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Alpine Space

BAUHALPS

D.1.1.1 – Methodology

Lead Beneficiary: Bayern Innovativ GmbH (PP06)

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EXECUTIVE SUMMARY

The BAUHALPS methodology offers a participatory framework for advancing circular building practices in the Alpine Space. Rooted in the principles of the New European Bauhaus—sustainability, aesthetics, and inclusion—it proposes a four-phase roadmap: Awareness and Education, Participatory Planning and Co-Design, Implementation and Capacity Building, and Monitoring, Evaluation, and Scaling. Developed through transnational workshops and expert input, the methodology responds to the region's unique challenges—geographic isolation, demographic shifts, and uneven awareness—while leveraging its cultural heritage and ecological stewardship.

Communities are positioned as active agents of transformation, supported by tools such as design charrettes, community mapping, participatory budgeting, and digital platforms. Artistic interventions, storytelling, and education initiatives foster emotional engagement and cultural resonance. Training programmes and pilot projects build local capacity, while community advisory boards ensure inclusive governance. Monitoring mechanisms and knowledge-sharing platforms support replication and policy integration.

This methodology is both a guide and an invitation—to co-create resilient, regenerative, and culturally vibrant built environments. It reflects a shift from top-down mandates to bottom-up innovation, where Alpine communities lead the way in shaping a circular future that honours tradition, embraces complexity, and inspires collective action.

1. Introduction

This document is **in fulfilment of deliverable D.1.1.1. "Methodology to engage local communities in the building transformation"** (BAUHALPS Application Form).

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The methodology, as detailed in the BAUHALPS application form, "proposes a roadmap with instruments to strengthen the participation of local communities to the local decisions concerning building's transformation processes". It further seeks "to engage the local building ecosystem (architects, engineer[s], building association[s] etc.)." The deliverable was developed during Reporting Period 2. It was informed by scoping exercises (including local workshops and an expert workshop) conducted across the consortium to mobilise the respective networks and build a shared understanding of the issues and barriers to circular building practices. The resulting methodology was subsequently reviewed and validated by the project partners.

The Alpine Space, a region defined by its mountainous landscapes, rich biodiversity, and centuries-old cultural traditions, is increasingly at the forefront of environmental and socio-economic challenges[1]. Stretching across eight countries - Austria, France, Germany, Italy, Liechtenstein, Monaco, Slovenia, and Switzerland - the core Alpine region is home to roughly 15 million people[2] (Alpine Convention, 2023) and serves as a vital ecological corridor for Europe. However, this unique territory is under mounting pressure from climate change, urban sprawl, tourism, and resource depletion.[3] Rising temperatures are accelerating glacial melt and altering precipitation patterns[4], while increasing urbanization and infrastructure development threaten fragile ecosystems and traditional ways of life[5]. In this context, the built environment

1 Modica, M. (2022). The Alps as context. In: Alpine Industrial Landscapes. RaumFragen: Stadt – Region – Landschaft. Springer VS, Wiesbaden. https://doi.org/10.1007/978-3-658-37681-9_3

2 The Alpine Space Programme reaches beyond the core alpine region and adds up to 80 million inhabitants (Permanent Secretariat of the Alpine Convention, 2023)

3 Kotlarski, S., Gobiet, A., Morin, S. et al. 21st Century alpine climate change. Clim Dyn 60, 65–86 (2023). https://doi.org/10.1007/s00382-022-06303-3; see also Veit H., Scheurer T., Köck G. (Ed's.) 2007: Landscape Development in Mountain Regions. Proceedings of the ForumAlpinum 2007, 18. – 21. April, Engelberg / Switzerland – International Scientific Committee on Research in the Alps Iscar. – Vienna, Austrian Academy of Sciences Press. Digital Edition. For further information also visit https://www.alpconv.org/en/home/topics/climate-change/.

4 Huber, C.J., Eichler, A., Mattea, E. et al. High-altitude glacier archives lost due to climate change-related melting. Nat. Geosci. 17, 110–113 (2024). https://doi.org/10.1038/s41561-023-01366-1

5 Schirpke, U. (2022). Ecosystem Services and Sustainable Development in the European Alps: Spatial Patterns and Mountain-Lowland Relationships. In: Misiune, I., Depellegrin, D., Egarter Vigl, L. (eds) Human-Nature Interactions. Springer, Cham. https://doi.org/10.1007/978-3-031-01980-7_11; see also Bole, D., Nared, J., Zorn, M. (2016). Small Urban Centers in the Alps and Their Development

