New European Bauhaus Concept Paper

Presented to the President of the European Commission Ursula von der Leyen
by the New European Bauhaus High-Level Round Table, including:

Shigeru Ban

Francesca Bria

Eszter Dávida

Olafur Eliasson

Gina Gylver

Thiëmo Heilbron

Bjarke Ingels

Michela Magas

Pia Maier Schriever

Alexandra Mitsotaki

Orla Murphy

Sheela Patel

Luther Quenum

Mária Beňačková Rišková

Hans Joachim Schellnhuber

Petr Skvaril

José Pedro Sousa

Hubert Trammer

Introduction

The goal of the New European Bauhaus Concept Paper is to provide a conceptual framework for the evolution of the New European Bauhaus[i] project narrative and to inspire a cultural movement which can facilitate the delivery of the European Green Deal. The conceptual framework provides a shell of key visions and actions to be expanded through broader community engagement.

As members of the New European Bauhaus High-Level Round Table we were invited to consider the focus, scope and nature of the New European Bauhaus (NEB) initiative. We established a series of visions around the core values of sustainability, aesthetics and inclusion with the objective of harnessing the power of design, culture and the arts to enable the ambitious change called for by the European Green Deal objectives: no net emissions of greenhouse gases by 2050; economic growth decoupled from resource use; and no person and no place left behind[ii].

In defining **the scope** of the project, our priority was to reframe the ambitions of the original 1920s Bauhaus movement under the radically different conditions of the 2020s defined by the climate crisis and thus, the urgent challenges of today's and tomorrow's generations. Guided by the European Green Deal objectives, we set a broad scope for addressing our living and built environments, ranging from the scale of the individual to that of communities and outward to ecosystems and the planet. Our intentions have been to include both human and non-human perspectives and rethink our complex relationships with nature; to acknowledge the diverse and mutable cultural dimensions of aesthetic values that extend beyond beauty and tactile materiality; to design for empowerment and for diverse abilities, not simply to retrofit accessibility; to not just repair but to heal, flourish and regenerate by adopting a process of circularity; to redress imbalance for the vulnerable, overlooked and marginalised, and to enable a just transition towards the world we want to live in.

In identifying **the focus areas** for our collective thinking and proposed actions, our position has been to consider ourselves deeply entangled in relationships with other ecosystems, both human and non-human, and adopt a more-than-human-centric approach to design and to our built environment[iii]. For this purpose, we have explored better ways of designing, planning, building and living together in healthy relationships with the planet, very much inspired by the work of the members of the NEB High-Level Round Table but also by the work of many other contributors, including designers, artists, architects, innovators and activists.

In considering **the nature of the NEB project**, we have observed the extent to which communities are central to its success. Feedback from our communities thus far underlines a strong desire for the process itself to be radically inclusive, which necessitates building trust on an ongoing basis. We therefore consider the nature of the project to be radically inclusive, emphasising trust, cohesion and convergence.

With the above scope, focus and nature of the project in mind, we developed and implemented **an innovative collaborative methodology** to gather the experience and collective intelligence of the group (see Annex). Over the course of several virtual workshops we shared concerns and individual perspectives on the living and built environments, and collectively imagined shared future narratives. Although representing different age groups, countries and backgrounds, we soon realised that we were on the same wavelength, with complementary and often overlapping priorities and ideas – including the need for greater diversity, dialogue and outreach, and with more emphasis on bottom-up approaches. At the same time, we have been mindful of the fact that we only represent *some* geographies – within Europe, as well as from other parts of the world – and *some* types of expertise, and that more voices and additional perspectives will enrich the dialogue and ground the NEB ambitions further. For this reason, we envisage this concept paper as a series of initial **visions and actions** resulting from our collaboration – a continuous work in progress which invites and embraces more broader community inputs.

1. Visions of the New European Bauhaus

The planetary climate emergency, the current pandemic and a catastrophic loss of biodiversity have forced us to examine what we take for granted and what we think of as natural or normal. It is time to act upon ideas that can take us into a sustainable, inclusive and carbon-neutral future.

1.1.   Sustainability

The world shares common environmental challenges that must be urgently addressed according to the particular conditions of each region on Earth.

Addressing climate change must consider the environmental, economic, technological, geopolitical, social and cultural conditions of each place. Protecting and restoring nature makes sound economic sense and is our best health insurance[iv]. Scientific evidence and knowledge should inform concrete actions to achieve carbon neutrality from the micro to the macro scale, measured by both quantitative and qualitative goals. However, we cannot simply 'follow the science'[v] when such actions concern human behaviour. They must also be framed through social, cultural and political lenses.

A culture- and design-led approach is an important strategy for the transition to a low carbon, regenerative and just society.

A culture- and design-led approach unlocks a positive paradigm shift full of pragmatic hope, grounded visions, actionable ambition and desire for meaningful change. As with other systemic practices, design provides ways of orchestrating high-level missions with bottom-up actions, tackling the wicked problems that science cannot cover alone. However, unlike many other disciplines, design not only drives the co-creation of diverse sustainable instruments, methodologies and solutions for a just transition, but can help motivate and communicate such change. Design can help us understand what it *feels like* to live in a sustainable place - before we are there. It can provide numerous ways of understanding and communicating how such societies might function, providing compelling and exciting visions of a possible future, and using vivid imagery and experiences to produce narratives that will enable us to understand, discuss and design such transformations. Nourishing an ecosystem of creators, artists and innovators, fostering alliances of science, technology and the arts, will contribute to innovation centered on sustainability, human needs, values and democratic principles.

Climate justice is predicated upon radically inclusive[vi] social and cultural relationships and interactions, both human and more-than-human.

The ambition for a climate neutral, safe and just future for all must include, but also move well beyond sustainable construction and ecological building materials. Climate justice requires the committed involvement of social groups and social structures; recognition of the importance of cultural interactions and relationships; rethinking of public spaces, products and services both digital and physical; and acknowledgement of the ever-evolving web of sustainable interactions between people and their living environments.

The built and natural environments should not be treated as separate poles.

Buildings should not be considered as products to be delivered, but rather as cells belonging to larger systems within entangled natural and built environments that must be nourished, adapted and regenerated over their life cycles. Buildings are materially drawn from limited natural resources, they are situated within connected ecosystems, and are embedded and enmeshed into living environments.

Education and lifelong learning are a key to both social and environmental sustainability.

A new approach to learning emphasises the convergence and co-existence of diverse perspectives around shared local and global environmental challenges. It requires a complete reframing of traditional learning approaches, which reinforces interdependent social and environmental justice rather than divides human from non-human, or knowledge domains into distinct categories. Radically inclusive education is key to creating new incentives for action, changing social conceptions and behaviours, fusing disparate practices into transdisciplinary approaches, and transforming the social systems that enable harmful practices against those without a voice, human or non-human, to new ones leading to greater social and environmental sustainability[vii].

Learning-by-doing builds courage, confidence and collective responsibility.

By collaboratively imagining other futures and prototyping solutions on the ground, diverse communities build courage, confidence and collective responsibility. Carefully curated environments which create a level playing field for hands-on, goal-oriented knowledge exchange encourage respect for each other's knowledge, regardless of age, social, cultural, economic or educational background. Equally, respectful contestation is an important dynamic, as democracy includes the right to disagree. Shared respect, ambition and responsibility, as well as careful (and care-full) facilitation, provide a way of moving forward, built upon such complex interactions between divergent perspectives.

Cross-domain and multi-perspective transgenerational knowledge exchange is necessary to build a deep respect for the environment and for each other.

Assembling knowledge and aspirations from different domains of knowledge, from the social and natural sciences, ecological activism, technological innovation, architecture, design, and art, city planning and public-private partnerships – recognising both overlaps and inherent conflicts of interest – builds respect for a broad range of social, cultural and environmental values. An intensive hands-on multidisciplinary education program that unites experts from the field of culture with those from science and technology can stimulate new ideas and critical views on sustainability opportunities and challenges. Deep respect for the complex narratives of places told from the perspective of different generations, their histories and futures, their cultural projections and imaginations, can establish a sense of diverse yet shared identities, collective memories and ambitions, as well as provide spark and fuel for invention. Situated, diverse perspectives and forms of knowledge can enable the emergence of ideas and innovation from the ground up, as well as unlock genuine local ownership of places and spaces.

1.2. Inclusion

Inclusion creates a sense of shared responsibility and collective action.

As a universal principle, inclusion has foundational value to the 21st Century vision of the New European Bauhaus. Inclusion ensures economic sustainability by making the most of every talent, also recognising that diversity is understood as a prerequisite for successful invention and innovation. The NEB initiative must ensure design for empowerment and ability, not simply to retrofit accessibility or adopt a compliance model of access and inclusion, but rather create objects and environments that actively welcome all. To avoid elitism and help abolish structural biases, the New European Bauhaus initiative must create common spaces for interaction, where people from all parts of our societies find a natural place for expression. Upon this ethical foundation, inclusion can help build social cohesion and can prevent polarisation and the risk of social unrest.[viii]

Inclusion demands a global perspective.

