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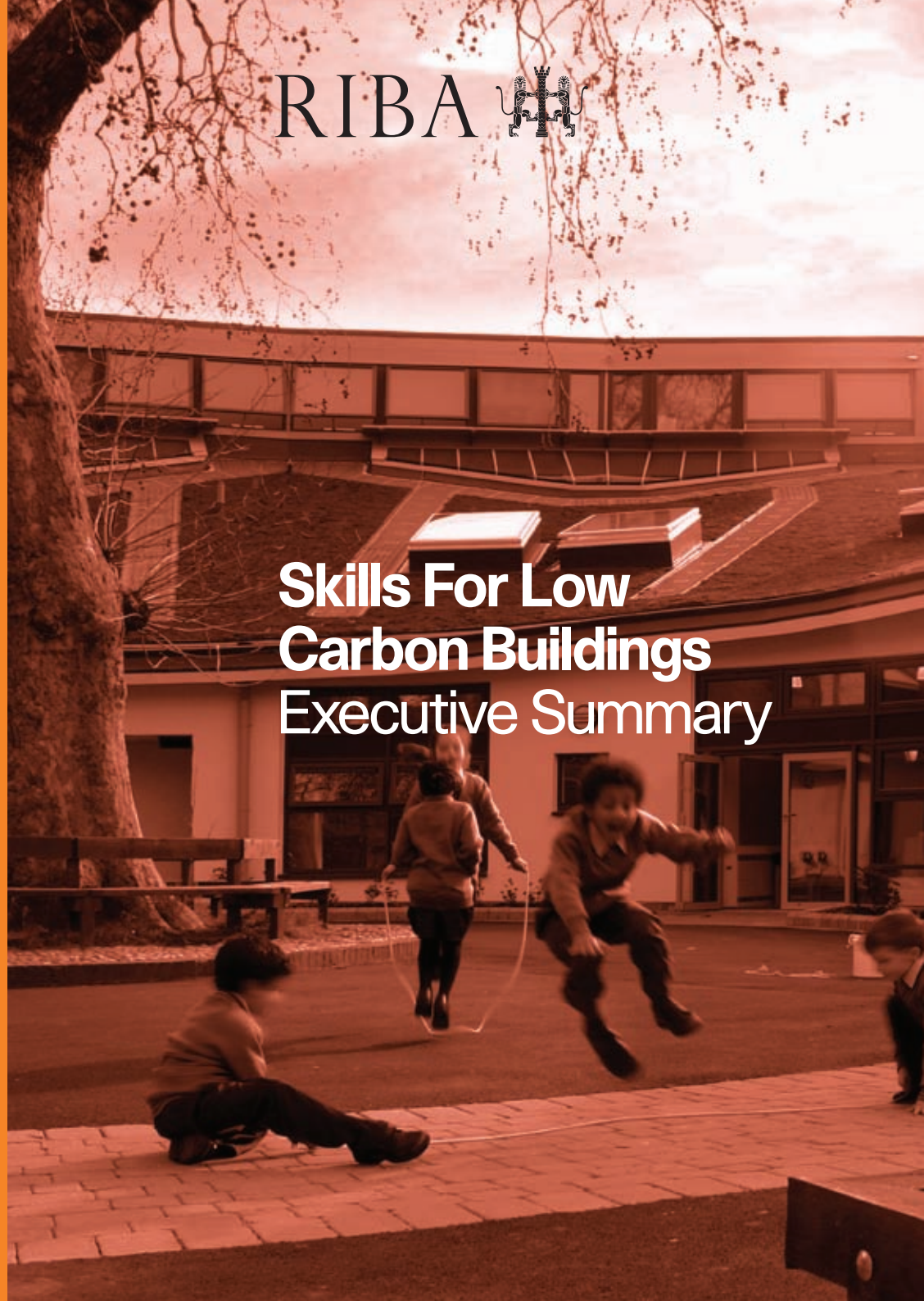


RIBA

Skills For Low Carbon Buildings

Executive Summary

About this Document:

This document summarises a guide to *Skills for Low Carbon Buildings*, developed by the RIBA as part of a suite of Climate Change Tools to encourage architects to engage with the issue of climate change and to deliver low carbon new buildings and low carbon refurbishment of existing buildings.

To download the full guide to *Skills for Low Carbon Buildings*, or to explore all of the RIBA Climate Change Tools, visit www.architecture.com/climatechange

Cover image Larmenier and Sacred Heart Primary School. The building, designed by Studio E Architects, features solar panels, generating ten per cent of the school's power, and a green roof. The design has also allowed for the preservation of two 120 year-old plane trees on the site. Other features include light-sensitive dimming controls on the light fittings, awnings outside the classroom windows, and independent temperature controls for each classroom.

