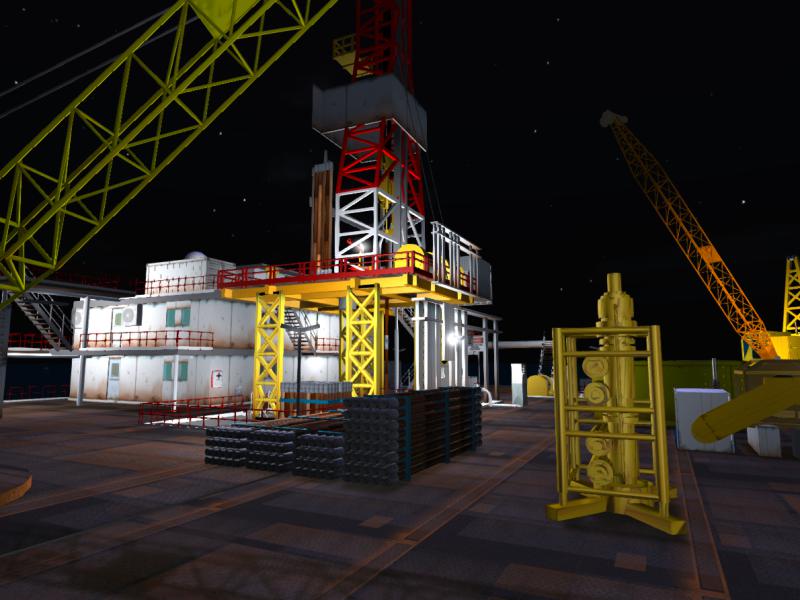
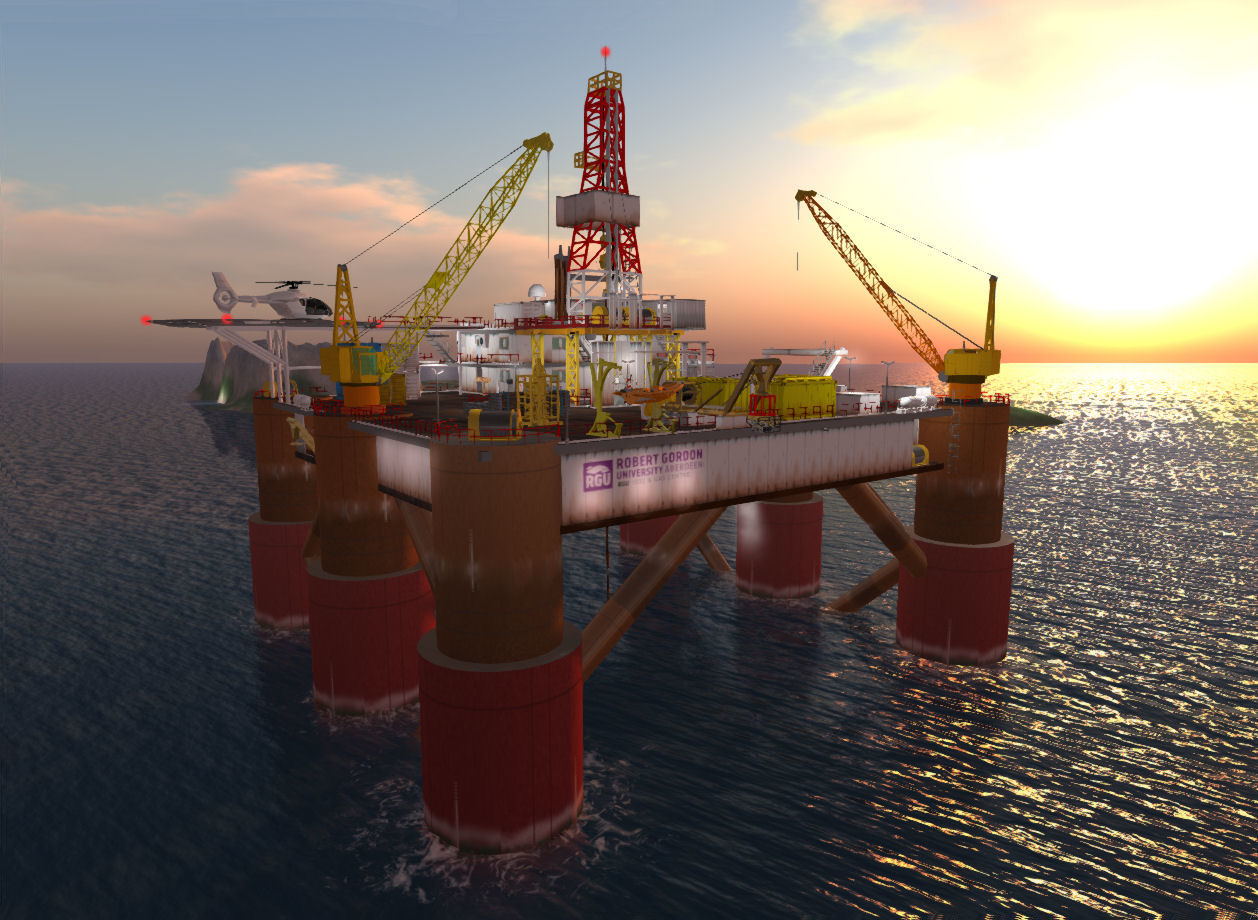
**The Virtual Oil Rig – Simulation-based Immersive Training**