The NEB approach to inclusion represents a shift in perspective, recognising both the interconnectedness of our world and the responsibility to address colonial pasts and their legacies in shaping our epistemologies and visions today. Rather than 'letting others in' to a European perspective and realm of knowledge production, we must eliminate polarity, reaching out to others and actively engaging with and learning from experts in other parts of the world, as well as recognising that our systems of everyday life are enmeshed and connected, rarely constrained by political or geographic borders. At the same time, we recognise that significant polarities and inequalities also exist *within Europe*, with regional cultures defined by differing pasts, and that these differences must be actively addressed in order to give space to local stories and histories within pan-European narratives. An empathetic and responsible stance that acknowledges and addresses local and global histories can be the driver for powerful, inventive and imaginative work that embraces cultures and visions from different parts of the world. As climate migration increases in scale, we must recognise a responsibility to accept and welcome people and their cultures, thereby expanding and enriching European identities.

Inclusion requires more-than-human perspectives.

The more-than-human is that which both includes and exceeds humanity: it represents the many entanglements of human existence with other living and non-living entities. It recognises that humans are part of nature and must adopt a more-than-human-centric perspective on human-led activities, cultivating awareness and empathy for the rich worlds of other species and entities. Within our systems of conception, production, and dissemination, we can support the ecological turn toward Earth as a shared space for multiple species and natural systems, defined by interdependence, and not merely a reservoir of natural resources to be extracted by humans.

Emphasis should be on where we converge, encouraging vital cultural expressions of diversity.

Inclusive environments such as public spaces and shared infrastructures and services in both urban and rural areas enable a sense of belonging and shared identity, leading to an ethos of radical inclusion[ix]. While focusing on what we share and welcoming the beauty that arises in those overlaps of efforts and ideas, fundamental differences in perspectives, values, power and access must also be actively addressed. Differences rooted in structural inequality and lack of equal access must be resolved, whilst expressions of cultural diversity and meaningful difference can be celebrated. Today's and tomorrow's rich diversity must be accepted, stimulated and promoted, whilst our shared resources, infrastructures, spaces and identities can also be reinforced through dialogue, co-design, cooperative ownership and civic structures. Art allows for a celebration of diversity and can explore radical and uncomfortable ideas through dialogue, providing space for ideas to breathe and for cultures to flourish.[x]

Transformative change must be made affordable to have tangible and positive impacts on everyday lives.

Transformative change must support those most vulnerable, marginalised, disadvantaged and whose livelihoods or ways of life may be adversely affected by climate change. Care ought to be taken so that rules and regulations do not achieve the opposite to the desired effect: leading to alienation, stigmatization or making people's everyday lives more difficult. For example, lack of feasible and affordable alternatives to car ownership leaves vulnerable rural communities at risk of economic exclusion from the transition towards carbon neutrality.[xi] Here, design has much to offer, in not only inventing sustainable solutions, but also helping to make them desirable.

Both frontier technologies and vernacular techniques must be equally embraced.

Advanced and emerging technologies must be balanced by other locally accessible tools, techniques and strategies. Nature-based technologies and infrastructures, often drawn from combining indigenous understandings of technology[xii], can provide viable alternatives to many contemporary models. Building circular, adaptive and self-sustainable models for so-called 'appropriate or intermediate technology'[xiii] can be predicated on small-scale, located approaches. Carefully designed, such technologies can be locally affordable and governed in sustainable and democratic ways by local stakeholders, making them powerful, effective, and often producing richer kinds of value. The New European Bauhaus can thus stand for a richer, more inclusive conception of *what technology is* than currently exists within policymaking and industry.

Local communities are some of the biggest innovators in our society.

Inclusion of local communities will be key to affecting broad and transformative decarbonisation. Deep listening to the aspirations, hopes and concerns of local communities, in embracing their differences, commonalities and ability to participate in the decision-making process and innovate at an impactful scale will be essential. True participation, beyond conversation, must involve large scale processes of participatory democracy (online and offline), and levels of meaningful local *ownership* - social systems like school food menus or infrastructural systems like microgrids and autonomous shuttles. Such systems can not only be designed through participative co-design processes, but also be inherently participative in their realisation, governance, ownership and operations. This can help change costly maintenance into valuable care, as well as produce resilience through diversity.

We need to involve the citizens of the future to build the future and achieve intergenerational solidarity and justice.

Millions of young people are striving to make a positive impact, including Fridays for Future, Global Youth Climate Network, EcoUnesco, Young Friends of the Earth Norway and many more. Their voices must be central to the activities and action of the New European Bauhaus which can function as a form of exploratory 'ministry for the future'[xiv], representing the rights of future generations, listening to their ideals for how to live, work and flourish together, and working to implement these ideals into processes of political missions. To design for just futures for generations to come, changes in patterns of consumption in the industrialized parts of the world must be initiated immediately so as to not leave young people, their children and grandchildren in deep ecological debt, having to combat problems that stem from before they were born[xv].

The NEB initiative must reflect on the relation between the countries of the European Union and other parts of the world.

The NEB High-Level Round Table actively acknowledges and celebrates the diversity of cultures. To counter the tendency to imitate and reproduce Eurocentric design culture, economic strategies and consumption patterns, NEB ought to embrace diversity in building, design, and innovation from different cultures and enable them to co-exist based on mutual recognition and acceptance. NEB should foster cohesion, collaboration and a common sense of belonging among European countries while at same time it should not regard practitioners from beyond the European borders as receivers of standards developed within the EU but as respected teachers, experts and sources of inspiration and knowledge. This openness to diversity needs to balance the possibilities of creative cultural hybridity with the need to respect cultural heritage and preservation.

1.3.   Aesthetics

Aesthetic values are not simply inherent to an object, a building or a place, but are continuously shaped by cultural conditions and dynamic patterns.

Aesthetic values include, but extend beyond, physical beauty and tactile materiality. They help to convey our diverse yet shared relationships, our cultures and politics, and what we stand for as societies. They are continuously shaped by, and in turn shape our deep cultural conditions, our shared identities and ideas. These expanded networks of meaning, through which our notions of beauty and aesthetic quality arise, also shape fundamental feelings of interconnectedness and togetherness. Aesthetics provides a shared ground on which to play out and articulate these deeper ideas, enabling people to express their shared sensibilities or kick against them. Aesthetics are both the backdrop to everyday life – colouring the *mis-en-scéne* that frames our everyday interactions – and the foreground, as culture is, to a large extent, what everyday life produces.

To address the increasingly urgent challenges of today and tomorrow we must dare to imagine the as-yet-unknown instead of relying on well-known typologies.

The use of natural materials, energy efficiency strategies, circular economy principles, and the different processes and cultures that they can support, has the potential to stimulate the emergence of entirely new spatial typologies – different forms of building, of public space, of neighbourhood, of product, of material production[xvi]. Producing regenerative, non-extractive and circular materials requires a radical reversal of almost all current manufacturing and building practices and a sustainable built environment requires a transformation of the whole construction chain, from the material extraction to the end-of-life of buildings (e.g. through reuse, disassembly or, as the last option, demolition), allowing for the emergence of a new aesthetic.

Quality of experience contributes to improved health, well-being, and healthy human- and beyond-human ecosystems.

The aesthetic experience of a musical performance or an art installation, tending the herbs in a quiet shared garden or being a flaneur in a vibrant public space, or even a well-crafted train journey or chance encounter in an intriguing side-street, are examples of a heightened quality of aesthetic experiences. These not only produce meaningful environments, or weave rich patterns of social fabric, but have been scientifically proven to contribute directly to physical and mental health and well-being in numerous ways[xvii]. Quality of experience requires recognition of diverse human and non-human capabilities, and their interaction with harmonious, regenerative and restorative living environments. *High-quality Baukultur*, highlighted by the Davos Declaration of 2018, should drive the development, operation and governance of quality spaces and ecosystems[xviii].

The New European Bauhaus notion of aesthetics is not dependent on individual judgement but emanates from a sense of community and place, of diversity and distinction.

NEB-funded projects should encourage highly diverse communities to translate speculative narratives and thought into practice and shape complex ideas and relationships through collaborative prototyping in order to create an aesthetic that emerges from a common set of values[xix]. This can lead to increased acceptance and appreciation of aesthetic choices and expressions that may differ from one's own. These values must be described in their own terms rather than exclusively through translation into quantitative or economic metrics. Such metrics may allow for comparison and evaluation, but they do not capture the crucial inherent qualities and meanings of those cultural and aesthetic values. Value recognition of culture and aesthetics requires new approaches and enabling frameworks.

