

Rodney Clark and Scott Pearson

Putting Operators First Insights from Waiāri's Design Journey

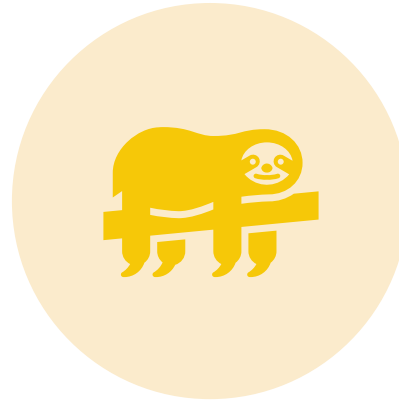


water
NEW ZEALAND
CONFERENCE & EXPO
17-19 OCTOBER 2023
Tākina, Te Whanganui-a-Tara Wellington

Languages of the Water Industry



OPERATOR

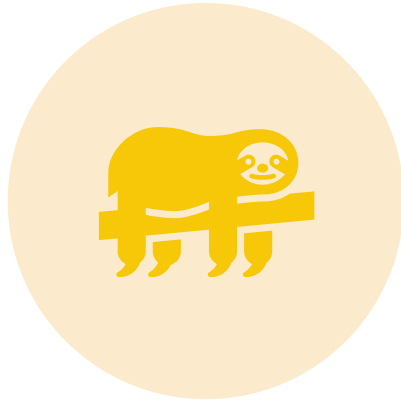


CONSULTANT

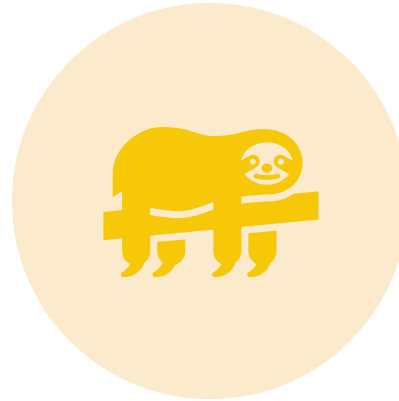


CONTRACTOR

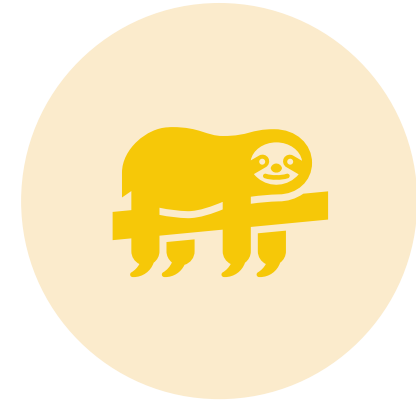
Languages of the Water Industry



OPERATOR



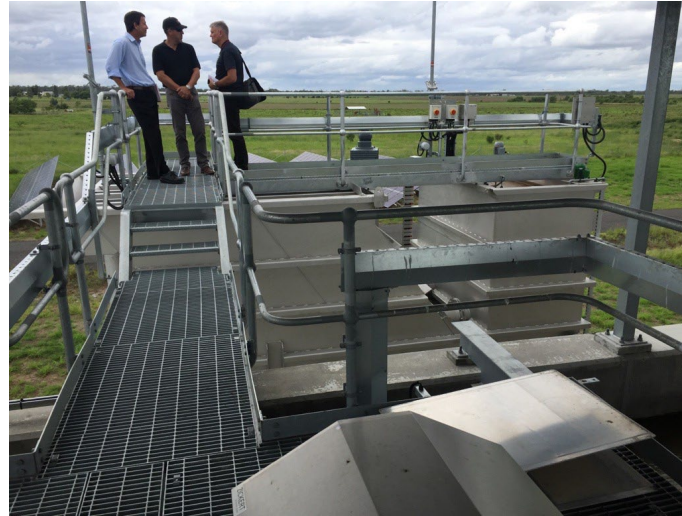
CONSULTANT



CONTRACTOR

Challenges

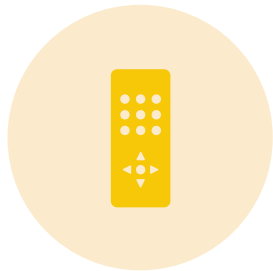
DESIGNERS	DESIRED PLANT OUTCOMES
Civil	Simple to Operate
Process	Simple to Maintain
Geotechnical	Simple to Construct
Mechanical	Safe for Staff
Electrical	Resilient
Structural	Carbon Smart
Architectural	Free
Etc...	Etc...



