03.

DOMINIKA RICHARDS

DIECKE RICHARDS

Sustainability in Learning Environments

ASSOCIATION FOR LEARNING ENVIRONMENTS
Enhancing the Educational Experience
Queensland

Deicke Richards

LEA PECHA KUCHA

SUSTAINABILITY IN LEARNING ENVIRONMENTS

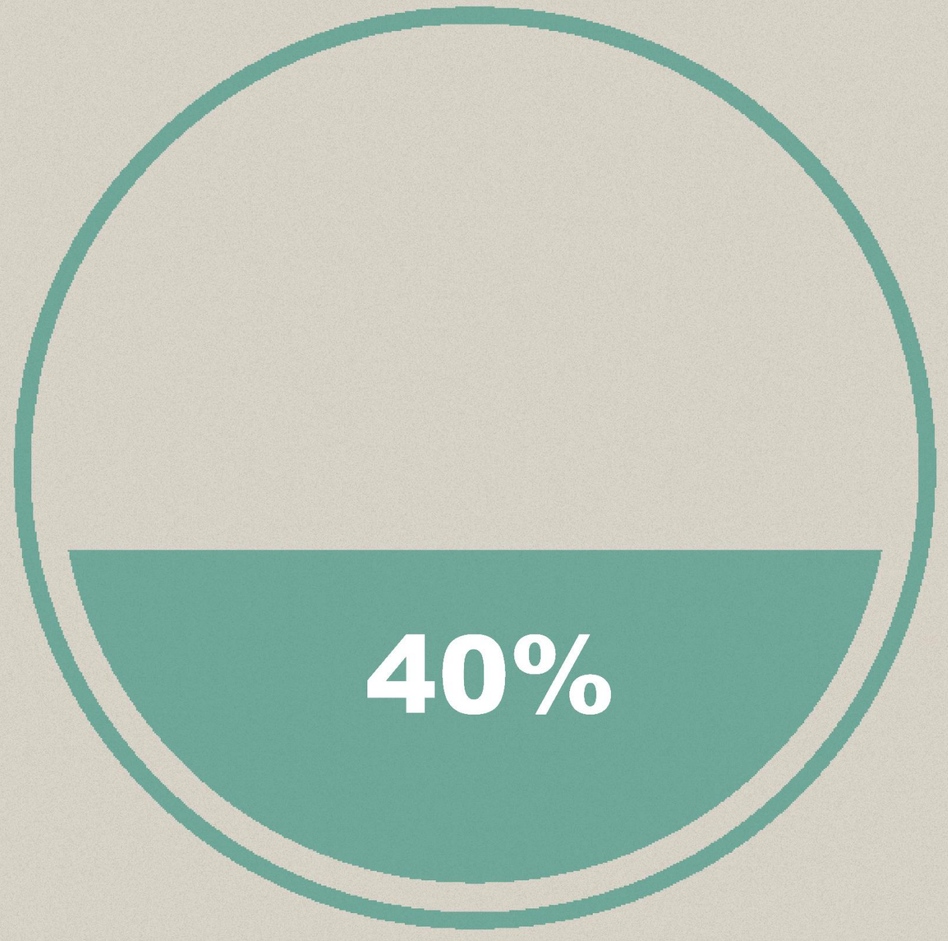
DOMINIKA RICHARDS

SUSTAINABILITY?

WHY?

Globally, buildings and construction account for nearly 40% of energy-related CO2 emissions whilst also having a significant impact on our natural habitats.

The architectural profession is integral to the journey towards more regenerative built environment.



WHY?

CONTRIBUTE TO MORE REGENERATIVE BUILT ENVIRONMENT.

MINIMISE WASTE AND CONSERVE RESOURCES.

IMPROVED PROJECT OUTCOMES.

LONG TERM COST BENEFITS (ELECTRICITY, WATER).

WHY?

