



THE FUTURE IS HERE

THIS PUBLICATION HAS BEEN DEVELOPED BY DARK MATTER LABS
IN "THE FUTURE IS HERE"

PROJECT BY DARK MATTER LABS + MEDIA EVOLUTION + MALMÖ STAD
PART OF SHIFTSWEDEN + VINNOVA

About

This publication has been developed by Dark Matter Labs done in partnership with Media Evolution and the City of Malmö as part of the project “The Future Is Here” under ShiftSweden’s Impact Innovation program “Designing the places of the future for attractive, accessible, and sustainable communities.”

Graphic and textual material in this publication has been produced by Ivana Stancic and Alexandra Hansten from Dark Matter Laboratories, with valueable inputs from Reeta Hafner and Martin Thörnkvist from Media Evolution and Ulrika Forsgren Högman from the City of Malmö. The work shared has been drawing on the interdisciplinary research by Dark Matter Laboratories, and insights, perspectives and visions shared in Collaborative Foresight workshops hosted by Media Evolution in the Generate District in Malmö.

This work extends Dark Matter Labs ongoing mission XO (Extraction Zero) to reshape the economy of Europe’s built environment, led by Ivana Stancic and Indy Johar.

This publication emerges from a pressing need to explore how Sweden, and by extension, global societies, can navigate complex systemic challenges at the intersection of planetary, human, and business systems. It situates its research within the context of accelerating environmental, social, and economic disruptions, highlighting the interdependent crises that demand new approaches.

The collaborative foresight activities have been based on the interdisciplinary research done by Dark Matter Labs team. Through applying methods from Collaborative Foresight at Media Evolution, people working, living and spending time in the Generate District were invited to share signals of change, explore potential synergies in attending to different challenges and imagine new ways of working and being. Together, they explored pathways in which ecological health, social well-being, and business vitality reinforce each other. These insights were synthesized into four desirable future scenarios.

Based on Dark Matter Laboratories “Alliances for change” model of fast-tracking systemic change – for each scenario, a set of enabling tools across various system dimensions has been identified. These tools aims to help participants understand their role and influence within complex systems, identify where they can make a difference, connect with others, and translate systemic insight into concrete, impactful action.

Real change emerges when actors from across disciplines begin aligning efforts to overcome barriers, unlock opportunities and amplify individual contributions into systemic impact. Recognizing that no single actor can drive systems change alone, the publication emphasizes the need for inclusive, interdisciplinary collaboration with the right set of actors around the table.

The publication is connected to an art piece – From Earth – a spatial, sculptural and tactile installation created by Malmö- based artists, architects and spatial designers Johanna Jonsson (Polymorf), and My Comét (Studio My Comét) – a place for continued dialogue and contemplation about futures of regenerative professional neighbourhoods.

[Cover page Image] by Ivana Stancic, Dark Matter Labs

Malmö The Future is Here explores how cities can turn today’s overlapping crises—climate breakdown, biodiversity loss, social stress, and economic instability—into drivers of transformation.

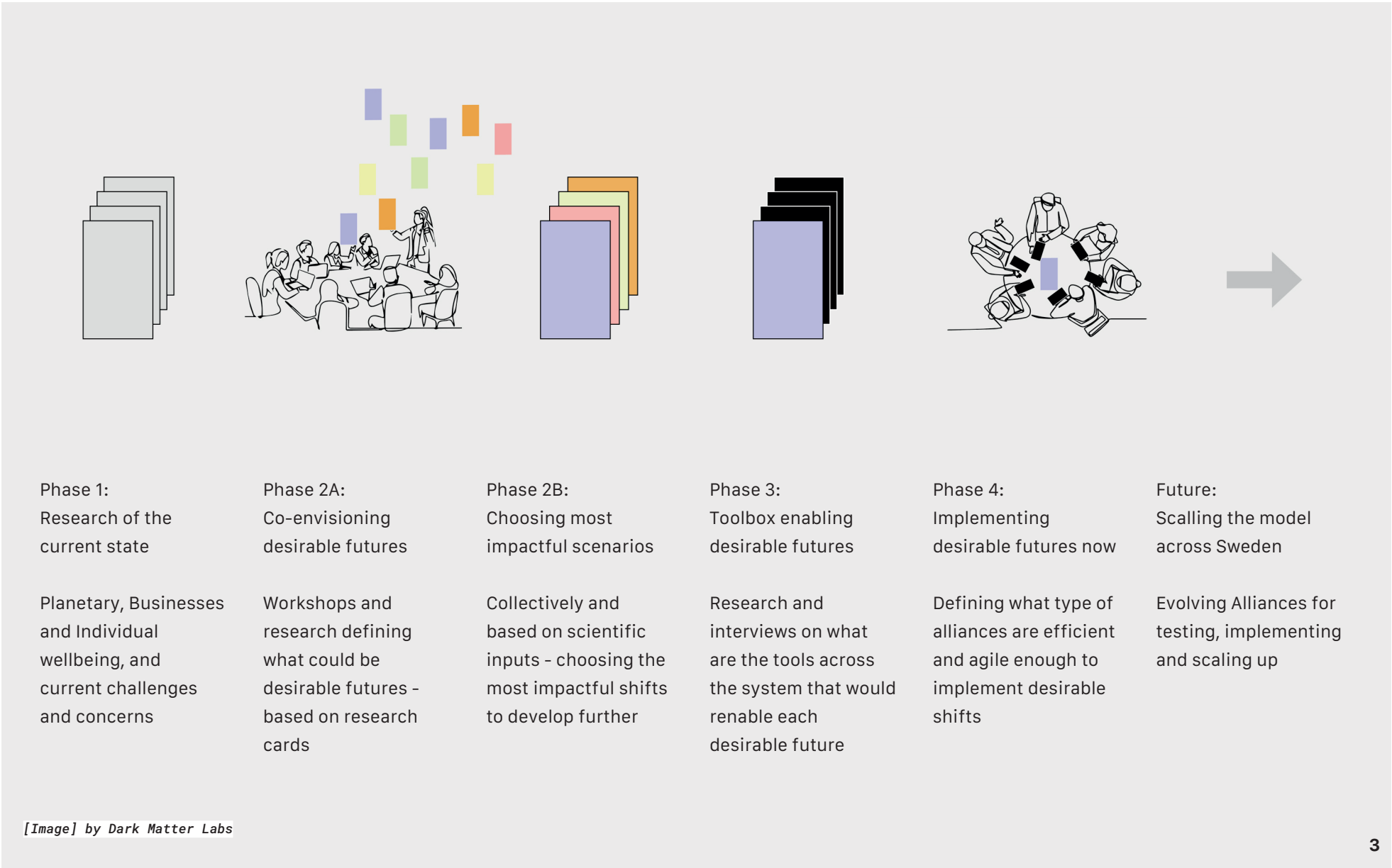
Drawing on research and collaboration, it outlines four regenerative pathways: maximising use of what already exists, building a collective bio-economy, redefining comfort, and creating hybrid models of contribution.

With practical tools across policy, finance, design, and governance, it is both a vision and a call to action: to fast-track change and build neighbourhoods that sustain life.

**In The Future is Here,
Dark Matter Labs,
the City of Malmö’s
Generate District
development initiative
and Media Evolution
invite people to
explore and envision
how professional
neighbourhood can
be transformed into
regenerative and de-
carbonised places
by re-imagining the
relationships between
work, work places and
the built environment.**

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[Image] Dillon Marsh on Getty Images

A black and white photograph of a desert landscape. In the background, a large, dark, spherical object sits on the horizon. To its left, a smaller sphere is visible. The foreground is dominated by a deep, rocky trench or gully, filled with loose stones and debris. The sky is overcast with soft clouds.

1. RESEARCH PROBLEM CARDS

**ARE ALL OUR
CHALLENGES
INTERCONNECTED?**

WELL-BEING OF THE PLANET

Land Use: Deforestation and Urban Growth

Over the past 60 years, land use change has reshaped one-third of the Earth’s surface. Forests have shrunk by 1 million km² while farmland expanded by 2 million km² [1]. In Sweden alone, forests declined by 13,000 km² between 1992–2018 [2].

The main driver is meat demand, which has tripled in 30 years, alongside unsustainable farming. Accelerating urbanisation [3] adds further pressure: covering soils with asphalt and concrete weakens resilience to storms, flooding, and heat [4].

Shifting diets, sustainable agriculture, afforestation, and strict limits on sprawl are essential. Timber and biomaterials can cut carbon in buildings [5], but unregulated demand risks deforestation, biodiversity loss, and habitat destruction [6].

[1] Nature Communication, Global land use changes are four times greater than previously estimated, 2021
[2] Geography and Sustainability, Overview of recent land cover changes and soil erosion trends in Nordic countries, 2021
[3] World Bank Group, Urban Development Overview, 2023
[4] European Environmental Agency, Urban sprawl continues at the cost of nature in Europe, 2022
[5] UCL Engineering, Embodied Carbon, Factsheet, 2023
[6] Forest Research, Forest carbon stock, 2018
[Image] Dillon Marsh on Getty Images



Water: Supply Pressures and Rising Demand

Freshwater sustains food and biodiversity, yet human use now exceeds safe planetary levels [1]. Irrigation consumes 70% of global withdrawals, industry 20%, and households 12% [2].

Food choices have major impacts: meat production uses fifty times more water than vegetables, while nuts are nearly ten times more intensive than fruit [3]. Meanwhile, cloud computing and AI add new pressures: data centres use wasteful cooling, and chip production consumes huge amounts with poor recycling.

Global AI water demand could reach 6.6 billion cubic metres by 2027 [4]. Protecting freshwater requires dietary change, efficient agriculture, industrial water management, and strict regulation of digital water use.

[1] Planetary Health Check, Freshwater Change, 2024
[2] Planetary Health Check, Freshwater Change, 2024
[3] WEF, Which foods need the most water to produce?, 2021
[4] Shaolei Ren, Making AI Less “Thirsty”: Uncovering and Addressing the Secret Water Footprint of AI Models, 2023
[Image] Elibet Valencia Muñoz on Unsplash

Climate: Global Warming and Extreme Weather

Emissions continue to rise, putting us on track for +2.7°C warming [1][2]. 2024 was the hottest year recorded, surpassing +1.5°C and raising risks of extreme weather and tipping points [3].

“We are entering a dangerous new era of boundary transgressions: more frequent storms, droughts, fires, and water scarcity” [4]. That year, Brazil and Namibia faced record droughts, Valencia had a year’s rain in eight hours, Asia endured heatwaves made 45 times more likely by climate change, and Hurricane Helene struck Florida [5–8].

Buildings cause over 35% of Europe’s emissions [9]. Retrofitting, scaling nature-based infrastructure, and adopting regenerative materials are critical to avoid further destabilisation.

[1] IPCC, AR6 Synthesis Report: Climate Change, 2023
[2] Climate Action Tracker, Warming projected by 2100, 2024
[3] European Space Agency, Climate tipping points, 2023
[4] Planetary Health Check, State of the Planetary Boundaries, 2024
[5] NASA, Widespread Drought Grips South America, 2024
[6] United Nations CERF, Namibia drought emergency report, 2024
[7] European Space Agency, Valencia flood disaster, 2024
[8] World Weather Attribution, Climate change and heatwaves, 2024
[9] European Environmental Agency, Buildings and emissions, 2024
[Image] Rober Solsona via Getty Images



“In Sweden, 13,000 km² of forests disappeared between 1992–2018”

“Building industry is responsible for over 35% of Europe’s emissions”

Biodiversity: Species Decline and Habitat Loss

Nature underpins food, energy, medicine, and climate regulation, yet biodiversity is collapsing. Two million species already face extinction [1], with rates tens to hundreds of times above historical averages. Wildlife populations have fallen 73% in 50 years [2].

Declining genetic diversity leaves species more vulnerable [3]. Food systems drive most losses, with construction materials responsible for nearly a third [4]. Meat-heavy diets, globalised supply chains, and demolition-led construction all exacerbate the crisis.

More than 30% of resources are wasted during production or consumption [5]. Protecting biodiversity requires cutting waste, shifting diets, conserving land, and reusing rather than replacing buildings.

[1] The Guardian, Number of species at risk of extinction doubles to 2 million, says study, 2023
[2] World Wildlife Fund, Living Planet Report, 2024
[3] Nature, Global meta-analysis shows action is needed to halt genetic diversity loss, 2025
[4] Expedition Engineering, The Embodied Biodiversity Impacts of Construction Materials, 2024
[5] United Nations, Climate change, Food loss and waste, 2024
[Image] Aishwarya Gunde on Unsplash



Materials and Geopolitics: Extraction, Supply and Risks

Global material use has tripled in 50 years and may double again by 2060 [1]. Extraction drives 60% of climate impacts, 40% of air pollution, and over 90% of biodiversity loss and water stress [2]. Wealthy nations consume six times more materials and ten times more electricity per capita than low-income ones, generating tenfold greater climate impacts [3]. The green transition could require 6.5 billion tonnes of steel, copper, and aluminium, plus a 600% rise in mineral demand by 2040.

Yet access to these resources is shaped by geopolitics. Lithium, nickel, cobalt, copper, and rare earths are concentrated in a handful of countries [4], leaving supply chains vulnerable to shocks [5][6]. Rising conflicts, trade restrictions, and isolationist policies intensify these risks [7]. Scarcity pressures combine with the ecological damage of mining and refining, amplifying global instability.

Cities and regions can respond by diversifying supply, strengthening recycling, and building local material loops. Malmö, for example, is testing neighbourhood-scale innovations [8]. Local energy communities and decentralised resource systems offer pathways to resilience while reducing dependency.

