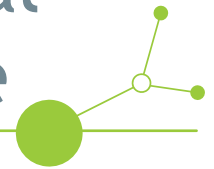


D.3.2.4. Guidelines for Implementation of Common Strategy for Circular and Digital Construction of Central Europe



Dr. Dragica Marinič, ZAG
Dr. Alenka Mauko Pranjić, ZAG

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Summary

The ReBuilt project, co-financed by the Interreg Central Europe Programme, has brought together partners from across Central Europe to accelerate the transition towards a circular and digital construction sector. Over the course of the project, the partnership developed practical digital tools, tested and validated circular construction solutions, built professional capacities through MOOC-based open online training, and established a network of Regional Circular and Digital Construction Hubs to ensure the long-term sustainability of its results beyond the funding period.

These guidelines have been developed as a project deliverable to support the implementation of the key project result Common Strategy for Circular and Digital Construction in Central Europe. They are addressed to four primary stakeholder categories – policy makers and public authorities; relevant public and private institutions; research and educational organisations; and industry and SMEs from the construction sector – who each play a critical role in mainstreaming circular and digital regulations and practices at national, regional, and local levels.

The guidelines provide a structured framework that bridges circular economy principles with digital construction practices across the Central European partnership region. They establish clear roles, responsibilities, governance mechanisms, and action pathways for collaborative implementation, with a view to achieving lasting, cross-border impact that endures well beyond the lifetime of the ReBuilt project.

The strategic objective of these implementation guidelines is to create a unified, cross-border approach that transforms the Central European construction sector by embedding circular material flows, progressively reducing construction and demolition waste, and deploying digital tools to enable data-driven, resource-efficient building practices – while ensuring the inclusive participation of public and private stakeholders at all levels of governance.

The guidelines are structured around the **six strategic pillars** of the ReBuilt Common Strategy, each providing targeted recommendations across the four stakeholder groups identified above.



1. Purpose and Scope

These guidelines aim to:

- provide practical recommendations for implementing circular and digital construction principles beyond the ReBuilt project funding period;
- support public authorities and institutions in developing enabling frameworks, policies, and procurement practices aligned with circular and digital construction objectives;
- guide construction companies, technology providers, and research institutions in adopting and scaling the solutions tested and validated through the ReBuilt project;
- strengthen regional cooperation through the network of Regional Circular and Digital Construction Hubs established across the Central European partner countries;
- foster transnational collaboration and sustained knowledge exchange across Central Europe.

The guidelines are applicable at local, regional, and national levels and are intended to complement and reinforce existing European and national and regional (national in each participating country of Interreg Central Europe programme) policy frameworks, including the European Green Deal, the New European Bauhaus, the EU Action Plan for the Circular Economy, and the recast Energy Performance of Buildings Directive (EPBD, 2024).

2. Guidelines by Strategic Pillar

The following six pillars constitute the Common Strategy for Circular and Digital Construction in Central Europe, developed within the ReBuilt project. For each pillar, specific implementation guidelines are provided for four target groups: Policy Makers and Public Authorities; Public and Private Institutions; Research and Educational Institutions; and Industry and SMEs. Together, these guidelines provide a practical and actionable framework for all stakeholder groups to contribute to the long-term implementation of the Common Strategy beyond the ReBuilt project funding period.

2.1. Pillar 1 | Circular Design Standards

Integrating circular principles from the earliest stages of building design and development is essential for reducing material consumption, enabling disassembly and reuse, extending the life cycle of construction assets, and reducing embodied carbon across the construction value chain.

Policy Makers and Public Authorities

Integrate circular design requirements – including design for disassembly, material passports, and lifecycle assessment – into national and regional building regulations and planning frameworks, in line with the obligations of the recast Energy Performance of Buildings Directive (EPBD, 2024) and the EU Construction Products Regulation (CPR 2024/3110).

Develop national standards and technical guidelines for circular building design that provide legal clarity and practical certainty for architects, engineers, and developers across the Interreg Central Europe region.

