



05. New Horizons

Dynamics for Collaboration in Construction Projects to Set and Realize Circular Ambitions

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Nowadays it's more and more common for companies to adopt circular strategies. Unfortunately, these strategies often do not result in realizing circular ambitions in construction projects. A careful examination of a series of 8 case studies with additional group interviews shows that there are at least fourteen dynamics that help actors in construction projects to set and realize circular ambitions, as can be seen in this figure. Dynamics refer here to the process of relating activities across boundaries to maintain patterns of change and continuity through time, and the forces that produce these patterns.

These fourteen dynamics each fall under one of three categories: *prerequisites*, *temporal dynamics* and *contextual influences*. Prerequisites are needed for every construction project before it starts, temporal dynamics that take place within a construction project, and contextual influences affect these temporal dynamics.

When we consider *prerequisites*, we can identify four important ones. First, *top-down support* is needed for actors to go beyond the trodden path, without support from their managers this is very unlikely. Second, *partnership based on increased equality* has proven essential to overcome the uncertainties of the secondary materials market. Contractors for instance are not simply executors of assignments, their knowledge of secondary

building components is a key factor to their reuse, and their voice must be heard earlier on in the process. Third, there is a need for *shared circular goals* that must be made explicit. Different parties have different ideas about what circularity means. To set specific goals for projects these differences need to be overcome. Lastly, involving *intrinsically motivated people* seems a key factor. Circularity demands challenging the current system and actors need to go the extra mile to achieve circular goals. Without intrinsic motivation it is unlikely these goals will be met.

Next, we can look at *temporal dynamics*. Here, we can identify seven dynamics that help actors realize circular goals within construction projects. The first is establishing *transparency and trust*. This allows actors to share their personal interests, makes it possible to exchange values, and helps to stop greenwashing. The second is granting some level of *flexibility* regarding project scope, budgets, and planning. This significantly improves chances of realizing circular goals, as the market for secondary building components is still small, there is much uncertainty about which circular solution will prove realizable. This has an impact on the project scope, the budget, and the planning. This does not necessarily mean projects become more expensive, but sometimes money must move from one actor to the next. Similarly, with planning, sometimes circular projects require



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more time in the preparation phase, but less time for realization. The third dynamic is developing *reciprocal relations* which allow actors to exchange values that are important for them specifically. Public clients often have to deal with politics, making it for instance important to realize a project within time, whereas contractors often take a lot of financial risk, which they would like to minimize. Sometimes these values can be exchanged, but this requires the first two identified dynamics to be in place: transparency and trust, and flexibility. The fourth dynamic is building a *project team identity*. The identification of project members with project goals offers extra motivation for the team to go the extra mile. This can be achieved by continuous explication of project goals, transparent communication, and building trust. It is further strengthened by reciprocal relationships. The fifth dynamic is a *struggle for new roles*. This is because the expertise of certain actors becomes more important, such as contractors or urban miners. New tasks also need to be undertaken, such as explicating circular visions for the different stages of projects, finding new resources, and monitoring the effects of design decisions. As there is no standardized culture for circular projects, these roles need to be explicitly negotiated for every project. Sixth, *pioneering leadership* plays an important role. As construction projects have many ambitions next to the circular, the latter often gets lost if project members do not take responsibility for it. The circular leader does not necessarily have to be a project leader; in practice the role is taken on by a diverse range of actors, including architects and contractors, that continuously put circularity on meeting agendas. Lastly, *continuity in staffing* is crucial. As project members engage in new practices and new knowledge, information gets lost if project members are being replaced during

the project. The strict division between design and realization that is common in construction projects is already a large barrier for innovation.

The last group of dynamics falls under the category of *contextual influences*. Three of them are crucial here. *Sector and organizational cultures* are the first: these play an important, often negative, role in the transition in several ways. The construction sector is known for its focus on technological solutions instead of strategy, its risk avoidance, and its aim for short-term cost reduction. This may lead to distrust between public and private parties, which forms a barrier for transparent communication during construction projects. But organizations too, might have different circular mindsets; that means that what one company understands as circular does not necessarily match with what another does. Cultures, therefore, need to be understood, communicated, and considered either barriers or enablers for the realization of circular ambitions. The second contextual influence is *knowledge flows*. As circularity is a new concept, practical knowledge is often lacking for different actors, such as clients that do not know how to set up circular tenders, or contractors that lack ready knowledge on the CO2 impact of specific design decisions. Projects are context specific, and knowledge often cannot be easily transferred from one project to the next. Also, for most organizations, there is no structured way to learn from projects, so knowledge often remains with the project members. Lastly, *power and tensions* heavily influence project dynamics. This shows for instance in the dominance of clients in construction projects. They often demarcate the roles, set the ambitions, and control the budgets, sometimes even changing them during the project. This limits the possibilities of other project



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members to influence setting and realizing circular ambitions. Moreover, the organizations also play a role here. Projects are often executed in relative isolation. However, too much isolation makes it impossible to transfer lessons from a project to an organization, but not enough isolation makes it impossible to be innovative.

These fourteen dynamics play a key role in setting and realizing circular ambitions in construction projects. They influence the direct behavior of actors and often explain why circular ambitions are not achieved, even though several parties were enthusiastic beforehand. As such, these dynamics play a pivotal role in the speed of innovation and therefore in the transition towards a circular economy in the building sector.