Learn from others



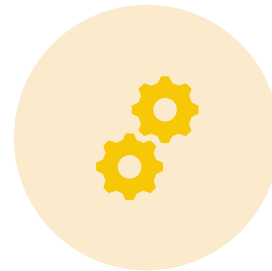
Learning From Others



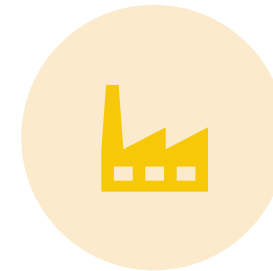
REMOTE ACCESS



SUPPORT
AGREEMENTS



CONTROL
SYSTEM



VALVE
MANUFACTURERS

Learning From Others



STANDARD
EQUIPMENT



NOISE



MEMBRANE
REPAIRS



TRAFFIC
MOVEMENT



Facility Design Principles



Health and Safety



Compliant



Resilient

Some Facility Design Principles



EQUIPMENT NOISE
LIMITS



REMOVE LADDERS



NO EQUIPMENT IN
CONFINED
SPACES



FLAT FLOORS AND
CLEAR
SIGHTLINES

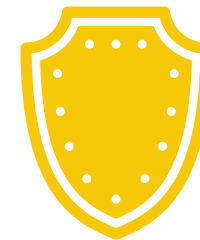
Some Chemical Facility Design Principles



