

From Building to Operation



Many people contributed skills, materials, transport and local knowledge to bring the three-surgery clinic into service.

The clinic is operational and treating patients. Several equipment systems still need specialist work before all three surgeries can function reliably. This report follows the people who built the clinic, supported its first weeks of operation and identified the remaining technical problems.

8 WEEKS

to complete the main build

OPERATIONAL

patients are being treated

FINAL GAPS

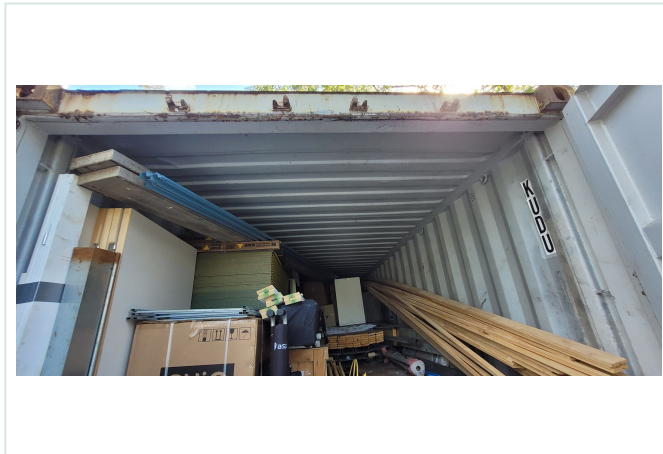
some equipment still offline



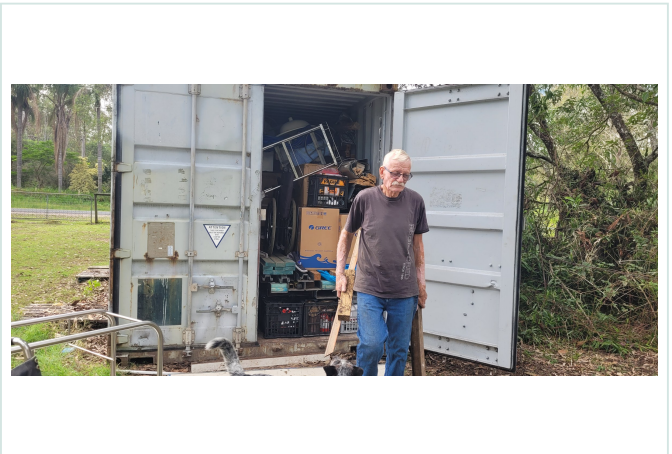
Makira-Ulawa
Provincial Government

Everything travelled in one 20-foot container

The prefabricated building, fit-out, instruments and dental equipment were selected and packed as one connected system.



Materials, fittings and equipment packed into every usable space.



Jack Visser with the completed 20-foot container.

EQUIPMENT SELECTED FOR RELIABILITY

Dr Beatrice Ng donated equipment from her two-chair paediatric practice in Hong Kong, and Dr Yun Leung supported its transport to Australia. Dr Lynette McMahon from the Central Coast donated small equipment and instruments.

A new suction unit and oil-free dental compressor were purchased. These systems are the workhorses of a dental clinic, and second-hand donated options were not considered reliable enough for a remote service.

MEASURED CLEANED PACKED AND CHECKED

Jack spent 18 months sourcing new, second-hand and donated materials. The clinic was designed so every prefabricated component, fitting, tool and item of equipment could fit into one 20-foot shipping container.

RARE Brisbane supported the shipping paperwork and secured free international freight through Swire Shipping. Wemyss Transport provided storage and road transport. Makira-Ulawa Provincial Government paid for domestic shipping and local labour.

20 FT ONE SHIPPING CONTAINER

Construction materials, clinical equipment, cabinetry, plumbing, electrical components and the tools needed for assembly were packed into every usable space.

Many hands completed the clinic

An Australian and Solomon Islands building team worked through hot, humid conditions. Miraculously, rain did not interrupt the eight-week build.



Jack Visser (left) and Johnny Marshall. Their relationship grew through earlier projects, including S.W.I.M.

BUILDERS WITH LONG EXPERIENCE

Jack Visser, an Australian builder who has worked in Solomon Islands for 20 years, designed the clinic and led the long preparation before construction began.

Johnny Marshall, the lead builder, is from Malaita Province and has worked with Jack for 20 years. Joel, also a builder from Malaita, has worked with Jack for a decade.



Local builders completing the clinic interior.

CONSTRUCTION AND CULTURAL LIAISON

Troy Meyers supported construction and cultural liaison. David and Rex from the hospital maintenance crew worked alongside the builders.