Create financial incentives – including grants, tax relief, and fast-track permitting – for projects demonstrating circular design principles such as design for disassembly and whole-life carbon assessment.

Public and Private Institutions

Adopt circular design methodologies as standard practice in new construction and major renovation projects, including the systematic use of material passports and design-for-disassembly principles.

Engage architects, engineers, and project managers in circular design training to build internal organisational capacity and embed circular thinking into project delivery processes.

Collaborate with research institutions and Regional Hubs to pilot, document, and disseminate circular design approaches at project level, contributing to the growing evidence base for the sector across Central Europe.

Research and Educational Institutions

Develop and disseminate methodologies, tools, and case studies for circular building design, supporting practitioners, policymakers, and industry actors across the Interreg Central Europe region.

Integrate circular design principles – including design for disassembly, lifecycle assessment, and material passport frameworks – into architecture, civil engineering, and construction management curricula at undergraduate and postgraduate level.

Conduct applied research on material performance, lifecycle assessment, and design-for-disassembly strategies to provide a robust evidence base for policy development and industry practice.

Industry and SMEs

Apply circular design principles – including modular construction, reversible connections, and material selection for reusability – as standard elements of project briefs and technical specifications.

Engage with Regional Hubs and training programmes to develop in-house expertise in circular design, lifecycle thinking, and the use of material passports.

Document and share experience from circular design projects – including costs, challenges, and performance outcomes – to build market confidence and support sector-wide learning across Central Europe.

2.2. Pillar 2 | Digital Tools and Data Infrastructure

Digital transformation is a key enabler of circular construction. Digitalisation supports transparency, traceability, and efficiency throughout the building lifecycle, and enables data-driven decision-making across the entire construction value chain. The digital tools and platforms developed within the ReBuilt project – including the CinderOSS platform – provide a practical foundation for this transition across the Interreg Central Europe region.

Policy Makers and Public Authorities

Mandate the use of Building Information Modelling (BIM) and equivalent digital documentation standards in publicly funded construction projects above defined thresholds, consistent with national BIM roadmaps and the requirements of CPR 2024/3110.

Develop interoperability standards and open data frameworks to enable seamless exchange of digital construction data across organisations, sectors, and national borders within the Interreg Central Europe region.

Support the development and long-term operation of shared digital infrastructure – including platforms, registries, and data standards – for the construction sector, recognising the ReBuilt / CinderOSS platforms as a regional asset to be sustained and further developed beyond the ReBuilt project.

Public and Private Institutions

Invest in digital infrastructure and staff capacity to adopt and effectively use digital construction tools – including BIM, digital product passports, and lifecycle tracking platforms – within standard project workflows.

Integrate digital tools developed within the ReBuilt project into project management, quality assurance, and sustainability reporting processes as standard practice.

Use digital platforms to monitor, document, and report on the circularity and sustainability performance of construction projects throughout their lifecycle, supporting both internal governance and external accountability.

Research and Educational Institutions

Conduct applied research on digital product passports, data governance frameworks, and interoperability standards to support harmonisation and standardisation at EU level.

Provide training, technical support, and user guidance to enable industry stakeholders across Central Europe to adopt and derive full benefit from digital construction tools developed through the ReBuilt project and beyond.

Integrate digital construction tools – including BIM, lifecycle assessment software, and circular material tracking platforms – into higher education and vocational training curricula, preparing the next generation of digitally capable construction professionals.

Industry and SMEs

Adopt BIM and digital documentation as standard practice across project types and scales, drawing on the training and support resources available through Regional Hubs and the ReBuilt MOOC.

Register and actively use the CinderOSS platform for material tracking, secondary material exchange, and circular performance reporting across projects and supply chains.

Engage with Regional Hubs to access technical support, peer learning, and guidance on selecting and implementing appropriate digital tools for specific business contexts.

