RINNO PROJECT

Report

Transforming energy efficiency in European building stock through technology-enabled deep energy renovation

Deliverable 8.1 : Report on RINNO Dissemination & Communication Plan V.1

Work Package 8 : Dissemination, Exploitation, Promotion & Knowledge Transfer

Theo Lynn
Pierangelo Rosati
Karina Haugen
Caitlan Brownlow
Rob Walsh

August 2020

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 892071

Document Information

Title:	Report on RINNO Dissemination and Communication Plans
Author(s):	Theo Lynn (DCU), Pierangelo Rosati (DCU), Karina Haugen (DCU), Caitlan Brownlow (DCU), Rob Walsh (DCU).
Editor(s):	Theo Lynn (DCU), Pierangelo Rosati (DCU)
Reviewed By:	Leon Nielsen (CIRCE), Elsebeth Terkelsen (EGC)
Document Nature:	REPORT
Date:	31/08/ 2020
Dissemination Level:	Public
Status:	Final
Copyright:	All rights reserved by the authors and the RINNO consortium

Revision History

Version	Editor(s)	Date	Change Log
0.1	Theo Lynn (DCU)	7 June 2020	Digital Marketing OGST
0.2	Karina Haugen (DCU)	19 June 2020	Initial Structure
0.3	Theo Lynn (DCU)	23 June 2020	Updated Content
0.4	Karina Haugen (DCU)	24 June 2020	Updated Content, Formatting
0.5	Karina Haugen (DCU)	7 July 2020	Updated Stakeholders, Target Audience and Online Communities
0.6	Theo Lynn (DCU)	16 July 2020	Updated Content
0.7	Theo Lynn (DCU)	18 July 2020	Edit and Comments, Added To Dos
0.8	Karina Haugen (DCU)	20 July 2020	Updated Content
0.9	Theo Lynn (DCU)	04 August 2020	Updated Section 2
1.0	Pierangelo Rosati (DCU)	21 August 2020	Added Section 6, revised Table 6 and reviewed content.
1.1	Theo Lynn (DCU)	24 August 2020	Edits and Comments

Version	Editor(s)	Date	Change Log
1.2.	Pierangelo Rosati (DCU)	24 August 2020	Final Draft
1.3	RINA-C	26 August 2020	Final revision before the submission
1.4	Pierangelo Rosati (DCU)	27 August 2020	Final version for submission

Executive Summary

This document is a Report on the RINNO Dissemination & Communication Plan and is Deliverable D8.1 of the RINNO project, an Innovation Action project supported by the European Union Horizon 2020 programme under Grant Agreement Number 892071. Full information on this project, including the contents of this deliverable, is available online at https://rinno-h2020.eu/.

This document provides an initial dissemination plan and an outline of the activities that RINNO will undertake to raise awareness, engage stakeholders, promote the project and its results, achievements and knowledge generated, while also setting a basis for concertation and exploitation. It also describes the implementation of the project website and social networking accounts. Finally, it reports on agreed dissemination activities to raise public awareness and participation and impact against planned metrics in the first three months.

This document is concerned with:

- Identifying the initial set of RINNO stakeholders to be targeted by dissemination activities
- Outlining the dissemination objectives, goals, strategies and tactics for the RINNO Project
- Presenting the dissemination activities to be undertaken over the duration of the RINNO Project
- Setting expectation for dissemination performance for the RINNO Project
- Reporting on dissemination activities taking place during the first three months of the project

It is organised as follows. Section 1 introduces the RINNO project, its aims and objectives and presents a preliminary analysis of key stakeholders. Section 2 outlines the initial dissemination objectives, goals, strategies and tactics for the project. The dissemination activities will be implemented through traditional communication channels, such as event attendance, project publications and project presentations, complemented by online activities based around the project website and social media platforms. Planned dissemination activities, channels and samples of collateral are outlined in Section 3. Section 4 presents key performance indicators for the project and summarises activities completed to date. Appendices are attached with supporting material.
This dissemination plan and set of activities outlined in this document are subject to change to provide the project with a flexible approach to determine the most relevant routes to dissemination, and taking into account limitations introduced by the COVID-19 pandemic from time to time. Any proposed changes are subject to approval by the RINNO Executive Board.

Table of Contents

List of Figures

List of Tables

1. Introduction

1.1 Purpose of the Document

This document is a report on RINNO Dissemination and is deliverable D8.1 of the RINNO project. The RINNO project is aa Innovation Action project supported by the European Union Horizon 2020 programme under Grand Agreement Number 892071. More information about this project can be found at https://rinno-h2020.eu.

The objectives of Work Package 8 as outlined in the project proposal include:

- To develop and implement a strategy for the individual and joint exploitation of the project
- To openly and proactively disseminate and promote RINNO progress and results to a wide group of stakeholders
- To raise awareness, build consensus, and create visible/measurable impact to exploit lessons learned and best practices based on the experience of RINNO
- To implement an on-going assessment process to identify issues affecting RINNO's exploitation
- To align, liaise and promote the activities of RINNO with standardisation bodies, European clusters and complementary initiatives at EU and International levels.

The purpose of Task 8.1 is to develop, maintain and document a dissemination and communications plan that will deliver the objectives of WP8, and to monitor and report performance against this plan.

The purpose of this document is to outline the activities that RINNO will undertake to:

- Raise awareness,
- Engage stakeholders,
- Promote the project and its results, achievements and knowledge generated, and
- Set a basis for concertation and exploitation.

Furthermore, this document will:

- Identify the RINNO stakeholders to be targeted by dissemination activities,
- Outline the dissemination objectives, goals, strategies and tactics for the RINNO Project,
- Present the dissemination activities, indicative resources, and schedule for activities to be undertaken over the duration of the RINNO Project, and
- Set expectations for dissemination performance for the RINNO in the form of targets and metrics.

1.2 Background

Approximately 77% of EU residential buildings were constructed before 1990 and about 11% of Europe's population still experiences energy poverty due to poor building quality, and in particular, thermal inefficiency. The European Commission estimates that a renovation rate of 3% annually is needed to achieve the EU's energy efficiency and environmental ambitions in a cost-effective manner. Based on current renovation rates of 0.4% - 1.2% (depending on the country), it could take more than 100 years to renovate all EU building stock. RINNO is a radical approach to reduce the costs, disturbance, and renovation times of deep renovation projects while increasing energy efficiency, environmental performance, and occupant satisfaction.

RINNO will focus on developing solutions for the construction industry to accelerate (triple) the rate of deep renovation in energy inefficient buildings around Europe, and thereby contribute to reaching the target of 32.5% cent in energy savings set by the EU Green New Deal. RINNO will achieve this through a combination of novel and innovative technologies, processes and business models.

Table 1. Sample RINNO Technologies, Processes and Business Models

Renewable Materials & Technologies	• Plug-and-play modular building envelope solutions • Hybrid renewable energy harvesting and storage
Processes	• Digital twinning integrating data from drones, computer vision, thermal vision and augmented reality • Renovation simulation, modelling, and optimisation tools • Retrofitting management tools including supply chain optimization through cobots, robots, 3-D printing, advanced monitoring and tracking, AI-enabled decision support systems etc. • Multi-agent intelligent building control and automation • Training using interactive AR/VR
Business models	• Smart contract (Blockchain)-enabled crowd equity, crowdfunding and other collaborative financing • Smart contract (Blockchain)-enabled energy performance contracting

The solutions developed by RINNO will be demonstrated in four real-life renovation projects to quantify and validate their impact throughout the whole renovation process. The demonstration sites will be located in France, Denmark, Greece and Poland (total 3,386 m^2 of floor area), representing different EU climate zones and markets with varying maturity in the renovation sector.

Table 2. RINNO Demonstration Sites

Partner	Pilot Type	Purpose
Bouygues, France	Multi-family Dwelling	• Reduce energy costs • Valorise the asset.
Avedøre, Denmark	Single Family (Semi-Detached) Dwelling	• Reduce energy use • Reduce energy costs • Achieve "Low Energy" standard
Nape, Greece	Multi-Family Dwelling	• Achieve "Passive House Premium" standard • Certified as EnerPHit Premium
Rajszew, Poland	Multi-Family Dwelling	• Improve thermal comfort • Reduce energy use • Reduce energy costs

The RINNO project has received funding under the European Union's Horizon 2020 innovation programme under the call H2020-LC-SC3-2018-2019-2020. The project consists of 17 partners: 10 industrial partners, 6 academic and research partners, and 4 end-users of the project. All partners are listed in Table 3 below.

Table 3. RINNO Partner Institutions

Partner Institution	Country	Type
RINA-C	Italy	Industrial
CERTH-ITI	Greece	Academic
Regenera	Spain	Industrial
Circe	Spain	Academic
Ekolab	Denmark	Industrial
Avedøre Boligselskab	Denmark	End-user
European Green Cities	UK	Industrial
University of Northumbria at Newcastle	UK	Academic
Bouygues Construction	France	Industrial, End-user
K-Flex	Poland	Industrial
VTT	Finland	Academic
Greenstruct	Greece	Industrial
HPHI	Greece	Industrial, End-user
NAPE	Poland	Academic, End-user
PINK	Austria	Industrial
Motivian	Greece	Industrial
Dublin City University	Ireland	Academic

1.3 Stakeholders

In the tables below, an overview of stakeholders for exploitation, dissemination, and concertation is presented. They include the main categories of groups/individuals who can affect or can be affected by the achievement of the objectives for RINNO.

Table 4. RINNO Primary Market Stakeholders

Stakeholder	Description	Examples
Energy Solutions & Construction Technology Providers, and Independent Software Vendors (ISVs)	Energy Solutions & Construction Technology Providers, and ISVs develop and/or market their own energy efficiency solutions, construction technology or software solutions to housing development and construction companies and building owners. They have existing solutions that can be improved, extended, or complemented by RINNO outputs. They wish to add value to their existing solutions catalogue to generate incremental revenue.	**Renewable technologies:** Amarenco (Ireland), BNRG Renewables (UK), Colloide (NI), Dow (US), FerroAmp (Sweden), Good Energy (UK). Kioto Solar (Austria), Next Kraftwerke (Germany), NIBE Energy Systems (Sweden), Oekostrom AG (Germany), Onyx (Spain), Pellini (Italy), Permasteelisa (Italy), Plastica (NL), Renewable Energy Generation (REG) plc (UK), SERGIES (France), Tempress Systems (NL), TULIPPS (NL), Vaillant (Germany), Valorem (France), Viasolis (Lithuania), WIP Renewable Energies (Germany) Sika, Trimo Group, Elements Europe (UK), Kingspan (Ireland & UK), Metawell (Germany). **BIM, Digital Twin & Related Software Vendors:** ABB (SE), ANSYS, ASite (UK), Arup (UK), Autodesk (US), BeckTech (US), Bentley Systems (US), Bosch (DE), CADCAMation (FRA), CadSoft (CAN), Dassault Systemes (FR), Graphisoft (HU), IBM (US), IES (UK), Microsoft (US), Trimble (US).
Housing development and construction companies	Companies or businesses that are concerned with the development and construction of housing. They recommend, buy, license and use technologies and systems developed by third parties to deliver energy performance. They also include architects	AG Real Estate (BE), Bonava (SE), Central Group (CZ), DOM Development (PL), Finep (CZ), Futureal (HU), HB Reavis (SV), JW Construction (PL), HB HINES (US), OHL (ES), OVG (NL), PEAB (SE), Skanska (SE), Strabag (DE), Tishman Speyer (US), YIT (FIN).

	and specifically those who specialise or excel in sustainable architecture and Nearly Zero Energy Building (NZEB) design. They wish to differentiate themselves from competitors. They want to win more deep renovation projects and generate more profit from these projects while delivering better value for their clients.	
Architects	Architects design and plan the construction and renovation of built environments. They are responsible for delivering a built environment that is functional, safe, economical and increasingly sustainable. In deep renovation, architects need to understand the environmental performance of buildings, materials, systems and construction, considerations often beyond the normal sphere of the architectural design process (Chansomak & Vale, 2010). Given their role, they are a key influencer and liaison between various stakeholders in deep renovation projects. Architects buy, license and use a variety of software tools to model and design built environment projects including BIM and Digital Twinning software, and related databases, as well as various EIA, LCA, project management and collaboration tools.	AART Architects (DEN), BEAR-ID (NL), BIQ Architecten (NL)., FORMAT D2 (FRA), Ines Camacho (BE), Hans van der Heijden (NL), Hauschil-Siegel (SE/DEN), Henley Halebrown (UK), Jakob + MacFarlane (FR), Karakusevic Carson Architects (UK), Lacaton et Vassal Architectes (FR), LAN Architecture (FR), Mikhail Riches (UK), Rolf Disch (DE), S333 Architecture (UK), Sean Harrington Architects (IE).
Construction Finance Companies and Crowdfunding Platforms	Construction finance companies provide finance for building and renovation projects. They wish to maximise their return on investment in building and renovation	**Construction Finance:** Beacon Capital (IE), Housing Finance Agency (IE), IPUT PLC (IE), Triodos Bank (UK), European Investment Bank (EU), CBRE Global Investors, Legal & General (UK), Cyprus Land Development Corporation (CY),

	projects and generate an increased pipeline of investment opportunities at a lower cost of deal acquisition. Crowdfunding platforms are online intermediaries that match capital supply (investors) with capital demand (building owners or developers) in exchange for a fee. They may be owned by construction finance companies and investors. They have existing financing mechanisms and platforms that can be improved, extended, or complemented by RINNO outputs. They wish to add functionalities and value to their existing platform to generate incremental revenue and increase access to finance and placement to funds.	BNP Paribas (FR), Aviva (UK), M&G (Prudential), Standard Life (UK), Blackstone Capital (IE), Instituto de Credito Oficial (ES). **Crowdfunding Platforms:** Abundance, Conda, Green Crowd, Lumo, OnePlanet Crowd, Sunfunder, Crowdproperty (UK), CrowdLords (UK), Walliance (IT), Urbanitae (ES), PropCrowd (ES), FundingOptions (UK), Crowd Real Estate (NL), Triodos Bank (UK).
Building owners	These include, but are not limited to, companies, municipal and local authorities, and individuals who have an ownership interest in any private or public building. They want to renovate their building stock cost efficiently while at the same time minimizing disturbance to occupants and overall renovation time. They want to increase energy efficiency and environmental performance to meet or exceed national standards, meet European goals, and maximise occupant satisfaction. They want to leverage new sources of financing to fund renovation projects.	Individual owners **Social Housing and other landlords:** ATC Piemonte Centrale (Italy), CASA SPA (Italy), Deutsche Wohnen (DE), Habitat 76 (France), Heimstaden (SE), LUDVIKAHEM AB (Sweden), GECINA (FRA), NCORE (US), Paris Habitat (FR), SAGA (DE), Sanctuary Housing (UK), SLRB Brussels (BE), SNI Group (FR), Stadt Wien (AT), Svenska Bostader (SE), VESTIA (NL), Vilogia (FRA), Visesa (ES), Vonovia (DE), Wheatley Group (UK).