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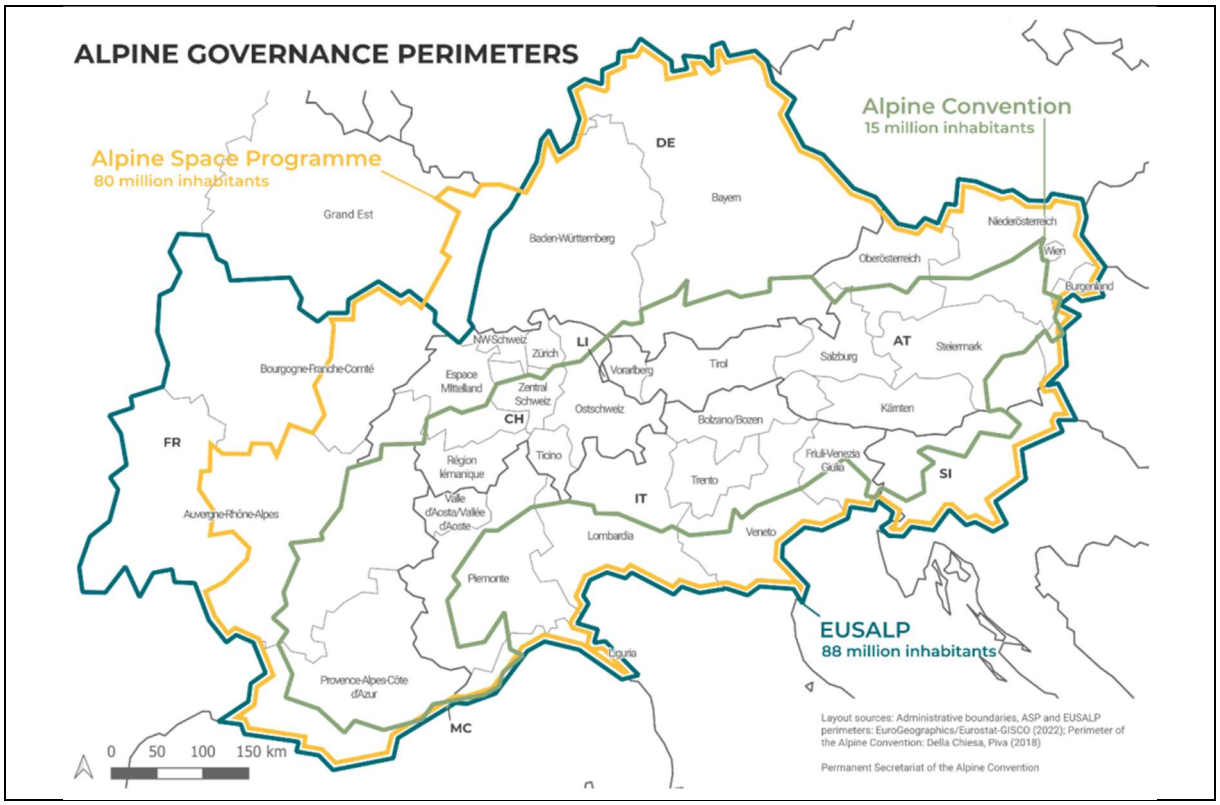
plays a pivotal role, both as a contributor to environmental degradation and as a potential catalyst for sustainable transformation (as is exemplified, for instance, by the Constructive Alps international architecture competition[6]).

Fig. 1: The Alpine Convention perimeter and other major boundaries in the Alps



Source: Alpine Convention (2023). Biodiversity in the alps: Policy Brief. A product o the Slovenian Presidency of the Alpine Convention 2023-2024.

Circular building practices offer a strong response to these challenges.[7] Unlike the traditional linear model of construction - which follows a 'take-make-dispose' trajectory - circular building emphasises the reuse, repurposing, and recycling of materials, as well as the design of buildings for adaptability and longevity. This

Issues. In: Zhelezov, G. (eds) Sustainable Development in Mountain Regions. Springer, Cham. https://doi.org/10.1007/978-3-319-20110-8_18

6 https://www.constructivealps.net/

7 EUSALP (2025). Policy Brief: Sustainable and circular construction in the alps. https://www.alpine-region.eu/fileadmin/user_upload/20250627_EUSALP_Policy_Brief_Sustainable_construction.pdf

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approach not only reduces waste and conserves resources, but also fosters local economic development, preserves cultural heritage, and enhances community resilience.[8] In the Alpine context, circular building can draw upon a wealth of vernacular knowledge and locally available materials, such as timber, stone, and clay, to create structures that are both environmentally sound and culturally meaningful. Modern building materials, material-sensitive design approaches and innovative forms of constructions complement the repertoire of circular building resources.

