

white paper
august 2012

facing the future

how **facilities management** can help
organisations meet **environmental** and
sustainability challenges



introduction



This White Paper assesses how environmental changes will impact business profitability and policy, and examines how Facilities Management companies such as EMCOR UK can help clients adapt to commercial and environmental challenges, to safeguard their future in the face of diminishing global resources.

For many businesses, one of the major current concerns is mitigating the impact of the global recession. Yet underlying that task, is a greater long-term financial challenge: the effect on the environment and on businesses, of carbon emissions and the impact of dwindling natural resources. While addressing the bottom line and ensuring business survival may be the most urgent imperative, implementing a sustainable environmental policy is also a high priority – not only for fiscal reasons, but also because of increasingly strict legislation and pressure from stakeholders to demonstrate Corporate Social Responsibility and sensitivity to green issues.

It's a challenge where facilities management (FM) can play a decisive and positive role. By suggesting, implementing and encouraging adoption of energy-efficient practices, FM companies, such as EMCOR UK, can help clients reduce their dependency and expenditure on energy and other costly resources, safeguarding profitability while meeting environmental targets.

In its early years, facilities management involved little more than supplying mechanical and electrical services to keep an organisation's buildings running. Today, the leading FM companies are closely integrated with their clients' operations, providing a greater range of services and becoming an intrinsic part of their support network.

This evolution means FM companies can now support clients at a fundamental and strategic level, helping to develop key policies to ensure prosperity and long-term security. As our own experience shows, a successful client-FM company relationship can reduce energy consumption, ensure compliance with carbon emission legislation, satisfy stakeholders (whether customers, employees or the public) about CSR and environmental performance, and crucially, deliver vital financial benefits.



David Parker,
Group Executive Director, EMCOR Group UK

about facilities management

The International Facility Management Association (IFMA) describes facilities management as “a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, processes and technology.”

The UK FM market is valued at £50bn, of which £33bn is outsourced. Over the next four years the market is expected to grow by 4 to 5% annually, with growth mainly driven by the private sector. Contracts are increasing in service scope and geographic spread as customers look to simplify their procurement and management of facilities, and share risk.

This increasing intimacy with their clients' day-to-day business practices means facilities management professionals are ideally placed to provide expert advice and business solutions for organisations. By taking direct responsibility for services and infrastructure, FM companies, such as EMCOR UK, can see where operations can be made more efficient, energy and resource consumption can be reduced and savings achieved. By combining insight and advice from their FM partners with their own policies, businesses can make a positive difference to the environment and, critically, to their bottom line.

the impact of local growth

Businesses are now facing the ever-increasing challenge of managing their operations in line with global growth. The world's population continues to increase, having already reached seven billion in 2011. UN statistics suggest a high median figure of ten billion living inhabitants by 2050¹.

The expanding world population is using more resources and the increasing industrialisation along with the rapid depletion of finite carbon-based energy and natural resources is continually pushing global energy and resource costs higher.

rising UK energy costs

From being a net exporter of energy for most of the last 30 years – thanks mainly to North Sea oil and gas – the UK has now become a net importer, importing 27.1% of our primary energy supplies in 2009². This means UK businesses are now more exposed to, and should make contingencies for, developments in global energy markets.

At present, the technology is not available to entirely replace our diminishing carbon-based energy sources with viable, renewable energy. The EU forecasts renewable energy will account for only 55% of Europe's gross energy consumption by 2050, and current renewable energy production levels are not yet on track to meet this target³. Consequently, carbon energy prices will continue to increase in Europe as reserves decrease.

carbon emissions: trends and consequences

At the same time, there will be greater pressure to reduce carbon emissions. Global growth is exacerbating climate change by releasing more carbon emissions into the environment. China is now the world's greatest producer of CO₂ emissions, with 23.33% of the global total. India is third, with 5.78%. The UK is ninth, with 1.73%⁴.

Figure 1 shows the marked 'hockey stick effect' correlation between the rise in carbon emissions since the industrial revolution and the increase in positive radiative forcing – the indication of higher global temperatures. In the last 100 years, the Earth's average surface temperature has increased by around 0.8°C, with about two thirds of the increase occurring over the last three decades⁵.

