

2014 TEMC

Sustainable Industries Education Centre | SIEC (Tonsley TAFE)

Adelaide, South Australia

Ana Sala-Oviedo

Bob Burton



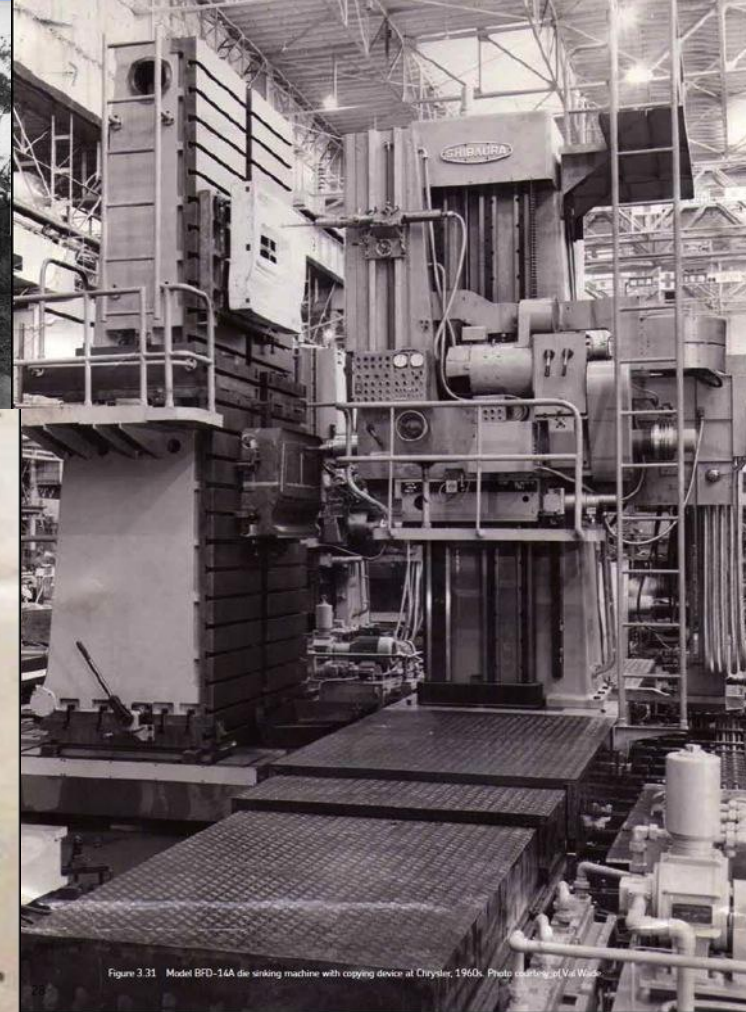
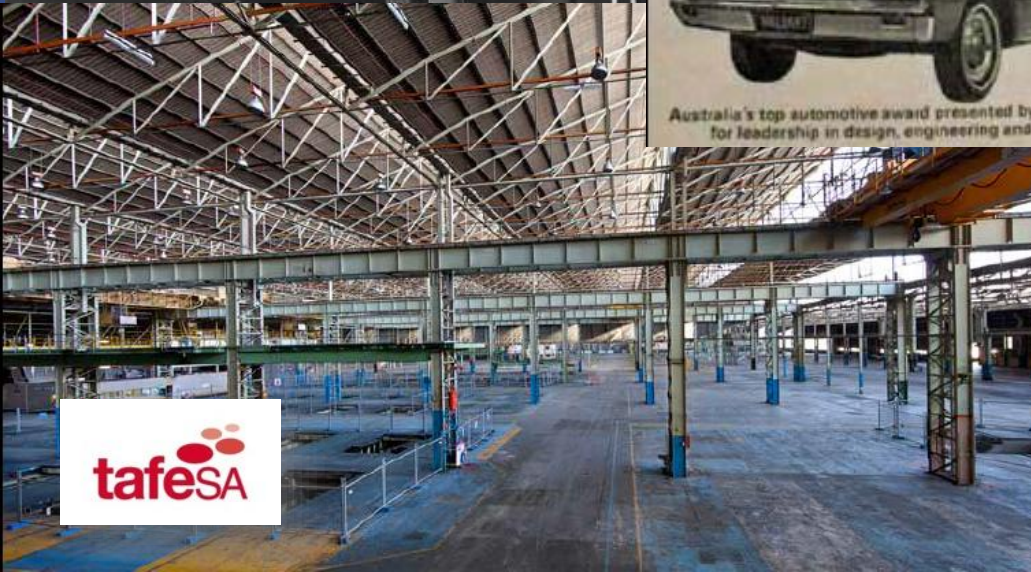


Figure 3.31 Model BFD-14A die sinking machine with copying device at Chrysler, 1960s. Photo courtesy of Val Wade



- RESIDENTIAL
- COMMERCIAL/LIGHT INDUSTRIAL
- SUSTAINABLE INDUSTRY
- EDUCATION/TRAINING
- RETAIL



Sustainable Industry Parks, What Works?

- Innovation through linkages
- Financial incentives
- Specialised incubator services
- Proactive Government
- Quality Infrastructure
- Education as anchor tenant



The Site – 61 hectares
SIEC Building occupies 3 hectares + 1 hectare car park

Tonsley TAFE @ SIEC

Rationale

- Tired TAFE SA infrastructure
- Duplication of facilities
- High Recurrent Costs – AHC/sqm

\$325m Infrastructure Plan in 2008

- Ambitious
- North node Elizabeth
- South node Noarlunga

2009 SIEC Business Case

- Building Construction & Furnishing
- New Build at Tonsley
- 100% State funded (2010/11 budget)

New build to Adaptive Reuse

- Environmentally responsible
- Good commercial sense
- Extra 10,000 sqm
- Expanded scope of training
- Preserve manufacturing heritage

