



# Construction Industry Skills Project

Project Design Principles

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**Presented by:**



Office of  
Environment  
& Heritage



**Government of South Australia**  
Department of State Development



**COAG**  
Energy Council

## Disclaimer

The Construction Industry Skills Project and application process are subject to continued funding from the NSW Office of Environment and Heritage, through the Environmental Trust, and the SA Department of State Development, through the COAG Energy Council.

Applications will need to be submitted to both the Office of Environment and Heritage (OEH) and the Department of State Development (DSD) when the tender opens. Successful proposals will be allocated to each Department for funding based on proposed outcomes.

Please contact the Office of Environment and Heritage and the Department of State Development if they have any questions or require guidance:

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## 1. Introduction

The New South Wales Office of Environment and Heritage (OEH) and the South Australian Department of State Development (DSD, on behalf of the National Energy Productivity Plan) are seeking to address barriers to delivering energy efficient and Code compliant homes. To progress this work, OEH and DSD would like to partner with practitioners in the residential construction industry to develop and deliver high-priority education and training to industry members.

OEH and DSD are able to provide targeted funding to member organisations and knowledge experts to deliver this education and training, and will seek applications for this funding when the tender is released in mid-December until 10 February 2017.

The Project Design Principles below were developed and tested through industry consultation and will be used in the tender application document to guide content, methodology and outcomes. The extent to which the Project Design Principles are addressed by applicants will be a key component in the evaluation process and thereby influence the success of each funding application.

OEH and DSD are seeking your feedback on the Project Design Principles document. We encourage you to discuss this with your potential team partners and to provide comment to us directly within the document. Please keep in mind that the scope of all funded projects is strictly limited to developing and delivering education and training materials for residential construction and product industry members.

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## 2. Background

The New South Wales Office of Environment and Heritage (OEH) and the South Australian Department of State Development (DSD – on behalf of the COAG Energy Council) have both developed projects to address knowledge and skill barriers and encourage the design and construction of high-performing residential buildings.

### **The Collaborative Sustainable Housing Initiative**

The NSW Office of Environment and Heritage established the Collaborative Sustainable Housing Initiative (CSHI) in 2014. The CSHI is an ambitious program and aims for housing-industry organisations to work together to address the systemic barriers to the supply and demand of sustainable housing design and features.

The CSHI, under its Industry Education and Engagement component, has developed education projects for Architects, Building Designers and Real Estate Agents, a consumer facing communications platform and research into existing housing typologies.

The CSHI seeks to develop similar projects alongside industry partners for the building and construction industry.

### **The National Energy Efficient Building Project**

The National Energy Efficient Building Project (NEEBP) is funded through the Council of Australian Governments (COAG) and has been managed by the South Australian Department of State Development since 2012.

The current work, NEEBP Phase 3, responds to the National Energy Productivity Plan (NEPP) Measure 32 – which aims to improve industry compliance with building energy efficiency regulation. The two NEEBP Phase 3 projects in 2016/17 focus on supporting industry compliance through targeted knowledge and skill development, and Web-based, site-accessible tools that support designers, builders and trades and augment quality control for improved compliance.

### **Joining of programs and consultation**

As both the NEEBP and the CSHI were seeking to develop education and training projects with the building and construction industry, it was logically more effective and efficient if OEH and DSD worked together to achieve their shared outcomes.

In late 2016 OEH and DSD met with representatives from peak building construction and product organisations and sought their feedback on: capacity issues facing the industry, the current state of sustainability and energy efficiency training, industry understanding of energy efficiency requirements in the National Construction Code and barriers to delivering energy efficient, Code compliant and high-performing buildings.

- Sustainability and energy efficiency information needs to be relevant to both the construction industry and home-owners
- Industry practitioners require education and skill opportunities to be tailored to their learning, time and budgetary needs
- Regulatory compliance needs to be promoted, supported and improved.
- The residential construction industry is rapidly changing. Trades and suppliers want the skills to keep up with the market, meet consumer demands and deliver more comfortable and affordable homes.
- The construction industry tends to operate in specialist trade, skill and material silos. In the absence of strong cross-trade communication and accountability or routine integrated

site coordination, these “trade silos” can impact the design and construction of high performing homes.

### **Barriers to energy efficiency and sustainable housing**

Since commencement in 2012 the National Energy Efficient Buildings Project has been consulting with the construction, design, assessment, regulator and real estate industry to identify systemic barriers to achieving Code compliant and energy efficient homes across Australia.

This broad industry consultation highlighted a number of key factors including an absence of consistent market demand, low levels of compliance checking and verification of designed and rated builds against the final home and an industry sometimes lacking in adequate knowledge and skills and motivation to deliver high performing energy efficient and code compliant homes. (ref: <http://www.statedevelopment.sa.gov.au/resources/energy-efficiency/national-energy-efficiency-building-project>)

This project joins OEH to collaborate with industry to address high priority knowledge and skill needs in the residential energy efficiency area and to strengthen industry capacity to comply with the energy provisions of the National Construction Code.

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### 3. Project Design Principles

#### 1. Goods/Services to be supplied

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To fulfil the requirements of this brief, you must:

1. Develop knowledge and training products that address at least of one (or more to achieve economies of scale) of the priority areas identified in the Construction Industry Skills Workshop 1 (**Attachment A**)
2. Develop all knowledge and training products to meet the stated design principles (below)
3. Pilot the use of knowledge and training products (in at least two locations) to construction industry members by 30 June 2017.
4. Develop a dissemination plan (for at least one year) after the initial training pilots to engage the identified target audience. Learnings from the pilots should be integrated into the dissemination plan.
5. Provide an evaluation report on the product development and pilot outcomes by 30 August 2017.
6. *(DSD-funded project requirement only)* Initiate a network of energy efficient trained professionals for information sharing, peer coaching and to enable cross-industry learning activity.

