AUSTRIAN SUSTAINABLE BUILDING COUNCIL

JUNE 2025

WORKING ENVIRONMENTS IN LIVING SPACES 2050

FROM SQUARE METRES TO NETWORKS

POSITION PAPER OF AN ÖGNI WORKING GROUP

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Gender Disclaimer
For the sole purpose of better readability, gender-specific language has been omitted. All personal designations in this paper are therefore to be understood as gender-neutral.

KEYWORDS

Working Environments 2050, Living Spaces, District Perspective, Use of Existing Buildings, Connectivity, Cognitive Buildings, Digitalisation, Artificial Intelligence, Building Operations, Materials, Circular Economy, Human-Centred, Meaningful

EXECUTIVE SUMMARY

By 2050, real estate will undergo a transformation towards connected, flexible, and identity-forming living spaces that go far beyond traditional office buildings and usage concepts.

Workplaces will be reimagined, no longer as rigid spaces, but as dynamic systems. They will be connected to their surroundings, designed with technological openness, intelligent and responsive, promoting social integration and focusing on circularity.

By 2050, existing buildings will not be an obstacle, but a strategic resource. Through the targeted activation of space, structure, and materials, existing substance is transformed into sustainable working and living environments. The ability to repurpose becomes a success factor – flexibility and resilience are key planning parameters.

Working and living environments are connected – digitally, physically, and socially. Open interfaces are needed for technology, AI, and robotics, which are integrated in a fair way and form part of 'digital justice'. At the same time, health, belonging, and identity are coming into focus: the company headquarters is becoming a place with meaning – it promotes well-being and strengthens the sense of community.

A paradigm shift is recommended: away from solitary thinking and towards interactive and cognitive building concepts that integrate into a larger environment. User centricity, mixed-use, and building or community management are key levers in this regard. Buildings are no longer static shells – they are continuously learning, becoming a circular organism and an active part of our reality.

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ABOUT ÖGNI

ÖGNI – Austrian Sustainable Building Council is an NGO (non-governmental organisation) and NPO (non-profit organisation) that has been working since 2009 to establish sustainability in the construction and real estate industry. By certifying buildings and districts, ÖGNI demonstrates the added value of sustainable real estate. The aim is to create resource-saving, economically and socially efficient buildings that can be used flexibly and promote people's well-being. In addition to building certification, ÖGNI also supports EU Taxonomy Verification by checking new buildings, renovation, and existing projects for compliance with EU Taxonomy criteria.

As a system partner of the DGNB (German Sustainable Building Council), the largest network for sustainable building in construction in Europe, ÖGNI uses the established certification system DGNB that has been adapted and further developed for Austria. As the only Austrian council, ÖGNI is an ‘established member’ of the World Green Building Council (WorldGBC) and strives to strengthen the European quality certificate internationally.

INTRODUCTION

Urban spaces are facing a transformation. The climate crisis, resource scarcity, social fragmentation, and technological upheavals are calling for a rethink in how we deal with our built environment. Instead of constantly constructing new individual buildings, the focus is shifting to the strategic use of existing building stock. Existing buildings are seen as a valuable resource – not only in terms of space and materials, but also in terms of social structures and cultural identity. The future of urban development lies not in solitary buildings, but in intelligently connected, cognitive districts.

This position paper addresses the question of how buildings and districts for the workplace of 2050 must be conceived, planned, designed, and operated to be sustainable, resilient, and liveable. It is about more than architecture or urban planning: it is about the interaction of buildings, infrastructures, uses, and people – interactive systems that respond flexibly, learn continuously, retain their value, promote health and quality of life, and keep resources in circulation. The integration of technologies such as artificial intelligence and robotics is examined, as is the social dimension of digitalisation and the role of cognitive buildings in learning districts.

