

# Building skills for energy upgrades in residential buildings

Public forum: Monday 20 March 2023

# Agenda

- Project purpose and outputs
- Context
- Retrofit process and roles
- Construction and major renovation process and roles
- Consultation questions
- Next steps

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# 'Residential energy upgrades workforce mapping' project purpose

To develop a report that:

- **Maps the professional and trades activities, roles and skills** involved in retrofitting and building homes, and undertaking major renovations;
- **Identifies gaps in the professional development pathways** for building the associated workforce; and
- **Clarifies how industry and governments can work together** to fill these gaps.



# Project outputs

1. A research report
2. A workforce map, including professional development pathways
3. A workforce development roadmap, with next steps for industry and government

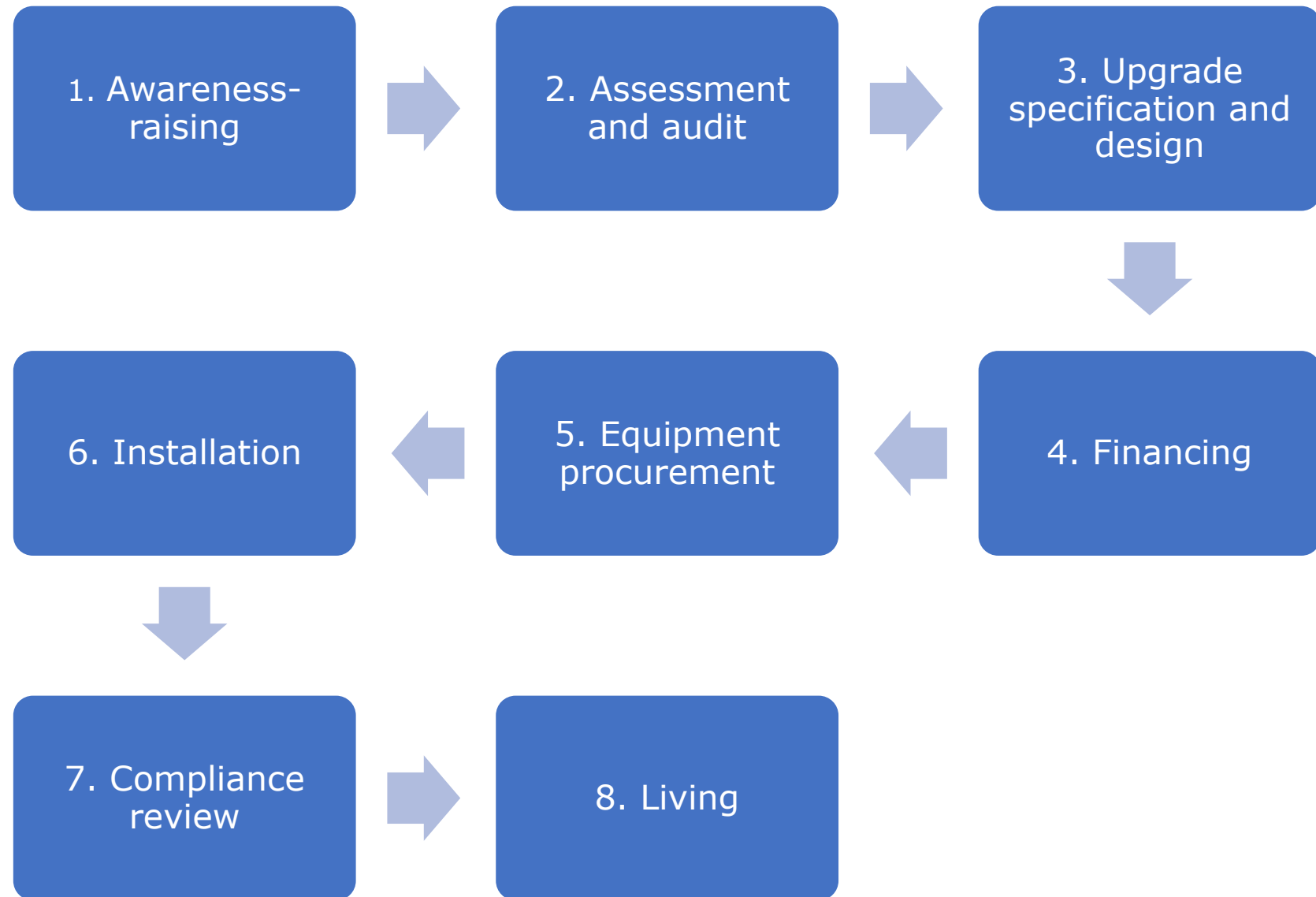


# Context: why capacity and capability building matters

- *Trajectory for low energy buildings, NCC, NatHERS, REEDI disclosure framework*
- Holistic/integrated retrofits
- Upgrades require skilled workers
- Upgrading the nation requires **many** skilled workers