The New European Bauhaus (NEB) initiative, launched by the European Commission in 2020, provides a visionary framework for integrating circularity into the built environment.[9] Inspired by the original Bauhaus movement of the early 20th century, the NEB seeks to bridge the worlds of art, culture, science, and technology to shape more sustainable, inclusive, and beautiful living spaces. Its three core values - sustainability, aesthetics, and inclusion - resonate deeply with the needs and aspirations of Alpine communities. By promoting collaborative design, participatory governance, and place-based innovation, the NEB offers a powerful platform for reimagining how buildings are conceived, constructed, and inhabited.

This methodology of the BAUHALPS project outlines a **comprehensive roadmap for engaging local communities in the Alpine Space in the realisation of circular building practices aligned with NEB principles**. Recognizing that top-down mandates are insufficient to drive meaningful transformation, the approach emphasises grassroots participation, interdisciplinary collaboration, and iterative learning. It is grounded in the belief that communities are not merely passive recipients of policy but active agents of transformation, capable of shaping their built environments in ways that reflect their values, histories, and aspirations. Communities are understood within the remit of this document as composition of people and things (temporarily) tied together by the very process/activity of probing into and driving circular building practices within the alpine space.[10] They constitute

[8] Ibid.

[9] European Union (2025). About the initiative: New European Bauhaus. Brussels. https://new-european-bauhaus.europa.eu/about/about-initiative_en

[10] Cf. Chavis, D. M., & Lee, K. (2015). What Is Community Anyway? *Stanford Social Innovation Review*.

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communities of inquiry to the extent that they are bound together by a shared question or problem (such as how to realise the green transformation) and subscribe to a specific set of rules and forms of engagement. These communities may include a range of actors from local residents and craftsmen to artists and cultural mediators to educators and researchers to SMEs and key actors from the construction value chain to communal authorities and policy-makers to other decision-makers.

The roadmap is structured around four interrelated phases as summarised in Fig. 2:

1. Awareness and Education
2. Participatory Planning and Co-design
3. Implementation and Capacity Building
4. Monitoring, Evaluation and Scaling.

Each phase is designed to build upon the previous one, creating a cumulative process that deepens engagement, builds capacity and fosters long-term commitment. The methodology draws on a range of participatory tools and best practices, including design charrettes, community mapping, material passports as well as digital platforms that enable broader and more inclusive participation.

Fig. 2: Community Engagement Roadmap

In the Awareness and Education phase, the focus is on cultivating a shared understanding of circularity and the NEB vision. Through workshops, exhibitions, and storytelling, communities are introduced to the principles and possibilities of circular building. The Participatory Planning and Co-Design phase then invites stakeholders to actively shape the design of buildings and public spaces, ensuring that projects reflect local needs and identities. Implementation and Capacity Building involves the actual

https://doi.org/10.48558/EJJ2-JJ82

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construction of circular structures, supported by training programs, apprenticeships, and knowledge exchange networks. Finally, the Monitoring, Evaluation, and Scaling phase assesses the outcomes of these efforts and identifies opportunities for replication and policy integration.

Throughout the methodology, special attention is given to inclusivity and equity. Efforts are made to engage marginalized groups, including the elderly, migrants and people with disabilities and to ensure that all voices are heard and valued. The approach also recognizes the importance of aesthetics - not as a luxury, but as a fundamental aspect of human well-being, orientation and cultural expression. By integrating beauty into the design of circular buildings, the methodology seeks to inspire pride, foster belonging and strengthen social cohesion.

The Alpine Space, with its rich tapestry of landscapes, cultures, and traditions, is uniquely positioned to lead the way in circular building innovation. By aligning local initiatives with the broader vision of the New European Bauhaus, communities can not only address pressing environmental challenges but also create more vibrant, inclusive, and resilient places to live. This methodology is both a guide and an invitation - to policymakers, practitioners, and citizens alike - to embark on a journey of transformation that honours the past, responds to the present, and shapes a sustainable future.

2. Context and Challenges in the Alpine Space

The Alpine Space is a geographically and culturally diverse region that spans multiple national borders and encompasses a wide range of community types – from isolated mountain hamlets to dynamic urban centres nestled in valleys.[11] This diversity presents both opportunities and significant challenges for implementing circular building practices. One of the most pressing issues is geographic isolation, which

[11] https://www.alpine-space.eu/wp-content/uploads/2024/02/Interreg_Alpine_Space_programme_2021-2027-1.pdf

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affects many rural and mountainous areas. Limited transport infrastructure and harsh climatic conditions can hinder access to sustainable building materials, skilled labour, and technical expertise, making construction projects more costly and logistically complex.