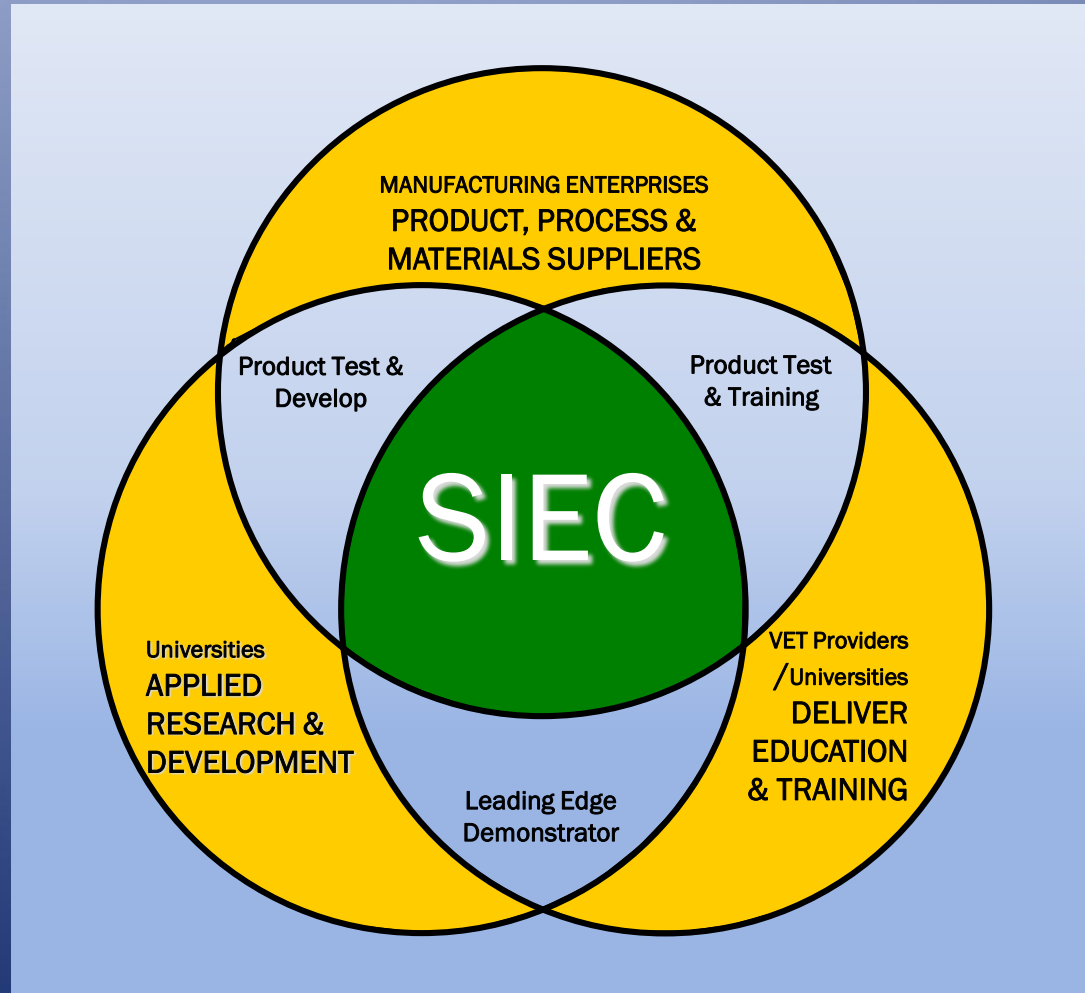
Project Overview

- \$110m CAPEX – \$14.3m OPEX saving
- Footprint: 30,000 sqm
- Build: 43,000 sqm adaptive reuse
- Divest 80,000sqm built form + land
- \$2.5k sqm (inc FF&E)
- \$2.3k sqm (ex FF&E)
- Building Services & Construction
 - Plumbing
 - Electrical
 - Refrigeration
 - Mortar & Trowel
 - Painting & Decorating
 - Carpentry & Joinery
 - Furnishing
 - Advanced Building & Design

Educational Aspiration

- Innovative, responsive, high quality
- Focus on sustainability
- Infrastructure is an educational tool
- Site linkages with industry
- Sharing amenity in public realm
- Two inter-sectoral pathways
- Third party use of facilities
- Tripartite collaboration
- Advanced Manufacturing

A Tripartite Operational Model





**CHANGE
AHEAD**

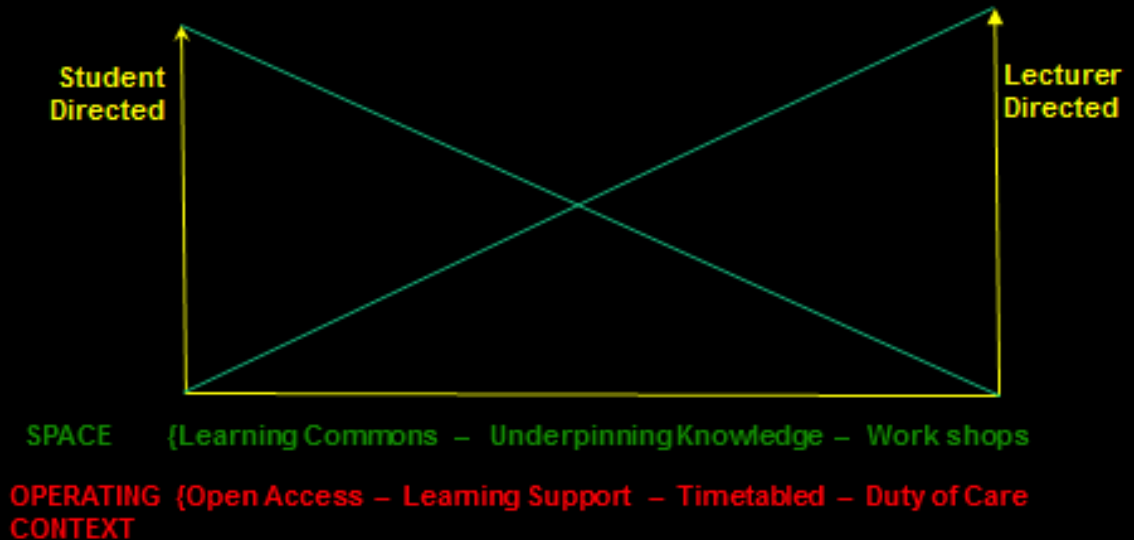


DEVELOPMENT OF THE EDUCATIONAL MODEL

LINKING PEDAGOGY AND SPACE

- Adoption of technology
- Flexibility of workshops
- Flexibility of theory spaces
- Flow between Spaces
- Student and Teacher Centred opportunities
- Staff working together

