

Sustainable Housing

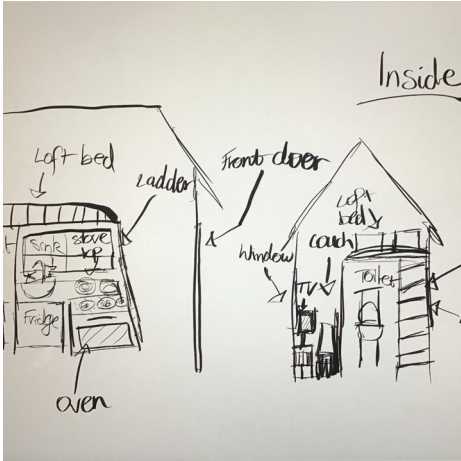
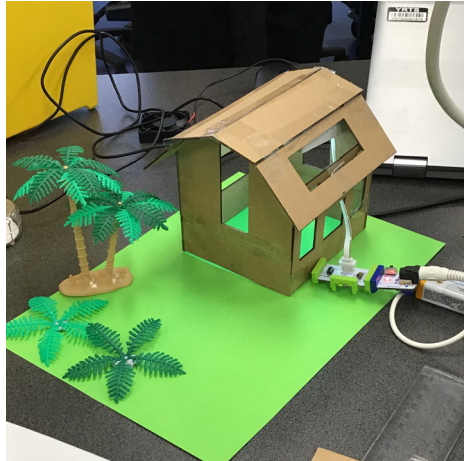
Industry Alignment

Students will be exposed to technologies and processes used in:

- Precision Manufacturing
- Digital Electronics
- Sustainability and Renewables
- Urban Planning and Design

Curriculum Areas Covered																					
	Tech					English		Arts				Humanities			Capabilities						
Year Level	Science	Design & Technologies	Digital Technologies	Mathematics	Health & Physical Education	English	EAL	Dance	Drama	Media Arts	Music	Visual Arts	Visual Comm & Design	Civics & Citizenship	Economics & Business	Geography	History	Critical & Creative Thinking	Ethical	Intercultural	Personal & Social
7 & 8	■	■	■	■	■	■										■		■	■		■
9 & 10	■	■	■	■	■	■												■	■		■

Student Work



Duration

This program can be undertaken on consecutive days or spread over a term.

2 days at Yarra Ranges Tech School.

Curriculum Level

This program is suitable for students from level 7 to level 10.

Building on virtual immersive visits focused on off-the-grid housing projects and Box Hill Institute Trades and Design Faculties, students will work in teams to design & develop an eco-friendly house.

This program introduces students to digital simulation of a house, data analysis, as well as physical model building. Students analyse factors affecting solar and wind energy generation, building materials and house placement, using computer aided design and precision manufacturing techniques.

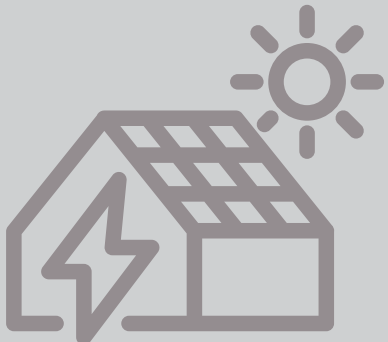
Key Learning Objectives

- To understand the key factors relating to energy efficiency in house design
- To understand the concepts of heat absorption, conduction and reflection
- To understand the notion of embedded energy in building materials
- To select materials for energy efficiency, considering the material's embodied energy
- Design & modeling using simulation-based scientific tools

