

2024-25 HIVE Summer Internship Project

Mapping Local Community Based Sustainable Initiatives designed to eliminate waste.

32HUM_DBE_MappingSustainableInitiaves

Primary Academic Supervisor

Assoc. Prof Brad Carey

Project Background

The overarching project is a collaboration between School of Design & the Built Environment (DBE), Curtin University and the Eurasia School of Art and Design (EAaD), Xi'an Eurasia University, China. It contributes to Australia's national interests in terms of sustainability, prosperity and cooperation by addressing the UN 2030 Agenda on Sustainable Development adopted as a domestic and international agenda in Australia and China. Specifically, it engages with communities in Perth and Xian and contributes research-based case studies to UNSDG11 Sustainable Cities and Communities and UNSDG12 Responsible Consumption and Production. This project examines localised circular economy strategies found to be common to communities in Perth and Xi'an. It focusses on sustainable practices 'on the ground' in local communities in these cities, and also explores how local practice has potential for global application. The research considers the capacity for community to effect change in addressing climate change and how this can be supported through design solutions. By strengthening people-to-people links between Australia and China through practical collaboration and exchanges in academia, this project contributes to positive climate change outcomes, via targeted research on sustainable practices in comparative community contexts and development of associated public communication activities. Foundation eco system mapping of Perth was conducted in 2023, with eco mapping of Xi'an to be conducted in November 2024. Key outcomes include a comparative mapping of community-based sustainable practices in Perth and Xi'an as well as reciprocal staff and student exchanges resulting in practical design solutions, community-based workshops, a bilingual website with videos and digital visualisations, and a joint exhibition to be shown at Curtin and Eurasia, to ensure the project's maximal outreach and impact in Australia and China.

Project Description, Expected Outputs, Possible Stretch Goals

DBE and EAaD have been developing new joint research focussing on community-driven sustainability since 2023. To pilot this research, EAaD hosted a preliminary visit and workshop by DBE staff in late 2023, and in turn DBE hosted a delegation of EAaD staff and students in mid-2024 to participate in the Curtin Sustainability Challenge and undertake exploratory mapping of city-to-city comparative data; EAaD will host a reciprocal visit by DBE students to Xi'an in November 2024. This preliminary research has identified sufficient information to support the investigation into the power of visualisation to enhance the reading and communication of data and associated narratives. Through inter-personal communications and cross-community storytelling, this project creates the opportunity to listen and learn from each other for common sustainability goals. The project website will serve as the context for documenting, sharing and promoting these narratives about community-driven sustainable practices via videos, visualisations and other resources, and the conduit for ensuring its outreach, impact and longevity. All content will be bilingual or available in translation to maximise accessibility. The videos will chronicle the unfolding project story including the fieldwork and community workshops. The exhibitions showcasing the design solutions will be documented using Matterport 3D for the website, digitally representing the physical exhibitions virtually for people to 'walk through' and explore. Visualisation of ecosystem mapping will

1. Support the examination of relationships between local community and businesses.
2. Contribute to identification of potential for circular HUB development.
3. Be used as a critical tool in the communication with industry and consumers community.

Links to background reading and any relevant recent work in the field

Digital Twin Exhibition <https://hive.curtin.edu.au/research/ctl/>

Ellen Macarthur Foundation <https://www.ellenmacarthurfoundation.org/>

How Communities Can Take Action on Climate Change in WA

<https://www.climateaction.wa.gov.au/how-communities-can-take-action>

The State of Fashion Textile Circularity in Western Australia - REPORT

<https://www.curtin.edu.au/about/futures-platform/the-state-of-fashion-textile-circularity-in-wa/>

University of Melbourne, Melbourne School of Government. 2017. Next Generation Engagement project Impact of

community engagement on sustainability outcomes

https://msd.unimelb.edu.au/__data/assets/pdf_file/0006/3027795/Next_Gen_Expert_series_D_Hes-1c4ud7u.pdf Waste Authority of Western Australia <https://www.wasteauthority.wa.gov.au/>

What type of visualisation will the student develop or produce?

There is opportunity for investigation into the application of a range of visualisation tools.

How will the visualisation contribute to your research outcomes?

The visualisation will contribute to a major research project by providing a visualisation of foundation research involving the mapping of local community engagement in sustainable initiatives and action designed to keep materials and resources in use. The visualisation will support the identification of sites, activity density and contribute to regional Eco mapping.

If the project is successful, where would you consider publishing the results?

HIVE Visualisation has the potential to contribute to the exhibition and website, which are planned outcomes of the major research project - "A Sustainability Tale of Two Cities: Mapping, Designing and Exhibiting Comparative Strategies for Community-Based Sustainable Practice in Perth and Xi'an". Exhibitions are planned for presentation in Perth and Xi'an China with the 'publication' of an associated website.

Draft Project Timeline:

Week 1

Review of project material and data.

Week 2

Visual documentation of Perth sites of community action.

Week 3

Review new data from Xi'an City mapping. Raw video data provided.

Week 4

Video interviews with researchers to document narratives

Week 5

Editing videos to best reflect narratives.

Week 6

Editing videos to best reflect narratives.

Week 7

Mapping sites and narratives together

Week 8

Mapping sites and narratives together. Finalise visualisation.

Week 9

Draft Report completed for discussion with supervisors.

Week 10

Review and completion of presentation.

Student Experience and Supervision:

How often will you meet with the student over the 10-week period?

Staff are available to meet in person or via online meeting 1-2 times per week. Further communication via email can also be accommodated.

Your work desk location and the location of student desk

Building 418, level 4 staff desk area. Open Plan staff area. Student can be accommodated in the Post Grad hot desks.

Student Attributes:

Please indicate any preference for student's academic discipline or field of study

Film and or Design are preferable.

What competencies are required to start this project

Intermediate - 2D image and/or video software (e.g. Adobe Suite, Sony Vegas)

Intermediate - 3D modelling software (e.g. Blender, 3ds Max)

Intermediate - Unity 2D/3D Artistry (assets, lighting, cameras, materials implementation)

Beginner - Unity Virtual Reality Development (rendering pipelines, scene content design, interaction)

Intermediate - Creativity

Advanced - Communication Skills

Do you have any other student attributes you think are important to the project?

Not applicable