COVERED CHEMICAL
STORAGE



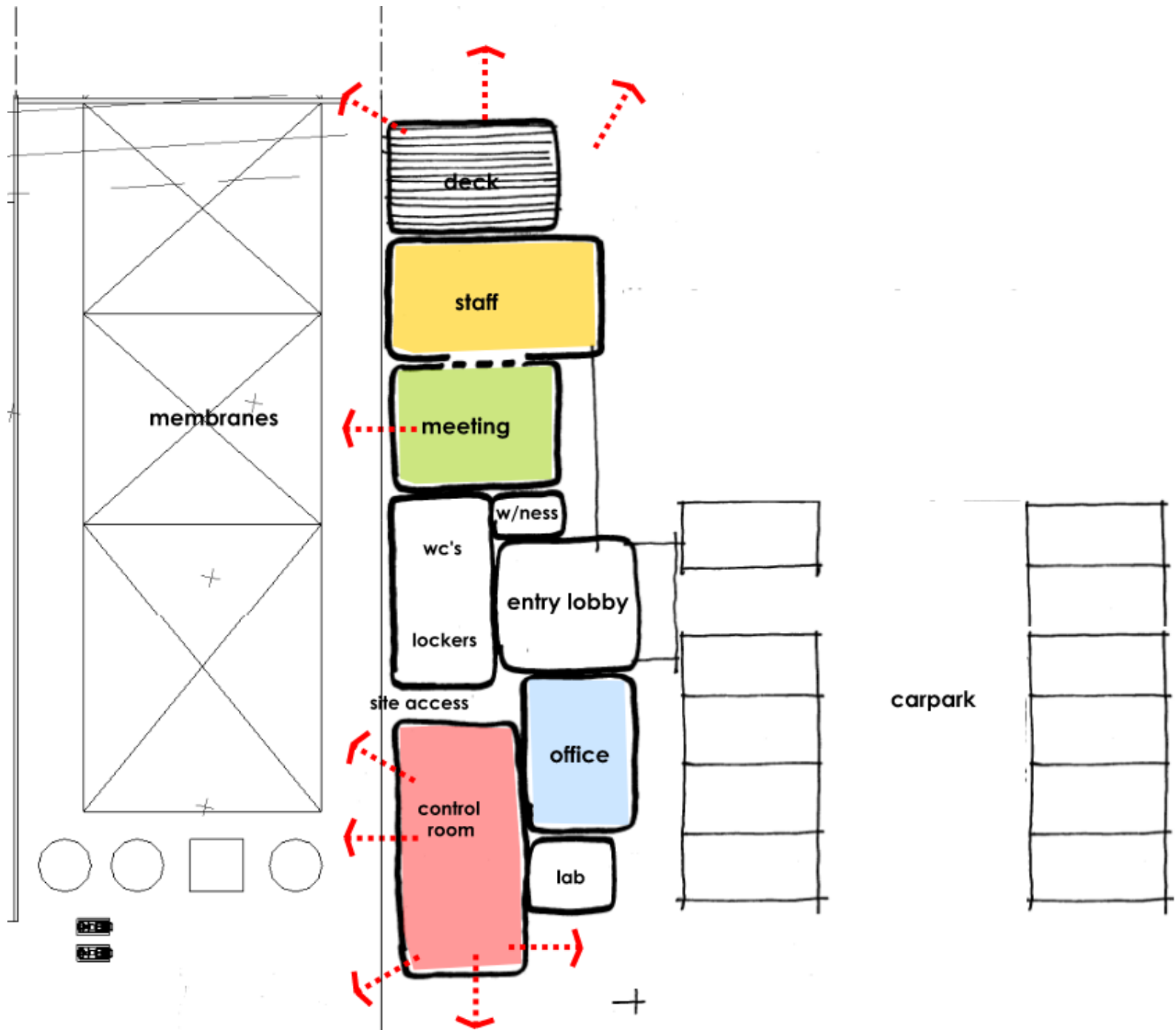
VENT CHEMICAL TANKS
EXTERNALLY

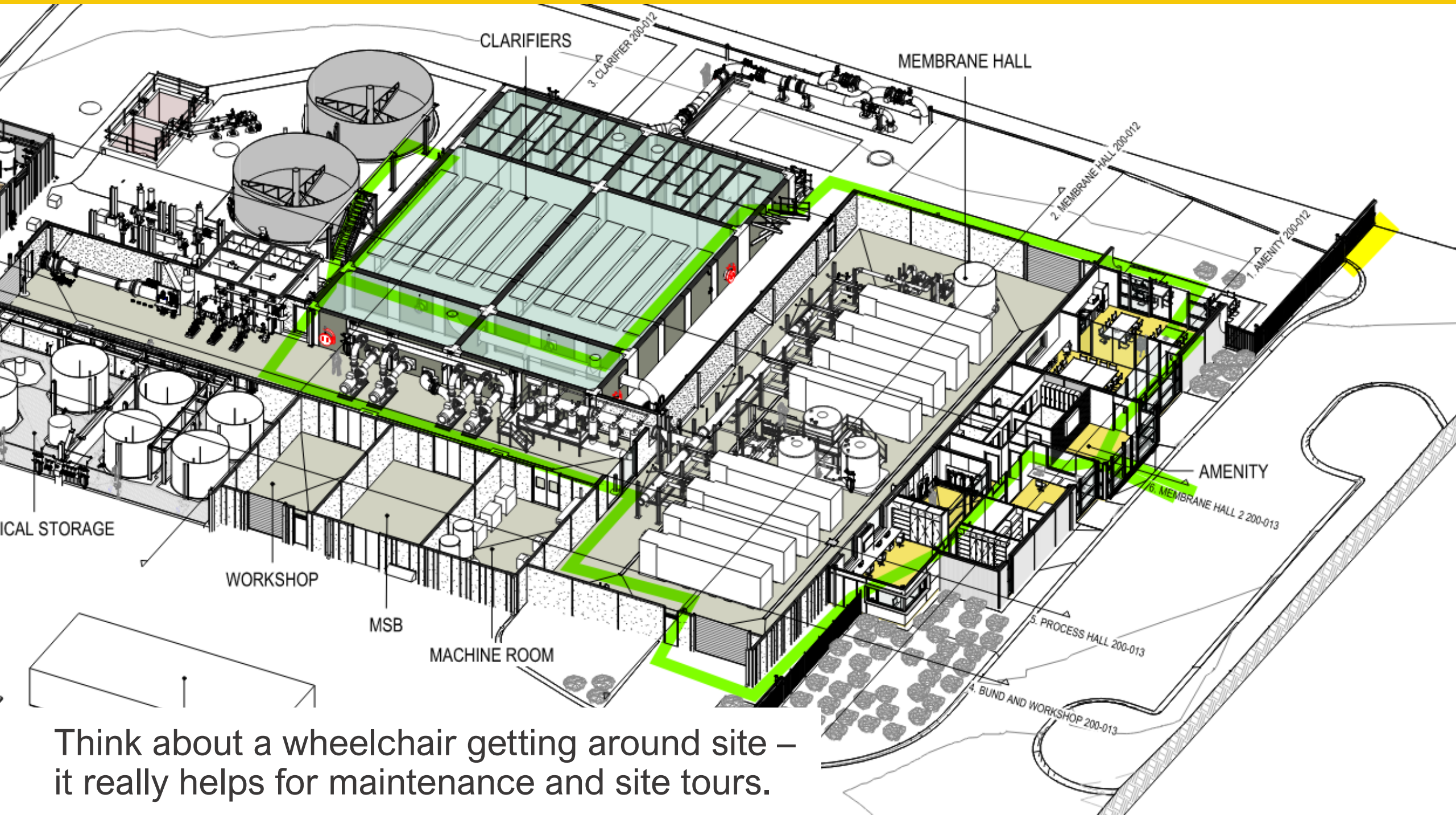


DOUBLE CONTAINMENT
OF CHEMICAL DOSE
LINES



Layout Development





Think about a wheelchair getting around site – it really helps for maintenance and site tours.

