



CEM OCCASIONAL PAPER SERIES

**DEFINING A PROFESSION:
CORE COMPETENCIES FOR
SUSTAINABILITY**

DEFINING A PROFESSION: CORE COMPETENCIES FOR SUSTAINABILITY

An information paper by Stephen Bickell, CEM Tutor

CEM OCCASIONAL PAPER SERIES

July 2013

INTRODUCTION

There is a general awareness of sustainability issues in the built environment professions as well as a growing focus on using technical skills to provide sustainability solutions. In recent years the subject of sustainability has increasingly come to the fore at a strategic level within organisations. However, at present there is still relatively little clarity about which skill sets genuinely facilitate the delivery of sustainable outcomes even though – or perhaps because – education and training providers deliver a bewildering array of products. While sustainability knowledge and skills continue to be so poorly defined, sustainability itself will continue to lack credibility, which in turn will hinder people's ability to identify and acquire the skills they need to deliver sustainability solutions.

This paper primarily seeks to draw together the latest thinking on what the core knowledge and skill sets among white collar professionals across all sectors of the built environment industry should be. This core knowledge and these skills are essentially the building blocks of sustainability literacy. In addition, they have other important ramifications – in particular in terms of the methods that are used in sustainability training and education, and the ways in which these skills may be translated into business opportunities.

ABOUT KNOWLEDGE AND SKILLS

Through defining core competencies (knowledge and skills) it becomes apparent that it is critical that they be applied in the real world. It is important to recognise that in order to implement sustainability measures we need to understand what knowledge and skills are required to achieve this.

ABOUT TRAINING AND EDUCATION

While education and training fulfill very different functions, they occupy some important common ground. Both are concerned with the process of acquiring knowledge and skills – in this case to develop and apply sustainable solutions to real world problems. But by its very nature, sustainability challenges traditional training and education techniques, much as it challenges a ‘business as usual’ approach in all sectors.

In particular, sustainability questions whether the ‘sage on the stage’ mentality of traditional teaching is still appropriate. Sustainability is not a subject that can be ‘preached’. Current thinking suggests that sustainability training and teaching must reflect the needs of the learner. Shifting to a learner-centred approach requires teaching strategies that promote deeper learning. Such an approach uses rich tasks that are teacher-led but student-directed, using action learning techniques – i.e. individual or group activities that build in time for reflection, as well as developing pedagogical management strategies that can adapt to continual changes. Most importantly, learner-centred teaching must contextualise the subject, making it personal and relevant to the learner.

These strategies lend themselves more naturally to education than to training, since the former usually runs over longer timescales and includes more student contact time. But corporate organisations often view education programmes as being too lengthy or irrelevant. Their preference instead is for short, targeted training programmes that focus on specific skills – an approach which does not square well with acquiring sustainability knowledge and skills.

To move beyond this short-term mentality, sustainability needs to be considered heuristically. A heuristic approach allows learners to explore how sustainability affects them and their careers, not just to study the subject or topic of sustainability itself. Viewed in this way sustainability becomes a learning journey and an ongoing commitment to continuing professional development (CPD) rather than a one-off course. Understanding the importance of this will help training providers understand the wider core sustainability skills framework into which shorter courses can and should fit. Viewing the process as a longer journey, rather than a one-off fix, also allows learners time to undertake deeper, more targeted learning and for greater reflection between training sessions. It also provides context for individuals and the organisations they work for as they directly apply activities and projects to specific work roles and problems encountered in the workplace.

It is easy to see how the educational model of modular units of between 100 and 200 hours of study might work in delivering a CPD programme on sustainability over, say, a couple of years, rather than on an isolated training day. This approach would also help the image of sustainability training in general by providing a ‘clear landscape’ to individuals and organisations who have not yet committed to sustainability education because they are unaware of what it entails.

The core knowledge and skills discussed below are relevant to everyone seeking sustainability qualifications. Clearly, though, different people will have different levels of literacy in sustainability. One would naturally expect a sustainability professional to have a deeper understanding of the issues around the subject than someone just starting out on their learning journey. So, too, there will be differences in the knowledge and skills that are relevant to particular roles. A CEO or board member, for example, will probably require

considerably more 'big picture' and strategic knowledge than specific technical knowledge about, say, renewable energy to be able to make high-level strategic decisions on what the impact of sustainable measures will be. Meanwhile, a design technician will require specific technical knowledge but will have less need for strategic knowledge. These differences in levels and content can be easily overcome through defining and mapping a set of clear learning outcomes that also relate to specific roles or professions.



DETERMINING SUSTAINABILITY COMPETENCIES

From the relevant literature we can see that adopting approaches to sustainability requires, broadly, three core skills: a flexible mindset and strategic and technical capabilities.

The relationship between these core skills can be well represented as a series of concentric circles with mindset at the centre as the basis upon which sustainability is founded. Mindset underpins all strategic decision making. In turn, both mindset and strategy can be seen to underpin technical solutions. Core technical skills for the built environment can be separated into two levels, represented by the two outer circles in the diagram. Technical Level 1 sets out the general knowledge and skills needed to develop sustainable built environments. In Technical Level 2 the requisite skill sets are more focused and are tailored to a particular role or profession, such as a project manager, legal advisor or a managing agent.

Any of these themes can be used as a starting point for learning about sustainability, but using this model makes people immediately aware that a wider suite of knowledge and skills complements whichever theme is chosen as a starting point.