Table 5. RINNO Secondary Market and Non-Market Stakeholders

Stakeholder	Description	Examples
End Users	An End User is the person for whom a product is designed. In the context of RINNO use cases, they are typically construction workers, energy auditors or other deep renovation specialists involved in the renovation of building stock, are delivery or management of building energy performance. They use RINNO solutions in their day to day activities, and are measured by the quality of their work, and the time, effort, and associated cost to meet required specifications. They do not have a lot of time for training and new skills need to make them more attractive to the jobs market and safety in their tenure.	**BIM Software** – Architects, BIM Managers, Director of Virtual Design/Construction, Facility Manager, Planners. **Digital Twin** - Energy Officer, Building Physics Engineer, Sustainable Structures and Materials Specialist, Building Simulation Specialist, Sustainability/Energy Engineer Energy Assessor, BREEAM Specialists/Professionals, Building Services Design Consultants. **Associations:** Chartered Institute of Architectural Technologists, Association of European Experts in Building and Construction, Irish Green Building Council, The Chartered Institute of Building, Build Europe.
Occupant	An Occupant is a person who resides in the building being renovated. Most want best value for money energy performance. Some want to meet reduce environmental impact and meet or exceed international standards for energy performance.	Individuals, Tenants **Associations:** Conféderation Nationale du Logement (FR), Federació d'Associacions de Veïns d'Habitatge Social de Catalunya (ES), International Union of Tenants, Lejernes Landsorganisation (DEN), Mietervereinigung Österreich (AT), National Federation of Tenant Management Organisations Ltd (UK), Sindicato Inquilini Casa e Territoria (SICET) (IT), Polskie Zrzeszenie Lokatorów (PL), Vuokralaiset (FI).
Research Centres and Projects	Research projects and dedicated research centres attract government and industry funding to carry on research aiming to push the technology boundaries of existing solutions, to identify economic and business impacts of novel solutions or to foster the industry adoption of novel technologies and processes. They	**Renewable Materials & Technologies:** Armines (FR), AZEB, BESTRES, BIFACE, CREATE, EnergyMatching, HVACviaFACADE*, GIGATES, Passive House Institute (DE), SCORES, BIOFIT.

	typically focus on specific elements of the renovation lifecycle, operate within pre-defined boundaries, and aim to influence a large number of stakeholders.	**Crowdfunding/Business Models:** CitizEnergy, CrowdFundRes, CityNVest, European Crowdfunding Network AISBL (ECN), PV Financing, WISEPower **Research Centres:** Buildings Performance Institute Europe (BE), WIP Renewable Energies, International Solar Energy Research Center Konstanz (DE), Centro Nacional de Energías Renovables (ES), AEE – Institute for Sustainable Technologies (AT), MaREI (IE), JRC Joint Research Centre (IT), IVL Swedish Environmental Research Institute (SE), Eurac Research (CH), FOSS Research Centre for Sustainable Energy (CY).
Investors and Licensors	These are individuals or organisations that invest or license technology and other research outputs for commercial purposes.	GV, M12 (Microsoft Ventures), Cisco Investments, Intel Capital, Intellectual, Ventures, Horizons Ventures, Breakthrough Energy Ventures, Building Ventures, Statkraft Ventures, Arup Ventures
EU Institutions, Policymakers, and Funding Bodies	These are persons or organisations that formulate or influence policy in EU institutions, national and local government and include regulators, international bodies, and other political bodies. Funding bodies are organisations that provide funding for industrial or academic research. They may operate at a national or international level and include philanthropic, private sector and public sector organisations.	European Commission, European Council, Member State Governments, Municipal and local authorities, Chambers of Commerce, Enterprise Ireland, SFI, ESRC, etc.
NGOs (incl. environmental organisations)	An NGO is an organisation that is independent of government involvement. NGOs are a subgroup of organisations founded by citizens, which include clubs and associations which provide services to its members and others. RINNO is particularly relevant to environmental organisations – NGOs who aim to protect, analyse or monitor the environment against misuse or degradation from human forces.	European Climate Foundation, European Crowdfunding Network, EEB, ECOS, European Environment Agency, INFORSE, ECEE, Climate Alliance, Climate Action Network, International Energy Foundation

Industry associations	An organisation founded by and funded by businesses that operate in a specific industry. They aim to represent the interests of their members, establish best practices, industry leadership or the technical standards to which their members should adhere to.	**Construction:** Architects Council of Europe, European International Contractors, European Council of Civil Engineers, European Union of Developers and House Builders, European Construction Industry Federation, Construction Industry Council **Building Owners:** Building Owners and Managers Association, Confederazione Italiana della Proprietà Edilizia (Confedilizia)(IT), European Property Federation (EPF), Zentralverband der Hausbesitzer (AT), Irish Property Owners Association (IPOA), National Landlords Association (NLA), Syndicat National des Propriétaires a Copropriétaires (SNP-AES)(BE), Union Nationale de la Propriété Immobilière (UNPI)(FR), Hellenic Property Federation (POMIDA)(GR) **BIM:** A2, BIMForum, BIM Journal, BuildingSMART, CAD User Magazine, The CAD Society, CAD Evangelist, Construction Computing Magazine, Construction Magazine, Develop3D **Renewable Energy and Technologies:** European Solar Thermal Industry Federation (ESTIF), Solar Power Europe
Standardisation bodies	A Standardisation Organisation develops, coordinates, issues and maintains standards intended to address the needs of a group of adopters. Standardisation Organisations are consensus-building bodies comprising individuals and organisations. They can be categorised by their role, position, and the extent of their influence on the local, national, regional, and global standardisation arena.	IEEE, ISO, ETSI, NSAI, CEN, CENELEC, EPBD, LiCEA, EED, RED, Eco Design Directive, Ecodesign and Energy Labelling, ESTIF, SEAI.

Media and Industry Analysts	The media includes formal and informal communication outlets that create content to influence stakeholders. These include the broader general media outlets (e.g. national newspapers) and specific technical or scientific outlets. Similarly, an Industry Analyst performs primary and secondary market research within an industry such as information technology, telecommunications etc.	See Table 19 below.

2. Primary Commercial Segmentation, Targeting and Positioning

2.1 Introduction

As discussed in Section 1, RINNO will develop solutions for the construction industry to accelerate (triple) the rate of deep renovation in energy inefficient buildings around Europe, through a combination of novel and innovative technologies, processes and business models. From a strategic perspective, RINNO will deliver improved product, service, and process quality, greater control, reduced costs, and new revenue generation for European enterprises. In addition to contributing to the firm-level and European competitiveness, adopters of the RINNO outputs will deliver downstream benefits through greater energy efficiency and associated energy savings to building owners and occupants, a strategic objective for the project, European society and industry. Figure 1 summarises the benefits of RINNO to commercial stakeholders based on primary and desk research.

Figure 1 Preliminary RINNO Strategic Alignment Model

The specific features, advantages and benefits for each RINNO artefact will be specified and validated during the project in WP1 and factored into subsequent iterations of this Dissemination and Communications Plan. Preliminary Features, Advantages, and Benefits are summarised in Table 6.

Table 6. Preliminary RINNO Features, Advantages and Benefits

Feature	Advantage	Benefit	User Stories
Innovative, hybrid and efficient integrated solutions through an adaptive comprehensive repository of technologies.	Plug-n-play modular elements are easier to install and combine than traditional solutions and can be integrated with other existing systems.	• Quicker installation times result in lower installation costs and less disturbance for occupants. • Modular elements can be integrated with existing systems and represent a viable solution for existing building and small-scale projects.	D2.1 D2.2
	Bio-based modular elements provides high thermal efficiency and isolation.	• Easier to recycle therefore reducing their environmental impact. • Thermal and acoustic insulation improve the overall energy efficiency of the building and comfort for occupants.	D2.1 D2.2
	Renewable energy harvesting and storage solutions can be integrated within structural building elements.	• Generate energy from renewable resources and store it on-site therefore reducing the environmental footprint of a building. • Reduced energy costs for the occupant. • Increased flexibility in terms of design and improved aesthetics of the building.	D2.3 D2.6 D2.7
Fast and occupant-centred renovation planning and design.	Automated mapping of the building and renovation design.	• Fast development of an accurate digital representation of the building. • Simplified design process and reduced disturbance for the occupants.	D3.1 D3.2 D3.3 D3.4

Feature	Advantage	Benefit	User Stories
	Ex-ante selection of the optimal renovation scenario based on a holistic approach to energy, environmental, and techno-economic aspects as well as user preferences and site restrictions.	• Accurate simulation of building elements and energy systems interoperability. • Estimate of the future operational performance of the building. • Reduced uncertainty for different stakeholders regarding the expected outcomes of the renovation.	D3.5 D3.6
	Automated renovation plan generation and optimization.	• Automatically generated and fully optimized renovation plan that takes into account the entire renovation lifecycle. • Minimize renovation time, cost, waste production, occupants' disruption time and level and assembly/disassembly easiness.	D3.7 D3.8
Innovative construction and process optimization methods, and real-time monitoring tools for quality control.	Real time data gathering allows to closely monitor the entire renovation process. Inefficiencies are identified and removed quickly ensuring on-time delivery.	• Reduced renovation time, cost and disruption for the occupants. • Reducing the energy-requirements and environmental impact of the renovation process.	D4.3 D4.4 D4.5 D4.6 D4.9
	The combination of on-site and off-site automated or semi-automated assembling of pre-fabricated components accelerates the overall renovation process and reduces manual work on-site.	• Reduced renovation time. • Increases the health and safety of the renovation site. • Reduces body stress for workers.	D4.1 D4.2
	"On-the-job" training and remote assistance reduce inefficiencies and avoids delay in the overall renovation process.	• Use of AR/VR tools for real-time training and assistance ensures that workers develop adequate knowledge of different building	D4.7 D4.8

Feature	Advantage	Benefit	User Stories
		elements and energy systems. • Reduced renovation time and better-quality results. • Increased health and safety of the renovation site and improved working condition of on-site workers.	
Context-aware operational platform with augmented intelligence for real-time building performance awareness and performance gap quantification.	Performance measurement of the building based on KPIs identified at the design stage and real-time monitoring through easy-to-understand management dashboards.	• Greater control over the energy performance of the building. • Visibility of pre- v. post-renovation performance gap and on the overall outcomes of the renovation.	D5.2 D5.3 D5.4 D5.7
	Information and knowledge sharing between different stakeholders throughout the renovation lifecycle.	• Increased transparency and efficiency throughout the renovation lifecycle.	D5.5 D5.6
Circular economy-driven business models (BMs) and financing schemes.	The design of incentive schemes based on circular economy principles ensures sustained post-renovation behavioural change of building users.	• Reduced environmental footprint of the overall renovation lifecycle. • Reduced energy costs for the occupants.	D7.1 D7.2 D7.3 D7.4 D7.5
	Purposefully-designed smart contracts based on energy performance, and "Product as a Service" (PaaS) models reduce the risk of energy efficiency investments on buildings renovation	• Increased attractiveness of building renovation investments for both private and institutional investors. • Increased capital availability and renovation rate.	D7.6 D7.7 D7.8

2.2 Target Audience

As per Section 0 the primary market for exploiting RINNO are (i) energy solutions & construction technology providers and related ISVs, (ii) housing developers, construction companies, (iii) architects, (iv) construction finance companies, and (v) building owners. The proposed RINNO solution focuses on European residential building stock constructed before 1990, due to the high potential for energy savings. Other geographic markets, for

example, the Asian-Pacific market, will also be examined as part of exploitation research during the course of RINNO. Preliminary overviews of positioning for these segments is outline below. These will be updated as the project evolves. Personas will be developed for each segment. Two exemplar persona profiles are presented in Appendix A.

2.3 Energy Solutions & Construction Technology Providers, and ISVs

Who are they?

Energy Solutions & Construction Technology (ES&CT) Providers develop and market technologies including renewable materials, equipment, and complementary technologies for supporting and delivering residential deep renovation projects. This includes building components for or complete building envelope solutions and renewable energy harvesting and storage technologies. Similarly, independent software vendors (ISVs) develop and market software solutions for building information modelling, deep renovation process management, building and infrastructure management and maintenance, and/or related technology management.

Table 7. Indicative Energy Solutions & Construction Technology Providers, and ISVs

Region	Sub-segment	Indicative Companies
Europe	Energy Solutions & Construction Technology Providers	Colloide (NI), Elements Europe (UK), Kingspan (Ireland & UK), Kioto Solar (AT), Next Kraftwerke (DE), NIBE Energy Systems (SE), Oekostrom AG (DE), Onyx (ES), Pellini (IT), Permasteelisa (IT), Plastica (NL), Tempress Systems (NL), TULIPPS (NL), Trimo Group (SV), Vaillant (DE), Valorem (FR), Viasolis (LT)
	ISVs	ABB (SE), ASite (UK), Arup (UK), Bosch (DE), CADCAMation (FRA), Dassault Systemes (FR), Graphisoft (HU), IES (UK)
Rest of World	Energy Solutions & Construction Technology Providers	Dow (US), ORMAT Technologies (US), TRIVA (US), RES Group (CA), Acciona (CA), Tetra Tech (CA), BT Energy (AU), Electronet (NZ)
	ISVs	ANSYS (US), Autodesk (US), BeckTech (US), Bentley Systems (US), CADSoft (Canada), IBM (US), Microsoft (US), Trimble (US)

What Customer Needs Do We Address?

For ES&CT providers and ISVs who want to improve, extend, or complement their existing product/service offering, RINNO represents a cost-effective way to add value to their existing product and service offering and/or solutions catalogue, differentiate themselves

from competitors, and generate incremental revenues with comparatively little upfront R&D investment.

Key Messages

- Access to state-of-the-art standards-based technologies from key domain experts
- Accelerate time-to-market and increase agility by leveraging a €4.5 million R&D investment validated in the field
- Increase competitiveness through new value-added products and services

Elevator Pitch

RINNO provides access to millions of euros of validated R&D for adding value to existing energy solutions, construction technologies, and software, and generating revenue from the deep renovation market.

Net Impression

"RINNO will improve our competitiveness and generate revenues from the deep renovation market."

2.4 Residential Development and Construction Companies

Who are they?

Residential Development and Construction Companies buy, license and use technologies, and systems developed by third parties, and often recommended by their planners and architects, to deliver energy performance. They wish to differentiate themselves from competitors by providing superior services and buildings. They want to win more deep renovation projects and generate more profit from these projects while delivering better performance and value for their clients. In many instances, they may own or manage the properties in they develop in their own right or on behalf of the ultimate owner. In such instances, profitability and occupant satisfaction may have greater importance.

*Table 8. Indicative Residential Development and Construction Companies**

Region	Indicative Companies
Europe	ACS (ES), AG Real Estate (BE), Balfour Beatty (UK), Bonava (SE), Central Group (CZ), DOM Development (PL), Durkan (IE), Eiffage (FR), Finep (CZ), Futureal (HU), HB Reavis (SV), JW Construction (PL), Hochtief (DE), Mullaley (UK), OHL (ES), OVG (NL), PEAB (SE), Skanska (SE), Strabag (AT), Vinci (FR), YIT (FIN)
Rest of World	AECOM (US), BlackRock (US), BMD (AUS), China State Construction (PRC), Hines (US), LendLease (US), Suffolk Construction (US), Sidewalk Labs (US), Tishman Speyer (US),

*The line between residential development and construction companies is increasingly blurry as more and more construction companies own and manage the properties they build.

What Customer Needs Do We Address?

For residential development and construction companies who want to generate incremental and more profitable revenues from the deep renovation market, and provide a state-of-the-art technology-based solution, RINNO will provide a high-impact best-value solution. Residential development and construction companies can leverage RINNO's expert technical team and solutions to reduce the inconvenience to occupants, the time and the cost required for deep energy renovation of residential buildings, while dramatically improving energy performance, and customer and occupant satisfaction.

Key Messages

- Leverage a €4.5 million investment in validated R&D investment to generate incremental more profitable revenues
- Reduce time and effort to deliver higher energy performance to building owners
- Increase competitiveness and differentiation in the residential deep renovation market through superior services and improved profitability

Elevator Pitch

RINNO delivers greater building energy performance at a lower cost for deep renovation projects by developing a novel suite of processes and technologies.

Net Impression

"RINNO will develop a novel suite of solutions for generating incremental revenues and increased profitability from deep renovation projects in the European residential building market, while improving energy performance."

2.5 Sustainable Architects

Who are they?

Sustainable architects design and plan the renovation and construction of sustainable built environments. In addition to delivering a built environment that is functional, safe, economical, and meet the specific needs of the people who use them, sustainable architects take in to consider factors relating to interaction of the natural environment, built environment, and human ecological conditions. Architects specialising in sustainable design require specific skills and knowledge for gathering environmental and cultural considerations, both pre- and post-occupancy, as well as specific sustainable design techniques and tools including environmental impact assessments (EIA), life cycle assessment (LCA), building rating systems (e.g. LEAD and BREEAM), standards, and environmental regulations (Chansomak & Vale, 2010)[1]. In deep renovation, architects need to understand the environmental performance of buildings, materials, systems and construction, considerations often beyond the normal sphere of the architectural design process (Chansomak & Vale, 2010). Given their role, they are a key influencer and liaison between various stakeholders in deep renovation projects. Architects buy, license and use a variety of software tools to model and design built environment projects including BIM and Digital Twinning software, and related databases, as well as various EIA, LCA, project management and collaboration tools.

Table 9. Architects

Region	Indicative Companies
Europe	AART Architects (DEN), BEAR-ID (NL), BIQ Architecten (NL)., FORMAT D2 (FRA), Ines Camacho (BE), Hans van der Heijden (NL), Hauschil-Siegel (SE/DEN), Henley Halebrown (UK), Jakob + MacFarlane (FR), Karakusevic Carson Architects (UK), Lacaton et Vassal Architectes (FR), LAN Architecture (FR), Mikhail Riches (UK), Rolf Disch (DE), S333 Architecture (UK), Sean Harrington Architects (IE)
Rest of World	BNIM (US), HDR (US), Kohn Pederson Fox (US), The Miller Hull Partnership (US), PTW Architects (AUS), Touloukian Touloukian (US), WOHA (Singapore), WRNS Studio (US)

[1] Chansomsak, S. and Vale, B., 2009. The roles of architects in sustainable community development. Journal of Architectural/Planning Research and Studies (JARS), 6(3), pp.107-136.

What Customer Needs Do We Address?

RINNO will automate and accelerate the collection of data from multiple sources for pre-, in-, and post-project evaluation for optimisation, remediation and future learning. For architects who want to supervise and/or monitor the entire renovation life cycle in a collaborative environment developed specifically for sustainable deep renovation, RINNO will provide an enabling workflow and state-of-the-art suite of software tools. For architects who wish to simulate the interdependencies between multiple aspects of the renovation process and model different renovation scenarios, RINNO will provide state-of-the-art decision-making tools for optimal renovation configuration and remediation. RINNO will accelerate and improve decision-making, design configuration assessment, and reduce risk associated with sub-optimal designs. As a result, RINNO will help architects deliver maximal energy performance faster and at lower costs.

