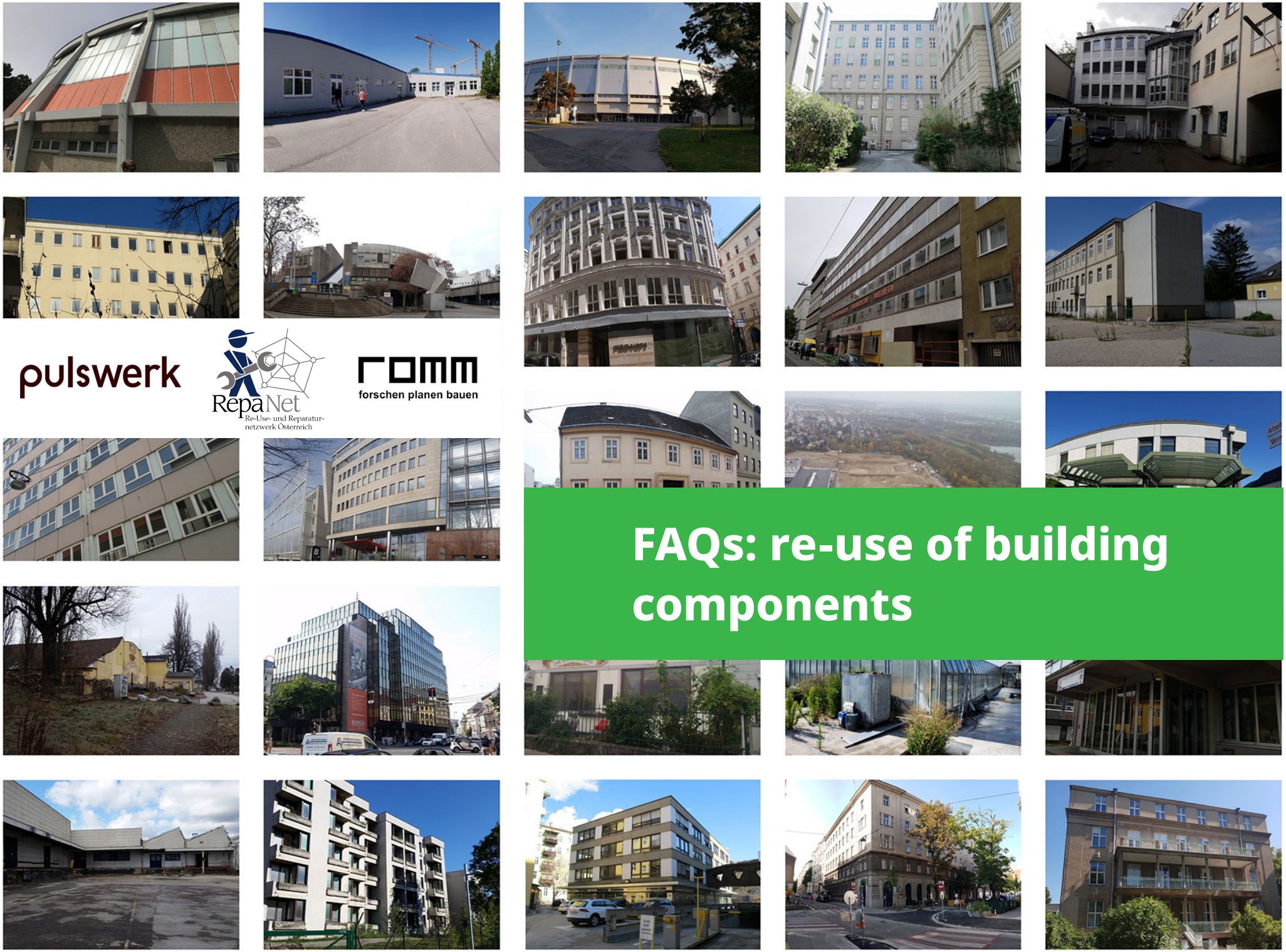

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RepaNet
Re-Use- und Reparatur-netzwerk Österreich

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FAQs: re-use of building components

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Bundesministerium für Klimaschutz, Umwelt Energie,