2. Proposals for focus areas and actions

2.1.   Design for re-entanglement: create synergies between built and natural environments and re-introduce natural ecosystems and beyond-human agency into a holistic design approach

2.1.1. Ecosystems: Adopt a more-than-human design culture

A more-than-human approach means genuinely designing interventions within the context of their surroundings and its connected, interdependent systems and assemblages. It considers nature not only through the human lens of conservation, but from the point of view of entanglement, ecosystems and the rights of nature. This allows for a necessary critical perspective on design solutions such as geo-engineering, recognising that centuries of it have so far caused dangerous imbalances to broader planetary ecosystems. Instead, it suggests ecosystemic approaches such as strategies of afforestation, from tiny forests to wildlife corridors, re-greening the ocean shallows, reorienting urban spaces around meadows for pollinators, exploring forms of rewilding and other restorative and regenerative approaches. NEB can powerfully explore the edges of these territories, beyond neo-conservationist, and into de-colonialised convivial conservation[xx], Half-Earth Project[xxi], and radical indigenism[xxii] movements.

2.1.2. Land use: Adopt a strategic holistic perspective to land use and extractive practice

The EU needs to take a holistic stance on land use. The current silo approach, separating, for instance, food production from urban planning, still reflects the *functional disentanglement* dogma of the Athens Charter. Instead it should integrate agriculture with biodiversity, but also with rural planning, infrastructure development, energy management and housing[xxiii]. Since the Industrial Revolution, the world economy has been driven by the extraction and utilization of non-renewable mineral resources and by the employment of machines based on the principles of physics, most notably thermodynamics. As our civilization realizes that only a circular economy with predominantly regional supply chains is sustainable, the overriding importance of renewable sources of energy and matter becomes clear. In particular, organic materials must be adopted to construct the world of tomorrow[xxiv]. The built environment, which is currently the biggest source of GHG emissions and toxic waste on Earth and extracts huge amounts of mineral resources such as sand from fragile landscapes, has to be both de-carbonized and de-mineralized. This can be achieved, to a large extent, by substituting conventional construction materials (such as concrete, steel, aluminium and glass) by bio-based substances (such as timber) or climate-neutral substances (such as clay). If properly used, this substitution can even create carbon sinks, i.e. negative CO_2 emissions, and thereby help to undo some of the historical combustion of fossil fuels[xxv].

2.1.3. Urban planning: Recognise cities, small towns, villages and regions as engines for the ecological transition

The smart cities, smart regions and smart countrysides are important engines for facilitating the ecological transition and sustainable digitalisation. Urban planning should promote sustainable democratic innovation that doesn't increase social inequalities. Our cities could be transformed into a series of self-sufficient archipelagos: the villages, the *Dörfer*, the *borghi*, able to minimize travel while maintaining culture, knowledge and information thanks to digital technology and access to fast connectivity. The connected countryside, villages, towns and smaller cities,

developed through the lens of the New European Bauhaus, could become locales of hopeful experimentation. For example, the so called 15-minute city model[xxvi] implemented by cities like Paris, Barcelona and Milan is a model for self-sufficient neighbourhoods in a metropolitan dimension, where every citizen is able to reach any needed services within 15 minutes on foot. Equally, clustering of rural towns to better share capacities and resources can provide cross-cutting benefits and support resilience. The principle of the 15-minute-city should therefore be implemented in small towns and extend also to smaller rural settlements supported by a digital infrastructure that collects public data on energy and heat consumption, mobility, water management, pollution etc. This data can be considered a common good and used to improve the city and create innovation in full respect of the privacy, security and digital sovereignty of citizens. As part of urban planning, the digital infrastructure will empower citizens and communities to make the EU Green Deal a reality.

2.1.4. Built heritage and architecture: Foreground the importance of high-quality adaptive re-use of built heritage

The connected challenges of demographic growth, densification and decarbonisation, call for robust policies that encourage adaptive re-use of existing buildings, in order to both protect and care for the culture of existing built fabric, and equally importantly, to make more effective use of existing resources and infrastructure. Renovation and upgrade of existing buildings is often complex and can be slower than new build and thus requires active support to recognise the long-term benefits of adaptive re-use over replacement. To this end, and augmenting the EU Renovation Wave priorities, stronger regulatory and fiscal supports for renovation, energy upgrade and repurposing of existing buildings are required, which take into account qualitative and intangible culture and heritage of buildings, and that support owners of public and private buildings to keep them in use. Shared knowledge repositories of best practice adaptive re-use and energy upgrade should be promoted. Research into the technology and evaluation of high-quality upgrade of existing buildings (both quantitative and qualitive) needs ongoing development and support.

2.1.5. Construction: Establish standards for evaluating embodied carbon and operational carbon emissions in the construction of buildings, spaces and infrastructures

Introduce Carbon Value Engineering as a requirement in new building projects. Buildings can be evaluated according to embodied energy, linked to material choices, extraction/replacement of raw materials, manufacturing and logistics, construction technologies, and removal/adaptation/re-use of a building, and linked by coherent interoperable material passports and smart contracting systems. They can also be evaluated against operational energy, linked to the usage of a building, across all its related systems. Carbon Value Engineering strategies for reducing embodied carbon need to be applied in building design through the entire lifecycle, from conception to manufacturing and construction, through to the lived experience, operations and re-use. The introduction of standards for both embodied and operational carbon emissions can be supported by a Return-on-Emissions (ROE) directive for construction companies to incentivise progressive removal of carbon emissions from their construction projects. Incentivizing legislation can be introduced for those who commit to a carbon neutral building to allow for new and innovative sustainable solutions to be implemented and tested. EU-wide building guidelines can be reviewed incorporating the best examples from this experimental process and reviewing risk assessment procedures to incentivize their adoption[xxvii]. Introducing Carbon Value Engineering strategies can prompt construction stakeholders to raise the bar for the environmental performance of buildings and stimulate regulators to refine legislation and update or eliminate outdated building code. Ultimately, NEB can prototype new forms of currency, accounting and value models to incentivise building projects to remove carbon and greenhouse gases whilst increasing biodiversity and

environmental qualities, as well as new forms of construction-related technologies and practices, opening up significant innovation possibilities.

2.1.6. Dwellings: Encourage regulators, planners and developers to adopt novel green solutions and holistic approaches to integration of dwellings with natural ecosystems

The current rules and regulations are the biggest obstacles on the road towards the green transformation of the built environment. The EU should start a reform process that would render the building codes and procurement regulations much more favourable for sustainable construction based on natural materials. Regional and municipal planners must update their regulations and culture to encourage higher quality design in dwellings and living environments, covering the entire lifecycle of dwellings from design and construction through to operations, adaptation and re-use. Regulations must support and encourage the adoption of circular ecological systems[xxviii], which include care of their own waste products and recycling by integrating biological ecosystems. Local energy generation and storage ought to be encouraged and supported, as well as water saving and harvesting, food production and integrated biodiversity. To incentivize all new buildings to maximize their environmental performance, public infrastructure ought to be set for both the supply of energy to the buildings, as well as from buildings which are energy positive to the grid. This will allow all new buildings to be designed and built with a positive energy revenue model as decentralized powerplants with a distributed production of heating, cooling and power. More diverse forms of tenure must be encouraged, recognising the long-term value of cooperative models of co-design, shared operations and ownership.

2.1.7. Healthy spaces: Design with nature as a force for physical and mental health in building and environmental design

Our health is strongly influenced by the quality of our designed spaces, environments, products and services. By designing environmental qualities – daylight, clean air, ventilation, careful sound design, biophilic design, vistas onto green surroundings, and integrated biodiversity – into our living environments and spaces, we create better conditions for our health and well-being, both mental and physical. By designing mobility around active transport, integrated into urban planning placing everyday needs at-hand, we produce cleaner, greener environments, a healthier population, and increased opportunity for social and cultural interaction and for ageing with dignity. An inclusive approach to integrating natural and environmental qualities and finding a balance between our built and living environments, will contribute to greater wellbeing, more resilient economies, and richer social and cultural life.

2.1.8. Forests: Adopt an ecosystemic approach to forestry management

A broader adoption of sustainable building materials such as wood requires careful considerations of provenance and resource management. Recent scientific evidence strongly suggests that in order to make the wood industry sustainable, forestry management and land use must be regulated according to ecosystem principles[xxix]. Much forestry management is currently oriented around extractive production methods rather than biodiversity generation or carbon sequestration. A deeper understanding of ecological forest systems, but also of timber processing, transport and manufacture, would support regenerative forestry that fosters biodiversity, carbon sequestration, climate responsive design and a long-term sustainable construction ecosystem, in which timber has an important role to play. A holistic circular land use and construction ecosystem map is needed to plan for sustainable forest management and ensure resilience to unavoidable

climate change, preserve a maximum of pertinent biodiversity and deliver sufficient organic resources for the modern bioeconomy worldwide.

