

CASE STUDY



3D PRINT SCALE MODEL

COMMUNICATION/PRESENTATION MODEL



Process: 3D printing

CHALLENGE:

Clean TeQ is a leader in metals recovery and industrial water treatment. As part of their water treatment plant proposal, Clean TeQ required more than just computer renderings to communicate their waste water treatment plans.

To assist in their design proposal they reached out to locally based additive manufacturing bureau, GoProto ANZ, to supply a scaled 3D print architectural model.

Traditionally, Stereolithography (SLA) 3D printing has been the most preferred method of creating scaled models, offering fine detail reproduction using epoxy-based material. However, this process requires high levels of post-processing to remove support structures and special care when transported, due to the brittle nature of epoxy resins.

KEY ADVANTAGES

- Reduced lead time using MJF process.
- Durable model for transportation.
- Fine detail pre-production.
- Experienced team able to assist with CAD modifications.

3D PRINT SCALE MODEL (CONT...)

SOLUTION:

HP's Multi Jet Fusion 3D printing was opted as the most suitable process for delivering a durable architectural model capable of replicating the fine details and smooth finish suitable for painting.

With architectural CAD software usually the biggest bottleneck in getting from a drawing to a printable 3D model, care was taken to ensure all features would successfully replicate. For Clean TeQ's project, some sections were dimensionally adjusted, such as stairwells, pipes and railings so they'd successfully replicate in the 3D printing process.

Once printed, it was just a matter of removing the excess nylon powder with an air gun. It's at this stage MJF process saved a lot of time. Kathryn Hay, Technical Sales Specialist at GoProto says, "Architectural models are usually very detailed. If we'd printed this model in SLA it would have been difficult removing the support structures without causing damage to the model. MJF parts feature a smooth finish and allows us to move to the painting stage fairly quickly".

RESULT:

While 3D printing buildings and architectural designs can create challenges of scale, GoProto's experience meant the team was able to assist Clean TeQ with the CAD and print a presentation model that could easily be transported from place to place without risk of damage. For Clean TeQ's project proposal, the 3D printed model helped their customer visualise the end result and engage at an earlier stage of planning.

Local & Global Manufacturing Network

GoProto ANZ's headquarters is based in Melbourne with a division in Sydney and USA.

Specialising in 3D scanning, prototyping and advanced manufacturing services, GoProto is dedicated to assisting businesses throughout all steps of the design and development cycle.

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