2.3. Circular Material Flows and Markets

Building functional circular value chains and markets for secondary raw materials and circular construction products is critical for scaling up circular construction practices across the Interreg Central Europe region. The CinderOSS Marketplace, developed within the ReBuilt project, provides a dedicated digital platform for trading and exchanging secondary raw materials in the construction sector, and serves as a practical instrument for stimulating regional circular market development.

Policy Makers and Public Authorities

Develop or update regional waste management and construction material regulations to facilitate the legal and administrative acceptance of secondary raw materials, including clear definitions, quality standards, and end-of-waste criteria aligned with the EU Waste Framework Directive.

Formally recognise and reference the CinderOSS Marketplace in regional circular economy and resource management strategies as an operational tool supporting market development for secondary construction materials across Central Europe.

Support the long-term sustainability and expansion of the CinderOSS Marketplace through public co-investment or inclusion in regional digitalisation, circular economy, and cohesion funding programmes.

Public and Private Institutions

Register as active users of the CinderOSS Marketplace, contributing available secondary materials and sourcing materials from the platform as part of standard procurement and supply chain practice.

Promote the CinderOSS Marketplace among supply chain partners, subcontractors, and clients as a standard resource for circular and resource-efficient procurement across the region.

Monitor and report on the quantities and value of secondary raw materials procured and traded through circular channels, integrating this data into corporate sustainability and circular economy reporting.

Research and Educational Institutions

Investigate quality assurance, certification, and standardisation pathways for secondary raw materials to support market confidence, regulatory compliance, and cross-border trade within the Interreg Central Europe region.

Use the CinderOSS Marketplace as a live case study and data source for research on circular material flows, secondary market development, and construction industry transformation.

Engage with industry and policy actors to identify systemic barriers to circular value chains – including regulatory, financial, and behavioural barriers – and propose evidence-based solutions applicable across Central Europe.

Industry and SMEs

Actively participate in the CinderOSS Marketplace as both suppliers and buyers of secondary construction materials, integrating circular sourcing into standard procurement processes.

Explore business model adaptations that capitalise on circular material flows – including material recovery, selective deconstruction services, and secondary material processing – as sources of commercial opportunity and competitive differentiation.

Collaborate with Regional Hubs and research partners to test, document, and scale circular value chain models that are economically viable for companies of varying sizes across the Interreg Central Europe region.

2.4. Public Procurement and Governance

Governance frameworks and public procurement represent powerful and immediate levers for accelerating the circular and digital transition in construction. Public authorities, as major clients of the construction sector, are uniquely positioned to drive demand for circular solutions and to set standards that the wider market will follow. Harmonised approaches across the Interreg Central Europe region will amplify individual national efforts and create a coherent regional signal to the construction sector.

Policy Makers and Public Authorities

Integrate circular economy criteria into public procurement regulations and frameworks, including requirements for material reuse, recycled content, design for disassembly, and whole-life cost and carbon assessment, consistent with the EU Green Public Procurement framework.

Develop practical guidance for contracting authorities on how to specify, weight, and evaluate circular and digital requirements in construction tenders, drawing on experience and good practice from across the Interreg Central Europe region.

Establish monitoring and reporting mechanisms for the uptake of circular and digital construction principles in publicly funded projects, contributing to regional, national, and EU-level circular economy targets established for 2035.

Engage in transnational policy exchange through the Regional Hub network to harmonise approaches to circular construction governance and procurement across the Interreg Central Europe region, reducing fragmentation and supporting cross-border market development.

Public and Private Institutions

Align internal procurement policies and supplier requirements with circular economy principles, prioritising materials, products, and services that demonstrate measurable circularity across their lifecycle.

Participate actively in the development and testing of circular procurement criteria and methodologies, sharing experience and documented results with the wider sector through Regional Hubs and professional networks.

Engage with Regional Hubs to access practical guidance, peer support, and capacity building for implementing circular procurement in specific institutional and project contexts.