Jo-Anne Tait (RGU), Colin Hetherington (RGU) & Austin Tate (University of Edinburgh)

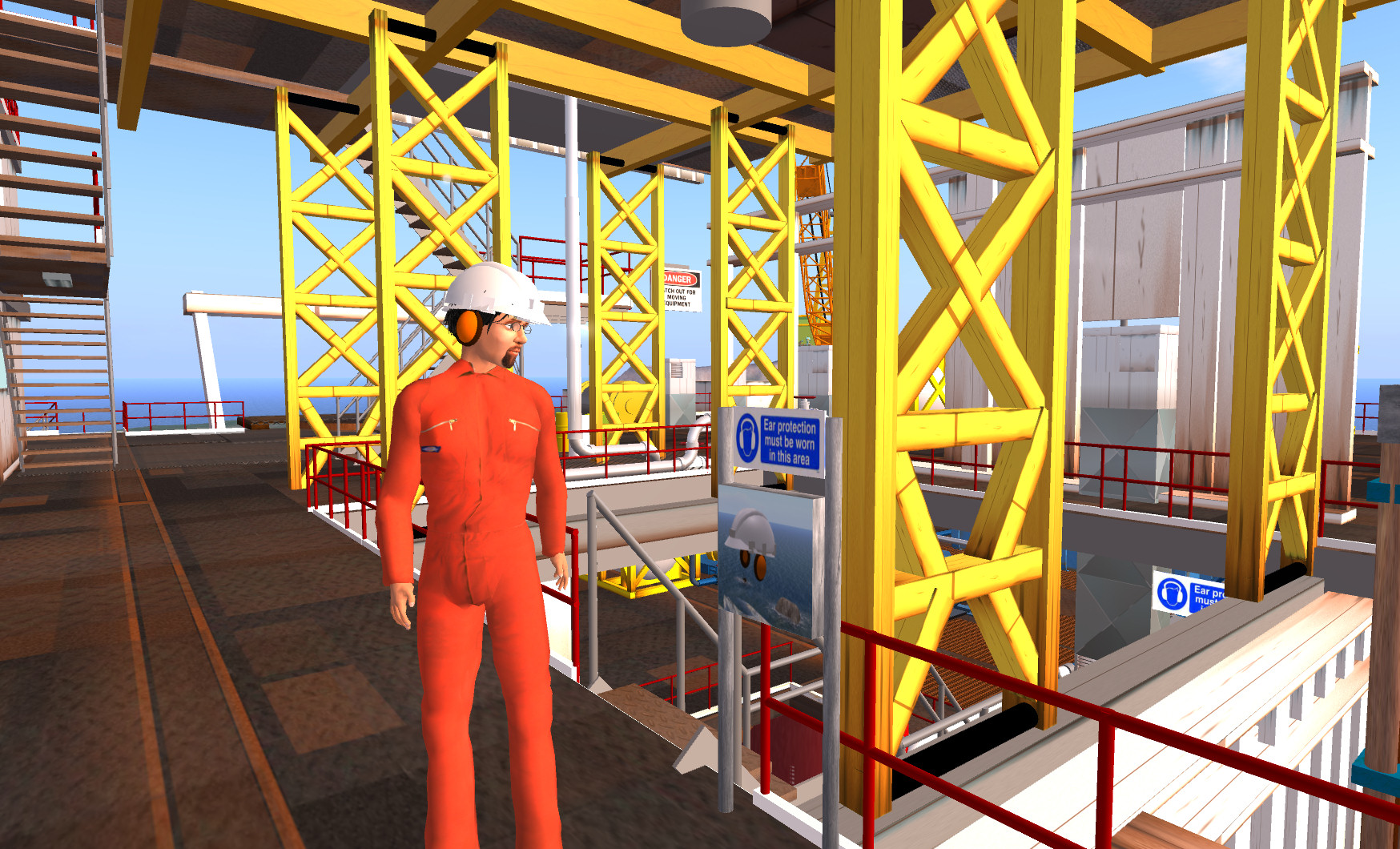


The Oil & Gas Institute in the School of Engineering at Robert Gordon University (RGU) in Aberdeen, Scotland has made significant investment in developing methods to ensure its graduates are “industry-ready”. As visits to oil rigs are not often possible or practical for students it was decided to develop a virtual space for students to familiarise themselves with aspects of the offshore environment in a virtual environment. Such simulation tools give students immersive experiences that can increase their desirability to employers.

