

EMBEDDING CIRCULAR ECONOMY PRINCIPLES WITHIN RMIT'S SOCIAL INNOVATION PRECINCT

MAY 2023



Executive Summary

This report presents findings of a research project conducted across RMIT's City North precinct development project, the Social Innovation Precinct (SIP). The project was funded by the Victorian Government, through the Social Innovation Hub of RMIT. The aim of the project was to conduct primary research to understand how best to include Circular Economy (CE) principles in the Social Innovation Precinct development plans. A mixed-methods approach was used, which included interviews with key internal stakeholders, analysis of RMIT policy documents and a survey with RMIT community and traders.

Findings - The majority of the CE actions within internal RMIT policies and strategies focus on recycling and recovery, which are aligned more with linear economy principles. There is minimal focus on higher order, design driven CE actions like repair, repurpose and refurbish. The RMIT community has a high interest in an Op-shop and repair café setup within the area. Awareness of the SIP was limited within the RMIT community. There is a lack of access to waste management services and options for waste separation at source creating challenges for businesses. Building owners/landlords play a critical part in decision making for energy and water use and can influence more circular behaviour of businesses.

Recommendations - Include CE experts during each stage of plan development including design and conceptualisation. Use a higher order CE metric to report on circularity impact of the project, for instance waste avoided rather than recycling rates. Setting-up a repair café and/or op-shop accessible to the RMIT Community. RMIT should raise awareness to retailers on how incorporating circular business models can be beneficial and incentivise retailers to adopt such practices.

Next steps - Engaging with the Social Innovation Hub to disseminate these findings across the RMIT community. Increase responses for the survey and conduct further analysis which can help designing more engaging actions for the community. Develop an on-line/social media engagement model with businesses in the area.

Introduction

The Social Innovation Precinct (SIP) is an RMIT-driven strategic precinct planning and renewal project, targeted to the north of the CBD area of Melbourne. The SIP is funded by Victorian Higher Education Strategic Innovation Fund, and is led by RMIT's Policy, Strategy and Impact (PSI) team. The plan is underpinned by 5 key design principles and aims to enable cross-disciplinary innovation and capability building by combining RMIT's strengths across applied teaching, research, and partnership to support growth and innovation across 4 key sectors; human services and wellbeing, engineering and future manufacturing, sustainable urban development, and digital and business transformation.

Under the sustainable urban development area, the Integrated Circular Economy, Climate Resilience and Clean Energy Platform (IC3P) of RMIT received internal funding to undertake a research project to explore how Circular Economy (CE) principles could be embedded within the SIP. This report presents the findings of the research project and provides recommendations on how best to incorporate and achieve CE outcomes within the SIP.

Scope

The funds to start the project was received in mid-July and the project needed to be completed by December 2022. The project aimed to contextualise previous CE related work conducted by the IC3P and the Victorian Circular Activator (VCA) team, which included CE ecosystem mapping and circular business models to the SIP region. The geographical scope of the project is shown in Figure 1, which included the 2-block region of the SIP and a wider area (also marked) for data gathering purposes.



Figure 1: Project area

Ethics approval to conduct interviews and questionnaire surveys for this project was obtained in August 2022, through an amendment to an existing Human Research Ethics approval researching on circular economy.

Project Goals

The overall aim of the project was to recommend actions that could increase the CE outcomes within the early stages of the SIP redevelopment project. To achieve this, the following research objectives were pursued:

1. To understand how RMIT Policies and Strategies can be utilised to achieve Circular Economy (CE) transition
2. To engage with key internal stakeholders to understand their needs for CE transition
3. To understand RMIT community needs related to the development of the precinct
4. To understand challenges faced by external stakeholders such as businesses in and around the SIP precinct
5. To engage with businesses to understand needs and raise awareness of the SIP
6. To propose recommendations toward integration of CE principles within RMIT

What is a Circular Economy?

