referred to as a transition plan. It is tactical. It defines the communication strategy, engagement activities and training that should be provided to deliver successful change.

In many transitions, for example, this requires recognition of other tools and processes that will need to shift in order for the change to be fully implemented. A good first step is defining the future workplace, which includes identifying the myriad practices that will need to adapt in order to support this new workplace. This process includes establishing refined management training and facilitating cross-department/ cross-discipline conversations in order to assure that each work process touched by the new workplace strategy aligns.

Employee engagement is a requisite part of the transition planning process. In particular, engaging employees in ways that are meaningful, authentic and thatdemonstrate value is critical. This helps make it easier for them to adopt new behaviors and let go of old ones. It is well established that employee engagement can reduce costs, drive greater innovation and problem solving and have a dramatic impact on employee retention.

Overall, an engagement strategy should build trust and understanding in addition to allowing employees to be participants in the process, and more deeply understand how their work will change and why. Consider developing a guide to help employees understand a range of typical building functions, including sustainable design aspects such as refraining from overriding sustainable lighting controls and how to answer customer questions regarding the company's commitment to sustainability. Through this guide, employees will be able to become more deeply engaged with the facilities they use every day.

Occupant engagement goes beyond an organization's relationship with its employees; it may relate to the connection between landlord and tenant, a student within a university or a specialized practice joining a larger health network. The point is that a person who is an occupant isn't always an employee, but can instead be a customer.

As a result of the different relationship, the structure of the change process must adapt. For example, even the most sustainably designed building requires participation from its tenants to achieve its long-term goals. Consider individuals employed by different companies within the same building. Now imagine their habits in regard to turning electronics on and off, interacting with automatic shades, and using stairs and elevators.

The landlord, driven to achieve building performance, must engage those occupants to encourage the desired behavior while managing the landlord/ tenant relationship.

The role of facility managers

Occupant engagement is an integral component of an aligned, well-designed strategy for workplaces, academic buildings, outpatient facilities and critical care hospitals. When any of these spaces is redesigned, the process creates visibility into many other non-spatial parts of the organization. The space becomes an embodiment of the brand and the culture of the organization, and it serves as an enabler for other changes.

There are many case studies over the last 20 years where design was used as the primary catalyst for change in an organization — in the model of "if we build it, they will change."

However, this model has not been especially successful. Instead, it often creates discord and disengagement if

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range of meeting and training rooms, which are now heavily used.

At the other end of the scale was a desire by staff to have somewhere to go to relax and get away from technology. For that reason four technology-free nurture areas or pods were created with a mix of styles and furniture. Pod 1 brings the 'outside in' and features deckchairs sitting on a 'grass' carpet; Pod 2 is for relaxation, with chaises longues sited below low-level pendant lights to create a calming aura, which can also be used for yoga; Pod 3 consists of comfy open chairs and ottomans for staff to read and relax and finally, Pod 4 offers a tea point with fresh fruit to promote wellbeing and healthy eating.

Kilmartin says: "We really made the open-plan spaces work for our people by using the core of the building as shared and meeting spaces."

"Without this and by taking a more traditional approach, would have meant we would have needed to take additional floor space by now."

Branding Three

Responding to the complaint that the building didn't "feel like Three", branding is incorporated throughout, beginning at reception where 'Gem' screens with large-scale messages reinforce the Three brand for visitors; branded touchscreen kiosks welcome and issue visitor passes and the firm's technology and wireless facilities are showcased.

The project also incorporated some simple, but very effective ideas that have gone a long way to engage staff. As it is a largely young workforce, based in the centre of a vibrant city, many of the Three staff go straight out to local bars and restaurants after work. The redesign had already included shower facilities to encourage people to cycle to work – but with the addition of lights around the mirrors, the bathrooms were transformed into dressing rooms. This simple and low-cost solution is just one more reason for staff pride.

Kilmartin says: "One of the outcomes we wanted was for our people to talk about their workplace outside work and for that message to spread locally. We feel we have definitely achieved this and it is a very positive factor used in the attraction and retention of new employees."

Following the project, maintaining high levels of engagement is dependent on continued monitoring by the facilities team. According to Kilmartin, this is being achieved by ensuring that new employees understand what "feels like Three" means in terms of how they work and use their workspace and in having an FM representative on the site leadership team so that any facilities issues are discussed, agreed and resolved by the senior team in Glasgow.

Going forward, she says: "We map trends and adjust our services where necessary. For example, the headcount using the building has increased in 2014 and with it the hours of use have extended to include weekends and later nights. We have had to think about how we reinvent our catering and cleaning service to suit."

The Impact on Organisation and Workplace Award celebrates working environments that as well as being functional and desirable also make a positive contribution towards job satisfaction and people's productivity. If one of the measures of its success is the response of its employees to the new workplace then Three was already worthy winner.

Architect Jane O'Connor, design director at IOR, explains: "The success of this project was having such a great brief and having a client who would allow you to access the staff and was interested in making sure that the staff were heard.

"They were inspirational in the brief and in their approach, which was pretty refreshing."

The BIFM judges agreed, remarking that the investment by Three and the valuable contribution of the FM team resulted in excellent shared facilities, space to handle the growth of a busy UK call centre and a doubling of staff engagement improvements (43 per cent to 88 per cent), which managed to deliver on more than 90 per cent of the staff wishes.

Kilmartin says: "We are thrilled to have won this award as we feel we were able to demonstrate how the workplace and facilities can really make a positive impact on our organisation. The sense of achievement by all who worked on the project and were part of the award submission was amazing.

"It made our day an 'everyday wonderful' day."

Occupant engagement

shifts in culture or processes necessitated by the new space do not receive the same attention. Things that are taken away (such as private offices or file cabinets or printers) force people to do things differently. Since facility managers are in the position to create physical changes, this becomes the time that behavioral changes are required. For example: if the file policy has been restated and is now to be completed electronically, people may continue to use the "old way" until the filing cabinets are removed. As a result, today's facility managers have become change agents, but they're not alone.

Many different parts of an organization must collaborate for any transition to be a success. Consider the following scenarios: Have your technology tools been replaced in the past year? Have you started scanning paperwork instead of keeping hard copies? Has employee mobility increased, resulting in changes in how everyone interfaces with technology, manages, is managed and relates to colleagues? It goes without saying that all of these changes require support from a range of subject matter experts, including real estate and facilities, operations, human resources, information technology, communications and business leaders. Some organizations also form continuous improvement groups to support complex changes. Notably, the involvement of business leaders cannot be overstated; they are the respected voice within a particular area of practice. Change is hard. Without leadership voice, success is much harder to attain.

Where to start

With any organizational change, initial assessment will help prioritize areas of focus. Consider the following factors as you assess the greatest needs:

- Voice – People want to hear from someone they respect and follow. Leaders need to have an active role in communicating and reinforcing the message. Remember that these leaders may be representatives of the management team, but they may also be found within the organization without a title that defines a leadership role; these individuals should be identified and engaged deliberately.

- Degree of change being experienced – If an organization is making major changes in the way that it works, whether physical or not, the need for support (and the duration of that support) is significantly greater than if the organization is maintaining its existing business model. If there are multi-disciplinary changes happening, then a team must be formed to work together. IT experiences changes very differently than human resources or real estate. These differences must be seen holistically and approached with a comprehensive change management strategy.

- Stakeholder characteristics – People are unique. Knowing your audience and their hot buttons, pain points and interests is key to creating positive change.

- Decision-making structure and authority – This further addresses

University at Albany School of Business   Albany, NY
Photo by Halkin Mason

stakeholders and specifically how decisions are made. A more centralized organization structure may require less consensus building than one where authority is decentralized, for example at academic institutions or mission-based organizations.