Layout Development



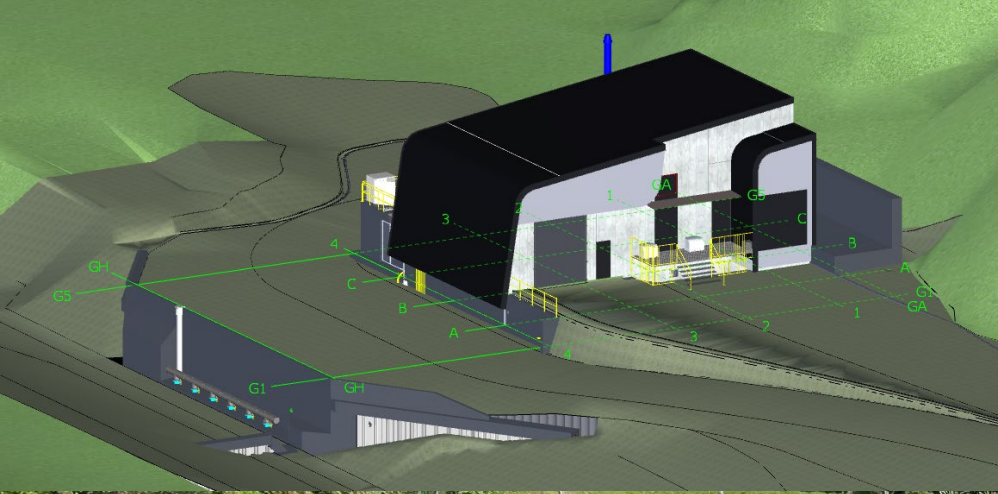
“Safety in design” prior to design allows the layout and design to be progressed on the right path



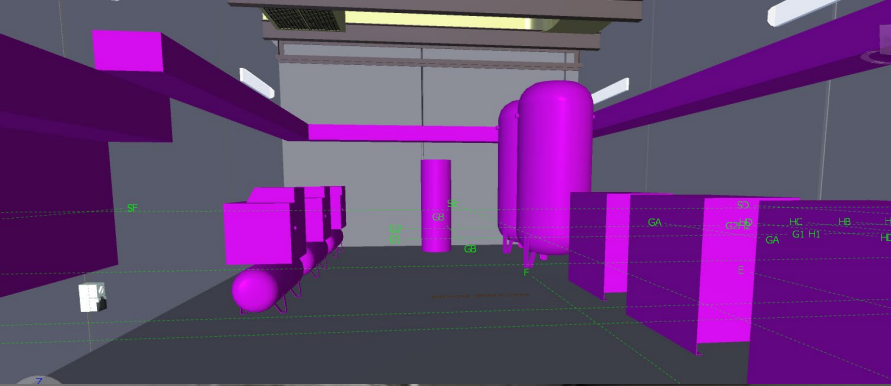
Reserves traditional safety in design and HAZOP sessions to focus on the finer points of the design.