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Content

PREFACE

Recovery-oriented demolition is mandatory in Austria as a standard demolition method via the Recycling Building Materials Ordinance and the related standard ON 3151. It supports EU-wide and national efforts in several strategic papers. The situation of the implementation of this framework is different: In discussions with various stakeholders in the context of their work on BauKarussell and re-use, the authors repeatedly encounter major gaps in their knowledge of the legal requirements, the opportunities and potentials, and the resulting changes in planning and implementation. The question of how (preparation for) re-use can be integrated into a deconstruction project is of little relevance to building owners. The specialised companies involved (general contractors, architects, pollutant and contaminant inspectors, demolition contractors, construction companies, etc.) have only sporadic knowledge about the assessment of the potential for re-use. In the meantime, individual actors have built up expertise and knowledge out of personal motivation.

Across Europe, a whole range of projects, initiatives and start-ups are simultaneously dealing with the possibilities of (preparation for) re-use in the building sector. These are at the beginning of raising the potentials. Countless conversations with building owners, project developers, architects, state administrations and municipalities show us that neither the knowledge nor the possibilities and opportunities would be widely known among the decision-makers in the sector. Discussions are regularly initiated to explain the importance of the Recycling Building Materials Ordinance. From a social perspective, these efforts contribute to the development of the circular economy. As a result, the need for action is that this knowledge transfer must take place as efficiently as possible.

In the course of more than five years of setting up and developing Social Urban Mining and BauKarussell, the authors were asked in countless conversations with stakeholders the same open questions relevant to the implementation of (preparation for) re-use of building components. The points listed as FAQs combine these project experiences with the interview results among Austrian stakeholders in the deconstruction sector. In the synopsis, a comprehensive picture of the challenges that arise in the re-use of building components emerges. At the same time, we point out options for action that stakeholders can take directly in project developments (project-oriented) and/or in the general strengthening of the reception of re-use in the system of demolition and new construction (system-oriented).

The FAQs are intended to provide project managers with advice for their own project development. The solution approaches of others serve as guidelines in the decision-making process for their own tasks. Nevertheless, every deconstruction project is unique and faces specific challenges that need to be solved individually.

The interview guide and the detailed analysis of the interviews, the presentation of possibilities for implementation based on previous experiences, good practice examples and study results as well as further references and a comprehensive bibliography are listed in the full version of this study, to which we would like to refer here. The compiled know-how is intended to support stakeholders efficiently and effectively in further implementation.

The authors

FAQS: IMPLEMENTATION OF RE-USE OF BUILDING COMPONENTS

FAQ.01
Why is re-use relevant?

Over the last century, we have continuously expanded our urban raw material stockpile. Reusing the existing urban mine by reintroducing used products or secondary raw materials in our economies significantly reduces environmental impacts and avoids further extraction of primary resources. Re-use and recycling are thus ecologically beneficial, as demonstrated by numerous environmental assessments.

PROJECT-ORIENTED

- Consider whether you can continue to use existing buildings (parts).
- Integrate the idea of re-use in the planning of the new building.
- Work with the functionalities of your building(s) and gain positive consideration in the implementation of the Taxonomy Regulation.

SYSTEM-ORIENTED

- Notwithstanding these considerations, the highest degree of resource conservation is represented by the extension of service life and the repurposing of existing buildings. The remaining challenge is to create suitable conditions to facilitate the implementation of these goals. Even though ongoing discussions on circularity of the construction sector reveals that relevant stakeholders are aware of these findings, the decisive step to put the latter into practice is still lagging.

FAQ.02

Is there potential for re-use?

Yes, interviewed stakeholders are able to name product groups that can be re-used, and the literature sources considered indicate a wide range of building components (e.g. building services, floor coverings, parquets, historic, individual items with building cultural value). Re-use can be strengthened through the use of system components with standardised formats. Re-use is an opportunity for local businesses and preserves cultural heritage.

PROJECT-ORIENTED

- Follow existing guidelines, checklists and your contracted experts when classifying.
- For the identification of potentials for re-use, note that waste management law, product law, commercial law and legal restrictions on the placing on the market according to different administrative laws must be taken into account.