“Circular Economy is an economic system that targets zero waste and pollution... from extraction to... consumption. Upon its lifetime end, materials return to either an industrial process or..., safely back to the environment as in a natural regenerating cycle. It operates creating value at the macro, meso and micro levels...” (Nobre & Tavares,2021¹)

How to achieve circularity can be simplified by identifying different strategies, typically presented as R strategies. Moving from lower order R strategies (R9 – R8) to higher order strategies (R1 – R0) increases circularity of a system. A higher level of circularity also results in fewer natural resources used and less environmental pressure.

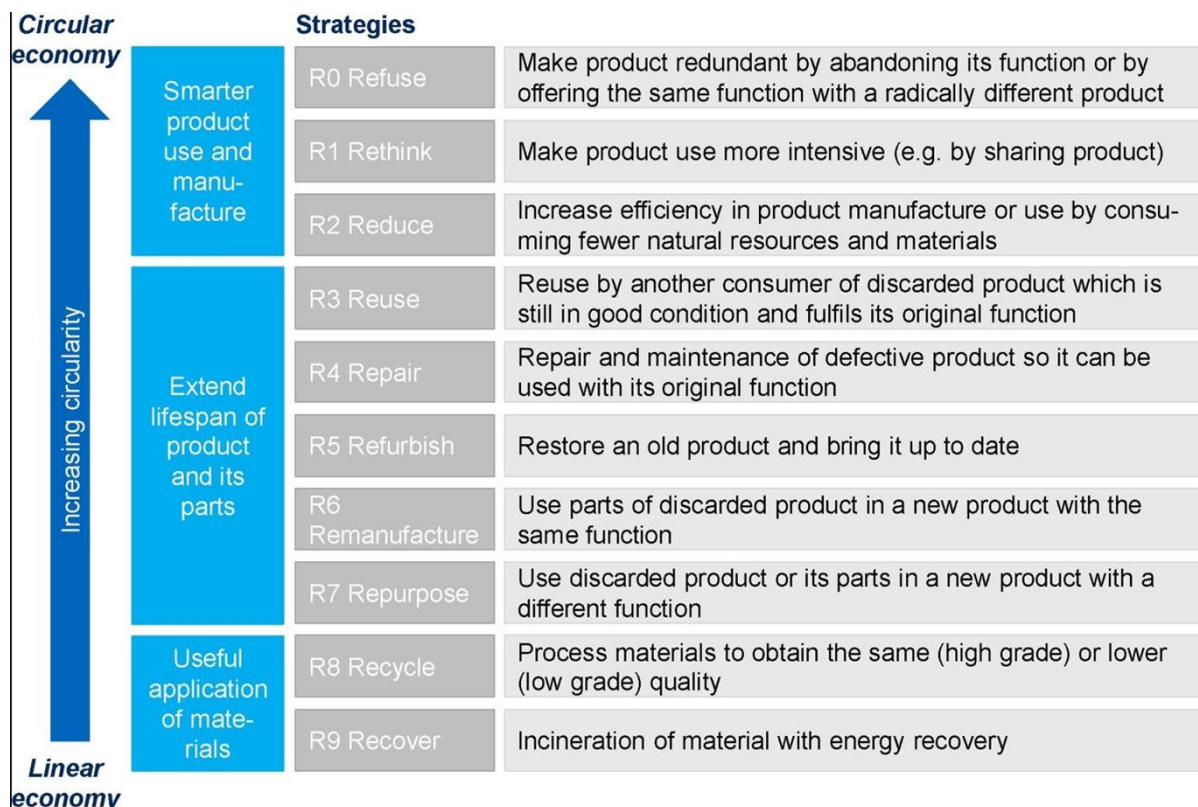


Figure 2: R-strategies to achieve circularity, Source Potting et.al, 2017²

This definition of CE and R-strategies have been used to analyse the level of circularity within this research project.

¹ Nobre, G.C. and Tavares, E., 2021. The quest for a circular economy final definition: A scientific perspective. Journal of Cleaner Production, 314, p.127973.

² Potting, J., Hekkert, M.P., Worrell, E. and Hanemaaijer, A., 2017. Circular economy: measuring innovation in the product chain. Planbureau voor de Leefomgeving, (2544).

Methods

A mixed-methods approach was used for this project to achieve the multiple objectives.