2.1.9. Farm2Fork: Co-design land use and food production systems and practices that regenerate soil, reduce methane emissions and prevent pollution of water courses

Use the CAP Reform window[xxx] to co-design a new relationship with nature and food, recognising the importance of healthy food, preventing food waste, healthy soil and water, biodiversity regeneration, halting mass extinction events, preventing excessive land-use, as well as diminishing opportunities for resilient, diverse farming. Small farms are essential to rural culture and life, and key to the stewardship of land and biodiversity for future generations. Shifting from intensive to regenerative farming can harness design skills to ensure the process is inclusive and fair. Reorienting food around both human health and planetary health – not as a zero-sum game trade-off but a cooperative and enriching act – will mean radical reforms in land use, culture and economy. NEB can explore, articulate and communicate the value of these transformations.

2.2.   Design for spatial and social justice at the core of the transition to climate-neutral societies

Design and implement an urgent strategy for those whose lives and livelihoods are already threatened or diminished in quality because of lack of access to clean water, clean air, safe and comfortable housing, education, democratic institutions and basic human rights. Include support for new spatial structures for urban farming, peri-urban farming, and local loops of regenerative agriculture in rural environments, in order to create new jobs, new cultures and practices, and ensure health and well-being not just of humans, but also of plant, animal and water ecosystems.

2.2.1. Affordable/sustainable housing: Prioritise high quality positive energy affordable and sustainable social housing

Design systemic approaches to enabling diverse bespoke local housing rather than standardised, universal models and elements. Leverage the possibilities of digital design and fabrication (design tools, co-design and participation tools, interoperable systems and standards, material passports and smart contracts) as well as the potential of local crafts, self-build, cooperative design and local resource pools. This balance of high-tech and lo-TEK[xxxi] with local community/resources and industrial backbone, can unlock new innovation dynamics. Design and architecture approaches must start by understanding our diverse ways of living together – past, present and future – and build planning, procurement, construction and operational models around these emerging practices. Planning for life-time housing and ageing-in-place must provide multiple options for a changing and diverse demographic profile.

2.2.2. Resilient infrastructures: Design diverse resilient infrastructures for energy, water, waste, mobility and communications, with those most vulnerable, human and non-human, at the centre of the process

Design critical public infrastructures of local energy generation and storage, health care, education, water supply, drainage, waste management, public transport and communications to be reparable and resilient to sudden and unexpected change, such as that experienced during the global coronavirus pandemic or other climate-related events which will become the norm under the conditions of accelerating climate change. Systems that cater at their heart for those who are most vulnerable, can be more robust, and those built around distributed and diverse models can

be inherently more resilient. Due to advances in new technologies, as well as older nature-based infrastructures, there are new possibilities for super-local forms of infrastructure – diverse, flexible, adaptive, located, resilient – that were previously harder, inflexible and centralised systems out-of-sight. These new possibilities open potential for more innovative, resilient and sustainable forms of local ownership, engagement, care and maintenance of critical infrastructures. Such infrastructures can be increasingly nature-based, whilst also taking advantage of contemporary digital and material technologies, and incorporate the vulnerable non-human living environment into the heart of infrastructure thinking and practice.

2.2.3. Infrastructure and energy justice: Seek out and change existing rules that perpetuate and support wealth inequality

Review and challenge unjust existing structures that reward, incentivise or enable wealth inequality. Incumbent and inequitable interests and structures must not prevail over urgent actions that support justice, diversity and sustainability. Evaluation methods often favour large organisations or wealthier stakeholders. For example, energy efficiency measures based on W/M^2 give preferential treatment to those in large houses over those in smaller homes which use more energy per square meter but less per whole house and much less per inhabitant; the evaluation of the quality and CO_2 emissions of timber and new material production favours large, more centralised suppliers [xxxii]; design and distribution of infrastructure and mobility systems lacks evaluation tools for alternative nature-based solutions. NEB can help envisage and prototype entirely new approaches to infrastructure driven by concerns of social justice and resilience, producing insights for design, but also broader engagement and desire for change.

2.2.4. Radical accessibility: Design radically accessible public spaces that encourage healthy physical activity by all mind and body types

A true diversity of public and shared spaces can emerge from a systematic redesign of planning processes and cultures, as well as participative design methods, new forms of understanding, measurement, and appreciation, driven by new objectives and grand ambitions, combining health with climate and social justice. Designing a place for wellbeing is a complex challenge, which requires a holistic understanding and careful curation of spaces, buildings, living environments and infrastructures combined with local cultures. For instance, NEB can explore and make tangible how we reorient around active transportation and healthy mobility. Solutions must challenge traditional notions of 'ability' by going beyond accessibility compliance and instead designing for interactions by mindsets and bodies of all types [xxxiii] based around deep participation cultures.

2.2.5. Sustainable mobility: Prioritise sustainable smart mobility options

Spatial policy must regulate development to prioritise smart mobility options of walking, cycling, and public transport. NEB solutions may consider the interplay between mobility technologies and re-planning of our living environments and services; retrofitting our streets as public spaces rather than car parks; or incorporating climate resilient green and blue infrastructures. Cities, towns, villages and regions should prioritise support for public spaces which enhance the quality of pedestrian mobility, followed by cycling, public transport, and private cars as a last resort. Direct and indirect subsidies for cars and car parking should be removed. Public transport should be made more affordable, reliable, regular and accessible. Strategies to replace air travel with rail and alternative sustainable modes of transport should be developed and supported by appropriate transportation infrastructures.

2.3. Increase the capacity for communities to adapt to new realities by shifting from an economy of growth to an economy of belonging

A sense of belonging increases when we create a space for common understanding. The aim of the New European Bauhaus is to make solutions, design processes and knowledge inclusive in origin, enriched by interaction, informed by engagement and desirable by design. Culture and art are decisive fields of action for a process of transformation of society and can carry the vision and future narrative. Broad awareness and access to culture for the whole of society should be promoted ambitiously, to develop shared experience, activating and energising our public spaces, and building capacity towards fundamental and transformative behavioural changes.

2.3.1. Regional hubs: Support local and regional communities as one of the most valuable innovators in our society

Develop new local hubs and support existing ones that support the decentralisation of knowledge production. Recognise the potential that local and regional ecosystems have to invent and create, to change and adapt rapidly, and to experiment with new methodologies and technologies in ways that are grounded in local needs and environments. With social justice, climate resilience, health and wellbeing and diverse inventions in mind, local communities are the key actors in both process and outcome. They are both keepers of traditional knowledge and the creators of new patterns of living. NEB can stand for deep participation, in both people and places: technology is best developed in context, its application shaped directly by human engagement, just as the rich diversity and dynamics of local environments across Europe with their specific resources like materials and food, will unlock significant innovation.

2.3.2. Small players: Empower a diversity of small players and micro-organisations through support to the commons

Empower small organisations, community groups, citizen associations and micro-organisations by actively supporting the commons of cultural and natural resources which those communities can access[xxxiv]. Design enabling instruments to ensure access to common resources and thereby boost innovation potential, build resilience, and support inclusion across cities, regions and villages. Small players are the life blood of innovation and make up the vast majority of the cultural and creative sector. Access to a well-supported commons can enable individuals, community members and small organisations to self-organise, become agents of change and leaders of a movement.

2.3.3. Hybrid skills: Enable spaces for transversal conversations to foster new, hybrid roles

Create spaces, contexts, platforms and services for interdisciplinary and transversal conversations that allow for the emergence of new roles that can support thriving local communities. These spaces allow for the development of necessary competences and skills, share best practices between knowledge domains and provide a platform for new business models, new societal models, and cultural expression and exchange. Engage with public administration at the local and regional levels, building capability for meaningful local participation, and help to create spaces for co-creation between local authorities and communities. Such spaces can be digital and physical, and manifest themselves at all scales. New forms of expertise, competencies and abilities arise from hands-on co-creation and conversation between representatives of different disciplines and participants from diverse backgrounds. Helping to subtly reorient the culture of local government towards participative co-design practices could be a key NEB agenda, led through collaborative prototyping, events and capability building.

2.3.4. Youth activism: Support activism among young people in order to promote world citizenship for youth

Recognise youth as core to the New European Bauhaus and give them a voice and the means to make a change and augment citizenship of their own neighbourhood, city, or country. For example, we endorse the Norwegian tradition of governmental support for youth green activist high-school organisations[xxxv] and encourage implementation of the programme across all EU member states. NEB could encourage working with youth environments, such as using school catneens to reimagine and reinvent food systems and cultures across Europe.

