

Online 3D Industry Training for Solar Hotwater Installation

Certifying Installers

Utilitech is an industry training provider that delivers qualification, refresher and customised training courses to the utilities sector. Utilitech's courses are accredited by the New Zealand Qualifications Authority and delivered throughout the country.

Subsidies for households that installed energy-efficient solar hot water cylinders created new demand for appropriately qualified plumbers and gas fitters.

The Energy Efficiency & Conservation Authority would only provide the \$1000 subsidies for systems put in by approved installers - tradesmen who have the appropriate NZQA unit standard.

With tradesmen spread around the country, Utilitech approached Nextspace to develop an intuitive 3D training module that students could access online. Course participants study the online course at their own pace, before attending a three-day course where they assemble and install a system physically.

This is the first time a course this interactive has been made available online, and received accreditation as part of a national qualifications standard.



Online 3D industry training

Plumbers and plumber gasfitters enrolled in Utilitech's solar hot water installation course can walk through a complete installation via a standard web browser and in 3D. Users can manipulate the components of a solar hot water system with their mouse to look at them from various angles – giving them much better comprehension and understanding of how the components fit together.

When users enter the website, they are first taken through the main components and then walked through a complete installation. Accompanying text boxes provide technical information and prompt users to think of safety issues and installation best practice. Because each component is in 3D the viewer can also look inside components, for example the manifold or the valves, which is not possible in reality. This gives users a chance to see online what they cannot see on the job.

Benefits of Utilitech's online training

- The 3D course content has been accredited by NZQA for national unit standards
- Cumbersome 250-page manual converted into a user-friendly, step-by-step online course
- Plumbers and gas fitters respond well to the visually-based training
- 3D is ideal for communicating physical placement and how components fit together
- Online 3D module allows assessment as well as teaching
- Online pre-training reduced the course from four days to three
- Pre-training ensures all students are at similar skill levels prior to in-person classes
- Using 3D CAD data of actual hot water cylinders ensures familiarity and accurate materials

The course covers key topics such as the placement of the solar collector, the role insulation plays, and how to control other energy sources.

At the end of the module, participants take an online test to assess their knowledge and whether they need to review any steps.

Plumbers are typically self-employed and find it difficult to set aside time for upskilling and training, particularly if they live in remote rural areas. By having candidates review the online training module prior to the in-person course, the course was reduced from four days down to three – saving valuable time for the tradespeople.

“It’s often difficult for plumbers to take time away from their clients to upskill. Using online 3D technology lets course enrollees to become familiar with the components and the installation procedure in their own time and their own place before attending the practical and classroom sessions.”

Chris Jobson, General Manager, Utilitech



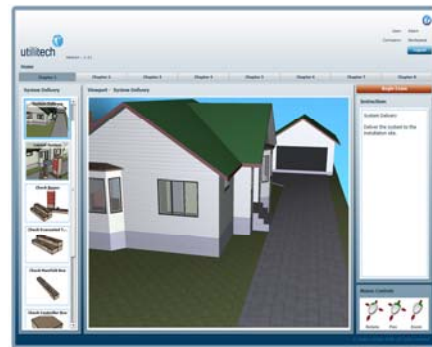
Interactive, Engaging and Effective Training

Nextspace adapted Utilitech’s traditional classroom-based materials and training approaches to create an interactive, online environment. This required the development of a pedagogical framework and instructional design that provided flexibility, made the most of interactivity and supported the desired learning outcomes.

Nextspace worked with Utilitech to identify the learning objectives and expectations of the end

users, Utilitech and the industry. This ensured the technology truly enhanced the learning experience and educational requirements.

The online module was storyboarded with the visuals and interactions structured to fit the course material. These went through several iterations to ensure the layout and course content were easy to use and navigate around. The usability of the site is a key element if the students are to have a positive online learning experience.



The online module uses true 3D graphics that allow for complete freedom of movement. Participants can view the models from any angle or distance at any stage in the installation, unlike many other online training tools.

The learning framework and course structure was designed to strike a balance between the user being able to freely interrogate and explore the learning objects and guiding them through the instructions.

Nextspace generated some of the 3D models from the hot water cylinder’s original CAD data. This gave an accurate replication of the physical objects and meant viewers were more familiar with the product when it came to hands-on installation.

The online installation can also be used as a refresher if plumbers or gasfitters are only installing solar hot water units infrequently.

The entire course, including the 3D module, has passed the requirements of the New Zealand Qualifications Authority. The course is now accredited to deliver national unit standard 24305: *Install, test, commission and maintain solar hot water systems.*

About Nextspace

Nextspace is a 3D industry catalyst and consultancy that was established with government backing to leverage Right Hemisphere's success and unique IP to enhance New Zealand's international competitiveness.

Nextspace acts as a conduit for firms, education and research organisations to access and take advantage of Right Hemisphere technology. The Nextspace team includes experienced 3D developers, content experts and sector-specific business consultants putting it in a unique position to add value to New Zealand.

A cluster of organisations have partnered with Nextspace to apply Right Hemisphere tools to new sectors such as heavy industry, construction, training, eLearning, marine, medical imaging and entertainment. Nextspace has also integrated Right Hemisphere's 3D platform into ERP, document management and customer websites.

Taking the Next Step

To evaluate how interactive training programmes could help your business, and the solutions available contact:

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