- Revenue impact – If there is a measurable business impact, change is easier to understand from all aspects of the organization. If brand realignment or qualitative issues are driving the change, it is often comparatively harder. Clear examples include retail environments, where every cubic foot might change a sale, or college dormitories, where square footage directly relates to quantity of rooms available for new students. When there are direct links to revenue generation or capacity to serve customers, the effect of the change can be more easily calculated and communicated.

- Risk factors – Changes that pose high risk, whether to attention or business continuity, need to be treated differently. For example, in a health care setting where new equipment or procedures are to be implemented, it is absolutely necessary to understand how routines will be interrupted and what potential risk this will have on patient safety. Routines are part of the healthcare delivery cycle, but interrupting them by designing new environments, installing new equipment or altering existing procedures creates new risks.

- Investment calculations – Often these calculations occur through different departments in the organization; the overall ROI can only become clear through holistic examination (real estate cost reductions against technology investments).

- Success factors – Success factors vary by group and by individual, which can make measurement of success difficult until shared values are identified and basic factors are aligned. Defining how those measures relate to the key influencers in the change process is also a critical step.

- Technology evolution – There is a wide range of capabilities to the technology backbone. If an organization intends to create new ways of working, for example, there will be significant changes to the technology backbone, the infrastructure investment and ultimately the human interface with the tools.

Based on these indicators, the tactics deployed in the transition plan and the

processes of employee and occupant engagement will vary. While no single set of tactics works for all organizations, there are some basics to consider:

Messaging

- Consistent, branded messaging brings context to all forms of communication about the change, such as in presentations and newsletters.

- Messages and materials that come from leadership convey significance in communications.

- Online newsletters often offer a convenient channel for communicating a variety of update.

Input

- Online crowd-sourced feedback mechanisms, such as websites or pulse surveys, provide a way to receive real-time insights as well as a continuous opportunity for engagement.

- Interviews, focus groups and facilitated workshops provide a chance to gather data as well as an opportunity for users to be heard one-on-one.

Experience

- "Day in the life" animations, story boards or other depictions help provide a user-centric perspective of the change ahead.

- Technology showcases create an opportunity to try the new technology that often accompanies a change to space before it is deployed.

- Training for specific skills alleviates

the fears that often accompany the introduction of unfamiliar new tools.

- Site tours provide great benefit by giving users an experience of the space.

- It is worth noting that any tactics that are necessary for "how-to" often are paired with others that focus on "why we should." This will improve the effectiveness of any engagement and help to ensure accurate representation of an organization's unique characteristics.

Ongoing engagement

In many ways, the occupant engagement process is never done, but how the process is managed evolves as capabilities increase. Begin a change management approach with the development of a new workplace strategy, continue with prototyping and roll-out at multiple locations if applicable and then arrange for the measurement and ongoing monitoring of performance. In this most recent stage, employees inside the organization can be trained to carry the program forward as an integral part of their business as usual approach. Additional training may need to be developed and offered as time goes on, but getting the employees involved in a practical way throughout their day helps ease the transition.

It is critical to remember that occupant engagement is about getting users to have a positive connection to a new normal that accompanies a change in space design. This positive connection is rarely formed by talking at people. It happens when users make the connection to the drivers for change, understand their individual role in the change and understand the intent. Think about a change you've experienced — did it feel like it was done to you or with you? We want to be asked. We want to influence our surroundings to make them work for us as individuals.

As facility managers, designers, architects, planners and managers, we have a significant responsibility and opportunity to embrace our role in the success of our organizations well beyond the management of space. Enjoy the journey and make it fun — after all, you can catch more flies with honey than vinegar.

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Internationally recognized for her expertise in workplace and organizational strategy, Barnes leads the firm's annual workplace trends research. She also leads engagements with diverse clients such as the United Nations, Medtronic, TD Financial Group and KPMG.

Rachel Casanova, LEED AP ID+C, is a senior planning and strategies consultant with nearly 20 years of experience in helping companies transform their real estate assets in order to reinforce long-term business strategies, corporate culture and increasingly integrated space, technology and performance goals. Her portfolio spans strategic and occupancy planning, programming and workplace standards development and also includes deep expertise in change management for today's evolving workplaces.

Casanova works closely with her clients, including Kimberly-Clark, MetLife, Thomson Reuters and Trinity Real Estate, to help them refine their business objectives and respond with a workplace that is tailored to their needs.

Performance management in facility management
Top key performance indicators in FM

By Deyan Kavrakov

Performance management is frequently defined as a process by which the company manages its performance in line with its corporate goals and functional strategies. In Facility Management, the objective of that process is to provide an integrated control system, where the corporate and functional strategies are transferred to all support processes, activities, tasks and personnel. Key component of that control function is the provision of reliable feedback and information through the performance measurement system. The final objective is to improve corporate performance, excel in FM service delivery and provide the means for informed and effective management decisions at all levels – strategic, tactical and operational. The most valuable instruments of the performance measurement system are the Key Performance Indicators. KPI could be defined as measure that provides essential information about the achievement of a desired level of results in Facility Management.

If you can't measure it, you can't manage it.

"Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it. " This view of H. Harrington lies in the core of contemporary performance management and the KPI system.

Every business leader in area of Facility Management would like to provide the best services on the market and develop a high quality performance organization. For that purpose, facility managers should establish quality assessment platform that integrates internationally recognized quality standards (for example, the CEN 15221 Standards) of FM services, which are clearly translated to KPIs and aligned with the corporate strategy.

Competitive Advantages of High Quality Performance Companies in FM

A corporate strategy with priority to provide facility services with excellent quality creates business advantages and gains benefits. The leading companies in the sector are distinguished most often by at least three competitive advantages: first, professional commitment to the needs of the customer/end user; second, capacity to provide effective and financially efficient services and third, an organizational culture, which enables the continuous strive for excellence.

What are the features of exemplary performance that make the FM leaders stand out among their competitors? They:

- Enhance operational effectiveness and efficiency;
- Consistently monitor and control the quality of performance;
- Maximize Return on Investment (ROI);
- Sustain optimal Total Cost of Ownership (TCO);
- Reduce operational costs;
- Maximize asset value and extend asset life cycle;
- Proactively improve FM processes;
- Systematically recruit, retain and support the professional development of best employees.

Facility Management KPIs

In order to achieve outstanding FM services it is necessary to assess the gap between the current state and the desired state of FM functions and identify performance strengths and weaknesses. The working KPIs system would be an essential tool for conducting effective GAP and SWOT analyses.

It is neither beneficial, nor practical to attempt listing exhaustively all KPIs in FM, due to the interdisciplinary and complex character of the segment and the significant scope of services provided. Rather, it would be more useful to focus on the most frequently monitored KPIs in business practice today. The presented below KPIs reflect my professional experience, as well as research and reported best practices by The KPI Institute, Euro FM and IFMA. What are the most often used KPIs in Facility Management currently? (KPIs are not presented in order of importance or priority)

KPI Rules and Selection Criteria

What are the basic guidelines and selection criteria for identifying, developing and utilizing KPIs in Facility Management? KPIs are:

- Clear and specific - KPIs should be defined by using clear and intelligible terms. When possible, avoid the use of management jargon. It has to be clear what the KPI exactly measures. There has to be one uniform definition of the KPI; it must be accepted with consensus within the company to guarantee that the different users interpret it in a uniform way.

- Measurable - The KPI has to be measurable; it should define a standard, budget value or norm. It should be possible to measure the actual value that could be compared to the target value. That is why, a suggested international standard in naming KPIs recommends starting with the symbol of the selected measure. Example: € Operational Costs; % Occupancy Rate; # Maintenance Requests.

- Achievable – Every KPI has to be realistic within selected time frame. It is really important the acceptance within the organization that the target value or standard is achievable. There is nothing more discouraging than making every effort for a result that would be never reached.