2.3.5. Transgenerational justice: Design for transgenerational justice and intergenerational interaction

Design spaces that prioritise children and older people, following the 8-80 principle. Such spaces will tend to work well for other generations too, producing places to loiter and reflect, to socialise and interact, to grow and play, places that are safe and free from traffic, as well as places of wonder and delight. These can include quiet spaces and accessible interfaces, diverse material palettes and green/blue infrastructures, communal areas and areas of contemplation. Environments built equally for the youngest and oldest citizens will afford respect, foster engagement and curiosity and bridge generational divides. Such principles will also work well for shared infrastructures, such as mobility, energy, water and waste, as well as local digital platforms for participation, engagement and operations. These environments will also have sustainability built in as a result of the long term and cross-generational thinking underlying their conception.

2.3.6. Capacity building: Create a network of accredited NEB initiatives, buildings, places, projects or designs that achieve the core aims of the New European Bauhaus

Reward projects and initiatives that directly address and achieve the three core aims of the New European Bauhaus with a NEB credit or quality mark. This public recognition will allow organisations, institutions and groups to lead and incentivise others to act, resulting in a virtuous circle of change. The barrier to entry should be low enough to enable true diversity of possible projects, and significant effort should be made by NEB to reach out beyond the 'usual suspects' and typical circuits. The quality criteria should be high, to engender truly meaningful accreditation for both peer group respect and citizen appreciation.

2.4. Innovation and learning-by-doing as a key part of new models of design education at all levels within Europe and beyond

In addition to innovation, knowledge-sharing networks for climate-responsive and socially-just design education are needed at all levels in order to shape adaptation in regional and local contexts.

2.4.1. Education curricula: Introduce distributed and connected New European Bauhaus design curricula

Develop and introduce NEB design education curricula for schools, universities, community education and lifelong learning. This action positions the New European Bauhaus as both a driver and central pillar for the burgeoning pedagogical shift in design education towards climate responsive and socially just design. Develop and support existing regional hubs of research, learning, teaching and knowledge sharing, and the training of trainers, with a focus on unlearning

established practice in order to re-learn. Reshape design education to focus on innovation that questions and reworks the complex relationships between design and consumption from the perspective of rethinking-reusing-recycling. Rethink and rewrite the previously dominant discourses in design education and work to support hands-on learning connected to local spatial and material traditions, as well as practices of care, maintenance, repair and reinvention. Connected, trans-national and inclusive educational methodologies must form part of the delivery of these curricula[xxxvi].

2.4.2. Hands-on prototyping: Prioritise the learning-by-doing principle of collaborative prototyping as a basis for inclusive problem solving

Create hands-on learning opportunities for students to encourage engaged, outward looking, collaborative practice, consciously learning *with*, learning *for* and learning *from*. For example, with regard to equality in education, our colleague Shigeru Ban has said: "The buildings (schools) of the New European Bauhaus should not be only in one location, but everywhere in the world. We can build classrooms with locally available materials by students and people of the community. It can also be part of their education"[xxxvii]. Prototyping and participation practices should be stimulated by NEB within public procurement, building, space and infrastructure design, and governance redesign. These learning-by-doing actions can close the gap between education and practice and ensure that participative learning, co-design and engagement does not just take place in the school environment, but in the street, in the piazza, in infrastructure projects, right across our living environments[xxxviii].

2.4.3. Re-learning fundamentals: Re-learn how, when and whether to build

Research and re-learn building design, repair, and adaptation for re-use in order to decouple from carbon and greenhouse gas intensive materials. This action must include a radical reorientation around building, re-building, and un-building[xxxix], focusing on adaptation and retrofit as much as new-build, particularly given the renovation wave agenda within Europe's existing building stock, which comprises the vast majority of our continent's living environments. The Bauhaus was a building programme, ultimately leading to vast amounts of extractive practices; the New European Bauhaus may be a re-building and un-building programme, reoriented around re-learning and regenerative growth. Bio-materials, recycled materials, renewable materials will all need to play their part in a new construction ecosystem, alongside new design cultures reoriented around retrofit, as well as knowledge of digital material passports and traceability systems for tracking the use and re-use of materials.

2.4.4. New education paradigm: Establish a new dominant discourse and outcome for education

Over the long term, develop and implement curricula, pedagogical material and classroom resources modelled upon NEB principles of sustainability, inclusion and aesthetics. Introduce 'world citizenship' as a central pillar and organising concept for primary education programmes and incorporate design thinking and problem solving as integral across a broad range of subject areas at all education levels. Situate climate justice, biodiversity, inclusion and societal wellbeing in art subjects, sciences, history, media studies, geography, social studies, physical education, citizenship, computing, and languages. Include NEB principles within assessment criteria.

2.4.5. The Year of NEB Education: Declare 2021/2022 as the academic year of the New European Bauhaus in education

Invite *all* schools to introduce the three New European Bauhaus principles as a supplement to existing curricula. At the conclusion of the year, a continent-wide sharing and showcase of innovation and design ideas by students of all ages could be organised, and promising ideas rewarded and supported. In design schools, proposals and solutions by the students of art, film, fashion, graphic design, product design, digital design, architecture, engineering would contribute to a transformative year in education which would have a lasting impact. This can be linked to the NEB accreditation programme, as a strand focused on education, with a similar balance of openness and inclusion and meaningful curation and appreciation. In addition, the programme could recognise the work of students outside of art and design who have successfully incorporated NEB principles in their subject areas.

2.5. Enable adoption of frontier technologies while reinvigorating vernacular knowledge and local production

Emerging technologies have a role to play in connecting people and place, data and things, and they work as a powerful source to re-factor and enrich our living environment made of local traditions, crafts and economies. For centuries now, modernity was tantamount to separating ecosystems from humans and to replacing natural entities by artificial ones. Guided by the more-than-human-centric approach, we can now blend superb evolutionary innovations (such as wood) with the most advanced inventions of modern science and technology (such as artificial intelligence), leading to what might be called the *cyborganic age*[xl], where Hi-Tech meets No-Tech. Design practice must deeply embrace tools to support and integrate design simulation and data analysis, as well participation and engagement platforms, alongside environmental, cultural and aesthetic interests, recognising both the potential and very real limits of a data-driven approach. Culture, as the heartland of digital innovation, provides an ideal environment to play out these themes.

2.5.1. Data spaces: Create a NEB Data Space for data-driven supporting technologies for the Green Deal transition of the construction sector

As part of the EU Data Spaces, including the existing Green Deal data space[xli], the establishment of a New European Bauhaus Common Data Space – a 'Datahaus', produced by the NEB programme - would allow research focus on core supporting technologies for the Green Deal transition of the construction sector, including Life Cycle Management and AI-assisted cognitive twins for the management of sustainability targets. Life Cycle Analysis (LCA) and the application of circular economy principles are crucial to assess and mitigate the environmental impact of building construction. These should include digital material passports, from production and extraction to use and re-use, as well as extending interoperable standards covering BIM (Building Information Models) and CIM (City Information Models) fully reoriented around NEB goals. Considerations must include increasing the energy efficiency of data centres and provisions to extend the operating life of smart devices. Equally, opening up citizen participation in co-design, and the learning-by-doing co-building methods will require new arrays of well-honed digital tools, and learning and support functions. There is an urgent need to research and develop user-friendly as well as stable and standardised tools to measure LCA, that allow for the incorporation of such methods in any design practice and the right comparison of results. By considering the life cycle of buildings as a design driver, a new (circular) tectonics might spontaneously emerge, embracing new materials and construction/adaptation practices as well as new design and construction logics (e.g., design for disassembly and re-use).

2.5.2. Data-assisted design: Strategically reposition design in light of affordances of data-driven systems

Current digital tools can facilitate assessment of performative criteria such as daylight, shading, noise, air and water qualities, biodiversity health, comfort, user appreciation, energy, water, waste, and related services such as shared mobility which are essential to maximizing opportunities for passive design techniques. Yet digital tools are rarely used coherently and at widespread scale, and have never been used systemically, capturing all aspects required to address the NEB agenda and the Green Deal goals behind it. Business models must be reinvented to prioritise the performance, rather than extraction, exploitation and construction aspects of the lifecycle of buildings and spaces. New forms of systemic models based around multiple pools of interoperable data, must be brought together in ways that aid the buildings themselves, considered increasingly as autonomous systems, and to support the humans and non-humans that live there. Hence, these systems must be legible, malleable, adaptable and explicit about their performance impacts. In addition to data used for optimisation, affordances of frontier technologies can enhance cultural and social interactions. For example, public data-enabled cultural heritage buildings or bicycle-sharing schemes can be considered a user interface with citizens, either literally or metaphorically[xlii]. Cultural practices, like the gaming sector, have enormous experience that can illuminate ways in which these touchpoints can be better articulated, understood and synthesised under a NEB umbrella. Another example is that narrative can be considered part of the product aesthetic: data allows to track and trace each individual product through the virtue of its unique use and resulting product narrative including its long-term, environmental impacts, re-appropriation and reuse.