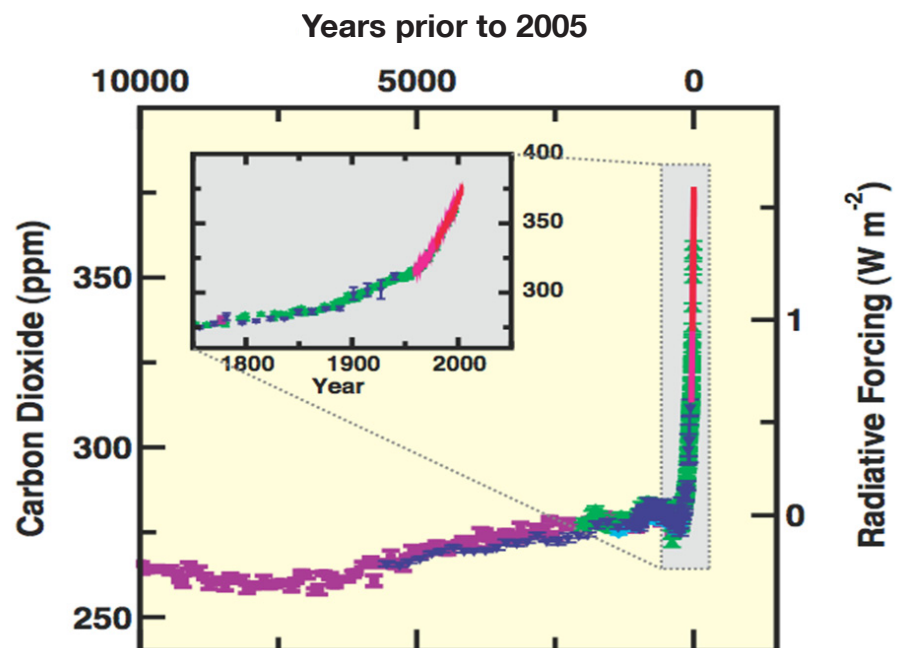


Fig. 1 Relationship between CO₂ emissions and radiative forcing (global temperatures).

Increased carbon emissions are not solely a concern for environmentalists; as the following evidence demonstrates, they have significant financial consequences for every business.

This is an area where FM companies can make a valuable impact. For example, since April 2007, EMCOR has worked closely with British Airways Property Services to reduce energy use and its carbon footprint across its property portfolio. The raft of initiatives include more energy efficient air conditioning equipment, low energy hangar lighting solutions, and other lower-cost approaches such as upgrading equipment controls. With these measures, EMCOR has helped British Airways reduce CO² emissions by 9,230 tonnes, the equivalent to heating almost 3,000 average UK homes each year.

This continual improvement in energy management strategies has seen British Airways reduce its consumption and costs, and was recognised by the award of the Carbon Trust Standard to BA Property Services in 2010. EMCOR has helped BA to beat its five year energy savings target of a 20% reduction in energy usage.

Also, waste management is among the FM services which EMCOR provides for a government health agency. Drawing on detailed knowledge accumulated while managing the site's waste disposal process, EMCOR introduced a modification which successfully reduced the main fan's power consumption by approximately 70%. Additionally, waste not treated on site now goes to a nearby recovery facility, where it produces enough steam to generate the 14MW of electricity, sufficient to power 14,000 local homes.

preparing for more extreme weather

The majority of scientists studying climate change now agree there is a direct relationship between increasing global temperatures, and the flow and strength of the planet's winds and weather patterns. Global warming will trigger more extreme weather events, which will have a financial as well as a human impact⁶.

In the UK, we will see stronger winds and more intense periods of rainfall. Buildings may have to be modified or rebuilt, for example, to withstand more frequent severe storms. Increased flooding and rising water tables will affect buildings and utilities infrastructure, and may block or damage roads, leading to traffic disruption. Flood plains are likely to be inundated more often, resulting in higher insurance premiums or insurers refusing to provide cover.

Meanwhile, rainfall in the UK has become less predictable. This will cause water supply difficulties or more expensive supplies for several industries, including food production, power generation and chemical industries. Reduced summer rainfall will also increase concentration of pollutants in our water sources, meaning more treatment is required further adding to costs⁷.

All of these factors will need to be incorporated in future business plans, with measures assessed to determine how businesses can mitigate the risks.

other influences on climate change policy

Global public reaction to the 2011 UN climate talks in Durban⁸ has shown there is greater pressure on the industrialised nations to be accountable for and reduce their energy and raw material consumption. This pressure will also be felt by organisations from multinationals down to smaller enterprises, as governments legislate to minimise their nation's carbon footprint.