**Virtual Oil Rig**

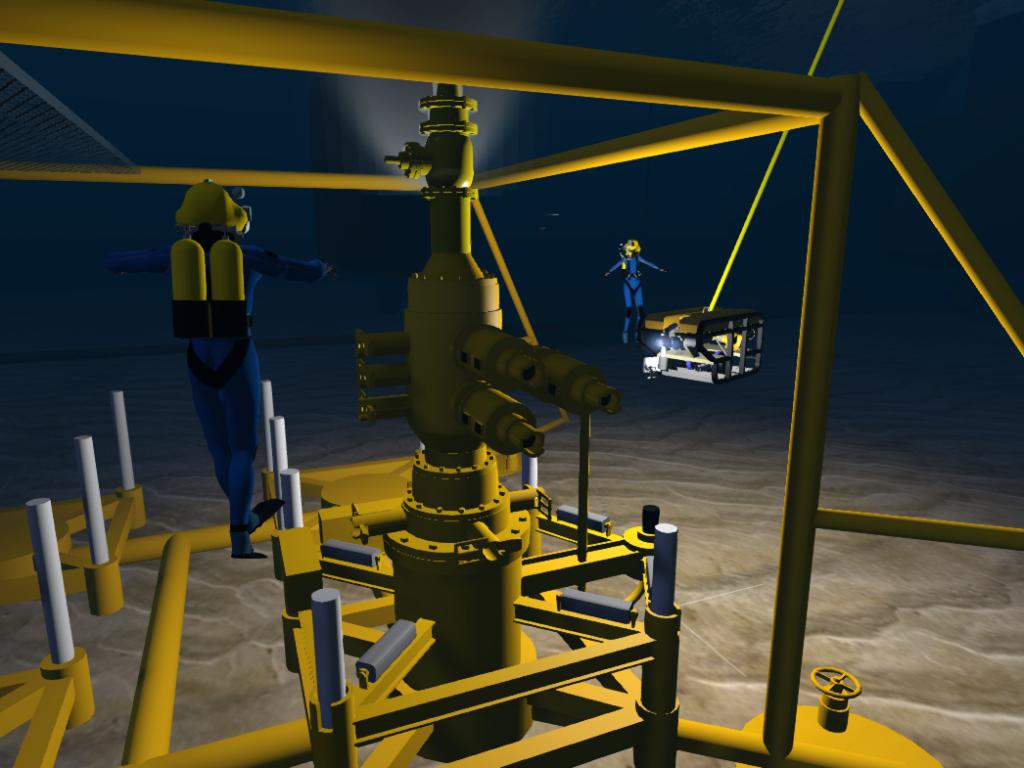
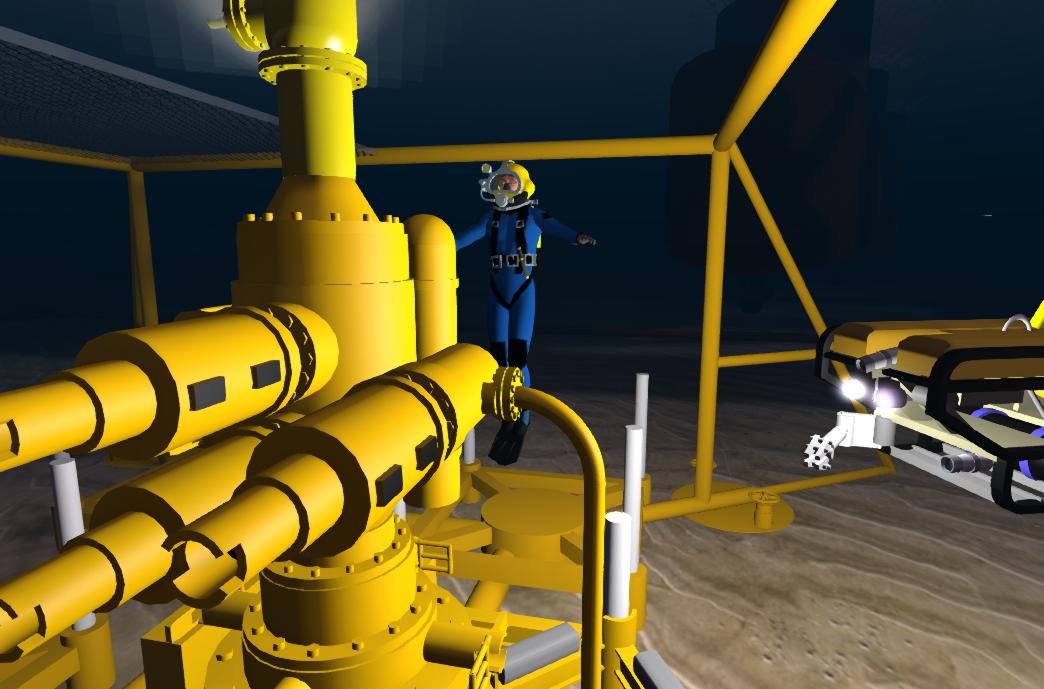


* Development of semi-submersible rig in 3D Modeller
* Deployment in OpenSimulator (OpenSim)
* Set in ocean environment with sea life
* Moving parts and detailed machinery
* Realistic, loud, 3D sound
* Visitors click on objects for information and linked videos
* Hard hat, ear defenders and boiler suit dispensers for avatars



**Seabed Equipment**

* Seabed “Christmas Tree” equipment
* Blow Out Preventer
* Remote-controlled inspection robot
* Diving suit outfit for avatars