Photo Studio E Architects

Introduction

Climate change brought about by man-made emissions of greenhouse gases has been identified as the greatest challenge facing human society at the beginning of the twenty-first century[1].

Action to address climate change falls into two categories: mitigation policies are designed to reduce greenhouse gas emissions to slow down or stop climate change; adaptation policies are designed to adjust society to cope with climate changes that are already happening or are likely consequences of current greenhouse gas emissions.

Tackling climate change requires concerted and focused action. This will include reducing carbon dioxide emissions by changing the ways in which buildings are designed, constructed, managed and used.

It's important to remember the wider context for action to address climate change. Buildings should be low carbon, but they should also be sustainably designed, that is, they should be created with consideration of the wider, long-term environmental, social and economic aspects of sustainability.

1 You can find out more about climate change in the RIBA *Climate Change Briefing*, see www.architecture.com/climatechange

The Importance of Low Carbon Skills

'The professional work of the architect, like all human activities, has impacts upon the environment. It is the responsibility of all architects to understand these impacts and seek to minimise negative environmental effects at global, local and indoor levels.'
Tomorrow's Architect

Over recent years, climate change has risen rapidly up the political and public agenda, with increasing amounts of legislation, regulation, media coverage and information in the public domain.

Architects are centrally involved in a sector of the national economy – buildings – which provides the setting for between 40% and 50% of UK national greenhouse gas emissions. Therefore the RIBA and its members have an important part to play and an opportunity to work with others to influence the future.

More enlightened clients are adopting a bolder, socially responsibile agenda and are keen that their buildings reflect their corporate commitments. Increasing demand for low carbon buildings, coupled with the strengthening of regulation (for example, the Code for Sustainable Homes placing us on a path to zero carbon new homes by 2016) mean that low carbon skills must become more integrated into mainstream architectural services.

By developing their low carbon skills rapidly, practising architects may gain competitive advantage from niche specialisation in low carbon design. Alternatively, simply having a stronger skills base and deeper knowledge of climate change and low carbon design issues will bring opportunities to build wider ranging relationships with clients and stakeholders who have an active interest in environmental issues.

Low carbon design offers great opportunities for creative thinking and innovation, and the journey towards a sustainable future should be taken with the spirit of adventure and as a source of inspiration. Low carbon skills should not be regarded as a 'chore', a commoditised skill delivered more by the modelling software than by the architect's inspiration.

Low Carbon Skills and the Architect

In Training

The education of architects today will have a profound effect on our future. Many will practise architecture through most of this century and their legacy will continue well into next. Many new graduates are already benefiting from the excellent work being undertaken by schools of architecture and universities in promoting sustainable design and low carbon skills.

The RIBA's manifesto for architectural education is laid out in *Tomorrow's Architect*. The core of the document sets out the benchmarks for passing the Parts 1, 2 and 3 examinations in architecture as administered by the RIBA.

Low Carbon Skills at Part 1

Part 1 helps students to develop insight into the benefits of an integrated approach to architectural design. Central to this is a demonstration of the student's ability to produce designs showing an understanding of the integrated relationship between climate, building design, materials, building services systems, energy use and greenhouse gas emissions. This incorporates environmental design techniques, building methods and active and passive building technologies that are employed to ensure the comfort of occupants and the conservation of energy.

Low Carbon Skills at Part 2

At Part 2, students are expected explicitly to address issues around social, environmental, technical and professional responsibilities. From the perspective of low carbon skills, this includes:

- The principles and theories associated with thermal environments
- Climatic design and the relationship between climate, built form, construction, lifestyle, energy consumption and human well-being
- Building technologies, environmental design and construction methods related to issues including the development of a sustainable environment
- The physical properties and characteristics of building materials and components and the environmental impact of specification choices.

Low Carbon Skills at Part 3

Part 3 is designed to test graduates' understanding of their professional obligations and responsibilities and is largely focused on architecture and management in practice. Low carbon issues are not explicitly addressed in Part 3 at present; however, in the future it is likely that sustainability criteria will become integrated into building contracts, so there is already scope for their consideration both in terms of the architect's professional duty to his/her client and to society more widely, and in terms of the design standards and managerial approaches adopted towards projects.

Continuing Professional Development

All chartered members of the RIBA are obliged to undertake 35 hours of CPD each year.

At least 19.5 hours of this CPD should cover aspects of the RIBA CPD Core Curriculum, which includes a module on sustainable architecture.