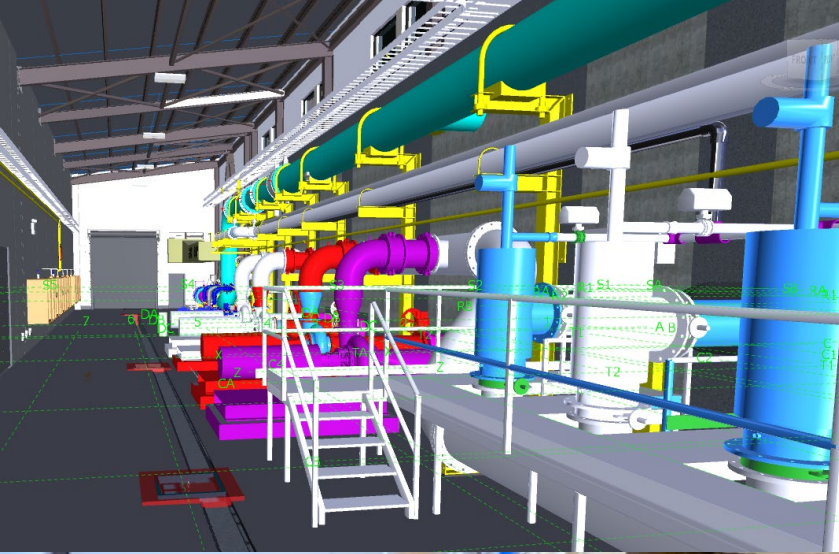


VR gives perspective.

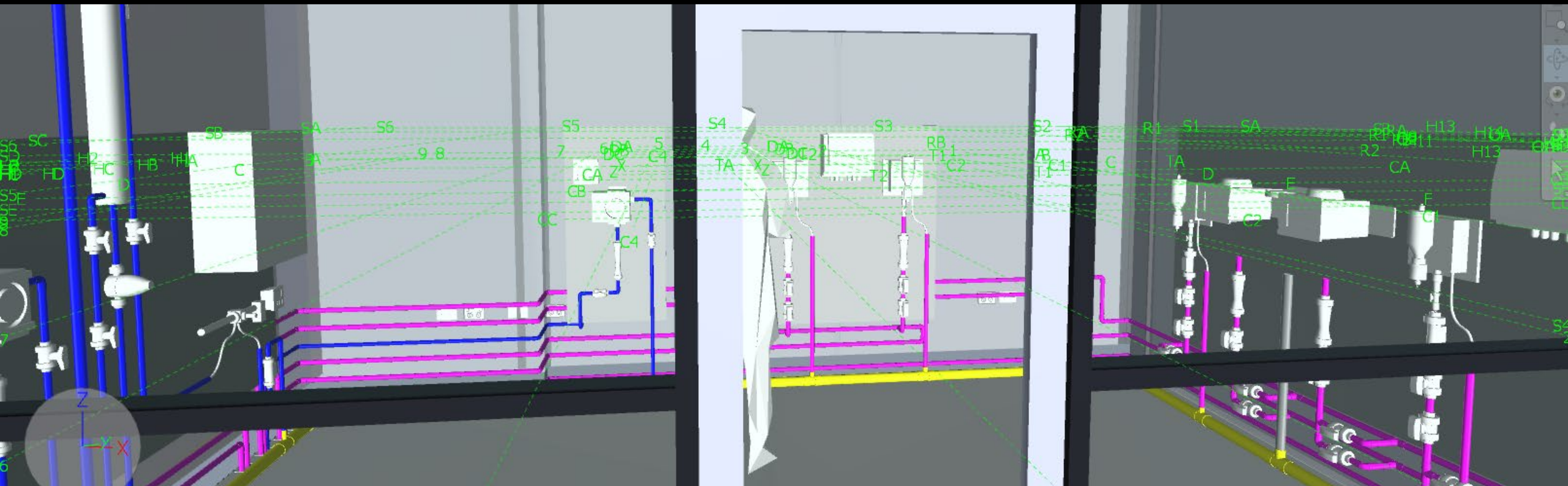
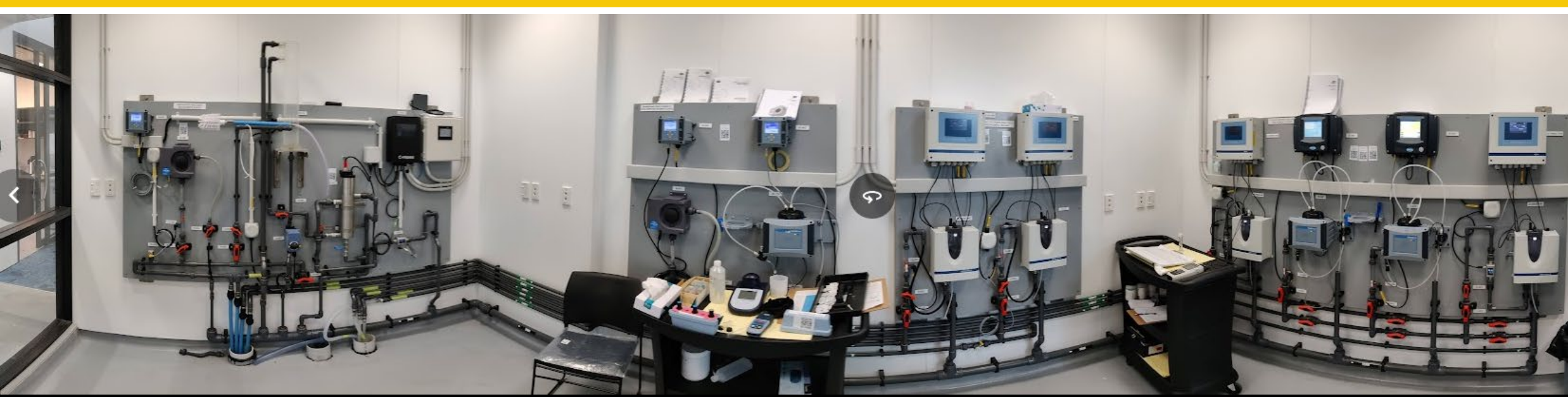