At the same time, topics such as mixed-use, open interfaces, community management, and user centricity are considered key success factors. Buildings and districts are understood not only as physical locations, but as living organisms and spaces that create identity – places that enable a sense of belonging and, at the same time, can function as part of a new healthcare infrastructure.
The aim of the working group was to create a holistic understanding of the design of our working and living environments in 2050 that meets ecological, economic, and social requirements equally. The approaches refer to office activities that can be carried out independently of location.

At the beginning, you will be presented with a picture of a utopian working environment as it might look in 2050. The following chapters approach the topics outlined therein, with a focus on building analysis across five different dimensions: First, as a starting point, a transformation-open district development with a focus on existing use is analysed. This is followed by an examination of the requirements for connected, user-centred, and adaptive systems, the design of a cognitive, forward-looking operation, and the need to view a building as a material bank. In the fifth dimension, people are placed at the centre of the consideration of working and living environments in 2050. Finally, you will find key takeaways that we would like to share with you for your consideration of current and upcoming projects.

THE UTOPIAN WORKING ENVIRONMENT 2050

In 2050, our society is more diverse than ever, shaped by a globalised world in which cultural differences enrich everyone. Social inequalities no longer exist; society has recognised that social cohesion must be strengthened to ensure long-term stability and prosperity. This has been achieved through initiatives to promote education and digital literacy, among other things. Each generation grows up in a world where age, origin, and gender no longer play a role. In an increasingly ageing society, we have developed innovative models of coexistence and care to meet the needs of all age groups. The healthcare system has been made more efficient through technological advances and preventive measures.

People live healthy and vital lives into old age. Age discrimination no longer exists, as young and old live in perfect symbiosis, learning from each other and growing together. Population growth and migration are harmoniously balanced, as global cooperation makes it possible to distribute resources fairly and efficiently and to deploy people where they are needed.

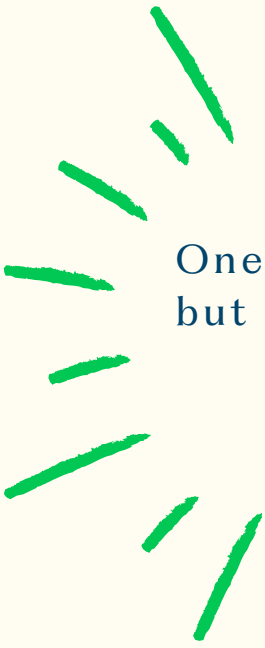
Work in the utopian society of 2050 is highly flexible and oriented towards the individual needs of people, with the focus on self-fulfilment. Everyone passionately pursues their interests and talents because all routine tasks are performed by intelligent robots and AI systems. People can concentrate on creative, social, and intellectual activities.

Visual: ARENDT & WENDELIN OG, genereated with AI (Midjourney)

Digitalisation is omnipresent and fully integrated into everyday life. Digital technologies facilitate communication, education, and access to services in a way that breaks down barriers and promotes equal opportunities. Every person has access to unlimited knowledge and the best educational opportunities, which are fully personalised. Virtual reality and augmented reality have revolutionised the way we live, learn, and work. Everyone can project themselves into any environment, network with people worldwide, and collaborate on global projects in real time. Thanks to complete connectivity, communication is transparent and open. Artificial intelligence supports each person individually.

Sustainability is firmly anchored in all areas of life, from architecture to agriculture to consumer culture. Cities are green oases, with spacious parks, vertical gardens, and ecologically sustainable buildings. The use of existing buildings has long since become the social and economic norm: renovation, densification, conversion, and adding extra storeys characterise the cityscape and are considered the first, obvious step in any spatial development. New buildings are only constructed in exceptional cases – exclusively on already sealed surfaces when no other solution is possible. And when buildings are constructed, they are energy-positive: every new building generates more energy than it consumes. The protection of the natural environment and the restoration of damaged ecosystems are top priorities, supported by international cooperation and technological innovations.

Driven by consumers, companies act as responsible players in society and compete for innovative solutions that drive a green transformation of the economy.



One should not try to predict the future,
but rather make it possible.