These themes can be further broken down into the primary skills sets shown in Table 1. However, it is important to note that these groupings are quite broad and, in true sustainability fashion, are deeply interconnected and interdependent so that not only is it difficult to separate them, but understanding each one depends on having an understanding of the other skills. It is debatable which of them, if any, are more important than the others and it is only by understanding the whole that it is possible to appreciate the full extent of their interrelationship.

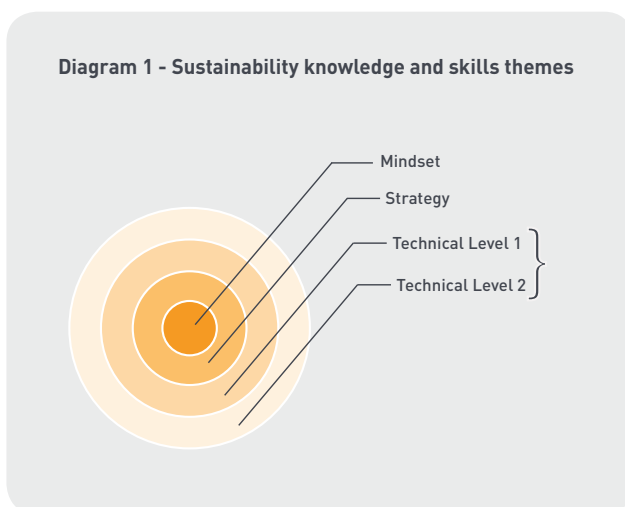


Table 1 - Primary themes and skill set

| Theme | Primary skill sets |
|-------------|---|
| 1 Mindset | 1.1 Values, motivation and action |
| | 1.2 Awareness of core principles and themes |
| | 1.3 Communication and collaborative working |
| | 1.4 Systems and futures thinking |
| | 1.5 Leadership |
| 2 Strategy | 2.1 Business case and strategy |
| | 2.2 Change management |
| | 2.3 Innovation |
| 3 Technical | 3.1 Technical Level 1 |
| | 3.2 Technical Level 2 |

Each of these primary skill sets is explored below.

1 MINDSET

1.1 Values, motivation and action

Sustainability requires a 'can do' attitude (in essence, a positive mindset) which sets the tone for overcoming 'business-as-usual' attitudes. Moving away from 'business as usual' requires a cultural change, but without personal commitment there can be no industry-wide change. So, at its most fundamental, sustainability is about exploring and identifying personal values. More often than not, there is a strong correlation between personal values and sustainability values. Moreover, aligning personal values with organisational values to provide a united vision is a key part of the sustainability learning journey. Organisations that succeed in aligning personal and organisational values stand a very good chance of developing sustainability as a culture. Organisations that fail to properly explore this avenue will struggle to maintain employees' enthusiasm for sustainability because it is all too easy to find excuses for not engaging and to leave personal values at home, settling for a different culture at work.

That said, aligning values is no guarantee of success. It is important to understand what stops people from acting and also to identify the triggers that motivate and empower us to commit to personal change. The barriers to action derive from a complex set of human traits that hinge on personal attitudes, how beliefs are formed and individuals' perspectives. For change to be effective it is necessary to reassess our beliefs and both understand and respect different perspectives and for us to engage

in the sustainability debate itself. Part of the sustainability learning journey is about exploring connections, seeking out a stronger alignment of personal and organisational values and ensuring they play a central role in decision making, where sustainability is seen as part of the process, and a focus and layer of thought that is applied to all decisions and actions.

The experience of developing this 'can-do', sustainability-focused culture is a powerful tool that organisations can take advantage of. An organisation that has been through the process of embedding sustainability is well placed to convince other organisations to embark on the journey as partners or as clients, and to capitalise on their experience by offering related consultancy services.

1.2 Awareness of core principles and themes

A general awareness and understanding of the main themes of sustainability can help to strengthen our attitudes towards the subject.

Sustainability challenges the status quo where business as usual and unsustainability are the norms. Thus, sustainability literacy requires a core knowledge and understanding of why business as usual should be challenged. Questioning business as usual can threaten our ideals, values, beliefs, business strategies and technical understanding and is not necessarily what everyone wants to hear. If someone has done a job, apparently successfully, for 30 years, it can be difficult for them to take on board thinking that questions its validity and even harder for them to change their mentality to commit to reconsidering existing

knowledge and skills. Thus, the status quo is the default fallback option. Dealing with values and 'big picture' sustainability is outside the comfort zone of many people in the workplace. However, using tools such as those developed by The Natural Step International or the SWOT analysis tool developed by the World Resources Institute it is possible to consider sustainability trends in relation to an organisation's values, and to simultaneously shed light on the impact these trends will have on business models.

Core principles and themes focus on big picture trends and paradigm shifts, and include:

- new economic models and their rationale – for example, rethinking the respective roles of consumption and technology, GDP versus genuine prosperity, limits to growth, globalisation, policy making;
- fundamental scientific awareness of key environmental and social trends and interactions and their timescales, drawing from research such as the Living Planet Report by WWF, the AR4 Synthesis Report by the International Panel on Climate Change and the UN's Millennium Ecosystem Assessment;
- fundamental awareness of key social issues such as environmental justice, community action, social and demographic shifts and their relationship to economic growth, and reference to established goals such as the UN's Millennium Development Goals;
- innovation and technological advances and their role in delivering sustainable outcomes;

- conceptual models of sustainable development such as the triple bottom line, the nested circles and the five capitals;
- understanding the skill sets needed to deliver sustainability and a programme of personal development.