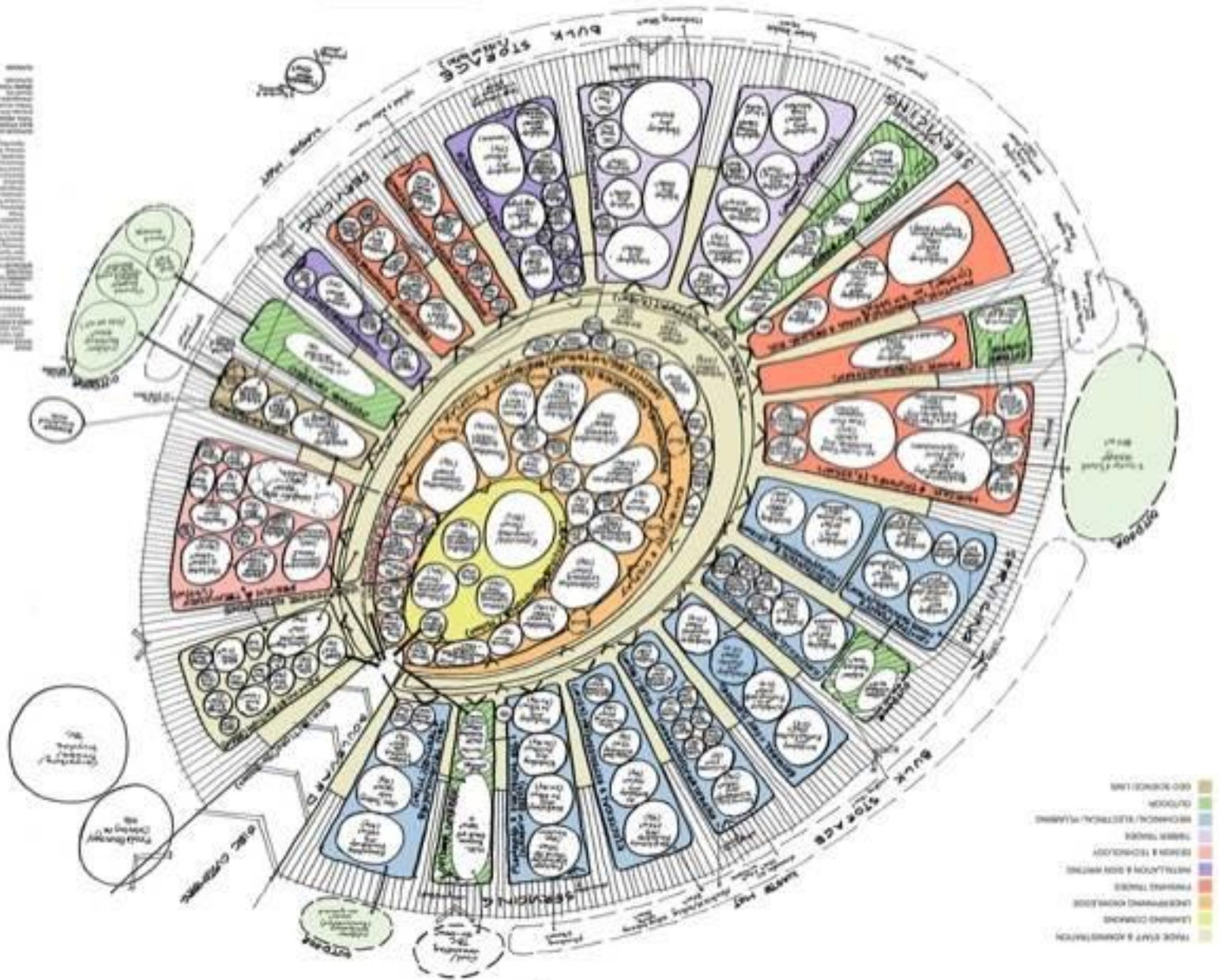
SIEC: Learning Direction, Space & Operating Context

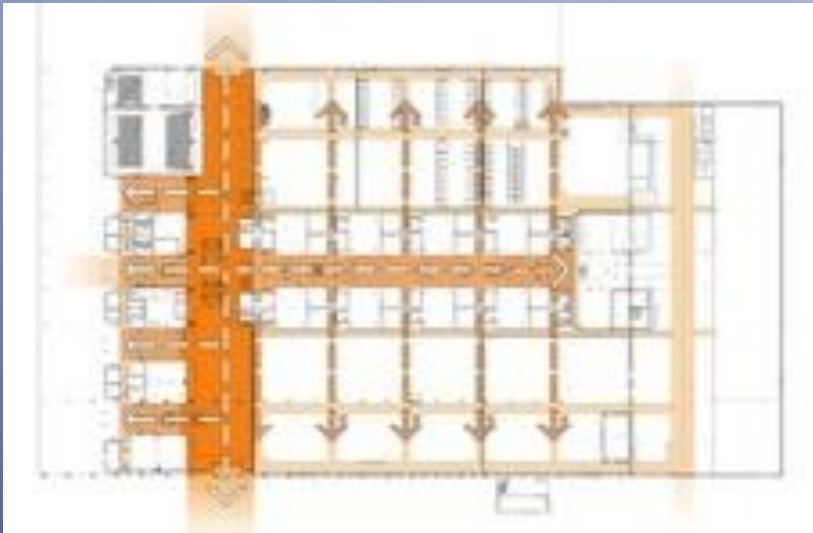


Educational Brief

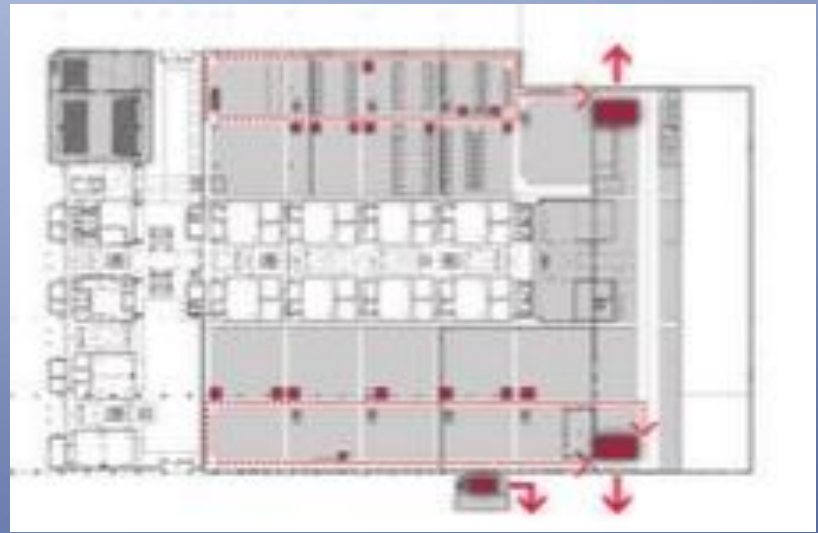
- Description of pedagogy
- Description of the processes
- Affinities and Adjacencies
- Equipment & materials
- Change management
- Selection of Principal Consultant:
 - MPH with Architectus