HEALTHIER LEARNING ENVIRONMENTS (AIR QUALITY, TEMPERATURE CONTROL).

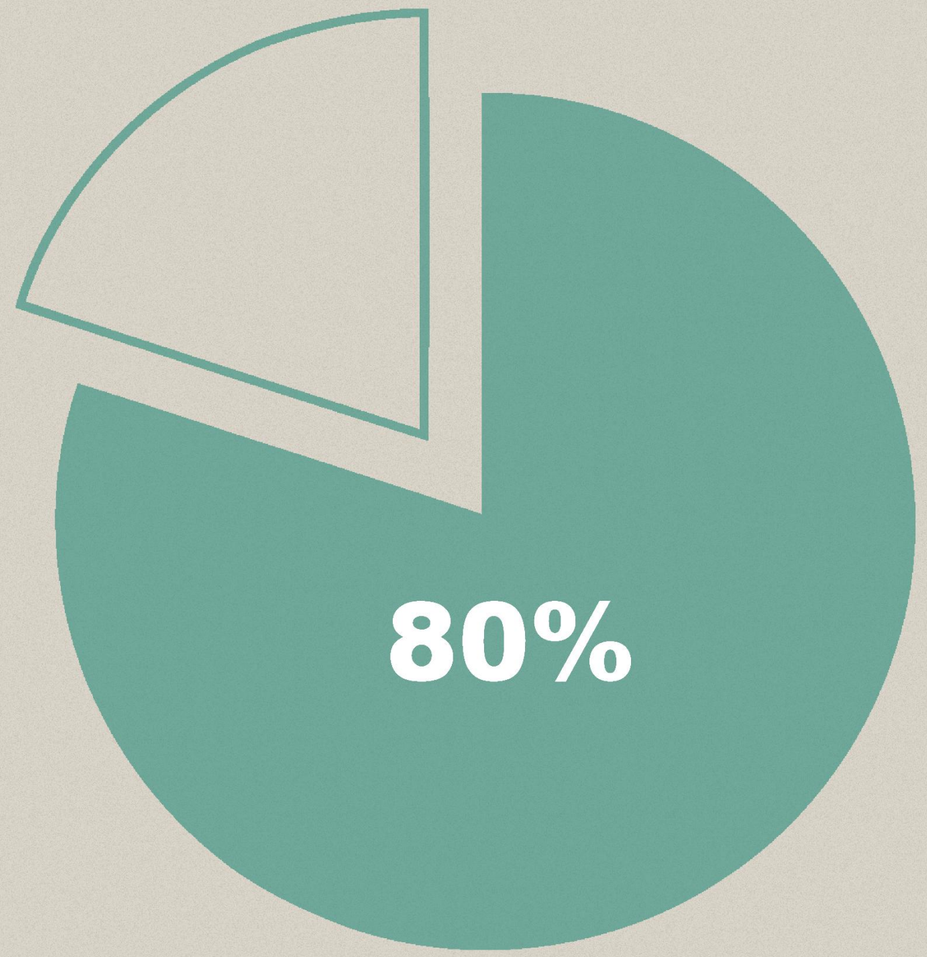
IMPROVED LEVELS OF STUDENT CONCENTRATION.

WHEN?

IDEALLY AT THE START OF A PROJECT

WHEN?

Typically, when just 1% of a project's capital cost has been expended (schematic design fee), more than 80% of its life cycle costs and impacts have been committed.