Analysing relevant RMIT policies and strategies

Interviews with internal RMIT staff working within the PSI area were conducted to get an in-depth understanding of the current CE related work conducted at the University and the broader sustainability related work pursued within the SIP to date.

In addition, key policy documents relating to the SIP project and Sustainability at RMIT were analysed. These documents included both publicly available documents, which were obtained through the RMIT website and internal documents, which were shared with the research team by the interviewees and the PSI team.

Surveys with RMIT community

A questionnaire survey within the RMIT community was deployed to understand sustainability and CE related behaviours of those who frequent the RMIT City campus. Participants included RMIT staff, students and visitors. The survey was designed on Qualtrics and distributed online through face-to-face interactions and distribution of a QR code with the relevant link. The survey was distributed across a period of 3 months and 147 responses were collected. After initial filtering, 89 responses were usable for further data analysis, accounting for a positive response rate of 60.54%.

Business survey with traders within the SIP

A business survey with selected stakeholders was conducted to understand the businesses' orientation towards sustainability and circular economy principles connecting social innovation. Both paper and online surveys were undertaken to collect data.

Engagement session with identified traders in the area

A trader engagement workshop was planned under the project, as a collaborative space to explore circular and sustainability actions, aspirations, and barriers with traders.

The Trader Engagement workshop was scheduled for late 2022. Despite face-to-face engagements to encourage attendance at the workshop, low registration numbers in early December forced the decision to pivot the trader engagement method. Engagement was instead facilitated via development of a targeted Facebook page, designed as a peer to peer collaborative learning and discussion forum for traders, moderated by RMIT Activator.

Findings

STAKEHOLDER AND POLICY ANALYSIS

The interviews and analysis of policy documents highlighted that environmental sustainability is a key focus of the University's operations and strategic plans. Interest in CE has increased in recent years, which has prompted CE related strategies and actions to be implemented across the University. RMIT Property Services has good relationships with suppliers and vendors within the city campus, and has been working to increase awareness and sustainability actions of these businesses.

"The circular economy plan... which looks at our waste operations to look at... maximizing our diversion from landfill... [Working with] ... our supply chains and seeing what we can do... promote resource recovery, [is] one of our key targets." - P2

As with most CE policies across Victoria, current actions within RMIT focus on lower order CE strategies such as recycling & recovering materials and using recycled content. There is less focus on higher-order strategies such as reducing, refusing, refurbishing and reusing products. This is more so the case with high functional products such as IT equipment and furniture.

As CE related actions are a relatively new concept within the RMIT ecosystem, there is minimal CE related work within campus construction and renovation projects. Most of the CE activities in such projects relate to the use of recycled material for construction and less on circular design, refurbishing, and reducing the need for new construction. This is evident within the SIP Options report, where CE actions identified focus on recycling and recovering construction and demolition waste.

"We have constant refurbishments [and] new builds across all our properties. So, for us it will be to increase the uptake of recycled materials... and the reuse of materials." - P3

Another finding through the analysis was that sustainability performance measures typically focus on the operational phase of the project, rather than in the design stages. However, a comprehensive CE strategy needs to be implemented from the planning and design stages so that higher order strategies can be implemented for improved circular outcomes.

Survey with RMIT Community

The survey was designed in two parts: understanding activities related to CE and waste management to get an in-depth understanding of the community's CE and sustainability knowledge and related daily activities.

Activities related to CE

A majority of the respondents indicated that they take individual sustainability related actions. Below are the most selected activities

- Refill my water bottles (76%),
- Use cloth shopping bags, or reused plastic bags (71%),
- Buy second hand and used items such as clothes, furniture (71%)
- Not to print paper unless I really need to (67%)

There was a high interest in purchasing and using pre-loved items, with over 20% and 30% of the respondents stating that a majority of their items are pre-owned or they shop and use some preowned items respectively.

High numbers of participants said that they would visit an on campus opshop or repair cafe, with 45 responses for the Opshop and 39 responses for the repair café (see Figures 3 and 4). Only 2 and 10 respondents were not interested in the Opshop and repair café respectively.

"Op-shop in campus is such a 'cool' idea!" - IS55.