The UK Government has set one of the world's most ambitious carbon emission reduction targets – 50% by 2025 and at least 80% by 2050⁹. Yet even complying with environmental laws may not be enough to satisfy some stakeholders; businesses must also be seen to set and meet their CSR targets, as green performance becomes increasingly important. The public, employees and investors will all expect to see companies cut their carbon energy consumption and improve energy efficiency. For existing and potential customers, green performance is gaining significance as a factor in purchasing decisions.

achieving energy efficiency

It is clear organisations need to improve building and operating efficiency, to save on energy costs, ensure compliance with legislation and satisfy stakeholders' concerns. Where new builds are concerned, it is important to consider sustainability solutions at the design and specification stage, in order to give projects a greater chance of achieving these goals.

FM businesses will have up to date knowledge of the equipment and practices that will deliver the greatest energy efficiency, and can also suggest how building design should accommodate working practices that minimise energy consumption. Taking 80% of carbon emissions out of a building's operations is a major challenge with new buildings, but becomes harder still with older, less efficient ones.

In the current economic climate, fewer businesses can afford the major capital investment required for entirely new, energy efficient infrastructure. Finding energy and resource saving improvements with older buildings is more likely to be the norm. Identifying areas for improvement within the existing infrastructure makes close co-operation between client and FM partner even more vital.

The Carbon Trust has identified that for existing non-domestic buildings, 70% of cost-effective emissions reductions (with corresponding reductions in energy consumption) can be achieved by fairly straightforward heating and cooling measures. The remainder of the cost-effective reductions are achieved by lighting, energy management, insulation and process efficiency.

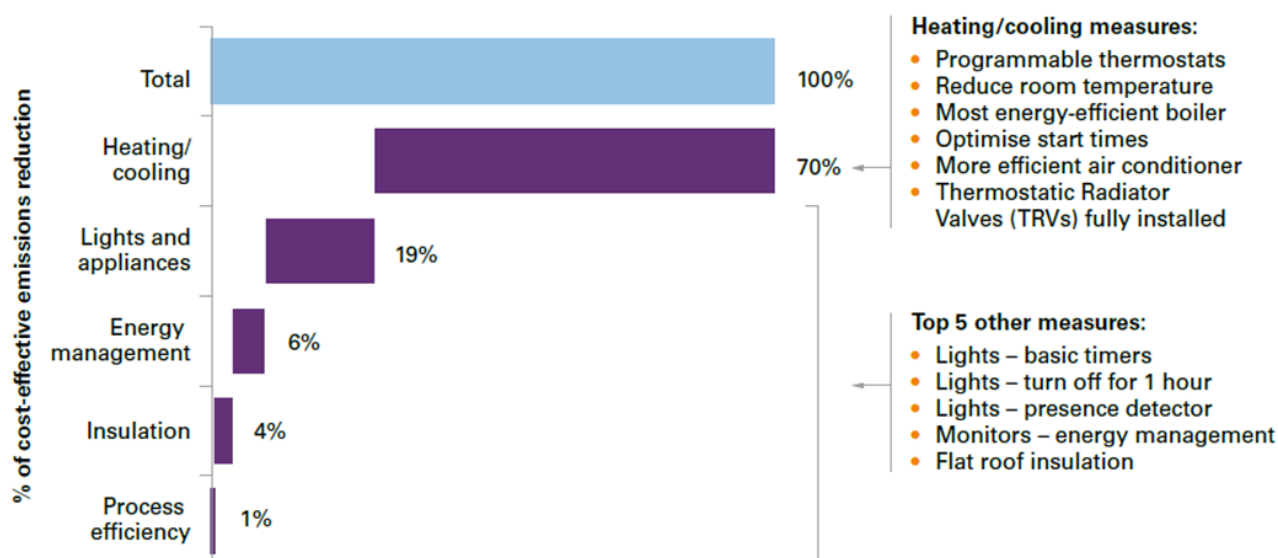


Fig 2. Cost-effective energy efficiency measures in non-domestic UK buildings.
Source: Building the future today, Carbon Trust.

Many of these reductions are within the remit of FM companies, which can recommend and help implement policies to realise these savings.

