



Reduce/Reuse/Recycle Architecture as Resource

The overall population of Germany is dwindling and aging. A large-scale process of demographic change is taking place. While some cities are growing apace, most are in decline, and the outskirts and surrounding regions are becoming depopulated.

In German architecture firms, working with existing housing stock has long since become a priority: new buildings account for only something approaching one percent of all housing in any given year, while eighty percent of the housing construction budget is earmarked for existing stock. There is a surplus of architecture. Downsizing and minimizing have become key planning issues, and even in areas with growth, the issue at hand is not about *tabula rasa* and new construction, but about regeneration, conversion, aggregation, and extension – not only of individual buildings, but of the urban fabric as a whole. How we deal with existing architecture is both culturally and economically crucial to our future; ambitious environmental targets can only be achieved by improving what is already there and by renewing existing infrastructures.

But the biggest challenge of modernization we face is that of the postwar buildings erected in the 1950s–70s, which have a serious image problem. The urban planning concepts of the time are widely dismissed as misguided, and the buildings themselves seem too inappropriate, too tawdry, or quite simply too unfit for purpose to function as housing in the future. Wherever it is economically feasible, these “outmoded” buildings and housing estates are being demolished and replaced. The gray energy potential stored in this housing stock is not being taken into account in any environmental evaluation, and is being squandered thoughtlessly through demolition.

If we really want to address the issue of carbon emissions, however, we have to consider the overall lifecycle of buildings. That means, when comparing the energy efficiency of existing buildings as opposed to replacements, the original construction energy should also be taken into account, as should the energy involved in demolition and disposal, in the production and construction of the new building, and in the operation of the building (heating, cooling, lighting) as well as the mobility generated by it.

When all these factors are taken into consideration, it is clear that the most sensible approach is to extend the lifespan of existing buildings by way of minimum intervention. Even today’s statutory energy refurbishment measures are not always worthwhile in terms of energy efficiency. The excess energy consumption of buildings that have not been refurbished has to be weighed up against the energy consumption involved in the production, assembly, and future disposal of the new components and insulation systems. A low-energy approach to refurbishment is also increasingly driven by demographic change: even now, in areas of population decline, maintenance measures are the only worthwhile solution, on economic grounds alone.

Economic pressure calls for the development of new, intelligent concepts: linking infrastructural facilities district-wide, or even simply educating consumers on changing their behaviors can result in considerable energy savings without the need for major construction work. However, energy consumption is only one aspect that has to be taken into consideration. Because existing buildings and infrastructure should be seen as an important cultural, social, and architectural resource for shaping our future, a fundamentally positive attitude has to be adopted toward the existing stock. One successful example of this

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13th International
Architecture Exhibition
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can be found in the progress that has been made in recent years in converting waste into valuable material. The environmental movement's international slogan Reduce / Reuse / Recycle incorporates the so-called waste hierarchy. "Reduce" is aimed primarily at avoiding and minimizing waste. "Reuse" is self-explanatory as a direct approach to waste handling. "Recycle" comes third on the list as a way of processing material. The less the original waste product needs to be altered, the better the process.

We have taken the 3Rs – Reduce / Reuse / Recycle – and applied them to architecture to create a possible hierarchy for strategies of change: the fewer interventions and the less energy expended, the more effective the process. However, an architectural hierarchy that propagates minimum intervention or avoidance of intervention is diametrically opposed to a long-outmoded but still vital ideal of the architect as an independent creator of new worlds. Today's panoply of "starchitects" and the huge public interest in spectacular buildings is rooted in the heroically romanticized origins of modernism. The quest for a tabula rasa as the basis for the new, and the programmatic contrast between old and new, arose in the early twentieth century when there was a plethora of historicism and functionally sub-par, run-of-the-mill architecture. Early star architects such as Le Corbusier reinvented the world, turned traditional views upside down, and followed their own rules. It was an approach that had been increasingly challenged since the 1950s, with Team 10 and other groups calling for a modernism rooted in the regional vernacular, while the Smithsons looked to "as found" ideas as a starting point for innovative architecture based on existing everyday buildings. With the advent of postmodernism proclaiming the end of modernism, architectural history was explored as a well-spring of new ideas. Yet in spite of all these developments, the image of the autonomously creative architect remained the ideal of an entire profession.

That autonomy is naturally curtailed by built architecture. Architects have to take on board the concept of an existing structure and embrace the ideas of their predecessors. When working on existing buildings, an architect is no longer a free agent, but an interpreter and developer. The amount of restraint and flexibility this requires is what makes this worthwhile and exciting challenge unappealing to some. And yet, interpreting, developing, and pragmatically building on the existing fabric was always a given in architecture before a dogmatic distinction came to be made between old and new. Already existing buildings were retained and stylistically developed, undogmatically extended, and radically refurbished.

Reduce / Reuse / Recycle calls for a return to this approach of simply extending, adapting, and continuing what is already there. Reduce / Reuse / Recycle is not a collation of conservational measures: whenever existing facilities have to fulfill new functions, interventions are necessary. The required change has to be determined anew with each task. A repair, an invisible addition, or an interpretative continuation can be just as appropriate as the clearly legible distinction between old and new in the spirit of the Venice Charter (which has so often, unfortunately, been misinterpreted in this particular regard). The extent of the intervention may range from repair to complete restructuring or reshaping. The strength and integrity of the existing architecture places high demands on the intervention. In this respect, the hierarchy of the 3Rs can also be taken as a demand on the adequacy of architectural means: any necessary input has to be justified by the actual improvement it achieves.

Conservation, repair, renovation: the established methods, approaches, and even the terminology applied to listed buildings differ, like the 3Rs, according to the depth of intervention. In the field of monument preservation, the value of the existing architecture and the priority of conservation are already a given. Society agrees on the value of the historic building. That stands in stark contrast to the value placed on the "ordinary" buildings that are the main focus of our study.



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Such buildings are potentially endangered. Their existence depends on the architect and the client making a conscious decision to maintain and reinforce them. Even such buildings, which are all too often dismissed as worthless, have potential and qualities that can be brought to the fore through qualified and creative remodeling. Indeed, it is the sheer unwieldiness of such existing stock that can provoke ideas for new solutions and scope for creativity.

Reduce / Reuse / Recycle presents a broad field of diverse projects, strategies, and approaches by architects. In spite of the diversity, there is one crucial common factor: valuing what exists. This is the best starting point, even for a completely free approach to existing stock. Discovering the potential of the dilapidated, the strange, and the ordinary as an architectural resource—as material and inspiration for further development—opens up new possibilities for architecture. The quality of the projects presented here lies in their intelligent strategies rather than in their spectacular form. The ability to identify with the existing stock counts for more in the long term than opposing it with something new.

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