2.5.3. Combine digital with vernacular: Enrich the impact of frontier technologies with vernacular knowledge

Vernacular knowledge and local production are key to reducing extractive practices in favour of regenerative practices, producing meaningful exchanges within living environments, leading to greater care, maintenance and diverse cultural expression, whilst also radically reducing the environmental impact of transportation. Local crafts can thus be reinvigorated while digital production technologies – for instance, the combination of local resource loops with fabrication and robotics – may be explored to support local production and adaptation of components designed elsewhere. Equally, technology can support local economies to be more resilient by enabling local products to be sold globally, if oriented around platforms that support local, independently owned design and production. Renovation and new construction benefits will emerge from coupling crafts and industrialised modes of production; together, they assure customization as well as mass production logics. In addition to the traditional construction market, there is a trend of natural construction, which has been developing in an organic way for several decades, basing its development in accordance with the protection of natural resources and the environment. Local efforts and looking for solutions in ecological niches, while unlocking the potential of innovation based on traditional techniques reinforced by the potential of modern biotechnology, should be based on a fast path from research, prototypes to tests, creating new standards and regulations. Thanks to public funding, local research solutions and technologies should be widely disseminated and not restricted by patent solutions that can delay and block access to developing countries.

2.5.4. Multiplicity of perspectives: Include actors and systems that challenge anthropocentrism

Embrace the notion that the more-than-human approach to design allows us to shift our perspective away from anthropocentrism and towards views that are offered by other species and

other environments, including all available technologies regardless of which part of nature was used in their construction. Lo-TEK approaches, and forms of 'radical indigenism' that understand nature-based technologies, alongside de-colonialised design practices, offer huge potential for innovation, when seen as part of a palette alongside frontier technologies. This allows for future inclusion of new actors, practices, and systems that are currently undiscovered, beyond our reach, not yet invented or still in development.

2.5.5. Technology procurement: Incentivise sustainable digital and technological solutions

The current EU financing programmes and public tenders should include environmental standards and give preference to green technology and environmentally-friendly products. This would shape markets towards a green direction. Public IT tenders should include ethical digital standards to preserve citizens' digital rights and their data sovereignty, openness and interoperability. For public building works in the EU, the construction budget and operating costs should be calculated based on e.g. 30 years of operation, allowing for increase in construction spending if there is a case for a 30 year return on investment on the deployment of technologies which reduce the building's carbon footprint. This will allow public projects to take a long-term holistic perspective and provide economies of scale for the necessary technologies, eventually driving implementation costs down and allowing more developers to implement the relevant technologies and materials.

2.6.   Integrate the bottom-up innovation and experimentation with top-down policy making

Top leaders and policy makers need to value their role as one of support and guidance for local, distinct, diverse, bottom-up initiatives. A culture of support at the highest level can ripple outwards to be inclusive and empowering with dedicated instruments which support experimentation and implementation on the ground, and integrate the collective intelligence of citizens in the decision-making process. This bottom-up approach allows those directly affected to participate in the definition of challenges to be tackled as well as to propose the most suitable local solutions.

2.6.1. Circularity in policy: New European Bauhaus to inspire both high-level missions and grassroots experimentation

The key role of the NEB High-Level Round Table, the NEB partners and funded actions, is to provide well documented use cases, inspiration, access to 'next practice' and on-the-ground expertise for both high-level policy missions as well as grass roots experimentation and replication of effective solutions. Policy instruments must include meaningfully funded actions and genuine open engagement with active support for execution and implementation nurturing profoundly interactive learning processes and cultures. In turn, results from grass roots experimentation can feed best practice into high-level missions, thus creating a virtuous cycle.

2.6.2. Experimental labs: Initiate and empower Living Labs and collaborative innovation ecosystems

Grand challenges derived from NEB principles can encourage and support new interdisciplinary thinking, designing and making in collaborative innovation labs and experimental learning labs including the European Network of Living Labs[xliii]. Labs allow and encourage participants to explore holistic sustainable systems spanning multiple dimensions: environmental, social, cultural, economic and political. Concepts and prototypes can be validated in testbeds and in real-world

settings through experimentation and feedback loops. Publicly funded research can be included in labs as part of innovation toolkits to seed rapid technology transfer, and early-stage ideas can be supported to take innovative designs and nascent teams to the next level of development, market testing, public partnerships or commercial deployment.

2.6.3.   Driven by missions: Adopt a mission-oriented approach to encourage moonshots

Mission-driven programmes are an effective strategy to promote deep and long-term collaborations that engage a variety of participants and disciplines, and to create the connection between the lab and the street, pulling research closer to the ground, and giving people and places a toolkit that includes 'next practice' research, invention and innovation[xliv]. Participants are encouraged to respond to grand societal challenges and as-yet-unsolved design and technology ambitions for the systems and infrastructures of everyday life, involving, for instance, the production of healthy sustainable food systems, healthy buildings and places, green vibrant streets, locally sourced non-extractive energy loops, but also the development of new tools (e.g., life-cycle analysis; carbon positive logistics) and materials.[xlv]

2.6.4.   Equity in funding: Ensure that funding mechanisms cater for small players

Smaller organisations evaluate risk and incentive in very different ways from large corporations. To motivate and enable small players, it is necessary to construct agile mechanisms that contribute to outcomes with precise yet adaptive cashflow conditions, injections of energy and insight that prop up the project at the right time, and ensure momentum without barriers, facilitating partnerships and relationships that extend reach and ability while ensuring just attribution to those who have contributed to breakthroughs. To achieve this, NEB must turn its good intentions into a radical redesign of all the typical bureaucratic touchpoints around European Commission programmes – the application processes, forms, procedures, human and digital services. A people- and place-based redesign process will deliver great insight into how to construct other EU initiatives to follow and create a just alternative to winner-takes-all innovation by the 'usual suspects' with additive value building.

2.6.5.   Inclusion in implementation: Include funding implementers and policy makers in participatory activities

Involve representatives from local administration, regional policy makers and funding implementers as part of grass roots activities with a vested interest in outcomes and results. This must include collapsing all aspects of governance around a people- and place-based systemic perspective, recognising that all these layers combine on the ground. Hence NEB must engage with local municipalities and national funding agencies, stakeholder groups and community groups, and their attendant policies, processes and touchpoints. These are the actors that will enable or disable NEB agendas, and as such must be seen as key to an open and participative approach. A powerful collaborative two-way relationship must be constructed between NEB and local implementers, as part of co-creation processes and enabling on the ground activity. Whilst working with those that are willing is a good starting point, NEB co-creation communities should not ultimately consist solely of enthusiastic practitioners and experts who know how and want to contribute. Communities of policy makers, implementers, cynics, doubters (through lack of information/knowledge) need to become part of the creation of outcomes. Their actions should contribute to the delivery and quality of results. As a design-led entity, NEB cannot simply add to the complexity of funded programmes and support initiatives on the ground by catering for how funding and policy entities happen to be organised; it must also engage with streamlining and realigning these flows of value around the realities of people and place.

ANNEX

Methodology

During the concept phase of the project members of the NEB High-Level Round Table (HLRT) were faced with a challenge: how to work democratically, online, and get results in the shortest possible time on tight deadlines. We designed a custom method building on the shoulders of our peers, basing our process on the Pecha Kucha format devised by Astrid Klein and Mark Dytham who run an architecture studio in Tokyo. The format encourages visual storytelling of the presenter's ideas in a short time with very focused and concise messages[xlvi].

We evolved this format further to solve our challenges specifically for an online co-creation environment. Instead of 20 slides delivered by one person, each of the 18 members of the HLRT was tasked to deliver 3 concepts with great clarity in just 1 minute. This resulted in up to 54 ideas delivered in just 18 minutes (the length of a TED talk) with equal contribution by each member. The resulting collection of idea visuals was then mapped on the Miro board according to their conceptual, visual and semantic links.

Figure 1: The NEB Values Framework derived from mapping the fundamental values highlighted by HLRT members during the first experimental collaborative Pecha Kucha presentation.

The NEB Values Framework

The first concepts addressed our common values around the ideas of sustainability, inclusion and aesthetics. We mapped the results and identified strong synergies as well as two very strong themes linking the co-created content. One is a **line of respect** – respect for the environment, our cultural heritage and nature. The other is a very strong **line of justice** uniting values such as equality in education, collaboration and catering for those most in need.