Key Messages

- Leverage a €4.5 million investment in validated R&D investment to deliver superior designs with maximal energy performance faster and lower cost
- Reduce time and effort to collect data, model designs and simulate performance of designs in different renovation scenarios
- Improve organisational learning through social collaboration and AR training
- Increase competitiveness and differentiation in the residential deep renovation market through superior services and improved profitability

Elevator Pitch

RINNO reduces the risk of sub-optimal renovation designs through improved data collection, modelling, simulation and scenario analysis, and full lifecycle monitoring and management. RINNO delivers renovation designs with maximal energy performance faster and at a lower cost for deep renovation projects using a state-of-the-art suite of processes and technologies.

Net Impression

"RINNO allows architects design and manage deep renovation projects that will deliver maximal energy performance through advanced intelligence, analysis, modelling and management systems."

2.6 Construction Finance and Crowdfunding Platforms

Who are they?

Construction finance providers provide capital to construction companies for financing the realisation of specific projects. Construction finance providers play a critical role in the construction industry where projects typically require significant upfront investments for construction material while work is typically paid many after work completion. This can put significant financial pressure on construction companies in terms of cash flow, preventing them from moving on to the next job and exploit growth opportunities. Traditional construction finance providers include banks and specialised financial services companies who provide loans to construction companies. However, these funding channels are not able to meet the growing demand and this results in lost business opportunities for construction companies and low renovation rate, and lower housing supply. Specialist sustainable development and social housing finance companies have emerged in recent years and will be a specific focus of RINNO.

In order to overcome the current limitations of traditional funding channels, alternative sources of capital such as crowdfunding platforms have emerged in recent years. Crowdfunding platforms are online intermediaries that match capital supply (investors) with capital demand (building owners or developers) in exchange for a fee. The main innovations introduced by crowdfunding platforms are two-fold. Firstly, projects are not funded by a single investor but by a large number of retail investors with a limited individual investment and therefore with limited risk. Secondly, crowdfunding platforms are fully digital and therefore accessible by investors worldwide regardless of geographical proximity with the construction company or the construction/renovation site. As such, crowdfunding platforms increase capital supply in the construction industry and foster growth.

Region	Sub-segment	Indicative Companies
Europe	Traditional providers	Bank of Ireland (EI), HSBC (UK), BNP Paribas (FR), Crédit Agricole (FR), Banco Santander (ES), Lotus Investment Group (IE), Cullaun Capital (IE), Bibby Financial Services Ltd (UK), DLL Financial Solutions Partner (NL).
	Crowdfunding and other alternative platforms	Crowdproperty (UK), CrowdLonrds (UK), Walliance (IT), Urbanitae (ES), PropCrowd (ES), FundingOptions (UK), Crowd Real Estate (NL).
Rest of the World	Traditional providers	JPMorgan Chase & Co. (US), Citigroup (US), China Construction Bank (CN).
	Crowdfunding and other alternative platforms	BuildingBits (US), Fundrise (US), NexusCrowd (CA), R2 Investments (CA), M2Crowd (MX), Brickx (AU), Urbe.me (BR)

What Customer Needs Do We Address?

Capital availability is critical for both construction companies and building owners in order to exploit market opportunities and cost reduction related to more efficient energy usage, and to reduce the environmental footprint of existing building stock. Traditional sources of capital cannot fulfil the demand and are constrained by regulation. RINNO aims to leverage crowdfunding to increase capital availability for renovation projects for both building owners and construction companies. Different from existing crowdfunding platforms for real estate investments, RINNO's crowdfunding platform is based on smart contracts built on top of a blockchain therefore ensuring full transparency and accountability for all stakeholders.

Key Messages

- Access to state-of-art blockchain-based technologies for crowdfunding and energy performance contracting.
- Reduce risk through smart contract enforcement.
- Accelerate time to market and increase agility by leveraging a €4.5 million investment in validated R&D investment.
- Increase competitiveness through new value-added functionalities and alternative financing mechanisms.

Elevator Pitch

RINNO provides access to millions of euros of validated R&D for integrating smart contract technologies into crowdfunding and collaborative financing platforms, thus adding value to existing funding platforms and generating greater revenue from the deep renovation market, while reducing investment search costs and ensuring greater transparency and accountability for investors.

Net Impression

"RINNO will improve our competitiveness and generate revenues from the deep renovation market while providing investors with reduced investment search costs, greater transparency and accountability through smart contracts."

2.7 Residential Building Owners

Who are they?

Building owners own and manage residential buildings. These include, but are not limited to, companies, municipal and local authorities, co-operatives, and individuals who have an

ownership interest in any private or public building. They want to renovate their building stock cost efficiently while at the same time minimizing disturbance to occupants and overall renovation time. They also want to increase energy efficiency and environmental performance to meet or exceed national standards, meet domestic or European policy goals, maximise occupant satisfaction, and ultimately increase the value of the property. Building owners may require external capital to finance a renovation project. In a traditional setting, such external capital comes from banks in the form of medium to long term loans. The sharp increase in regulatory requirements that has followed the global financial crisis imposes a number of limitations to bank lending which make access to credit more difficult for individuals and small investors. In the context of building renovation, limited access to credit arguably contributes to the low renovation rate.

Table 10 Indicative Residential Building Owners

Region	Indicative Companies
Europe	ATC Piemonte Centrale (Italy), CASA SPA (Italy), Deutsche Wohnen (DE), Habitat 76 (France), Heimstaden (SE), LudvikaHem AB (Sweden), GECINA (FRA), Paris Habitat (FR), SAGA (DE), Sanctuary Housing (UK), SLRB Brussels (BE), SNI Group (FR), Stadt Wien (AT), Svenska Bostader (SE), VESTIA (NL), Vilogia (FRA), Visesa (ES), Vonovia (DE), Wheatley Group (UK)
Rest of World	NCORE (US), Omni New York, LLC (US), Sidewalk Labs (US), Toronto Community Housing (CAN), Urban Renaissance Agency (JAP), US Department of Housing & Urban Development (HUD)(US)

What Customer Needs Do We Address?

For building owners who want to increase the energy efficiency of their buildings, improve occupant satisfaction, and increase the value of their property, RINNO will provide a high-impact best-value solution. RINNO will reduce the time to completion of deep renovation projects and reduce inconvenience to occupants, while dramatically improving energy performance, and occupant satisfaction. Taken together, these have an induced effect of increasing property values.

Key Messages

- Increased occupant satisfaction and improved energy efficiency will increase property values
- RINNO is a best-value state-of-the-art solution for delivering building energy performance
- Deep renovation using RINNO is less intrusive, faster, and has a greater impact than existing approaches

Elevator Pitch

RINNO can increase property value by delivering greater building energy performance, faster and at a lower cost for deep renovation projects with lower occupant disturbance than existing approaches.

Net Impression

"RINNO will develop a novel solution for dramatically improving energy performance in residential buildings faster and less intrusively than existing approaches."

3. Goals, Objectives, Strategy and Tactics

3.1 Goals

The project dissemination goals are:

1. Achieve high project awareness levels with specialist construction, deep renovation, BIM, AR and other targeted specialist domain media outlets.

2. Achieve Top 10 search ranking for deep energy renovation of buildings, building information modelling, BIM, digital twinning, and smart contracts in building renovation.

3. Achieve and maintain web traffic growth of 10% year on year.

4. Develop and achieve an active online community of at least 500 relevant, engaged members through targeted dissemination tactics and relevant content.

5. Achieve 100% compliance with Horizon 2020 framework regulations and requests made by the European Commission relating to project dissemination activities.

6. Identify, develop and engage researchers, collaborators, influencers and online and offline advocates to meet agreed KPIs.

3.2 Objectives

The RINNO dissemination objectives seek to provide measurable outcomes that act as reference for the effectiveness of the plan.

1. Drive positive awareness and perceptions of the RINNO project and establish it as a thought leader in topics pertaining deep energy renovation of building stock, building information modelling, digital twinning, smart contracts and AR training for deep renovation.
2. Publish and disseminate a range of material that adds and creates value to attract academic and industry participation including targeted sector contributions to assist with the industry exploitation of the project.
3. Build engagement, trust and advocacy for the project through collaboration, strategic communications, and stakeholder relations.

4. Optimise, organise, and allocate RINNO's resources to maximize efficiencies in dissemination outputs through successful leverage of the expertise and knowledge of each individual consortium partner as well as the consortium as a whole.
5. Create and deliver a range of activities that add and create value to all relevant academic and industry stakeholders as well as wider societal stakeholders.
6. Comply with all Horizon 2020 framework regulations and requests made by the European Commission relating to project dissemination activities.
7. Maximise the take-up of the new knowledge generated by the project, both for commercial purposes and for policy-making.
8. Boost R&D among other EU funded participants and others who will benefit from the research conducted.

3.3 Strategies

RINNO aims to achieve the goals and objectives through seven strategies as outlined in the table below.

Table 11. Dissemination Strategies

Strategy	Description	Support these objectives
Awareness	Establish awareness of RINNO as the thought-leader and destination site for deep energy renovation of buildings, building information modelling.	1, 2, 4, 5, 6, 8
Leverage/ Alignment	Leverage and align the community of EU funded projects and other related research initiatives worldwide.	3, 6, 8
ROI	Invest in activities and allocate resources to initiatives that will maximise dissemination and communication results.	3
Collaborate	Collaborate on the development of programs and events with members of academia and industry that add, create, or amplify value to stakeholders.	1, 2, 3, 6,8
Content	Develop or facilitate unique content that inspires engagement and generates interest in the project across relevant target communities.	1, 2, 5, 6, 7
Digital/Social	Extend and enhance the content, functionality and user experience to all digital platforms.	1, 2, 4, 5, 6, 8
Human	Build and organise a results-driven team.	1, 2, 4, 5, 6, 7, 8

3.4 Tactics

RINNO will use a variety of tactics to deliver the strategies outlined above. These tactics are organised in to seven activities: marketing collateral, digital marketing, social media, media/PR, event marketing, academic dissemination and operations.

Table 12. Dissemination Tactics

Activity	Description	Support these objectives
Marketing Collateral		
MC1	Develop and maintain RINNO Brand Guidelines and Style Guide and monitor compliance with guidelines, including partner brand guidelines.	RELEVANCE LEVERAGE/ALIGNMENT ROI
MC2	Design and maintain RINNO Collateral including fact sheets, project summaries, posters, pop-up stands, videos and other dissemination materials.	RELEVANCE LEVERAGE/ALIGNMENT ROI
MC3	Coordinate localization of collateral and material, where appropriate.	RELEVANCE LEVERAGE/ALIGNMENT ROI
MC4	Provide creative and design support for consortium partners relating to RINNO materials.	RELEVANCE LEVERAGE/ALIGNMENT ROI
MC5	Design and maintain RINNO marketing tools and templates, including stump speeches and presentations.	RELEVANCE LEVERAGE/ALIGNMENT ROI
MC6	Coordinate the production and distribution of marketing collateral and tools.	RELEVANCE LEVERAGE/ALIGNMENT ROI
MC7	Comply and monitor compliance with European Commission dissemination requirements.	RELEVANCE LEVERAGE/ALIGNMENT ROI
Digital Marketing		
DM1	Develop digital advertising and media campaigns and tactics.	AWARENESS DIGITAL
DM2	Design and launch a website that informs and engages visitors.	CONTENT AWARENESS DIGITAL
DM3	Optimise RINNO website and social media accounts for user experience and usability.	CONTENT AWARENESS DIGITAL

Activity	Description	Support these objectives
DM4	Attract and convert web visitors using content marketing strategies with focus on lead generation, user engagement and development of email database.	ROI CONTENT AWARENESS DIGITAL
DM5	Increase awareness of RINNO through relevant and timely curation and unique content.	AWARENESS CONTENT DIGITAL
DM6	Build engagement, positive sentiment and advocacy for RINNO through targeted content marketing including newsletters, podcasts, webinars, market briefings and other resources.	ROI AWARENESS DIGITAL
DM7	Strongly align earned, owned and shared online marketing mix.	ROI AWARENESS DIGITAL
DM8	Track and report performance metrics and other relevant data to benchmark overall marketing and activity impact.	ROI
DM9	Integrate PR, communications and media outreach with digital activities and editorial calendars.	DIGITAL
DM10	Use CRM platforms to support stakeholder relations including targeted email communications and real-time web monitoring.	ROI
DM11	Launch campaigns across digital channels targeting key sectors and industries to increase awareness among stakeholders in target domains and deliver qualified site visitors.	AWARENESS DIGITAL ROI
Social Media		
SM1	Launch ongoing social listening to monitor sentiment and project feedback.	AWARENESS
SM2	Develop and launch social media assets to test messaging, drive consumer engagement and support key promotional campaigns.	DIGITAL/SOCIAL
SM3	Further test content formats, tools and messaging as new features are added to core social channels.	DIGITAL/SOCIAL CONTENT
Media/PR		

Activity	Description	Support these objectives
PR1	Develop and curate a database of relevant content and media assets for use by stakeholders and media.	CONTENT AWARENESS DIGITAL CO-OP
PR2	Source, develop and maintain contact details and profiles of specialist deep energy renovation, BIM, digital twinning, AR training, and use case domain experts, influencers, bloggers and members of technical and commercial media and press.	LEVERAGE/ALIGNMENT AWARENESS COLLABORATE
PR3	Increase awareness, support and advocacy with media and academic and industry experts, online or otherwise, including experience, content and status opportunities.	AWARENESS CO-OP
PR4	Enhance the quality of content provided for most relevant stakeholders and the public.	AWARENESS CONTENT
Event Marketing		
EM1	Align and leverage partner participation to optimise the dissemination impact through attendance at conferences, tradeshows and workshops.	RELEVANCE LEVERAGE/ALIGNMENT ROI
EM2	Integrate and time the release of project research outputs and supported dissemination activities with relevant academic and industry events.	ROI
EM3	Host RINNO workshops and seminars and participate in key industry, academic and EU events.	RELEVANCE LEVERAGE/ALIGNMENT ROI
EM4	Enhance RINNO presence at each event through continuity and quality in graphics and collateral.	AWARENESS CONTENT
EM5	Coordinate the promotion and distribution of RINNO collateral via partners, conferences, tradeshows and other events.	LEVERAGE/ALIGNMENT COLLABORATE
EM6	Launch stakeholder outreach direct and via presentations at academic conferences, tradeshows and other targeted events.	AWARENESS
EM7	Integrate and coordinate the launch of conference, events and workshop efforts with partners to maximise existing opportunities.	ROI AWARENESS COLLABORATION DIGITAL

Activity	Description	Support these objectives
EM8	Follow up with and engage visitors, attendees and participants at events, workshops and conferences attended or organised by RINNO.	CONTENT AWARENESS DIGITAL
Academic Dissemination		
AD1	Align and leverage partners to optimise the dissemination impact of academic publications.	RELEVANCE LEVERAGE/ALIGNMENT ROI
AD2	Distribute academic publications to relevant scholars and academic influencers worldwide.	RELEVANCE LEVERAGE/ALIGNMENT ROI
AD3	Leverage marketing channels to maximize scholarly impact metrics.	RELEVANCE LEVERAGE/ALIGNMENT ROI
Operations		
OP1	Ensure dedicated dissemination resource with high digital emphasis.	HUMAN
OP2	Establish internal communication between project partners for information exchange, scheduling, reporting and project management.	HUMAN
OP3	Establish external communication between the RINNO project and external stakeholders.	HUMAN
OP4	Develop a comprehensive system to measure and track dissemination activity across online and offline channels.	ROI

4. Dissemination Activities

4.1 Marketing Collateral

The collateral will support the marketing of RINNO and will ensure that the project is visible to target audiences. A RINNO Style Guide has been developed to ensure that the project's identity is maintained and to make sure the project is represented cohesively to the outside world. The brand style guide includes brand colour scheme, typography and logo usage.

Table 13 presents a set of marketing tools that will be created to promote the project to target audiences and to assist consortium members in delivering a consistent message to stakeholders.

Table 13. RINNO Marketing Collateral Tools

Collateral	Description
Fact Sheet	An EU H2020 fact sheet describing the project and outlining features and benefits. The factsheet follows the EU guidelines in respect of the template, fonts and size.
Flyer	A professionally printed A3 flyer describing the project, its use cases and outlining features and benefits.
Poster	A professionally printed AO overview poster summarizing consortium members, motivations, use cases, architecture and benefits.
PowerPoint Presentation	A PowerPoint template and stock presentation. This includes an overview slide on the project, Horizon 2020 programme, consortium members, motivation/problem statement, use cases, architecture, benefits, timelines, and contact details.
Roll Up Stand	A professional designed roll up stand for use at conferences, meetings and presentations.
Video	A professionally produced 3-5-minute video conveying the core message of RINNO in lay language.
Templates	RINNO document templates, including PowerPoint, Word, and Poster.
Media Elements	A zip file of all approved RINNO graphics, logos, designs and other original artwork including any original collateral and guidelines for use.