FAQ.03

Does re-use increase complexity?

Yes, because other planners and trades come into their planning and execution of new construction and demolition.

PROJECT-ORIENTED:

- Contact competent initiatives that are able to prove their knowledge of relevant processes and requirements concerning construction and waste management alike. The latter should be able to provide support with demolition and new construction.
- Adjust the work into the phase of preparation for demolition and the construction of the new building. If it is possible to work in parallel with mechanised demolition, this can save time overall.

SYSTEM-ORIENTED:

- Incorporating these tasks into standardised procedures and process descriptions (in the medium term) ultimately supports efficient implementation.

FAQ.04

Does re-use delay demolition?

No, re-use does not entail delays, if overall construction time is scheduled accordingly.

PROJECT-ORIENTED:

- Use the planning time allocated to the (new) construction project for re-use work in the existing building.
- Bring re-use considerations up to the development team at the earliest possible planning stage. Re-use of building components will not take place without an appropriate time window. As demonstrated by implementation projects, this is the most critical and - at the same time - the most promising success factor.

FAQ.05

Are the costs of re-used building components comparable to those of new products?

Yes, cost can be comparable. These considerations are a step towards an improved perception of effective cost comparison with new products. Re-used building components themselves are usually inexpensive. Yet removal, storage, testing and transport entail additional costs. Yet several examples prove that re-used building components are marketable. With increasing internalisation of environmental costs, re-used building components are becoming increasingly competitive.

PROJECT-ORIENTED:

- Compare costs in relation to those entailed in a „usual“ scenario. This means that the offsetting calculation must include disposal costs, procurement of new products and transport costs. These can be requested as reduced costs during the tendering process.

SYSTEM-ORIENTED:

- In addition, the activities carried out show added value in the corresponding public relations work for the presentation of the project.

FAQ.06

How can re-used building components meet requirements of modern project development and overcome their negative image?

Several building components with potential for re-use fulfil their original function at time of removal. Planning for re-use must preserve this long-lasting value in order to effectively foster re-use.

PROJECT-ORIENTED:

- Define your project's quality standards in this area. Formulate comprehensible criteria for disassembly, procurement and reassembly and publish them.
- Organise sufficient documentation of the ecological, economic and, if applicable, social impacts to be used in communication with the public.
- Have re-use activities credited in building certificate assessments, if applicable. Criteria catalogues in various assessments allow this procedure. In this way, implementation will contribute to the overall assessment, thus enhancing the positive perception of used building components.

SYSTEM-ORIENTED:

- Showcase the already implemented construction/deconstruction products meeting existing standards. This will enhance trust as the quality will be visible to relevant stakeholders and to the public.

FAQ.07

How shall liability and warranty for re-use building products be handled?

From a structural engineering perspective, building components retain European CE certification with unchanged functionality. Product liability remains with the manufacturer as long as the original function is maintained. For safety-relevant components (e.g. statically supporting elements), individual testing by accredited laboratories or civil engineers is required.

PROJECT-ORIENTED:

- Regulate liabilities and warranties under civil law by means of precise performance specifications.
- Check whether your supplier has a CE mark if you use re-use building components in a new function.

SYSTEM-ORIENTED:

- Add appropriate passages for B2B and B2C to your general terms&conditions and contract texts.

FAQ.08

How to establish a market for offers/requests for used products?

According to the stakeholders interviewed in context of this the project and the relevant literature examined, the topic has gained in importance in recent years and will continue to grow relevance. For this reason, an efficient organisation of re-use is essential. Currently, individuals are still the carriers of development.

PROJECT-ORIENTED:

- If you are responsible for a large development project, you can foster SMEs involvement. A business field can then be restarted, and new processes/machines/offers can be established.

SYSTEM-ORIENTED:

- Make objects available and integrate offers and demands into your standard processes for planning and execution. This will ensure high market activity and increase the attractiveness of the re-use marketplace.
- Identify those offices/departments/stakeholders who have power of disposal over your building components and create your own expertise for realisation.
- Support the development of curricula for knowledge transfer. Existing knowledge must be incorporated into education and training at a wide variety of levels.