In order to apply these principles there is a growing need to develop an awareness of the way global and local societies work as well as an understanding of the role that science, economics and politics play in shaping them, while at the same time adopting a healthy mistrust of traditional approaches. Just because we have 'always done it this way' does not mean 'this way' is sustainable. We need to question underlying assumptions and emerging patterns, to seek to understand why things have gone wrong in the past, what might go wrong in the future, and to distinguish fact from opinion and theoretical models from reality.

1.3 Communication and collaborative working

Communication and collaborative working are closely linked. The vision for a sustainable future is not always easy to convey and communicating to people that sustainability is the new norm can be challenging. Hence, the ability to articulate effectively and develop logical, coherent and persuasive arguments is fundamental to changing people's beliefs. Communicating an organisation's sustainability journey to internal and external stakeholders is an important statement of intent. Who this is communicated to, and how, informs other business strategies such as marketing, customer relations and staff training, as well as



developing market shares or entering new markets. The 'can do' attitude required to implement sustainability measures comes from empowerment. Understanding how to overcome barriers relies heavily on getting the right people together and working towards a common goal. Collaboration is about assembling the right players to deliver new, innovative solutions, whatever the scale. It requires an understanding of how to get things done in the face of hidden agendas and unwritten rules, political coalitions and competing points of view. This will involve identifying, managing and working with stakeholders to form alliances and allegiances to overcome any barriers. The values that underpin effective group work give a strong sense of shared purpose, reflecting the diversity of participants and embracing win-win-win objectives, tolerance and communication. This is precisely what is hoped for from the UK coalition government's Green Deal under which sectors of the built environment will have to come together to evaluate new partnerships to take advantage of new work streams.

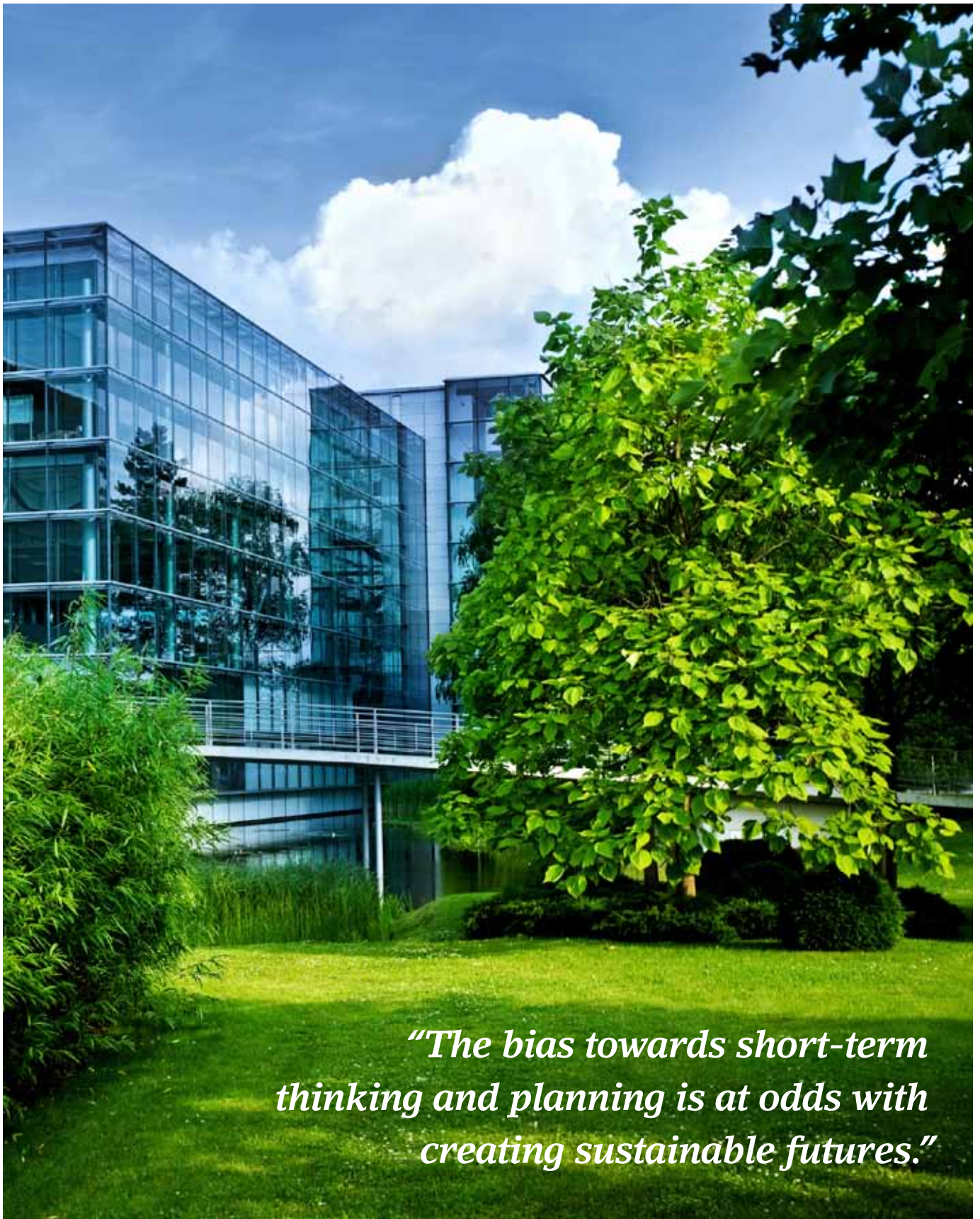
1.4 Systems and futures thinking

Using 'systems thinking' is critical when working on complex, interconnected problems. Systems are all around us; for example, earth's natural systems upon which human life depends, human interaction with these systems and interactions between different social groups can all be termed systemic. Although systems thinking theory can be complex, it is a very natural way of considering and representing real world problems. Using systems and 'futures' thinking allows us to better appreciate the natural and social systems that come together and interact in the built environment.