Demographic trends further complicate the picture. Many Alpine communities face aging populations, youth outmigration, and seasonal fluctuations due to tourism, which can weaken local continuity and reduce the capacity for long-term planning.[12] These demographic shifts often result in fragmented community structures and a lack of sustained civic engagement, both of which are essential for the success of circular initiatives. Moreover, awareness of circular economy principles remains uneven across the region. While some areas benefit from active environmental organizations and progressive local policies, others lack exposure to innovative practices, or the institutional support needed to implement them.

Despite these challenges, the Alpine Space also offers unique strengths that can be leveraged to support circular building. Strong local identities, rooted in centuries of architectural tradition and ecological stewardship, provide a cultural foundation for sustainable practices.[13] Traditional knowledge – such as timber framing, dry stone walling, and passive design techniques - can be reinterpreted through a circular lens to create buildings that are both modern and deeply connected to place. Additionally, there is a growing interest in sustainability among residents, municipalities, and regional networks, driven by the visible impacts of climate change and a desire to preserve the Alpine culture.

To be effective, circular building strategies in the Alpine Space must be tailored to these distinct contexts. This means developing flexible models that can adapt to local conditions, fostering innovation through collaboration between communities, experts,

[12] Bausch, T., Koch, M., & Veser, A. (Eds.). (2014). Coping with Demographic Change in the Alpine Regions: Actions and Strategies for Spatial and Regional Development. Springer. https://doi.org/10.1007/978-3-642-54681-5; see also https://www.alpconv.org/en/home/topics/population-and-culture/

[13] See e.g. https://www.re-thinkingthefuture.com/architectural-facts/a3616-10-things-you-did-not-know-about-alpine-architecture/

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and institutions, and embedding circularity not just in technical solutions but in cultural narratives and everyday practices. Only by respecting the region's complexity and harnessing its strengths can circular building become a meaningful and lasting part of Alpine development.

3. Roadmap for Community Engagement

This methodology is structured around a four-phase roadmap to engage local communities in realising circular building practices in the Alpine Space. Each phase is aligned with the guiding values and working principles of the New European Bauhaus (NEB), emphasising sustainability, aesthetics, and inclusion. The roadmap provides detailed strategies, tools, and examples to strengthen community participation and foster a circular transformation.

Phase 1: Awareness and Education

The first phase of the roadmap is foundational: it sets the tone for the entire community engagement process by cultivating awareness, curiosity, and a shared understanding of circular building practices and the values of the New European Bauhaus (NEB).[14] In the Alpine Space, where communities are often deeply connected to their natural surroundings and cultural heritage, awareness-raising must be both locally grounded and forward-looking. This phase is not merely about disseminating information - it is about inspiring a cultural shift toward circularity, rooted in the principles of sustainability, aesthetics, and inclusion.

The **primary objectives of this phase** are to introduce the concept of circular building and its relevance to the Alpine context, communicate the values and vision of the NEB initiative in accessible, engaging ways, and build trust and interest among diverse community members. This may include organising interactive workshops, public lectures or exhibitions in collaboration with local schools, cultural centres,

[14] https://new-european-bauhaus.europa.eu/funding/neb-prizes_en

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environmental NGOs, and municipal governments. These events should showcase tangible examples of circular architecture, such as the "Building as Material Bank"[15], which illustrate how buildings can be designed for disassembly, reuse, and adaptability. They should also engage in new forms of interaction and collaborative work as sparked by the "Common Ground Project."[16]

Educational content ought to be tailored to the linguistic, cultural, and environmental context of each Alpine community. This (ideally) includes multilingual brochures and posters, short videos and animations, and infographics that connect circularity to local traditions. Materials should be co-created with local educators and artists to ensure cultural relevance and resonance.

Examples and further insights

Factsheet: Boosting Circular Economy in the Alpine Region, EU Strategy for the Alpine Region (EUSALP). https://www.alpine-region.eu/fileadmin/user_upload/20250515_EUSALP_Factsheet_Circular_economy.pdf

Educational Video: Governance for Eco-Industrial Parks: Enhancing Circular Economy in Alpine Regions. https://www.youtube.com/watch?v=4obIFHlvkZM

Infographics: Circular Economy Resources. https://www.circulareconomyresources.com/facts-and-figures

To engage younger audiences and tech-savvy residents, digital tools can be powerful. Virtual reality (VR) simulations, augmented reality (AR) apps, and digital material passports[17] allow residents to explore circular design principles in immersive ways. These tools not only educate but also spark imagination and innovation.