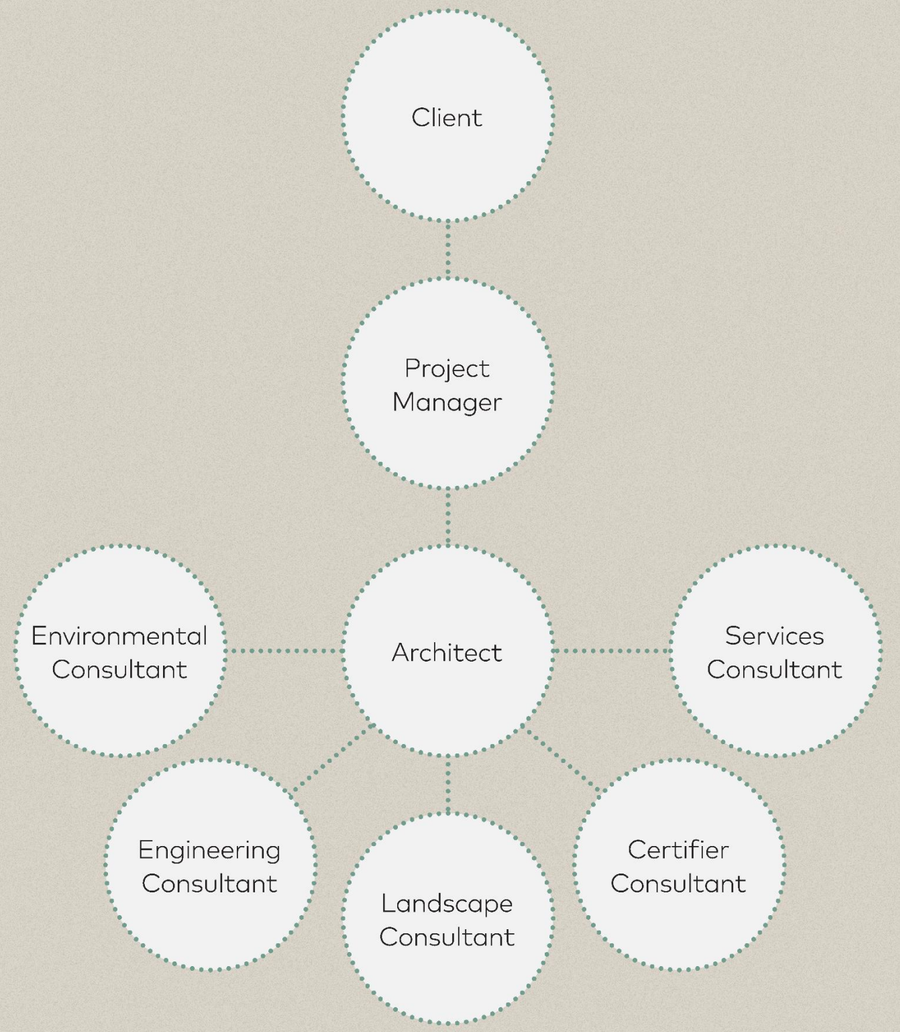


WHO?

EVERYONE!

WHO?