Unfortunately, the traditional education system has failed to equip us to deal with the complex, so-called 'wicked problems', characterised by uncertainty and involving multiple stakeholders, different perspectives and competing values, which are embodied by sustainability. The traditional education system embeds in us the 'reductionist' way of problem solving; namely, drilling down into more and more detail. This gives rise to the term 'silo mentality'. Current teaching methods which centre around fragmentation, control and manipulation need to be replaced with a systems approach that embraces participation, appreciation and self-organisation. Lest we forget, everything is connected.

On another level, systems thinking helps us to understand the organisational problems arising from business or management strategies and change management because it considers issues from diverse, shifting points of view and gives leaders the tools with which to frame problems holistically by building judgement and intuition into messy, unstructured situations.

The bias towards short-term thinking and planning is at odds with creating sustainable futures. Failure to consider how a system operates through time is a common problem and needs addressing. Considering longer time horizons is a valuable business planning tool. For example, the full lifecycle of a building is rarely given due consideration. But sustainability dictates that it is better to build in durability and longevity by creating buildings which are as flexible and adaptable as possible so that they can potentially be used for a variety of purposes. Such futures thinking is not applied to most modern designs.



“The bias towards short-term thinking and planning is at odds with creating sustainable futures.”

1.5 Leadership

In many ways leadership skills encapsulate the skills that are required to embed sustainability. It is important to define what is meant by leadership. Effective leadership is as much about championing sustainability as about fulfilling the traditional role of great leaders. Engaging in the sustainability agenda means that by definition one has become a leader, and is now part of the solution, no longer part of the problem.

As with sustainability many of the fundamental characteristics of leadership develop from a set of core values and being able to live by these values and articulate them to inspire and empower action. For example:

- having a sound understanding of sustainability's core principles, themes and influences;
- having the ability to develop and articulate the vision of a sustainable future to a diversity of parties;
- being able to communicate and receive information effectively and engage in the debate;
- Identifying and nurturing collaborative partnerships either within an organisation or in the wider community to create common purpose to resolve systemic problems;
- having the skills to appreciate the strategic implications of sustainability from systems and futures' perspectives;
- having the ability to develop a strong business case assessing risk and opportunity;
- being able to understand the role of innovation and how to establish conditions that allow effective innovation;
- having an appreciation of the role of community, and the built environment in a sustainable future.

It is not necessary to possess all these skill sets but it is implicit that the sustainability champion needs to understand the need for change and how others are going about achieving it. Leadership requires someone who can drive forward an organisation's sustainability credentials and who has the ability to develop and deliver a vision, policy and strategy, as well as to lead and support the team that will manage change.

“Effective leadership is as much about championing sustainability as about fulfilling the traditional role of great leaders.”



2.0 STRATEGY

Although many organisations have long-established environmental or corporate responsibility (CR) policies and departments, such initiatives are often criticised for lacking ambition and for rarely being core to business activity. Such ‘departments’ are often tagged on to an organisation, and their unofficial status allows staff to abdicate responsibility.

Because of its wide-ranging nature many organisations find it extremely difficult to place sustainability effectively; indeed, sustainability

cannot be covered by any one single person or department in an organisation. The responsibility for sustainability therefore lies principally at an individual level, not with a department, or sustainability expert. It is not ‘someone else’s problem’. Understanding this goes a long way to developing a strategic response.

While many organisations are becoming more comfortable with the idea that efficiency is closely related to sustainability, the full impact of sustainability on business models is less widely

| | | |
|---|--|---|
| <p>Ethics</p> <p>Providing strong, clear governance to deliver ethical behaviour, transparent stakeholder relationships and effectively manage environmental economic and social impacts on the communities they serve</p> | <p>Accounting</p> <p>Building systems, establishing sustainability targets and objectives and providing sustainability information to influence decision-making</p> | <p>Economics</p> <p>Helps to understand the macro environment which influences the business. Explore mechanisms to allow companies to internalise costs to society and contribute positively to economic and social development</p> |
| <p>Finance</p> <p>Considering long-term opportunities that responsibly and effectively manage their environmental, economic and social impacts</p> | <p>Strategy</p> <p>The right approach for the right company implemented in a way that mobilises the whole company</p> | <p>Marketing</p> <p>Designing and promoting sustainable options and inspiring change</p> |
| <p>Entrepreneurship</p> <p>Identifying and exploring new sustainable (business) solutions both inside and outside the organisation</p> | <p>Operations</p> <p>Taking responsibility for all social and environmental impacts across the lifecycle of a company’s products and services</p> | <p>Organisational behaviour</p> <p>Translating sustainability policy into action and creating a work environment where sustainability is embedded in the culture of the organisation including every aspect of the employee’s lifecycle from recruitment to retirement</p> |

understood. Without a strategy an organisation will struggle to develop a coherent response to sustainability in the long run. Weybrecht (2010) shows how a strategy sits at the hub of a giant sustainability jigsaw puzzle and provides the glue that ties all aspects of organisational behaviour together. The corner pieces of the puzzle are the four key areas which an organisation should use as a basis from which to address sustainability. At the heart of the jigsaw is strategy, while the pieces inbetween help tie it all together.