CPD: Sustainable Architecture

The RIBA's Core Curriculum for CPD includes sustainable architecture, which is defined as the inter-relation between the social, environmental and economic aspects of the built environment. Members are encouraged to consider:

- **Climatic design and the relationship between climate, built form, construction, lifestyle, energy consumption and human well-being**
- **Building technologies**
- **Environmental design and construction methods in relation to human well-being, the welfare of future generations, the natural world and the consideration of a sustainable environment**
- **Pertinent legislation, statutory requirements and building regulations.**

Types of Low Carbon Skills

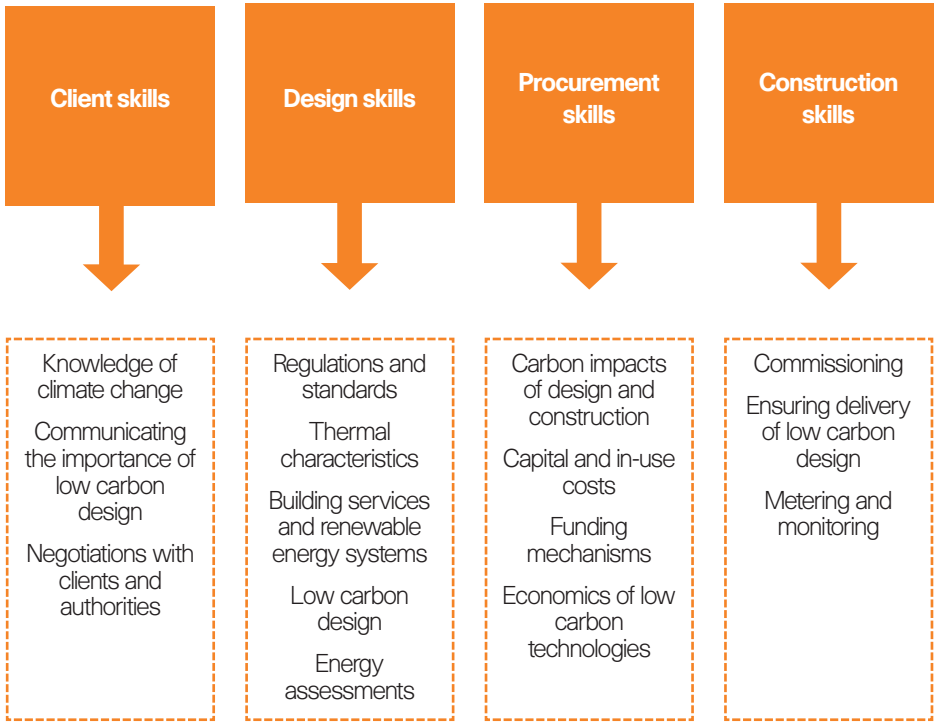
We define low carbon skills as:

'knowledge, skills and competencies that support the design and delivery of low carbon new buildings and low carbon refurbishment projects'.

Low carbon skills extend beyond design; they should be embedded within communications, procurement and project management activities to ensure that the quality of the low carbon design is reflected in the building that results.

The full guide on *Skills for Low Carbon Buildings* provides a comprehensive table of skills, knowledge and competences, which can be used for an individual skills assessment or to map skills across a team or practice.

It can also be used to help describe the design services that you seek from engineers and other specialists to support an integrated approach to low carbon design.



Training and CPD Providers

RIBA CPD Providers Network

The 500 members of the RIBA CPD Providers Network offer architects and other construction professionals RIBA-assessed, high-quality CPD material.

This is the only CPD assessed by the RIBA.

You can access a list of approved CPD providers on the RIBA website at: www.tinyurl.com/5mg8vz

RIBA Skill

RIBA Skill is a new service from the RIBA CPD Providers Network, offering intensive training to Advanced Learning level, enabling you to gain competitive advantage by developing specialist skills. RIBA Skill addresses low carbon skills in a number of modules:

Advanced Environmental and Energy Studies

From the University of East London in conjunction with the Centre for Alternative Technology (see www.cat.org.uk), this course covers energy provision and consumption, climate change, resource provision, waste disposal, local environmental considerations, environmental design, energy efficiency and renewable energy technologies.

BREEAM and EcoHomes

From BRE (see www.bre.co.uk), courses cover all aspects of BREEAM and Ecohomes assessment for new buildings, Building Regulations Part L, and the Code for Sustainable Homes.

Building the Future – Sustainable Development

From the Prince's Foundation for the Built Environment, part of a suite of short courses on current issues in the built environment.

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