4.1.1 Brand Style Guide

The style guide developed in M3 aims to explain correct use of the RINNO brand style and to reinforce consistent application of the visual elements in all communications. This included all marketing materials such as publications, presentations and social media creatives. The RINNO brand style guide is presented in Appendix B and will be updated as the project evolves.

Figure 2. RINNO Style Guide

4.1.2 Promotional Material

Following the brand identity guidelines development, an initial set of project promotional material was designed, printed and delivered to the consortium members. It is also available in digital format to the project partners via Microsoft Teams and publicly via the website.

4.1.2.1 Project Flyer

A two-sided, A3-size flyer for distribution at industry events and academic conferences was developed. The flyer was initially created in English and will be localised into the following languages – Italian, Greek, and German.

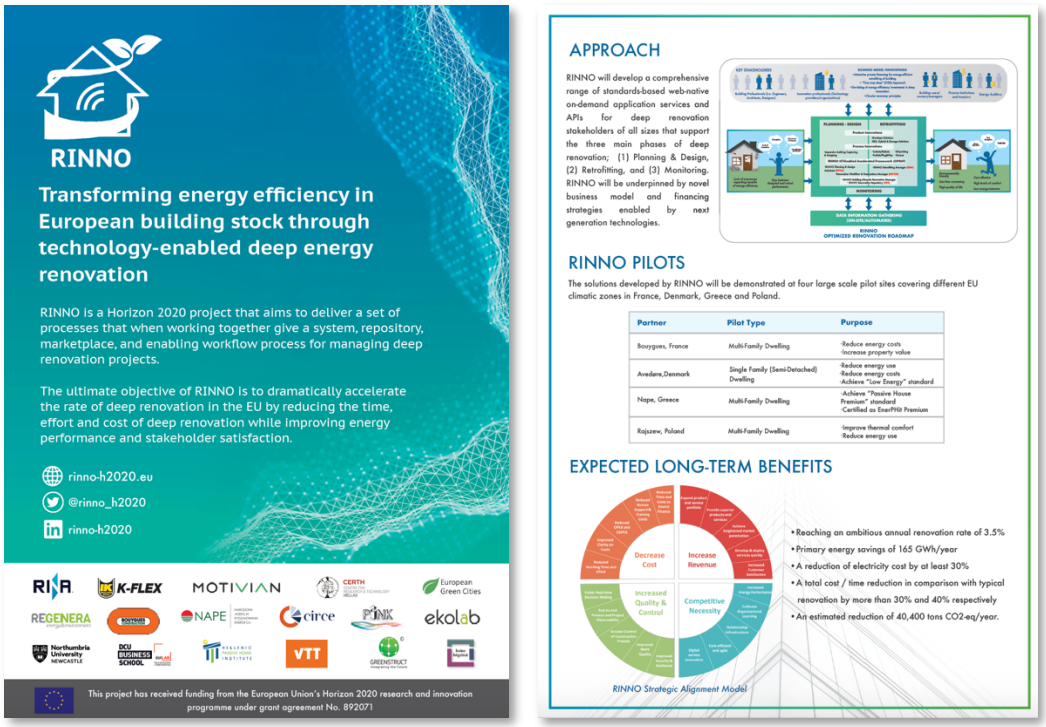


Figure 3. Project Flyer

4.1.2.2 Project Roll Up Banner

A roll up project banner for displaying at project stands and booths at industry events, conferences and exhibitions was designed. Digital design files are available via Microsoft Teams for local fulfilment and localisation if required.

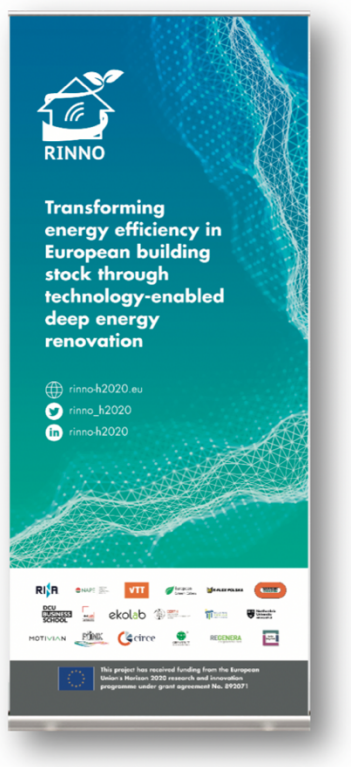


Figure 4. Project Roll Up Banner

4.1.2.3 Promotional Posters

An initial A0-size conference poster (Figure 5) was created to clearly communicate the objectives, use cases and benefits of the project for display at booths at industry events, trade show and exhibitions. A second poster will be designed to present a detailed description of the RINNO architecture, expected results and project motivation for display at academic events. These will be updated as the project evolves.

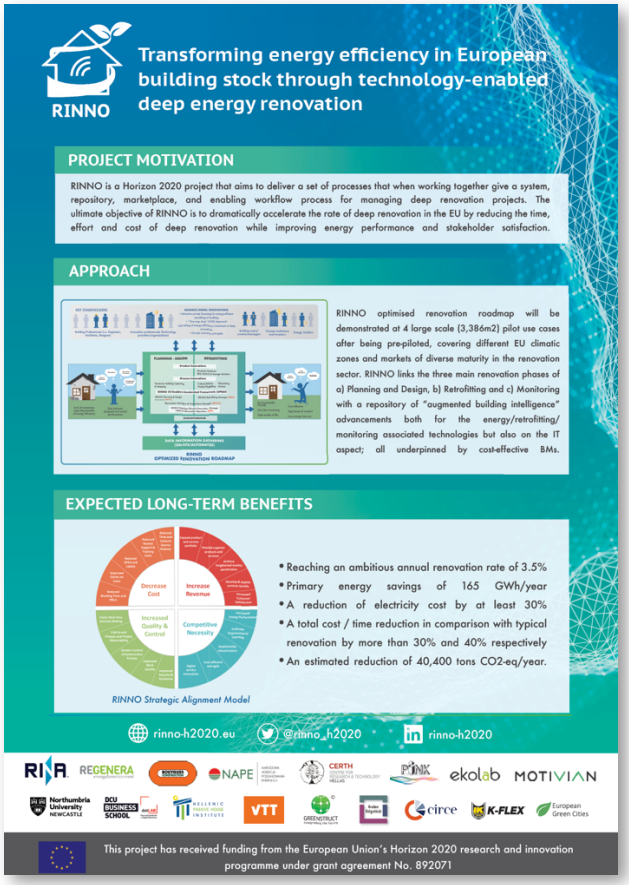


Figure 5. Project Poster

4.2 Academic Dissemination

As per project's proposal, each academic partner is required to organise at least one workshop. Furthermore, the proposal calls for a minimum of 4 publications in books or peer-reviewed journals over the lifetime of the project.

Below is a list of target journals and conferences proposed by the consortium in the original proposal. As a general principle, the aim is to target highly ranked journals (Q1 or Q2 as defined by Scopus) and conferences that are ranked A or B in CORE, where appropriate.

4.2.1 Academic Journals

The list is not final and will be updated throughout the lifetime of the project. The COVID-19 pandemic has caused significant disruption to conference schedule and event. Consequentially, the status of these activities will be monitored and updated periodically.

Table 14. Sample Target Academic Journals

Discipline	Journal	Scopus Ranking
Computer Science	Journal of Machine Learning Research	Q1
	Science Robotics	Q1
	IEEE Transactions on Cybernetics	Q1
	Journal of Artificial Intelligence Research	Q1
	Machine Learning	Q1
	IEEE Communications Magazine	Q1
Construction	Construction Management and Economics	Q1
	Automation in Construction	Q1
Energy | Construction	Advances in Building Energy Research	Q2
	Building and Environment	Q1
	Energy and Buildings	Q1
	Building Research and Information	Q1
	International Journal of Engineering Science	Q1
Energy	IEEE Transactions on Sustainable Energy	Q1
	Sustainable Energy Technologies and Assessments	Q1
	Energy and Environmental Sciences	Q1
	Energy Policy	Q1
	Applied Energy	Q1
	Advanced Energy Materials	Q1
	Renewable Energy	Q1
	Renewable and Sustainable Energy Reviews	Q1

4.2.2 Academic Conferences

Table 15. Sample Academic Conferences

Discipline	Conference	Organiser	Date	Location
Computer Science	IoT Conference	Malmö Univeristy / Internet of Things and People (IOTAP)	6-9 October 2020	Malmö, Sweden
	International Conference on Image Processing (ICIP)	IEEE	25-28 October 2020	Abu Dhabi
	International Conference on Pattern Recognition (ICPR)	IAPR/IEEE	10-15 January 2021	Milan, Italy
	International Conference on Efficiency, Cost, Optimization, Simulation and Environmental	ECOS	20-25 June 2021	Las Palmas de Gran Canaria, Spain

Discipline	Conference	Organiser	Date	Location
	Impact of Energy Systems (ECOS)			
	European Conference on Computing in Construction (EC-3)	EC-3	19-28 July 2021	Rhodes, Greece
	CIB W78 – Information Technology for Construction	International Council for Research & Innovation in Building and Construction (CIB)	11-13 Oct 2021 2023	Luxembourg Greece
Computer Science | Energy Efficiency & Performance	International Passive House Conference	Passive House Institute, Universität Innsbruck	20 September-8 October 2020	Berlin, Germany
Construction | Computer Science	International Conference on Applied Energy	The International Research Conference	6-7 May 2021	Istanbul, Turkey
	Energy Efficiency Conference	OÖ Energiesparverband	24-26 February 2021	Wels, Austria
Energy Efficiency & Performance | Construction	International Conference on Innovative, Ecological and Energy Efficient Building Materials	World Academy of Science, Engineering and Technology	6-7 August 2020	Amsterdam, Netherlands
Energy Efficiency & Performance	International Conference on Green Building Technologies and Energy Efficiency	World Academy of Science, Engineering and Technology	16-17 September 2020	Lisbon, Portugal
	International Conference on Energy Efficient Residential Buildings	World Academy of Science, Engineering and Technology	21-22 January 2021	Amsterdam, Netherlands

4.2.3 Academic Workshops

Where possible particularly in light of COVID-19, the RINNO consortium will six organise a number of academic workshops to contribute to the scientific dissemination of the project activities.

4.2.4 Open Data and Open Access

Special attention will be given to the EC's H2020 guidelines and philosophy on open access. RINNO will strive to ensure open access to all peer reviewed scientific publications. Most of the journals listed above have an open access publication option for authors. Where Gold Open Access option is not available, RINNO will implement Green Open Access strategy, i.e. final peer-reviewed papers will be archived in publicly available online repositories, such as arXiv, in compliance with the rules of each publisher. In addition, a Gold Access book summarising the key concepts and outcomes of the project will be published in Y3 of the project.

4.3 Event Marketing

All RINNO partners will commit to present the project, its activities and the consortium at events in construction, retrofitting, ICT, building management, and other fields related to the project. These events shall include conferences, congresses, workshops, trade fairs, exhibitions, etc. These events will be crucial to the future sustainability of the project for engaging other organisations in further discussions and collaborations. The M48 target for attendance and participation at relevant national or international conferences, workshops or other networking events is 30.

4.3.1 Trade Shows and Exhibitions

Table 16. Sample Target Academic Conferences

Discipline	Conference	Organiser	Date	Location
ICT	BIM WORLD	Beyond Event SAS	7-8 October 2020	Paris, France
	BIM Show Live	N/A	N/A	N/A
	Modular & Offsite Construction 2020	The CONSTRUCT & Built Environment IT Event	22 October 2020	Dublin, Ireland
	Glasstec	Messe Düsseldorf	15-18 June 2021	Düsseldorf, Germany
	Vivatech	Echos Solution SAS	17-19 June 2021	Paris, France
	European BIM Summit	CAATEEB, BIM Academy, BuildingSMART Spanish Chapter	22-23 April 2021	Barcelona, Spain

Discipline	Conference	Organiser	Date	Location
Computer Science | Energy Efficiency & Performance	AEE Europe Energy Conference & Exhibition	Association of Energy Engineers	22-23 September 2021	Dublin, Ireland
Construction | Computer Science	International Conference on Augmented Reality in Construction Industry	The International Research Conference	7-8 January 2021	Tokyo, Japan
Construction	Creative Construction Conference	Miklós Hajdu	28 June – 1 July 2020	Opatija, Croatia
	International Building Physics Conference	Technical University of Denmark	25-27 August 2021	Copenhagen, Denmark
	UK Construction Week	UK Construction Week	5-7 October 2020	Birmingham, England
	Batimat	Batimat	15-19 November 2021	Paris, France
	MIPIM	MIPIM	2-5 June 2021	Cannes, France
Sustainability	SUSTAINABLE PLACES	R2M Solution	27-3 October 2020	Aix-les-Bains, France
	International Conference on Improving Energy Efficiency in Commercial Buildings and Smart Communities	European Commission	1-2 October 2020	Frankfurt, Germany
	All Energy	Reed Exhibitions Ltd.	4-5 November 2020	Glasgow, Scotland
	ISH trade fair		22-23 March 2021	Frankfurt, Germany
	Hannover Messe	Deutsche Messe AG Hannover	12-16 April 2021	Hannover, Germany
	EU Sustainable Energy Week	European Commission	N/A	N/A
	National Sustainability Summit	National Sustainability Summit	27-28 January 2021	Dublin, Ireland

4.4 Digital Marketing

Digital marketing is an important part of the dissemination strategy. The RINNO website will serve as the primary means of dissemination of project news, deliverables and other project-related information.
Figure 6 below depicts the framework laid out to establish a system to promote the project across a range of platforms. Tools such as Google Analytics (analytics and measurement), Hootsuite (social media monitoring and scheduling) and Moz (search engine optimisation) will be used in order to monitor the project's digital marketing performance.

The project website will be optimised for the different search engines such as Google, Bing and Yahoo. Project accounts have been set up on appropriate social media platforms – LinkedIn, Facebook and Twitter. Pay-per-click advertising will be used occasionally to promote project deliverables or hosted events. In addition to this, email marketing will be managed via Mailchimp and press releases will be distributed online via PRNewswire.

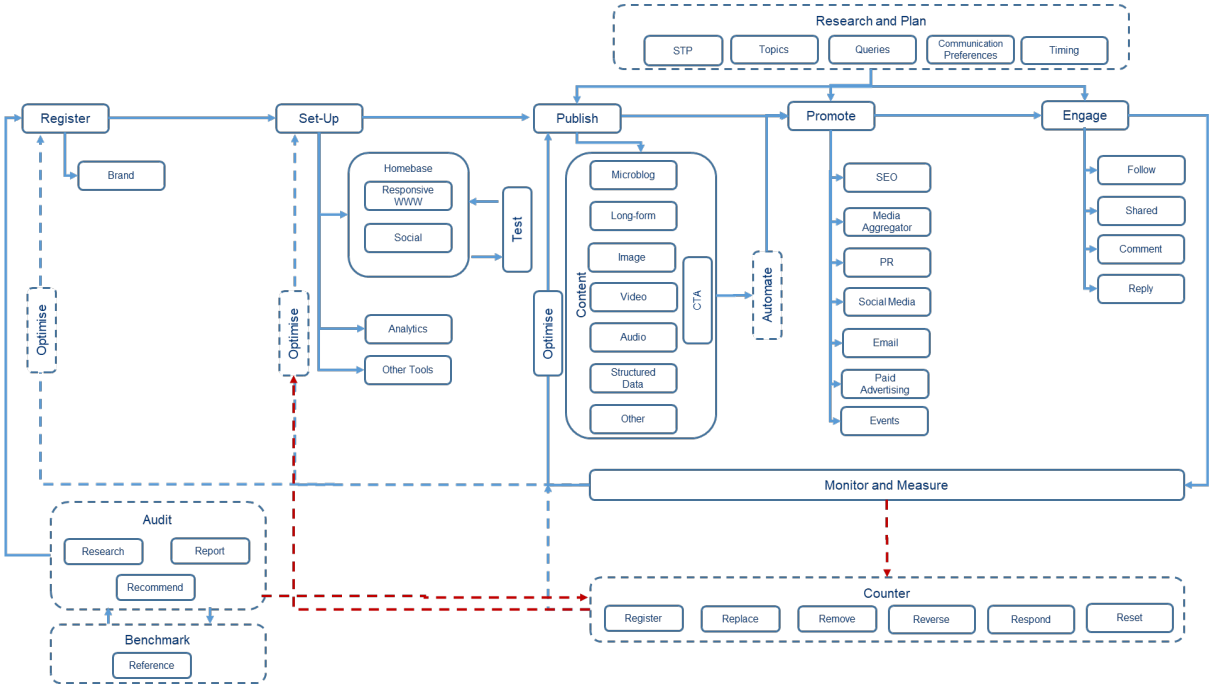


Figure 6. Digital Marketing Framework

4.4.1 Website Development and Maintenance

The RINNO website was developed in M1 of the project. The main purpose of the website is to raise awareness, engage stakeholders, promote the project and its results, achievements and knowledge generated. Furthermore, the website will also serve as the primary resource and central point of contact and interaction for external stakeholders. The

layout and structure of the website is subject to change to maintain the site in the context of emerging web technologies, web design and UI/UX standards. Further detail is provided in D8.4.