Antoine de Saint-Exupéry

DIMENSION DISTRICT

The working environments of 2050 will no longer be isolated places, but rather an integral part of a connected urban structure. The district will form the central spatial and functional unit in which work, living, and leisure intertwine seamlessly. Buildings will no longer stand alone, but will interact with each other, exchange resources, and respond flexibly to changing needs. The connectivity between buildings creates a resilient, adaptive, and sustainable environment.

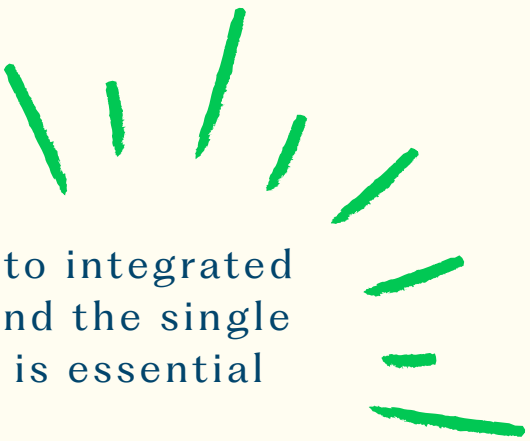
Existing buildings play a central role: they offer the greatest potential for space that can be activated in a resource-efficient manner. In urban areas, where space is becoming increasingly scarce and expensive, renovation, densification, and conversion are essential. Every structural intervention must be measured against whether it intelligently develops the existing building stock – instead of replacing it with new construction.
Modular construction promotes cost efficiency, among other things, through efficient use of resources and offers a high degree of flexibility for future changes in use. Existing buildings are also being intelligently retrofitted.

Visual: ÖGNI GmbH / generated with ChatGPT

Traditional office buildings are being transformed into multifunctional spaces that serve as workspaces and communal and cultural meeting places. Unused areas are becoming vibrant intersections that connect working environments with social life in the district. Traditional interiors are also increasingly opening up to the outdoors – through flexible façades, green passages, and open space concepts that merge buildings and outdoor areas. This creates a new kind of coexistence in which productive work, social activities, and interaction, as well as everyday activities, merge into one another.

This is made possible by the fact that the district is a traffic-calmed, car-free zone. Only emission-free mobility solutions with sharing concepts are offered within the district. The resulting improved air quality and noise reduction, as well as the promotion of active forms of mobility such as cycling and walking, significantly improve both the health of the population and the quality of life.

The working environments of 2050 are created through the consistent combination of technology, sustainability, and social interaction, as well as through the targeted support of human innovation through the environment and technology. The district is more than just a location – it is a dynamic, resource-saving and human-centred ecosystem that intelligently combines work and life and supports it with appropriate hardware and software. Working environments must be rethought and redesigned with this in mind, and cooperation between various stakeholders and owners is essential in this regard.



From solitary buildings to integrated districts: planning beyond the single structure - cooperation is essential

DIMENSION CONNECTIVITY

By 2050, buildings and districts will not only be intelligent, connected systems, but they will also be capable of thinking and learning. Artificial intelligence and an increasingly digital infrastructure are among the driving forces behind this development and contribute significantly to ecologically, economically, and socially sustainable buildings and districts.

Through AI-supported control, buildings continuously optimise their energy consumption, reduce CO_2-emissions, and operate as self-sufficient units or within renewable energy communities at the district level. Intelligent sensors detect current requirements and adjust lighting, temperature, and air quality to create an optimal working environment – whether for concentrated work or creative collaboration. At the same time, data-based optimisation of operations leads to significant efficiency gains: operating costs are reduced, maintenance cycles are proactively controlled, and the use of resources is minimised. As already demonstrated in the ‘Dimension District’, connectivity goes beyond individual buildings: buildings communicate with each other, exchange energy and data, and form an adaptive ecosystem. This digital, AI-supported infrastructure enables predictive resource management, making it easier for districts to become resilient organisms.

