

MAKERS

Making And Knowledge Exchange for Repair & Sustainability

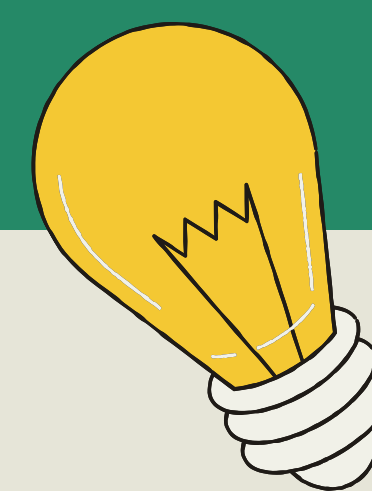
Can a student-led Repair Café develop a sense of belonging and provide hands-on experiences for engineering students?

RESEARCH QUESTIONS

RQ1: Can a student-led repair café sustain itself?

RQ2: Is a repair café an effective way to provide under-represented communities an opportunity to gain hands on engineering experience?

RQ3: Are student repair cafés an effective activity to increase a sense of belonging for people from under-represented backgrounds in engineering?



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SUPPORTERS



BACKGROUND

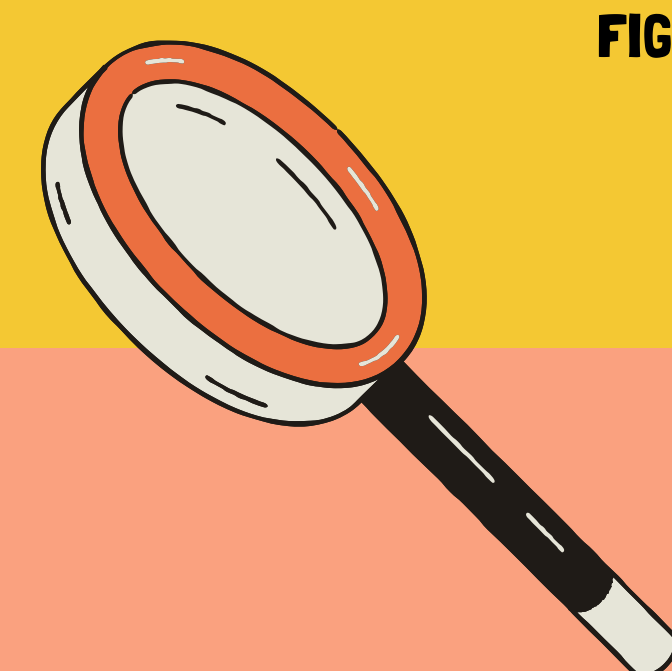
This work explores the creation of a Repair Café at the School of Engineering at the University of the West of England (UWE Bristol), introduced as part of wider project funded by the Royal Academy of Engineering Diversity Impact Programme. Research indicates that “constructionist” learning environments like Makerspaces and Repair Cafés can support equitable engagement with the potential to transfer and impart repair knowledge, normalise repair in place of consumerism, and create a greater sense of belonging amongst students from socio-economically disadvantaged backgrounds. This project had two strands of work; community co-development and repair projects in Bristol, and the monthly Repair Café on campus.

METHODOLOGY

- Quantitative data was collected regarding the number of repairers and item owners present at each café, along with the items attempted to be fixed. This data was entered into the Restart Fixometer to calculate kg of waste saved from landfill and CO2 emissions prevented.
- Pre-project student survey: a Qualtrics based survey which identified students’ repair related skills, their own assessment of their engineering self-efficacy and demographic data.
- Repair item owner survey: an online survey which asked repair item owners to describe their experience of the Repair Café.
- Post-project student survey: an online survey which was an adapted version of the pre-project survey.
- Post-project student interview: semi-structured interviews with the students who had attended the highest number of repair café sessions.



FIGURE 1: THE UWE REPAIR CAFÉ (PHOTO CREDIT: KAT CORBETT)



RESULTS AND DISCUSSION

Interviews with two women of colour who participated as student repairers indicated that the Repair Café provided the opportunity to establish new social connections:

“One of the people, we just spoke briefly about our culture and there was a time I brought a fabric, and she was really interested. The fabric kind of signifies our culture. And then we’ve spoken about just general stuff with some of the other people... I think it was welcoming. Everyone felt at ease, and it was easy to blend in. I don’t think I felt different.”

“A lot of people, different people, that I can now say hi to you have a great conversation with that I met. I also met a person who’s also doing textiles who does the same course as me. Yeah, we’re kind of like almost into a sort of friendship where we can talk casually as well.”