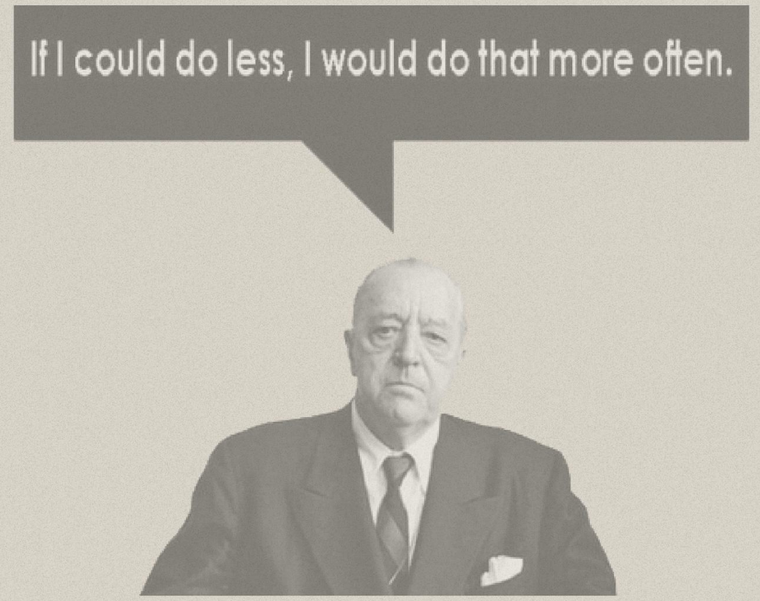
TRADITIONAL CONSULTANT STRUCTURE

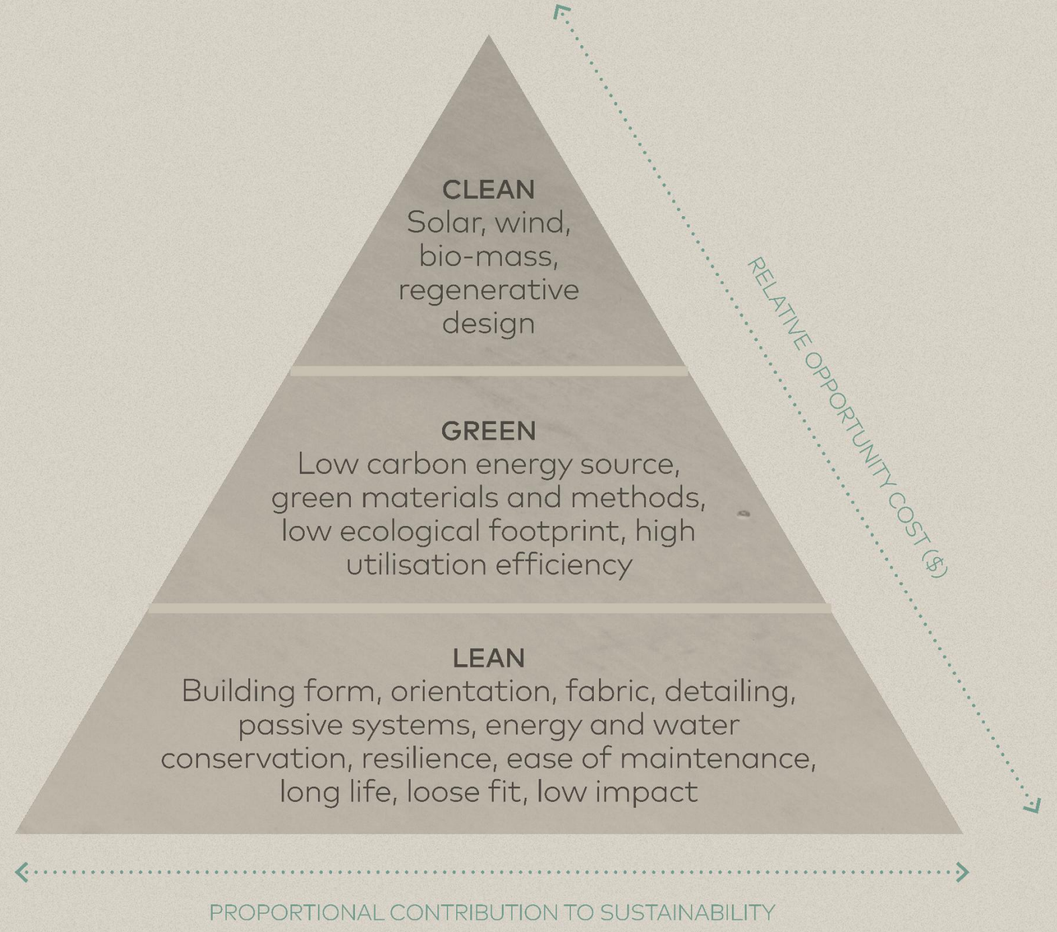


CONSULTANT COLLABORATIVE STRUCTURE

HOW?