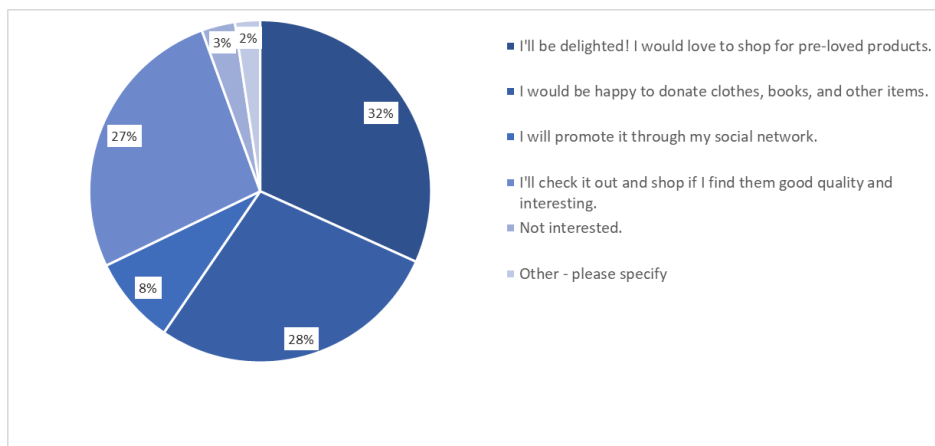


Figure 3: Interest in an Op-shop at RMIT

The SIP project was also seen as an opportunity to showcase the CE and Sustainability work that RMIT conducts; leading by example.

"I would link this with the RMIT Maker Space and Repair Café being organised by the CE Hub and make it more than an op-shop. Use it as a venue of zero waste and repair education of the community" - IS45

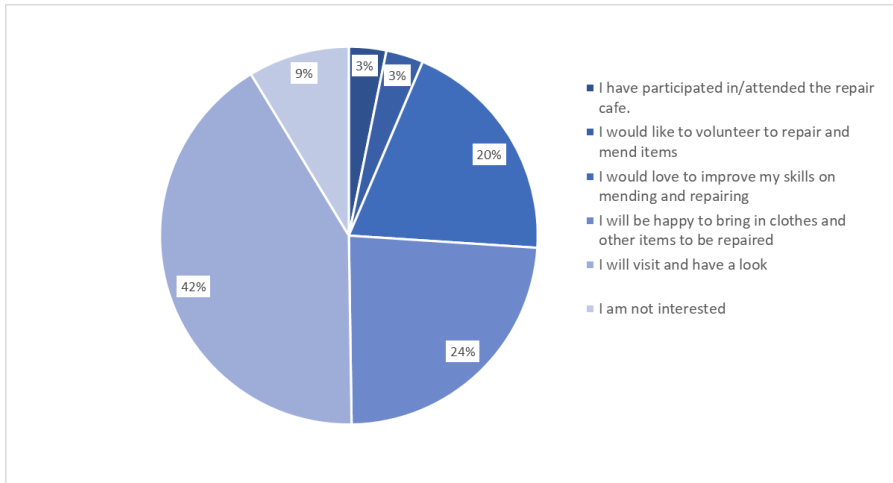


Figure 4: Interest in a repair café at RMIT

Waste management

Awareness of how to dispose waste using the on-campus waste bins as well as reading and adhering to disposal instructions on packages were considered to be a desirable habit. A majority of respondents stated that using the bins on campus was simple and easy.

Community recommendations on waste collection included: *"There are no green and food waste bins. People seem not to know which bin to use, so too many people put the wrong things in bins"* - IS64+IS45

"In classrooms, there only tends to be a general rubbish bin, no recycling or food waste which defeats the purpose" - IS47

Survey with businesses

Initial geo-spatial analysis of the survey area showed that there were approximately 142 businesses located within the area, the vast majority of which were hospitality traders.