The workspace itself is also highly flexible. Walls and surfaces respond to their respective use – they dynamically transform from open co-working studios to secluded retreat areas for concentrated work. AI recognises patterns in work behaviour, analyses biometric data, and adapts rooms proactively to individual needs.

The building becomes a health coach and actively promotes the well-being of its users.

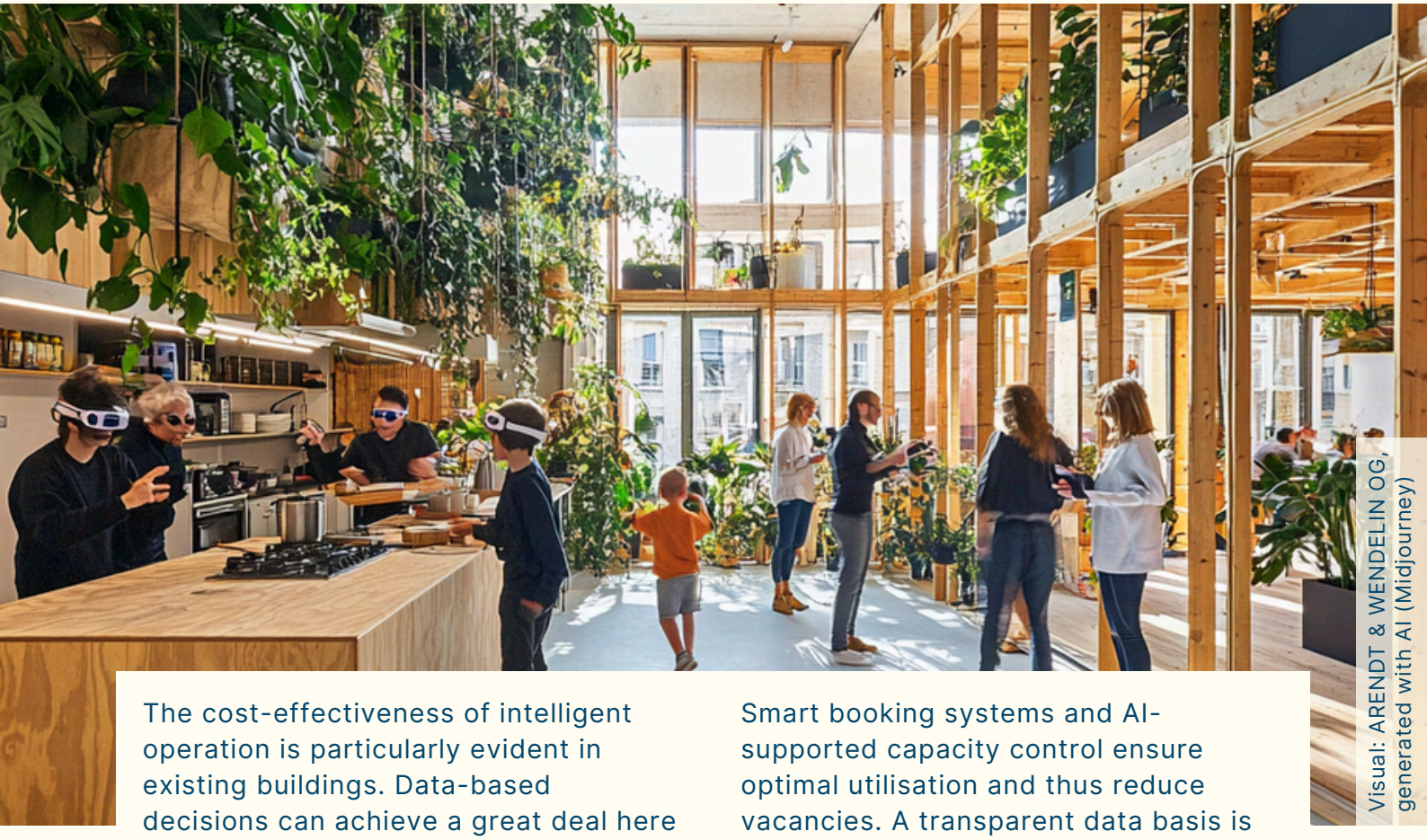
Connectivity does not only mean technological, but also social interaction. Cognitive districts promote interaction between people through intelligent communication platforms and flexible meeting zones. Work is no longer tied to fixed locations – digital and physical networks are merging and creating new forms of collaboration.