- Relevant – KPI should be aligned with corporate strategy and must be significant for the specific area of services or activities,
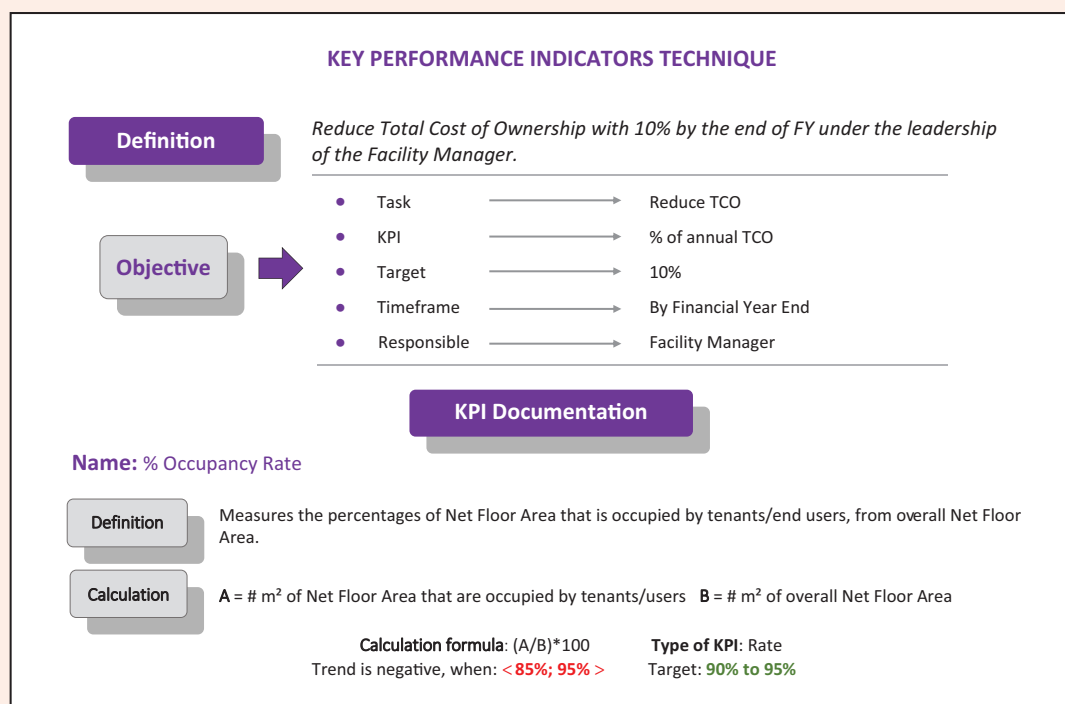

KEY PERFORMANCE INDICATORS TECHNIQUE

Definition

Reduce Total Cost of Ownership with 10% by the end of FY under the leadership of the Facility Manager.

Objective

Task	Reduce TCO
KPI	% of annual TCO
Target	10%
Timeframe	By Financial Year End
Responsible	Facility Manager

KPI Documentation

Name: % Occupancy Rate

Definition — Measures the percentages of Net Floor Area that is occupied by tenants/end users, from overall Net Floor Area.

Calculation — A = # m² of Net Floor Area that are occupied by tenants/users   B = # m² of overall Net Floor Area

Calculation formula: (A/B)*100   **Type of KPI**: Rate
Trend is negative, when: < 85%; 95% >   Target: **90% to 95%**

Figure №1

Alternative cooling in the data center

Cooled with ground water

By Gerald Nowitzky

Air conditioning is always responsible for the largest energy consumption in a data center and provides an opportunity for significant optimization. If regional requirements are met, it is possible to cool a data center with low power requirements using groundwater wells.
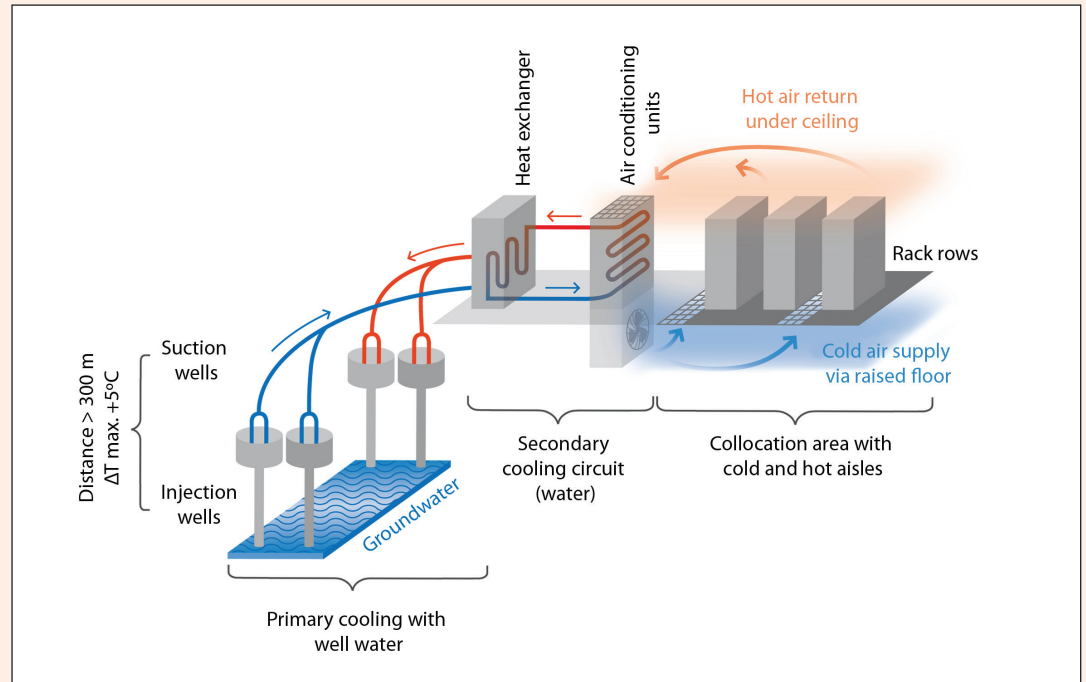
In the primary circuit, groundwater is drawn via a suction well, routed through the heat exchangers and returned via injection wells.

The energy saving potential depends directly on the choice of the cooling concept, and the largest savings can be obtained by implementing procedures that reduce the use of power-driven refrigerant compressors. Measures such as cold aisle containment or a higher cold aisle temperature all aim at reducing the cooling load. Free cooling reduces

the lifetime of the cooling unit. For the construction of a 380 m² large data center in Munich, the Internet service provider IGN opted for eliminating compression cooling completely. Instead, groundwater is used to remove the heat from the server room.

This is achieved by drawing water via a suction well, filtering it and feeding

it to the heat exchangers in the primary cooling circuit. The warm water is then returned via injection wells. The power requirements of the groundwater cooling system are limited to the pumps and the fans required for the air circulation in the server room. With groundwater cooling there are no containment costs

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Performance management in facility management

Top 20 FM KPIs

- ➡ € Gross FM Costs (TCO) / 1 m² of Gross Floor Area (GFA), annually
- ➡ % Return on Investment
- ➡ € Operational Costs / 1 m² of GFA or per 1 user/tenant
- ➡ € Capital Costs / 1 m² of GFA
- ➡ € Maintenance Costs / 1 m² of GFA
- ➡ % Maintenance Cost / Replacement Cost
- ➡ % Planned maintenance vs Reactive maintenance Ratio
- ➡ € Utility Consumption Costs / 1 m² of GFA or per 1 user/tenant
- ➡ € Cleaning Costs / 1 m² of GFA
- ➡ € Security Costs / 1 m² of GFA
- ➡ % Occupancy rate (Net Floor Area)
- ➡ % Net Floor Area from Gross Floor Area
- ➡ % Utilization rate of Working Places
- ➡ # Net Floor Area in m² / 1 working place or per 1 user
- ➡ # Electric Energy Consumption – kWh / 1 m² of GFA or per 1 user
- ➡ # CO_2 Emissions, ton, annually
- ➡ % Employees Turnover
- ➡ % Churn Rate of Customers with Subscriber Based Contracts
- ➡ # End User Complaints
- ➡ % Degree of Satisfaction of Users from FM Service

or particular group of clients/customers/users. The measurement of many, insignificant indicators, with weak relation to the planned result is the most common pitfall of performance measurement.