FAQ.09

What is the relevance of pre-demolition audits?

In Austria, the principles of pre-demolition audits and deconstruction concept itself are key drivers of recycling-oriented deconstruction. These practices comprehensively foster, among others, the topic of re-use potentials. According to the Recycling Building Materials Ordinance, these are legally binding requirements that apply above certain quantity thresholds. They also provide the quantity framework for the tendering of deconstruction itself. If the auditor indicates re-use potentials, certainty that the latter are used as input for the deconstruction tender increases.

PROJECT-ORIENTED:

- Clearly request the identification of re-use potential in a functional manner. Look for experts who can provide solid input and experiences in these processes.
- Use already available templates and sample texts.

FAQ.10

What is the influence of the call for tender?

The tender is a crucial document defining construction and deconstruction services.

PROJECT-ORIENTED:

- Tender with provided re-use building components.
- Formulate award criteria that meet circularity requirements.
- Request reduced costs for the omitted disposal of re-use building components.

SYSTEM-ORIENTED:

- Include re-use and „preparation for re-use“ in the tender processes.
- Involve social enterprises in re-use dismantling. In Austria the 2018 Federal Procurement Act takes into consideration this element in the form of reserved contracts.

FAQ.11

How to solve the End of Waste discussion?

A clear scheme fostering the re-use potential of building components for re-use is essential. A thoughtful approach to waste legislation allows options for action towards increased re-use of building componen.

PROJECT-ORIENTED:

- Check regulatory approvals of the selected companies.

SYSTEM-ORIENTED:

- Document work procedures (including safety instructions and instructions for action) for the different waste fractions.
- Operationalise existing guidelines and manuals to minimise risks during construction.

FAQ.12

Can a transformation of the planning process be expected?

Yes, circularity principles are already an part in integral planning of new construction and demolition. The choice of building materials and construction methods are decisive for later ease of deconstruction. For this reason, ease of deconstruction/disassembly should be considered as key factors in designing sustainable products. The easier it is for architects, for example, to access the relevant information, the easier it will be to plan for circularity.

PROJECT-ORIENTED:

- Check possibilities for re-use in the context of your own development project and/or other projects in your organisation.
- Seek cooperation and professional exchange. In the spirit of societal development, everyone benefits from this experience.
- Use Building Information Modelling (BIM) to capture re-use building components and support the process. BIM facilitates the „handover“ from demolition to new construction.
- Use relevant criteria catalogues of building certification systems to collect points for the assessment, thus generating added value for re-use.

SYSTEM-ORIENTED:

- Identify these processes and integrate them into planning.
- Run a pilot project to identify adaptation needs for your organisation.
- Turn to competent initiatives familiar with these practices, as a reference for their competence in waste and construction management.

FAQ.13

What are good practices for implementation?

Several examples of implementation demonstrate that construction with re-use components is advantageous. Controlled dismantling with prior removal of all components that are still in use is possible. The mutual exchange of know-how allows for all participants to make significant progress.

PROJECT-ORIENTED

- Publish demonstrable ecological, economic and, if applicable, social impacts entailed by re-use to draw attention to your achievements. This creates a positive perception of your „lighthouse project“ and motivates others to act.

SYSTEM-ORIENTED

- Include re-use considerations in building competitions and work on future “lighthouse projects”.
- Analyse European re-use projects and identify solutions to facilitate their planning.
- Prepare and disseminate targeted activities (publicity, public awareness) addressing your relevant target groups.

FAQ.14

What role can the public sector play?