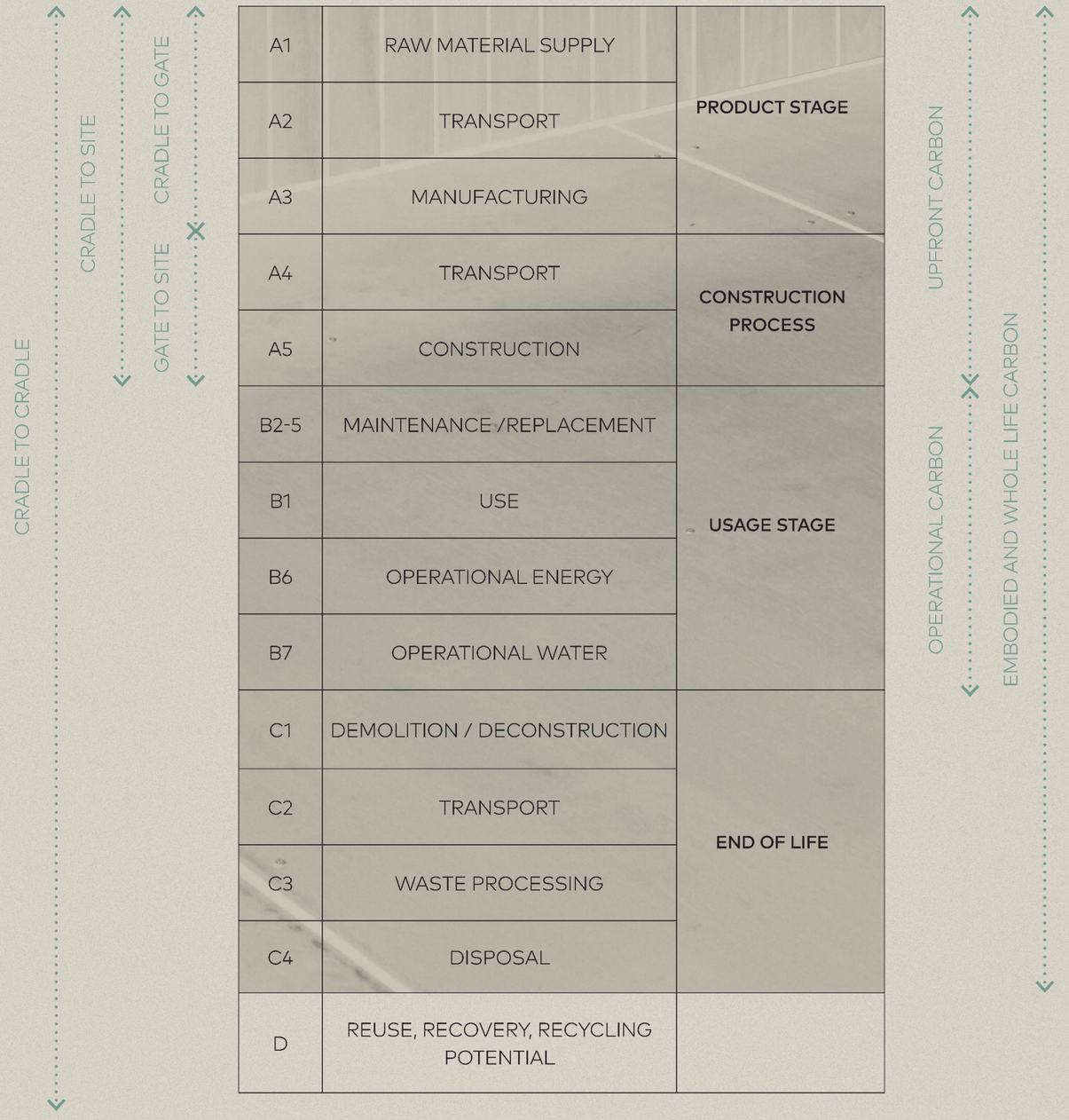
1. LESS IS MORE!





HOW?