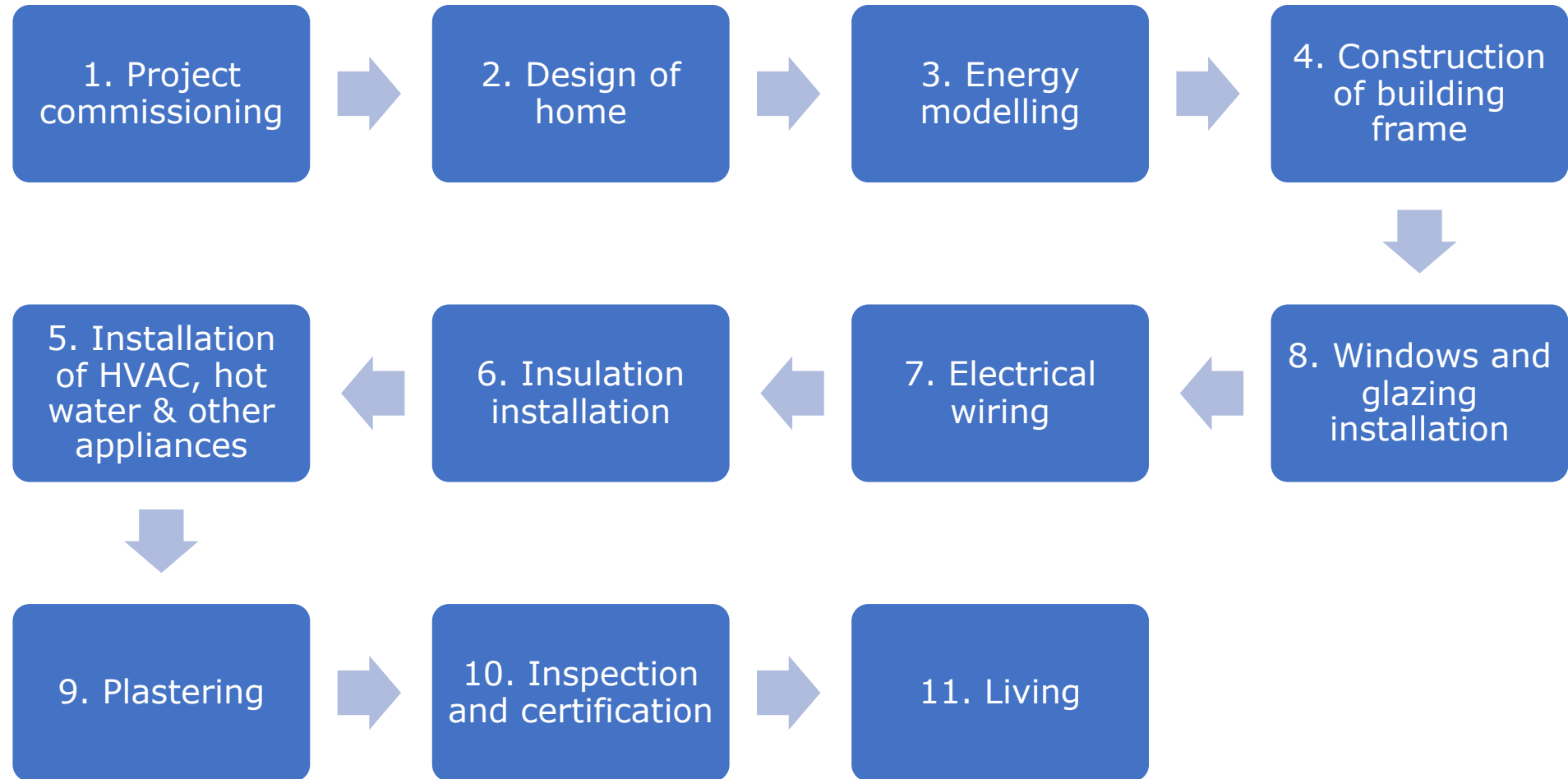
# Retrofit process: what's the UX?