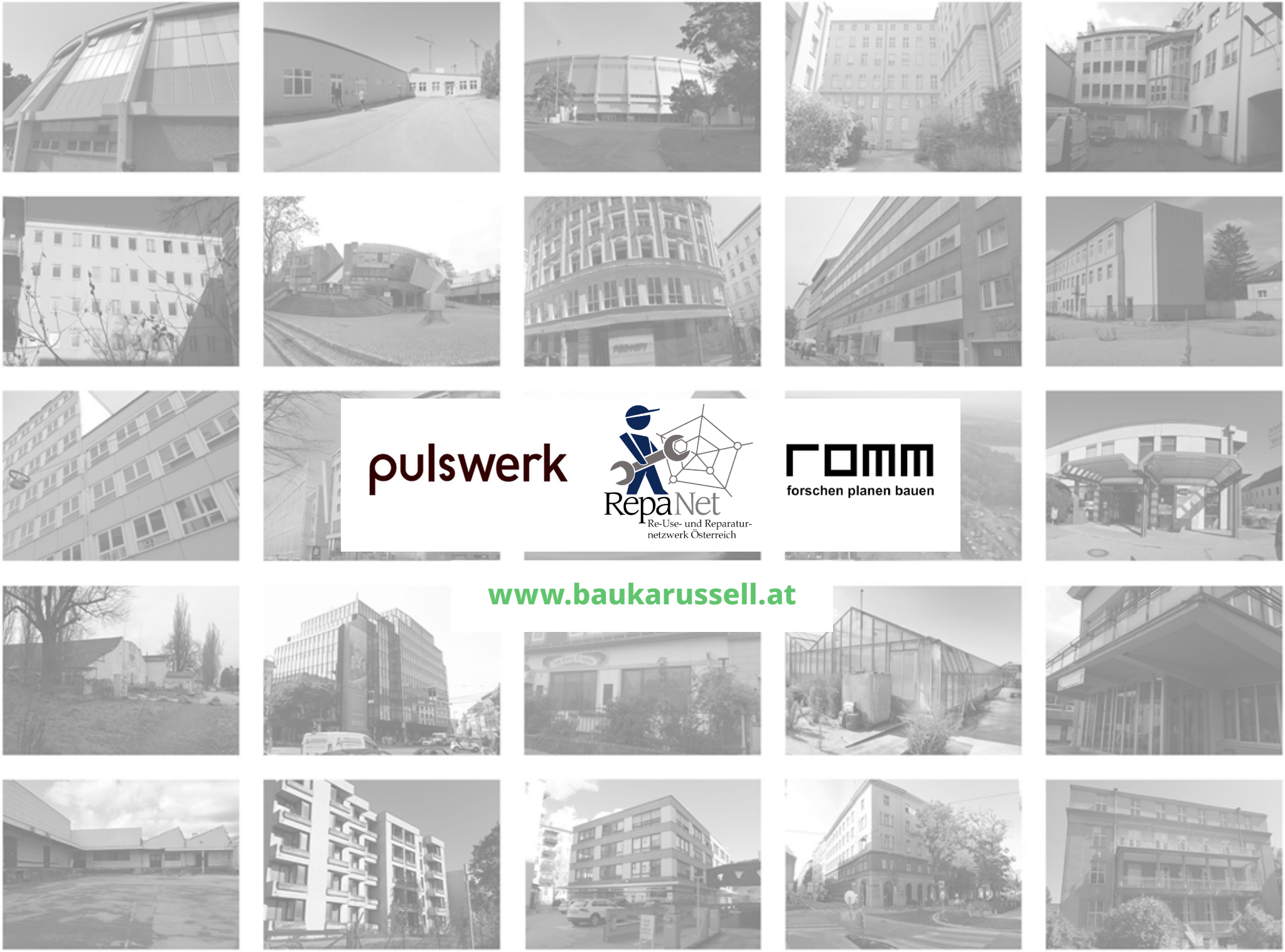
Different actors of the public sector are essential players in several aspects of implementation.

Their scope for action includes public authorities...

- ... as developers, users and those responsible for deconstruction in the future, the implementation of examples in their own property stock.
- ... as building owners, a formative role in the formulation of tender criteria.
- ... as awarding body for building competitions, the integration of the topic of re-use.
- ... as procurer, the possibilities of integrating re-use into green procurement systems.
- ... as (co-)financier, the promotion of pilot projects.
- ... as legislators, the further development and control of the legal framework.

FURTHER INFORMATION

Further information (interview guidelines, analysis of the interviews, presentation of possibilities for implementation based on previous experiences, good practice examples and study results, references to study sources, comprehensive bibliography) can be found in the full version of this study (in German).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