2. CONSIDER WHOLE OF LIFE CARBON



A1	RAW MATERIAL SUPPLY	PRODUCT STAGE
A2	TRANSPORT	
A3	MANUFACTURING	
A4	TRANSPORT	CONSTRUCTION PROCESS
A5	CONSTRUCTION	
B2-5	MAINTENANCE /REPLACEMENT	USAGE STAGE
B1	USE	
B6	OPERATIONAL ENERGY	
B7	OPERATIONAL WATER	
C1	DEMOLITION / DECONSTRUCTION	END OF LIFE
C2	TRANSPORT	
C3	WASTE PROCESSING	
C4	DISPOSAL	
D	REUSE, RECOVERY, RECYCLING POTENTIAL	

HOW?

3. CONSIDER MATERIAL SELECTIONS

1. WHY IS MATERIAL NEEDED?

2. WHAT RAW PROPERTIES WILL IT CONSUME CRADLE TO CRADLE?

3. WHERE IS IT SOURCED FROM, DESIGNED & MANUFACTURED?

4. CONSIDER PROJECT BENEFITS

HOW?

4.ACCOUNTABILITY: SUSTAINABLE ACTION PLANS

01
ACTIONABLE STRATEGY
Business Operation Best Practices
Sustainable Design Best Practices

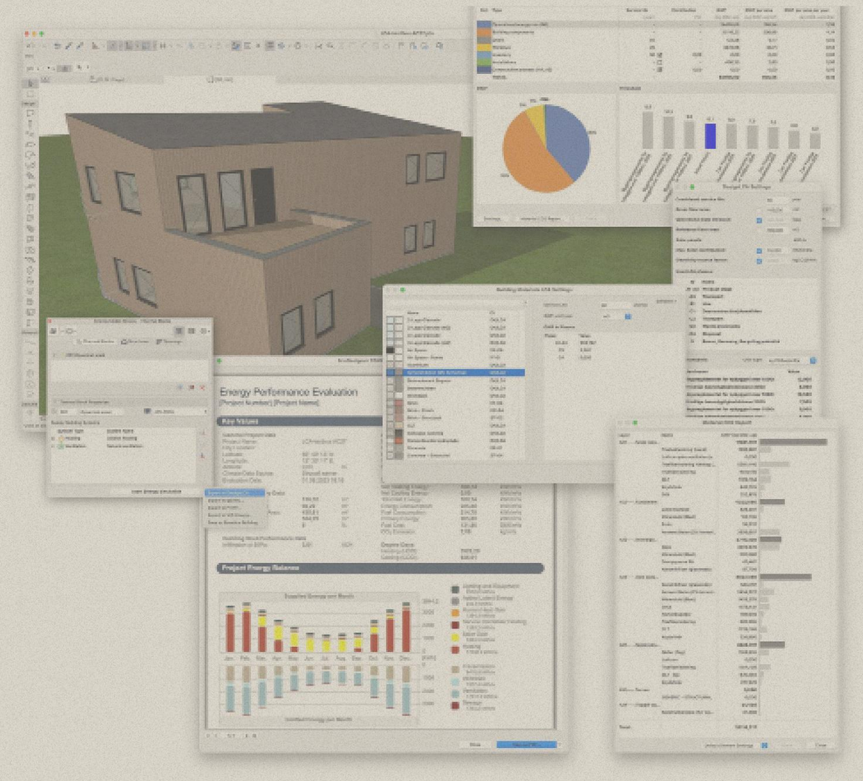
02
MEASURABLE FRAMEWORK

03
LONG TERM PLANNING TOOL
Ensure ongoing alignment of values, goals and practice

04
INFORMATION SHARING PLATFORM

HOW?