In mapping core values, the **social dimension** has shown to be dominant. On the top right (Figure 1), a strong cluster surrounds the concept of *Equality in Education*. This includes ensuring access to education by the broadest communities with a variety of accessible tools and means. It also highlights knowledge transfer, the importance of understanding and human empowerment. Closely linked to equality in education is the notion of collaboration and *Strength in Communities*, including respect for each-other's knowledge, sharing of skills, and celebrating diversity and participation. Social inclusion is further highlighted in women's collectives taking ownership of their rights to a roof over their heads, health and transportation, treating neighbourhoods as partners and demonstrating people's natural tendency to help each other. The human qualities of empathy, balance, ensuring breadth and depth of actions, as well as courage and responsibility,

grow from the initial narrative thread which is unified by a powerful diagonal *Line of Justice*. As human qualities build, stemming from embodied and local engagement, and with the inclusion of people's full sensorium and imagination, so do a sense of responsibility and respect for the environment, openness to natural processes, patience and delight, adaptation and care. Only with a strong identified diagonal *Line of Respect* for the spirit of a place, cultural heritage and natural environment, can one establish a sense of identity, memory, positivism, and engage in creativity and imagination.
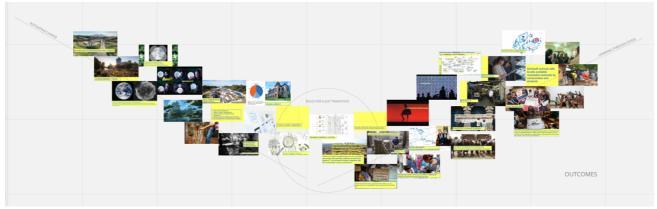

Figure 2: Mapping of the NEB desirable outcomes

The HLRT vision for the NEB outcomes

Our second series of concepts focused on the desirable outcomes for the New European Bauhaus. Here again we identified strong synergies and uniting themes: a strong cluster around the idea of **learning by doing**, a central area focusing on **rules for a just transition,** and building onwards with a variety of ways to **instigate change**, including engaging the imagination, aiming for moonshots and stimulating behavioural changes.

Starting at the top right following the map of values, education takes centre focus with several images which illustrate Shigeru Ban's projects for self-built schools with locally available renewable materials by communities and students working across religious groups in Sri Lanka and China. Workshops, connected and shared learning spans across borders with people from outside the EU as partners and teachers. New schools and new skills are important outcomes, listing a series of new roles and discovery of new human virtuosities. Communities taking ownership of hands-on learning processes complete a diagonal united by the notion of *Learning by Doing*, for example at example, at Fawaka Entrepreneurship school programmes, where children and teens start their own social enterprises, responding to a real-world sustainability challenge. Supporting structures, guiding principles and rules which do not privilege the richest lead to tangible spatial justice and sharing of the principles of resilience with the Global South. A charter or declaration and celebration of grassroots initiatives leads to tangible impacts in this central area which implies the need for *Rules for a Just Transition*. The map builds outcomes by setting NEB objectives for the transformation of the built environment and a mission-oriented NEB competition. Consideration of the natural resources and the engagement of imagination leads to moonshots which recognise complexity, interconnectedness and interdependence and contribute to a civilisational shift reconnecting mind, body, heart and spirit, and re-attuning us to Earth, to what it offers us and to its limits in terms of sustaining growth and supporting a growing number of people. A changed mindset and a new vision build a powerful diagonal around the notion of *Instigating Change* by bringing about systemic and behavioural changes.

NEB at scale: the human dimension, the community perspective and the scale of the planet

Our final round of co-creation looked at **sustainability, aesthetics and inclusion, through the lens of different scales**: the human scale, the scale of places and communities, and the scale of the planet. Members were then invited to place each of their slides on a matrix, from these two perspectives of scale and values. Once again, we detected meaningful patterns and narratives, which have been translated into our concept document.
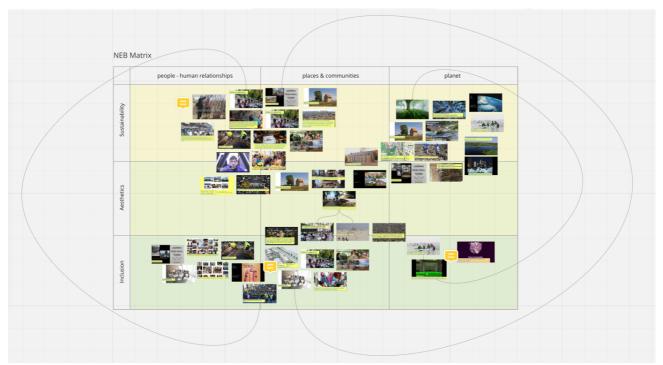

Figure 3: The NEB Matrix mapping Inclusion, Aesthetics and Sustainability against three dimensions of scale: people/human relationships, places/communities, and the planet.

Immediately evident are strong clusters between i) people and places and sustainability; and between ii) people and places and inclusion. Aesthetics feeds through these and connects to them, derived from and founded on the idea of inclusion and community. A third clear cluster can be seen at the crossover between the planet and sustainability.

Connections between sustainability and inclusion became evident at the scale of people and places, demonstrating the importance of action the local scale to positively impact people, places and their communities.

Active and engaged education – learning through doing – connects strongly with sustainability in the matrix, evidenced through the recognition of the importance of starting young, but also of passing on skills, deep knowledge and the wisdom of older people and their experience.

Tools and toolkits for education were noted as important across all three scales. These included digital tools but also pointed to traditional skills as well as the need to provide the tools that enable learning from and with communities. The sharing of local knowledge with broader communities and need for multidisciplinary approaches was highlighted. Access to tools and toolkits was seen as enabler for learning and knowledge creation through prototyping.

Inclusion, across the matrix, connects very strongly to people in all their diversity, who infuse almost every slide: people in collaboration, in conversation, in negotiation, co-dependent on each other and on the planet; people sharing a common responsibility to care for it.

Zooming out to the scale of the planet, there is a link to the importance of cities and towns, but also to nature, and to forming a new relationship with nature that sees the world from the perspectives of non-human species.

Finally, at the centre of the matrix members note the importance of places where people meet, the agora, the public space, and the value of these for our communities, as a place to negotiate our relationship with the planet and with each other.

---

[i] For more information about the New European Bauhaus initiative, its actions, events, and shared materials, see https://europa.eu/new-european-bauhaus/index_en.

[ii] For more information about the European Green Deal objectives, actions and timeline, see https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

[iii] Multiple visions are offered on the subject of a more-than-human approach to design. To paraphrase Anab Jain: In a more-than-human-centered approach to design we consider ourselves as deeply entangled in relationships with other species, both human and nonhuman. (http://opentranscripts.org/transcript/more-than-human-centred-design/) Thomas Wright offers: "More-than-human design is a conceptual articulation that stimulates action by designing for impact beyond humans." (https://uxdesign.cc/more-than-human-design-rethinking-agency-and-sustainable-practices-926d580d5311)
Iohanna Nicenboim and Elisa Giaccardi approach the subject from a data and intelligent agents perspective: "More-than-human Design is a new way of researching and designing that looks into the creative possibilities of data enabled Things and intelligent agents." (https://iohanna.com/More-than-human-Design)

[iv] Sala, E. (2020) *The Nature of Nature: Why we need the wild*, National Geographic.

[v] Venki Ramakrishnan, 2020. Following the science: https://royalsociety.org/blog/2020/05/following-the-science/

[vi] Martin Dempsey's and Ori Brafman's "Radical Inclusion" is a concept for resilient leadership which recommends to "Listen, amplify and include (which results in learning), coupled with a bias for action". In the post-pandemic era, this approach becomes even more pertinent.

Dempsey, M. and Brafman, O. *Radical Inclusion: What the post-9/11 world should have taught us about leadership*. Arlington, VA: Missionday; 2017. [Google Scholar]

[vii] More about the challenges to be addressed by education can be found in More-than-human design: rethinking agency and sustainable practices (https://uxdesign.cc/more-than-human-design-rethinking-agency-and-sustainable-practices-926d580d5311)

[viii] See for example, Revitalisation de Centre-Bourgs https://www.cohesion-territoires.gouv.fr/revitalisation-des-centres-bourgs

[ix] Martin Dempsey's and Ori Brafman's "Radical Inclusion" is a concept for resilient leadership which recommends to "Listen, amplify and include (which results in learning), coupled with a bias for action". In the post-pandemic era, this approach becomes even more pertinent.