[1] OECD, Global Material Resources Outlook to 2060, 2018
[2] UNEP International Resource Panel, Global Resources Outlook, 2024
[3] Our World in Data, Access to Energy
[4] The Guardian, Critical Minerals and Energy Transition, 2024
[5] AP News, Geopolitical Tensions and Global Supply Chains, 2025
[6] Reuters, Market Instability and Supply Chain Disruptions, 2025
[7] Wall Street Journal, Mining Concentration and Geopolitical Risks, 2025
[8] TIME, Localised Material Supply Chains and Urban Innovation, 2025
[Image] Isaac Johnsonon Unsplash

“2024 was the hottest year recorded”

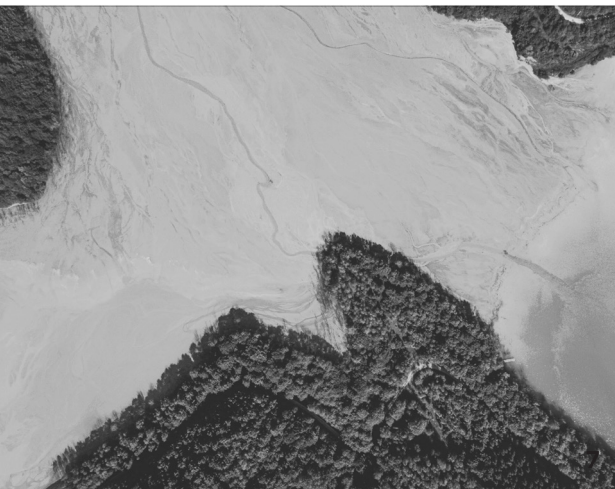
Pollution and Waste: From Extraction to Health

Material extraction and use generate not only greenhouse gases but also severe health and ecosystem impacts. Construction alone produces 30% of urban particulates [1], while manufacturing building materials releases harmful gases, heavy metals, and volatile organic compounds [2]. Indoors, furnishings leach chemicals into air, while outdoors untreated wastewater, industrial discharges, and stormwater runoff damage ecosystems [3].

Globally, extraction causes 60% of heating impacts, 40% of air pollution, and over 90% of biodiversity and water stress [4]. Air pollution kills 13 people every minute [5], including nearly 7,000 annually in Sweden [6]. Less than 40% of Europe’s surface waters are healthy, and a quarter of groundwater is “not good” [7]. Most EU soils are degraded, with heavy metals and persistent pollutants exceeding safe thresholds [8].

Reducing pollution and waste requires systemic solutions: electrified heating and cooking, low-emission transport, and cleaner construction practices. At the same time, cutting material demand and expanding circular reuse is vital to reduce pressure on both ecosystems and human health.

[1] Urban Health, Reducing air pollution from construction sites, 2022
[2] World Economic Forum, Air pollution is a silent killer, 2024
[3] European Environmental Agency, Europe’s state of water, 2024
[4] UNEP International Resource Panel, Global Resources Outlook, 2024
[5] World Economic Forum, Air pollution is a silent killer, 2024
[6] Swedish Environmental Research Institute, Air pollution causes 6,700 premature deaths in Sweden each year, 2022
[7] European Environmental Agency, Europe’s state of water, 2024
[8] European Environmental Agency, Soil, 2024
[Image] Jaanus Jagomägi on Unsplash



WELL-BEING OF THE INDIVIDUALS

Physical Wellbeing: Sedentary Lives and Urban Stress

Sedentary lifestyles and reduced time outdoors are harming physical wellbeing in Sweden. Around 15% of people live sedentary lives [1], contributing to obesity, cardiovascular disease, and metabolic disorders [2]. Most workers still commute by car [3], spending long hours indoors and disconnected from nature.

Environmental stressors make this worse. Air pollution in Stockholm, Gothenburg, and Malmö causes respiratory illness [4], while noise pollution reduces sleep quality and heightens stress [5]. Limited daylight disrupts circadian rhythms and fuels seasonal affective disorder.

“One in five sits more than ten hours a day” [6], and office workers during dark months get far too little daylight [7]. Active mobility, healthier commutes, and workplace daylight access are crucial to reverse the trend.

[1] WHO, Global Health Observatory Data, Sedentary Lifestyle, 2023
[2] Public Health Agency of Sweden, National Health Report, 2023
[3] Swedish Transport Administration, Travel Habits Survey, 2023
[4] Swedish Environmental Agency, Air Quality in Swedish Cities, 2022
[5] European Environment Agency, Environmental Noise in Europe, 2020
[6] Folkhälsomyndigheten, Daily Sedentary Behaviour Study, 2023
[7] Swedish Work Environment Authority, Daylight and Work 2022
[Image] Kateryna Hliznitsova on Unsplash



Dietary Habits: Stress, Access and Nutrition

Diet strongly shapes health but many Swedish workers face barriers to healthy eating. Culture, price, marketing, and supply drive unhealthy patterns [1][2]. Employees with irregular hours or blue-collar jobs often lack access to healthy meals, while stress worsens dietary habits [3].

The Swedish National Food Agency supports better nutrition through guidelines and campaigns [4], but unhealthy practices persist. One in four skips lunch at least weekly [5], and only one in ten eats the recommended daily fruit and vegetables [6].

Poor diet reduces sleep quality, increases risk of obesity and chronic disease, and undermines workplace performance. Initiatives involving employee participation have shown promise in creating healthier workplace food environments.

[1] WHO, Healthy Diet Fact Sheet, 2022
[2] OECD, Obesity Update, 2023
[3] Karolinska Institutet, Workplace Dietary Habits Study, 2021
[4] Swedish National Food Agency, Nutrition Guidelines, 2022
[5] Unionen, Work Stress and Eating Habits Survey, 2021
[6] Public Health Agency of Sweden, National Dietary Survey, 2022
[Image] Alexander Mills on Unsplash



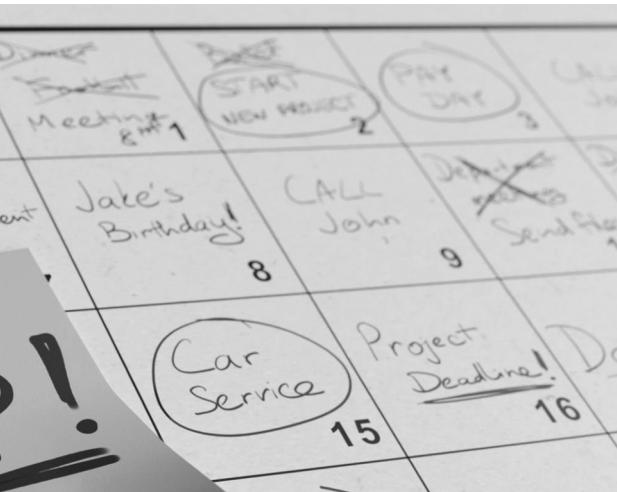
Work Schedules: Balance and Stress

Rigid work schedules contribute to stress, burnout, and poor health. Despite Sweden’s focus on work-life balance, excessive demands in some sectors create strain. Around 700 people die annually from work-related stress [1].

Pilots such as the six-hour workday and four-day workweek [2] show benefits for productivity, wellbeing, and balance [3]. Flexible and hybrid models are also gaining ground, giving employees more autonomy and control [4].

These approaches enhance job satisfaction, lower stress, and prevent burnout. Without such reforms, stress-related illness will continue to drive absenteeism and reduce workforce resilience.

[1] Swedish Work Environment Authority, Arbetsmiljöverket: Work-related Stress Mortality Data, 2022
[2] European Foundation for the Improvement of Living and Working Conditions, Working Time Developments in Europe, 2021
[3] Göteborgs Stad, Six-Hour Workday Trial Report, 2019
[4] Statistics Sweden, Hybrid Work Trends Survey, 2023
[Image] Getty Images on Unsplash



“Workplace wellbeing is in crisis: one in five sits more than ten hours a day, one in four skips lunch, and almost 20 percent feel lonely at work”

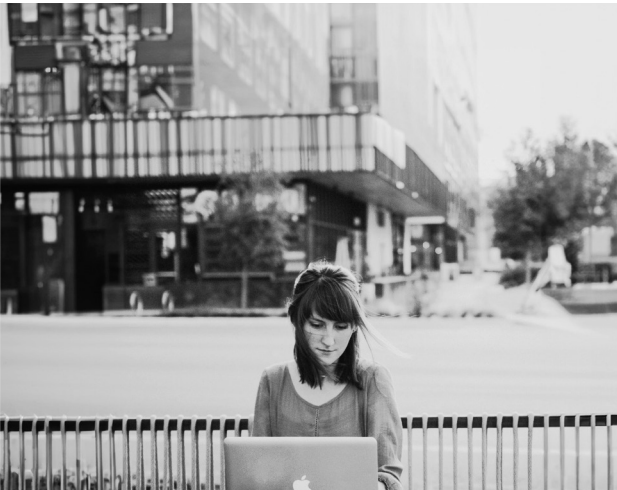
Social Wellbeing:
Purpose and Belonging

Around 20% of employees experience daily loneliness [1]. Remote work risks siloed networks, reduced belonging, and professional isolation [2], increasing risks for physical and mental illness [3].

“Almost 20 percent of all employees feel lonely at work” [4], while one third say loneliness while remote prevents them working effectively [5]. Workplaces without strong social ties and purpose see disengagement, weaker collaboration, and lower innovation [6][7].

Conversely, people who view their work as meaningful show greater motivation, resilience, and wellbeing [8]. Building purpose-driven, socially connected workplaces strengthens both employees and organisations.

[1] Statistics Sweden, Loneliness in the Workplace Report, 2022
[2] McKinsey & Company, Remote Work and Collaboration Study, 2021
[3] Harvard Business Review, Loneliness at Work Analysis, 2020
[4] Unionen, Employee Loneliness Survey, 2021
[5] Microsoft, Work Trend Index, 2022
[6] Gallup, State of the Global Workplace Report, 2023
[7] Deloitte, Meaningful Work and Engagement Report, 2020
[8] Journal of Occupational Health Psychology, Meaningful Work and Wellbeing Study, 2021
[Image] Christin Hume on Unsplash



“Stress-related illness is at its highest in a decade, with around 700 people in Sweden dying annually from work-related stres”



Environments: Urban Disconnect and Nature Deficit

Urbanisation has increased time spent indoors, weakening connection to nature and harming wellbeing [1]. This detachment links to higher stress and lower cognitive function [2]. Many people remain dissatisfied with both indoor and urban environments.

Biophilic design — integrating plants, daylight, and water features — can improve workplace wellbeing [3]. Yet such design still falls short of fulfilling deeper human needs for direct engagement with natural environments [4].

To foster healthier lives, workplaces and cities must move beyond aesthetics and reintroduce deeper, everyday interactions with nature into daily routines and spaces.

[1] European Environment Agency, Urbanisation and Human Health, 2022
[2] Public Health Agency of Sweden, Nature and Wellbeing Report, 2021
[3] International WELL Building Institute, Biophilic Design in Workplaces, 2020
[4] Journal of Environmental Psychology, Nature Connectedness Study, 2019
[Image] Andrej Lišakov on Unsplash

Technology: Cognitive Strain and Mental Health

Digitalisation reshapes cognition and health. Reading rates are falling [1], while short-form video undermines attention [2]. AI and digital tools boost efficiency but fuel overload, reduced memory, and shorter attention spans [3][4].

Stress-related illness is also rising: over 40% of Swedish sick leave in 2020 was due to psychological conditions [5]. Workplace factors such as conflicts, high performance demands, and weak organisation worsen mental strain [6].

“The proportion of people sick due to stress is the highest in ten years” [7]. Prolonged stress increases risks of burnout, anxiety [8], and even physical disease [9]. Digital detoxes, balanced workloads, and healthier digital culture are key.

[1] Swedish Arts Council, Reading Habits Survey, 2021
[2] American Psychological Association, Short-Form Content and Cognitive Health, 2022
[3] OECD, Digital Wellbeing Report, 2021
[4] Karolinska Institutet, Cognitive Overload in Work Environments, 2023
[5] Försäkringskassan, Sjukfrånvaro i psykiatriska diagnoser, 2020
[6] Swedish Work Environment Authority, Arbetsmiljöverket: Stress and Work Environment, 2021
[7] Eurofound, European Working Conditions Survey, 2020
[8] Journal of Occupational Medicine, Work-Related Stress Study, 2019
[9] Lancet Public Health, Social Stimulation and Physical Health, 2018
[Image] Tegan Mierle on Unsplash



“One in four skips lunch weekly, and only one in ten eats the recommended daily fruit and vegetables.”

WELL-BEING OF BUSINESSES

Security: Risks and Resilient Workspaces

Dynamic workspaces foster collaboration but also expose sensitive information. Risks such as theft, unauthorised access, and accidental disclosure are increasing [1]. Shared environments are targeted by state actors, cybercriminals, and opportunistic intruders exploiting digital or physical vulnerabilities [2].

Spaces must be adaptable, with zoned areas (open, private, confidential), physical barriers, and coordinated access [3]. Smart contracts and blockchain-based systems can automate access, monitor usage, and ensure compliance. Tools like occupancy sensors, digital IDs, and AI-driven threat detection strengthen resilience [4].

Organisations also face rising cybersecurity and data privacy threats. Sweden’s digital strategy stresses stronger cyber resilience and integration of digital risks into national security frameworks [5].

[1] NPSA, NCSC, Shared Workspaces - Security Guidance for Providers
[2] European Union Agency for Cybersecurity, Threat Landscape Report, 2023
[3] ISO 27001: Information Security Management Systems, 2022
[4] European Commission, Blockchain for the European Green Deal and the Digital Transition, 2022
[5] Swedish Government, Sweden in a Digital World - Cyber and Digital Strategy, 2024
[Image] Towfiqu barbhuiya on Unsplash



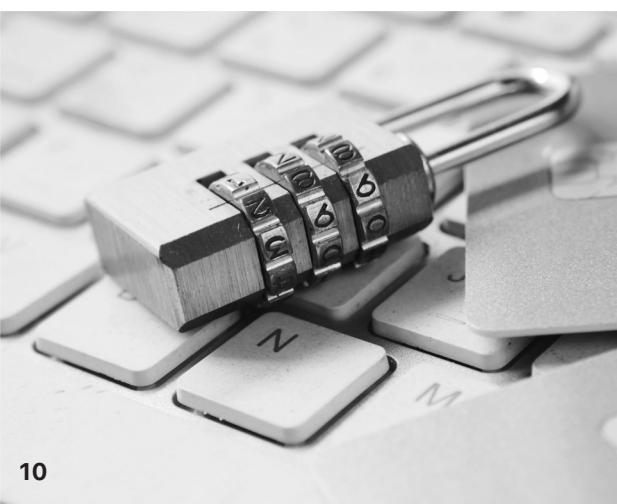
Business Agility: Efficiency and Adaptation

In today’s fast-changing business landscape, efficiency and agility are critical for adapting to market shifts, new technologies, and evolving consumer preferences. Sweden ranks 10th worldwide for ease of doing business [1] and invests over 3.5% of GDP in R&D annually, one of the highest rates globally [2].

Yet gaps remain: while 90% of European CEOs see agility as essential, only 21% feel their organisations are advanced in it [3]. Closing this requires more than adopting agile tools—it demands cultural transformation.

True organisational agility relies on embedding flexibility, resilience, and workforce wellbeing across all levels, ensuring competitiveness and adaptability in uncertain markets [4].

