Plan Overview

A Data Management Plan created using DMPonline

Title: TRACE+

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Template: UKRI Template

Project abstract:

Scotland's construction sector generates up to 50% of the country's total waste, yet only 1.3% of its resources are cycled back into the economy, one of the lowest circularity rates in Europe. While national policy, including the Scottish Government's Circular Economy and Waste Route Map to 2030 and the EU-funded CirCoFin programme, identifies reuse hubs as a priority intervention, a critical gap remains: no design framework currently exists that treats the reuse hub itself as a commons, a shared resource to be designed with, not just for the community it serves.

TRACE+ addresses this gap through a community-engaged, design-led research project centred on the Stirling Reuse Hub (SRH), Scotland's pioneering community construction reuse hub, established by Transition Stirling in 2022, operating from a 14,000 sq. ft warehouse and serving the wider Stirling community with reclaimed and surplus construction materials. Building directly on the TRACE project (Transforming Resources and Advancing Circular Economy), which developed a blockchain-enabled digital marketplace prototype for construction material reuse, TRACE+ extends this work into the domain of architectural design by asking a new and urgent question: how should a circular reuse hub look, feel and function when its very building is designed using the circular economy principles it champions?

The project will conduct a series of participatory design experiments in which the community, SRH staff and design professionals co-design the future Stirling Reuse Hub, conceived as a physical commons, using reclaimed and secondary materials sourced from the Hub's own inventory. Design is conducted in a bespoke virtual environment developed by industrial partner Adventurous Systems Ltd, which encodes a material aesthetic of circularity: surfaces bear the patina of use, components exhibit heterogeneity rather than uniformity, and the visual language of the building reflects the imperfect, storied quality of reclaimed material, drawing on principles akin to Japanese wabi-sabi philosophy, where impermanence and authenticity are celebrated rather than concealed.

The blockchain layer developed in TRACE serves a dual function in TRACE+: as a material tracing system (recording the provenance, condition, and location of every design element considered for reuse) and as a governance mechanism (applying Elinor Ostrom's commons governance principles through smart contracts that encode community decision-making rules, access rights, and shared stewardship obligations). Together, these create what the project terms a 'governed circular design environment' - a setting in which the act of design is itself a commons practice.

The project produces three interconnected outputs: a validated community based co-design methodology for circular buildings; an enhanced and tested TRACE marketplace prototype

with extended material and governance functionality; and a set of design principles for circular aesthetics in the built environment, principles that challenge the dominant paradigm of 'pristine and new' in construction in favour of material honesty, heterogeneity, and temporal layering. These outputs will be disseminated through academic publication at the European Council on Computing in Construction (EC3) and through industry engagement with Zero Waste Scotland, BE-ST, and the wider CirCoFin network.

TRACE+ is uniquely positioned at the intersection of design research, digital innovation, and community practice. It offers Scotland a replicable model for how reuse hubs across the country can become not just repositories of reclaimed material but living demonstrations of circular economy design, governed by and for the communities they serve.

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TRACE+

0. Proposal name

0. Enter the proposal name

TRACE+

1. Description of the data

1.1 Type of study

1.2 Types of data

This research will be qualitative in nature. The proposed research strategy will cover case study interviews and focus group through a workshop. Furthermore, the questions for the case study interviews and focus group workshop will be derived from an extensive lietarture review. The literature researh will explore built environment, business models and wellbeing articles in Scopus, Emerald publications, Google Scholar and Science direct.

1.3 Format and scale of the data

The format and scale of the data will be divided into three categories:
1) Meta analysis of lietature in PDF and word files. Over 250 artciles will be reviewed and analysed. A comprehensive database search from Scopus, Science direct, Emerald journals andGoodle Scholar will provide a comprehenisve PDF repository of articles for the meta analysis in this study.
2) Audio recordings and transcribed interview data. Six (6) interviews will be conducted in total. Two (2) interviews each from three (3) different organisations will make up the six (6) interviews. The audio recordings will be in an mp3 format and the trasncribed will be in a doc. format.
3) Video, audio recordings and transcibed data from an industry workshop (focus group). Six (6) respondents from large and small and medium scale construction companies will be part of the focus group interview. A represnetative of the Aberdeen city council (government client) will also be part of the focus group interview. The video recording of the focus group session will be facilitated by RGU's Panopto system. The videos will be in HD format and all audio recodings will be in mp3 format.

2. Data collection / generation

2.1 Methodologies for data collection / generation

New data exploring the perception of construction employee, contractors, cleints and consultants towards an outcome-based business model is required for effective transofrmation of the UK construction industry.

