



STUDENTS AS
CO-CREATORS

A Curriculum Design Collaboration Evaluation Report

Project Title:

**Education for Sustainable Development:
Games for Climate Literacy**

Student partners

Maja Kurantowicz: Masters of Architecture Year 2

Vanessa Keung: Masters of Architecture Year 2

Sara Vannella: BA Interior Architecture Level 6

Dilay Bakici: BA Architecture Level 4

Academic partners

Dr Ro Spankie: AHoS

Richa Mukhia: 1st year Leader, BA Architecture

School of Architecture + Cities, DCDI

Academic Year 2023-2024

1. Where did the inspiration to do the project come from?

This project is in response to the University's Education for Sustainable Development drive that calls for all courses to embed and champion inclusion and sustainability as vehicles for cultural change through understanding of the SDG's in particular [Target 4.7](#). It is also responsive to the particular role Architecture + Cities has to play in SDG 11: Sustainable Cities and Communities and SDG 13: Climate Action.

That the built environment is currently responsible for 39% of global carbon emissions is well known: 28% from energy needed to heat, cool and power buildings and infrastructure, and the remaining 11% from materials and construction. As the world's population heads to 10 billion by 2050, the global building stock is expected to double in size. The young architects, interior architects, planners and technologists that we educate will have huge part to play in the planet's future.

All the partners of this team (students and staff) completed the Carbon Literacy Training organised by the Sustainability Team and run by Positive Planet. Following this training there was a discussion about '**all the things I would have like to learn in First Year**' in relation to sustainability and climate change - with students saying the issue wasn't being addressed early enough in their education. These conversations led to the idea of a cross-course Climate Literacy Workshop involving BA Architecture, BSc Architecture & Environmental Design, BA Interior Architecture, BSc Architectural Technology, BA Designing Cities and the Foundation in Architecture (@300 students) run at the beginning of first year where the content and material would address how the built environment might respond to the challenges of climate change at a number of scales - from the interior to the city. This workshop is timetabled to run for the first time in Teaching Week 4: 14.10.24 - 18.10.24. and the co-creator project 'Games for Climate Literacy' was set up to explore what the content might be, as well as to design engaging ways to deliver it.

2. What did you set out to achieve?

We started with the idea that architecture is a practical subject so the workshop should be, hands-on and relatable to an incoming first year regardless of what design skills they might arrive with or what their knowledge of the relationship between architecture, sustainability and climate action might be.

We recognise climate change is a global issue and will not be addressed by architectural solutions alone. There are many different but interrelated factors to consider - carbon emissions, global warming, extreme weather events, flooding, biodiversity loss, etc and solutions for one issue can come at a price for another. Games are great pedagogical tools for understanding complex problems and scenario thinking. This is backed by experiential learning theory which tells us that if we are aiming for transformative perspective shifts and cognitive reframing, we cannot tell students what to think but rather must let them see problems and consider solutions for themselves (Kolb, 2015).

The ideas for the four games we developed evolved out of discussions about what did we want the Level 4 students to be thinking about and how could we actively engage all the students. Good games don't offer fixed outcomes, they ask players to test strategies and solutions against defined criteria. While winning can be motivational, playing in groups is important because it offers soft skills such as collaboration, cooperation and creative thinking as well as an informal

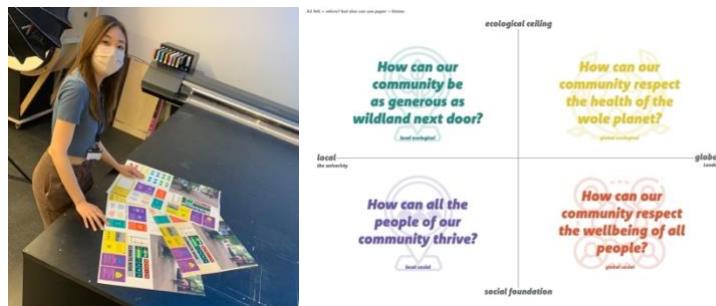
means of getting to know other students. In order to emphasise the soft skills, we felt it was important these games would be hands on, beautifully designed and physically robust so they could be re-used.



The Climate Risk Board, during play

Maja: Climate Risk

Climate Risk is a game inspired by the online game [Half-Earth Socialism](#), which is based on the book *Half-Earth Socialism* by Drew Pendergrass and Troy Vettese. In Climate Risk, players control global political actions by implementing research, infrastructure, or policies, and by managing electricity production, food production, and fuel production. Players learn how their political actions affect global temperatures, emissions, biodiversity, and people's contentedness. The aim of the game is to lower temperatures, emissions, and biodiversity pressure, while keeping people's contentedness high.



Testing materials on flatbed printer, the Doughnut Economics playing board

Vanessa: Doughnut Dynamics

The aim of the game is to educate students about [Kate Raworth's doughnut economy](#), fostering a deeper understanding of sustainable development through interactive discussions and collaborative problem-solving. Through this quick exercise, players will explore how communities can thrive while respecting the ecological boundaries of the planet and ensuring social equity both locally and globally.



Precedent for G[re]jen design it! Idea applied to Marylebone Campus

Sara: G[re]jen design it!

In this game, players embark on a journey to re-design the spaces around the university. Using the students' artistic skills and sustainable thinking, players sketch innovative "after" designs that reduce carbon footprints, enhance green spaces, and promote a healthier environment. Each student will then compare their imaginative transformations with others and see who can create the most impactful eco-design.