[1] Wolters Kluwer, Doing Business in Sweden, 2024
[2] Eurostat, Sweden leads the EU in R&D intensity, 2024
[3] ServiceNow, IDC Research: European CEOs on Agility, 2024
[4] Capgemini, Business Agility, 2024
[Image] Curated Lifestyle at Unsplash



Digital Work Futures: AI and Hybrid Models

Sweden’s digital sector accounts for 5.8% of GDP and over 250,000 jobs [1]. Yet technological shifts and the climate crisis are transforming work: the World Economic Forum predicts 85 million roles may disappear while 97 million new ones emerge [2]. By 2030, 30% of work hours could be automated [3], with AI reshaping manufacturing, retail, and transport, while demand grows for AI, sustainability, and cybersecurity specialists. Jobs reliant on human expertise - healthcare, education, mental health - remain less vulnerable [4].

But AI carries high costs: training models is carbon- and water-intensive, with data centres emitting more carbon than aviation [5]. By 2027, AI’s water demand could exceed four times a Nordic country’s annual use [6].

Meanwhile, 44% of Swedes worked remotely in 2023, double the EU average [7]. Hybrid work drives low office occupancy and rising demand for adaptable spaces [8]. While digital tools expand collaboration, they also create “techno-overwhelm,” blurred boundaries, and risks to cohesion [9].

[1] Business Sweden, Digital Technologies Ecosystem, 2024
[2] McKinsey & Company, Generative AI and the Future of Work, 2024
[3] European Commission, Innovation for a Sustainable Industry, 2024
[4] World Economic Forum, Future of Jobs Report, 2023
[5] 8 Billion Trees, The Carbon Footprint of Data Centers, 2024
[6] Arxiv, AI Model Energy Consumption Report, 2023
[7] Statista, Share of employees in Sweden working from home, 2023
[8] XY Sense, Workplace Utilization Index, 2024
[9] Lund University, Trust-Based Leadership in Hybrid Work, 2024
[Image] Alesia Gritsuk at Pexels



“Hybrid work drives low office occupancy, with global utilisation rates at just 37% in 2024.”

“Remote working is rising in Sweden, with 44% working from home in 2023, double the EU average.”



Resilience: Local Systems and Supply Chains

Recent events exposed vulnerabilities in globalised systems, especially in food, energy, and critical materials. Sweden’s national strategy stresses food security [1] and regional energy planning to mitigate scarcity [2].

Embedding global systems within local contexts and fostering cross-sector collaboration supports sustainable urban transitions. Place-based transition industries require integrated infrastructures in food, medicine, materials, and climate adaptation [3][4]. Convergence between hardware, software, and services is reshaping these systems [5].

Local collaborations between communities, start-ups, public entities, and corporations generate mutual benefits [6]. Initiatives like Smart City Sweden [3] and the “one-minute city” [7] show how stronger supply chains and ties to ecosystems enhance resilience and climate goals.

[1] Swedish Board of Agriculture, National Food Strategy, 2024
[2] Swedish Energy Agency, Regional Energy Planning and Security
[3] Viable Cities, Smart City Sweden, Sustainable urban development
[4] Formas, Driving Urban Transitions: New European Call, 2024
[5] Harvard Business Review. What It Takes to Compete in the Age of Digital Ecosystems, 2023
[6] Viable Cities, Collaboration with Driving Urban Transitions, 2024
[7] Allwork.Space, Sweden’s One-Minute City, 2021
[Image] Charlotte Swinburn at Assemble studio

Bureaucracy: Barriers and Breaking Points

Rigid bureaucracy, slow policy change, and limited startup capital hinder innovation and adaptability. Centralised decision-making struggles to keep pace with rapid change, producing outdated regulations and missed opportunities. Delays in approvals, complex procedures, and inflexible policies create barriers for emerging businesses and local initiatives [1].

Lack of early-stage capital worsens the issue, especially for start-ups and small enterprises in experimental fields. Without agile funding or local support structures, promising ideas often stall before implementation [2].

More dynamic and decentralised systems are essential. Empowering regional actors with decision-making authority, flexible frameworks, and direct access to funding supports faster adaptation. Community-based models, microgrants, and public-private partnerships improve resilience and enable inclusive development [3][4][5].

[1] OECD, The Innovation Imperative: Contributing to Productivity, Growth and Well-Being, 2015
[2] European Commission, Start-up Financing: Challenges and Opportunities, 2020
[3] Nesta, Funding Innovation: Pathways to a More Responsive System, 2021
[4] World Bank, Improving Public Sector Performance through Innovation and Inter-Agency Coordination, 2018
[5] World Economic Forum, Decentralized Autonomous Organizations: Beyond the Hype, 2022
[Image] Gorodenkoff at Adobestock



Innovation: Cross-Sector Capacity and New Markets

The challenges society faces today are too complex for isolated solutions, demanding cross-disciplinarity and new forms of cooperation [1]. Rapid market shifts and unpredictable fluctuations require integration across industries, shared missions, and stronger public-private-community partnerships [2].

These dynamics create opportunities to optimise resources, reimagine facilities, and foster adaptive models of collaboration [3]. Yet rigid hierarchies and centralised decision-making slow responsiveness. To remain competitive, organisations must adopt agile methodologies that enable flexibility, cross-functional teams, and decentralised authority [4][5].

Supporting these shifts also requires infrastructures—both physical and organisational—to evolve. Building interconnected, flexible, and multidisciplinary systems ensures organisations can navigate uncertainty, innovate effectively, and contribute to sustainable transformation in rapidly changing markets [6].

[1] Forbes. Cross-Disciplinary Thinking Helps, 2022
[2] McKinsey. Public-Private-Partnerships in Driving Transitions, 2023
[3] World Economic Forum. Global Risks Report, 2023
[4] OECD. Cross-Disciplinary Research for Innovation, 2022
[5] FranklinCovey, Building Organizational Agility: Strategies to Drive Innovation and Growth, 2024
[6] Brookings Institution. The Future of Infrastructured, 2023
[Image] Thai Noipho at Dreamstime

“While 90% of European CEOs see agility as essential, only 21% feel their organisations are advanced in it.”





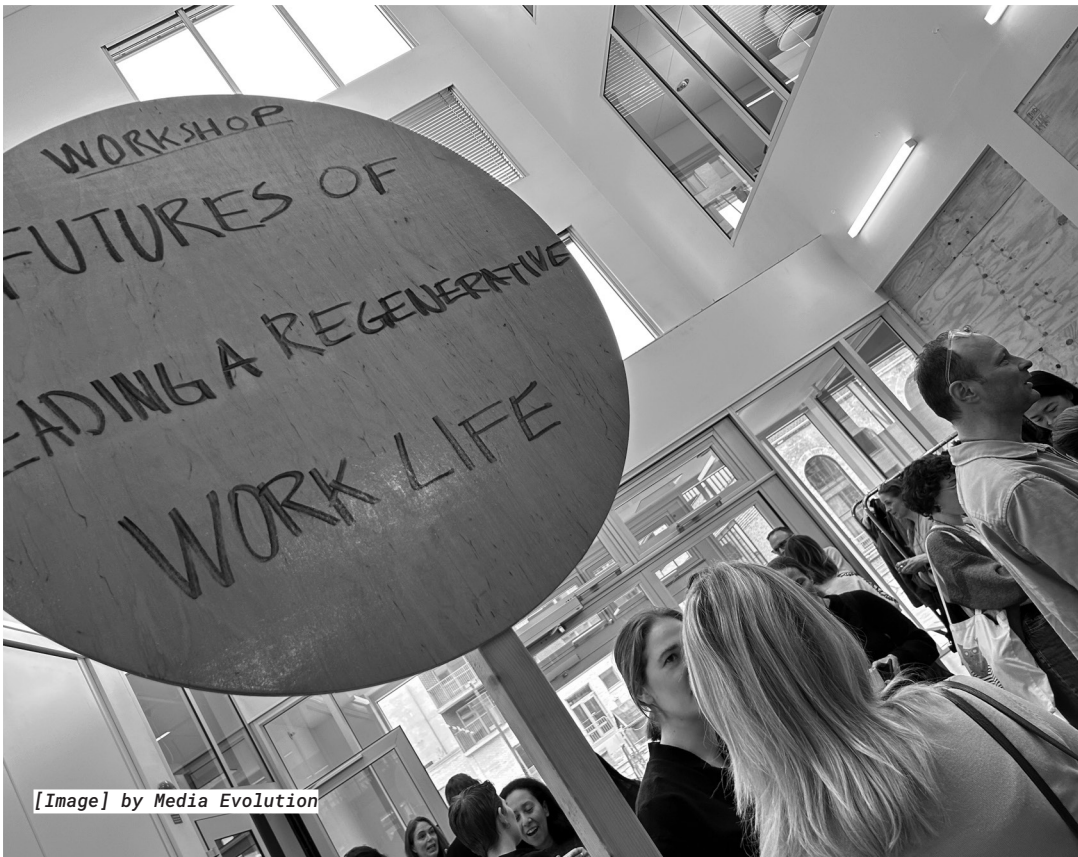
2.CO-IMAGINING DESIREABLE FUTURES:

**WHAT FUTURES
WOULD MAKE THE
PLANET, PEOPLE AND
BUSSINESSES THRIVE
TOGETHER?**

Activity:

COLLABORATIVE FORESIGHT

Our process centered on actively involving individuals and organisations with stakes in the neighborhood’s future. We hosted four Collaborative Foresight workshops open to anyone interested in the future of work, workplaces, professional neighborhoods and Generate District. The workshops created spaces for shared imagination, explored emerging signals, and surfaced synergies around new ways of relating to work. Grounded in Media Evolution’s Collaborative Foresight approach, 125 participants from diverse disciplines, sectors, and walks of life contributed to shaping these futures.



Signal scanning

We began with a Signal Scanning workshop to surface key questions, developments, potentials, and barriers around transforming professional neighborhoods into regenerative and decarbonized places. Using a slightly adapted version of Sohail Inayatullah’s Futures Triangle, participants mapped causal forces: push of the present (trends and drivers pushing us forward), pull from the future (signals and visions drawing us toward new futures), and weight of the past (structures, behaviours, and institutions resistant to change). Participants reflected on and discussed forces shaping the future of work lives, workplaces, and neighbourhoods. Each selected one novel signal, trend, or driver to explore further, imagining a future where it had become commonplace. Using Jerome C. Glenn’s Futures Wheel method, they considered multiple consequences. Finally, they situated these changes in the neighborhood, imagining a Tuesday in February 2035: What does your day look like? How do you feel? How is the neighborhood different from 2025?



Envisioning futures of regenerative workplaces

The third workshop focused on physical workplaces, including offices, factories, remote, traveling, and digital work, with the aim of exploring and reimagining regenerative work environments and what might enable them. Participants first reflected on what regenerative practices already existed, barriers to change, and future opportunities. Using challenge cards addressing planetary, individual, and business wellbeing, groups generated ideas for new workplace practices and selected the most inspiring concepts. They then envisioned workplaces where these practices were fully realized, describing the environment, who was present, how work unfolded, and the tools and routines involved. The workshop concluded with participants sharing insights, lessons learned, and practical steps to start implementing these regenerative practices today.

Regenerative Professional Neighbourhoods

The final workshop built on previous workshops, research and conceptualization, focusing on the future of the neighborhood. Participants began with a time-travel meditation imagining a scenario drawn from prior workshop visions. They then walked outdoors in groups, discussing what felt positive, what enabled their work and daily life to thrive and what challenges or struggles remained. They imagined interventions, services and infrastructures to support work, reduce difficulties and strengthen benefits. Groups identified key elements or places with important roles and portrayed them using playdough. Each participant selected a key insight or perspective from these conversations and presented it to the full group, sharing collective reflections, ideas and visions for shaping the neighborhood’s future.



[Image] by Media Evolution

Futures of Leading a Regenerative Work Life

Using work lives and practices as a starting point, participants shared what they were most curious about and reflected on work practices they had experienced that support both human and planetary wellbeing. In small groups, they explored challenges to individual and planetary wellbeing and imagined future practices addressing them, including different ways, places, collaborations, routines, and tools. Each participant selected the most inspiring idea and envisioned a future where it had become commonplace, imagining a typical workday in March 2040: What do you work on, where, with whom, and how? They also reflected on what behaviors, social norms, infrastructure, policies, technologies, and organizational changes would be needed to enable and sustain these futures, considering practical steps to start today.



[Image] by Media Evolution



[Image] by Media Evolution

Outcomes:

VISION SNIPPETS OF THE FUTURE

Vision 01: We include

A place of work for many, in this future neighborhood, social relationships, inclusion and interdependence thrive. There is a culture and practices that cultivate togetherness, inclusion and a welcoming felt by people from all across Malmö and the world. People from different ages spend time here: there is play, sports, parties, care, clubs for different interests.

People are in engaged in different types of work: from knowledge work done mainly on computers to more manual work and care work. The multiple different types of spaces in the neighborhood allow for quiet focus, socializing, reflection, rest, recovery, walks and other things. And many working here work with different types of things throughout the week alternating.

There are communal caretakers and janitors who work to welcome and connect people, help people find their way and share resources. Community events and workshops regularly bring opportunities for deeper connections across diverse groups.



Vision 02: We share

All spaces are shared, no new buildings are built, instead, existing buildings have been redesigned and repurposed in a way that allows for effective use of the spaces indoors and outdoors. There are no private offices.

Materials are shared and made visible in a shared platform – no reason to own a pair of scissors as there are already 10 pairs in the whole neighborhood you can have access to!

There is a shared governance structure where those part of the community (companies, organisations, individuals, those passing by) govern and share responsibilities over the neighborhood, including monitoring and making decisions to improve the impact of the neighborhood on both planetary and human wellbeing. There is a lot of work done on safety and security. Teams and people developing new products and services can both be part of the shared spaces while finding temporary spaces where they can do work that requires isolation.