AFFINITIES

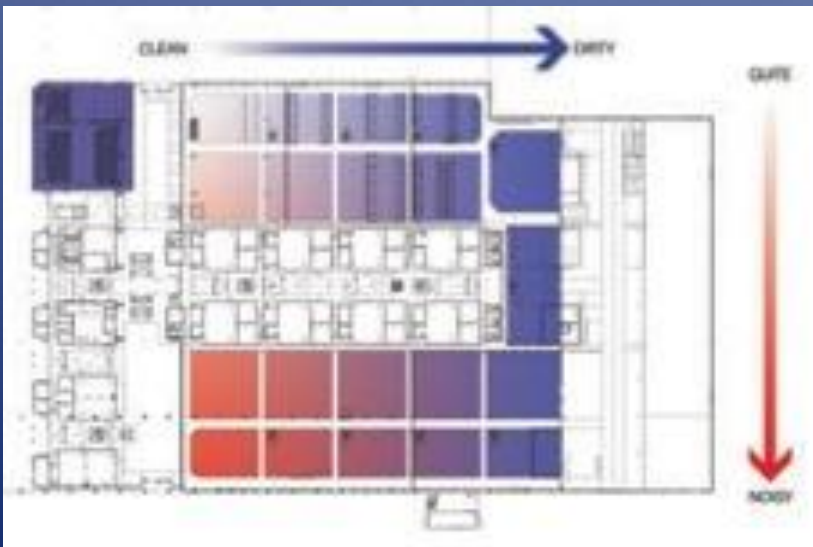




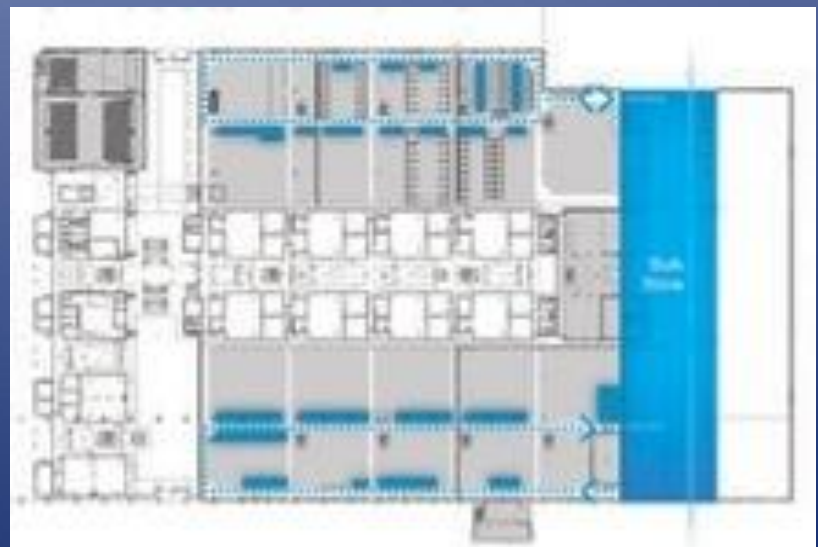
URBAN



WASTE



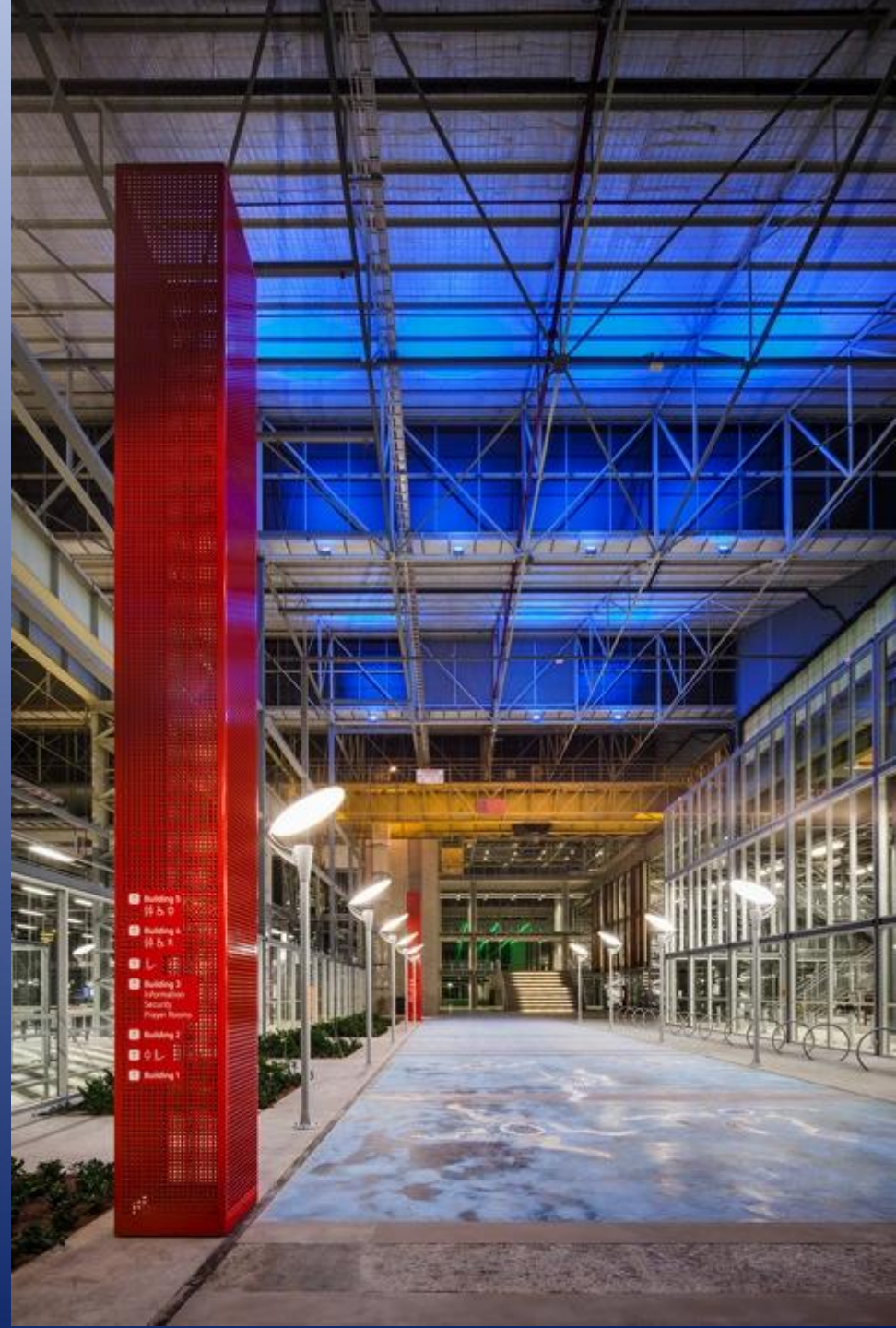
DIRT & NOISE



MATERIALS



LINK TO THE REST OF THE STRUCTURE



TO THE REST OF THE SHED

UNDERPINNING KNOWLEDGE
(THEORY) STAFF ABOVE

INFORMAL LEARNING HUB

PLUMBING &
ELECTRICAL

REFRIGERATION &