Research and Educational Institutions

Conduct research on the effectiveness of different governance and procurement instruments in driving circular construction outcomes, providing an evidence base for policy development and refinement across the Interreg Central Europe region.

Develop training and practical guidance materials for public procurement officers on circular and green procurement in the construction sector, tailored to the varying regulatory contexts across Central Europe.

Contribute to EU and national standardisation and policy processes related to circular construction governance, procurement criteria, and sustainability reporting frameworks.

Industry and SMEs

Proactively develop the capacity to respond to circular and digital procurement requirements – including the ability to provide Environmental Product Declarations (EPDs), digital product passports, and whole-life carbon data – as these become increasingly standard in public tenders across Central Europe.

Engage with Regional Hubs and industry associations to monitor evolving procurement requirements across the Interreg Central Europe region and to collectively advocate for proportionate, SME-accessible circular procurement frameworks.

Participate in pilot procurement exercises and market consultations, contributing practical market knowledge to the development of workable and effective circular procurement criteria.

2.5. Skills, Capacity and Knowledge

Sustained capacity building and awareness raising are essential to embed circular and digital construction principles across the sector and to address the significant skills shortages facing the Central European construction workforce. The ReBuilt MOOC and associated training programmes provide a scalable, accessible, and multilingual foundation for this effort, targeting construction professionals, students, policymakers, and the wider public across the Interreg Central Europe region.

Policy Makers and Public Authorities

Incorporate the ReBuilt MOOC and training materials into continuing professional development frameworks and qualification requirements for construction professionals at national and regional level, recognising completion as a formal credential where possible.

Support the integration of circular and digital construction content into vocational education and training curricula across the Interreg Central Europe region, working with education ministries, accreditation bodies, and Regional Hubs.

Fund the translation, contextualisation, and ongoing updating of training materials for local languages and regulatory contexts across Central Europe, ensuring broad and equitable access for all audiences in the region.

Public and Private Institutions

Mandate or actively incentivise completion of the ReBuilt MOOC and related circular and digital construction training for relevant staff – including project managers, procurement officers, design professionals, and site supervisors.

Use the MOOC and Hub training resources as standard onboarding and awareness tools for new partners, clients, and supply chain members engaging with circular construction projects.

Contribute to the ongoing development and quality improvement of training content by systematically sharing practical experience, case studies, and lessons learned from project implementation with the ReBuilt training network.

Research and Educational Institutions

Integrate the ReBuilt MOOC and training modules into university curricula for architecture, civil engineering, urban planning, and construction management programmes, supplementing academic content with practical project-based learning.

Continue updating and expanding training content in collaboration with industry partners and Regional Hubs, based on new research findings, evolving regulatory requirements, and emerging construction practices across Central Europe.

Actively engage vocational and university students as participants in Hub activities, pilot projects, and applied research, building the pipeline of circular and digital construction professionals needed to sustain the transition beyond 2035.

Industry and SMEs

Invest in the circular and digital upskilling of the workforce at all levels – from site workers and technicians to project managers and executives – drawing on the ReBuilt MOOC, Hub training programmes, and sector-specific resources available across the Interreg Central Europe region.

Collaborate with vocational training providers, Regional Hubs, and educational institutions to co-design training content that reflects real industry needs and the practical realities of circular construction implementation.

Recognise and reward staff who complete circular and digital construction training, embedding a culture of continuous professional development and innovation within the organisation.

2.6. Circular and Digital Construction Hubs

The Regional Circular and Digital Construction Hubs represent the cornerstone of the ReBuilt legacy and the primary institutional vehicle for the long-term implementation of the Common Strategy. As multi-stakeholder platforms anchored across the Interreg Central Europe region, with ZAG in Ljubljana, Slovenia serving as the central hub, they provide the institutional home, knowledge base, and collaboration space for sustained cross-border engagement. The long-term sustainability and growth of the Hub network depends on the active commitment and support of all stakeholder groups.