Central to the job of the sustainability professional is the need to understand the interrelationships between these nine areas and to communicate and collaborate with the people working in them, to engage them and to develop their sustainability literacy so that they can contribute to the debate.

2.1 Business case

In order to bring the sustainability agenda firmly to the attention of traditional business leaders a robust business case is required. The first step must be to consider the potential risks and opportunities that implementing sustainability measures represents to an organisation. Most businesses will consider the risks first. Risk is a concept and language which business is familiar with and adept at dealing with. Assessing risk requires the analysis of business models in the light of high-level market trends such as population growth, migration to cities, climate change and the trajectory of policy making and public opinion.

However, while assessing risk is clearly important, and might be the initial motivator, it is the wrong mindset. Sustainability is primarily about creating opportunity. Working through and applying the skills listed in the sustainability checklist reveals what an organisation

needs to move towards to implement sustainable solutions. At the same time, working through these same skills can also create opportunities by identifying new markets. Organisations will need to acquire the necessary expertise to deliver sustainable solutions. It is likely they will need help from go-betweens who can translate technical jargon into language that can be easily understood and they will want to employ people who understand their sustainability aims or who can show them how they can move into that space themselves.

By focusing on the positive benefits it is possible to put a very different spin on the potential outcomes of introducing sustainability measures. Some of the potential benefits to business can be summarised as follows:

- improves resource productivity;
- avoids regulatory burden and compliance costs;
- lowers costs upstream and downstream in the supply chain;
- manages environmentally driven business risk;
- meets customer environmental needs;
- builds product position and customer loyalty on green attributes;
- promotes value innovation and develops breakthrough products;
- builds stronger corporate reputation;
- develops stronger customer loyalty;
- improves staff loyalty and attracts the best talent.

Often though it is only when a combination of these benefits are taken into account that the true business case for sustainability measures becomes clear.

Some of these benefits, such as energy efficiency, are tangible – the business case for energy savings is likely to be clear cut. But often the benefits are less tangible – for example, heightened brand reputation, improved sales or free or cheap marketing. Only when the tangible and intangible benefits are seen holistically can a robust case be made.

Understanding sustainability risks and opportunities is a collective learning process which the sustainability professional must be able to facilitate. It requires an understanding of the role, responsibilities and purpose of business, of balancing financial and non-financial objectives while simultaneously juggling the demands of diverse constituencies such as shareholders and employees, customers, regulators and society. Strategically underpinning a strong business case requires a global perspective, identifying, analysing and putting into practice ways of best managing when faced with economic, institutional, and cultural differences. It is not just about developing a business case for sustainability – understanding sustainability itself helps inform the business case. The more you engage with

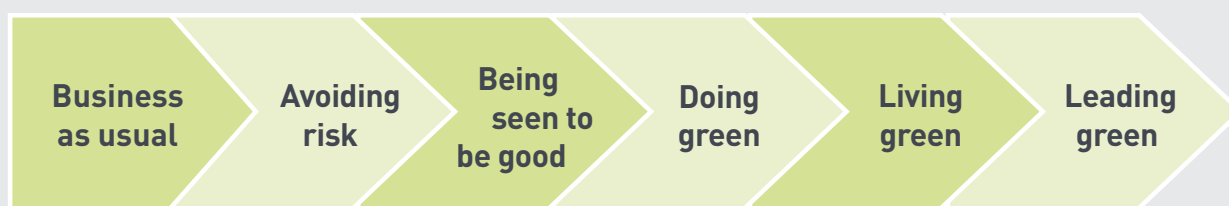
sustainability the more the opportunities it can create become apparent.

2.2 Change Management

Sustainability cannot simply be embedded within organisations since it is a cultural change. As has already been noted, true change is the result of many factors but without personal commitment, change initiatives will more than likely fail over the long term. So a critical goal for sustainability professionals is to use change management to lead the process of instilling a sustainability culture within their organisations.

Many organisations talk about embedding sustainability but it is extremely difficult to suddenly make the change from business as usual to embedded sustainability. Embedded sustainability results in such a deep integration of social and environmental performance within an organisation that it transforms the business model, without compromising quality or price. This change is not something that can occur overnight. The diagram below represents the stages an organisation may take in order to move along in the journey.

Diagram 2 - Stages of 'green'



From Presentation by Futera

The late Ray Anderson, founder and chairman of Interface, Inc., took many years to achieve his vision of making his organisation the first blue chip company to supply construction material that enhanced, rather than detracted from, the environment it was used in. There are many reasons it took Anderson so long to feel he had achieved his goals – the inertia of traditional practices and processes do not change overnight but it was the resistance Anderson met with from sceptical staff and investors that presented the biggest hurdle. However, once engaged, there was a groundswell of enthusiasm among staff that surprised Anderson. The fact that this is a journey that will take time is good reason to take the first steps towards sustainability before wider business considerations and market developments prevent sustainability becoming embedded into the normal practice of a company.

Change management requires an understanding of behaviour and attitudes. Changing someone's mind is generally complicated and rarely the result of a sudden moment of enlightenment. There is a growing acknowledgement that not everyone will be swayed by the traditional 'looming environmental disaster, desperate action required' approach. Since the general response so far has been one of inaction it is clear that a different approach is required to persuade us to bring about change.