ELECTRICAL

FINISHING TRADES

MORTAR TRADES

BULK
STORAGE

SUSTAINABILITY
LABORATORIES
HIGHER DEGREE AREAS

GLASS &
GLAZING

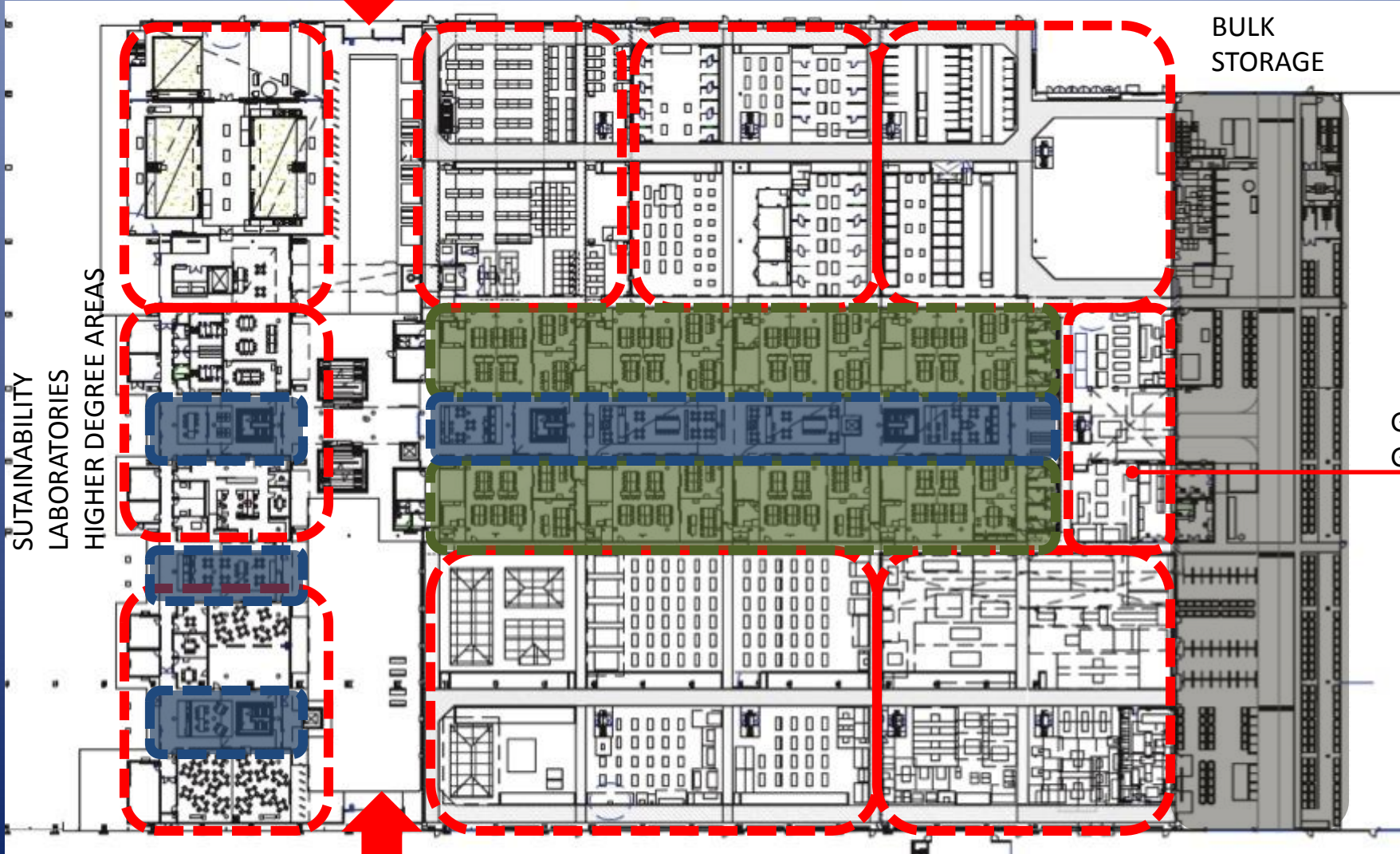
ADVANCED BUILDING &
CONSTRUCTION

TIMBER TRADES

WOOD
MACHINING

BULK
STORAGE

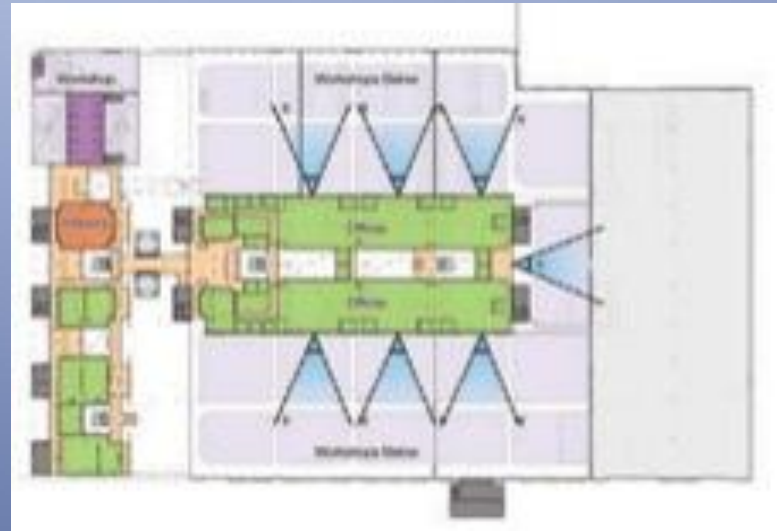
TO CARPARK



PROGRAM GROUND



PROGRAM FIRST



PROGRAM SECOND