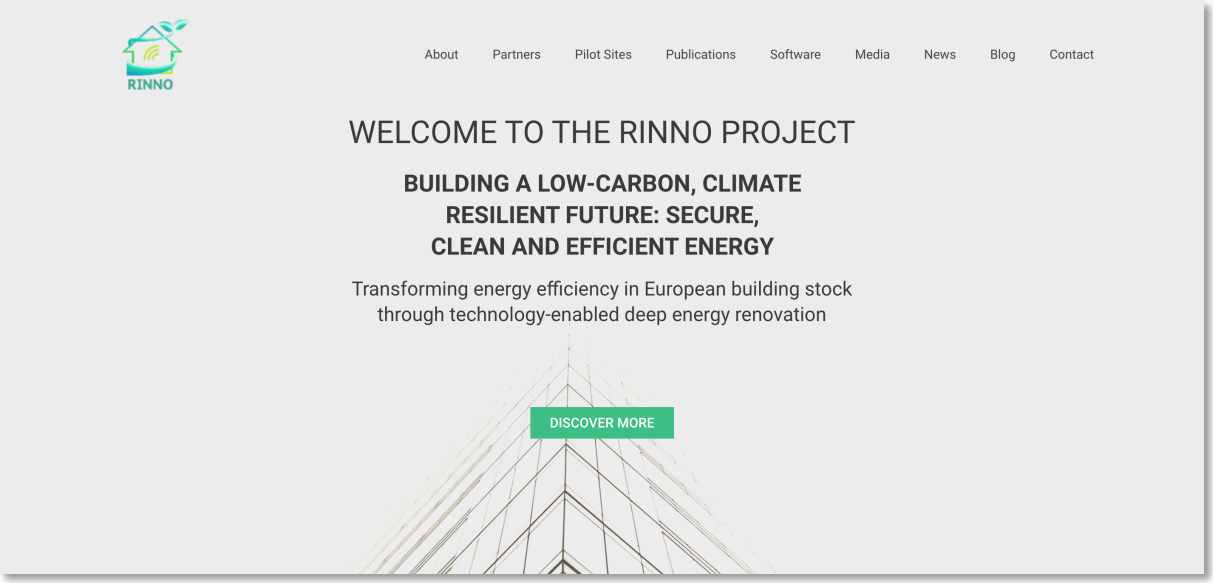


Figure 7. RINNO Homepage (above the fold)

4.4.2 Newsletter

Email marketing campaigns will be set up using the email newsletter management platform Mail Chimp. The aim of these campaigns is to generate awareness, increase traffic to the website and to engage with and keep the subscribers updated on the progress of the project. In order to generate subscribers to the mailing list, several list building tactics will be implemented:

- An email subscription box on the homepage;
- A lead capture box that asks visitors asking visitors to complete a form before downloading a public deliverable, use case or marketing briefing on the website;
- A contact form on the contact page on the website;
- Event registrations;
- Encourage users to subscribe on social media platforms.

Newsletter content includes project updates, recent consortium activity, promotion of recent publications, public deliverables, articles, podcasts, blog posts and upcoming industry events.

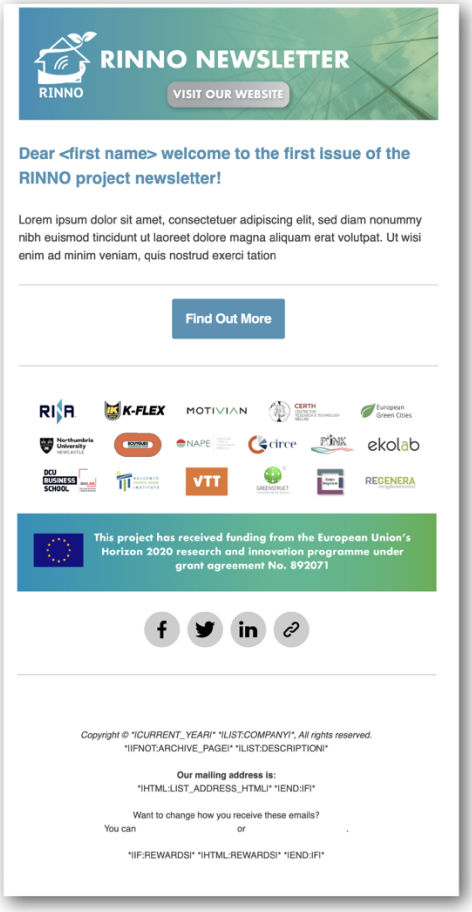


Figure 8. RINNO Email Newsletter Template

4.4.3 Social Media

Social media is an important part of the promotion of the project and is a crucial way of connecting and communicating with project stakeholders.

Table 17. RINNO Social Media Overview

Name	Platform Type	Content
Twitter	**Social**	Twitter is used to identify relevant stakeholder and publish project news and updates, share website content and re-share third party content related to project and its uses cases.
Facebook	**Social**	The Facebook account was created for dissemination of project news and announcements as well as facilitation of paid campaigns.
LinkedIn	**Professional / Social**	The LinkedIn page is used for dissemination to businesses and professionals in RINNO target areas.

Name	Platform Type	Content
YouTube	**Video**	The RINNO YouTube page hosts all videos created throughout the duration of the project. The videos are categorized and tagged to increase search visibility and discoverability.
Slideshare	**Media Aggregator**	RINNO uses Slideshare to host and dissemination various media file, such as documents, presentations and infographics. The platform allows for presentation content to be embedded on project website, thereby increasing visibility.
ResearchGate	**Social / Academic**	The ResearchGate profiles was created to communicate the project to scientists and researchers. It allows to share academic papers with the RINNO acknowledgement, post updates on the project and find potential collaborators.

4.4.4 Online Communities

The table below presents indictive online communities identified as relevant to the project. Such groups provide an opportunity to participate in discussions, share updates with the community and promote and create a profile for the project. These groups are continually being updated as the project progresses.

Table 18. Relevant Online Communities

Target Audience	Exemplar online communities
Construction & Architecture	• Building-integrated photovoltaic (BIPV) • BIPV Group • High Performance Facades • H2020 SMART CITIES & Communities ICT in Building and Construction, ASCE, BIM & VDC • Hellenic Passive House Institute • Passive House - the energy efficient construction standard • Construction and Real Estate Professionals • Energy Efficiency & Water Conservation in Real Estate: Education, Tools and Implementation.
BIM Software	• BIM Experts • BIM Architecture & Digital Design • Virtual Design & Construction • MEP Engineer – Architects & Engineers Network by Virtual Energy by Virtual Energy Solutions Inc. • Vectorworks Design and BIM Software • CITA BIM Group • The BIM Engineers

	• BIM Denmark
Renewable Energy Solutions	• Building-integrated photovoltaic (BIPV) • Smart Glass World • Energy Efficiency & Water Conservation in Real Estate: Education, Tools and Implementation • Energy Efficiency Professionals • Clean and Renewable Energy Community • "H2020 ENERGY Research" R&D, Innovation in Energy Efficiency, Renewables, Cleantech • Renewable Energy Industry • Clean Energy Network – Solar power, Wind, Renewables, Hydropower, Energy efficiency, Sustainability
General ICT	• Augmented Reality AR, Virtual Reality VR, Mixed Reality MR, Extended Reality XR, Spatial Computing • Augmented reality AR, Virtual reality VR and Mixed reality MR #1 group for professionals • VR/AR Content Development (Virtual and Augmented Reality • Information Technology & Computer Software for Construction

4.5 Media and PR

Initially, RINNO will rely on the existing media relations infrastructure and relationships within Consortium members. In Years 1 and 3, DCU will establish contacts (editors and writers) within targeted specialist media, blogs and websites to obtain coverage, attract guest bloggers and build awareness within target audiences.

Media Release and Press Events activities will include:

- **List of target journalists and outlets** – RINNO will compile a list of and contact influential journalists on construction, retrofitting, ICT, building management and target use cases. Initial targets will be those journalists and magazines that have covered similar projects and partner organisations. Indicative target media outlets are listed in Table 19.
- **Press Releases** – RINNO will issue press releases to mass media and trade publications to announce major project news and deliverables.
- **Trade Publications** – RINNO will approach trade publications running stories on target use cases or construction, retrofitting, ICT, building management, and other fields related to the project and provide them with information on RINNO for consideration.

- **Press / Media kit** – RINNO will develop a re-packaged set of promotional materials comprising assets from the marketing toolkit.

Table 19 Example Media Targets by Domain

Target Audience	Exemplar outlets
Construction & Architecture	Architectural Digest, Architectural Record, Architectural Review, The Architects Newspaper, ARCH+, Dwell, eVolo, onoffice, On Desino, Icon, Building Design, Archis, Building Products News, Design Boom, Volume Zero, Building Design & Construction, Architect Magazine, Environmental Design and Construction (EDC) Magazine, Green Builder (GB) Magazine.
BIM Software	AEC Bytes, AEC Magazine, AEC DevBlog, Architectural CGI, AUGIWorld, Cadalyst, Constructech, BIM Fix Blog.
Renewable Energy Solutions	Ecozen, Energy Live News, Construction News, Recharge News, Energy industry today, Sustainable Building, Energy Engineering, Home Energy, Engineering magazine, REFOCUS, Renewable Energy World.
General ICT	Computer Weekly, Silicon Republic, Tech Central, Wired, VentureBeat, Forbes, The Register, TechRadar, ZDNet, Computerworld.
Mass Media and Other	The Irish Times, The Greek Reporter Europe, Las Repubblica, Kathimerini, El Pais, B.T. Metro, Fakt, Le Monde.

4.6 Operations

A fast, reliable and easily accessible infrastructure will be developed for the effective communication of the project's research outputs and public deliverables. The main elements of this infrastructure will be the project website, a shared document repository on Microsoft Teams with the minutes of meetings, reports, deliverables and project plans available to the Consortium.

4.6.1 Initial Communication

Internal communications refer to all methods of communication between the project partners. All RINNO partners will exchange information on a regular basis through emails, weekly teleconferences, and face-to-face meetings.

The Consortium will use Microsoft Team for project management activities.

4.6.2 External Communication

During WP8, DCU will coordinate all communication to external stakeholders and will be assisted by the Dissemination and Exploitation Manager with the cooperation for individual partners, whenever necessary. The main channel for external communication will be through the project website https://rinno-h2020.eu/.

4.6.3 Release of Project Deliverables

Final versions of project deliverables are stored and accessible internally on Microsoft Teams. Public deliverables will be available for download by the public at the project website at https://rinno-h2020.eu/publications/deliverables/.

4.6.4 Metrics and Tracking

In order to measure the success of all dissemination activities, the different activities will be tracked across each platform. The aim is to optimise outreach, engagement, awareness and impact. Analytics tools such as Google Analytics, Twitter/LinkedIn Analytics and Google Search Console will be used to analyse the performance of activities. An easy to use online tool has been deployed to record all dissemination and concertation activities and summarise impact. This will be reviewed regularly.

	Activities	Target, M12	Target, M24	Target, M36	Target, M48
2	**Dissemination**				
2.1	Participation at a Conference	5	10	20	30
2.2	Participation at a Workshop				
2.3	Organisation of a Workshop	1			
2.4	Book Chapters				4
2.5	Journal Publications				4
2.6	Conference Proceedings	4			4
2.7	Trade Publications				12
2.8	Trade Conference/Fair				30
2.9	Brochures	1			
2.10	Flyer Distribution				1000
2.11	IP Briefings (F2F)				20
2.12	IP Overviews Sent				100
3	**Communication**				
3.1	Website (# of unique visits)	1200	3600	4800	7200
	Website (duration of visits)	2 min for 30% of users	2 min for 30% of users	2 min for 30% of users	2 min for 30% of user
	Website (downloads)	500	1000	1500	2000
3.2	Blog Posts	10	10	10	10
3.3	Newsletter (# of newsletters sent)	1	3	5	7
	Newsletter (open rate)	20%	20%	20%	20%
	Subscribers	150	300	450	600
3.4	Social Media Followers	225	450	750	1150
3.5	Press Releases				9
3.6	Mentions in Media	20			20
3.7	Videos				12
	Video Views	500	1000	2000	3000
3.8	Collaborative Web Pages				5
3.9	Survey/Focus Group Participation (Number of Opens)				
	Survey/Focus Group Participation (Number of Participants)				350

	M1	*M2*
Analytics Metrics	**June**	**July**
Visits (Sessions)	10	278
Unique Visitors (User)	10	160
Pageviews	30	920
Pages / Visit	3	3.18
Avg Visit Duration	0:04:39	00:03:43
Bounce Rate	50%	52.80%
% New Visits	100%	81.20%
% Returning Visits	0%	18.80%
Organic Search Traffic	0%	1%
Social Traffic	0%	5.90%
Referral Traffic	30%	24.90%
Direct Traffic	70%	68.30%
Unique Pageviews	26	655
Avg Time on Page	0:02:20	00:01:42
% Exit	33.30%	31.33%
Website Downloads	0	0

Figure 9. Dashboard and Website Metrics

5. Performance

5.1 Key Performance Indicators

A set of key performance indicators (KPIs) has been developed and is listed in the table below. The objective of these KPIs is to establish how well RINNO is performing in the dissemination and communication activities.

Table 20. Dissemination KPIs

Activity	KPI	Target, M48
Participation at a Conference, Workshop or other Networking Events	Attendance and participation at relevant national or international conferences, workshops or other networking events	30
Organisation of a Workshop	Organisation of a minimum of one workshop per academic partner	6
Book Chapters and Journal Publications	Publications in books or peer-reviewed journals	4
Conference Proceedings	Presentation at relevant national or international scientific conferences with proceedings	4
Trade Publications	Publications in trade publications during the lifetime of the project	12
Trade Conference/Fair	Participation in non-scholarly national or international industry/trade conferences, exhibitions or fairs	30
Flyer Distribution	Number of flyers distributed	1,000
IP Briefings	Number of F2F Meeting	20
	Number of IP Briefings sent	100
Website	Number of unique visitors	9,000
	Duration of visits	2 min for 30% of users
	Downloads/views of any material (incl. social dissemination)	2,000
Newsletter	Mailing List	600
	Number of newsletters sent	7
	Open Rate	20%
Social Media	Number of Followers	500
	Number of Downloads/Views	3,600
Media	Number of press releases issued	9
	Number of mentions in specialist and mainstream media	20

Videos/Podcasts	Number of videos, podcasts and other multimedia (incl. demonstrations, presentations and interviews)	12
Collaborative Web Pages	Collaboration to existing entries, creation of new entries	5
Survey/Focus Group Participation	Number of participants	350
Open Access Book	PDFs sent	2500
	Number of downloads	10,000

5.2 Activities to Date

This section presents RINNO performance to date (M3).

5.2.1 Website

The project website has been live since end of M1 (June 2020). A total of 263 sessions were recorded in Google Analytics at the time of writing, 147 of which were unique visitors. Visits generated over 1,004 pageviews with an average of 3.82 pager per visit and average visit duration of 5 minutes and 38 seconds. The bounce rate is 60.46% meaning that almost half of the visitors stay on the page to engage with content and explore more pages.

Figure 10 below shows the website's performance from its launch until August 24 2020.

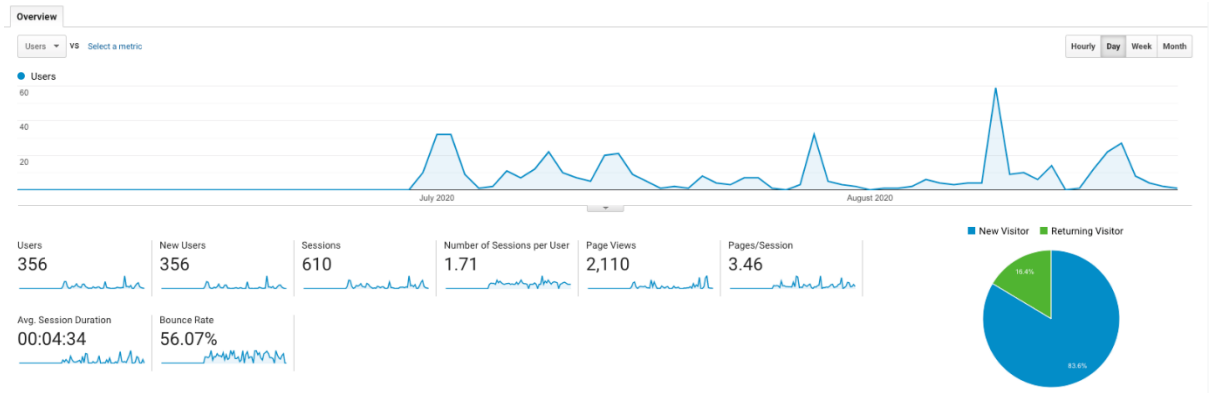


Figure 10 RINNO Website performance M1-M3

The website is optimised for search engines on a regular basis and runs weekly crawl diagnostics on Moz to evaluate its SEO performance. As of M3, there are no critical crawler issues or warnings. According to Moz, 14 external domains link to the RINNO website increasing its search engine visibility.