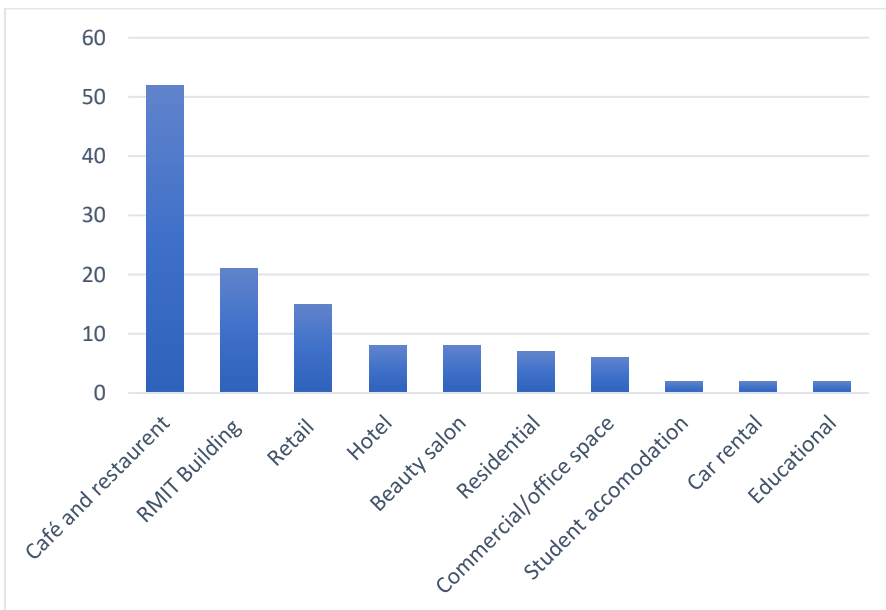


Figure 5: Frequency of business types within SIP project area.

Due to the high density of hospitality businesses (predominantly cafés and restaurants) located in the SIP project area, this type of business was targeted for data collection. The hospitality sector is also well positioned to consider actions to support a transition away from linear practice, considering high (material) input and waste levels. All hospitality traders were approached for the survey. However, only 11 responses were received from a total of 142 businesses (7.75% of the total survey population). Despite the low response rate, the data is insightful.

Results from Business survey

Most hospitality traders were associated with food retailing and food and beverage services, representing more than 73% of the total businesses in the area. Most businesses employed between 5-19 employees (over 70% of the businesses), and annual turnover was less than \$10 million for 91% of businesses.

Overall consideration and application of circular or sustainability principles was low across this trader cohort. Only 36% of the businesses mentioned that they consider environmental and sustainability principles in their everyday operation (Fig. 6(A)).

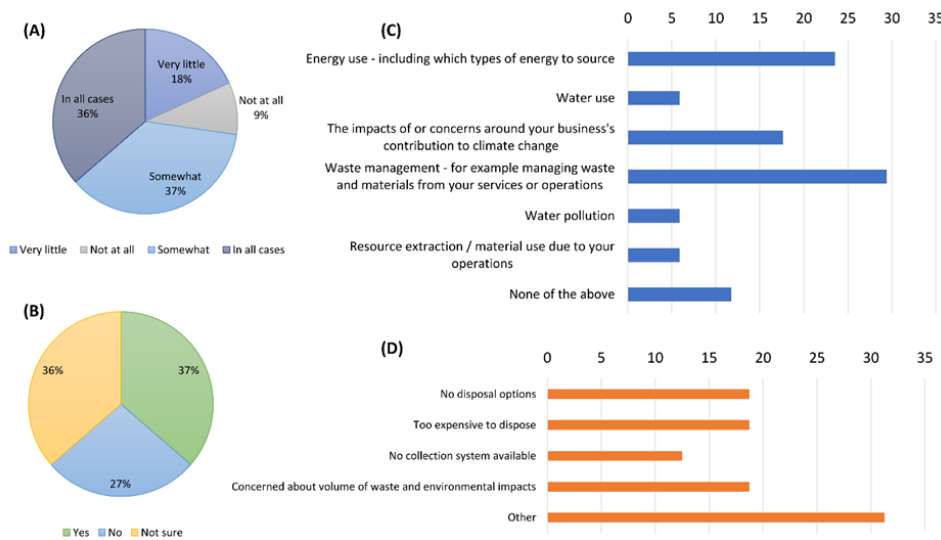


Figure 6: (A) Sustainability principles applied to business operation, (B) awareness around circular economy, (C) main environmental issues impacting businesses, (D) challenges associated with the waste and /or by-product. Number are in % of businesses.