Dempsey, M. and Brafman, O. *Radical Inclusion: What the post-9/11 world should have taught us about leadership*. Arlington, VA: Missionday; 2017. [Google Scholar]

[x] Here we can look to the EU S+T+ARTS programme for precedent https://www.starts.eu/

[xi] Caulfield, B., Benoduto, R., Carroll, P., *Transport disadvantage and car dependency in Rural Ireland* (http://www.tara.tcd.ie/handle/2262/91824)

[xii] Julia Watson, Lo-TEK: Design by Radical Indigenism (2019)

[xiii] Schumacher EF, *Small Is Beautiful: A Study of Economics As If People Mattered* (1973)

xiv Stanley Robinson, K. *The Ministry for the Future*, 2020. The Ministry for the Future is a science fiction novel that follows a subsidiary body, established under the Paris Agreement, whose mission is to advocate for the world's future generations of citizens as if their rights are as valid as the present generation's. https://www.hachettebookgroup.com/titles/kim-stanley-robinson/the-ministry-for-the-future/9780316300162/

xv 'Intergenerational solidarity and the needs of future generations', 2013, a report by the UN Secretary-General.

xvi For instance, the waste-to-energy plant merged with public space sports activities in Copenhagen by BIG. As there are already non-human robotic typologies (data centres and automated big warehouses, for instance), it is useful to refer to constructions that support non-human forms of life, too (by Andrés Jaque and the Office for Political Innovation, among others).

xvii The pandemic has brought an increased awareness of the importance of beauty and aesthetics for wellbeing. An example is a recent paper by Cabedo-Mas et al, on the effects of music on the Spanish population during the COVID-19 crisis:

Cabedo-Mas A., Arriaga-Sanz C., Moliner-Miravet L. (2020). Uses and perceptions of music in times of COVID-19: a Spanish population survey. Front. Psychol. 11:606180. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8024569/) As one of the examples from the public press, the Guardian newspaper has advocated for the recognition of the contribution of the arts to health and wellbeing: https://www.theguardian.com/healthcare-network/2017/oct/11/contribution-arts-make-health-wellbeing.

xviii See the Davos Declaration on High Baukultur, endorsed by ACE (2018): https://davosdeclaration2018.ch

xix Sebastian Olma advocates for a shift from the notion of "contemporary aesthetics" which is linked to conspicuous consumption, to the "poetics of performative defiance", or the creative process of the enactment, the experience, testing or prototyping, accompanied by constant questioning. Olma, S., 2018. *Art and Autonomy: Past, Present, Future*. V2_Publishing, Rotterdam.

xx Bram Büscher and Robert Fletcher, *The Conservation Revolution: Radical Ideas for Saving Nature Beyond the Anthropocene*, 2020. https://convivialconservation.com/

xxi Edward O. Wilson, *Half-Earth: Our Planet's Fight for Life*, 2016. https://www.half-earthproject.org/

xxii Julia Watson, *Lo-TEK: Design by Radical Indigenism*, 2019. https://www.juliawatson.com/

xxiii Such an integrated perspective has been discussed in quite some detail by the recent report "Rethinking Land in the Anthropocene: from Separation to Integration" by the German Advisory Council on Global Change (WBGU 2021).

xxiv The real obstacle in introducing on a wide scale the natural materials is the requirement to develop product specifications for all cases of their use. To get rid of that, natural materials such as straw, hemp or agricultural waste should be treated as new sand, lime, steel or cement. Standards of their use should be developed at a fast pace, just as previous generations used their advantages on the basis of the established rules of social trust. (Information from the consultation with Cezary Czemplik from Polish Society of Natural Construction)

xxv The transition to bio-based value creation will open up a new perspective on global development: The geographical distribution of mineral resources (such as oil and iron ore) on Earth is highly heterogeneous, resulting in huge comparative disadvantages for many countries, not least in the Global South. By way of contrast, most areas of the African continent abound in biological resources. If the latter are not used for domestic burning (as currently done), but employed effectively in the context of an emerging bioeconomy, countries like Kenya or Ghana can become competitive champions of the international markets.

xxvi https://www.15minutecity.com/

xxvii An approach to risk assessment that builds on Technology Readiness Levels is Market Adoption Readiness Levels, developed by the Connect Advisory Forum. It adds three further assessment parameters: the level of risk, numbers of potential early adopters, and data yield.

xxviii I.I. Gitelson, G.M. Lisovsky, R.D. MacElroy, 2003. *Manmade Closed Ecological Systems*, Taylor & Francis, London and New York (2003) [Google Scholar]

xxix Recent scientific evidence shows that he most connected tree on the forest floor, the so called "mother tree", is key to resilience and regeneration. Suzanne Simard, *Finding the Mother Tree: Discovering the Wisdom of the Forest*, 2021, Alfred A. Knopf. Also: https://mothertreeproject.org/team/project-leads/suzanne-simard/

xxx https://www.consilium.europa.eu/en/policies/cap-reform/

xxxi Julia Watson, Lo-TEK: Design by Radical Indigenism, 2019. https://www.juliawatson.com/

xxxii Regulation which insists on complex and expensive digital technologies can damage local craftsmen. This problem takes place, for example, in the timber industry where excluding the traditional methods of testing the quality of wood offers inadvertent preference to those based on expensive computer programs which are not affordable for the local sawmills, thus forcing them to send their wood to the big centers.

xxxiii Obourn, Milo W., *Disabled futures: a framework for radical inclusion,* 2020. Temple University Press, Philadelphia. Obourn's "Disabled Futures: A framework for radical inclusion" opens up possibilities for imagining alternate and more radically inclusive futures in which all of our identities, experiences, freedoms, and oppressions are understood as interdependent and intertwined.

xxxiv Examples of commons as shared ressources ran by communities of citizens not privately/publicly owned : Park Slope Food Coop (a Supermarket: https://en.wikipedia.org/wiki/Park_Slope_Food_Coop), Rail Coop (a Railway project: http://www.onthecommons.org/about-commons), and Habicoop (Housing project: http://www.habicoop.fr/)

xxxv Nature and Youth – Young Friends of the Earth, Norway. https://nu.no/english/

xxxvi Two examples of how this is already happening can be seen in NEB Goes South (https://www.up.pt/neb-goes-south/) and Anthropocene Architecture School (https://linktr.ee/AnthropoceneArchitectureSchool) as well as the burgeoning design justice movement within education and practice.

xxxvii Examples from Shigeru Ban's practice can be seen in the "Hualin Temporary Elementary School" that was built in response to the 2008 Sichuan Earthquake in China, or the Paper Nursery School in Yaan: http://www.shigerubanarchitects.com/works/2008_hualin-temporary-elementary-school/index.html

http://www.shigerubanarchitects.com/works/2014_PaperNurserySchool_Yaan/index.html.

xxxviii Design-led mission-oriented innovation approaches, such as those led by Vinnova in Sweden, around reimagining streets and school food systems, are learning-by-doing in 'real life', ensuring that that idea of life-long learning is also 'life-broad', dissolving the artificial walls between pedagogy and practice. https://www.vinnova.se/en/m/missions/

xxxix 2021 Pritzker winners Anne Lacaton and Jean-Philippe Vassal (and others) provide good examples: https://www.pritzkerprize.com/laureates/anne-lacaton-and-jean-philippe-vassal

xl Orive, Gorka & Taebnia, Nayere & Dolatshahi-Pirouz, Alireza. (2019). A New Era for Cyborg Science Is Emerging: The Promise of Cyborganic Beings. Advanced Healthcare Materials. 9. 1901023. 10.1002/adhm.201901023. https://onlinelibrary.wiley.com/doi/10.1002/adhm.201901023

xli For more information about the Common European Green Deal data space see the recent related initiatives: https://inspire.ec.europa.eu/sites/default/files/inspire2020_greendataspace_green_deal_data_space.pdf

xlii This example of using data-enabled public buildings and infrastructures as an interface between governments and citizens was adopted in the recommendations of the G7 "Innovation 7" in 2017.

xliii The European Network of Living Labs (ENoLL) lists 440 registered lab sites across the EU and globally with a potential reach to millions of people (https://enoll.org). MTF Labs manages a global community of around 8000 innovators of all backgrounds and has run a nomadic series of innovation events, including week-long, High-Level curated residential labs across Europe and around the world for almost a decade (https://mtflabs.net).

xliv Promoted by the US Government, the Solar Decathlon Competition aiming at designing and building high-performance, low-carbon buildings that mitigate climate change and improve our quality of life through greater affordability, resilience, and energy efficiency. Students and researchers from different disciplines and countries around the world, develop a comprehensive and hands-on work that ends with the building of 1:1 scale functional built prototypes that are visited and assessed by the public.

https://www.solardecathlon.gov/

xlv For moonshots to really add value, the challenge needs to be defined very clearly, it needs to address a problem that we don't know how to solve yet and be a solution that has the potential to unlock a wider change / shift. Good examples at https://50breakthroughs.org)

xlvi https://www.pechakucha.com