5.2.2 Social Media

RINNO social media accounts were set up in M1 (end of June 2020). The accounts have been regularly updated to increase visibility to the scientific community and general public and to build awareness around the project. As of M3, RINNO has 130 followers across all platforms.

Table 21. Social Media Metrics M3

Social Media Metric	M3 (August 2020)
Twitter Followers	76
Twitter Tweets	29
Facebook Likes	5
LinkedIn Followers	20
YouTube Videos	0
YouTube Views	0
Slideshare Files	0
Slideshare Views	0
ResearchGate Followers	0

5.2.3 Press releases

To date, five press releases were issued in Greece, Ireland, Spain and the UK to announce the launch of the project.

Table 22. Press releases

1	**Title**	**New research at DCU to tackle energy efficiency in European housing**
	Date of issue	29/06/2020
	Authors	DCU
	URL	https://rinno-h2020.eu/press-release-dcu/
2	**Title**	**Northumbria partners in €4.8m EU housing energy efficiency project**
	Date of issue	08/07/2020
	Authors	University of Northumbria
	URL	https://rinno-h2020.eu/press-release-unn/
3	**Title**	**The Hellenic Institute of Passive Building, Partner in a European project € 4.8 million to address the energy efficiency of housing in Europe**
	Date of issue	01/07/2020
	Authors	HPHI
	URL	https://rinno-h2020.eu/project-launch-the-hellenic-institute-of-passive-building-press-release-english/

4	Title	CIRCE PARTICIPATES IN A EUROPEAN PROJECT OF 4.8 MILLION EUROS TO ADDRESS ENERGY EFFICIENCY IN EUROPEAN HOMES
	Date of issue	01/07/2020
	Authors	CIRCE
	URL	https://rinno-h2020.eu/project-launch-circe-english/
5	Title	NAPE will participate in an EU project worth 4.8 million euro to support the pace and scale of energy efficiency improvement in EU residential buildings through new technologies and business models.
	Date of issue	06/07/2020
	Authors	NAPE
	URL	https://rinno-h2020.eu/project-launch-nape-press-release-english/

5.2.4 Media Mentions

The press releases resulted in 14 media mentions in specialist and general newspapers and websites.

Table 23. Media Mentions

1	Source	Silicon Republic
	Title	DCU to help research ultra-efficient buildings as part of €4.8m EU project
	Web link	https://www.siliconrepublic.com/machines/dcu-ultra-efficient-buildings-rinno
	Type of audience	Industry
	Date	29/06/2020
	Estimated monthly traffic	380 000
2	Source	Irish Tech News
	Title	New research at DCU to tackle energy efficiency in European housing
	Web link	https://irishtechnews.ie/research-dcu-energy-efficiency-european-housing/
	Type of audience	Industry
	Date	29/06/2020
	Estimated monthly traffic	86 000
3	Source	Engineers Ireland
	Title	DCU research project to tackle energy efficiency in European housing

	Web link	https://www.engineersireland.ie/Engineers-Journal/News/dcu-research-project-to-tackle-energy-efficiency-in-european-housing
	Type of audience	Industry
	Date	29/06/2020
	Estimated monthly traffic	N/A
4	**Source**	**Ecozen**
	Title	RINNO: Φιλόδοξο ευρωπαϊκό πρόγραμμα για την ενεργειακή απόδοση κτιρίων
	Web link	https://ecozen.gr/2020/07/rinno-filodoxo-eyropaiko-programma-tin-energeiaki-apodosi-ktirion/
	Type of audience	Industry
	Date	01/07/2020
	Estimated monthly traffic	53 000
5	**Source**	**Energy Press**
	Title	ΕΕ: Εργο 4,8 εκατ. για εξοικονόμηση ενέργειας στα σπίτια
	Web link	https://energypress.gr/news/ee-ergo-48-ekat-gia-exoikonomisi-energeias-sta-spitia
	Type of audience	Industry
	Date	01/07/2020
	Estimated monthly traffic	430 000
6	**Source**	**Euro 2day**
	Title	ΕΕ: Εργο 4,8 εκατ. για εξοικονόμηση ενέργειας στα σπίτια
	Web link	https://www.euro2day.gr/news/economy/article/2030867/ee-ergo-48-ekat-gia-exoikonomhsh-energeias-sta-spi.html
	Type of audience	General
	Date	01/07/2020
	Estimated monthly traffic	2 000 000
7	**Source**	**B2green**
	Title	Το Ελληνικό Ινστιτούτο Παθητικού Κτιρίου, Εταίρος σε ευρωπαϊκό έργο €4.8 εκ. ευρώ για την αντιμετώπιση της ενεργειακής απόδοσης της κατοικίας στην Ευρώπη

	Web link	https://www.b2green.gr/el/post/81696/
	Type of audience	Industry
	Date	01/07/2020
	Estimated monthly traffic	152 000
8	**Source**	**Ecopress**
	Title	Το Ελληνικό Ινστιτούτο Παθητικού Κτιρίου σε ευρωπαϊκό πρόγραμμα ενεργειακής απόδοσης κατοικίας
	Web link	https://ecopress.gr/to-elliniko-institouto-pathitikou-ktiriou-se-evropaiko-programma-energiakis-apodosis-katikias/
	Type of audience	Industry
	Date	02/07/2020
	Estimated monthly traffic	96 000
9	**Source**	**World Energy News**
	Title	Συμμετοχή του Ε.Ι.ΠΑ.Κ σε ευρωπαϊκό έργο 4.8 εκατομμυρίων ευρώ - Η λειτουργία του RINNO
	Web link	https://worldenergynews.gr/index.php?id=46965
	Type of audience	Industry
	Date	01/07/2020
	Estimated monthly traffic	N/A
10	**Source**	**PBC Today**
	Title	Northumbria joins €4.8m EU housing energy efficiency project
	Web link	https://www.pbctoday.co.uk/news/energy-news/eu-housing-energy-efficiency/79076/
	Type of audience	Industry
	Date	10/07/2020
	Estimated monthly traffic	75 000
11	**Source**	**Business Leader**
	Title	NORTHUMBRIA PARTNERS IN €4.8M EU HOUSING ENERGY EFFICIENCY PROJECT
	Web link	https://www.businessleader.co.uk/northumbria-partners-in-e4-8m-eu-housing-energy-efficiency-project/94209/

	Type of audience	General
	Date	10/07/2020
	Estimated monthly traffic	65 000
12	**Source**	**Business in the News**
	Title	Northumbria partners in €4.8m EU housing energy efficiency project
	Web link	https://businessinthenews.co.uk/2020/07/19/northumbria-partners-in-e4-8m-eu-housing-energy-efficiency-project/
	Type of audience	General
	Date	19/07/2020
	Estimated monthly traffic	N/A
13	**Source**	**Construction Magazine**
	Title	Northumbria partners in €4.8m EU housing energy efficiency project
	Web link	https://constructionmaguk.co.uk/northumbria-partners-in-e4-8m-eu-housing-energy-efficiency-project/
	Type of audience	Industry
	Date	09/07/2020
	Estimated monthly traffic	N/A
14	**Source**	**Building Specifier**
	Title	€4.8 MILLION EUROPEAN RENOVATION PROJECT
	Web link	https://buildingspecifier.com/e4-8-million-european-renovation-project/
	Type of audience	Industry
	Date	09/07/2020
	Estimated monthly traffic	N/A

5.2.5 Other Activities

Other dissemination activities have been implemented to increase the awareness of the project among the general public. One blog has been posted on the project website to summarise the key objectives of the project. Additional blogs will be posted on a regular

basis throughout the project. One professionally-produced podcast has also been recorded and published as part of dotLAB Radio, a podcast series that has been launched by the Irish Institute of Digital Business (IIDB) and DCU Business school. This and all following podcasts will be available either for streaming or download on dedicated platforms such as Spotify, Apple Podcasts etc., and on RINNO and IIDB's websites.

Table 24 Blogs

1	Title	RINNO partners discuss motivations, innovative technologies and project milestones
	Date of issue	18/08/2020
	Authors	Robert Walsh (DCU)
	URL	https://rinno-h2020.eu/rinno-partners-interview/

Table 25 Podcasts

1	Title	Sustainability and the circular economy in construction – How the RINNO project aims to improve efficiency and reduce emissions
	Date of issue	27/08/2020
	Speaker(s)	Dr Mohammad Kassem (UNN) and Joseph Kilroy (CIOB)
	URL	https://rinno-h2020.eu/media/podcasts/

6. Concertation

Concertation activities will include both formal and informal engagement. Formal engagement includes participation in workshops, conferences, and collaboration on relevant construction, deep renovation, ICT and related standards, production of white papers, position papers and other projects. Informal engagement will include teleconferences, face to face meetings, and discussions.
RINNO will draw on the experience of previously funded projects and envisages exchanges of knowledge with (i) closed FP7 projects, (ii) ongoing and closed Horizon 2020 projects, (iii) future Horizon Europe projects, (iv) projects funded by other agencies, (v) projects funded by industry and (vi) any projects deemed by the project consortium to be of potential interest.

The overall aims and priorities of RINNO's concertation activities are:

- To establish synergies with relevant EU projects that relate to RINNO's core domains.
- To collaborate successfully with other EU projects.
- To engage with international standardisation organisations with a view to contributing to the furtherance of standards.
- To communicate successfully with the wider stakeholder community.

6.1 Concertation Strategy

6.1.1 EU Project Concertation

RINNO will draw on the experience of previously funded projects and envisages exchanges of knowledge with closed FP7 projects, ongoing and closed Horizon 2020 projects, future Horizon Europe projects, and projects being funded by other agencies and by industry of potential interest to the proposed research. Over the course of the project, RINNO partners will leverage projects that they are participating in currently.

Table 26 outlines eight projects in which RINNO partners are participating with relevant areas of interest to RINNO. This list will be extended from time to time as partners deem appropriate.

Table 26. Related EU-funded Projects with RINNO Partners

Project	Start/End Dates	Overview
RenoZEB	2017-10-01 to 2021-09-30-	RenoZEB aims to unlock the nZEB renovation market leveraging the gain on property value through a new systemic approach to retrofitting that will include innovative components, processes and decision making methodologies to guide all value-chain actors in the nZEB building renovation process; including integrated solutions with highest impact in the revalorization of the building. RenoZEB will provide cost-effective plug&play solutions for a large scale deep NZEB rehabilitation schemes, ensuring the integrability of all its components, methodologies, training, guidelines, and demonstration cases (real and virtual) that show and ensure the replicability of the schemes, and technical tools to appropriately address the valorization of the building stock before and after nZEB renovation schemes are applied.
BIMERR	2019-01-01 to 2022-10-30	BIMERR will design and develop a Renovation 4.0 toolkit, which will comprise tools to support renovation stakeholders throughout the renovation process of existing buildings, from project conception to delivery. It comprises tools for the automated creation of enhanced building information models, a renovation decision support system to aid the designer in exploring available renovation options through an the accurate estimation of renovation impact on building performance as well as a process management tool that will optimize the design and on-site construction process toward optimal coordination and minimization of renovation time and cost.
RE-COGNITION	2019-04-01 to 2022-03-31	RE-COGNITION proposes a holistic, end-to-end RETs Integration Framework towards energy positive buildings with a focus on small and medium-sized buildings in Europe. Through the envisaged Automated Cognitive Energy Management Engine (ACEME), RE will be utilized more efficiently paired with appropriate storage technologies and innovative energy systems to meet the electricity and heating/cooling demand of the buildings. The framework is designed to enable the integration of multiple, heterogeneous, energy generating systems covering the spectrum of available building-scale RES (solar (PV, thermal/ cooling), wind, bioenergy (renewable biofuel through micro-CHP) and geothermal) and demonstrating future-proof extensibility.
DRIMPAC	2018-09-01 to 2021-08-31	DRIMPAC offers a comprehensive solution to empower prosumers to become active participants in the energy markets. It comprises three main pillars: a) A legacy and Standards-compliant interoperability framework to interconnect building energy loads/appliances and expose their demand flexibility as price-responsive demand to the grid or for market actors to aggregate and bid in ancillary service markets. b) A human-centric, intelligent building energy management system that will lift the burden of demand response from the consumers shoulders and reduce reluctance and fear of participation in DR programs. It will infer user comfort preferences and dynamically control building loads to minimize energy cost and use for the building occupant leveraging dynamic prices, while always preserving comfortable and healthy indoor conditions.

Project	Start/End Dates	Overview
		c) Innovative business models and service offering for energy retailers in order to facilitate their transformation from commodity suppliers to digital energy service suppliers and kick-start the deployment of the DRIMPAC solution in the market.
ENVISION	2017-10-01 to 2022-03-31	Envision a full envelope concept that harvests solar energy from the 120 billion square meters of building surface available within the EU28. Envision using the currently unused 60 billion square meters of façade surface. That is why 'ENVISION' will demonstrate a full renovation concept that, for the first time, harvests energy from ALL building surfaces (transparent and opaque). The hybrid harvesting solutions will harvest energy both thermal and electric from the whole envelope, using standard PV solutions for roof and developing new solutions for the façade. As façade solutions have the lowest TRL, 'ENVISION' will develop energy harvesting invisible aesthetic façade solutions. The solutions will harvest maximum amount of solar energy and simultaneously retain the aesthetic and functional properties of the façade. To maximise efficient usage of the harvested energy, the solutions are coupled to novel heat systems and district heat networks.
PLUG-N-HARVEST	2017-09-01 to 2021-11-30	The main strategic goal of the PLUG-N-HARVEST proposal is to design, develop, demonstrate and exploit a new modular, plug-n-play concept/product for ADBE - deployable to both residential and non-residential buildings - which is able to provide high (maximum possible) energy use reductions and high (maximum possible) energy harvesting from RES both at the single-building and the district scale while requiring medium-to-low installation costs and almost-zero operational costs.
EnergyMatching	2017-10-01 to 2022-03-31	EnergyMatching aims at developing adaptive and adaptable envelope and building solutions for maximizing RES (Renewable Energy Sources) harvesting: versatile click&go substructure for different cladding systems (R3), solar window package (R4), modular appealing BIPV envelope solutions (R5), RES harvesting package to heat and ventilate (R6). Such solutions are integrated into energy efficient building concepts for self-consumers connected in a local area energy network (energyLAN). The energyLAN is designed to fullfil comprehensive economic rationales (organised by geo-cluster), including balancing cost and performance targets, through the energy harvesting business enhancer platform (R1), which handles different stakeholders' benefits, risks and overall cash flows, and it will be exploited to develop specific business models. Operational strategies of the energyLAN are driven by the building and district energy harvesting management system (R7).
HYBUILD	2017-10-01 to 2021-09-30	HYBUILD will develop two innovative hybrid storage concepts: one for the Mediterranean climate primarily meant for cooling energy provision, and one for the Continental climate primarily meant for heating and DHW production. PINK: Development of a decentralized, pre-mounted, wall-integrated storage system with optimized hydraulic and control.

6.1.2 Identification of Other Relevant Projects

In addition to specific existing deep renovation, energy performance and related projects, RINNO will monitor appropriate notification services for relevant new projects to engage with. This includes projects related to building retrofitting, deep renovation, BIM, Digital Twinning, and renewable energy. RINNO has identified an initial list of 14 EU projects for potential direct engagement over the life of the project. These are outlined in Table 27 which will be updated from time to time.

Table 27. EU Funded projects with potential for RINNO engagement

Project	Call for Proposal	URL	Start/End Dates
Pro-GET-OnE	H2020-EE-2016-PPP	https://www.progetone.eu/	2017-05-01 to 2021-04-30
4RinEU	H2020-EE-2016-PPP	https://4rineu.eu/	2016-10-01 to 2021-06-30
SMAFIN	H2020-LC-SC3-EE-2020-1	N/a	2020-09-01 to 2023-08-31
BUILTHUB	H2020-LC-SC3-EE-2020-1	N/a	2020-10-01 to 2024-09-30
AmBIENCe	H2020-LC-SC3-EE-2018	http://ambience-project.eu/	2019-06-01 to 2021-11-30
StepUP	H2020-LC-SC3-EE-2018	https://www.stepup-project.eu/	2019-08-01 to 2023-01-31
EuroPACE	H2020-EE-2017-CSA-PPI	https://www.europace2020.eu/	2018-03-01 to 2021-02-28
TripleA-reno	H2020-EE-2017-CSA-PPI	https://triplea-reno.eu/	2018-05-01 to 2021-04-30
HEART	H2020-EEB-2017	https://heartproject.eu/	2017-10-01 to 2021-09-30
Envision	H2020-EEB-2017	https://www.energy-envision.eu/	2017-10-01 to 2022-03-31
SCORES	H2020-EEB-2017	http://www.scores-project.eu/	2017-11-01 to 2021-10-31
BIM4EEB	H2020-NMBP-EEB-2018	https://www.bim4eeb-project.eu/	2019-01-01 to 2022-06-30
ENCORE	H2020-NMBP-EEB-2018	http://encorebim.eu/	2019-01-01 to 2022-02-28
BIM4REN	H2020-NMBP-EEB-2018	https://bim4ren.eu/	2018-10-01 to 2022-09-30

Figure 11 below contains a proposed methodology to identify key opportunities for concertation and bi-directional collaboration where appropriate and relevant.