There was a relationship between the types of inputs used and outputs/wastes produced. This was evident specially with the relationship between fresh produce as an input and organic waste as an output. An interesting find was that soft plastic was a major waste (17%), although this was not identified as a major input. A possible reason for this could be that the majority of soft plastic coming into businesses were packaging of other products, such as food and beverage items.

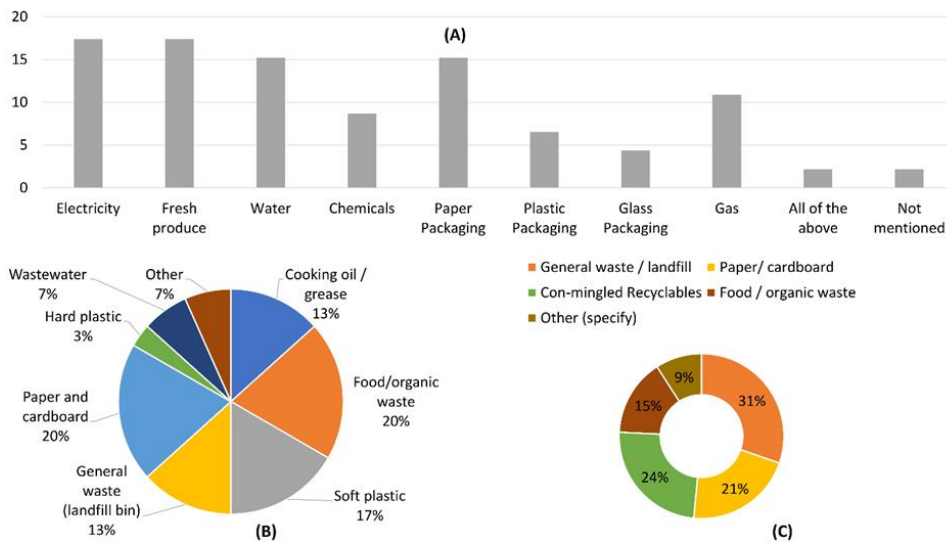


Figure 7: (A) Major inputs, (B) Output or waste generation and (C) Major bin system utilized by the percentage of the business

Sustainability initiatives - present and future

Using energy and water efficient appliances was the most used sustainability related initiative. However, there were a large number of businesses that had not taken any energy or water saving measures (25% and 17% respectively). These actions were also identified by those businesses that are aspiring to take actions on the energy and water aspects of their business.

On the material aspect, using recyclable or compostable packaging and separating waste for recycling/composting was the most popular actions. Separating organic waste and finding an alternative to landfill were identified as the most popular actions that businesses aspire to take in the future.