[15] https://www.bamb2020.eu/about-bamb/
[16] https://www.commongroundinitiatives.org/about-us
[17] Honic, M., Magalhães, P.M., Van den Bosch, P. (2024). From Data Templates to Material Passports and Digital Product Passports. In: De Wolf, C., Çetin, S., Bocken, N.M.P. (eds) A Circular Built Environment in the Digital Age. Circular Economy and Sustainability. Springer, Cham. https://doi.org/10.1007/978-3-031-39675-5_5

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Examples and further insights

AR Solutions: AR Locations. https://ar-locations.com/en/

Article: Beyond the Drawing Board. https://www.archdaily.com/1029744/beyond-the-drawing-board-how-augmented-reality-is-reshaping-architectural-design-review

Digital Material Passport: CIRPASS-2. https://cobuilder.com/en/eu-funded-project-digital-product-passports/

Personal stories are often more persuasive than abstract concepts. This phase should include testimonies from residents who have participated in circular renovation projects, profiles of local artisans and builders, and short documentaries or podcasts that follow the journey of a building material from demolition to reuse. Identifying and empowering local champions - respected community members who advocate for circularity - can amplify the message and build trust.

Examples and further insights

Storytelling: Fragments of the Future. https://architextures.org/stories/how-circular-design-can-reimagine-waste

Storytelling: REVIVE. https://storylabresearch.com/projects/revive/

Identity building: Werkraum Bregenzerwald. https://www.werkraum.at/en

Schools and higher education institutions are critical partners in shaping long-term cultural change. Activities can include design competitions, field trips, and curriculum modules on circular economy and sustainable architecture. Engagement with younger audiences, educators and researchers not only inspires the next generation but also brings circularity into family conversations, community life and professional practice.

Examples and further insights:

Higher Education: circular time lab - Architektur an der Hochschule Luzern. https://sites.hslu.ch/architektur/circular-time-lab/?lang=en

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Higher Education: E-Art Project – Co-creation for sustainability. https://www.eartproject.eu/

School: Werkraum Schule. https://www.werkraum.at/en/next-generation/the-werkraumschule

Art can make abstract ideas tangible and emotionally resonant. Collaborations with local artists can result in murals or installations made from reclaimed materials, temporary structures that demonstrate modular, circular design, and community art projects that symbolize the circular transition.

Examples and further insights

Art installations: Upcyclist. https://www.upcyclist.co.uk/2018/07/art-installations-repurposed/

Artistic Intervention: CRAFT Project. https://projects.research-and-innovation.ec.europa.eu/en/horizon-magazine/artistic-flair-inspiring-greener-european-cities

Residency: CYCLE UP. https://www.goethe.de/en/kul/foe/cyc.html

Residency: Where art and ecology intersect. https://artofchange21.com/en/where-art-and-ecology-intersect-21-artist-residencies-in-europe/

Effective communication is essential to reach a broad audience. Strategies include local media partnerships, social media campaigns, information booths at community gatherings, and mobile engagement units that travel to remote villages. All communication should emphasise inclusivity, using plain language and visuals to ensure accessibility.

To ensure equitable participation, this phase must proactively address potential barriers such as language and literacy, mobility and access, time constraints, and scepticism. Indicators of success may include the number and diversity of participants, engagement on digital platforms, and feedback from participants on

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their understanding and interest. These metrics can inform adjustments and help build momentum for the next phase.

Phase 2: Participatory Planning and Co-Design

This phase involves **engaging community members in the planning and design of circular buildings**. It emphasises **inclusive, transparent, and collaborative processes** that empower residents to shape their built environment in alignment with circular economy principles and the values of the New European Bauhaus (NEB). The goal is to co-create designs that reflect local needs, values, and aesthetics while promoting sustainability, resilience, and innovation.

Design charrettes are a central tool in this phase. These are intensive, multi-day workshops where residents, local stakeholders, and professionals such as architects, urban planners, and engineers collaborate to develop proposals for circular buildings or neighbourhood transformations. Charrettes foster creativity, consensus-building, and rapid prototyping of ideas. They can be held in community centres, schools, or even outdoors to encourage informal participation and visibility.

Examples and further insights

Design charrettes: CIRCuIT. https://www.circuit-project.eu/

Tool: Eco-Charrette Guide – Scott Edwards Architecture. https://www.seallp.com/news-collection/leading-an-effective-eco-charrette

Community mapping exercises complement charrettes by enabling participants to identify underutilized spaces, local resources, and cultural landmarks that can inform design decisions. These maps can highlight areas suitable for adaptive reuse, locations of traditional materials, or zones vulnerable to climate impacts. Mapping can be done using printed maps, digital tools, or participatory GIS platforms, and should be inclusive of diverse perspectives, including those of youth and elders.