- Time phased – Every KPI becomes meaningful when its value is monitored in time periods. Example: Reduce Percentage of

Reactive Maintenance vs Planned Maintenance Ratio to 30/70 within the next 12 months under the leadership of the Maintenance Manager.

- Assigned to – The responsibility for monitoring and managing the feedback from KPIs within the concept of Plan-Do-Check-Act must be assigned to specific unit/

position. Software and automation systems could facilitate, but cannot manage or lead. Example: Under the leadership of the Maintenance Manager reduce the Maintenance Costs as a percentage of Asset Replacement Value to 3% by the end of Q1, FY 2016.

- Balanced – An integrated KPI system must be balanced by

offering indicators that measure quality and quantity; effectiveness and efficiency; including indicators that measure objective and subjective domains. It must employ objective measurement methods as well as techniques that capture and report subjective opinions and reflections. Example: # Net Floor Area in m² per 1 Workstation, Level of Satisfaction of Users from Help Desk Service; % Maintenance Overtime,

Level of Employee Engagement.

How do we apply these rules and criteria? Figure №1 presents the technique of defining and documenting KPIs by using specific examples.

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Alternative cooling in the data center

Cooled with ground water

and there is no need to seal the racks. In contrast to compression cooling, the difference between the supply and return temperatures plays an insignificant role.

Complex conditions

However, for well cooling to be successful, a lot of forward planning is needed, together with an important organizational and technical effort. First of all, it is necessary to consider the geological conditions at the site. Groundwater must be available at an accessible depth, in sufficient quantity and at the right temperature. The flow rate of the subsurface water stream determines the distance between the suction and the injection wells in order to prevent sucking in back-fed warm water again. For IGN's data center, the distance required was of 300 m, which could easily be achieved on the chosen plot of land. Further conditions are prescribed by individual water utilization concepts which may differ from state to state and from municipality to municipality. It is the responsible water authority who ultimately decides if groundwater can be used for cooling data centers, or whether an existing or planned groundwater use can have negative effects on neighboring land.

High planning and approval costs

The complex, location-specific conditions require individual planning. The best support can be expected from an experienced company. The application and approval processes for a data center with groundwater cooling are significantly longer and more complex than for a conventional data center and can also have certain planning related risks. The operation itself is also tied to a significant extent to licensing requirements and orders. These include annual checks of the temperature and the thermal plume of the back-fed water.

The costs also depend on the location, a significant factor being the construction of the wells: At IGN, it was decided to incorporate two suction and two injection wells for redundancy purposes.

Efficient components help

Some efficiency measures applied at IGN's new data center are reproducible independently of the cooling method used: Radiators are used instead of the conventional systems involving fans blowing cold air down into the air conditioning units. The radiators are placed directly in the raised floor in the direction of flow. This ensures that no energy is lost to deflect the air stream. The radiators are driven by EC motors with continuously variable speed control. The server room is designed so that air circulation can be maintained with low energy usage. The air conditioning units are located on the long side of a 10-m wide equipment hall separated by a wall. The room is pool shaped and is dimensioned to hold the entire water volume of the secondary cooling circuit. The server room is thus safe from flooding. In order to achieve the lowest possible flow resistance, the raised floor is 90 cm high, the cable management systems are installed in the flow direction, and the slotted panels have a high opening cross-section. The maximum distance for the return of the warm air under the ceiling is 10 m.

Sustainable and future-proof

From the point of view of sustainability, the new approach is worth the effort: In addition to huge CO_2 savings, the expected service life of the data center's well system is of approximately 30 to 40 years. If we take into account that the average annual temperature will keep rising as a result of climate change, the independence from the outside temperatures of the well cooling offers a high degree of security for the future. At a depth of approx. 15 m, the groundwater temperature practically does not fluctuate due to the significantly delayed temperature spread.

The energy consumption of the new data center is only about 20 percent of that of a conventional system. Thanks to the well cooling and the optimizations described above, IGN achieves a PUE (Power Usage Effectiveness) value of 1.2 already at an IT load of 60 percent. This means that compared to a data center with a PUE value of 2.0, 800 W are being saved with each installed kW of computer power. For the 600 kW of computer power provided in the IGN data center, the savings add up to 480 kW or 11,520 kWh per day or 4,200,000 kWh per year. Assuming average CO_2 emissions of 600 g per kWh generated, the data center reduces the annual CO_2 emissions by 2,500 tons.

Gerald Nowitzky, founder and CEO of IGN GmbH
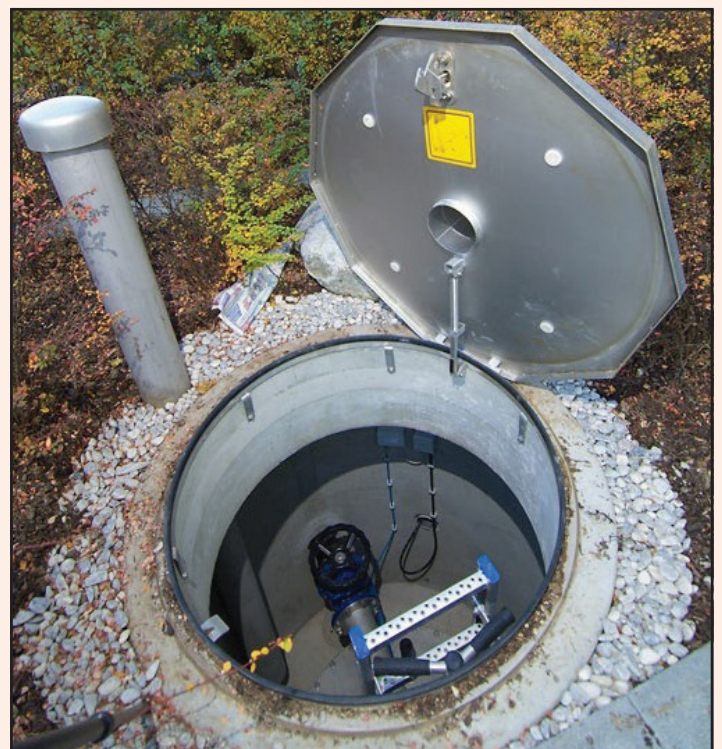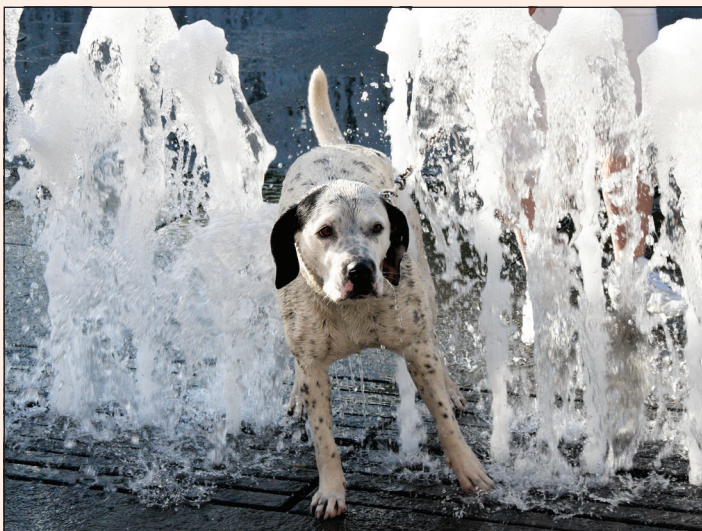
Theoretical aspects of the management and maintenance of residential buildings

By Doc. Ing. František Kuda, CSc. and Ing. Eva Wernerová Beránková, Ph.D.

