STRATEGIES FOR DESIGN AND CONSTRUCTION

Responsible use of raw n and resources	naterials	Avoid premature demolition	≯ Ke	eep materials in the cycle
A minimise total AMOUNT of materials A1 question needs for new construction and/or fulfil them differently	B minimise ENVIRONMENTAL IMPACT of materials B1 gain insight into the environmental impact of the building (materials & energy) & optimise via TOTEM	extend the USEFUL LIFE of buildings C1 design with potential for future functions (functional adaptability)	maximise the REUSABILITY of elements D1 detailing with consideration for easy dismantling (reversibility)	maximise the REUSABILITY OR RECYCLABILITY of materials E1 Choose elements that can be dismantled into pure raw materials
preserve the value of existing heritage	focus on reusing elements/materials & assess environmental impact via TOTEM	design for adaptability: flexibility, versatility, "support-infill-principle"	design with consideration for modularity, prefabrication, standardisation	keep harmful/toxic substances out
share spaces with third parties	invest in materials with high recycled content & assess environmental impact via TOTEM	design with consideration for future extension/ "in-fill"	consider compatibility a interchangeability when choosing construction elements	choose (raw) materials that are biodegradable or can be disposed of responsibly
share technical equipment with third parties	focus on bio-based structural elements/ materials & assess environmental impact via TOTEM	design for future maintenance, upgrading & repair: include independent & accessible functional layers	choose elements with contractual agreements regarding take-back schemes	choose (raw) materials with already existing, closed loops
make spaces multifunctional	avoid irresponsible management of natural resources (forest cover, arable farming, quarries, etc.)	choose robust & high-quality materials	identify existing valuable parts during renovation/ dismantling	choose elements/ materials with a take-back guarantee and/or recycling guarantee
dematerialisation at the structural level: design lightweight structures	minimise energy needs	C6 Building stock regularly maintained & optimally managed	identify & record elements/ components of the new building	identify (raw) materials in existing elements/ components
dematerialisation at the material level: design with raw materi- als as finishing (without additional layers)	use renewable energy sources	contractually encourage the extension of useful life	preserve elements that have cultural value (e.g. heritage) in subsequent building cycles	identify elements, materials & raw materials during renovation and/or dismantling
dematerialisation at the technical level: design smart-tech solutions	meet remaining energy needs as efficiently as possible			tap into second-hand markets or platforms for selective demolition and/or disassembly

ACTIONS APPLIED: TARGET GROUP LOCAL GOVERNMENT

Responsible use of raw materials > Avoid premature demolition > Keep materials in the cycle and resources D minimise total extend the maximise the maximise the **AMOUNT** of materials **ENVIRONMENTAL USEFUL LIFE** of **REUSABILITY REUSABILITY OR IMPACT** of materials of elements **RECYCLABILITY** of materials convert the building for choose facade bricks + lime carry out an LCA study avoid new construction: other functions. E.g. mortar, dry-stacking (via TOTEM) & opt for opt for components consider alternative ways village house becomes a systems, planks with construction solutions made out of one/easily to meet (spatial) needs workplace, rehearsal room, groove & clip, loose roof with a lower environseparable (raw) material emergency shelter, membranes, dry screed mental impact care home, etc. floors choose recovered give preference to design with grid design versatile spaces bricks, donor skeleton, choose low-emission dimensions (standard repurposing & second-hand furniture via re-mountable and/or paint or glue, untreated ceiling elements, raised renovation of & other reclaimed mobile walls. wood, unpainted wood existing heritage floor elements, etc.) material set up inter-municipal choose: concrete with provide: increased loadopt for geo-based opt for components initiatives, bring capacity to enable a materials (e.g. clay, shell recycled aggregate & that can be rooftop extension; extra insulation) & for bioassociations together, alternative binders; reassembled, make the space publicly screeds with recycled height to enable degradable materials plug & play techniques accessible another function sand & lime (e.g. hemp, jute) opt for supporting provide accessible lease furniture, carpet tiles, consider productstructures in wood pipe shafts & ducts, choose materials with organise heating at (engineered wood), interchangeable as-a-service (e.g. lightcradle-to-cradle district level as-a-service), energy certificate or equivalent bio-based insulation technical parts materials service companies create an inventory for negotiate a take-back design neutral spaces, choose FSC/PEFC label, choose materials reuse during renovation agreement with a guarantee of recycling and/or dismantling: suitable for more than quarries with a green resistant to premature one activity reconversion plan aging, wear, vandalism... materials that can easily (roof membranes, be used again mineral wool ...) draw up subopt for structural draw up a draw up a materials focus on insulation, maintenance contracts, elements with smart building passport, passport, including compartmentalising in post-intervention files, design (strength including an extensive an extensive temperature zones, etc. building maintenance post-intervention file post-intervention file through geometry) booklets integrate elements opt for visible build quality houses draw up a detailed deopt for PV panels, heat of emotional value: techniques & with a long lifespan via molition inventory, bluestone or cement structures, unfinished pumps, geothermal heat i.e. the "Design/Build/ reuse inventory walls & ceilings (i.e. exchangers as well as tiles, platines, Finance/Maintain/ (if necessary asbestos without an additional use residual heat cobblestones, design Operate" procedure inventory) finishing layer) furniture opt for climate offer materials: on online responsive design, opt for heating second-hand platforms; moisture regulation by at a very low at construction dealers, plants, shading by trees, temperature local material banks. reed fields.. social enterprise Passive cooling