Additional savings can be made through 'greener' practices, such as reducing waste by adopting sustainable supply chains, and minimising water consumption by installing self-cleaning building products, such as 'smart glass'.

There is further scope within working practices themselves. Greater working mobility, with the ability to communicate via WiFi, means the old one-desk-per-worker model no longer applies. At the KPMG building in Canada Square, London, employees work within an open plan, non-assigned desk environment, with a range of alternative areas for individual output and collaboration. Combined with practices such as smart metering and lighting linked to available daylight, this innovative approach to building utilisation has resulted in a 40% reduction in energy consumption and a 50% reduction in carbon emissions.¹⁰

FM's role in energy efficiency and carbon reduction

Innovative developments, including KPMG's Canada Square building, are implementing FM controlled technology such as remote monitoring and advanced building diagnostics for tighter control of water and power consumption.

Many of the areas where these energy efficiency gains are being made (such as lighting), are already the responsibility of FM companies. This will become more widespread as organisations and their FM suppliers work together to establish more effective energy and resource policies. As facilities management providers are often directly involved with their clients' energy and resource consumption, they now play an increasingly significant role in helping to develop suitable policies and implement strategies to improve efficiencies and reduce overall business costs.

encouraging buy-in

While environmental policies will be assessed and approved at Board level, they still need employees' support to succeed. This requires consistent internal education and communication programmes to ensure each individual understands the implications and is sufficiently motivated to participate.

EMCOR has initiated Energy Awareness Days and similar events for several clients, where employees at all levels can see the benefits of reducing energy and resource consumption. For example, for the Department of Health in London, EMCOR appointed energy champions for each building, encouraging employees to take charge of their own energy consumption and adopt energy saving ideas. By introducing and promoting green practices, such as video conferencing and real-time gas and electricity monitoring, EMCOR saved the Department of Health more than £100,000 in the first year of its new contract. EMCOR also pays the subscription for Transport for London cycle hire (known colloquially as Boris Bikes after the Mayor). This means keys to unlock and use the cycles are always available for employees whose work regularly takes them to nearby buildings. This measure has significantly reduced the practice of using taxis between sites, providing not only cost savings but also carbon emission reduction.

As businesses seek to reduce expenditure and comply with increasingly demanding legislation, identifying and achieving small gains to contribute to a greater cumulative effect, is likely to become more necessary and commonplace.

summary

There is no doubt that the ramifications of diminishing carbon energy and resources pose substantial challenges for all businesses. These challenges must be met primarily due to increasing cost and safeguarding business continuity, and also to ensure compliance with legislation along with CSR commitments.

Facilities management has evolved in sophistication and scope, to take greater responsibility for key aspects of clients' operations. This allows FM providers to play an enhanced role in helping businesses reduce their energy consumption, costs and emissions. By identifying efficiencies, and determining which changes to working practices will have the greatest positive impact, FM companies can guide their clients to a more sustainable future, economically and environmentally.

Creating and implementing policies that have the greatest chance of delivering these benefits requires openness in sharing goals and concerns, a willingness to consider fresh approaches, and commitment from both client and FM provider.

about EMCOR Group (UK)

EMCOR Group (UK) is a wholly owned subsidiary of EMCOR Group, Inc - a Fortune 500 company with estimated 2012 revenues of \$6.3bn. EMCOR Group, Inc. is a global leader in mechanical and electrical construction, energy infrastructure, and facilities services.

With over 100 years' experience in the UK market, EMCOR Group (UK) provides engineering services, facilities management and sustainable business solutions for a diverse range of private and public sector organisations, through its two businesses – EMCOR Engineering Services and EMCOR Facilities Services.

We offer Total Facilities Management in its truest sense. Looking after environments as well as the people who work in them, we keep your facilities clean, comfortable, safe and sustainable in a way that adds real value to your organisation.

And we're celebrated for our success, too. We're the first FM company in the UK to achieve BS 11000 accreditation for Collaborative Working, and the only one in our sector with Key Account Management certification from Cranfield University. We've also been named the World's Most Admired Company in our sector by Fortune magazine in 2010 and 2011.

We are dedicated to finding effective solutions to the problems facing us and our clients, today and tomorrow, helping them operate more efficiently, effectively, sustainably and competitively. We have evolved our approach from supply chain to value chain – improving efficiency and use of resources, introducing innovation, and adding value.

sources

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