This article aims to introduce methods and tools to assess the costs during the operational phase of the life cycle of buildings. Determining the life cycle cost of buildings is an important part of every construction project and a preliminary determination of costs in the operational phase life cycle contributes to the sustainability of future building.

1 Introduction

Detailed view of the current state of management of functional parts of buildings throughout their lifetimes showed that existing common economic rules, it is important to broaden and deepen. [6] Detailed view of the impulse to recommendations for new forms of maintenance processes to improve the current situation. This mainly concerns the analysis of the current state, using tools Facility Management as a new method of integrated management in the management and maintenance of housing stock, including computer support decision-making processes. The proposed methodology for the selection of the technical solution to the maintenance and restoration of residential buildings in terms of sustainable development represents a practical application of knowledge that emerged from the work of the authors [2].

2 Maintenance and renewal in the context of the life cycle of buildings

The importance of maintenance and restoration of buildings in the context of the life cycle cost of buildings, their benefits in relation to preservation of sustainable development continues to grow. In the forefront is getting finding a balance between construction activities and buildings with high-quality indoor environment on the one hand and environmental burdens on the other hand, throughout the life cycle of buildings, especially with regard to construction materials and components with low power consumption, including the use of renewable energy sources.

A large number of implemented projects during the last century is a certain signal to increase the technical care of their structural system and also the various elements of the system. The appearance of buildings and their functionality are due mainly to their maintenance and is dependent on the activities of the owners and property managers (state, municipalities, companies, cooperatives and individuals).

Maintenance is generally characterized as a series of preventive and other measures carried out on the building so that throughout its lifetime, the building could fulfill all of its design function. This interpretation gives a new perspective on the importance of life cycle costs of construction, which is based mainly on the ongoing refinement of the calculation of costs exploring structures.

The role of the owner of the building or its manager in the issue of sustainable life cycle of the building should not be focused only on optimizing these total life cycle costs of construction, but also on substantive solutions for construction, including determining the extent of the required maintenance of the individual components. Taking into account that the life expectancy of normal maintenance is usually in buildings and halls with brick, monolithic or reinforced concrete and steel vertical support structures 100 years for other types of structures 80 years or less, it is time that affects three generations of owners.

The program will be anchored upskilling question of the application of new forms of solving the problem of maintenance of buildings as a means to increase their benefits in terms of use, durability, terms of renewal and controlled end of their lifespan. These activities are currently included under the concept of building life cycle (LC) (Fig. 1). All of our solutions are now used to calculate the entire life cycle cost. Its main feature is the durability of the proposed building.

Part of the topic will be mainly characteristics and definitions of basic technical-economic tasks of sustainable development life cycle engineering, financial planning tools recovery and improvement of buildings. It also outlines the problems of operation, administration and maintenance, and a brief summary of the development of this issue.

The methodology for this part of the course is based on the theory of the life cycle of buildings and sustainable benefits.

3 Methods life cycle assessment and its costs

Developed countries gradually natural evolution movement towards developing methods for comprehensive evaluation of the quality of buildings (ie rating of "sustainability" of buildings) and the progressive implementation. There is no uniform method for comprehensive evaluation of the quality of buildings throughout the life cycle. Based on the methodology defined set of standards EN ISO 14000 was developed by a number of computational models and software tools, which differ in scope and scale of analysis, determining the distinctive level of detail and the system model.

But so far, has been appointed international standard for comprehensive quality buildings. Czech Republic established in 2005 to an international group of GBC (Green Building Challenge), which is developing a methodology GBTool. GBTool were incorporated as an inspiration and methodical process in 2006, a preliminary tree evaluated criteria were set criterion limits (benchmarks) and balance between them. The working title of the new Czech tool VI @ ZE 2006.

Evaluation of buildings and entire residential complexes in terms of a wider range of sustainability criteria is becoming in some developed countries respected by comprehensive evaluation of quality of construction, usually serving their unofficial certification. It is expected that the selected method is gradually becoming in certain countries or regions, enabling standard benchmarking the quality of individual solutions.

Determining the LCC is a useful method to analyze the total cost of acquisition, use, maintenance and services for the entire product LC, including disposal costs. LCC analysis can provide important outcomes in decision-making, especially when

- evaluation and comparison of alternative investment strategies,
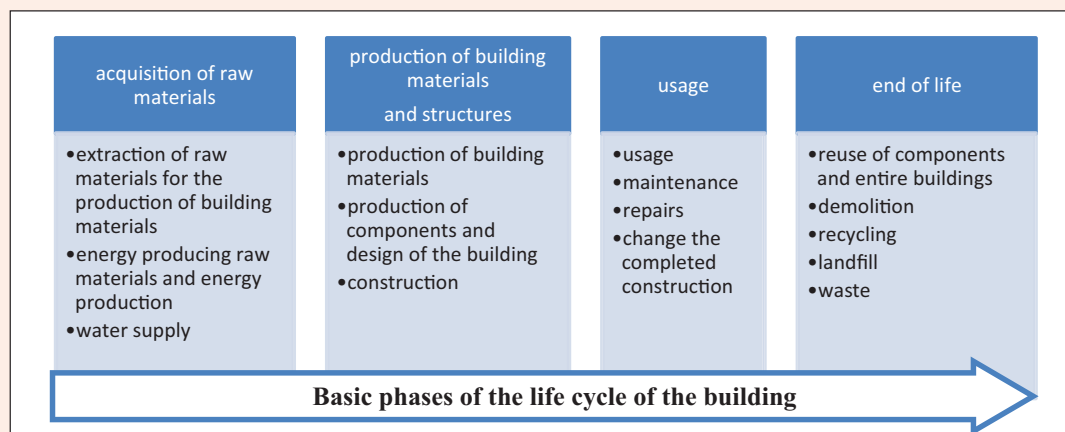- determining the economic viability of the project,

Fig. 1: Basic phases of the life cycle of building structure

Theoretical aspects of the management and maintenance of residential buildings

- evaluation and comparison of the different concepts of maintenance and renewals and enhancements,
- choice between different building materials, components and systems,
- improve or change operation.

The cost of repair, maintenance, modification completed building (maintenance life cycle replacements, ie. "Hard FM"), not constant progression within the life cycle and therefore the interest involved in the construction, especially investors and users focused just on them.

Analysis of the life cycle cost of the building LCC is focused on optimizing costs during the whole time of her life. The resulting calculation LCC at relevant input data relating to the technical parameters of structural elements, and the formation period of the costs related to them, should be an important basis for decision-owner, designer and future user to select the optimal variants of the technical design of the building also with regard to environmental aspects and long-term economic consequences. The percentage of the life cycle cost is shown in Fig. 2.