Policy Makers and Public Authorities

Formally recognise the Regional Hubs as strategic platforms for implementing regional circular economy and digitalisation strategies in the construction sector, embedding them within relevant policy, investment, and EU funding frameworks – including Structural Funds, national recovery plans, and smart specialisation strategies across the Interreg Central Europe region.

Allocate or facilitate access to public funding for the operational continuity of the Hubs, ensuring financial sustainability well beyond the ReBuilt project funding period.

Engage actively with Hub governance structures to align Hub activities with regional policy priorities, investment plans, and circular economy targets established for 2035.

Support the establishment and formalisation of a transnational coordination mechanism linking all Regional Hubs, enabling joint programming, shared learning, and a unified Central European voice in EU policy discussions.

Public and Private Institutions

Become active institutional members of the relevant Regional Hub, contributing expertise, resources, market knowledge, and project opportunities to Hub activities on an ongoing basis.

Use Hub platforms as the primary space for joint testing, demonstration, and piloting of circular and digital construction solutions, sharing results openly within the network and with the wider sector.

Support Hub outreach, communication, and event activities to expand the network of engaged stakeholders and raise the visibility of circular and digital construction across the Interreg Central Europe region.

Research and Educational Institutions

Anchor Hub activities firmly within institutional academic and research programmes, providing a continuous and sustainable pipeline of knowledge, innovation, skilled graduates, and research infrastructure to the Hub network.

Facilitate access to testing facilities, laboratories, and research datasets through Hub partnerships, enabling evidence-based development and validation of circular and digital construction solutions across Central Europe.

Lead or co-lead transnational research and innovation projects originating from the Hub network, actively leveraging EU funding instruments – including Horizon Europe, Interreg Central Europe, and LIFE – to ensure the Hub network continues to generate new knowledge and lasting impact beyond 2035.

Industry and SMEs

Engage with Regional Hubs as active participants – not merely as beneficiaries – contributing market intelligence, real project experience, testing opportunities, and business development expertise to Hub activities across the region.

Use Regional Hubs as a gateway to transnational markets, partnerships, and funding opportunities, leveraging the cross-border reach of the Hub network to access new clients, technologies, and collaborators across the Interreg Central Europe region.

Invest in Hub membership and co-financing as a long-term business development strategy, recognising the Hub network as a shared regional infrastructure that reduces individual transaction costs and accelerates the commercial viability of circular and digital construction.

3. CE Transnational Collaboration and Follow-up Initiatives

The ReBuilt project has demonstrated the value of transnational cooperation in accelerating the circular and digital transition in the construction sector in Central Europe. Maintaining and deepening this cooperation beyond the project period is a strategic priority for the implementation of the Common Strategy for Circular and Digital Construction in Central Europe.

Key recommendations for transnational collaboration

Establish a permanent transnational coordination mechanism among the Regional Hubs, supported by a light governance structure and a shared communication and knowledge platform, ensuring continuity of collaboration and joint strategic direction beyond the ReBuilt funding period.

Develop a joint follow-up project proposal to scale and replicate ReBuilt solutions – including the CinderOSS platform, the MOOC, and the Hub network model – across a wider geography within and beyond the Interreg Central Europe programme area.

Contribute collectively to EU-level policy discussions on circular construction, channelling project evidence and practical experience into legislative and standardisation processes, including the revised Construction Products Regulation (CPR 2024/3110), the recast Energy Performance of Buildings Directive (EPBD, 2024), and the EU Action Plan for the Circular Economy.

Organise annual transnational events – including conferences, workshops, and peer learning exchanges – to maintain momentum, share progress across all six strategic pillars, and attract new partners, policymakers, and investors to the regional circular and digital construction ecosystem.

Develop a shared monitoring and evaluation framework to track progress in implementing the Common Strategy and the uptake of circular and digital construction practices across all partner regions, drawing on the indicator framework established in Annex A of the Strategy.