One of the topics of the future will be: Who has access to which data and technologies – and under what conditions? The democratisation of technologies requires that digital infrastructures are not reserved for a few large providers, but are also open to smaller market participants, public institutions, and civil society. This requires communicative systems, open interfaces, and clear legal framework conditions, especially when dealing with artificial intelligence. In addition, topics such as data sovereignty, which ensures that both people and organisations retain control over the use of their data, algorithmic transparency, digital participation, and the resilience of critical infrastructures are on the agenda. Only through inclusive, fair access to technology can we ensure that digital progress benefits everyone – and does not lead to new dependencies.

By 2050, people, space, and technology will be closely interconnected. Connected buildings will be intelligent, districts will organise themselves, with a focus on conserving resources, maintaining value, and ensuring people's well-being.

Visual: ARENDT & WENDELIN OG, generated with AI (Midjourney)

DIMENSION BUILDING OPERATIONS



Visual: ARENDT & WENDELIN OG, generated with AI (Midjourney)

The cost-effectiveness of intelligent operation is particularly evident in existing buildings. Data-based decisions can achieve a great deal here – for example, through energy-efficient refurbishment, dynamic space and load management, and optimisation of usage.

Flexibility, cost-effectiveness, and user comfort are prioritised over rigid space utilisation. The best possible space utilisation through multiple use is essential. General areas such as conference rooms, canteens, and auditoriums are used around the clock, beyond traditional working hours, and for different purposes. The availability of these rooms is organised easily, conveniently, and transparently through digital platforms.

Smart booking systems and AI-supported capacity control ensure optimal utilisation and thus reduce vacancies. A transparent data basis is crucial for making future-oriented operational decisions. By gaining a deep understanding of the building and its actual characteristics, and by continuously analysing usage data and real consumption figures, investments can be strategically directed, economic potential can be enhanced, and risks can be reduced. This data-driven approach, closely linked to the Dimension of Connectivity, enables operators to optimise their properties in a forward-looking manner and adapt them to changing requirements.

Sharing concepts and community spaces are shaping the working environments of the future. Instead of fixed workstations, versatile spaces are created that can be adapted flexibly to suit needs and requirements. Through the intelligent use of digital solutions, the operation of these spaces is efficiently controlled, so that users benefit equally from a cost-efficient and highly functional environment.

A central component of the operating model is the club concept: membership gives users access to a comprehensive ecosystem – from flexible workspaces and health and leisure facilities to networking events and exclusive community spaces. Instead of simply using square metres, the focus is on services and experiences that are individually tailored to the needs of employees.

This model creates significant added value for the well-being, motivation, and productivity of users. At the same time, it strengthens the sense of belonging to the company and promotes an active community culture in which social, professional, and personal development can be combined. The increasing prevalence of AI and robotics is accompanied by a decline in easily standardised tasks. At the same time, there is a growing demand for qualified specialists who understand technological contexts, think creatively, and can shape social processes. To attract and retain these talents, working environments with high user comfort, a tangible sense of purpose, and a strong identity-building effect are needed.

A forward-looking operational design is essential – proactive, adaptive in real time to external factors, continuously learning, and individually aligned with economic, environmental, and social aspects.