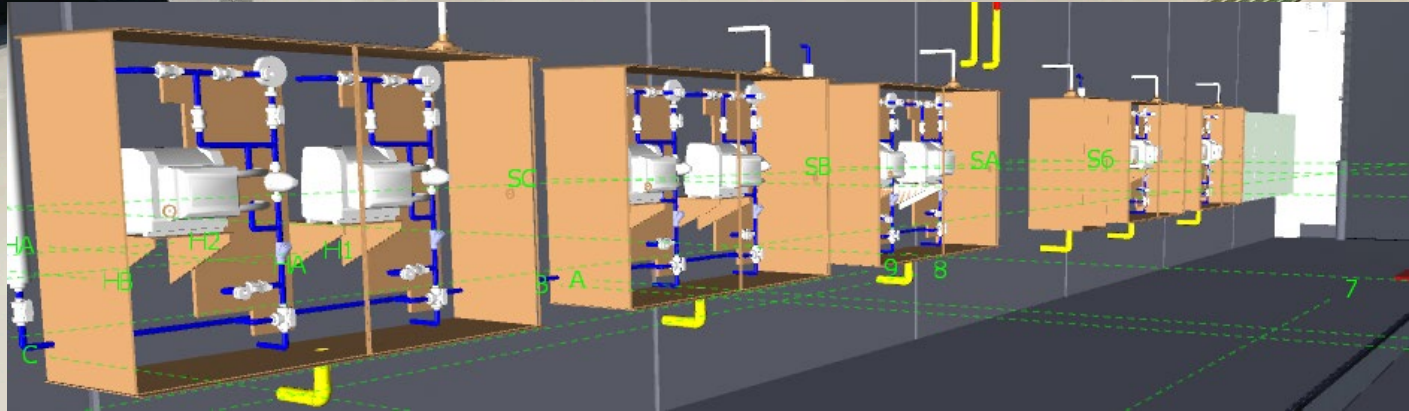
The End Result



















WATER
TASTING

Celebrate
Waiāri

TRENDS
TRENDS
TRENDS
TRENDS



Celebrate
Waiāri

Celebrate
Waiāri

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Intermediate



By including operations in the decision making helps to deliver a project that is resilient, safe, simpler to operate and maintain, and a nice environment to work in.