Gardner (2004) outlined seven essential factors or 'levers' that can bring be used to bring about changes to mindsets, including presenting logical arguments, presenting factual data, connecting with an individual's or group's emotional or spiritual core, offering positive or negative reinforcement, leveraging happenings that are

out of your control and identifying and countering longstanding, contrary beliefs. Generally speaking, once someone is 'hooked' the topic of sustainability is very engaging, and progress along the learning journey is more easily facilitated. But to gain that interest the traditional environmental doomsday scenarios have to be repositioned to capture more compelling reasons to change behaviour, such as business strategy, personal values or career development. Acknowledging the wide-ranging topics that engage individuals, organisations and communities and realising that different hooks may engage different people in the sustainability agenda puts a far more positive 'spin' onto the subject.

Organisational culture itself develops through an ongoing negotiation and conversations about values and meanings between the organisation's members. These negotiations define the day-to-day 'way' of doing things, but rarely does this dialogue get to be informed by sustainability. Sustainability needs to be automatically part of this process. As individuals we need to make the connection between our home life, our work and the influence that we have on the global community. As such it is important to visualise skill sets that reflect what one would expect a particular person to be doing in their day-to-day lives as well as at work. It is also about realising that we are collectively responsible for contributing, or not contributing as the case may be, to the community we exist in.

It is unlikely that corporate responsibility/ corporate social responsibility initiatives will have been the subject of much scrutiny by the majority of employees. In fact, the process of understanding the values of sustainability

involves working out who is responsible and who has to act. This process of reflection is critical to allow both organisations and individuals to develop a common vision for an organisation,

2.3 Innovation

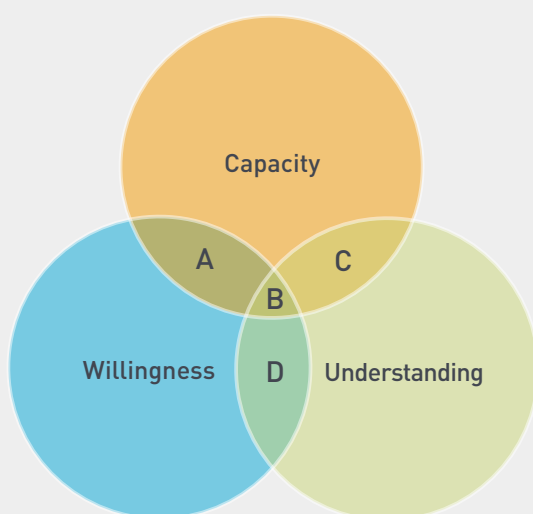
We cannot solve problems by using the same kind of thinking we used when we created them. In order to deal with the paradigm shift this represents, it is necessary to generate conditions that allow people to reconsider existing business models and develop new and innovative sustainable products and services to suit the new paradigm.

Innovation needs to be facilitated. It is a skill in itself to set up effective innovation groups. Sustainability can be used as an innovation driver: the process of exploring sustainability in the context of a product or service is the basis for innovation.

as well as action plans about how sustainability might be achieved, and to assign resources and governance and identify appropriate reporting mechanisms to the plans.

The diagram below shows how innovation requires a combination of three ingredients: understanding the nature of the problem; a willingness to seek answers; and having the time and resources to be able to consider solutions.

Diagram 3 - Capacity to innovate – Basic conditions for moving towards sustainable development



A = Willing, able but ignorant;
wrong actions

B = Willing, wise and able;
appropriate actions

C = Wise and able but unwilling;
inaction or only cosmetic actions

D = Willing and wise but unable;
thwarted actions

Source: redrawn from Gallopin 2002

3.0 TECHNICAL

Looking at the built environment is integral to understanding sustainability and is therefore a core subject irrespective of whether one is a built environment professional or working in another field. There are an ever-growing number of specific technical sustainability disciplines but understanding the fundamental principles of a sustainable built environment is at their core. For many built environment professionals their first encounter with sustainability is when they come across a technical challenge in their existing role. This could be when they take the first steps to learning about sustainable solutions such as rating tools and indicators, whole life value and sustainability reporting or carbon accounting. There are two levels to this set of core skills. Technical Level 1 includes the core sustainability competencies that anyone working in the built environment needs to understand, while Technical Level 2 is an extension of these skills but relates specifically to an individual role or profession.

3.1 Technical Level 1

The role the built environment can play in helping develop and deliver sustainable futures is something we are all bound up in, as individuals and businesses alike interact with and use the built environment in which we work and live. Indeed it provides the real world context for a great many sustainability problems and challenges and goes well beyond the normal interests and concerns of built environment professionals. The problems of urbanisation, poverty, health, consumption, equity and so on all play out in this theatre. Sustainable buildings and communities have fast become the embodiment of a great

many corporate sustainability policies, so the link with the built environment and sustainability has already been made. As a key battleground, the built environment is often lauded as a panacea for sustainability. However, the built environment cannot provide the solutions on its own – the way it is used is of equal if not greater importance, so educating people about exactly what role it can perform is vital. At a basic level there is a need to understand what a sustainable built environment might look like and how it is underpinned by the other core competencies discussed above.