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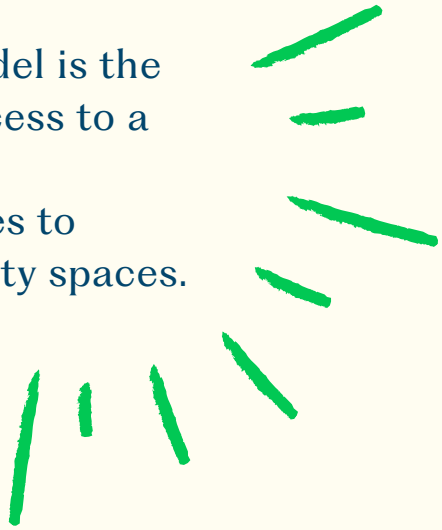


DIMENSION MATERIAL

Buildings are no longer just a shell, but a living part of a comprehensive, dynamic ecosystem. They function as a living circular economy – planned, built, and operated in accordance with regenerative principles. Materials are not consumed but used and returned or recycled. Existing buildings are particularly valuable in this respect, as they serve as material banks. The building thus becomes a circular organism that thinks in terms of life cycles and is prepared for change. This applies to both the interior and exterior, as well as the supporting structure. The choice of building materials influences the dismantlability, recyclability, and adaptability of the entire building. Structural design and façade design are therefore increasingly considering circular construction principles and material-efficient construction methods.
Natural, renewable raw materials enable the regenerative use of materials due to their circularity and replace conventional, finite resources. Wood, clay, straw, hemp, reed, or mycelium-based materials are increasingly being used – not only for ecological reasons, but also because of their positive effect on indoor climate and health. Secondary raw materials are also used to curb additional resource consumption, whether in floor coverings, wall materials, insulation materials, or in the supporting structure and façade cladding.

Furthermore, biophilic design plays a central role, in which elements from nature are integrated into the interior design to promote the well-being of users. Interior and exterior spaces thus merge into a harmonious whole. Natural materials, plenty of daylight, high air quality, and greenery promote the mental and physical health of users. This transforms the building into a place of regeneration and productivity.

Modular construction methods significantly support this development. They not only enable a high degree of adaptability to different uses, but also more precise planning of material and manufacturing costs. At the same time, they promote the reuse of building elements and materials. This not only minimises resource consumption but also increases cost-effectiveness and resilience.

Another key aspect is inclusivity in the selection of materials and design principles. Design for All and ageless design ensure that buildings are accessible, usable, and pleasant for everyone – regardless of age, origin, or physical conditions. Materials are selected not only based on functional and ecological criteria, but also because of social considerations.

The material dimension of the future considers buildings to be transformable, circular systems. Sustainability is not seen as a limitation, but as a basis for innovation, quality of life, and lasting value creation.

The material dimension of the future envisages buildings as transformable, circular systems.

Visual: ARENDT & WENDELIN OG, generated with AI (Midjourney)

DIMENSION PEOPLE

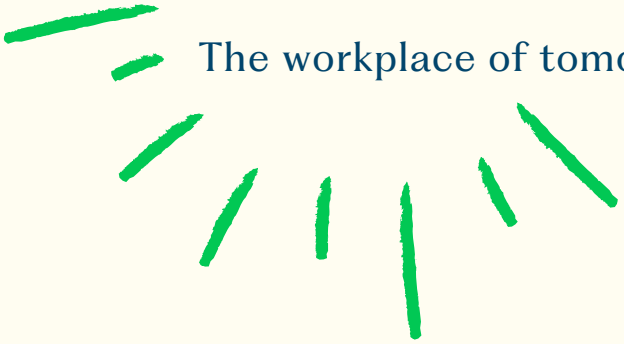
People are at the heart of the working environments of 2050.

Buildings, districts, technologies, and operating models are not developed for their own sake, but are consistently geared towards the needs, abilities, and realities of people's lives. The Dimensions of District, Connectivity, Operation, and Materials merge into a holistic system that actively promotes the physical, mental, and social well-being of users.

Sustainable working environments are designed to be inclusive – for all age groups, lifestyles, and cultural backgrounds. Intergenerational encounters, barrier-free access, and flexible room concepts ensure that everyone feels seen and included.