The starting methods of determining costs in the Czech Republic, for example, total renewal of the building is the use of volume (cost), shares of structures and equipment by type of building (according to Annex no. 14 of Decree no. 173/2000 Coll.), A
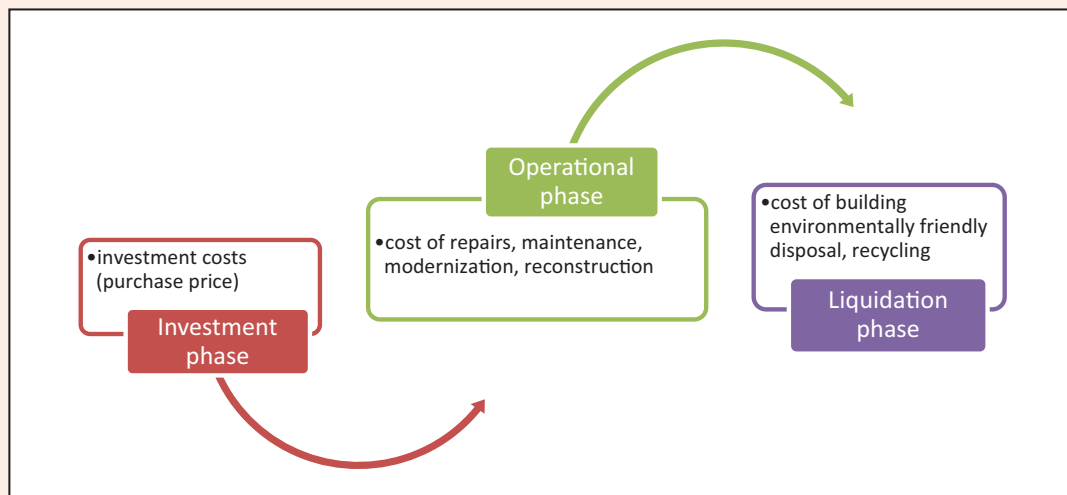
Fig. 3: Phase of designing structures

cost index and degree of damage. To determine the cost of the repair and maintenance of buildings, which are an essential component of life cycle cost of construction, was created in the Czech Republic several models:

- ratiometric model costs,
- Buildpass, technical-analysis model,
- REMAB method.

Buildpass, technical-analysis model buildings

Model technical economic analysis enables accurate planning of costs for repairs and maintenance in the short term, they can also be used to assess the various options proposed alterations in terms of the future costs of repairs and maintenance and operating cost savings. It focuses on the analysis of the cost and revenue object in the context of maintenance and renewal of the individual components. The solution is implemented using a web interface

through which you enter information about the object and re-analysis results are returned. Scheme web interface and the steps of solutions are shown in [3]. Input addresses the application is a web page analysis model http://www.buildpass.eu/new/.

REMAB method

Method REMAB (Reconstruction and Maintenance of Buildings) [4] solves the system of care for the building, maintenance, system renewals and enhancements. It is modeled by addressing Property Management, which aims to give building owners the tools for effective management, maintenance and alteration of real property. REMAB method is based on determining the risk of purposeful modification of the method FMEA (Failure Mode and Effects Analysis).

4 Conclusion

Life cycle assessment of buildings and determining their costs aims to quantify the economic demands of caring for technical or physical condition of the building and the pre-defined level of sustainability and its demands on the operation and use. In order to be able to watch these aspects and determine the operational phase of the lifecycle of the works were created models that assist in determining the cost of maintenance and renovation of buildings, they are cost-ratio model, Model and technical-analysis Buildpass last mentioned method was REMAB . All three models in detail the value of the physical condition of elements and structures and models of external intervention in the physical condition of the building.
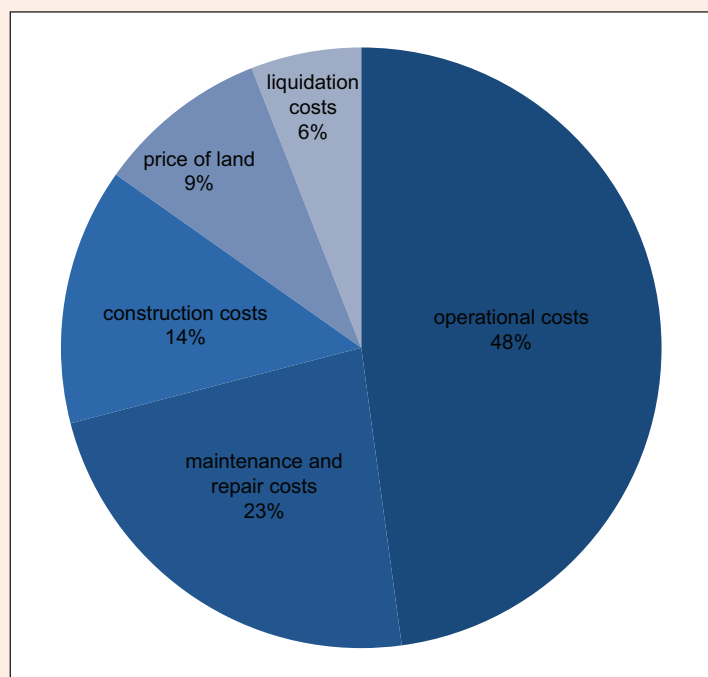
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Fig. 2: Structure of costs during the life cycle of the works [5]

Sick building syndrome costs millions

By Dave Ableman

Who knew?

"The average desktop has 400 times more bacteria than on a toilet seat,"[1] and chairs are often worse than desktops.

Dust mites are responsible for about 25 percent of all allergy diseases and a factor in 50 to 80 percent of asthmatics, as well as in countless cases of eczema, hay fever and other allergic ailments.[2] Moreover, "dust mites may be the most common cause of year-round allergy and asthma,"[3] which "is one of [the U.S.'] most common chronic health conditions."[4]

Sick building syndrome

Poorly understood and most often unrecognized, sick building syndrome (SBS) costs companies millions every year through employee absenteeism, decreased productivity and even increased health care premiums. In addition, some costs are less apparent, at least initially, because they stem from the emotional impacts of SBS which often create exaggerated responses.

Whether or not the actual problem is severe, disclosure and perception may cause unjustified claims of serious and persistent health effects. Consider that the U.S. Environmental Protection Agency estimates that one of four new or renovated indoor buildings in the U.S. may be classified as "sick buildings." Moreover, with the increasing trend toward collaborative environments, SBS is becoming a bigger concern because most cases of SBS occur in open-plan offices.

At a high level, the causes are frequently attributed to pathogens (e.g., viruses, bacteria or fungi) or ventilation-, humidity- and temperature-related issues. A bigger problem is that SBS is especially prevalent in newer, energy-efficient buildings in which windows are sealed shut and fresh air is scarce. Some research now suggests that SBS may even be caused by tiny amounts of chemicals escaping from paints, cleaning agents, carpets, photocopiers, office supplies and other sources that combine to make the air hazardous.

Symptoms may include:

- Eye, throat or skin irritation
- Headache, dizziness or nausea
- Irritated, blocked or runny nose
- Poor concentration or fatigue
- Respiratory illnesses including shortness of breath

In some cases, the symptoms are so severe that those affected can no longer work at the building in question. Most often, though, no single cause can be identified. Still, many facility managers are only focused on the obvious air-quality control solutions (although cleaning ductwork is frequently neglected for longer periods than recommend).

On the other hand, some of the real problems and potential root causes are overlooked, which should at least be tackled by leveraging some basic and cost-effective cleaning and preventative maintenance programs. For example, while many janitorial companies do a good job cleaning floors, bathrooms and kitchenettes, their processes don't always sanitize. Worse, many workspace surfaces are overlooked, such as desks, conference room tables and chairs.

An ounce of prevention

Facility managers can follow a few simple steps to avoid or mitigate the development of SBS:

- Ensure all ventilation, humidity and temperature controls are properly functioning and that system maintenance schedules are precisely followed and recorded. In particular, check to ensure all vent grills are not blocked and that all ductwork, including humidifiers, dehumidifiers and cooling towers, is regularly cleaned. Furthermore, if your building doesn't already deploy automated software tools that track these environmental impacts and automatically trigger alerts as appropriate, consider acquiring some.

- Establish routines that monitor the cleanliness of your building(s). Be sure to spot-check the janitorial staff and their equipment to ensure their processes sanitize all the surfaces they clean. Evaluate whether or not cleaning supplies are properly used and stored. In addition, check that vacuum cleaners are up to code (vacuums with high-efficiency particulate air (HEPA) filters are best), regularly emptied and filters cleaned.