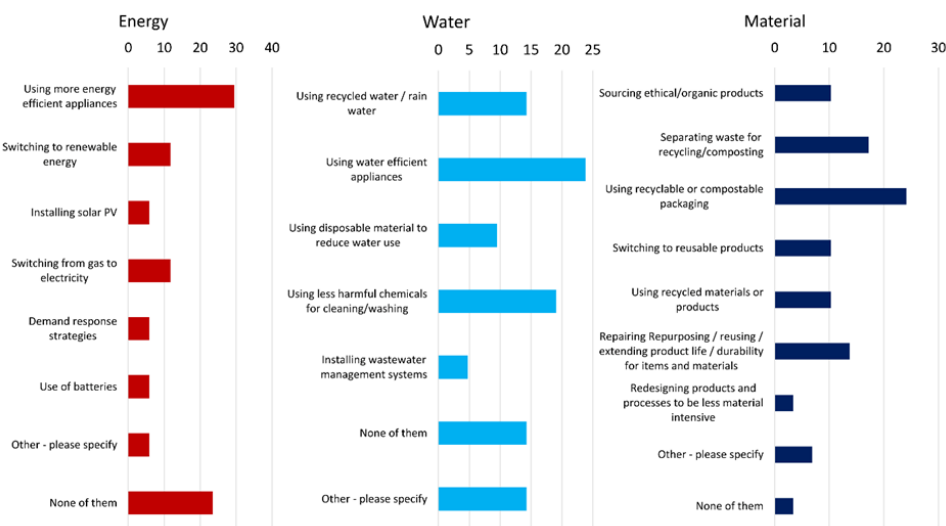


Figure 8: Current sustainability initiatives taken by businesses

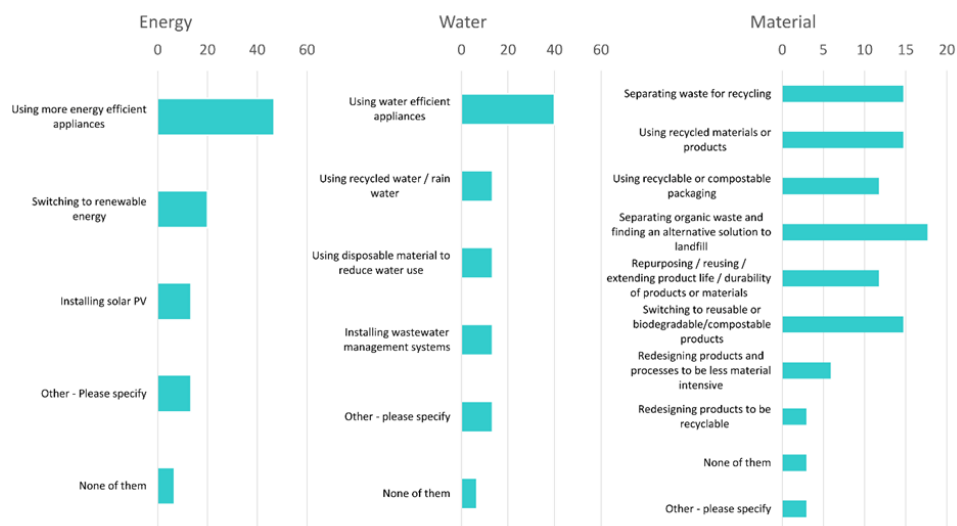


Figure 9: Future perspectives of business initiatives around sustainability

The survey also revealed that "Climate /social conscience," "the right things to do," and "business strategy/ organizational policy" were the main drivers to considering sustainability initiatives. This is consistent with the imperative for brand recognition and therefore differentiation for hospitality businesses, as a main driver of customer volume and revenue.

However, many respondents indicated that initiatives the businesses would take are influenced by the building owners, particularly pertinent for campus traders. For instance, energy and waste are regulated by RMIT property services department for businesses located on campus premises. Despite their strong interest in taking further steps, many business owners noted that it is RMIT's responsibility to establish energy-related installations such as solar PV or heating equipment due to their status as renters. In addition to those factors mentioned above, "upfront costs/financial considerations," "not owning the land/premises," and "lack of viable business models" were the three main barriers highlighted by the businesses in regard to implementing future sustainability initiatives.

Engagement session with identified traders in the area

Analysis of low engagement levels from trader contacts highlighted significant barriers such as lack of time (particularly the decision-makers targeted for engagement), lack of available staff to dedicate to additional actions/engagement beyond BAU (particularly considering staffing challenges post-COVID 19), proximity to the end of the year (particularly pertinent for campus traders whose main business is generated by students/teaching staff), and a general low motivation to allocate time to a workshop with a relatively unknown outcome for their business.

After discussion and analysis of successful trader engagement methodologies, it was determined that a dedicated Facebook group and page would offer a more successful means of ongoing engagement with the trader cohort. This online forum will offer a space for ongoing and targeted engagement, as well as a closed peer-to-peer environment for traders to collaborate and information-share. The Facebook page has been designed to offer the following:

- Information and resources
- Ideas and stats

- Suggestions for action
- Polls and feedback
- Upcoming business improvement and CE/sustainability opportunities

The Facebook page can also be a forum for RMIT partners and collaborators to share upcoming opportunities and communicate directly with traders from the SIP precinct. Strategic discussions are being facilitated with the CBD North program, Social Innovation Precinct team, City of Melbourne, the Victorian Circular Activator (VCA), and others. The project team is also exploring knowledge sharing and collaboration opportunities with concurrent projects with a similar circular hospitality focus, such as the VCA Collaborate to Thrive project.