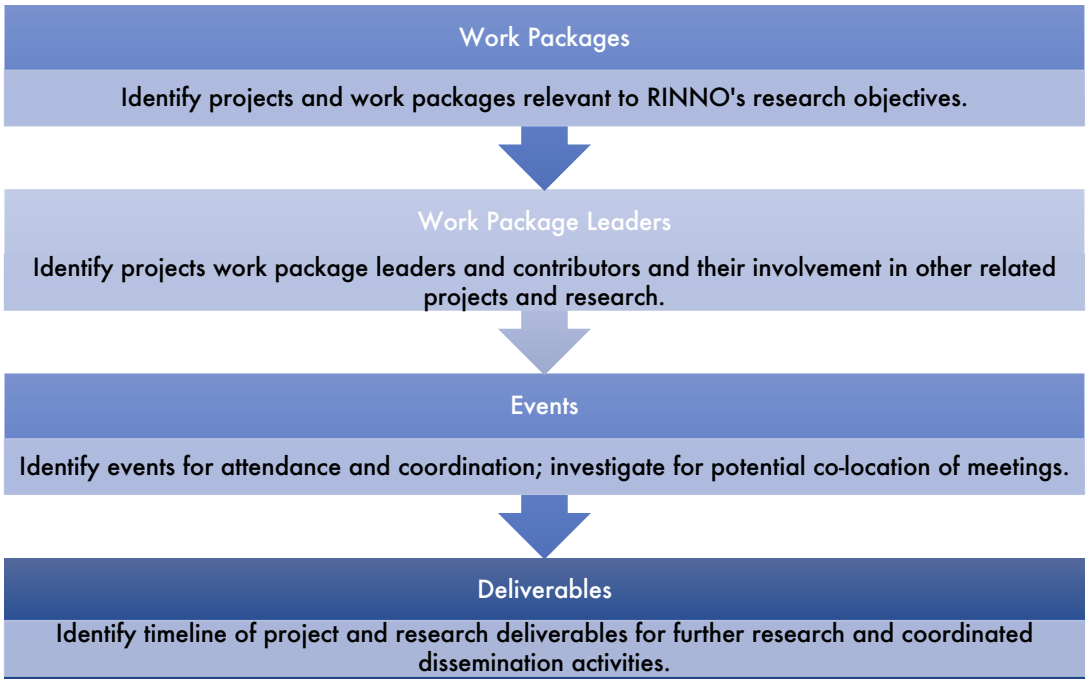


Figure 11. Project Identification Process for RINNO Concertation

6.1.3 International Standardisation Organisations

T8.4 outlines RINNO's primary activities in relation to standardization and certification. RINA-C will lead all such activities. T8.2 will support these activities by promoting RINNO to the wide range of organisations and agencies that influence and fund standard setting in contraction, ICT and related standards to deep renovation. A sample of some of the target organisations is listed in Table 28 below.

Table 28. International standardisation organisations relevant to the project

Stakeholder	Description
Institute of Electrical and Electronics Engineers (IEEE) Standards Association	IEEE is a leading developer of industry standards in a broad range of technologies that drive the functionality, capabilities, and interoperability of products and services, transforming how people live, work, and communicate.
International Organization for Standardization (ISO)	ISO is an independent, non-governmental international organisation which includes representatives from various national standards organisations. The ISO is developing a number of standards for testing and measuring building performance.
National Standards Authority of Ireland (NSAI)	NSAI (National Standards Authority of Ireland) is Ireland's official standards body. NSAI aims to inspire consumer confidence and create the infrastructure for products and services to be recognised and relied on all over the world.
European Committee for Standardization (CEN)	CEN is responsible for developing and defining voluntary standards at European level. CEN provides a platform for the development of European Standards and other technical documents in relation to various kinds of products, materials, services and processes.

Stakeholder	Description
European Committee for Electrotechnical Standardization (CENELEC)	CENELEC is responsible for standardisation in the electrotechnical engineering field. CENELEC prepares voluntary standards, which help facilitate trade between countries, create new markets, cut compliance costs and support the development of a Single European Market.
Sustainable Energy Authority of Ireland (SEAI)	SEAI is Ireland's national sustainable energy authority. SEAI aims to transform Ireland into a society based on sustainable energy structures, technologies and practices by providing well-timed and informed advice to Government, delivering a range of programmes efficiently and effectively, and engaging and motivating a wide range of stakeholders and showing continuing flexibility and innovation in all activities.
Solar Heat Europe (ESTIF)	ESTIF aims to develop, deepen and disseminate the knowledge concerning the use of solar thermal energy, from scientific, technological, economic, sociological, legal and political perspectives, as well as in any other aspect having a relevance at European level

6.1.4 Policy Making Organisation

Policy making organisations and those that influence policy may impact the future adoption of RINNO. These include government, government agencies, regulators, trade associations and other organisations who influence decisions on research and political priorities. In addition to targeting European Union institutions, directorates and expert groups and member state government units and agencies, RINNO has identified the following indicative stakeholders for engagement. The number of organisations and potential engagements will be reviewed periodically and increased over the duration of the project. RINNO will brief various policy making organisations periodically and participate in policy-influencing activities, where appropriate.

Table 29. Policy making organisations relevant to the project

Stakeholder	Description
European Commission	The European Commission is the executive branch of the European Union. As such, it is responsible for initiating and enforcing the laws of the EU and managing the EU's policies.
European Council	European Council defines the EU's overall political direction and priorities. It is not one of the EU's legislating institutions, so does not negotiate or adopt EU laws. Instead it sets the EU's policy agenda, traditionally by adopting 'conclusions' during European Council meetings which identify issues of concern and actions to take.

Stakeholder	Description
Member State Governments	National governments are responsible for translating EU Directives into national laws and for defining national policies of each member state of the EU.
Chambers of Commerce	Chambers of Commerce aim to create a business environment in which local businesses can prosper and to foster economic growth.
Local economic development agencies (e.g. Enterprise Ireland)	Enterprise Ireland (EI) is a government organisation responsible for the development and growth of Irish enterprises in world markets. EI collaborates with local enterprises to help them grow, innovate and establish an international presence.
Local research and innovation agencies (e.g. UK Research and Innovation – UKRI)	UKRI works in partnership with universities, research organisations, businesses, charities, and government to create the best possible environment for research and innovation to flourish. The aim of the UKRI is to support and help connect the best researchers and innovators with customers, users and the public.

6.1.5 Funding Bodies

The novel approach to buildings' deep renovation developed by RINNO could have profound effects on the competitiveness and availability of innovative and transformative technologies and processes in the areas of building renovation and energy efficiency.

RINNO will engage with the European Commission Horizon 2020 and the future Horizon Europe programme, and national research funding agencies to increase investments in relevant technologies through briefings, consultations and other policy-influencing activities.

6.2 Concertation Activities

RINNO's concertation activities will focus on stakeholders not addressed directly through (i) the project partners, (ii) the External Advisory Board, (iii) dissemination activities, and (iv) the exploitation activities. As such, the focus of concertation will be on engaging and collaborating with:

- EU Projects
- International Standardisation Organisations
- Policy making organisations
- Funding bodies

Concertation activities will be supplemental to the wider dissemination and exploitation plans and will include formal and informal components.

For each of the concertation priority categories, a contact database will be collated and continuously updated over the course project. For each stakeholder group, campaigns will be developed with clear objectives and messaging for contacting each stakeholder type. Contact with a given stakeholder will be allocated to RINNO partners on the basis of their existing relationship with a target.
Formal concertation activities may include:

- Participation in existing and proposed cluster activities and events;
- Participation in Horizon 2020, Horizon Europe, and other European Commission activities and events as notified by the Commission and others;
- Participation in formal consultation processes organised by target organisations;
- Organisation of and participation in third party stakeholder activities and events;
- Preparation and dissemination of briefing papers for each stakeholder category;
- Participation and contribution to standards setting activities; and
- Organisation of specific events including online meetings, seminars, workshops, webinars, demonstrations and other forms of strategic engagement to proactively involve relevant stakeholders.

Informal concertation focusses on:

- Attendance and participation in online events organised by stakeholders;
- Subscription and review of updates or newsletters;
- Informal discussions and meetings with stakeholders.

6.3 External Advisory Board

RINNO will establish an External Advisory Board (EAB) comprising academic and industry experts from the different areas addressed by the project. The primary role of the EAB is to help and guide the project consortium by giving an independent perspective on its plans and project's progress and suggesting opportunities for maximising impact including opportunities for concertation with EAB member organisations or other organisations and activities within their networks. There will be at least four main EAB meetings: January 2021, January 2022, January 2023 and January 2024.

6.4 Key Performance Indicators

KPIs establish how well RINNO is performing in its Concertation activities. Performance will be measured by the overall number of engagements and outputs resulting from concertation activities in Years 2, 3 and 4, namely:

Table 30. Concertation KPIs

Activity	KPI	TARGET, M48
Research Collaboration with other Projects	Number of projects with whom there are joint acknowledgements of outputs	3
Formal Concertation Activities	Number of formal concertation activities (e.g. meetings, workshops, demonstrations as per above)	12

Informal Concertation Activities	Number of information concertation activities (e.g. online meetings and informal discussions with stakeholders as per above)	6
Position Papers/Whitepapers	Position paper per cluster where such clusters are active and can be identified	1 per cluster
Policy Making and Standard Setting Activities	Contributions to policy making and standard setting activities	2
External Advisory Board Meetings	Number of EAB Meetings	4

7. Conclusion

This Deliverable D8.1 outlines the proposed activities and KPIs for RINNO to raise awareness, engage stakeholders, promote the project and its results, achievements and knowledge generated, while also setting a basis for concertation and exploitation. This Dissemination Plan should not be considered static and are subject to alteration and improvement in the best interests of the project and where new and greater opportunities for dissemination appear. Some market research and planning activities have been impacted by the timing of the task and lockdowns, work restrictions, and mandatory leave enforced as a result of COVID19. Notwithstanding this, the project is largely on track with respect to WP8. The performance of the plan will be monitored and measured and changes will be made as necessary under the guidance of the Work Package Leader, the Project Management Board and the Project Coordinator.

Appendix A. Exemplar Audience Personas

Persona 1: BIM Lead/Manager

Overview of Role:

- Management and development of BIM implementation strategies.
- Training and support of staff with regard to BIM specific software programmes.
- Coordinate BIM kick-off meetings for the project teams.
- Overseeing design and software budgets.
- Installation and ongoing support of BIM software including incorporation of new software version releases.
- Regular reporting on current and projected outputs of the wider BIM team (BIM Engineers, BIM modellers & designers).
- Furthering the development of the company's digital transformation strategy and innovative technology usage within company projects.
- Monitoring performance across the supply chain to ensure effectiveness.

This table summarizes the various different roles associated with BIM Lead/Manager and the global and European market size of these individuals using the LinkedIn platform. The data was gathered from LinkedIn targeting individuals working in the following industries:

Construction, Architecture & Planning, Civil Engineering, Mechanical and Industrial Engineering.

Job Role	Market Size (Europe)	Market Size (Global)
CAD Manager / CAM Manager	700+	10,000+
Service Coordinator	2,800+	15,000+
Architectural Design Manager	2,000+	21,000+
Virtual Design & Construction (VDC) Manager	550+	4,700+
Facility Manager	4,200+	23,000+
Lead planner	130+	2,300+

Persona Profile:

Oliver Agner is a Design & BIM Lead for a Swedish owned architectural firm.

Company Profile: Oliver works for an architecture and planning company located in Stockholm, Sweden.

The company employs 30 and aims to become a leading Swedish provider of architectural, design, planning and project management for construction, with a focus on innovation.

Location: Stockholm, Sweden

Market Size: 26,000 globally, 150 in Sweden

Age: 30-50

Education: BSc in Construction Management & Construction Technology

Goals:

- Keeping up to date on the latest BIM software, applications and processes.
- Lowering cost and improving efficiency for current clients and partners.
- Developing new external partnerships and relationships.
- Ensuring that BIM processes align with the company's design strategy.

Challenges and Pain Points:

- Ensuring BIM alignment with building regulations and fire protection models across the company's portfolio.
- Guaranteeing that all models conform to data requirements.
- Keeping up to date with changing computer systems and applications.

- Aligning the BIM team output with the vision of multiple stakeholders including designers, clients and architects.

Values:

- Passionate about creativity, innovation and efficiency in architecture and design.

Customer Experience He Wants:

- Tools which will improve efficiency for the BIM team and will provide ongoing value and savings for clients and partners.

Info Sources:

- Architect's Journal
- ArchDaily
- AEC Magazine
- AUGIWorld
- Cadalyst
- Architectural Digest

What LinkedIn groups do BIM Leads/Managers hang out on?

Group	Link
Dezeen	https://www.linkedin.com/groups/3118814/
Nordic Innovation	https://www.linkedin.com/groups/3893185/
"H2020 SMART CITIES & Communities" ICT in Building and Construction, ASCE, BIM & VDC	https://www.linkedin.com/groups/4427029/
BIM Experts	https://www.linkedin.com/groups/98421/
BIM Architecture & Digital Design	https://www.linkedin.com/groups/923267/
Architizer	https://www.linkedin.com/groups/2453039/
Virtual Design & Construction	https://www.linkedin.com/groups/67725/
MEP Engineer - Architects & Engineers Network by Virtual Energy Solutions, Inc.	https://www.linkedin.com/groups/139536/

Persona 2 (Digital Twin): Senior Building Engineer

Overview of Role:

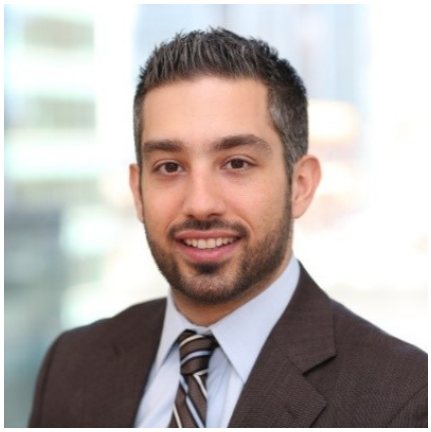
- Implementing building automation control strategies
- Implementing systems to solve problems and increase team effectiveness
- Liaising with clients and other stakeholders to ensure design briefs are met in-line with health and safety regulations and energy efficiency targets
- Conducting Energy assessments to determine building energy performance and devise a plan to optimise the energy efficiency of a property
- Surveying and carrying out walk-downs on all mechanical equipment needed for the building services
- Providing detailed design for client facilities including AHU and black utility schematics, drawings, layouts and schedules.
- Ensuring that the design brief is met, that the building is comfortable and safe for its occupants, that it meets all aspects of the building regulations, and is an energy efficient and sustainable building.

This table summarizes the various different roles associated with Senior Building Engineers and the global and European market size of these individuals using the LinkedIn platform. The data was gathered from LinkedIn targeting individuals working in the following industries:

Construction, Architecture & Planning, Civil Engineering, Mechanical and Industrial Engineering.

Job Role	Market Size (Europe)	Market Size (Global)
Building Physics Engineer	1500+	4,800+
Energy Officer	35+	308+
Sustainable Structures and Materials Specialist	278+	1600+
Building Simulation Specialist	427+	1,500+
Sustainability/Energy Engineer Energy Assessor	347+	3,700+
BREEAM Specialists/Professionals	3,100+	14,000+
Building Services Design Consultants	234+	2,300+

Persona Profile:



Mateo Mandel is a Senior Building Physics Engineer for a multinational professional services firm.

Company Profile: A Spanish building engineering firm with 50 employees. Provides clients with engineering, architecture, design, planning, project management and consulting services for all aspects of the built environment.

Location: Madrid, Spain

Market Size: 4,800+ globally, 52 Spain

Age: 30-50 Education: BSc in Architectural Engineering

Goals:

- Participate in projects with a sustainable focus and building physics challenges.
- Utilise building technology and physics to enhance efficiency, affordability and sustainability of energy consumption in buildings.
- Look to occupant comfort issues, energy use, carbon emissions, and operational performance in order to quantify building performance.
- Work with academics and leading research centres in order to remain at the cutting edge of building physics and develop services to benefit the design process.

Challenges and Pain Points:

- Effectively utilising new building technologies and using them in a strategic and cost-effective manner
- Using technology to accurately measure energy consumption of buildings and optimise the building energy assessment process

Values:

- Ability to balance big picture strategic thinking with attention to detail.
- Strong leadership and team-building capabilities
- Organised and process-oriented with a track record of implementing systems to solve problems and increase team effectiveness

Customer Experience He Wants:

- A product that can provide better insights about how to improve operations, increase efficiency and discover issues digitally before it happens in the real world in order to reduce risk and increase return on investment.