The core topic areas for sustainability into which systems and futures thinking must also be embedded include:

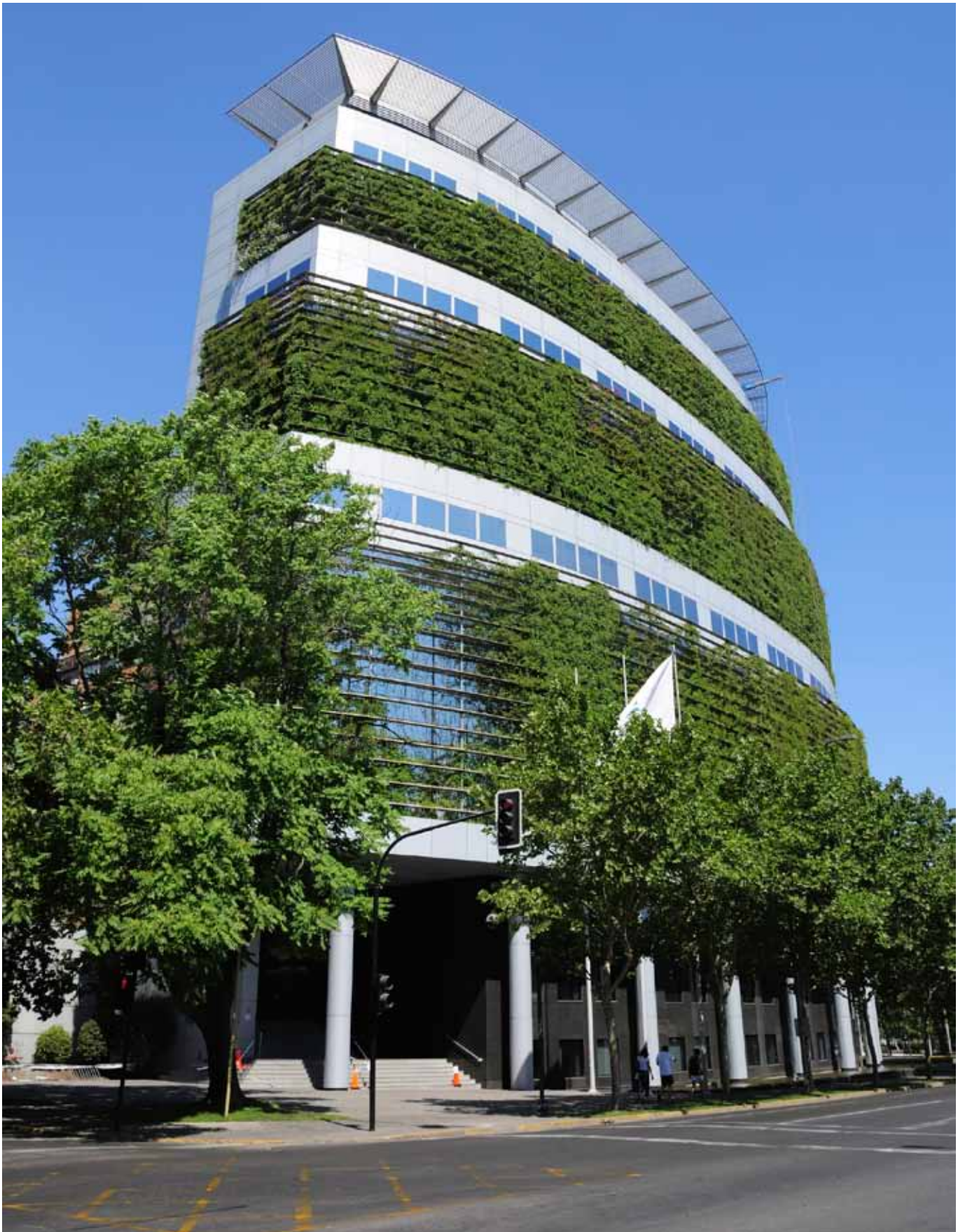
- the building lifecycle overview
 - traditional practices and barriers to sustainability, e.g. understanding individual roles, performance gaps
 - principle reasons for using the building lifecycle to promote sustainability
- sustainable cities/neighbourhoods/communities
 - understanding the relationship between spatial scale and sphere of influence
 - core components of sustainable cities
 - developing and working with community;

- sustainable infrastructure, e.g. energy, waste and fresh water, waste;
- sustainable transport;
- sustainable buildings – new, existing, domestic and non-domestic, e.g. principles of sustainable design, performance, material selection;
- rating tools, e.g. aims, limitations, key components;
- benchmarking schemes, e.g. indices for property performance comparison;
- assessment tools, e.g. whole life costvalue, life cycle assessment analysis

3.2 Technical Level 2

It is not the purpose of this paper to identify the range of roles and professions or the vast array of technical subjects that are relevant to sustainability. But individual roles and professions throughout the built environment lifecycle have specific technical solutions. These might range from selecting a renewable energy type or defining a sustainable urban drainage system, through to drafting green lease clauses in leases. Arriving at the answer requires a deeper understanding of the finer detail and workability of sustainable solutions. The old cliché ‘the devil is in the detail’ is significant because sometimes grand schemes do not work in practice or have unintended consequences. Without understanding what constitutes core sustainability knowledge and skills there is a strong possibility that at this level failures to deliver will go undetected or challenged.