The local team and a Provincial Government builder completed the kitchen and the ramp after the main visiting team left. This became the first clinic in Makira with a disability access ramp.



The prefabricated frame taking shape beside Kirakira Hospital.



Local builders installing the external cladding.

Practical support after the main build

Plumbing, power, flooring and equipment protection still needed careful technical work after the structure was complete.



David Nunn with Som-Ling Leung.

David Nunn, a retired electrical engineer with 25 years of experience supporting projects in Solomon Islands, travelled to Kirakira to help complete the clinic. He worked beside the local team and explained the systems as problems were solved.

When water appeared beneath the clinic, David found problems with the new crimped plumbing connections. He helped identify replacement components and worked with the team to repair the fittings.

He also supported the commercial vinyl flooring, resolved drainage questions and worked with the local electrician to finalise a safe single-phase supply.

ELECTRICAL PROTECTION FOR SENSITIVE EQUIPMENT

- Separate circuits for equipment with high start-up demand.
- Protection from voltage surges and voltage drops.
- Additional earthing to reduce risk to people and equipment.
- A direct supply designed to avoid overloaded hospital wiring.
- Local certification and a system the local electrician can service.
- Single-phase power rather than an unnecessary three-phase supply.
- Protection for sterilisers, suction, compressor and electronic controls.
- A safer base for final biomedical commissioning.

David helped bridge the gap between a completed building and a clinic that could safely support specialised dental equipment.

Dr Kate Aitken and family in Kirakira

A five-week placement helped turn the new infrastructure into a working clinic and tested the equipment under real operating conditions.



Dr Kate Aitken with the new dental assistant and Dr Lenstar.



Dr Kate Aitken with her husband and children, including the child beneath the Solomon Islands flag.

Dr Kate travelled to Kirakira with her husband and three children for five weeks. The children attended the local school, making the placement part of community life rather than a short clinical visit.

Kate worked with Dr Lenstar and the local team to set up equipment and organise the clinic layout. She supported workflow, infection control and surgical techniques while the clinic began treating patients.

The Provincial Health Department employed a new dental assistant. Kate trained him in current sterilisation techniques and chairside assistance, helping the new team establish safe daily routines.

The placement also supported the Wednesday school program and oral health promotion. Running the clinic under normal conditions revealed equipment problems that still needed specialist attention.



Dr Kate supporting school oral health education.

WHAT THE PLACEMENT SUPPORTED

- Equipment setup and clinic layout.
- Workflow and infection-control mentoring.
- Clinical and surgical support.
- School oral health activities.
- Troubleshooting during live clinical use.

The remaining equipment problems

Remote commissioning depends on specialised parts, careful troubleshooting and travel. The clinic can operate, but several systems are not yet reliable.



Solomon Islands biomedical team.



Davis Harara (right), a biomedical engineer from Makira now based in Newcastle, with an Australian dental equipment specialist.

PROBLEMS IDENTIFIED DURING OPERATION

- Water leaking through handpiece tubing and fittings.
- Around 80 per cent loss of compressed-air pressure.
- Central suction not yet installed and operating.
- Some dental units unable to receive water.
- No drainage connection for the dental-chair spittoons.
- Dental chairs lack separate internal water-bottle systems.
- Some lights and equipment not working reliably.
- Specialised connectors and small dental parts difficult to obtain remotely.

Heat and noise in the plant room

The oil-free dental compressor is a separate technical concern. The plant room becomes too hot in Solomon Islands weather, placing the compressor and suction equipment at risk of early failure.

Leaving the door open is not a workable solution because the equipment is too noisy for nearby clinical areas. The plant room needs dedicated air conditioning so the door can remain closed while the machinery operates safely.

Davis is keen to return and support further improvement in equipment maintenance across Solomon Islands.

The next step is targeted specialist support, the correct components and cooling that protects the equipment in local conditions.

The remaining funding need

The final work will make the compressed air, suction, water and equipment systems reliable across the clinic.

Remaining technical funding	
Parts and fittings	\$9,000
Plant-room air conditioner and installation	\$3,600
Biomedical travel, logistics and accommodation	\$8,200
Labour costs	\$8,200
Handover ceremony	\$1,000
TOTAL	\$30,000

WHAT COMPLETION WILL ACHIEVE

- Reliable compressed air and suction across all three surgeries.
- Water delivered consistently to the dental units.
- Equipment protected from excessive plant-room heat.
- Local staff supported with maintenance knowledge and documentation.
- A safe technical handover after final testing.



RAWCS project page

The clinic is operating. The final work will protect it.

Funding will support specialist biomedical travel, the correct fittings and components, plant-room air conditioning, labour and final handover.