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Examples and further insights

Community Mapping: Transformative Cities Project. https://transformative-cities.eu/project/

Community Mapping: Urbact. https://urbact.eu/articles/power-mapping-co-creation-everyone-involved-integrated-urban-development

Tool: Community Challenger Mapping Toolkit. https://communitychallengers.org/wp-content/uploads/2022/04/Community-Challengers_IO2-Mapping-Toolkit_final.docx-1.pdf

Participatory budgeting is another powerful instrument that allows residents to allocate a portion of public or project-specific funds to initiatives they prioritize. This process builds ownership, transparency, and accountability. It can be structured through public assemblies, online voting platforms, or deliberative mini-publics. In the context of circular building, participatory budgeting might fund the reuse of materials, the installation of shared infrastructure, or the creation of community workshops.

Examples and further insights

Participatory budgeting: Lisbon's green participatory budget. https://centreforpublicimpact.org/public-impact-fundamentals/green-participatory-budgeting-lisbon-portugal/

Workshops during this phase should be facilitated by interdisciplinary teams that include not only design professionals but also sociologists, environmental scientists, and cultural mediators. Their role is to ensure that technical feasibility is balanced with social inclusion and environmental integrity. These teams can also help translate complex concepts into accessible language and visuals, making the process more inclusive.

To ensure broad and equitable participation, special efforts must be made to engage marginalized groups, including the elderly, migrants, low-income households, and people with disabilities. This may involve providing translation services, accessible

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venues, transportation support, and childcare during meetings. Outreach should be proactive, using community liaisons, local media, and trusted institutions to invite participation.

Digital platforms can complement in-person engagement by offering tools such as online surveys, interactive maps, and virtual co-design environments. These platforms can extend participation to those unable to attend physical meetings and allow for asynchronous input. For example, residents might use a mobile app to suggest reuse ideas for vacant buildings or vote on preferred design features.

The outputs of this phase should include co-designed plans, visualizations, and implementation roadmaps that are publicly shared and validated through community feedback. These outputs serve as the foundation for the next phase - implementation and capacity building - and ensure that the circular transformation is rooted in local knowledge, creativity, and commitment.

Phase 3: Implementation and Capacity Building

The third phase of the roadmap focuses on translating co-designed plans into tangible outcomes through implementation and capacity building. This phase is critical for ensuring that circular building practices are not only conceptualized but also realised in a way that empowers local communities and sustains long-term transformation. It emphasises hands-on engagement, skill development, and the establishment of support structures that enable communities to take ownership of circular construction processes.

A cornerstone of this phase is the development of comprehensive training programs tailored to various community segments. These programs should range from introductory workshops for residents unfamiliar with circular principles to advanced technical courses for professionals such as architects, engineers, and construction workers. Topics may include deconstruction techniques, material recovery, modular construction, and the use of digital tools like Building Information Modelling (BIM) for circular design. Training should be delivered through local vocational schools,

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community centres, and mobile learning units to ensure accessibility across the Alpine region.

Examples and further insights

Training programmes for professionals: NEB Academy. https://innorenew.eu/2024/10/new-european-bauhaus-academy-training-professionals-biobased-construction-renovation-urban-transformation-launch-first-neb-academy-hubs/

Education initiatives: GreenComp Framework. https://education.ec.europa.eu/focus-topics/green-education/learning-for-the-green-transition

Apprenticeships and on-the-job training opportunities are essential for embedding circular skills within the local workforce. Collaborations with local construction firms, artisans, and material recovery enterprises can provide real-world experience and foster intergenerational knowledge exchange. These apprenticeships not only build technical capacity but also strengthen community ties and create employment pathways, particularly for youth and marginalized groups.

Pilot projects serve as living laboratories where circular building concepts can be tested, refined, and demonstrated. These projects should be selected based on their potential for visibility, replicability, and community relevance. Examples include the adaptive reuse of public buildings, construction of modular community centres, or renovation of traditional Alpine homes using reclaimed materials. Each pilot should be accompanied by clear documentation of processes, challenges, and outcomes to inform future initiatives.

To support implementation, knowledge exchange networks should be established at local, regional, and transnational levels. These networks can facilitate the sharing of best practices, technical expertise, and policy insights among Alpine communities and

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beyond. Platforms such as the New European Bauhaus Lab[18] and other EU-funded initiatives can serve as hubs for collaboration and innovation.

Material sourcing is another key component of this phase. Efforts should be made to map local material flows and identify opportunities for reuse and recycling. Municipalities can establish material banks or circular depots where salvaged components are catalogued and made available for new construction. Digital tools, including material passports and inventory platforms, can enhance transparency and traceability.

Examples and/or further insights

Digital platforms: Interreg North-West Europe Digital Deconstruction – Review of digital trading platforms.https://vb.nweurope.eu/media/20549/ddc_analysis-of-digital-trading-platforms-for-reused-materials_summary-and-platform-list.pdf

Inclusive governance structures must be maintained throughout implementation. Community advisory boards, composed of residents, local officials, and technical experts, can oversee project progress and ensure alignment with circular and NEB principles. Regular public updates, site visits, and feedback sessions can sustain community engagement and accountability.