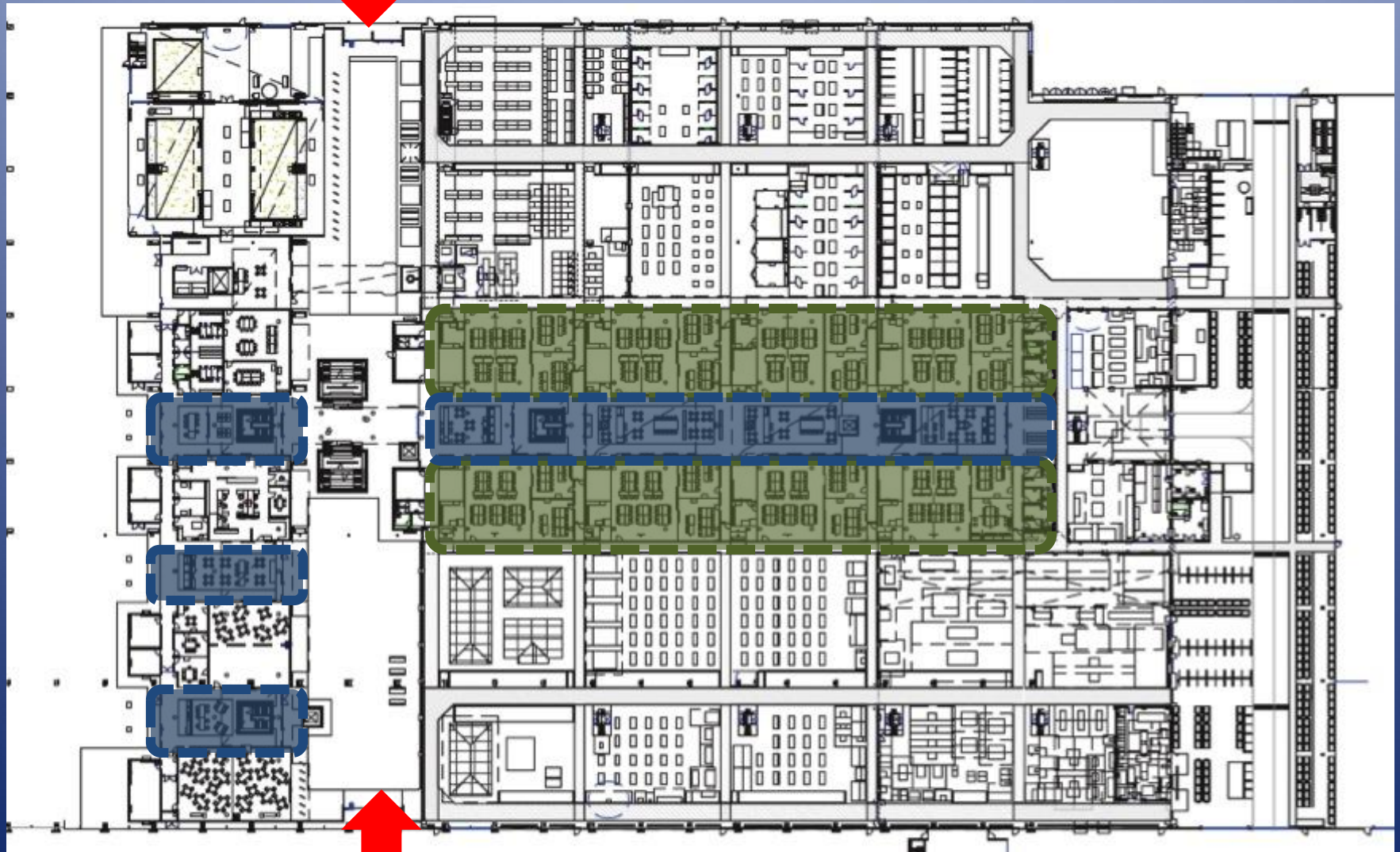
PROGRAM THIRD



WORKSHOP
THEORY

BULK
STORE

TO THE REST OF THE SHED



TO CARPARK



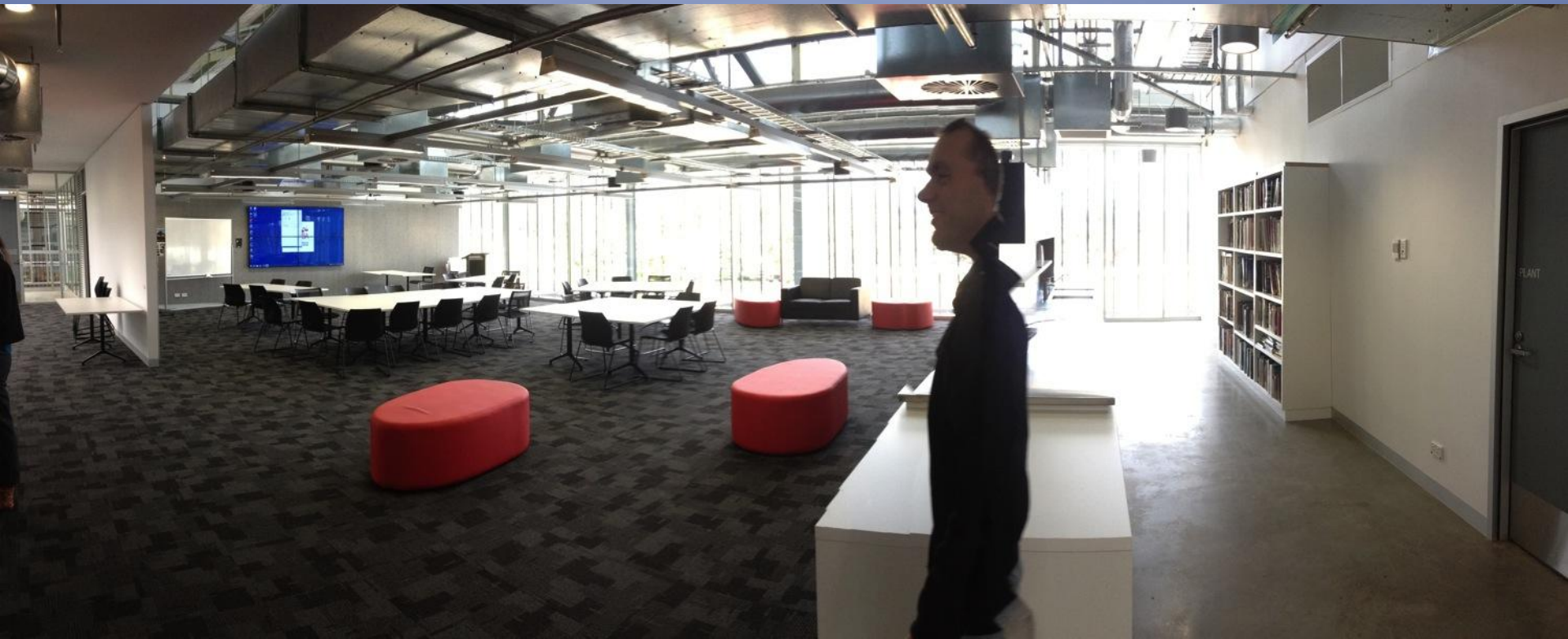
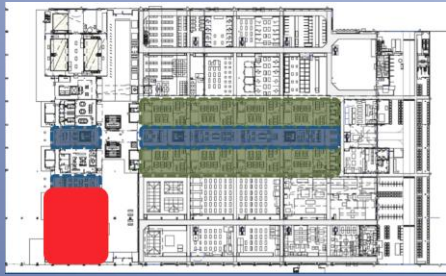


VISUAL LINKS AND TRANSPARENCY







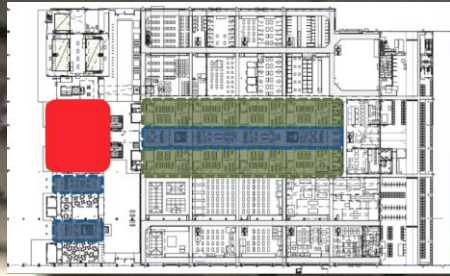


ADVANCED BUILDING & CONSTRUCTION

© Ana Sala (Photographer)