Dilay: Twist Your Footprint

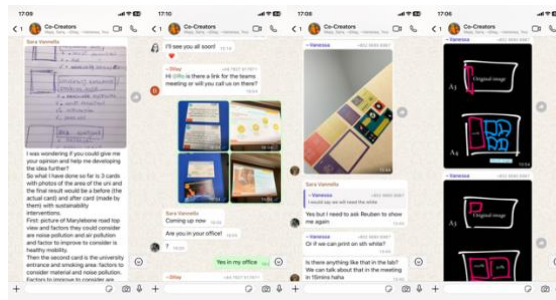
While developing my game, I was influenced by the educational strategy used during the Carbon Literacy Training as well as the game "Twister". The students would be paired up and each pair would be asked the same question and presented with two options. They would go to the next question based on how accurately they answered the previous one. As they advance, the level of questions becomes more difficult, which would make it easier for other students to catch up with them. Unlike other games, guessing wrong would earn the partners more points, suggesting that their ignorance of the subject would result in a larger carbon footprint. Therefore, the students with the most points would lose.

3.How did students and staff work together on this project?

The four students collaborating in this co-production are from the Master in Architecture, BA Architecture and BA Interior Architecture. The two academic partners, Richa and myself, teach in different areas. What unites us is we are all active members of ArCCAT - the School of Architecture + Cities Climate Action Task Force. ArCCAT was set up in 2021 in response to student demand to give them better tools to address the climate crisis. Consisting of a mix of staff and students ArCCAT is committed to 'cultural change in the school of architecture and building collaborative relations between staff and students to collectively develop a more climate conscious curriculum'. As such this project was an ideal vehicle to test out ideas.

In terms of working together it was helpful that we knew each other beforehand and had common agendas in terms of SDG 11 Sustainable Cities and Communities and SDG 13 Climate Action. We set up a WhatsApp group and had a running conversation – often image based rather than text - that ran throughout the project (see images below). As the details of the Level 4 Climate Literacy Workshop to be run in Teaching Week 4 of the Autumn Semester developed, we decided to focus on the games. Each student partner developed a game which they presented and discussed, first as ideas, then as maquettes, and finally developing prototypes. Reflecting on this method, co-creation is how architects typically work both in studio and practice. Buildings are complex and architecture is created by teams not individuals – design solutions responsive to ambitions and parameters informed by all the relevant stakeholders.

What was challenging was finding times to meet. We were a group of six people with very different timetables and schedules and both students and staff had to focus on other important deadlines such as submission dates, end of year shows, etc. We held regular hybrid meetings with some of us on campus and some online and were relaxed about the project developing through short bursts of activity and then quieter periods.



Images from WhatsApp showing initial sketches, precedents and development of final prototypes.

4. What kind of impact do you anticipate that your work may have on learning and teaching going forward (specific to your course/module or in a broader context)? **Richa Mukhia**

The first year is arguably the most pivotal in a young designer's education, establishing the foundations for how they observe and respond to design challenges big and small. The project embeds the climate crisis at the front and centre of student learning emphasizing its critical relevance across all disciplines. By taking students out of their usual timetable and cohorts and dedicating a week early in the year to focus on the subject, we hope to emphasise to underscore the urgency of the climate crisis and the need for radical approaches to address it. The strategic timing means that we can capture students' imaginations when they are fresh and full of energy. It also means that this will become a foundational moment in the year that students and staff are able to refer to across the years in the context of other project and briefs.

Another significant benefit is the opportunity to collaborate with peers from across the school. Due to timetables and other factors, there are sadly very few opportunities for students from different courses to work together. We anticipate that this project will foster an appreciation for the power of collaboration among students, with the bonds formed during these workshops enriching their entire university experience. Specifically, the integrated games are designed to facilitate peer learning and knowledge exchange at a particularly formative moment of their academic journey.

Finally, we aspire for the games to instil a sense of optimism, stemming from students' recognition of their agency and their potential to effect meaningful change.

5. Any lessons learned from working in partnership?

“Being a Co-Creator has allowed me to exchange ideas with other creative minds that share the same passion for education on sustainability as myself. Developing the game and researching the questions has allowed me to learn and understand different levels and depths of knowledge on sustainability. As I have embarked upon this journey, I have become more eager for the impact my

game might have on the upcoming students and on igniting their curiosity for the same cause.”
Dilay Bakici

“This co-creators project has been tailor-made for me because I am passionate about climate action and education, and I love board games. Designing my board game has been very fun, and being able to create something that will teach students about a topic I care deeply about has been very motivating and fulfilling.” **Maja Kurantowicz**

“I am so grateful to have accepted this role as a co-creator in the “Sustainable Games” project. As someone passionate about how better design can foster more sustainable and healthier spaces, this project has made me feel part of a bigger cause. Spreading the knowledge about sustainability to the new generation in a fun and engaging way fills me with hope and a deepened sense of responsibility towards our planet.” **Sara Vannella**

“The word design comes from the Italian word ‘disegno’ meaning a drawing, but also the drawing out of an idea; an etymology that emphasises the importance of thinking through doing. Working with a co-design paradigm adds collaboration, communication and creativity to the mix. The task we had set ourselves was a challenging one because there are no easy answers to climate change. It has been inspiring to watch is how the four student co-creators used their knowledge, and their design skills, combined with reflections from their own educational experience to work together and design the games.” **Ro Spankie**