Examples and further insights

Toolkit: Establishing Community Advisory Boards.
https://equitablecities.com/wp-content/uploads/2025/02/Establishing-and-Maintaining-a-CAB.pdf

Finally, partnerships with universities, research institutions, and innovation hubs are vital for integrating cutting-edge knowledge and monitoring tools. These collaborations can support the development of performance metrics, environmental

[18] https://new-european-bauhaus.europa.eu/community-core-new-european-bauhaus/neb-lab_en

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impact assessments, and user satisfaction surveys. Data collected through these mechanisms can guide iterative improvements and contribute to a growing evidence base for circular building in the Alpine context.

By investing in local capacity and fostering collaborative implementation, this phase transforms community aspirations into built realities. It lays the structural and social foundations for a resilient, inclusive, and circular built environment aligned with the vision of the New European Bauhaus.

Phase 4: Monitoring, Evaluation, and Scaling

The fourth and final phase of the roadmap is critical for ensuring the long-term success, adaptability, and replicability of circular building practices in the Alpine Space. It focuses on systematically assessing the outcomes of community engagement and circular construction initiatives, drawing lessons from pilot projects, and scaling successful models across the region. This phase aligns with the New European Bauhaus (NEB) principles of transparency, inclusion, and continuous learning.

Monitoring and evaluation (M&E) should be participatory, inclusive, and iterative. Community members must be actively involved in defining success indicators, collecting data, and interpreting results. This participatory approach not only enhances the accuracy and relevance of findings but also reinforces community ownership and accountability. Indicators should encompass environmental, social, and economic dimensions. Environmental metrics may include reductions in construction waste, energy consumption, and carbon emissions. Social indicators can assess levels of community satisfaction, inclusiveness of the process, and perceived improvements in quality of life. Economic indicators might track job creation, cost savings from material reuse, and local business engagement.

To facilitate data collection, a combination of qualitative and quantitative tools should be employed. These include citizen science apps for tracking material flows, feedback kiosks installed in public buildings, and structured interviews or storytelling sessions

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that capture lived experiences. Digital dashboards can visualize progress in real-time, making data accessible to all stakeholders. Evaluation reports should be published in plain language and presented in community forums, fostering transparency and dialogue.

Lessons learned from pilot projects must be systematically documented and shared. This includes both successes and challenges, as well as adaptations made during implementation. Toolkits, case studies, and video documentaries can serve as valuable resources for other communities embarking on similar journeys. These materials should be disseminated through regional networks, NEB platforms, and educational institutions.

Scaling successful models requires strategic planning and resource mobilization. Policy briefs summarizing key findings and recommendations should be prepared for local and regional policymakers. These briefs can inform updates to building codes, procurement guidelines, and funding criteria to better support circular practices. Training modules based on pilot experiences can be integrated into vocational education and professional development programs, ensuring that knowledge is institutionalized.

Funding mechanisms are essential for replication. Municipalities can leverage EU structural funds, regional development programs, and public-private partnerships to finance new initiatives. Crowdfunding and community investment schemes may also be explored to deepen local commitment. Cross-border cooperation is particularly relevant in the Alpine context, where shared environmental challenges and cultural ties create opportunities for joint projects. Platforms such as the Alpine Convention[19] and NEB-affiliated networks[20] can facilitate knowledge exchange and coordinated action.

Ultimately, this phase ensures that circular building practices become embedded in the fabric of Alpine communities. By continuously learning, adapting, and scaling, the

[19] https://www.alpconv.org/en/home/convention/
[20] https://new-european-bauhaus.europa.eu/community-core-new-european-bauhaus_en

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region can lead the way in demonstrating how circularity, beauty, and inclusion can be harmoniously integrated into the built environment.

The final phase focuses on evaluating the outcomes of community engagement and circular building initiatives. Indicators should include environmental impact, social inclusion, and community satisfaction. Lessons learned should be documented and shared through regional networks and NEB platforms. Successful models can be scaled to other Alpine communities through policy advocacy, funding mechanisms, and cross-border cooperation.

Monitoring should be participatory, involving community members in data collection and analysis. Tools such as citizen science apps, feedback kiosks, and storytelling sessions can capture diverse perspectives. Evaluation reports should be publicly accessible and presented in community forums to encourage dialogue and continuous improvement.

Scaling strategies may include the development of policy briefs, toolkits, and training modules that distil key insights from pilot projects. Funding mechanisms such as EU grants, regional development funds, and public-private partnerships can support replication. Cross-border cooperation can be facilitated through Alpine-wide networks and within the framework of EUSALP – the European Strategy for the Alpine Region[21] and NEB-affiliated initiatives, fostering a shared vision for circular transformation.