Additionally, alternative engagement activities such as showcases and webinars could provide an opportunity to introduce SIP and CE practices to the RMIT community, as well as showcase local innovative products and services suitable for a circular transition for the hospitality sector.

Key Insights

STAKEHOLDER AND POLICY ANALYSIS

- CE is considered as part of the sustainability decision making process
- Current CE actions at University level are typically lower order R-strategies, with minimal focus on higher order strategies
- Minimal CE work takes place at building/site development stages
- CE actions in the SIP Options report focuses on recycling and recovering construction and demolition waste
- Sustainability performance measures for the project focus on the operational phase

SURVEY WITH RMIT COMMUNITY

- RMIT community has a limited understanding on the SIP project, in particular what SIP is and what it offers or is aiming to achieve.
- Individuals have a low understanding of circular economy concepts even though they have personal activities related to circular economy.
- In general, the RMIT community has a positive attitude toward initiatives which aim to transform our system into circularity, moving away from a linear economic pattern.

BUSINESS SURVEYS

- There is a strong intention among businesses achieving sustainability and CE-related actions, however CE-related knowledge and awareness are limited.
- Lack of access to waste management services and options for waste separation at source creating challenges for businesses.
- Building owners/landlords play critical part in decision making for energy and water use.
- Businesses are asking for sustainable products and business models, incentives/funding and strategic partnership.

TRADER ENGAGEMENT SESSION

- Face to face engagements and attendance remains challenging, particularly in a post-COVID landscape
- Traders remain interested in learning about the CE and opportunities to take further action, however this interest doesn't easily translate into proactive decision-making and action
- Engaging in an easily accessible online forum may prove to be more successful as a means to share information and opportunities, and encourage peer-to-peer connection
- Sharing information about CE/sustainable initiatives undertaken by peers may act as a critical inspiration and entry-point for future engagement and to encourage action

Recommendations

This section provides recommendations for different aspects of CE within the SIP project. The recommendations are presented in three parts, covering policy and strategic planning, community engagement, and business engagement.

POLICY AND STRATEGIC PLANNING

- Include CE experts during each stage of plan development including design and conceptualization, through to operations and end of life.
- Use a higher order CE metric to report on the circularity impact of the project.
- Prioritise reusing, repurposing and refurbishing existing assets (buildings) and equipment where possible (furniture, IT equipment) and showcase this as an exemplar CE project
- Continue to engage with the Victorian Circular Activator to extract learnings and findings from simultaneous projects exploring a CE hospitality transition model and actions. Explore future collaborative project and funding opportunities in this realm as appropriate.

COMMUNITY ENGAGEMENT

- Disseminate survey, increase engagement and share survey findings with stakeholders, including survey respondents, local traders, university collaborators, and other relevant networks.
- Engagement activities such as showcases and webinars could provide an opportunity to introduce SIP and CE practices to the RMIT community, as well as showcase local innovative products and services
- Bin systems in the campus should provide more informative instructions for disposal and consider having different bins for different waste types such as organic, soft plastic, recyclables, glass. This also supports user education and behaviour change for CE.
- More products or activities to demonstrate CE implementation around the campus such as repair café, Op-shop and repair/redesigned electronics. These could also become a source of skills training in CE across both the VE and HE sectors.

BUSINESS ENGAGEMENT

- SIP development team should conduct awareness raising campaign on CE and circular business models for businesses and building owners/landlords (I.e., where the business is located).
- Together with City of Melbourne and other stakeholders, the team should revisit the current waste-bin system based on waste generation patterns by the businesses.
- SIP team should engage with policymakers (City of Melbourne) developing dedicated waste collection mechanism
- Sharing platform-based circular business model can be utilized to reduce unsold food waste that could also generate revenue for businesses. Placing appropriate waste collection bins, especially for glass and organic waste, would generate resource recovery type business models. Suppliers providing circular products (e.g., reusable container, biobased products) could be integrated in the value chain.
- Provide CE related advise and awareness to businesses

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