- Schedule preventative maintenance for all furnishings. Unfortunately, furnishings are ideal breeding places for disease-carrying pathogens including bacteria, viruses and dust mites. Curiously, many facility managers don't have standard procedures in place that regularly sanitize these commonly touched surfaces. Though often overlooked, furnishings (especially woods, leathers and upholstery) need to be deep cleaned, sanitized and preserved, not just wiped, dusted or vacuumed. Proven to improve the triple bottom line of profits, people and planet, onsite refurbishment is becoming recognized as a best practice.

- In addition, ensure that human resource (HR) policies and procedures include the requirement to notify the facility management team regarding any unusual employee symptoms or environmental concerns. If there are credible reports of symptoms, a survey should be arranged immediately to avoid employee discussion, which can distort the findings. Also, though reactive, a final approach may be to simply monitor HR metrics regarding absenteeism. By comparing historical same-time-of-year data, especially if it can be monitored on a department-by-department basis (or better yet, floor-by-floor), the facility management team could head off a calamity.

Advice for employees

In addition, facility occupants should be encouraged to:

- Comply with smoking policies. Smokers should only smoke outside and far away from the fresh air intake ducts.

- Maintain healthy plants. Over-watered plants can develop mold, and dusty, dying plants don't help air quality.

- Keep eating areas clean. Along with dust mites, pests such as cockroaches have been linked to respiratory problems because proteins in their droppings and saliva can cause allergic reactions or trigger asthma symptoms.

Costs of sick building syndrome

The primary costs of sick building syndrome are initially identified and monetized by decreases in productivity, first caused first by absenteeism, and worsened by a loss of employee morale.

Consider that one landmark study of 6,000 office buildings throughout the United States during a five-year period showed that people costs outweighed facility costs by a ratio of 13:1 for owner-occupied buildings.[5] More recently, salaries were shown to comprise 85 percent of the total costs, compared with only 8.5 percent for furnishing, maintaining and operating a facility. Therefore, senior management acknowledges that even small improvements in office worker productivity derived from facility management projects are clearly worthwhile.[6]

Additional costs are associated with identifying and mitigating the problems, along with lingering negative customer and stakeholder reactions.

Increase in productivity and revenues

Conversely, if treated as part of a preventative maintenance program, the potential bottom line losses noted above be alleviated, and demonstrable benefits are likely to impact the top line. Studies have proven that appearances and "dressing for success" impact productivity.[7] Similarly, "scientific research has firmly established that the office environment can influence people's health, wellbeing and productivity,"[8] with studies showing that keeping an office looking good increases employee productivity.[9] The

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Delivering value of BIM for facilities management

By Francisco Forns-Samso

The last decade the building industry has experienced major changes with the use of building information technologies. Building Information Modelling (BIM) and the lean processes it supports have been the main drivers for this innovative period. The documented benefits during design and construction have motivated public organizations and governments to demand the use of BIM for the design and construction of new buildings and for the renovation of major projects. Consequently, the use of BIM in Facilities Management has brought a growing interest from number of stakeholders, especially owners and operators, in leveraging building information for the operational phase and in such way close the loop of BIM use for the entire facility lifecycle. However, still it is unclear how the use BIM can deliver significant value for facilities management, specifically supporting strategic level decisions.

1) Air conditioning service areas shown in 3D produced from an IFC model. Useful to the real state manager when planning future renovations

Initial value of BIM for FM

For many years, facilities' initial construction costs have been the main focus of attention to stakeholders, even though 85% of the total costs of ownership occur after the construction phase. In 2004, industry research conducted in the United States by the National Institute of Sciences and Technology (NIST) reported an estimated efficiency loss of $15.8 billion per year (95 billion DKK kr.) resulting from inadequate exchange and management of information in capital facilities. Of the estimated losses, owners and operators incurred approximately 67% of the total cost and 57% of these costs occurred in the operation and maintenance (O&M) phase. The report not only showed the inefficiencies with current processes, but also revealed the opportunities for potential improvement in the use of information technologies. As a result, BIM has been presented as the solution for handling those issues and also for managing building information for the entire lifecycle. Yet, using BIM for exchanging information and visualizing the building is only a small part of the value of BIM in FM.

Beyond 3D and handover information

At the moment it is perceived that the greatest value of BIM for FM is in delivering handover information for operations and using a 3D "As-built" as a reference model for future renovations (Figure 1). However, the amount of structured information generated during design and construction provides great opportunities in extending the use of BIM in other areas such as space management, asset management, building maintenance and energy management. What is missing is the communication between FM practitioners and BIM experts to determine how both could benefit with the use of the available information or new information that can be embedded in the model (Figure 2). The current situation is that FM practitioners do not understand what BIM can do for them and BIM experts do not know what information FM practitioners need. This is a never ending cycle where very little has been done in the last years. In order for BIM to deliver value in FM that conversation needs to take place inevitably.

Future Steps

So far BIM for FM initiatives in countries like the United Kingdom, Finland and the United States have focused in information exchange requirement and guidelines for data management. For instance, Finland's National BIM Guidelines (COBIM) emphasize the importance of updating "as-built" model during the operation phase and set the minimum requirements for the model updating procedure (Figure 3). However, small efforts have presented BIM use with a strong value proposition for FM. BIM needs to be presented as an integrated solution that can support different areas in facilities management. It needs to enhance proactive and future looking thinking, reducing costs and risks before problems occur. It should work as management tool rather than a simply visualization tool. In such way BIM will justify the efforts that need to taken for overcoming technical, process and organizational challenges that would come along with BIM implementation.
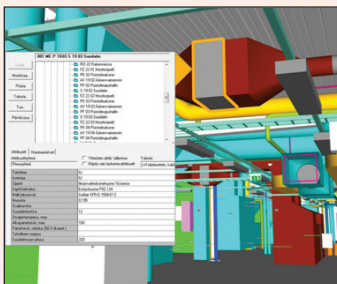
2) Links to FM database to view AC filter data enable the maintenance staff plan filter replacements

LIFE CYCLE MANAGEMENT OF BUILDING INFORMATION MODELS (BIM'S)
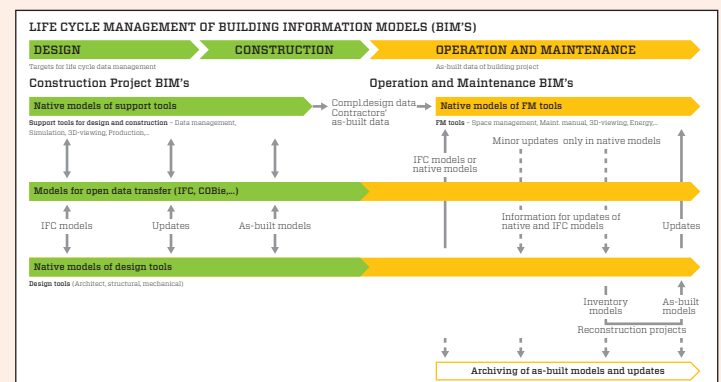
Sick building syndrome costs millions

National Institute of Building Sciences recommends facility managers "assure a visually appealing environment." Moreover, the appearance of an office workspace can be the difference between clinching deals and losing clients.

"Scientific research has indicated that improving the working environment results in a reduction in the number of complaints and absenteeism and an increase in productivity." An obvious example is decreasing the spread of diseases (by decreasing bacterial growth), such as sick building syndrome, which could otherwise have a devastating impact.[10]

"When office workers are satisfied with their environmental conditions, when they can work in greater comfort and control, they will be more productive. Additionally, the cost of employment per worker will drop, and the cost of facility operations will decrease."[11]

The good news

The good news is that more facility managers are becoming aware of sick building syndrome and are monitoring and maintaining systems and facilities more proactively. In addition, facility managers are taking more advantage of specialized onsite services that not only sanitize surfaces but can enhance environments by beautifying and preserving the lifetime value of furnishings (which also promotes sustainability).

By remaining diligent and proactive, facility managers can help improve the top line while decreasing losses to the bottom line by reducing absenteeism and the impacts of sick building syndrome.