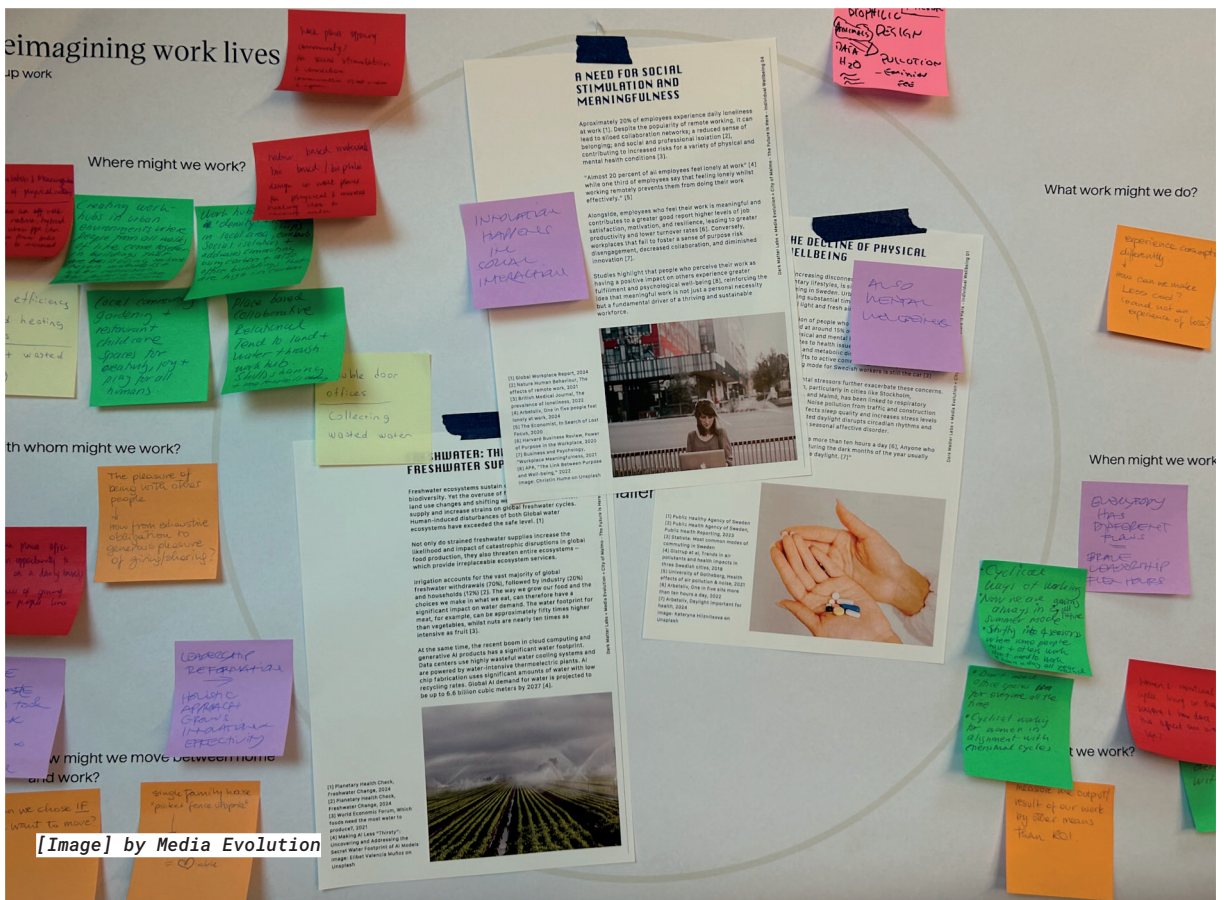
[Image] by Media Evolution

Vision 3: We model flexibility

In this future neighborhood, there are spaces dedicated to certain types of work: like repair workshops, spaces for focus work, resting areas; kitchens and large tables for dining; and spaces that can be easily turned to serve different activities, such as large spaces that can be used for dance classes, conferences, parties, or silent meditation.

The community hosts work to support the flexibility and agile coordination. They use a digital platform to support their work to be able to focus on interpersonal relationships, sensing, and support.

The neighborhood does not shy away from creating friction where it serves long-term benefits for planetary and individual wellbeing: for example, by rewarding biking and public transport over the use of private cars. Residents and organizations are encouraged to experiment with new ways of working and living, testing ideas to enhance collaboration, sustainability and wellbeing..



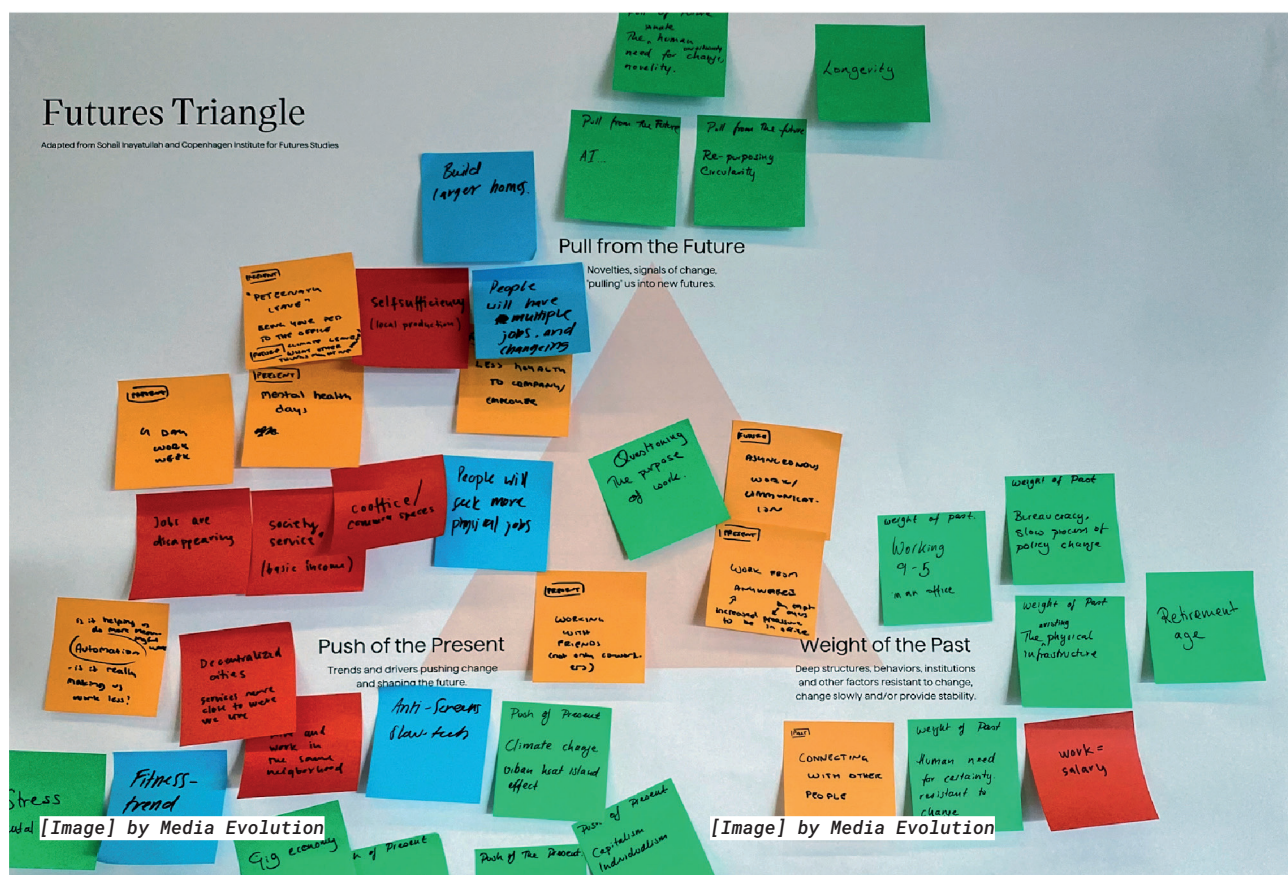
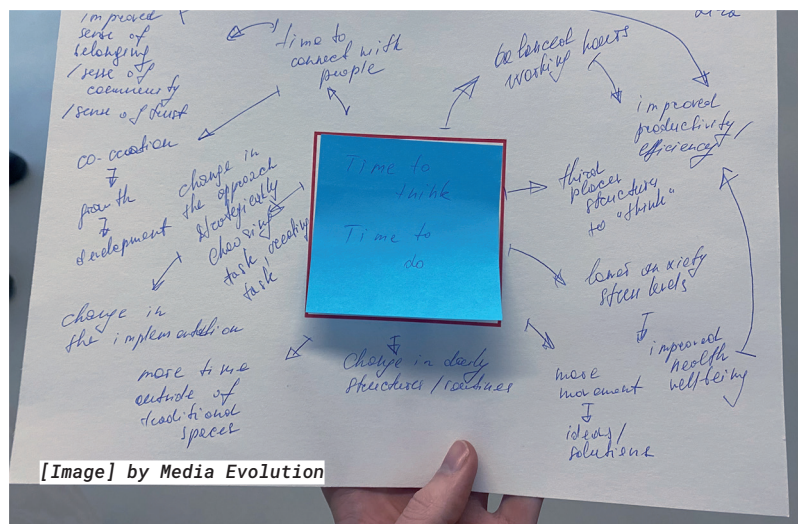
Vision 4: we contribute in diverse ways

There are different ways of contributing to this neighborhood. Those organisations and individuals working here who can, pay rent.

Both those who pay rent and those who cannot are invited to contribute in various ways on a voluntary basis: from gardening, offering repair services, sharing knowledge, mentoring, and teaching workshops, to cooking and serving in the community kitchen that provides pay-what-you-can lunches every day of the week.

Contributions also include helping maintain shared infrastructure, organizing cultural events, or supporting neighborhood initiatives that benefit both residents and visitors. Many companies have noticed a spike in the wellbeing, creativity, and motivation of their employees due to reduced work hours and engagement in diverse activities, creating a stronger connection between personal development, community and work.

Based on the input from the collaborative foresight, four elements for a future regenerative professional neighborhood were highlighted. As with all desirable visions of the future, these vision snippets are highly subjective, sometimes contested, filled with frictions and contradictions. These were used together with the contextual research to compose 4 "desireable pathways" for a regenerative future professional neighbourhood which you will find on following pages.



Outcomes:

REGENERATIVE PATHWAYS

Adressing the
multi-crisis

Our cities face urgent and interconnected challenges: climate change, resource depletion, and ecosystem collapse are no longer abstract concerns, they are immediate, material realities shaping how we live and the preconditions for generations to come.

At the same time we are facing a deepening mental health crisis, with burnout, anxiety, and loneliness increasingly embedded into the daily fabric of urban life.

In sweden, where over 85% of the population now lives in urban areas[1], these interlinked crises are especially apparent [2]. Cities like Stockholm, Gothenburg, and malmö are growing, but so too are their emissions, land use pressure and inequalities.

Regenerative development is the one that shift from harm reduction to active regeneration; designing built, ecological and social systems that restore ecosystem health and repair historical injustices.

What is Regenerative development?

Regenerative development is the one that shift from harm reduction to active regeneration - designing built, ecological, and social systems that restore ecosystem health and repair historical injustices.

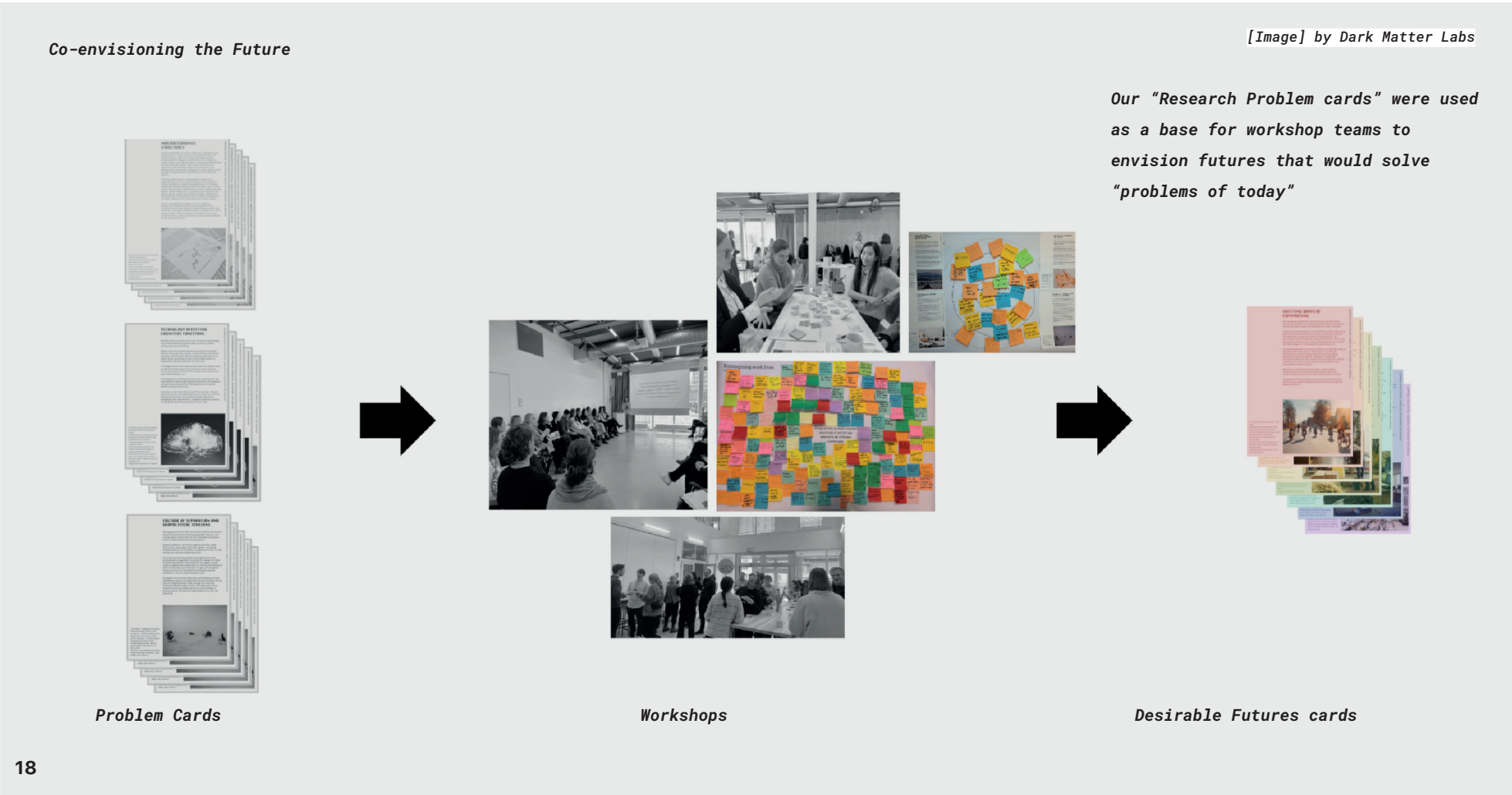
It is becoming increaingly apparent that much of our current ways of thinking remains rooted in models that isolate systems from each other, treating planetary health, human wellbeing, and economic growth as separate, often competing goals.