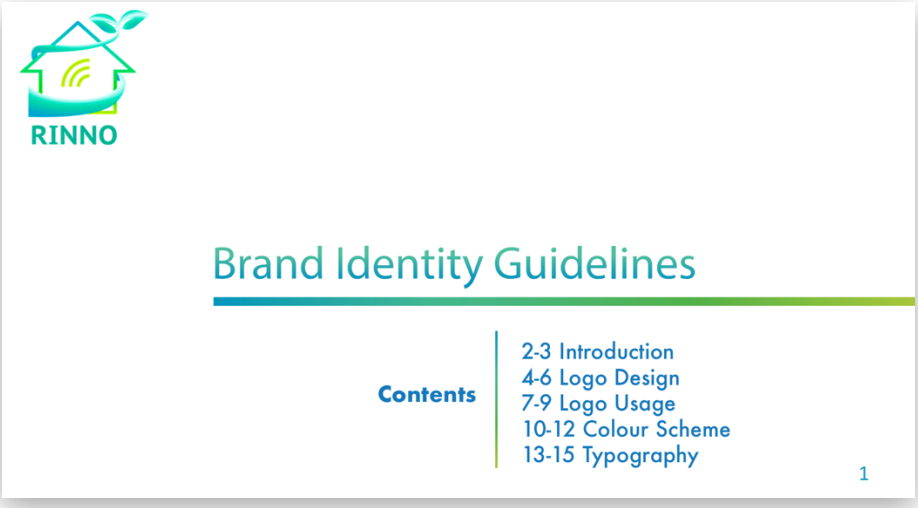
Info Sources:

- Green Building and Design Magazine (GB&D)
- DLR Group
- Council on Tall Buildings and Urban Habitat
- KHL Group – Construction Europe Magazine
- E&T Magazine
- The Economist

What LinkedIn groups do Building Physics Engineers hang out on?

Group	Link
Young Professionals in Energy - YPE SF Bay Area	https://www.linkedin.com/groups/4018074/
Passive House - the energy efficient construction standard	https://www.linkedin.com/groups/1946618/
Association of Energy Engineers (AEE)	https://www.linkedin.com/groups/1859049/
Building Physics	https://www.linkedin.com/groups/1712337/
REHVA Energy Group	https://www.linkedin.com/groups/2312185/
Chartered Institution of Building Services Engineers (CIBSE)	https://www.linkedin.com/groups/75555/
Open innovation, green, energy efficiency and smart technologies	https://www.linkedin.com/groups/8135752/
Alliance for an Energy Efficient Economy (AEEE)	https://www.linkedin.com/groups/3832445/
Sustainability Professionals	https://www.linkedin.com/groups/59930/

Appendix B. RINNO Style Guide


RINNO

Brand Identity Guidelines

Contents

1


RINNO

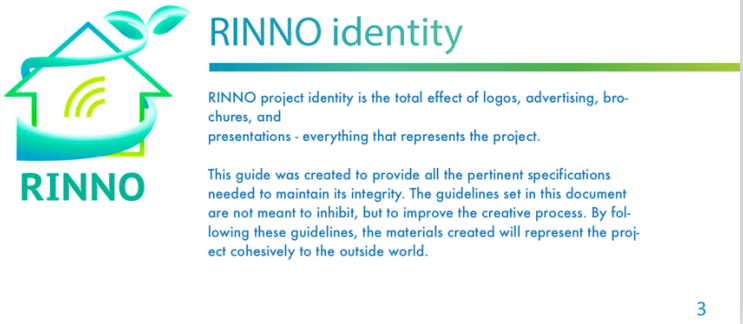
Introduction

Overview

The purpose of these guidelines is to explain the use of the RINNO brand style and to reinforce consistent application of the visual elements in all communications. This includes publications, presentations and all other marketing materials, both online and offline.

Guidelines on the use of the logo are included.

2


RINNO

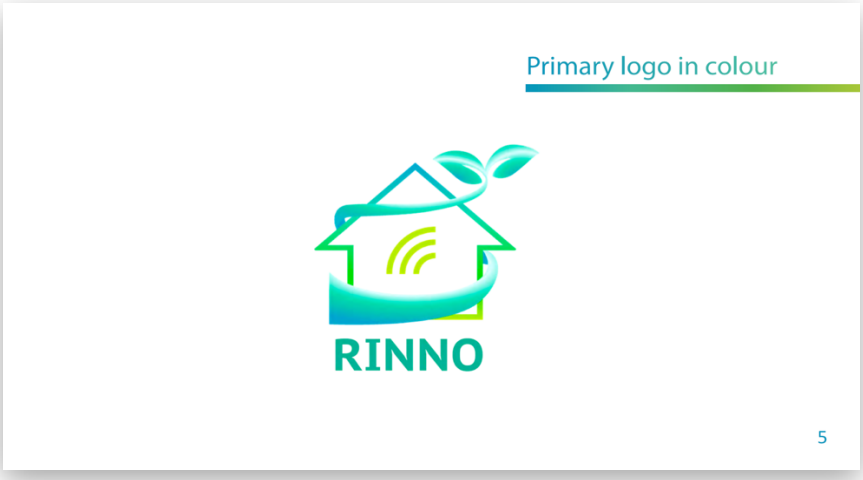
RINNO identity

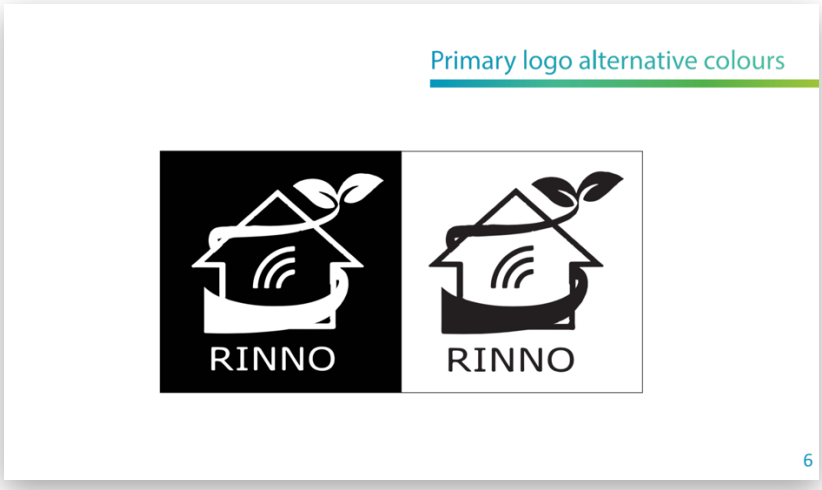
RINNO project identity is the total effect of logos, advertising, brochures, and
presentations - everything that represents the project.

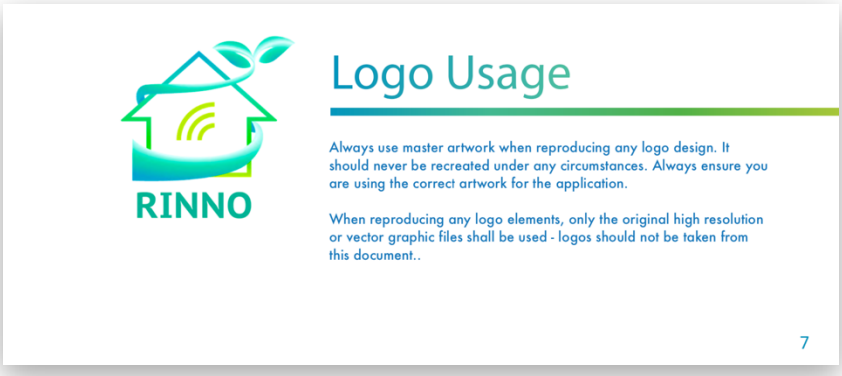
This guide was created to provide all the pertinent specifications needed to maintain its integrity. The guidelines set in this document are not meant to inhibit, but to improve the creative process. By following these guidelines, the materials created will represent the project cohesively to the outside world.

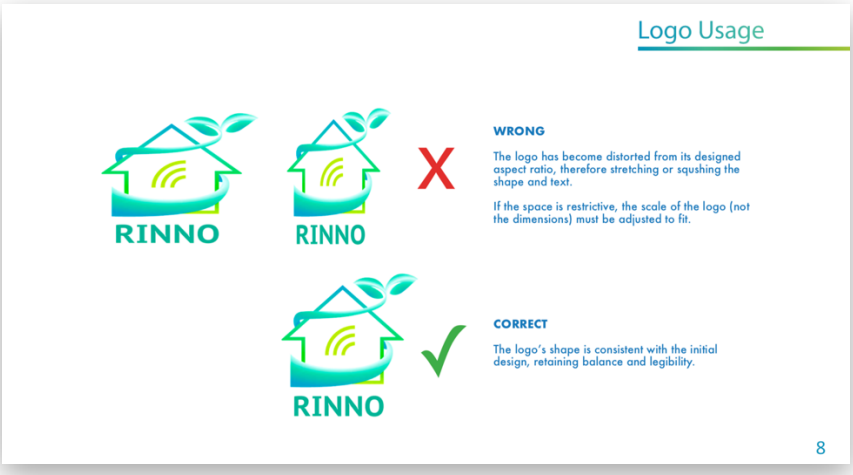
3

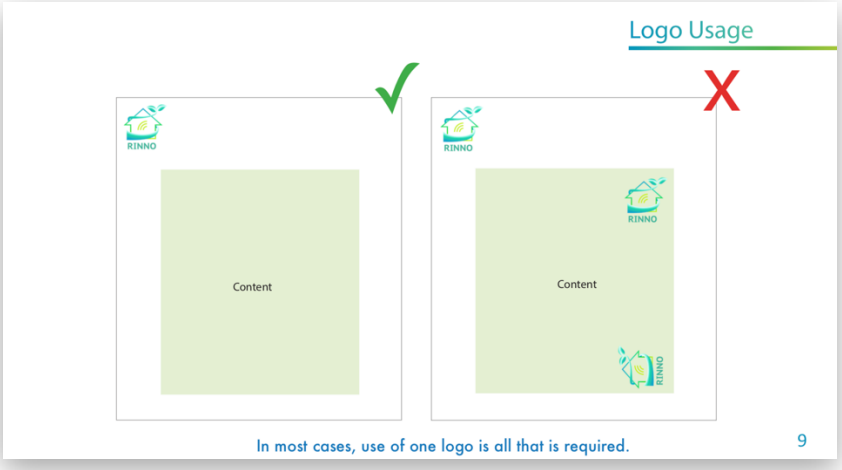

Logo Design
The RINNO logo is an important and valued graphic element and must be used consistently and appropriately, even minor variations will undermine and compromise the image of the branding.
RINNO

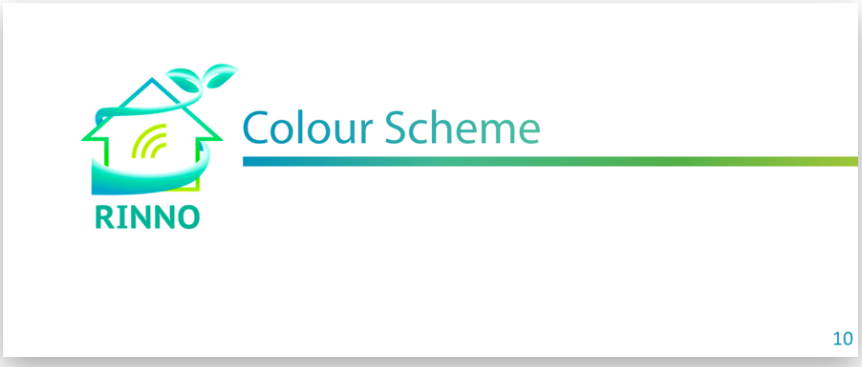

Primary logo in colour
RINNO
5

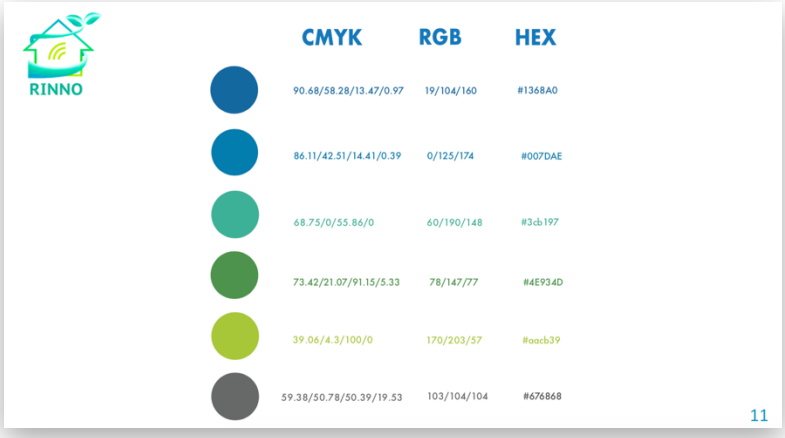

Primary logo alternative colours
RINNO
RINNO
6


RINNO
Logo Usage
Always use master artwork when reproducing any logo design. It should never be recreated under any circumstances. Always ensure you are using the correct artwork for the application.
When reproducing any logo elements, only the original high resolution or vector graphic files shall be used - logos should not be taken from this document..
7


Logo Usage
RINNO
RINNO
WRONG
The logo has become distorted from its designed aspect ratio, therefore stretching or squshing the shape and text.
If the space is restrictive, the scale of the logo (not the dimensions) must be adjusted to fit.
RINNO
CORRECT
The logo's shape is consistent with the initial design, retaining balance and legibility.
8

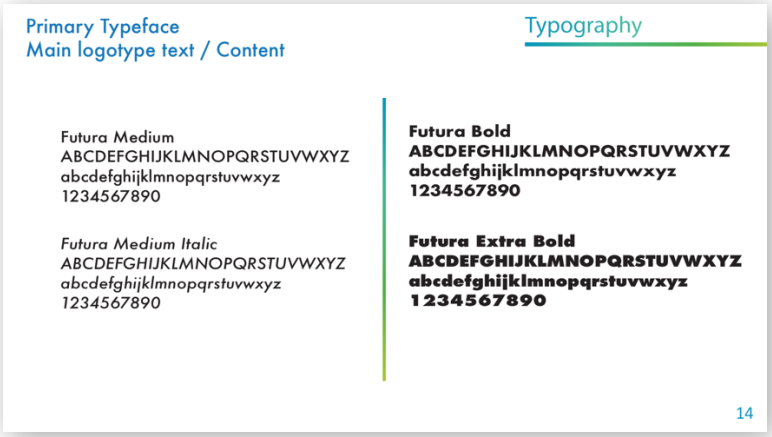

Logo Usage
RINNO
Content
RINNO
Content
In most cases, use of one logo is all that is required.
9

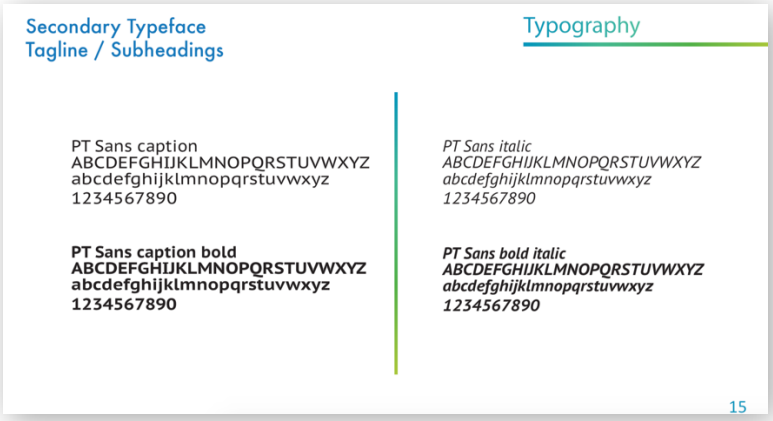

RINNO
Colour Scheme
10


RINNO
CMYK
RGB
HEX
90.68/58.28/13.47/0.97
19/104/160
#1368A0
86.11/42.51/14.41/0.39
0/125/174
#007DAE
68.75/0/55.86/0
60/190/148
#3cb197
73.42/21.07/91.15/5.33
78/147/77
#4E934D
39.06/4.3/100/0
170/203/57
#aacb39
59.38/50.78/50.39/19.53
103/104/104
#676868
11


Colour Scheme
RINNO
RINNO
RINNO
RINNO
RINNO
RINNO
Examples of how the primary logo deals with the alternative colour backgrounds from the suggested scheme.
The only 'rules' are that the colours do not clash and that there is a level of contrast (or difference) between logo, typography and its specified backdrop.
12


RINNO
Typography
13


Primary Typeface
Main logotype text / Content
Typography
Futura Medium
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
Futura Medium Italic
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
Futura Bold
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
Futura Extra Bold
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
14


Secondary Typeface
Tagline / Subheadings
Typography
PT Sans caption
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
PT Sans caption bold
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
PT Sans italic
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
PT Sans bold italic
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
15