



The SDG Accord

The University and College Sector's Collective Response to the Global Goals

Integration of SDGs in

- Institutional governance/strategic level
- SDGs in research
- SDGs in campus operations
- SDGs in curriculum development
- SDGs in student engagement activities
- SDGs into community activities
- SDGs at a whole-institution level

Focus on

- Goal 1 - No poverty
- Goal 2 - Zero hunger
- Goal 3 - Good health and wellbeing
- Goal 4 - Quality education
- Goal 5 - Gender equality
- Goal 6 - Clean water and sanitation
- Goal 7 - Affordable and clean energy
- Goal 8 - Decent work and economic growth
- Goal 9 - Industry, innovation and infrastructure
- Goal 10 - Reduced inequalities
- Goal 11 - Sustainable cities and communities
- Goal 12 - Responsible consumption and production
- Goal 13 - Climate action
- Goal 14 - Life below water
- Goal 15 - Life on land
- Goal 16 - Peace, justice and strong institutions
- Goal 17 - Partnerships for the goals

Summary

Scotland's rivers, canals and lochs make a major contribution to tourism and biodiversity and thereby represent an irreplaceable and high value resource to the Scottish economy. Through an innovative partnership project, City of Glasgow College & Altitude Thinking have developed the Aquabot, an aquatic drone with a range of sensors to monitor water properties in large bodies of inland waters. This project was funded by CENSIS, a Scottish innovation centre.

Developing this product aims to change environmental monitoring and support sustainable water use. The ability to acquire representative data from large water bodies, particularly in remote areas is challenging and costly, with many areas remaining simply inaccessible to manual sampling. Through two rounds of development, an innovative demonstrator model was created that can remotely operate on the surface of rivers, canals, or lochs to monitor and report water quality.

Dale Colley said: "I started to build a drone because you can't buy one that can monitor water quality. Ultimately, I want to build a drone that can both monitor water quality and also extract rubbish from the waterways. It could have a real positive environmental impact. Aquabot will be affordable enough for anyone to use – whether you are a large company monitoring your environmental impact or a community group concerned about a local body of water that needs quick action."

Linus Reichenbach said: "Our college's STEM and Innovation team has been supporting Dale Colley throughout all stages of the Aquabot's development and it's fantastic to see the final prototype out on the water. With its focus on sustainable water use that we believe will ultimately lead to a cleaner and safer environment, this project aligns with City of Glasgow College's own ecological values."

Outline the benefits of integrating this theme:

- 1. Supporting Sustainable Water Use**
- 2. Increased Applied Research Capabilities through Collaboration**

Outline the barriers or challenges encountered in integrating this theme and how you overcame these:

- 1. Funding – Developing the prototype was costly and only possible through funding from CENSIS, the Scottish innovation centre for Imaging, Sensing and IoT.**
- 2. Engineering Expertise – In addition to monetary support CENSIS also supplied valuable engineering expertise that helped in areas where our lecturing staff was less experienced.**
- 3. Supply issues of electronical components – We found other components to use or waited till issues resolved**

Conclusions and recommendations

This was the college's first research project to be funded by a Scottish Innovation Centre and it provides a great opportunity to contribute to the development of technology that will ultimately lead to a cleaner and safer environment.

It provided the College with a blueprint on how we can collaborate with SMEs to support them and contribute to the development of innovative technological solutions to support the SDGs.

Partnership not only with Altitude Thinking but with our funders and all other project partners was key to the success and highlights the importance of working together to solve larger issues.



Dale Colley (r) talking to Scotland's First Minister Nicola Sturgeon (m) and College Principal Paul Little (l) about the Aquabot during the launch of the COP26 International Maritime Hub.