4.ACCOUNTABILITY: LIFE CYCLE ANALYSIS TOOLS



BOB MARSHMAN CASE STUDY

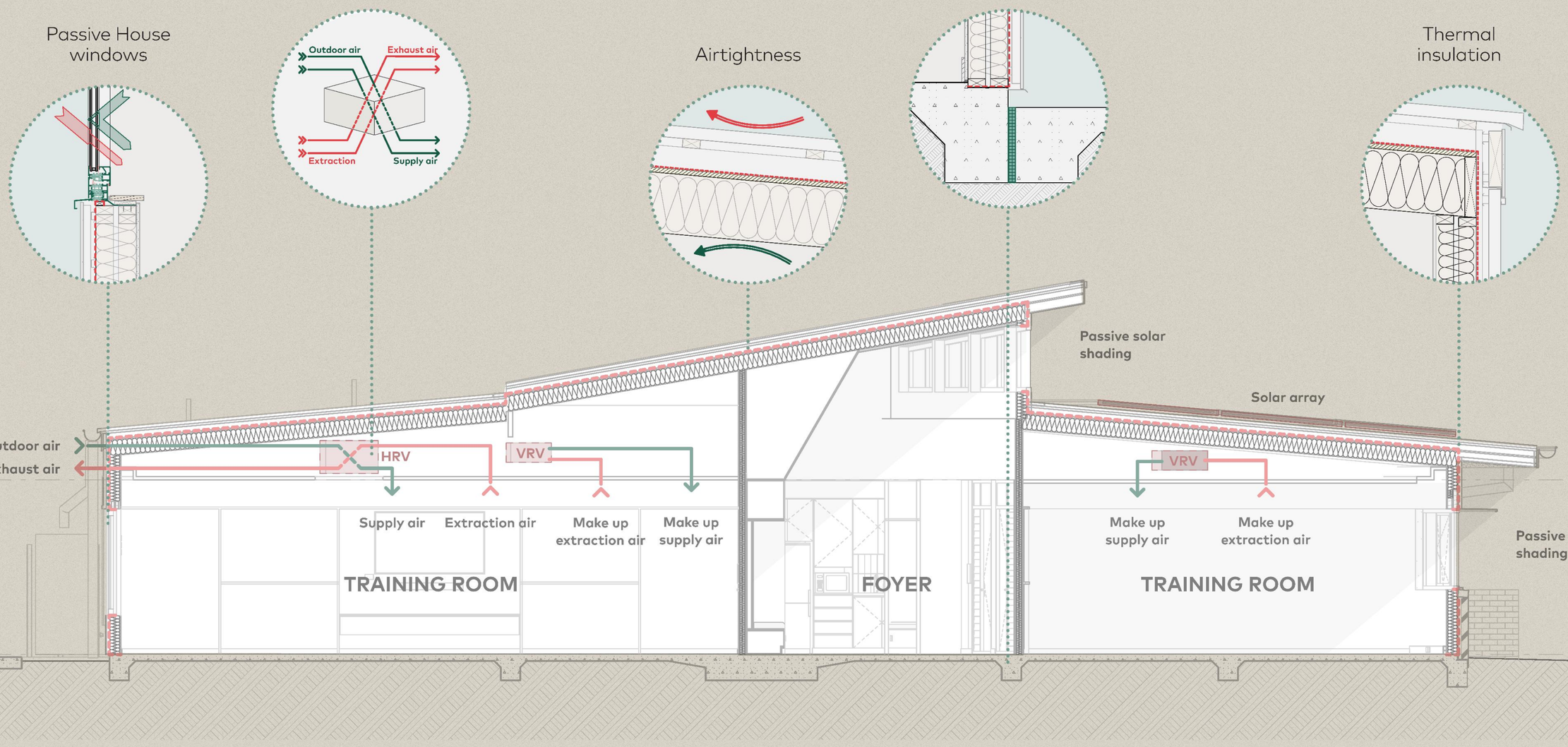
Passive House windows

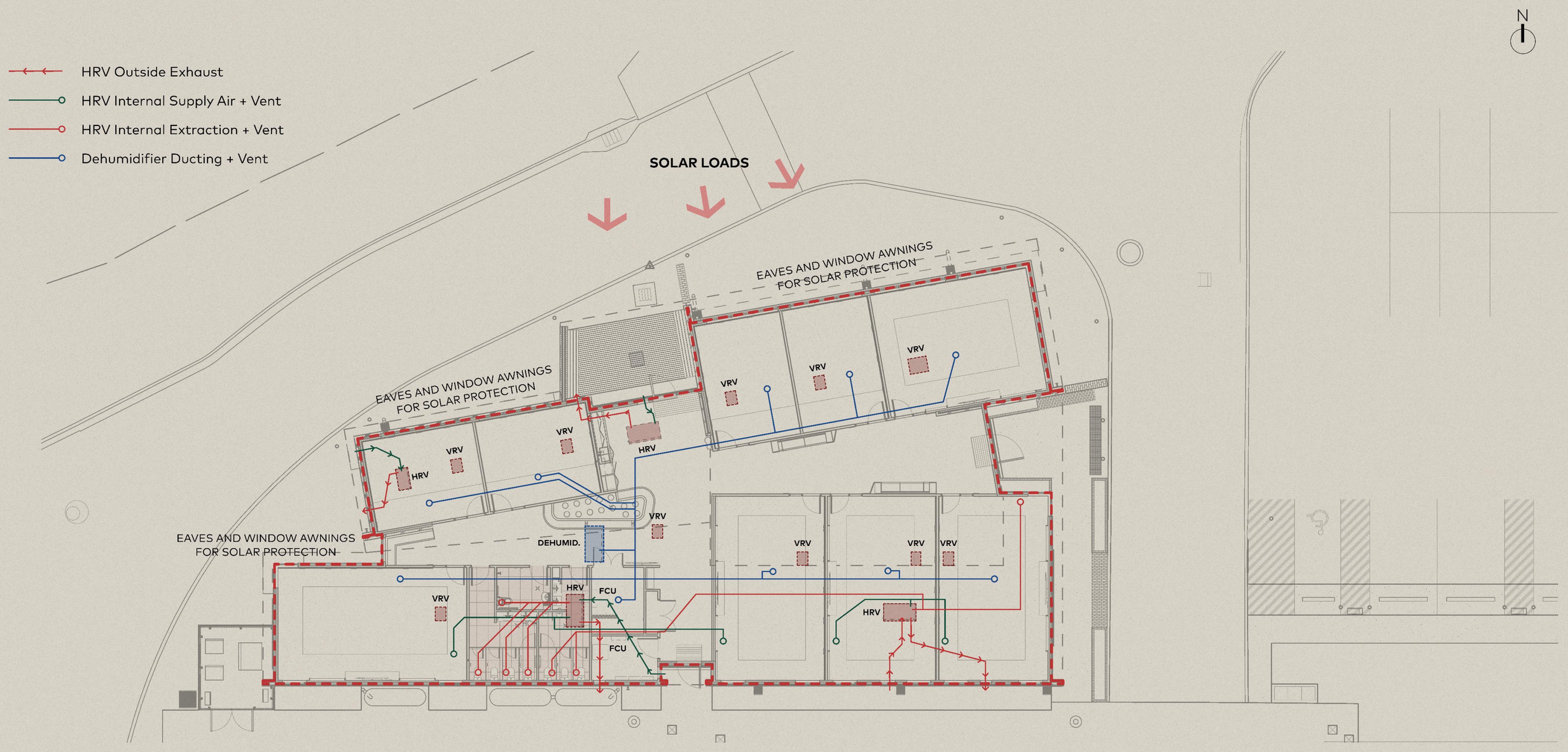
Adequate ventilation strategy

Airtightness

Thermal bridge reduced design

Thermal insulation





BMB Mechanical Requirements Diagram

JPC COURTS CASE STUDY

JPC COURTS CASE STUDY