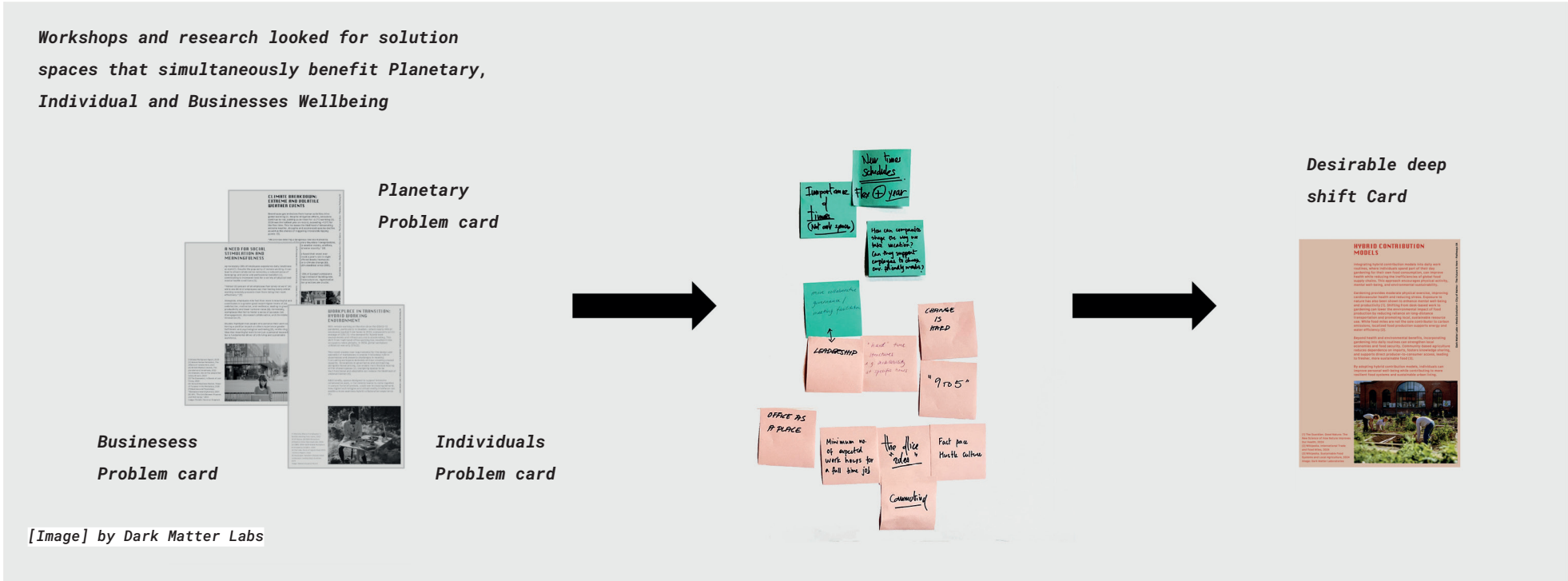
This often leads to unintended consequences where efforts to optimize one system, comes at the risk of degrade another. For example, economic growth often comes at the expense of ecological stability, and individual wellbeing can suffer in environments designed solely for efficiency.

To break this cycle, we need a fundamental shift toward integration, where the health of the planet, people, and businesses are seen as deeply interconnected. This means designing systems that allow each of these layers to co-exist, co-evolve, and mutually support each other. We need to find pathways that are simoultaneously:

Wellbeing of the Planet emphasizes the interconnectedness between earth’s natural systems, natural resources, and human wellbeing, recognizing that a thriving planet is essential for clean air, water, food security, and climate stability.

Protecting and enhancing natural systems and





biodiversity creates healthy, resilient environments that support both human wellbeing and economic prosperity.

Wellbeing of individuals refers to a person’s overall mental, physical, and emotional health. It includes factors like stress levels, happiness, sense of purpose, and the quality of relationships. When wellbeing is prioritized, people tend to be more resilient, productive, and satisfied with their lives.

Supporting individual wellbeing involves creating environments that promote balance, connection, and opportunities for growth.

Wellbeing of businesses goes beyond financial success to include resilience in the face of rapidly changing economic, social, and geopolitical landscapes. In today’s complex world, businesses that prioritize the wellbeing of their employees, communities, and the environment are better equipped to navigate uncertainty and disruption.

By aligning purpose with sustainable growth, these companies can adapt to emerging trends, attract committed talent, and create lasting value that supports both economic and social stability.

It’s not about making compromises between the Planet and the Humans, but about recognizing the economy of mutual wellbeing where the health of the planet, people, and businesses are interconnected and thrive together.

Finding mutually supportive systems

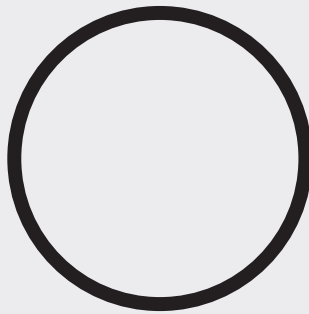
The wellbeing of the planet is the foundation for the wellbeing of individuals, which in turn is essential for the wellbeing and thriving of successful businesses. It’s not about making compromises between these needs, but about recognizing the economy of mutual wellbeing where the health of the planet, people, and businesses are interconnected and thrive together.

In the coming pages you will read about how we in this project have used collaborative foresight as a model of exploring what these mutually supportive systems might look like and which capabilities we might need to develop in order to realize them.

Everyone has a role to play in imagining and creating desirable futures. In the final chapter of this paper, we present a selection of specific tools across various system dimensions that could help drive transformative change.

This is to be seen as an invitation to reflect on what powers and influence you might hold in these questions. We also encourage you as reader of this paper to think about what other tools you might have in your toolbox that could help create enabling conditions for change to occur.

The Bun Economy



Workshops reinforced the hypothesis that Wellbeing of Planet is a prerequisite of Wellbeing of Individuals - is a prerequisite of Wellbeing of Businesses.

Building on the Doughnut Economy theories - our project actually develops A Bun Economy - where we don’t look for a space of compromise between Humans wellbeing and Planetary wellbeing - but we develop solutions which make Planetary wellbeing thrive - and humans are only a part of that Planetary wellbeing.

What pathways we want to develop further?

THE DESIRABLE FUTURES

Through research, workshops and dialogues with diverse actors, we identified leverage points where change is both urgent and possible.

These include reusing what we already have, building a circular and bio-based economy, shifting comfort standards, and enabling new models of contribution. Each pathway offers a way to reduce extraction, emissions, and waste while unlocking co-benefits for people, communities, and businesses.

By further developing these desirable futures, our aim was to demonstrate that transformation is not only necessary but possible - here and now. They represent actionable steps toward neighbourhoods and systems that sustain life, improve wellbeing, and regenerate the ecosystems we depend on.



Pathway 1: Maximised use of the existing

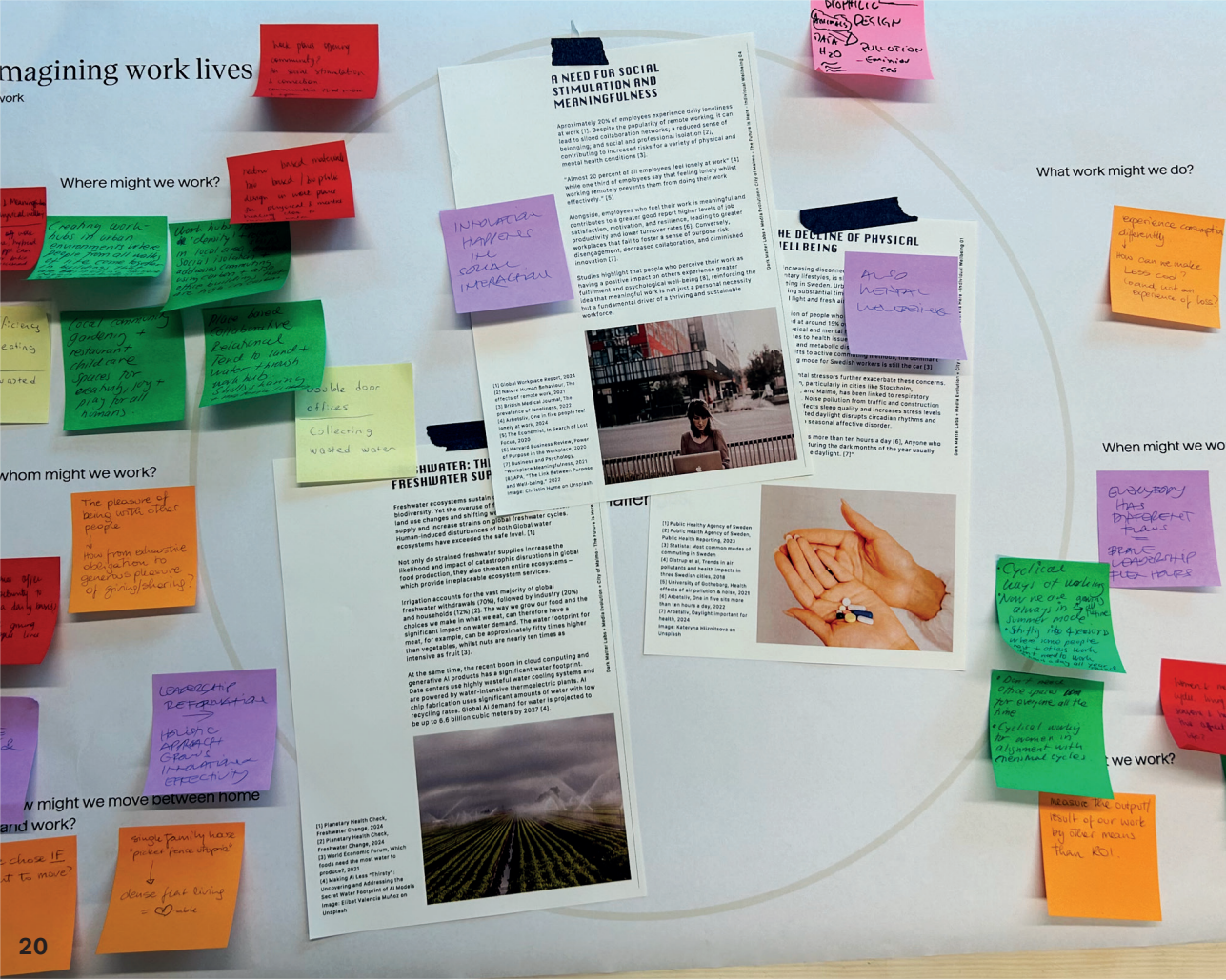
Given that the construction sector accounts for nearly 40% of global carbon emissions [1], limiting new developments would significantly curb environmental impact.

To achieve the necessary reductions in environmental impact, cities must maximise the efficiency of their existing building stock. With approximately 18% of European housing units currently vacant [2], there is an urgent need to repurpose these underutilised spaces rather than build new ones. Additionally, public buildings such as schools, municipal offices, and churches are occupied only about 20% of the time, while office space sees an average utilisation rate of just 35% [3].

Adaptive re-programing for a maximised use efficiency and flexible zoning laws, temporary use permits and co-use models could play a key role in transforming vacant and underutilised spaces into active, multi-functional assets.

By shifting from new construction to re-operationalising what already exists, cities can decrease material extraction, reduce embodied carbon, and create more resilient urban environments.

[1] World Green Building Council. The Global Status Report for Buildings and Construction, 2023
[2] OECD. Vacant Housing in Europe: Trends and Challenges, 2022
[3] European Commission. Sustainable and Circular Cities Initiative, 2023
[Image] Dark Matter Laboratories



Pathway 2:
Next collective
bioeconomy

By prioritising locally grown biomaterials and regenerative agriculture, Sweden can enhance its economy, restore ecosystems, and create new employment opportunities in emerging green sectors.

For example, companies like BioInnovate Sweden are developing bioplastics from agricultural waste [1], Recomatics in Denmark produces mycelium-based construction materials [2].

Sweden currently imports approximately \$680 million worth of stone, plaster, cement, asbestos and similar materials annually [3]. It also imports around 50% of its food.

Reducing dependency on these imports by investing in local biomaterial production would generate jobs in manufacturing, research, and product development, strengthening the local economy while ensuring food and material supply security.

Vacant urban spaces in Malmö could be transformed into community-driven permaculture farms, producing both food and bio-based construction materials.

In Malmö, initiatives like Botildenborg Urban Farm show how regenerative agriculture can provide jobs and support local food security [5].

[1] BioInnovat, Advancing Bioplastic Solutions for Sustainable Futures, 2024
[2] Recomatics, Scaling Mycelium-Based Construction Materials, 2023
[3] Trading Economics, Sweden Imports by Category, 2024
[4] Permaculture Research Institute, The Future of Regenerative Farming. 2024
[5] Botildenborg. Urban Farming and Sustainable Food Systems in Malmö. 2024.
[Image] Dark Matter Laboratories



Pathway 4:
Shifting Comfort
Standards

The climate crisis highlights the necessity of rethinking comfort in built environments.

This could require a shift towards passive air conditioning strategies and leveraging nature-based solutions to regulate temperatures, humidity and airflows. Research suggests that passive climate control methods, such as natural ventilation and green infrastructure, can significantly reduce energy consumption while enhancing indoor environmental quality [1].

Additionally, there is a growing shift from reliance on mechanical ventilation towards the use of indoor plants for air purification, as plants can effectively filter pollutants and improve indoor air quality [2].

Spending time and working outdoors has been shown to provide numerous health benefits, particularly in reducing stress improving overall well-being. Exposure to natural light helps regulate circadian rhythms, leading to better sleep quality and increased energy levels [3].

Being in green spaces is associated with lower cortisol levels, improved cognitive function, and higher productivity [4]. Companies are increasingly incorporating outdoor workspaces, recognising their positive impact on both mental and physical health.

[1] Steemers, Energy-efficient design and occupant well-being, 2010
[2] Wolverton, Johnson, Interior Landscape Plants for Indoor Air Pollution Abatement, NASA, 1989
[3] Cajochen, Effects of light, 2007
[4] Kaplan, The Experience of Nature: A Psychological Perspective, 1989
[Image] Dark Matter Laboratories

Pathway 3:
Hybrid contribution
models

Integrating hybrid contribution models into daily work routines, where individuals spend part of their day gardening for their own food consumption, can improve health while reducing the inefficiencies of global food supply chains. This approach encourages physical activity, mental well-being, and environmental sustainability.