RQ1: Student engagement fluctuated over the academic year. Feedback provided by students indicated that they wanted some form of recognition for their participation. For this reason, efforts were made to encourage further participation of students through the introduction of LinkedIn skills badges, food and socialising, and repair kit rewards.

RQ2: From the student volunteers who attended, 61% were male and 39% were female; this compares positively to the national average for university courses. UCAS 2023 admissions data revealed that only a fifth (19%) of applicants for engineering and technology degree programmes were female, while the proportion of women employed in engineering and technology related jobs was 15.7% in 2023.

RQ3: Activities that create opportunities to develop a strong sense of belonging, acceptance and of being supported for individuals of minority backgrounds are important for retention in the field of engineering.

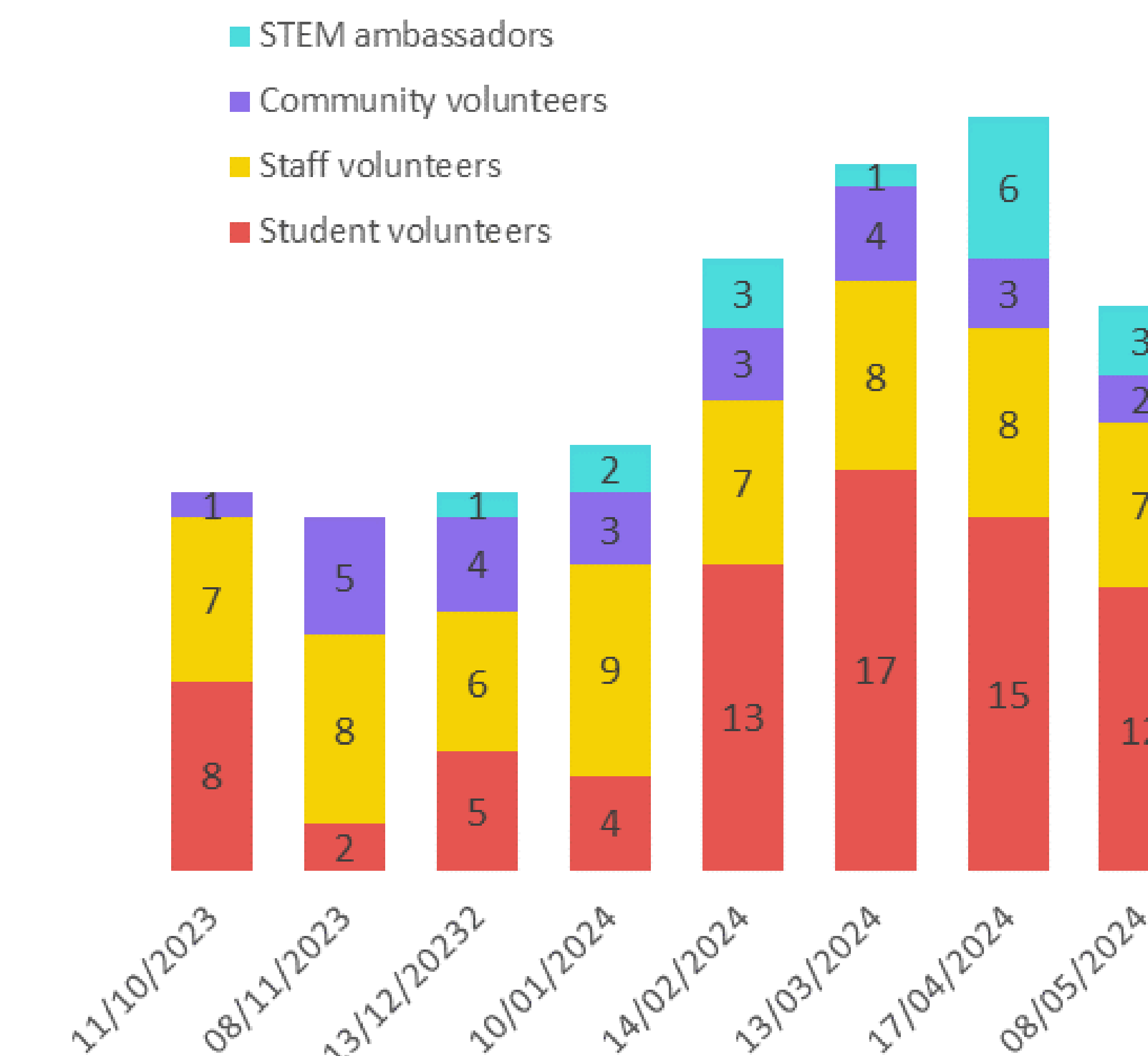


FIGURE 2: A BREAKDOWN OF THE VOLUNTEERS PRESENT AT EACH REPAIR CAFÉ

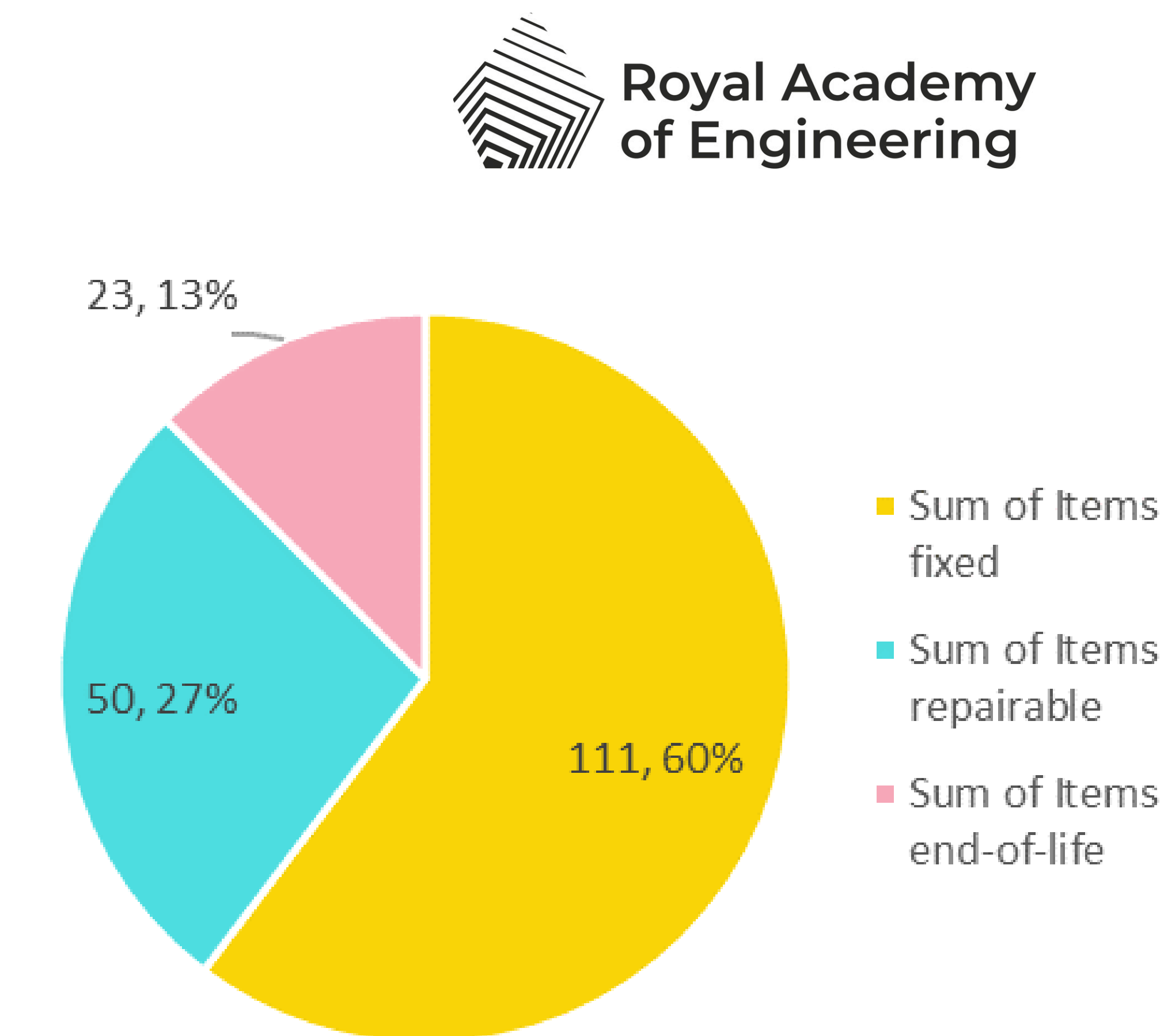


FIGURE 3: OUTCOME OF REPAIRS

Group achievements



Environmental impact

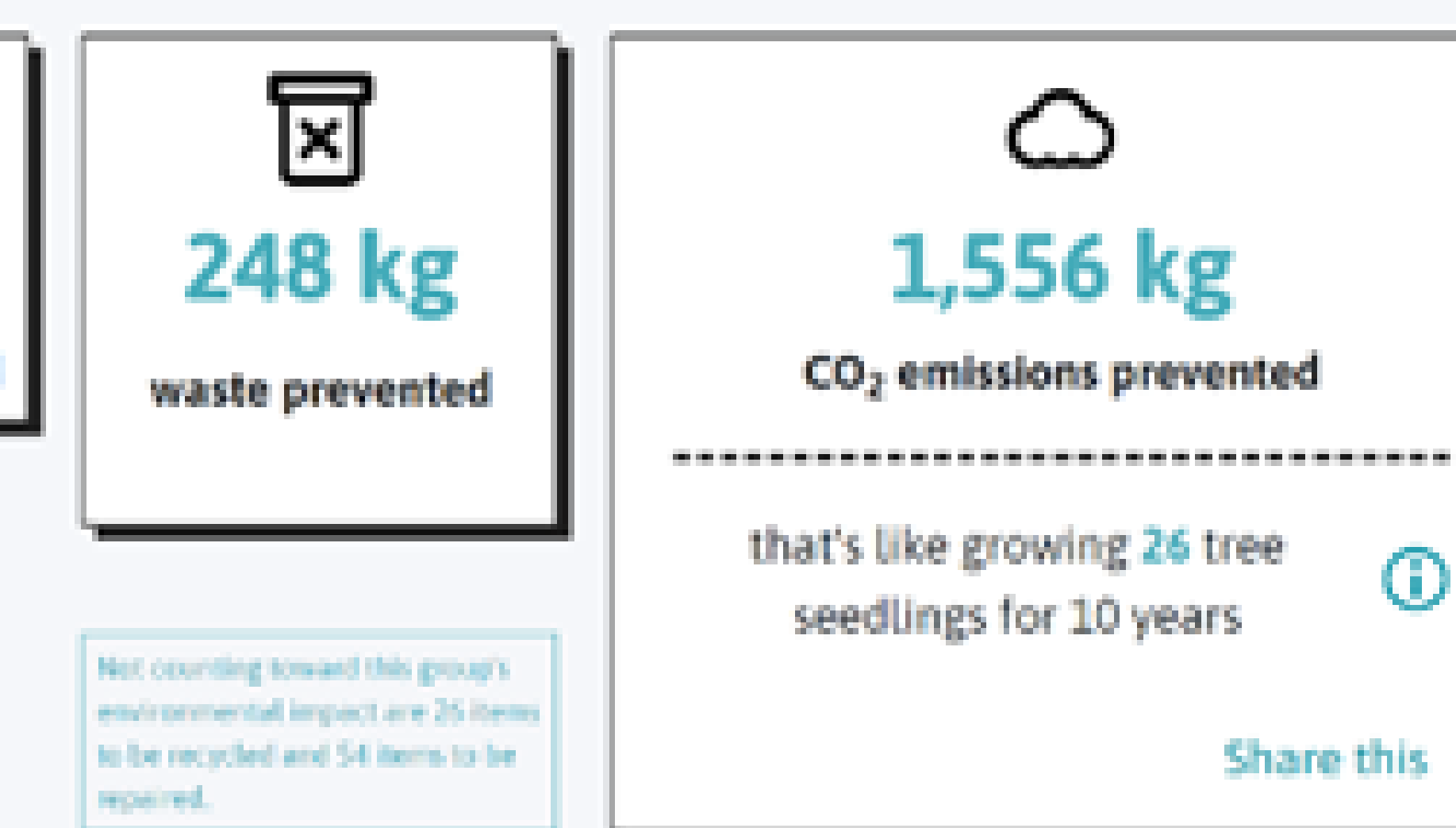


FIGURE 4: A SUMMARY OF MAJOR RESULTS FROM THE RESTART FIXOMETER

CONCLUSION AND RECOMMENDATIONS

For similar initiatives elsewhere, the experience of the UWE Repair Café resulted in the following recommendations:

- A strong network of experienced repairers (both internal and external to the University) was supportive to completing repairs and allowing knowledge to be developed with students.
- Sustained presence of the students depended upon additional methods of engagement, e.g. the LinkedIn skills badges and repair kits.
- With internal advertising, the University community of staff and students provided sufficient items for the Repair Café to sustain itself throughout the academic year.
- The ebb and flow of students before and after Christmas and other holidays meant that there was reduced participation around these times.
- Representation of under-represented groups was supportive to participation of other members from those groups.