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(Learning from innovative practices, barriers and enablers for designing Urban Resource Centre in European cities)

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Towards circular management of Construction and Demolition Waste: Learning from innovative practices, barriers, and enablers for designing Urban Resource Centre in European cities

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Abstract

Construction and Demolition Waste (CDW) is the main driver of resource consumption and waste generation in Europe. Although most European countries achieved 70% recovery rate of CDW, the majority is used for backfilling. Therefore opportunities for Circular Economy (CE) practices in CDW management are underexploited. This research identifies the innovative practices, barriers, and enablers for developing tailored-made designs of Urban Resource Centre (URC) for managing CDWs in four European cities namely Riga, Tartu, Kavala, and Barcelona. Qualitative methods using multiple case studies were used to draw generalizations from cases. Data was collected from reports and interviews with different stakeholders, and a validation workshop for designing URC of each city. Current innovative practices include recycling and upcycling of CDWs; use of green points, exchange platforms, and waste management apps; repair cafés; selective demolition; and (pilot) initiatives on resource centers that function as material exchange point, recycling center, work station for repair and creative ideas, and prototyping hub, among others. The identified barriers and enablers can be categorized as governmental, market, and individual factors. First, local governments (municipalities) play a key role for facilitating CDW management via both support such as provision of subsidies, green procurement, and mandatory waste sorting, and through strict regulatory requirements. Second, URCs must be locally rooted with inclusion of citizens, grass roots initiatives, and schools/universities to increase community acceptance, awareness, and education on CDW management. Third, partnerships with local stakeholders, such as repair cafes, waste management companies, and local NGOs, is needed to operate the URCs both in short- and long-terms. And fourth, the creation of niche markets such as linking localism (e.g. locally crafted CE stores) and supplying to businesses in need of CDWs, can support the operation of URCs. The identified barriers and enablers can help further improve the design of URCs for each city.