REFERENCES

- Blewitt J (2009) *Understanding Sustainable Development*, London: Earthscan. ISBN-13: 978-1844074549.
- Blowfield M and Murray A (2008) *Corporate Responsibility: A Critical Introduction*, Oxford: Oxford University Press. ISBN-13: 9780199209095.
- Esty D and Winston A (2009) *Green to Gold*, Hoboken, NJ: John Wiley & Sons. ISBN-13: 978-0470393741.
- Gardner H (2004) *Changing Minds: The Art and Science of Changing Our Own and Other People's Minds*, Boston, MA: Harvard Business Review Press. ISBN-13: 978-1578517091.
- Global Reporting Initiative, *Sustainability Reporting Guidelines*. Available at: www.globalreporting.org/resource/library/G3.1-Guidelines-Incl-Technical-Protocol.pdf [accessed 20 September 2012].
- Hitchcock D and Willard M (2006) *The Business Guide to Sustainability: Practical Strategy and Tools for Organisations*, London: Earthscan. ISBN-13: 978-1844073207.
- Murray P (2011) *The Sustainable Self*, London: Earthscan. ISBN-13: 978-1849712408.
- Northouse, P (2007) *Leadership: Theory and Practice* (5th edn), Thousand Oaks, CA: Sage, ISBN-13: 978-1412974882.
- Porter, M (2007) *The Global Competitiveness Report 2007-2008*, Basingstoke: Palgrave Macmillan. ISBN-13: 978-1403996374.
- PRP, URBED and Design for Homes (2008) *Beyond Eco-Towns Applying the Lessons from Europe*. Available at www.futurecommunities.net/files/images/1_3_Beyond_Eco-towns.pdf [accessed 20 September 2012].
- Senge P (2007) *The Dance of Change: The Challenges of Sustaining Momentum in Learning Organisations*, London: Nicholas Bealey Press. ISBN-13: 978-1857882438.
- Weybrecht G (2010) *The Sustainable MBA: The Manager's Guide to Green Business*, Chichester: John Wiley & Sons. ISBN-13: 978-0470741146.

USEFUL WEBSITES

Global Reporting Initiative

www.globalreporting.org

[accessed 20 September 2012].

International Panel on Climate Change A4

Synthesis Report

www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm

[accessed 24 September 2012].

Natural Step International

www.naturalstep.org/

[accessed 20 September 2012].

UN Development Goals

www.un.org/millenniumgoals/

[accessed 24 September 2012].

UN Millenium Ecosystem Assessment

www.maweb.org/en/index.aspx

[accessed 24 September 2012].

WWF Living Planet Report

http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/

[accessed 24 September 2012].

World Resources Institute

www.wri.org/ [accessed 24 September 2012].

ABOUT THE AUTHOR

Steve has worked in and around the property industry all his life. He is a Chartered Building Surveyor and has worked variously as a consultant, business owner, and contractor.

Travelling in the early noughties Steve discovered a passion for sustainability and whilst completing his first Master's Degree in Sustainable Architecture at Sydney University he founded and chaired the Sustainability Group for RICS Oceania and created their first regional sustainability focused newsletter.

On returning to the UK in 2007, his experience in education led him to feel that his new found skills would be best employed trying to help educate the property industry to make the transition to delivering more sustainable built environments.

After joining CEM he has developed and delivered various sustainability training courses for and in partnership with leading industry organisations such as Legal and General, Jones Lang Lasalle, Willmott Dixon, and GVA Grimley.

Building on these successes through CEM Steve has forged a strong working bond with the UKGBC, producing the UKGBC online training STEP Introduction to a Sustainable Built Environment. At CEM he is now our lead tutor in sustainability, and he is also leading an assessment of the strategic impact of sustainability on CEM's management and organisation, and CEM's learning products.

© College of Estate Management 2013

All rights reserved by CEM. No part of this publication may be reproduced, stored or transmitted in any form or by any means without prior written permission from CEM.

CEM warrants that reasonable skill and care has been used in preparing this report. Notwithstanding this warranty, CEM shall not be under liability for any loss of profit, business, revenues or any special indirect or consequential damage of any nature whatsoever or loss of anticipated saving or for any increased costs sustained by the client or his or her servants or agents arising in any way, whether directly or indirectly, as a result of reliance on this publication or of any error or defect in this publication. CEM makes no warranty, either express or implied, as to the accuracy of any data used by CEM in preparing this report nor as to any projections contained in this report which are necessarily of any subjective nature and subject to uncertainty and which constitute only CEM's opinion as to likely future trends or events based on information known to CEM at the date of this publication. CEM shall not in any circumstances be under any liability whatsoever to any other person for any loss or damage arising in any way as a result of reliance on this publication.

The College of Estate Management (CEM), founded in 1919, is the leading provider of supported distance learning for real estate and construction professionals. CEM has been playing a key role in the property world for more than 90 years, and covers almost every property-related topic at diploma, undergraduate and postgraduate level. Most courses are accredited or recognised by a range of professional bodies, including RICS, CIOB, BCSC and BIFM. In 2012 the College was granted taught degree awarding powers by the Privy Council.

All CEM degree programmes are taught through supported distance learning, so students can study in their own time. A structured online study programme with guidance from experienced tutors is provided so there's no need to attend lectures or classes for the majority of study. All learning materials are accessible through CEM's Virtual Learning Environment (VLE), a specialised online resource.

Drawing on our extensive knowledge base, professional contacts and independent standpoint, research is a core area of CEM's activities, both to ensure the quality and relevance of our education programme and to offer a vital service to the property profession.



The College of Estate Management
Whiteknights, Reading, RG6 6AW
United Kingdom
Tel: +44 (0) 118 921 4696
Email: research@cem.ac.uk

Patron: HRH The Prince of Wales

www.cem.ac.uk