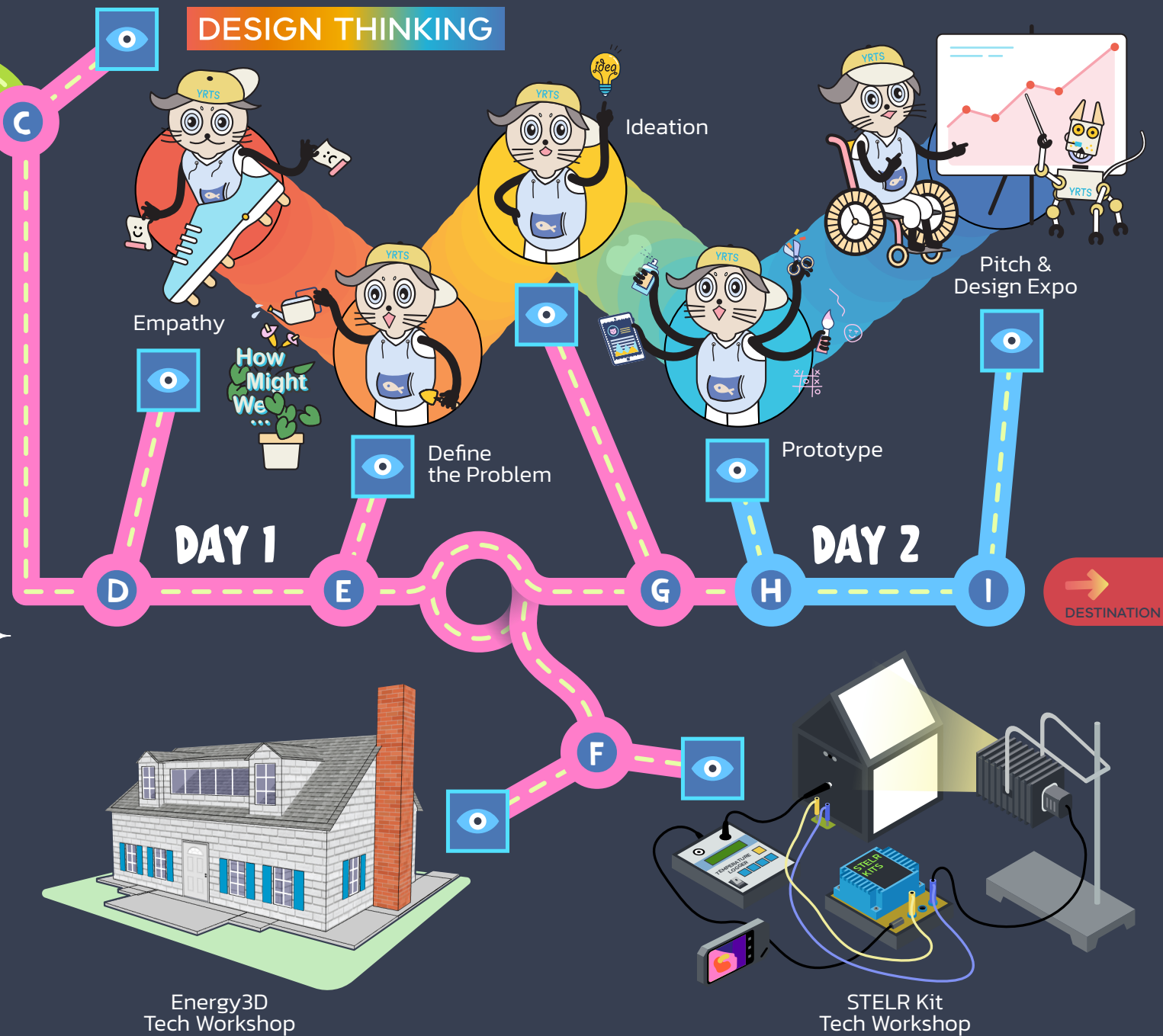
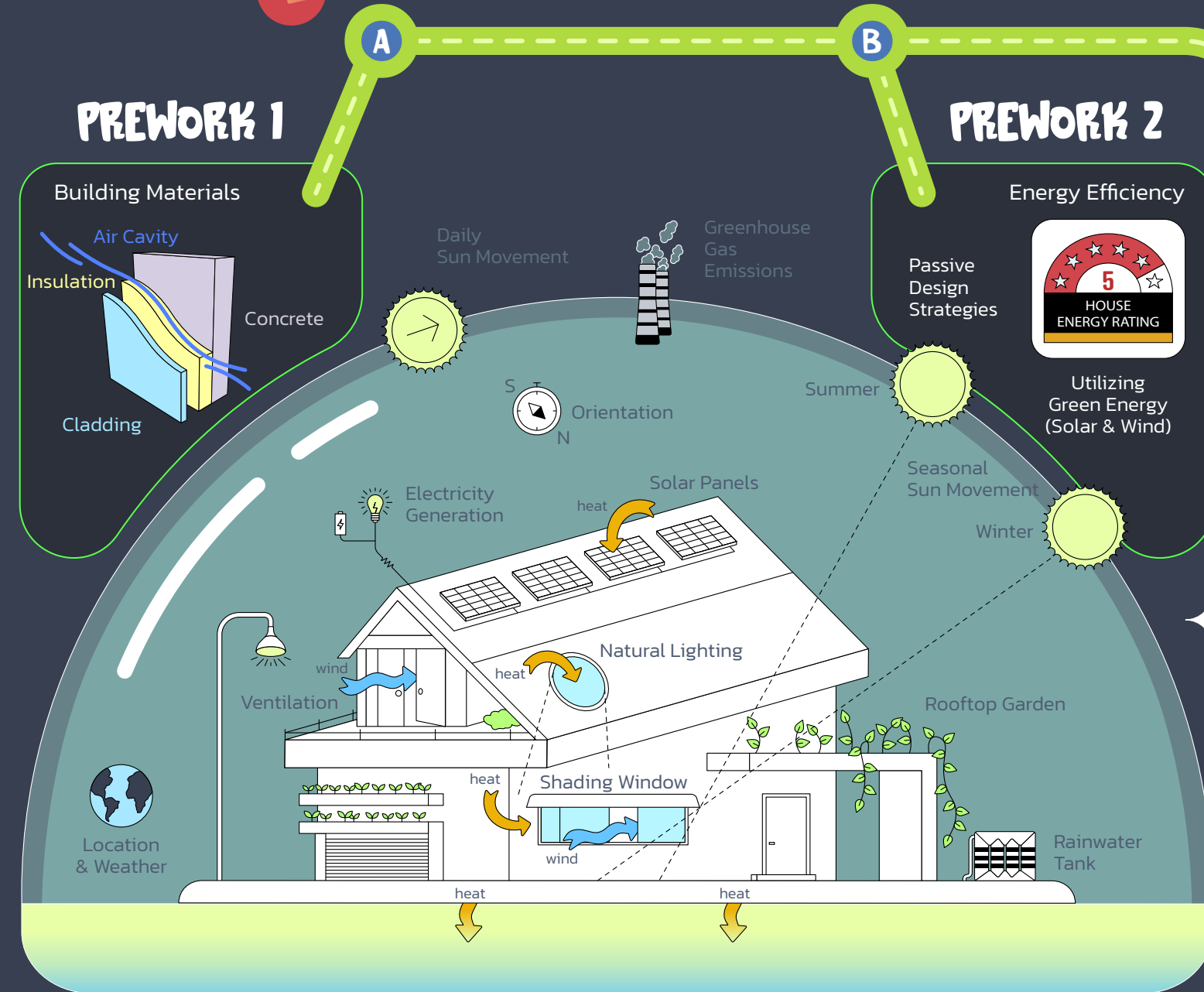
Technologies Introduced

Students will develop knowledge and skills in:

- Sustainable Buildings
- Production Processes
- Sensor Design
- 3D Computer-Aided Design Software
- Digital Simulation



START



Structure of the two days – Day 1

S1 Sustainable Housing & Design Thinking overview Choose case study & define problem	L Lunch
B Break	S3 Tech workshop – STELR Kit Generate ideas Assess ideas
S2 Tech workshop – Energy3D	D Depart

Structure of the two days – Day 2

S1 Review of Day 1 Prototype & test	L Lunch
B Break	S3 Pitch – Presentation Pack up & survey
S2 Prototype & test Pitch – What is it?	D Depart