WATER AND GAS LABORATORIES
HIGHER DEGREE AREAS
SOME THEORY

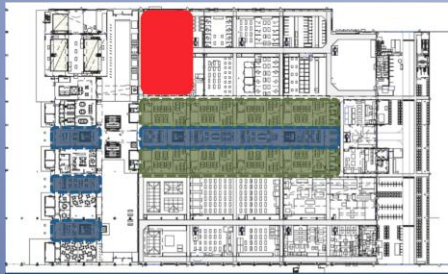




ELECTRICAL, PLUMBING, REFRIGERATION AND WATER OPERATIONS RIG



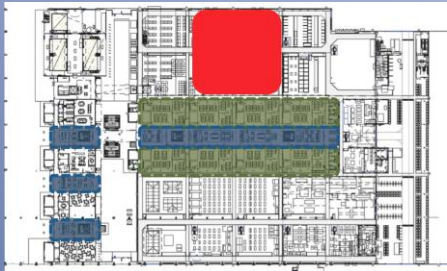




REFRIGERATION AND ELECTRICAL

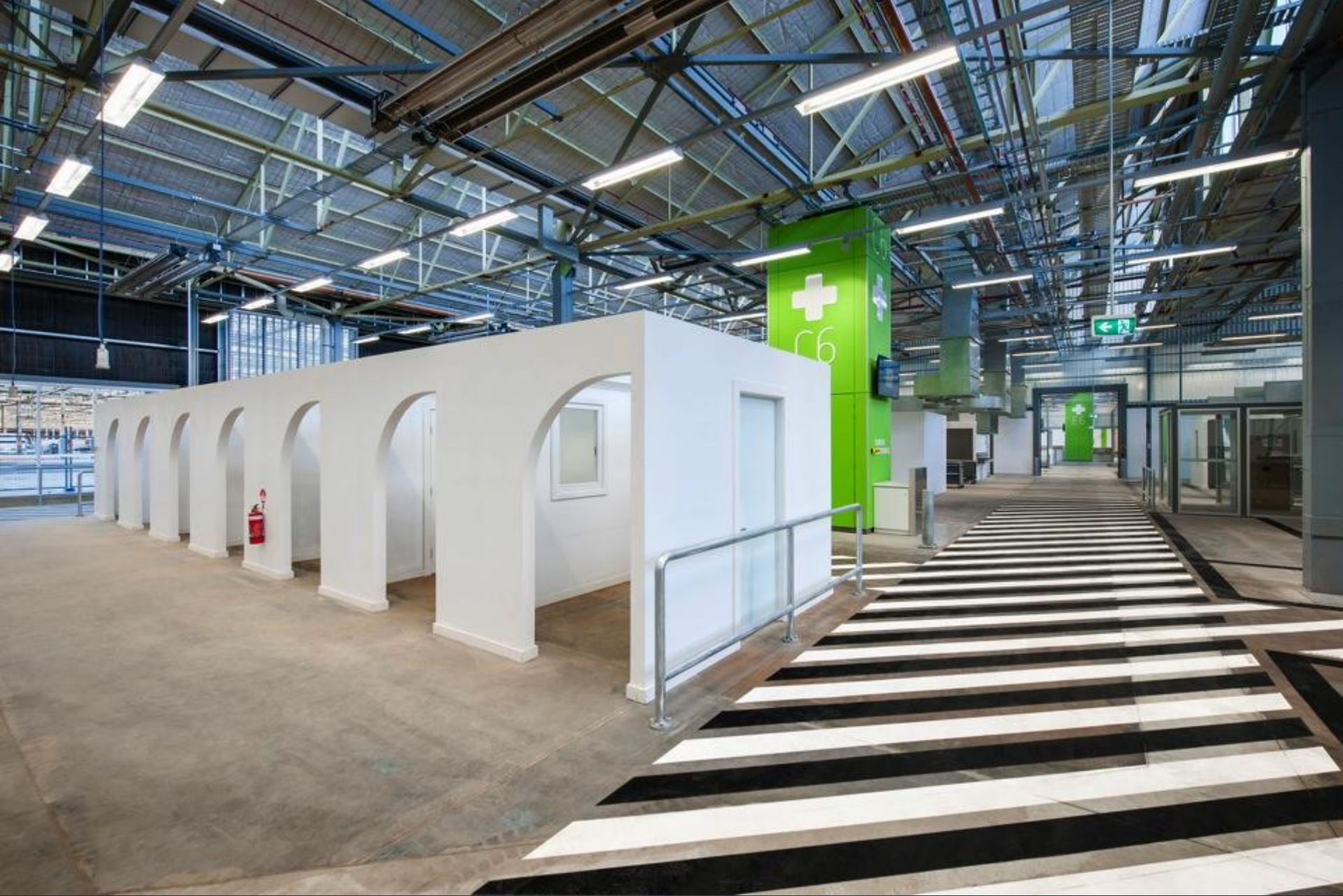
© Ana Sala (Photographer)





FINISHING TRADES

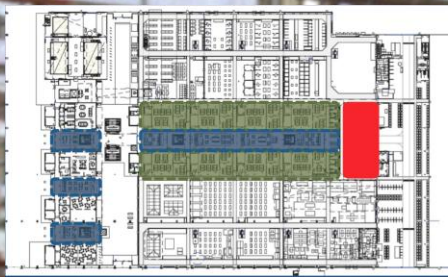
© Ana Sala (Photographer)





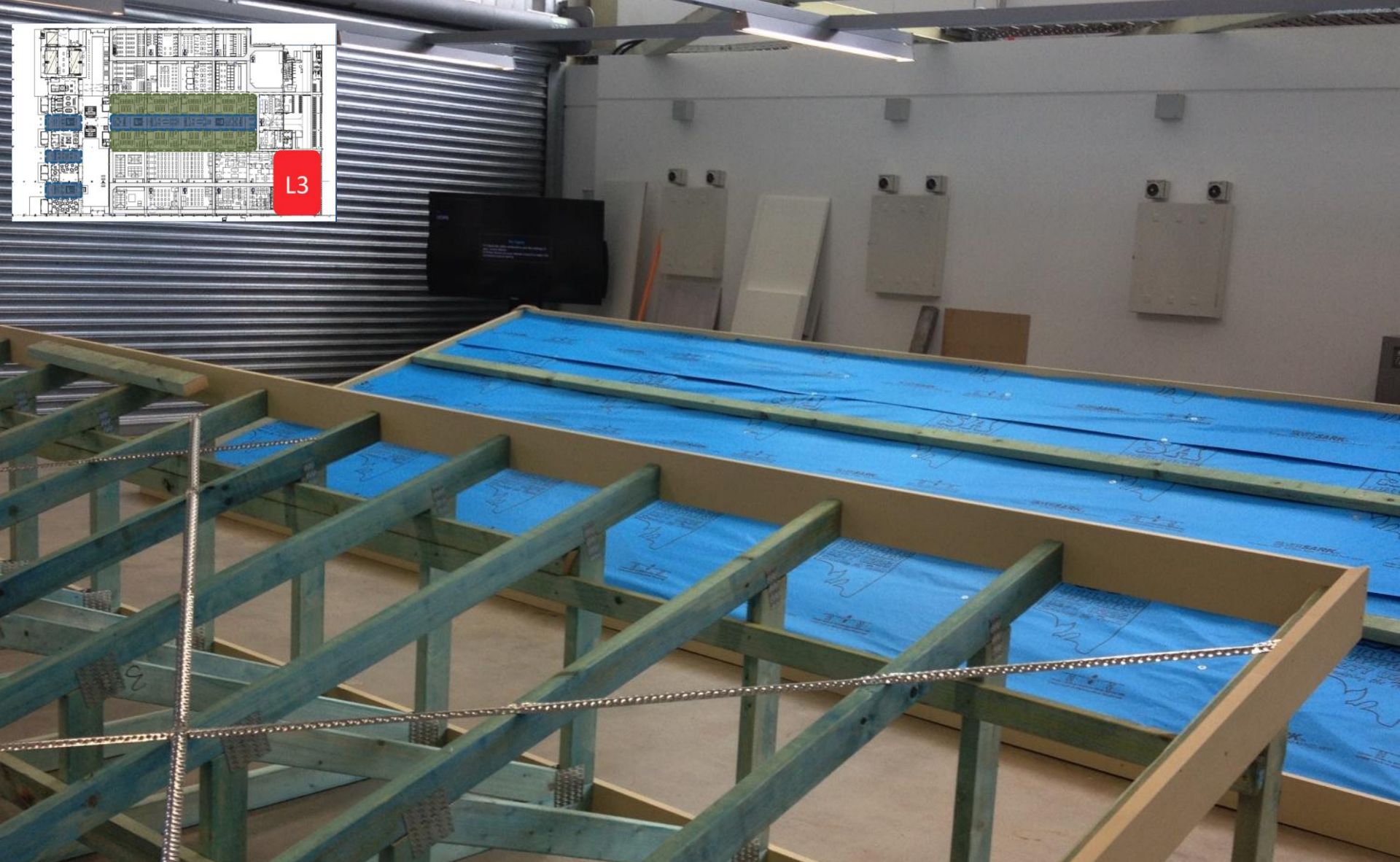
MORTAR TROWEL TRADES





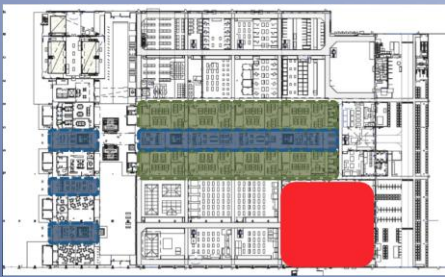
GLASS AND GLAZING TRADES

© Ana Sala (Photographer)