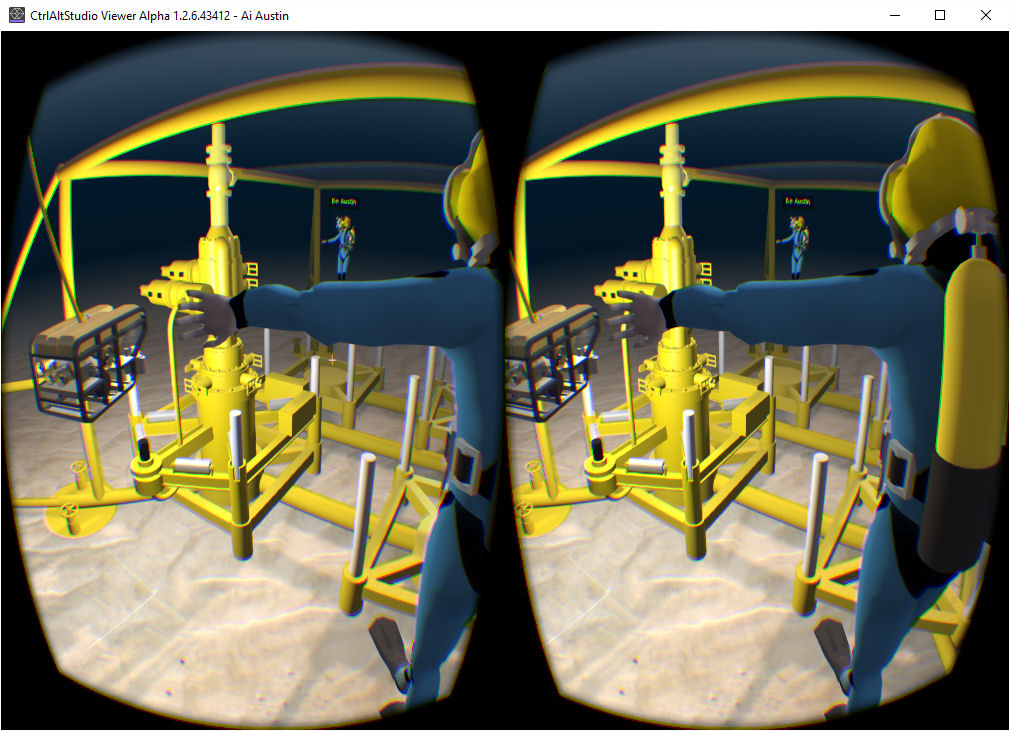
**Onshore Campus**

* Buildings “onshore” to showcase posters and further educational materials
* Lecture Hall for live streaming events and presentations
* Social areas for staff and students
* Based on the OpenVCE Collaboration Region (open source from OpenVCE.net project)



**Collaboration – University of Edinburgh**

* Experimenting with porting the Virtual Oil Rig via the OpenSim OAR Converter to Unity3D.
* Experimenting with porting to multi-user collaborative virtual worlds such as Sine.Space.
* Investigating use in virtual environments designed for immersive experiences using VR headsets.



**Next Steps**

* Further integration into taught modules
* Use the Virtual Oil Rig for assessment of key skills
* VR simulations
* Increasing student partnership

**More Information and Image Sources**

* RGU Oil and Gas Institute: http://www.rgu.ac.uk/ogi/
* Virtual Oil Rig: http://blog.inf.ed.ac.uk/atate/2013/05/08/aberdeen-oil-rig-visit-on-rgu-islands-in-opensim/
* Blog Post featuring OpenSim OAR Converter to Unity3D: http://blog.inf.ed.ac.uk/atate/2015/10/24/opensim-oar-convert-to-unity-scene-with-windows-interface/
* Blog Post featuring Virtual Oil Rig in Unity3D/Sine.Space: http://blog.inf.ed.ac.uk/atate/2017/01/24/sine-space-rgu-oil-rig-region-live/
* Blog Post featuring Virtual Oil Rig in Oculus Rift VR: http://blog.inf.ed.ac.uk/atate/2016/07/20/oil-rig-training-environment-in-vr/
* Open Virtual Collaboration Environment Region http://openvce.net/vwassets/

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* Austin Tate: a.tate@ed.ac.uk

**Acknowledgements**

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