Gardening provides moderate physical exercise, improving cardiovascular health and reducing stress. Exposure to nature has also been shown to enhance mental well-being and productivity [1]. Shifting from desk-based work to gardening can lower the environmental impact of food production by reducing reliance on long-distance transportation and promoting local, sustainable resource use. While food miles are not the sole contributor to carbon emissions, localized food production supports energy and water efficiency [2].

Beyond health and environmental benefits, incorporating gardening into daily routines can strengthen local economies and food security. Community-based agriculture reduces dependence on imports, fosters knowledge sharing, and supports direct producer-to-consumer access, leading to fresher, more sustainable food [3].

By adopting hybrid contribution models, individuals can improve personal well-being while contributing to more resilient food systems and sustainable urban living.

[1] The Guardian. Good Nature: The New Science of How Nature Improves Our Health, 2024
[2] Wikipedia. International Trade and Food Miles, 2024
[3] Wikipedia. Sustainable Food Systems and Local Agriculture, 2024
[Image] Dark Matter Laboratories





3. SOLUTION CARDS:

**WHAT ARE THE
INVISIBLE TOOLS FOR
DEEP CHANGE?**

MAXIMISED USE OF THE EXISTING

Why is this important?

Given that the construction sector accounts for nearly 40% of global carbon emissions [1], limiting new developments would significantly curb environmental impact. To achieve the necessary reductions in environmental impact, cities must maximise the efficiency of their existing building stock. With approximately 18% of European housing units currently vacant [2], there is an

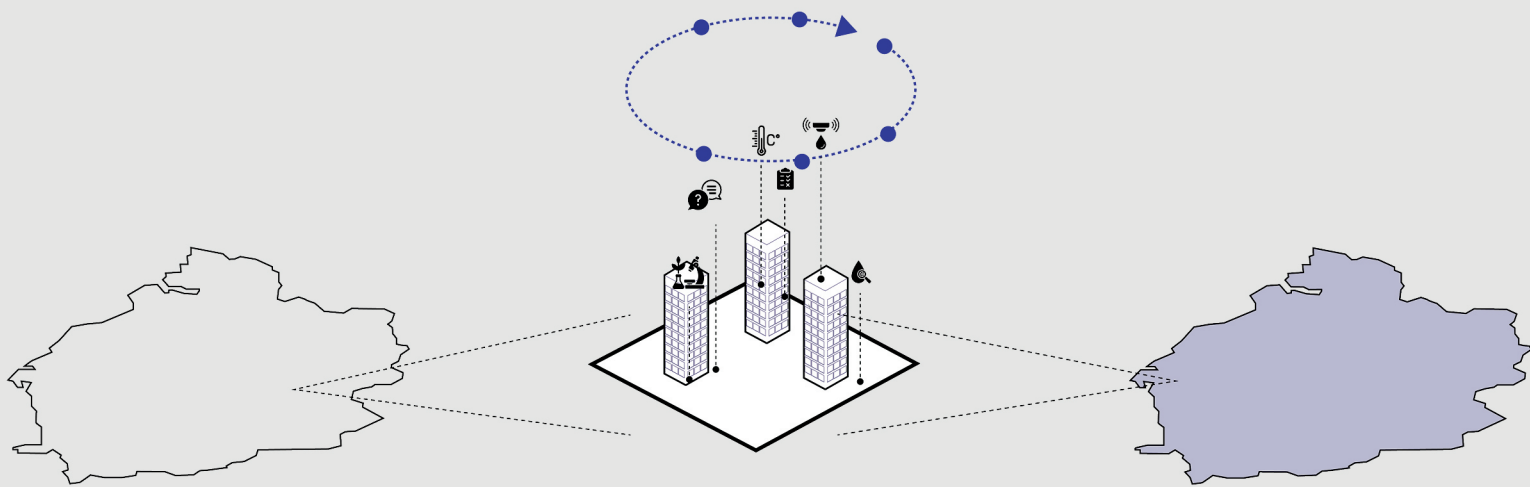
urgent need to repurpose these underutilised spaces rather than build new ones. Additionally, public buildings such as schools, municipal offices, and churches are occupied only about 20% of the time, while office space sees an average utilisation rate of just 35% [3].

Adaptive re-programing for a maximised use efficiency and flexible zoning laws, temporary use permits and co-use models could play a key role in transforming vacant and underutilised spaces into active, multi-functional assets. By shifting from new construction to re-operationalising what already exists, cities can decrease material extraction, reduce embodied carbon, and create more resilient urban environments.

[1] World Green Building Council. The Global Status Report for Buildings and Construction, 2023
[2] OECD. Vacant Housing in Europe: Trends and Challenges, 2022
[3] European Commission. Sustainable and Circular Cities Initiative, 2023
Image: Dark Matter Laboratories
[4] Øresundsinstittutet, 100 000 kvm nya kontorslokaler färdigställs i Malmö under nästa år, 2018.
[5] Savills, Swedish Office Market Overview Q3 2024, 2024.
[6] Brink, Dan, Recent construction boom in the office market in Malmö, Nordic Real Estate, 10 April 2020.
Image: Dark Matter Laboratories, 2025
Diagram: Dark Matter Laboratories, 2025



Visualisation by Ivana Stancic and Alex Hansten Dark Matter Labs



Malmö statistics

Malmö has an office-building stock of just over 1.6 million square meters [4]. Vacancy rates have steadily increased across Sweden's major cities throughout 2024. In 2024, the vacancy rate in Malmö's Central Business District was reported at 12%, indicating a significant amount of underutilized office space [5]. In 2019 and 2020, ten new office projects were completed, adding nearly 100,000 square meters of office space [6].

How does this future look and feel?

Malmö's Generate District was the first to pilot this bold strategy. It became the city's test bed for adaptive reprogramming, flexible zoning, and multi-use models.

Through updated regulations and new incentive schemes, buildings across the city were retrofitted for multi-functionality. Public spaces that were once occupied only 20–30% of the time now operate on near-constant cycles, with multiple users, programs, and functions co-existing within the same physical footprint.

A former single-company office, once half-empty outside peak hours, might now host tenant businesses during the day, while unbooked desks and meeting rooms are made available in real time to freelancers and remote workers. Around lunchtime, the same building could transform into a space for open lectures and hands-on workshops. In the early evening, yoga or movement classes take over former conference rooms or aulas, followed by activities for

older residents, such as PRO meetings, book clubs, or digital support sessions. Smart scheduling platforms coordinate access, while on-site hosts manage transitions, ensure shared use runs smoothly, and maintain a welcoming, functional environment throughout the day.

Even the objects within these buildings, such as desks, projectors, tools, kitchen equipment and decoration are considered shared resources. Digitally tagged and accessible through mobile platforms, they can be reserved, tracked, and redistributed as needed. This system has drastically increased the overall efficiency of city-owned assets.

The new model is not simply technical, its just as much a mindset and behaviour shift. At its core is a shift in values: access over ownership. The traditional notion of a building "belonging" to a single tenant or purpose has given way to a broader understanding of space as a shared civic resource, expected to contribute actively to the life of the city.

Vacancy is no longer accepted as inefficiency it's seen as opportunity to create value, support resilience, and accelerate the transition to a circular urban economy.

Good for the Planet

Reusing existing built structures drastically reduces carbon emissions from construction, demolition, and new material production. Extending the life and function of what's already built helps cities avoid unnecessary extraction, waste, and land use change. This approach also protects natural ground, enhancing resilience to climate impacts such as heavy rainfall. It aligns with circular economy principles by emphasising adaptation and reuse.

Good for Individuals

People directly benefit from better use of existing places. Mixed-use settings reduce commute times, improve access to services, and strengthen social bonds. Reimagining familiar spaces for multiple functions enhances safety, comfort, and identity, making everyday life richer without requiring greater consumption.

Good for Businesses

For businesses, shared offices and workshops cut fixed costs while encouraging collaboration. Being located in active, mixed-use environments increases visibility and foot traffic. Adaptive reuse like pop-ups in vacant shops or studios in repurposed basements offers flexible, low-risk entry points. Businesses in multifunctional spaces become embedded in local networks, strengthening their customer base through community integration.

MAXIMISED USE OF THE EXISTING

How can we make this happen?

In Malmö, the built environment is a major source of climate emissions, yet much of the city’s building stock remains underutilized. By rethinking how space is used, we can reduce emissions, cut costs, and increase flexibility and collaboration, particularly interesting for creating thriving professional neighbourhoods and

innovation clusters like Generate District. In order to make the most of existing buildings, three complementary strategies can be applied.

First, reduce: reconsider how much space is actually needed and free up underused areas, lowering the need for new construction. Second, optimize: use the remaining spaces more efficiently through shared workplaces, flexible scheduling, and smart management tools, allowing more people to benefit from the same footprint.

Third, adapt: upgrade and remodel or retrofit underused or vacant buildings with circular materials to meet changing needs and extend building lifespans.[1] Applied together, these strategies can unlock the full capacity of existing buildings while supporting changing business needs, the wellbeing of people and the planet.

[1] Example: Reducing unused floor space in a university building is estimated to lower the institution’s climate impact by around 15 kg CO2 per m2 per year. If the freed-up space is used by another organization instead of building new, an additional 300 kg CO2 per square meter of avoided



Visualisation by Ivana Stancic and Alex Hansten Dark Matter Labs

POLICY

Zoning and permits as a tool enabling flexibility

In Sweden, how a plot or building can be used is largely determined by the detailed development plan. By applying these tools more flexibly, municipalities can enable buildings to serve multiple purposes over time and support a more mixed and resilient city.

Flexible lease contracts

Long term leases have traditionally benefited property owners, but tenants increasingly demand flexibility to expand, shrink, or share space. Property owners, developers, and tenants can design leases that allow expansion, contraction, or shared use of spaces.

Short term building permits

In Sweden, temporary uses often require the same permits as permanent structures, which can be slow and bureaucratic. Streamlining these processes and offering flexible permits enables temporary uses, encourages innovation, and improves urban space efficiency. [2]

[2] Example: Almost 30% of property owners find municipal processes for changing the use of premises complicated. Many say building permits take too long and regulations are hard to interpret. Improved dialogue with municipal officials and more flexibility from detailed plans are highlighted as good examples. [Fastighetsägarna & White Arkitekter. (2022)]

FINANCE

Vacancy taxation

The government can introduce taxes on underutilized or vacant spaces to incentivize owners to lease, share or repurpose empty spaces. This encourages efficient use of buildings and can generate additional revenue for reinvestment in sustainable management. [3]

Dynamic pricing models

Building managers and municipalities can implement variable pricing for spaces based on demand, occupancy, or peak hours. Higher rates during peak times and discounts during low-demand periods promote more balanced and efficient use. [4]

Grants for activating space

Municipalities, national funding agencies, and development organizations can provide grants or financial incentives to property owners, organizations, or community groups that activate underutilized spaces and reduce the demand for new buildings.

[3] Example: In England, authorities can demand a local tax increase of up to 50% for properties unoccupied for more than two years. [FEANTSA]

[4] Example: The concept of dynamic pricing is gaining traction- Flexspace has introduced a dynamic pricing feature for coworking spaces, and early adopters have reported significant positive results. [Flexspace]

GOVERNANCE

Open protocols for shared spatial use.

Municipalities and building managers can define clear, standardized rules for accessing, modifying, and maintaining shared spaces covering everything from sound levels and energy use to waste handling, insurance, and safety, adapted per space and context.

Security and access to shared assets

Municipalities and property managers can implement secure access systems like digital locks or app-based entry. Combine this with clear rules for collecting, storing, and sharing usage data, ensuring privacy, transparency, and compliance with GDPR.

Simplified leasing administration

To encourage organizations to share space, municipalities or building managers can offer templates and streamlined approval processes, making it faster and easier for organizations to participate in shared-space arrangements.

DESIGN

Modular and adaptable interiors

Flexible furniture, and multipurpose layouts allow spaces to adjust to changing activities and occupancy levels. Architects and designers play a key role in planning interiors that can be reconfigured over time and extend the building’s functional lifespan.

Design for adaptation

Building changes are often less costly the earlier they are anticipated. Architects and planners therefore have a key role in considering long-term adaptation when designing buildings, ensuring spaces remain flexible and efficient over time.

Multipurpose outdoor spaces

Careful planning of courtyards, parks, and other public areas can reduce the need for additional buildings by supporting activities that might otherwise take place indoors. Urban designers and planners therefore play a key role in activating outdoor spaces to increase spatial efficiency

TECH

Data collection & digital twins

Municipalities and data experts can collect occupancy and booking data to help optimize space use through revealing patterns and trends over time. Digital twins can also help through enabling monitoring, simulation, and optimization of space use, energy efficiency, and indoor comfort. [5]

Digital booking platforms

Platform developers and municipalities can create systems for booking underutilized public or semi-public spaces, turning static assets into active, accessible commons for communities and organizations.

Secure public Wi-Fi networks

Municipalities can provide free or low-cost public Wi-Fi in key public and professional neighborhoods, supporting equity in access to digital services and enabling mobile work and community programming.

[5] Example: Digital twins is also an enabling factor in the EU’s directive on the energy performance of buildings. [SUHF]

BEHAVIOUR

Access over ownership

To encourage spatial sharing, companies and organisations can prioritize access over ownership. Business owners can emphasize that workplaces has access to a broader range of spaces and facilities without the costs of owning them all

Off peak scheduling

Employers and office managers can adjust mandatory availability hours and schedule meetings outside of peak periods to prevent overcrowding. This can reduce peak occupation, balance demand over the day, and ensure more efficient use of workspaces.

Feedback loops for encouragement

Property owners can use digital and physical feedback systems to show how people’s behavior (e.g., how they use energy, space and resources) has a substantial impact on the building footprint. Make people understand that they are active contributors to a more sustainable future.

NEXT COLLECTIVE BIOECONOMY

Why is this important?

By prioritising locally grown biomaterials and regenerative agriculture, Sweden can enhance its economy, restore ecosystems, and create new employment opportunities in emerging green sectors. For example, companies like BioInnovate Sweden are developing bioplastics from agricultural waste [1], Recomatics in Denmark produces mycelium-based construction materials [2].

