



Universität Stuttgart

Institut für Baubetriebslehre

Prof. Dr.-Ing. Hans Christian Jünger

Pfaffenwaldring 7

70569 Stuttgart

Telefon: +49 (0)711 685-66145

E-Mail: ibl@ibl.uni-stuttgart.de

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Circular Economy in the construction sector - Barriers for implementation and potential solutions [MA 232]

The construction sector markedly influences environmental degradation through substantial resource and energy utilization alongside significant waste generation. The adoption of CE principles presents an innovative approach to enhance the environmental sustainability of this sector. This research examines CE's application within CI, focusing on Germany to identify integration barriers and assess international strategies, incorporating insights from France and the Netherlands to enhance resource efficiency, minimize waste, and reduce environmental impacts. The methodology employed in this research integrates a detailed literature review with semi-structured interviews, offering a dual approach to uncover both theoretical and empirical insights into CE adoption challenges and opportunities. The research identifies significant barriers to CE adoption in CI, including data management and sharing complexity, regulatory hurdles, and a prevailing linear economy mindset. It also highlights the lack of political incentives, systemic institutionalization challenges, and the underdeveloped and fragmented secondary materials market as pivotal impediments. Moreover, it underscores the critical role of efficient data management and the necessity for collaborative stakeholder engagement. Recommendations aim to address these impediments, advocate for robust policy frameworks, financial incentives, and establish centralized secondary materials marketplaces. The objective is to equip policymakers, industry stakeholders, and scholars with actionable strategies to facilitate the CI's transition towards sustainability and CE. By leveraging insights from diverse countries, this study not only examines the unique context of Germany but also garners lessons from France and the Netherlands, thereby proposing a multifaceted perspective on enhancing CE implementation across the CI. Ten guide-lines emerge after a thorough evaluation of both academic and expert perspectives. These directives aim to guide stakeholders toward a more profound integration of CE principles within the construction sector, highlighting the significance of leadership, collaborative endeavors, innovative

approaches, and decision-making rooted in solid evidence to foster an environmentally and economically sound industry. And so, these guidelines mark a strategic pathway forward.