David Ableman is vice president of operations for PROTEK, a company specializing in onsite refurbishment, founded in 1963, and headquartered in Randolph, Massachusetts (www.protekcorporation.com). He oversees an experienced team which has completed thousands of projects throughout the U.S. Northeast. Charged with managing quality control and customer expectations, Ableman is responsible for day-to-day operations, process improvement and onsite, overnight deliverables.

Ableman received a bachelor of science in chemical engineering from Carnegie Mellon University in 1982 and subsequently attended Babson College for an MBA. A member of IFMA with more than 30 years of professional experience, he is an award-winning and respected consultant, speaker, trainer and author.

Research Network Group

Susanne Balslev Nielsen, Chair

How to become better together?

The title of this short status of activities in the EuroFM research network group (RNG) reflects the ever present ambition at EuroFM members meetings: How can the National FM associations, FM companies, FM educators and FM researchers become better by working together. The potential lies in the mission of EuroFM, examples show that it can be done; but improvements are still possible.

The first day at the members meeting in The Hague the RNG met Dutch FM researchers who presented their current research. We had very interesting presentations about e.g. indoor climate, prisons, hospitality and wellbeing. Meetings like this are important to attract new researchers to the RNG and EFMC but also on a personal level to have stimulating discussions and to meet FM researchers who bring new experiences to EuroFM.

On the second day the focus was on the status of EFMC2015 conference planning and strategic important issues like: election of new coordinators; boosting the knowledge portal on www.eurofm.org; keeping the members list updated; and contributions to this journal; FMInsight.

Even though the time was tight, we also spend dedicated time on drafting a storyboard of the ideal process of including EuroFM in future research projects. Since more and more research is needed to attract external funding and strong international partnerships, it is likely that the EuroFM secretariat (team@office-eurofm.org) will receive a lot more requests for project collaboration in the future. The RNG discussed and tried to draw up the ideal story board for this process. Beyond the administrative steps in an application; we discussed how to facilitate the match making between: 1. FM organisations who would like to engage with research to improve their performance, 2. researchers with special knowledge, some research ideas and knowledge about funding projects and 3. Educators who can take the knowledge to the new generation of facilities managers. This is a discussion that will continue, also on a board level.

The members meeting in The Hague was my first meeting as chair of RNG. It is a heavy task to take over from the former Chairman Keith Alexander, who still has the task of heading the planning at the 14th research symposium at EFMC in Glasgow. The Hague meeting was a good start and I look forward to a joint effort of being better together in EuroFM, an effort which will take openness, curiosity and a sincere willingness form partnerships.

Education Network Group

Pekka Matvejeff , Chair

Thank you for inspiring and energetic networking days in The Hague. Special thanks go to The Hague University of Applied Sciences, its students and staff, who had put lots of effort into the arrangements of the members meeting and the 4th EuroFM Winter School.

Corporate Social Responsibility was the theme for this year's EuroFM Winter School. It was great to follow the enthusiasm and excitement of students when they presented their Project results in the form of posters to the EuroFM members as their audience.

Education Network Group went through its plans for the upcoming years. We decided to focus on a few things, which we thought are important when adding value to all EuroFM network members and at the same time would motivate the ENG members to bring in their knowledge and efforts for the greater good. It is important to remember that networking is a two way street: it is giving and getting.

Usually, you should give something first in order to get something back in return.

We decided to start with an update of where our Education Programs are at the moment. Tessa Gilbert, graduating student from Hanze University of Applied Sciences, is doing this update in the form of her Bachelor´s Thesis. She will go through the competences and curriculum represented in the different schools of all active ENG member universities. She will identify each university's focus areas, make comparisons, assess if there are major differences, and if possible, discover how and see if standardization could be reached in specific areas. Tessa´s work is the first step in making our Education offering visible to all members.

Communication is another focus area that ENG Group will concentrate on. We try to develop a communication strategy inside the ENG group, inside the EuroFM between network groups and even the outside of EuroFM in a way that serves all stakeholders in the best possible way. ENG will also have Skype meetings in-between the 3 main annual member meetings in order to enhance communication amongst its members. All ideas to improve these developments are more than welcome.

The 2015 EFMC in Glasgow will gather all of us together again in June. I am looking forward to meeting many of you in Scotland. On behalf of ENG Network Group, I am especially welcoming our future FM professionals – students from various member universities to join us there. See you in Glasgow!

Practice Network Group

Karin Schaad, Chair

The most recent members meeting was held in Den Haag in the middle of February at the Haagse Hogeschool together with the Winter School. This gave the members of the PNG the possibility to attend some of the plenum winter school lectures under the overarching title of Corporate Social Responsibility and hear about several different approaches to such a broad topic. The boat trip we took on the canal let us see Den Haag from an unusual perspective and was a nice way to spend an evening together with FM professionals from all over Europe.

During the first Practice Network Group Meeting held on Thursday afternoon, the attending representatives of various National Associations such as our host country the Netherlands, Norway, Denmark, Spain, Romania, Bulgaria and Switzerland were able to share what is going on in their countries and what kind of projects they are working on at the moment. Among the most inspiring projects was a very interesting website project, whose goal it is to connect providers and clients and to provide information about profiles, ratings and people, processes and the contribution to FM of various organisations. Another catching issue is that the municipality of Copenhague is looking for a Metropole Network with which to benchmark and exchange ideas and experiences. Last but not least the Bulgarian Association is aiming at completing a Handbuch for FM including legislation and standards and is now collecting data.

After this, those present were given an update on the progress on the ISO Standards by Olav Saeboe from Norway. According to him, a lot of progress has now been made on part 1 "Overview, Fundamentals and Terminology". The ISO directives are giving the document a logical structure. There are 8 concepts along with many definitions to define defined words.

Part 2, with the title "Guidance on strategic sourcing and the development of agreements", is completed. Large parts are based on EN 15221. It is possible that the supplement to that norm as put into the ISO standards will later be included in an updated version of 15221.

After both parts will be aligned, hopefully drafts will be approved in Glasgow just after the EFMC. From June to October, there will be an open enquiry, allowing interested parties to offer feedback. Comments will be discussed. A formal vote will then take place in 2016, with publication expected in November.

Unfortunately, after one or two versions of the market data report were completed, the project has not made any more progress. Soon, a new team will restart the project involving local associations as well as universities to help collect the relevant data. The aim of this project is to be able to show the size and importance of the FM market in Europe and thus its social, economic and political influence.

Another very interesting topic was EuroFM's endorsement of the EU Coalition as discussed during the members meeting in London. In spite of the fact that there are still a lot of open questions with regards to finding the best way in which to make FM and its associations EuroFM, IFMA and all the local associations more visible, EuroFM's main pillars fit very well with the topics of the EU commission. A strategy and action plan will be worked out by the board of EuroFM as soon as possible.

The Knowlegde Portal promised for some time is now up and running and will soon be filled with papers and reports in various languages. The access is open to the public. In addition, tools such as a "who's who" or social media forums for more personal contact between members will be worked on in the near future.

In order to make Member Meetings in general and PNG Meetings in particular more interesting and to attract more FM practitioners, there needs to be more content. The PNG will thus discuss one or two topics of interest to the FM professionals per meeting. Members will be asked to propose such topics by means of a survey which will be sent out to everyone shortly. Topics will be published in advance so PNG members know what to expect and can prepare and there will be a short summary or podcast provided for Practitioners who miss the meeting. There will also be more interaction between all the Network Groups as there will be a time slot installed in which to collaborate on current FM-topics in workshops during the second day of the Members meeting.

All PNG members who did not attend the meeting are very welcome to give input about any other FM-related topics they wish to bring forward or discuss at the meeting or give suggestions about what should be further investigated.

In order to allow for better coordination and to make sure there is time enough for everyone who wishes to present a topic, please contact me in advance at *karin.schaad@bluewin.ch*.