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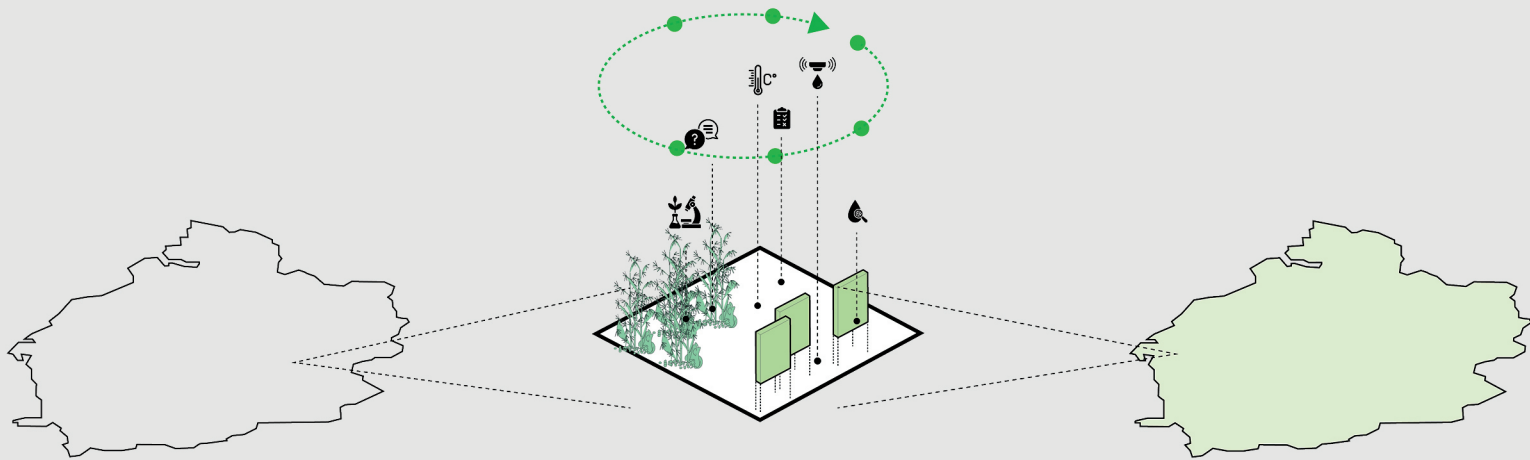
Reducing dependency on these imports by investing in local biomaterial production would generate jobs in manufacturing, research, and product development, strengthening the local economy while ensuring food and material supply security.

Vacant urban spaces in Malmö could be transformed into community-driven permaculture farms, producing both food and bio-based construction materials. In Malmö, initiatives like Botildenborg Urban Farm show how regenerative agriculture can provide jobs and support local food security [5].

[1] BioInnovat, Advancing Bioplastic Solutions for Sustainable Futures, 2024
[2] Recomatics, Scaling Mycelium- Based Construction Materials, 2023
[3] Trading Economics, Sweden Imports by Category, 2024
[4] Permaculture Research Institute, The Future of Farming. 2024
[5] Botildenborg. Urban Farming & Sustainable Food Systems in Malmö. 2024.
[6] Malmö stad, Klimat- och energistrategi.
[7] LFM30, Roadmap for Climate Neutral Construction Sector in Malmö 2030.
Images: Dark Matter Laboratories, 2025



Visualisation by Ivana Stancic and Alex Hansten Dark Matter Labs



Malmö statistics

In Malmö, the construction sector accounts for around 20% of the city's total carbon emissions, making it a major focus for climate action [6]. While the city was one of the first in Sweden to adopt a roadmap for climate-neutral construction by 2030, the development and large-scale use of biomaterials remains at an early stage, leaving significant potential for innovation, investment, and pilot projects [7].

How does this future look and feel?

By 2040, Sweden's bio-economy is thriving. Climate pressure, unstable global supply chains, and a push for national self-sufficiency made it necessary to rethink how the country produces food, materials, and products. When prices for imported goods spiked in the late 2020s, Malmö stepped up, becoming a pioneer in local biomaterial production and regenerative farming.

This shift began with the creation of a bold and forward thinking partnership between the city and local industries established in the Malmö generate district during the 2020's. As part of this new model, companies joining the district committed to dedicating a portion of their floor space or employee time to local production activities

To accelerate progress, the city offered tax incentives to companies that replaced imported materials with local, eco-friendly alternatives. All new buildings and refurbishments of old structures in the area was required to prioritize certified biobased materials.

Educational facilities within the district support hands-on learning, enabling young people to develop skills in circular design and bio-based construction.

Local re-use hubs and material banks were established in some of the old structures less fitted for workplace operations. Digital material registries were launched for effortless material scouting when refurbishing. New waste-to-resource systems were put in place, collecting organic waste from the area and transform it into compost for the neighbourhood farms, biogas, and raw inputs for biomaterial production.

Neighbourhood farms were built, providing the area with the fresh produce needs. The neighborhood gardens were realized through a hybrid model of the city allowing municipal land, while companies contributed indoor space, materials, or employee time.

Excess produce was sold at nearby farmers markets. This collaboration boosted resilience by shortening supply chains and lowering prices for healthy, sustainable food, enabling companies to offer fresh, local lunches as an employee benefit.

Good for the Planet

By prioritising local, certified biobased materials, the model could significantly reduce CO2 emissions from production and transport. Waste can be transformed into resources like compost and biogas, closing loops and advancing true circularity. Local food production on neighbourhood farms helps cut reliance on imports, lowering emissions from long-distance transport while promoting regenerative agriculture that restores soil health and biodiversity.

Good for Individuals

From an individual perspective, this model creates real benefits for wellbeing. Fresh, healthy, affordable produce is grown nearby, making nutritious food accessible to all. Educational programs give young people hands-on skills in sustainable design and bio-based construction, opening doors for opportunities. Offering local, fresh lunches as an employee benefit supports workers' health.

Good for Businesses

From a company perspective, this approach makes solid business sense. Local supply chains reduce risks tied to global disruptions and volatile prices. Companies can contribute in ways that fit their resources - space, materials, or time - and get tax incentives to offset costs. Being part of this green ecosystem boosts reputation, attracts talent, and opens new markets for bio-based products.

NEXT COLLECTIVE BIOECONOMY

How can we make this happen?

A significant portion of emissions from the built environment originates from embodied carbon. [1] Shifting to bio-based materials and sustainable sourcing methods can be an important step on the way to achieve a more regenerative built environment for both humans and planet.

Municipalities, developers, and designers all play a role in this shift: public projects can set examples, financial incentives can lower market risks while digital tools and certifications can make biomaterials easier to choose, verify and implement. Professional neighbourhoods and innovation clusters like Generate District could serve as leading examples of this new type of growth, demonstrating how biomaterials, circular construction practices, and sustainable urban

development can strengthen local supply chains, encourage innovation, and foster resilient, low-carbon, and health-promoting districts. The adoption of low-carbon materials can also create new business opportunities, workforce development and more sustainable urban spaces.

[1] Example: For new buildings in Sweden, lifecycle assessments show that embodied carbon frequently accounts for more than half of total lifecycle emissions. (Malmqvist et al) Reference values for embodied carbon of Swedish building construction, Sustainable Built Environment, 2023).



Visualisation by Ivana Stancic and Alex Hansten Dark Matter Labs

POLICY

Lead by example

Municipalities can set examples for private actors by prioritizing biomaterial in public construction. This can drive wider adoption among developers, architects, and businesses while supporting local supply chains and reducing environmental impact.

Tighten building emission limits

Boverket can lower the allowable emissions for the construction phase, driving developers to use low-carbon materials and methods, reducing overall building-sector emissions, and encouraging innovation in sustainable construction. [2]

Promote biomaterial in detail plans

Municipalities can integrate sustainability criteria into detailed development plans (detaljplan) that favor timber, bioplastics, and other biobased materials, encouraging low-carbon construction while respecting legal limits on mandatory technical requirements.

[2] Boverket proposes 2025 limits for the construction phase (A1–A5) of 375 kg CO2e/m² for apartment buildings and 180 kg CO2e/m² for single-family houses, while the industry agrees, many consider the limits too high.

GOVERNANCE

Standards for sustainable sourcing

Municipal and national governance can set standards and provide oversight to ensure local biomaterial production integrates sustainable practices such as avoiding monocultures and maintaining biodiversity.

Develop biomaterial certification

Municipalities and industry can support the creation of recognized certifications for biomaterials, giving producers a trusted way to demonstrate quality, safety, and compliance. This could reduce market risk, build buyer confidence and make bio-materials easier to adopt at scale.

Facilitate collaboration

Municipalities and national authorities can create platforms for collaboration between government, industry and research institutions to coordinate biomaterial development, share best practices, and ensure sustainable production and adoption across the construction sector.

TECH

Digital biomaterial passports

Tech developers can help create digital passports to track material composition, origin, and lifecycle, enabling circular reuse, safe handling, and regulatory compliance. This supports informed choices, recycling, and supply chain transparency.

Digital biomaterial libraries

and BIM integration
BIM developers can develop comprehensive libraries of certified biobased materials, enabling architects and engineers to easily select low-carbon options and integrate them into designs. [4]

3D printing and new material processing methods

Tech developers can support the use of 3D printing with biobased composites or bio-resins to create custom building components. This approach minimizes waste, increases design flexibility, and helps scale adoption of low-carbon materials.

[4] Example: Open Detail is an open-source platform where architects, engineers, and designers can contribute and download 2D or 3D construction details focused on biogenic and low-carbon materials. [OpenDetail]

FINANCE

Carbon based building material tax

The government could look into introducing a tax on construction materials proportional to their life-cycle carbon emissions, making fossil-based materials more expensive and incentivizing the use of biobased alternatives. [3]

Green loans and public funding

Banks and public financing agencies can offer low-interest or performance-linked loans for construction projects with high biobased content or low life-cycle carbon emissions, encouraging developers to choose sustainable materials.

Expand biomaterial R&D funding

Investors and municipalities can expand R&D support to include sustainable production practices to avoid monocultures, maintain biodiversity. This would accelerate circular, resilient biomaterial systems while preventing unintended ecological problems

[3] Example: Sweden has a long-standing carbon tax system, introduced in 1991, which currently applies to fossil fuels used for heating and motor fuels. In 2025, the tax rate amounts to SEK 1,510 per tonne of fossil CO2 for most fuels. This established framework provides a foundation for expanding the tax to include construction materials based on their life-cycle carbon emissions. [Regeringskansliet]

DESIGN

Promote bio-based design choices

Architects and designers can play a key role in suggesting low-carbon alternatives to traditional solutions for building design. This in turn requires training in biobased materials, structural properties, fire safety, durability, and best practices.

Encourage modular and adaptable construction

Architects and developers can prioritize modular designs using biobased materials to simplify material substitution. This approach supports flexibility, efficiency, and wider adoption of low-carbon solutions.

Prioritize locally sourced materials

Architects and designers can prioritize the use of locally grown or produced biomaterials in their projects. This supports local supply chains, reduces transportation emissions, and strengthens the adoption of sustainable, low-carbon construction practices.

BEHAVIOUR

Increase awareness of health impact

Municipalities can through campaigns and education programs highlighting the benefits of safe, sustainable biomaterials can encourage healthier choices, reduce exposure to toxins, and increase adoption of circular and low-impact materials in construction.

Increase transparency of impact

Education campaigns and labelling initiatives from various stakeholders can highlight the environmental, social, and economic benefits of sourcing biomaterials locally, encourage sustainable procurement and strengthen local businesses.

Promote a public mindset shift on production speed

Municipalities and stakeholders can raise awareness about the benefits of regenerative biomaterial production. Encouraging the general public and industry to value patience and resource regeneration supports circular, low-carbon construction and long-term ecosystem health.

NEW COMFORT STANDARDS

Why is this important?

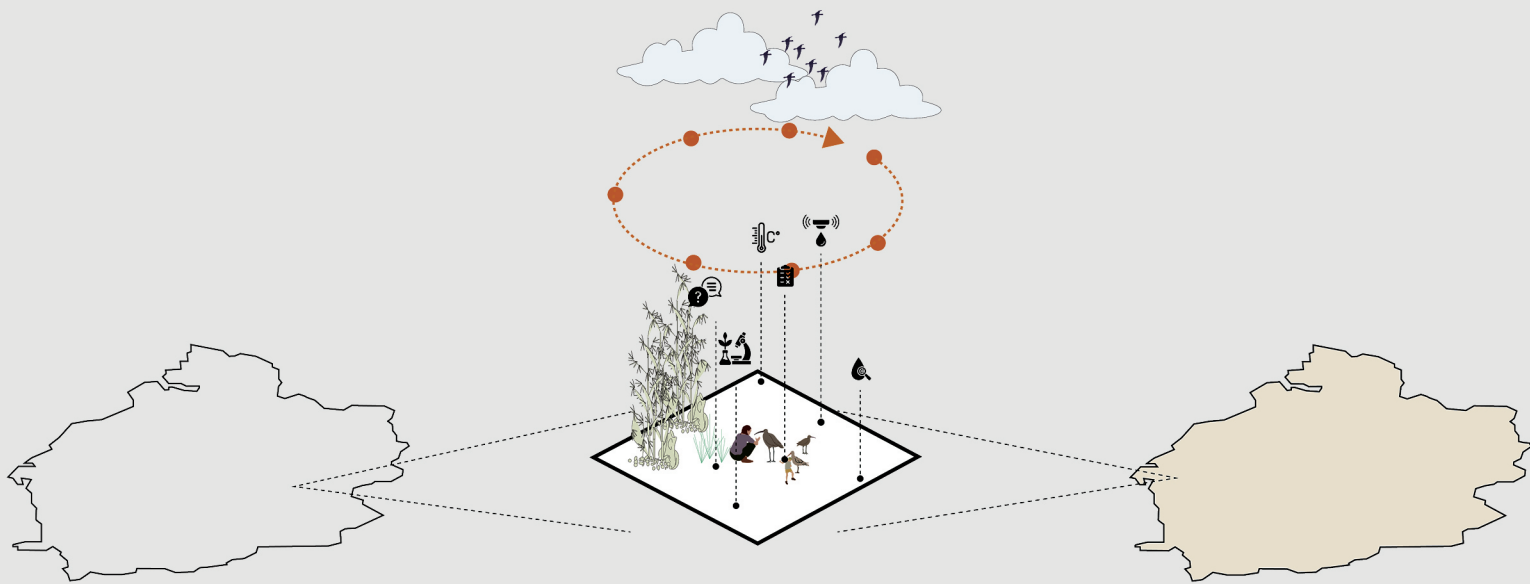
The climate crisis highlights the necessity of rethinking comfort in built environments. This could require a shift towards passive air conditioning strategies and leveraging nature-based solutions to regulate temperatures, humidity and airflows. Research suggests that passive climate control methods, such as natural ventilation and green infrastructure, can significantly reduce energy consumption while enhancing indoor environmental quality [1]. Additionally, there is a growing shift from reliance on mechanical ventilation towards the use of indoor plants for air

purification, as plants can effectively filter pollutants and improve indoor air quality [2]. Spending time and working outdoors has been shown to provide numerous health benefits, particularly in reducing stress improving overall well-being. Exposure to natural light helps regulate circadian rhythms, leading to better sleep quality and increased energy levels [3]. Being in green spaces is associated with lower cortisol levels, improved cognitive function, and higher productivity [4]. Companies are increasingly incorporating outdoor workspaces, recognising their positive impact on both mental and physical health.