Visual: ARENDT & WENDELIN OG, generated with AI (Midjourney)

These working environments are needs-oriented. They adapt to individual life phases and daily rhythms. The environment actively supports health: Intelligent systems recognise stress, fatigue, or lack of movement and respond with appropriate room adjustments or incentives, such as changes in lighting, impulses for better ergonomics, posture corrections through furniture, suggestions for meditation, or exercise units. An integrated nutrition AI also recommends suitable meals – tailored to activity levels and individual needs. Buildings thus become personal health coaches, as already described in the ‘Dimension of Connectivity’.



The workplace of tomorrow is a place with meaning.

People are also at the heart of the digital space. Access to technology, data sovereignty, and media literacy are essential for ensuring that everyone can work independently and with self-determination in a connected world. The working world of tomorrow must be inclusive, accessible, and digitally equitable.

The workplace of tomorrow is a place with meaning. Meaningful activities, a lively community, and a strong sense of togetherness shape the corporate culture, promote a sense of belonging to the company, and are key reasons for physical presence. Districts are becoming social networks where collaboration and exchange are the focus.

Lifelong learning has become a matter of course and a prerequisite for remaining in employment for a long time, even in times of rapid change. Due to increasing efficiency gains through technological developments, humanity, empathy, creative processes, and collaborative solution-finding are gaining in importance, leaving time for exchange and learning.

Spaces and digital platforms are designed to promote further development and knowledge exchange. Among other things, the workspace is becoming an educational space.

The ‘Dimension People’ ensures that all technological, material, and operational innovations are not ends in themselves, but tools for a working environment that puts people at the centre: connected, healthy, motivated, and integrated into a dynamic, meaningful community.

KEY TAKEAWAYS

The working group summarised the following key takeaways from the five dimensions:

- Strategically activate existing buildings: use existing buildings as a resource for space, structure, materials, and identity
- From solitary buildings to integrated districts: planning beyond the single structure
- Connect buildings and infrastructure – buildings are part of an interactive district – cooperation between different stakeholders and owners is essential
- Integrating the environment: Districts do not end at the property boundary
- Creating holistic living spaces: mixed-use as standard
- More important than ever: flexible buildings and districts as a guarantee for the future
- Cognitive buildings and districts: they think for themselves and learn continuously
- Fair integration of technology, AI, and robotics: open interfaces and digital justice
- Understanding buildings and districts as part of the health infrastructure
- Consider buildings as circular organisms – circular concepts as a basic requirement
- Operated districts: needs-oriented community management
- Company headquarters are places with meaning, identity, and a sense of belonging
- User centricity: Focus on people

CONCLUSIO

The spaces in which we will work in the future must be much more than mere office buildings – they are central places of interaction, identification, and sustainable development. Our working environments of tomorrow need flexible, multifunctional districts that go beyond individual buildings and are understood as connected, interactive living spaces. Working environments must be rethought and redesigned, and cooperation between various stakeholders and owners will be essential. Only in this way an environment can be created that dynamically adapts to changing requirements and combines a variety of uses.

It is crucial to activate existing buildings as a valuable resource – spatially, structurally, and in terms of materials and identity. Working environments must be integrated into their neighbourhood and infrastructure, so that the neighbourhood functions as a whole organism, learning and developing together while focusing on the needs of people.

Sustainable working and living spaces promote health and well-being – they are part of a comprehensive health infrastructure. They also require the intelligent integration of technologies such as artificial intelligence and robotics, which must be designed to be supportive, digitally equitable, and transparent. Their increasing prevalence is leading to a decline in the need for standardised tasks, while highly qualified specialists with technological understanding, social skills, and creativity are increasingly in demand. This makes it even more important to create working environments that impress with their amenity value, sense of purpose, and lived identity.

Flexibility means future security: working environments should be designed as living, constantly changing systems that consider individual needs as well as collective requirements. At the same time, circular concepts are indispensable for conserving valuable resources. A new mindset in the planning and development of real estate will be necessary.

By consistently designing such holistic and people-centred living spaces, we are creating the working environments of tomorrow – resilient, sustainable, and full of potential for innovation, cooperation, and individual development.

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