3.1. Recommended Implementation Steps

The following phased approach is recommended for stakeholders beginning to implement the Common Strategy. Long-term targets are aligned with the monitoring and indicator framework set out in Annex A of the Common Strategy, with a target horizon of 2035.

Pillar	Short-term (0-12 months)	Medium-term (1-3 years)	Long-term (3+ years)
P1 – Circular design standards	Map policy gaps; promote circular design pilots; begin integrating DfD criteria into project briefs	Revise building codes; embed lifecycle assessment and LCA criteria in building permits; align with EPBD recast obligations	Circular design standards adopted across the Interreg Central Europe region; ≥30% of new public construction projects applying DfD principles
P2 - Digital tools and data infrastructure	Pilot BIM and CinderOSS digital tools in new projects; register on the CinderOSS platform	Scale digital adoption across organisations; connect to open data frameworks; work towards BIM adoption ≥75%	Sector-wide interoperability and mandatory digital documentation; ≥1,500 digital product passports issued across partner countries
P3 - Circular material flows and markets	Activate CinderOSS accounts; map secondary material flows; identify circular business model opportunities and join peer networks	Expand CinderOSS Marketplace use; develop quality standards for secondary materials; pilot and assess circular business models	Mature regional circular construction market; ≥300 SMEs offering circular products/services; ≥50 cross-border secondary material transactions/year; ≥€150M cumulative value of circular construction projects; circular business models mainstream across the sector
P4 - Public procurement and governance	Endorse Common Strategy; map procurement gaps; identify contracting authorities ready to pilot circular criteria	Revise procurement rules; embed circular criteria in tenders; develop guidance for contracting authorities	Circular procurement standard across all public authorities in the region; ≥60% of public construction contracts >€1M including circular/environmental award criteria; all 8 partner countries with formal circular GPP criteria adopted

P5 - Skills, capacity and knowledge	Promote ReBuilt MOOC internally; identify CPD pathways; enrol first cohorts	Embed MOOC in university and VET curricula across partner countries; build multilingual training offer	university and VET curricula across partner countries; build multilingual training offer ≥10,000 professionals trained in circular and digital construction; ≥5,000 MOOC completions with certification; accredited qualifications for circular and digital construction professionals
			construction
P6 - Circular and digital construction hubs	Confirm Hub membership and governance structures; establish ZAG as central hub	Expand Hub membership; launch joint transnational activities; establish regional hubs in all partner countries	membership; launch joint transnational activities; establish regional hubs in all partner countries Self-sustaining Hub ecosystem with dedicated long-term funding; ≥7 operational hubs (1 central + 6 regional); ≥2,000 stakeholders engaged annually; ≥100 good practices documented on CinderoSS

4. Conclusion

The Common Strategy for Circular and Digital Construction represents a shared vision and collective commitment by all ReBuilt project partners and associated stakeholders to transform the construction sector in Central Europe. Structured around six strategic pillars – from circular design standards and digital tools and data infrastructure to circular material flows, public procurement and governance, skills and capacity, and the Regional Hub ecosystem – it provides a comprehensive and actionable framework for long-term, cross-border change.

These guidelines translate that strategic vision into concrete recommendations for four stakeholder groups: policy makers and public authorities, public and private institutions, research and educational institutions, and industry and SMEs. Implementation will require sustained effort, genuine cross-sector collaboration, and a willingness to innovate and learn from experience.

The ReBuilt project has laid the foundation – through tested solutions, digital tools, trained communities of practice, a growing body of good practice, and an emerging network of Regional Circular and Digital Construction Hubs. It is now the responsibility of all stakeholders to build on that foundation and ensure that circular and digital construction becomes the standard – not the exception – across Central Europe by 2035.

For further information on the ReBuilt project, its tools, and the Regional Circular and Digital Construction Hubs, please contact the lead partner:

Slovenian National Building and Civil Engineering Institute (ZAG) Ljubljana, Slovenia Project website: <https://circularconstruction.zag.si> Digital tools platform: <https://circularconstruction.zag.si/digital-tools/>