4. Instruments for Participation

Effective community engagement in circular building practices requires a diverse set of participatory instruments that reflect the NEB's core working principles: participatory design, transdisciplinary collaboration, and long-term, life-cycle thinking. These instruments must be inclusive, accessible, and adaptable to the Alpine context,

[21] For further information visit https://www.alpine-region.eu/about

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where geographic, cultural, and infrastructural diversity demands flexible and creative approaches.

1. Participatory Digital Platforms

Digital platforms are powerful tools for enabling broad-based participation, especially in geographically dispersed Alpine communities. These platforms can host interactive maps, idea boards, and collaborative design tools that allow residents to contribute to planning processes from their homes. For example, a municipality might launch a digital "Circular Ideas Hub" where citizens can upload photos of underused buildings, propose reuse strategies, or vote on design options for public spaces. These platforms should be mobile-friendly, multilingual, and designed with accessibility in mind to ensure equitable participation.

NEB Principle in Action: Participatory design is supported by enabling citizens to co-create solutions in real time, regardless of physical location.

2. Community Assemblies

Community assemblies are structured forums for deliberation, dialogue, and consensus-building. They provide a space where residents, local officials, and experts can come together to discuss priorities, evaluate proposals, and make collective decisions. Assemblies can be organized as one-off events or as recurring gatherings that accompany each phase of a circular building project. For instance, a town planning a circular renovation of its civic centre might hold quarterly assemblies to review progress, gather feedback, and adjust plans accordingly.

NEB Principle in Action: Transdisciplinary collaboration is fostered by bringing together diverse voices - technical, political, and civic - into a shared decision-making space.

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3. Mobile Engagement Units

To reach remote or underserved communities, mobile engagement units - such as vans or trailers equipped with interactive exhibits, models, and digital tools - can travel across the region. These units can host pop-up workshops, showcase circular materials, and collect feedback through surveys or creative activities. In mountainous areas where internet access is limited, these mobile units ensure that no community is left out of the conversation.

NEB Principle in Action: Inclusion is advanced by physically bringing engagement opportunities to communities that might otherwise be excluded.

4. Local Design Labs

Design labs are temporary or permanent spaces where residents, designers, and craftspeople can prototype ideas, test materials, and co-develop solutions. These labs can be hosted in schools, libraries, or vacant buildings and serve as hubs for experimentation and learning. For example, a design lab might facilitate the co-creation of furniture from reclaimed wood or test insulation methods using local wool.

NEB Principle in Action: Life-cycle thinking is embedded in the design process by encouraging experimentation with circular materials and techniques.

5. Participatory Budgeting

Participatory budgeting empowers residents to allocate a portion of public funds to circular building initiatives. This process not only democratizes resource allocation but also builds a sense of ownership and accountability. In practice, a municipality might invite residents to propose and vote on small-scale circular projects - such as green roofs, shared tool libraries, or community composting stations.

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NEB Principle in Action: Participatory design and inclusion are reinforced by giving citizens direct control over funding decisions.

Conclusion

Engaging local communities in circular building practices is particularly relevant for achieving sustainable and inclusive development in the Alpine Space. This document has proposed the **BAUHALPS methodology** - a four-phase roadmap comprising Awareness and Education, Participatory Planning and Co-Design, Implementation and Capacity Building, and Monitoring, Evaluation, and Scaling - designed to empower communities as co-creators of their built environments.

The methodology is grounded in the experiences, tools, and insights gathered across the Alpine Space through workshops, expert exchanges, and pilot initiatives. It reflects the shared challenges of geographic isolation, demographic shifts, and uneven awareness, while building on the region's strengths: cultural heritage, vernacular knowledge, and growing interest in sustainability.

The NEB initiative provides a guiding framework for this transformation, emphasising sustainability, aesthetics, and inclusion. The BAUHALPS methodology translates these values into practical instruments, from design charrettes and community mapping to participatory budgeting and mobile engagement units. These tools are not merely illustrative; they are tested mechanisms for fostering agency, trust, and shared ownership.

Importantly, the green transformation is not merely a technological challenge but a cultural process. It requires shifts in values, behaviours, and relationships, and must be rooted in local identity, memory, and collective purpose. Buildings are more than structures, they are expressions of how communities live, interact, and envision their future.

By following this methodology, Alpine communities can move from fragmented efforts to systemic, participatory transformation. The BAUHALPS approach offers a

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replicable model for circular building that is sensitive to place, inclusive in process, and regenerative in outcome. It is both a guide and a commitment to reimagine how we live together, and to shape resilient, vibrant environments that reflect shared values and aspirations.

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