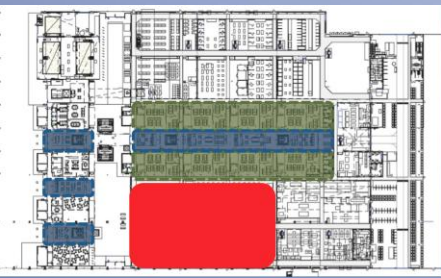
SUSTAINABLE TECHNOLOGIES





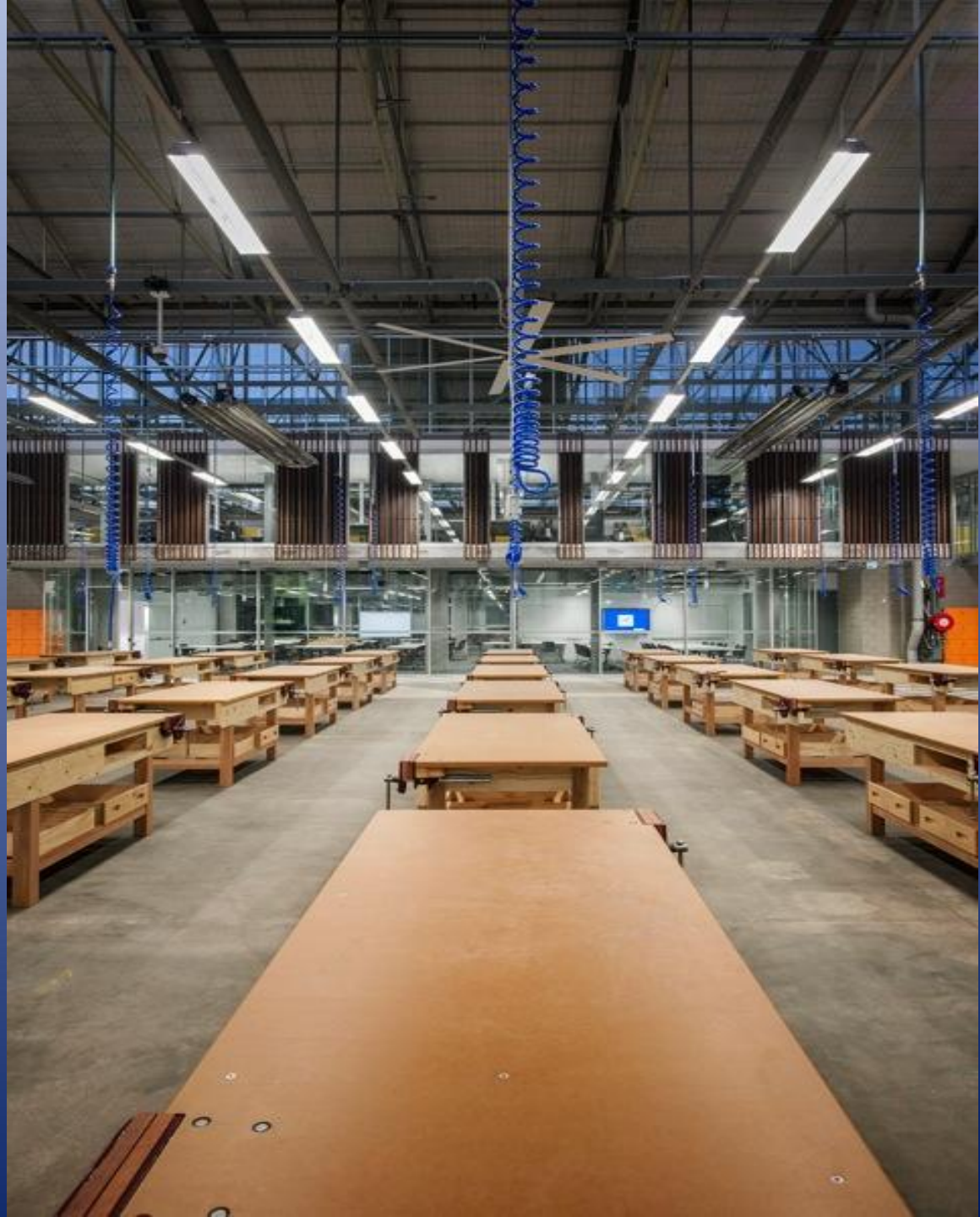
MACHINING WORKSHOP

© Ana Sala (Photographer)

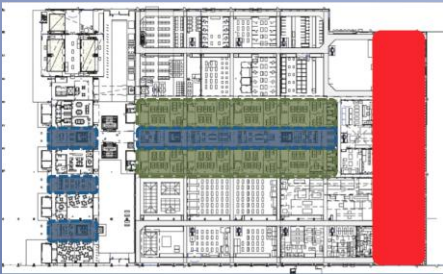


TIMBER TRADES / ROOF
PLUMBING / HAND TOOLS





MPH Architects (Lead Professional Consultant)
© David Sievers (Photographer)



BULK STORAGE



SUSTAINABILITY

- The building as the third teacher.
- Services exposed
- Innovative Demonstrator elements
- Greenery
- Natural light



TECHNOLOGY

- **LAPTOPS** available from informal areas



TECHNOLOGY

Access to screens via
mobile phone



TECHNOLOGY

Access to cameras
into workshops
from anywhere (via
mobile app)



<https://fs.tafesa.edu.au/adfs/lis/?SAMLRequest=nZJLa8MwEIT%2Fim862fljiWMRB0xCIZCWkrQ99FI28pqYypKrlfr493UcSh%2FQ%0AHnpdZr7ZWXXB0KleVN4d9Q6fJILKiK0rjV6ZTT5Du0e7XMr8Xa3LdnRuZ4E%0A59JoZ42KHDRIEGHtl%2FACBg4%2F7gEpQ4gH1mwHqithhPyE9DQT2%2FdEFfEWbBZ%0A%2Bwhnx%2FSaT2Pw2RSYBgnWRpmh3wazjl4ZNiks6zIBymRx40mB9qVLI2TSRgX%0AYZzexLIUjEp7llwh5bG6DSKWfDaKU1irF0yb7UwQC0JDR2ScFLsq8utGJSi%0At8YZaRRbLk5qMUbZL%2F6%2F7fBxRbYECQv%2BhXEG9uJqMG3W10a18i2oDlvK4vg%0AsGTOemTBhbEduN9jkigZJ20dNqNUeE09yrZpsf5PU7487%2Fn9IZbv%0A>

Lessons Learned

Change Management

- ProjectResources
- Separated D & C from change management
- Middle Management time bomb

ICT / AV development

- Interface with departmental geeks
- Allowed contractor off the hook

Materials Handling

- Incorporated in change management
- Should have remained with D & C
- High risk with confused responsibilities

Visual
identity

Environmental messaging

35

Front up here
we can see
the change.

Thank you!

