



SUM4Re NEWSLETTER #1

10 December 2024

INTRODUCTION

It is a great pleasure to announce the launch of this newsletter dedicated to sharing the progress and results of the project "*SUM4Re, Creating materials banks from digital urban mining*". This ambitious project, funded by the Horizon Europe programme, brings together 17 partners from 9 countries with a total budget of more than €6.5 million and a duration of 42 months.

SUM4Re aims to revolutionise urban waste management by creating digital material banks. Throughout this newsletter we will describe the scientific achievements, technological innovations developed, international collaborations, publications and recent events we have had the opportunity to contribute to that make this project possible.

We are convinced that SUM4Re will not only contribute to a more sustainable management of urban resources, but also establish new practices and standards in the field of digital urban mining. We thank all our partners and collaborators for their dedication and continued efforts. Together we are building a more sustainable and efficient future.

We hope you enjoy this first issue!

Sincerely,

[Pedro Arias Sánchez](#)



Pedro ARIAS-SÁNCHEZ - SUM4Re Project Coordinator and Chair of Applied Geotechnologies Group at the University of Vigo.



THE SUM4RE PROJECT

The SUM4Re project is cofunded by the European Commission and aims to **reduce waste and promote circular construction practices**. It proposes an integrated approach to the creation of material banks from built-up areas, combining urban mining, automated in situ data acquisition technologies and the identification of building components and materials with value for new uses.

The project will include the **implementation of three pilot demonstration projects** linked to construction projects, and a strategy to improve the qualification of the construction workforce and facilitate the uptake of solutions developed by companies and professional groups with interests in the sector.

The project aims to **develop software tools and databases** based on robust identification assisted by AI and other digital techniques, supported by blockchain solutions, and consider circular economy processes such as Reduce, Reuse, Repair, Recycle, and Renovate. SUM4Re will **improve the BIM standard to support current circular (C-BIM) challenges**, following open standards and ensuring interoperability with commercial databases.

[👉 Learn more here](#)



THE PROJECT CONSORTIUM

Researchers from **nine countries** are leading this European project, aimed at reducing and recycling construction materials from the predemolition phase.

The consortium, led by **Universidade de Vigo**, is composed of **17 entities from the construction sector** in Norway, the Netherlands, Spain, Germany, Belgium, France, Finland, Estonia and Switzerland.



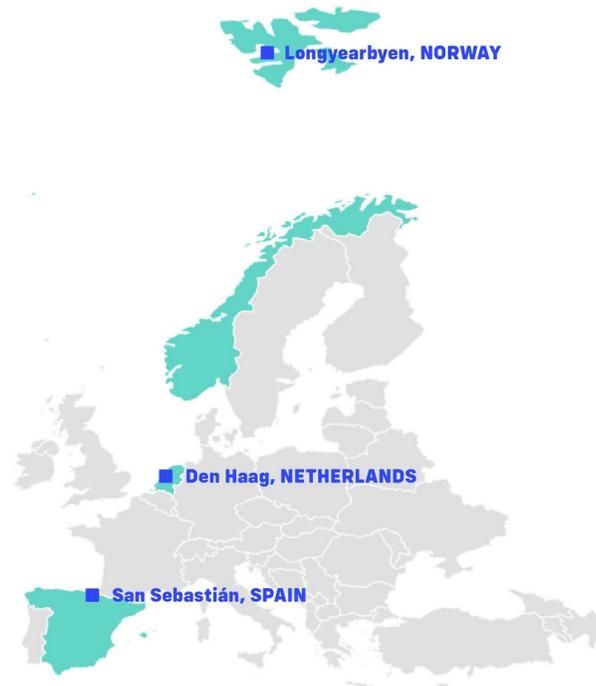
Universidade de Vigo | TECNALIA Research & Innovation | De Haagse Hogeschool / The Hague University of Applied Sciences | SINTEF | Block Materials | R2M Solution France | Estudios Rafer | VTT | Gemeente Den Haag | CONSTRUCCIONES MOYUA SL | AF Offshore Decom | Store Norske | Concular OLAR Solutions | GScan | European Builders Confederation EBC | Screening Eagle | Proceq



THE SUM4RE PILOT SITES

SUM4Re's results will be demonstrated in **3 different pilot sites** linked to singular construction projects in EU regions (North, Norway; Centre, The Netherlands; South, Spain), considering **existing buildings with different uses or typologies** (residential, tertiary, industrial & infrastructure assets) and **targeting different products & materials** (concrete, timber, asphalt, structural steel, and reinforced concrete), to validate the methodology and a strategy for skill development to upskill the workforce in the construction sector and facilitate the uptake of the solutions developed.