Retrofit activity	Associated role(s)	
Awareness-raising	<ul style="list-style-type: none"> <li>• Program administrator (government or NGO)</li> <li>• Plumber (i.e., water heater failure)</li> <li>• Electrician (i.e., aircon failure)</li> </ul>	<ul style="list-style-type: none"> <li>• Energy assessor</li> <li>• <i>Energy auditor</i></li> </ul>
Assessment and audit	<ul style="list-style-type: none"> <li>• Scorecard assessor</li> <li>• <i>Energy auditor</i></li> </ul>	<ul style="list-style-type: none"> <li>• Electrician</li> </ul>
Upgrade specification and design	<ul style="list-style-type: none"> <li>• Energy assessor</li> <li>• <i>Energy auditor</i></li> <li>• <i>Retrofit advisor</i></li> </ul>	<ul style="list-style-type: none"> <li>• Electrician</li> </ul>
Financing	<ul style="list-style-type: none"> <li>• Banker</li> <li>• Program administrator (government)</li> </ul>	<ul style="list-style-type: none"> <li>• Electrician</li> </ul>
Equipment procurement	<ul style="list-style-type: none"> <li>• <i>Retrofit advisor</i></li> <li>• <i>Project manager</i></li> <li>• Electrician</li> </ul>	<ul style="list-style-type: none"> <li>• Plumber</li> <li>• HVAC&amp;R technician</li> <li>• Building envelope product supplier/installer</li> </ul>
Installation	<ul style="list-style-type: none"> <li>• <i>Project manager</i></li> <li>• Electrician</li> <li>• Plumber</li> <li>• Glazier/builder/carpenter/insulation installer/window fabricator</li> </ul>	<ul style="list-style-type: none"> <li>• HVAC&amp;R technician</li> <li>• Draught proofer</li> <li>• Air measurement/ventilation expert</li> </ul>
Post install audit/M&V	<ul style="list-style-type: none"> <li>• <i>Project manager</i></li> </ul>	
Compliance review	<ul style="list-style-type: none"> <li>• <i>QC inspector/field auditor</i></li> </ul>	<ul style="list-style-type: none"> <li>• Electrical inspector</li> </ul>



# Construction and major renovation process: what's the UX?





Construction and major renovation activity	Associated role(s)	
Project commissioning	<ul style="list-style-type: none"> <li>• Architect</li> <li>• Building designer</li> </ul>	
Design of home	<ul style="list-style-type: none"> <li>• Architect</li> <li>• Building designer</li> <li>• Structural engineer</li> </ul>	<ul style="list-style-type: none"> <li>• Land surveyor</li> <li>• Energy modeller</li> </ul>
Energy modelling	<ul style="list-style-type: none"> <li>• Architect</li> <li>• Building designer</li> </ul>	<ul style="list-style-type: none"> <li>• Energy modeller</li> </ul>
Construction of building frame	<ul style="list-style-type: none"> <li>• Builder</li> <li>• Carpenter</li> </ul>	<ul style="list-style-type: none"> <li>• Construction supervisor or project manager</li> <li>• Labourer</li> </ul>
Windows and glazing installation	<ul style="list-style-type: none"> <li>• Carpenter (or labourer)</li> </ul>	
Electrical wiring	<ul style="list-style-type: none"> <li>• Electrician</li> </ul>	
Insulation installation	<ul style="list-style-type: none"> <li>• Insulation installer (or labourer)</li> <li>• Draught proofer (or labourer)</li> </ul>	
Installation of HVAC, hot water, and appliances	<ul style="list-style-type: none"> <li>• HVAC&amp;R technician</li> <li>• Plumber</li> </ul>	<ul style="list-style-type: none"> <li>• Electrician</li> </ul>
Plastering	<ul style="list-style-type: none"> <li>• Plasterer</li> </ul>	
Inspection and certification	<ul style="list-style-type: none"> <li>• Building surveyor or certifier</li> </ul>	



# Consultation questions: roles

- Have we accurately captured the retrofit and construction processes?
- How do these processes practically work?
  - Do they differ greatly from the steps we've laid out?
- Are any roles missing in these processes?
  - What gaps do you see emerging into the future?



# Consultation questions: skills and training

- What skills are currently associated with the roles involved in these processes?
  - What gaps do you see emerging into the future?
- What training exists to build those skills?
- What barriers and opportunities do you see for driving people into the residential energy efficiency workforce?
- What research and publications are a must read?



# Next steps for 'Residential energy upgrades workforce mapping' project

- Forum to present draft professional development pathways: **Thursday 27 April 2023**
- Forum to present draft 'residential energy upgrades workforce development roadmap': **Tuesday 14 June 2023**
- Questions or queries?  
Contact Julianne Tice at [julianne.tice@eec.org.au](mailto:julianne.tice@eec.org.au)