#### 2. Design Principles

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To fulfil the requirements of this brief, the proposed knowledge and training products must incorporate the following design principles:

1. Emphasise the role of integrated systems design in delivering high performing and energy efficient homes.
2. Incorporate advice and recommendations of peak industry organisations and known experts in the development and delivery process to ensure effective cross-industry and targeted member participation.
3. Incorporate innovation and flexibility in delivery to the target audiences to meet cross-industry learning needs, such as:
  - a. Self-paced and continuous learning
  - b. Self-paced and continuous learning.
  - c. “Just in time”, web-based or mobile technology.
  - d. Low-cost training.
  - e. Accessible learning methods for site-based, ESL or clients not engaged in high literacy, desk-based training.

4. Communicate training information in a way that is of interest to trades and suppliers, by focussing on the business benefits of sustainability rather than just environmental outcomes.

### 3. Audience

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To fulfil the requirements of this brief you must design, develop and deliver integrated and targeted education and training content to at least two of the following priority groups in the building and construction industry:

1. Building and Trade Professionals
2. Construction Site and Contract Coordinators
3. Structured Apprenticeship Programs
4. Building Product Manufacturers, Sales, Specifiers and Installers
5. Regulatory Professionals, Surveyors and Certifiers

### 4. Applicants

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To fulfil the requirements of this brief, your project team must have the following capabilities (draw on your own industry expert and member organisation partnerships or those enabled by the recent workshops):

1. Access skills and networks within the education and training industry to develop content for technical audiences with different learning styles, language and literacy capabilities.
2. Actively engage with the building and construction industry and demonstrate a deep understanding of issues facing the industry, trades and suppliers.
3. Interpret and deliver best-available technical information in the area of sustainability, building and product science, systems, integrated energy efficiency and Code compliance.
4. Experience in using pilots and peer coaching opportunities to partner with industry member organisations to engage broadly (in at least 2 locations) with industry trainers, CPD professionals and targeted members.
5. Develop and deliver innovative knowledge sharing and skill development methodology to industry.

## ATTACHMENT A

### Priority Knowledge and Training Products

Identified target audiences:

- Building and Trade Professionals

- Construction Site and Contract Coordinators
- Structured Apprenticeship Programs
- Building Product Manufacturers, Sales, Specifiers and Installers
- Regulatory Professionals, Surveyors and Certifiers

1	<p><b>Energy Compliance in the National Construction Code</b></p> <p>National Construction Code Compliance for Industry - Energy Efficiency Performance Requirements and Approvals Process (Verification (NatHERS/BASIX) or Deemed to Satisfy)</p>
2	<p><b>As Designed versus As Built</b></p> <p>Understanding the Impact on Building Performance (and Contracts) of Off-Plan Changes and Substitutions</p>
3	<p><b>Energy Efficient Design Principles</b></p> <p>Solar-Passive and Integrated Design - Planning, Construction and Operation for Regulators, Designers and Builders - Version A</p>
4	<p><b>Energy Efficient Design Principles</b></p> <p>Solar-Passive and Integrated Design - Planning, Construction and Operation for Trades - Version B (<i>Abbreviated</i>)</p>
5	<p><b>Systems Thinking in Residential Buildings</b></p> <p>Integrated Systems Thinking - Relationships Between Design, Build &amp; Technology (PV, Energy Storage, Appliances etc.)</p>
6	<p>Impact of Supply Chain Management on NCC Compliance and Sustainability</p>
7	<p><b>Role of Building Seal in Energy Efficiency</b></p> <p>Building Physics &amp; Thermal Envelope for Regulators, Designers and Builders - Version A</p>
8	<p><b>Role of Building Seal in Energy Efficiency</b></p> <p>Healthy and Energy Efficient Building Seal for Trades - Version B (<i>Abbreviated</i>)</p>
9	<p>Post-Build Thermal Envelope Testing, Measurement and Repair</p>
10	<p><b>Developing the Market</b></p> <p>Promoting energy efficient and high performing homes to clients. Communicating life-style, health, affordability and whole-of-life energy and cost savings to the residential market.</p>
11	<p><b>Understanding Specifications and Performance</b></p> <p>Building Product, Technology and Appliance Performance and Selection for Designers, Builders and Trades</p>



12	<b>Retrofitting Existing Homes</b> Strategic Retrofitting and Renovations for Energy Performance and Sustainability in Existing Homes and the Use of Residential Rating Systems
13	<b>Residential Building information Systems</b> Lifetime Document, Data and Drawing Control (Building Information Modelling and Electronic Building Passports) for Housing Regulators and Homeowners.
14	<b>Integrated Data Access for Compliance and On-site Collaboration</b> Using Mobile Technology to Achieve Building Compliance, Quality Control and Trade Collaboration On-Site - The Virtual Site Supervisor (VSS)

Identified target audiences:

- Project Home Specifiers and Sales
- Real Estate Professions
- Home Owners and Owner Builders

1	Understanding Design, Built and Fit-Out Characteristics of High Performing Homes for Homeowners and Real Estate Professions
2	Building Product and Appliance Performance and Selection for Homeowners
3	Recognising Energy Non-Compliance Before Your First Power Bill
4	Strategic Retrofitting and Renovations for Energy Performance and Sustainability in Existing Homes and the Use of Residential Rating Systems

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