This strategic choice will prove relevant in the pathway to standardisation from a technical (different technologies for various materials), economic (availability and maturity of marketplaces) or regulatory framework (local policies) to widen the impact in the construction sector.



LATEST NEWS





Our consortium gathered in Den Haag, Netherlands

Last week, our second General Assembly and Consortium Meeting took place in the capital city of the South Holland province of the Netherlands: [Gemeente Den Haag](#).

1 On the programme for the first day: presentation of the city and its impact, presentation of the BINCKHORST area development, and visit of the pilot site. We had the opportunity to witness the use of an advanced tool for scanning and modelling buildings in 3D, utilizing augmented reality glasses that enable real-time material labelling, with the data to be further processed for 3D modelling. We also had update presentations of our 8 work areas.

2 On the second day, we had an overview of our project pilots, which raised some very interesting questions and discussions. Then, we participated in parallel sessions: Workshop for collection of data requirements, The Nordic Pilot and Labelling system for C-BIM: conditions for development, which also gave us the opportunity to witness the use of an advanced tool for detecting materials through walls! And to conclude this enlightening day, we were delighted with a surprise visit of Santa Klaus !!

3 On the third and final day, we had an overview at the needs, challenges, and current approach in the construction sector, we discovered the relevant developments in photonics, and we enjoyed an introduction to some of the project's technological solutions: Muon Flux, Active hyperspectral sensor/imager, and LIBS sensor/analyzer. We then had three training sessions during our public seminar, with the objective of stimulating matchmaking between the needs from the circular construction and the solutions provided by innovative companies.

Many thanks to [Gemeente Den Haag](#) and [De Haagse Hogeschool / The Hague University of Applied Sciences](#) for their warm welcome and hospitality! 🍷



Toward a collaborative circular ecosystem within the built environment

A paper related to [SUM4Re](#) has been published: **Toward a collaborative circular ecosystem within the built environment**, co-written by [Phuc Huynh Evertsen \(SINTEF\)](#) and [Vegard Knotten](#).

👉 [Click here](#) to read the full paper.



SUM4Re took part in a workshop at the Sustainable Places Conference

Hosted by our partner [R2M Solution](#) and the [Luxembourg Institute of Science and Technology \(LIST\)](#), [Sustainable Places](#) is an annual hybrid event focused on sustainability in the built environment. The 12th edition took place from September 23 to 25.

[SUM4Re](#) and fellow sister projects gathered in a workshop to discuss a common topic of research: [Data Management for Enhanced Built Environment Circularity](#). We express our gratitude towards [Inès Elisabeth Kahin](#) who represented us at the workshop, and hope to learn from other projects in the future.

[▶ Watch the video replay here](#)



Our partner from CINTECX by UVIGO attended the #Eurocarto2024 Conference

Their presentation highlighted SUM4Re's innovative approach to circular construction data management and urban transformation.

This opportunity to showcase our work underscores the importance of integrating circular economy principles into urban development, fostering collaboration among stakeholders for sustainable outcomes.

They have also released a scientific report: [Scanning indoor environments with Microsoft HoloLens 2 for interactive generation of floor plans](#).

[👉 Click here to read more](#)



A systematic literature review of low-cost 3D mapping solutions

We are happy to announce that [SUM4Re](#) was featured in Elsevier's article: [A systematic literature review of low-cost 3D mapping solutions](#), co-written by [Jesús Balado Frías](#), [Raissa Garozzo](#), [Lukas Winiwarter](#) and [Sofia Tilon](#).

[Click here](#) to read the full paper.

Thank you for reading this first edition of our newsletter, and do not hesitate to like, comment and share our posts and newsletters. 🍷

The logo for SUM4Re, consisting of a stylized 'S' made of four colored squares (blue, green, red, yellow) followed by the text 'SUM4Re' in a bold, sans-serif font.The logo for the European Union, featuring the flag's stars in a circle, followed by the text 'Co-funded by the European Union' in a small, sans-serif font.

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