The data will be collected through semi-structured interview questions designed from the findings of the lieterature review. The RGU ethical policy on research will be adhered to. Please see: https://www3.rgu.ac.uk/file/research-ethics-policy-pdf-60kb.

Anonymity, confidentiality and the GDPR 2018 act on data protection will all be followed during the course of collecting data from the respondents.

2.2 Data quality and standards

The consistency of the data collected will go through an intial pilot phase where the semi-structured interview questions will be reviewed internally. All the co-investigators will be requested to review the consistency, vocabular, accuracy, standard, and relevance of the questions posed for the case study and focus group workshop interviews.

The transcribed audio data will also be reviewd by each co-investigator for bearing the aforementioned criteria for quality in mind.

3. Data management, documentation and curation

3.1 Managing, storing and curating data

The transcribed data and artciles collected will be stored in Robert Gordon University's web based storage system which could centrally be backed up and restored in case of any loss or damage. The University's data storage and accessibility will be followed throughout the duration of this research (6 months). Furthermore, the UKRI concordant on open research data will be implemented during and after this research.

3.2 Metadata standards and data documentation

Data from the case study and focus groups will be converted to transcibed interview data. They will be categorised accordingly for accessibility and storage. The caset study interview data will involve consultant and contractors. The categorisation will further involve gender, age, years of experience and profession.

A detailed content analysis will also follow the project objectives 3 and 4 which seeks to establish the components of the stakeholders and associate these components with a wellbeing business model.

3.3 Data preservation strategy and standards

Data collected in this study will be presrved for over the next six (6) months after the project

completions. This is necessary for dissemination of findings in ARCOM and COBRA 20201 conferences. The data will be stored accoriding to the UKRI data sharing standards for further research into wellbeing of construction employees in the UK.

Please see https://www.ukri.org/files/legacy/documents/concordatonopenresearchdata-pdf/

4. Data security and confidentiality of potentially disclosive information

4.1 Formal information/data security standards

Personal information from the respondents will be anonymised and will not be disclosed to any other party. Hence, the names of the respondents will not be part of the data collection. The data collected will only include information about their wellbeing, working hours, profession, gender, age, years of experience, and other conceptual variables which will be developed from the lietature rveiew findings. The data collected will follow the GDPR 2018 regulations for data protection. The storage of data will eb web based in accordance to RGU's standard.

In case of data sharing amongst the co-investigator, all data will be shared through the University Shared drive and deleted when they are no longer required.

4.2 Main risks to data security

There are no main risks to the data security once the data is stored in RGU's web storage system.

5. Data sharing and access

5.1 Suitability for sharing

The data collected will be suitable for sharing because personal information will not be collected from the participants. All data will be anonymised and there are no sensitive data addressing, race, nationality, political affiliation or sexual orientation. The UKRI concordant on shairng and storing data will be adopted in this study.

5.2 Discovery by potential users of the research/innovation data

Potential new users can find the data through:

https://www.ukri.org/funding/information-for-award-holders/data-policy/https://www.ukri.org/files/legacy/documents/concordatonopenresearchdata-pdf/

5.3 Governance of access

The contact person for data sharing will be:
Principal Investigator: Dr Huda Salman
Co-Invesytigator: Dr Temitope Omotayo
The data will be stored in the UKRI specified database for this further research.

5.4 The study team’s exclusive use of the data

The primary data will be accessible to toher researchers in January 2021. Although the project will end in July 2020, adequate time will be required for journal and conference paper preparation. This will necessitate additional data analyses.

5.5 Restrictions or delays to sharing, with planned actions to limit such restrictions

There are no restrictions to sharing after the project completion date apart from the aforementioned timeline.

5.6 Regulation of responsibilities of users

The external users will be bound by UKRI data sharing agreement.

6. Responsibilities

6. Responsibilities

Dr Temitope Omotayo
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Scott Sutherland School of Architecture and Built Environment
Robert Gordon University
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7. Relevant policies

7. Relevant institutional, departmental or study policies on data sharing and data security

Policy	URL or Reference
Data Management Policy & Procedures	https://library.rgu.ac.uk/researchdata#section-4
Data Security Policy	https://library.rgu.ac.uk/researchdata#section-4
Data Sharing Policy	https://library.rgu.ac.uk/researchdata#section-4
Institutional Information Policy	https://library.rgu.ac.uk/researchdata#section-4
Other	
Other	

8. Author and contact details

8. Author of this Data Management Plan (Name) and, if different to that of the Principal Investigator, their telephone & email contact details

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