[1] Steemers, Energy-efficient design and occupant well-being, 2010
[2] Wolverton, Johnson, Interior Landscape Plants for Indoor Air Pollution Abatement, NASA, 1989
[3] Cajochen, Effects of light, 2007
[4] Kaplan, The Experience of Nature: A Psychological Perspective, 1989
[5] City of Malmö's Environmental Barometer, 2020
[6] Annual energy statistics (electricity, gas and district heating)
Images: Dark Matter Laboratories, 2025



Visualisation by Ivana Stancic and Alex Hansten Dark Matter Labs



Malmö statistics

In Malmö, heating and cooling buildings consume approximately 1,200 GWh of electricity annually, representing a significant portion of the city's energy use [5]. Despite strong efforts to promote sustainable transport, around 34% of daily trips are still made by car, contributing roughly 407,000 tons of CO₂ emissions each year [6].

How does this future look and feel?

By 2040, comfort has been redefined. In Malmö, rising temperatures, energy instability, and stricter emissions rules have made constant indoor climate control unsustainable. Comfort is no longer about stable temperatures or minimizing physical effort. Instead, comfort is redefined around human and ecological needs.

Due to the lingering impacts of decades of emissions, people now value clean air, natural light, and spaces that support movement, rest, and flexibility as comfort. People have understood that this shift is less about restrictions and more about redefining what's actually supporting wellbeing.

Over the last 15 years, our cities have changed as this awareness grew. Buildings have been adapted to follow seasonal patterns, using features like ventilated facades, green roofs, and shaded work areas to reduce reliance on mechanical cooling. New urban rewilding requirements have significantly lowered the temperature in the city during summer and improved

the local biodiversity. This not only cuts emissions but also reduces vulnerability to increasingly frequent power outages and fluctuations in global energy supply.

People have learned to live more in sync with the Nordic climate and accepts and adapts to the seasonal changes. In the summer, work often extends outdoors to urban pavillions in shaded and ventilated green areas.

In winter, the pace of work and life adjusts. Cities embrace seasonal rhythms, with shorter workdays aligned to natural light and energy availability. Flexible schedules help reduce peak energy loads, while strategic planning helps lower energy demand by sharing spaces or closing off unused spaces.

Comfort is no longer defined by minimizing physical effort, instead, movement is recognized as a core part of comfort and a healthy work-life balance.

Active commuting has become a practical norm. Offices are equipped with showers, lockers, and policies that treat commuting by bike or foot as a legitimate part of the workday.

Good for the Planet

From a planetary perspective, this shift reduces energy use and emissions by prioritising passive design, thermal mass, ventilation, and shading over carbon-intensive heating and cooling. Greenery, water features, and biodiversity are used not only for aesthetics but to regulate temperature, improve air quality, and support ecosystems.

Good for Individuals

Individually, this shift asks us to be more tolerant, aware, and in tune with our environments, while redefining how we experience comfort emotionally and culturally. Is sitting in a perfectly heated room still comfortable if the air is stale, the noise constant, or the light artificial? We've accepted conditions that are technically 'comfortable' but leave us tired, disconnected, and unwell. True comfort may mean being slightly cooler in winter or warmer in summer, but with clean air, quiet surroundings, and a deeper sense of place.

Good for Businesses

For businesses, it opens up the chance to design buildings, materials, and services that don't just maintain comfort when things are going well, but that continue to function when systems are under stress. And for the planet, it's a way to reduce dependency on fossil fuels and fragile infrastructure by returning to practices that were always low-impact and resilient.

NEW COMFORT STANDARDS

How can we make this happen?

In Sweden, operational energy use in buildings remains a major source of carbon emissions [1], while the quality of indoor environments strongly affects individual health and wellbeing. Adopting new comfort standards that prioritize thermal comfort, daylight, air quality, acoustics, and access to nature can both reduce energy demand

and improve physical and mental health for occupants.

Architects can play a key role in designing layouts and materials to maximize passive comfort, employers can implement retrofits and workspace adaptations, and municipalities can update building codes and provide incentives to ensure these measures are applied, helping people feel energized, focused, and comfortable while supporting sustainable energy use.

Professional neighbourhoods and innovation districts like Generate District could serve as leading examples, showing how seasonal adaptation and sustainable urban planning can foster healthier, low-carbon, and resilient environments. Implementing these standards can also make cities more liveable and support long-term wellbeing.

[1] Definition: Operational energy use is the energy consumed for a building's daily activities, such as heating, cooling, lighting, and powering appliances.



Visualisation by Ivana Stancic and Alex Hansten Dark Matter Labs

POLICY

Include full building life cycle in climate declarations

Municipalities and Boverket can extend climate declarations to cover the full building life cycle. Currently, only construction is counted; this encourages low-carbon design and accounts for operational and end-of-life emissions. [2]

Passive design in building codes

Today Swedish building regulations (BBR) focus primarily on energy efficiency and insulation. Adding requirements for shading, ventilated façades, and green roofs would cut cooling demand and boost resilience to heatwaves.

Emission free urban zones

Municipalities can designate areas where high emission vehicles are restricted, promoting electric transport, cargo bikes, and clean mobility in line with traffic regulations.

[2] Boverket proposes a full life-cycle climate declaration from 2027 including operational stages of the building process. [Svenskt Trä. "Boverkets förslag till gränsvärden är ett steg framåt." 2025]

FINANCE

Targeted passive retrofit support

Current retrofit programs mainly fund insulation and energy efficiency. Investors can look into expanding support to include passive solutions for cooling, solar shading, and green roofs would incentivize adaptation measures that reduce vulnerability to rising temperatures.

Employee wellbeing benefits

Swedish employers can already subsidize bikes and public transport but uptake is limited. Expanding employee benefits to promote other healthy and sustainable choices like sustainable meals or mental health support, could further promote wellbeing and sustainable behavior.

Fund climate-smart workplaces pilots and innovation

Innovation funding currently prioritizes energy and transport. Expanding grants to test outdoor workspaces, seasonal office adaptations, and biophilic design pilots would encourage business models that support resilience and employee wellbeing.

GOVERNANCE

Expand urban transport restrictions

Despite strong cycling policies, car use remains high. Stricter limits on cars in city centers, parking maximums, and more pedestrian zones would accelerate modal shift and improve urban health. [3]

Monitor urban green infrastructure

Municipalities can establish systems to track the health, coverage, and effectiveness of trees, green roofs, and water features. This could potentially also lead to new job creation in urban maintainance.

Monitor building performance

Building owners and municipalities can implement mandatory data collection and reporting of energy use and emissions to enable benchmarking, identify inefficiencies, and inform policy or incentives for continuous carbon reduction.

[3] Example: In Stockholm, the introduction of a Class 3 environmental zone was planned, where only electric vehicles, fuel cell vehicles, and gas vehicles (Euro 6) would be allowed to drive in a designated area. The decision was overturned by the County Administrative Board due to deficiencies in the city's assessment, and the city can now choose to appeal or conduct a new study. [Länsstyrelsen. "Miljözon Klass 3 i Stockholm upphävd – stadens utredning brister." Accessed September 8, 2025.]

DESIGN

Scale up urban green infrastructure

Many municipalities invest in green corridors and stormwater solutions, but implementation is uneven. Expanding requirements for urban forests, water features, and shading in streetscapes would improve local microclimates and biodiversity across Swedish cities.

Prioritized cycling and pedestrian infrastructure

Urban planners play a key role in enabling higher levels of walking and cycling by creating safe, continuous, and well-lit networks. Integrating bike lanes, pedestrian streets, and supportive infrastructure such as secure parking and wayfinding encourages active travel.

Design urban space for multi-use

Shared outdoor pavilions and flexible seasonal workplaces remain niche in Sweden. Including these spaces in planning guidelines and funding pilots would help normalize new ways of working aligned with climate adaptation.

TECH

Smart healthy building monitoring

Today, many Swedish buildings track energy use but not indoor comfort variables such as air quality, humidity, or daylight. Expanding sensor networks and digital twins would allow real-time optimization of comfort providers.

Occupant feedback platforms

Tech developers can create digital tools that let occupants provide real-time feedback on comfort such as temperature, lighting, or noise that help building managers fine-tune systems.

Adaptive climate control systems

Building owners can use intelligent heating, cooling, and ventilation systems that automatically adjust based on occupancy, indoor conditions, and outdoor weather. This reduces energy use while maintaining thermal comfort and healthy air quality for occupants.

BEHAVIOUR

Increased wellbeing awareness

Sweden has a strong outdoor culture, but work and schools remain tied to indoor, controlled climates. Awareness campaigns reframing comfort around daylight, fresh air, and movement would help shift expectations and behaviors.

Participation in urban greening

Community engagement is often project-based rather than systemic. Establishing long-term programs for citizens to co-design, plant, and maintain green spaces would build ownership and accelerate climate adaptation.

Promote seasonal living practices

Work-life rhythms in Sweden largely ignore natural light and seasonal energy availability. Encouraging flexible hours, outdoor meetings, and adjusted winter schedules would reduce energy peaks while improving wellbeing.

HYBRID CONTRIBUTIONS

Why is this important?

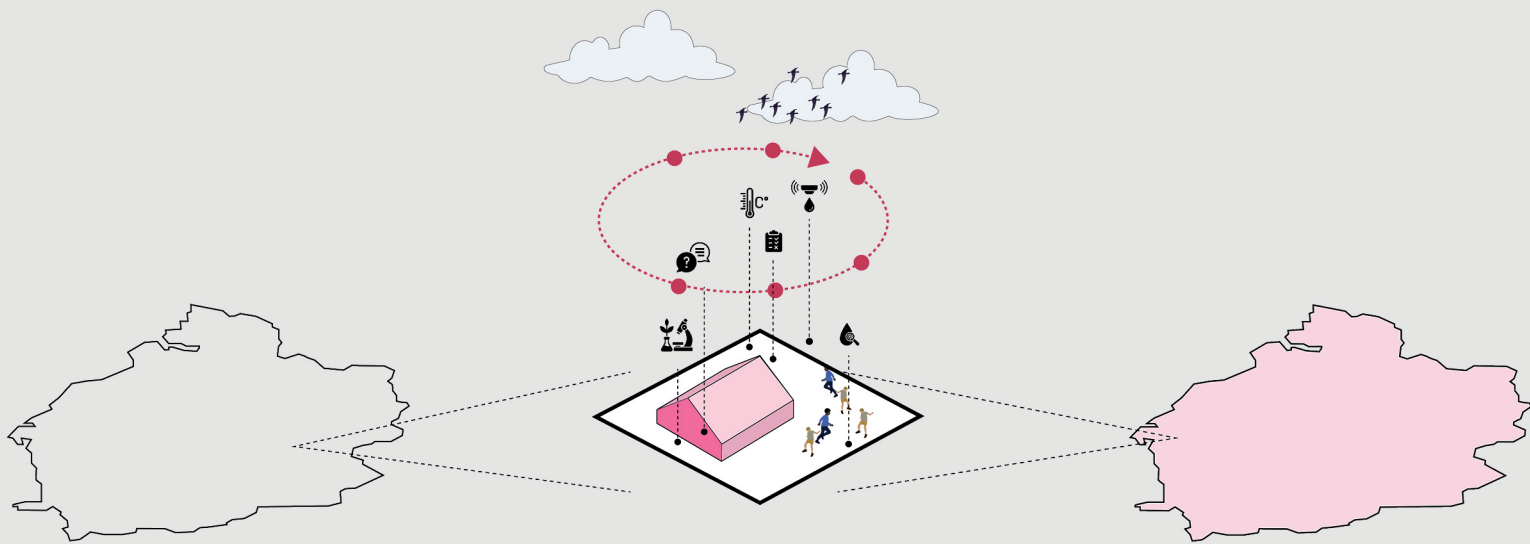
Integrating hybrid contribution models into daily work routines, where individuals spend part of their day gardening for their own food consumption, can improve health while reducing the inefficiencies of global food supply chains. This approach encourages physical activity, mental well-being, and environmental sustainability. Gardening provides moderate physical exercise, improving cardiovascular health and reducing stress. Exposure to nature has also been shown to enhance mental well-being and productivity [1]. Shifting from desk-based work to gardening can lower the

environmental impact of food production by reducing reliance on long-distance transportation and promoting local, sustainable resource use. While food miles are not the sole contributor to carbon emissions, localized food production supports energy and water efficiency [2]. Beyond health and environmental benefits, incorporating gardening into daily routines can strengthen local economies and food security. Community-based agriculture reduces dependence on imports, fosters knowledge sharing, and supports direct producer-to-consumer access, leading to fresher, more sustainable food [3]. By adopting hybrid contribution models, individuals can improve personal well-being while contributing to more resilient food systems and sustainable urban living.

[1] The Guardian. Good Nature: The New Science of How Nature Improves Our Health, 2024
[2] Wikipedia. International Trade and Food Miles, 2024
[3] Wikipedia. Sustainable Food Systems and Local Agriculture, 2024
[4] SCB. "Labour Force Surveys (LFS), November 2023."
[5] Ingenjören. "February News from Ingenjören in English." 2025.
[6] SLU. "New Forms of Collaboration and Learning Are Being Tested in Malmö." 2024.
Image: Dark Matter Laboratories, 2025
Diagram: Dark Matter Laboratories, 2025



Visualisation by Ivana Stancic and Alex Hansten Dark Matter Labs



Malmö statistics

Since 2020, economic uncertainty has led to a slight decline in working hours across Sweden [4]. In Malmö some companies like miljömatematik have participated in pilots of the 4 day working week with promising results on employee wellbeing [5]. Botildenborg in Malmö exemplifies a hybrid contribution model by integrating urban farming with community engagement, offering programs like internships, vocational training, and intergenerational gardening to promote social inclusion, health, and sustainability [6].

How does this future look and feel?

By 2040, work has evolved beyond traditional roles. As rising global supply chain risks, climate challenges, and the need for stronger local resilience grew significantly in the end of the 2020's, Malmö became one of Sweden's frontrunners in pioneering innovative and bold solutions.

It all started with the city's mission to increase crisis preparedness and strengthen local supply chains leading to the launch of an urban rewilding program. Since the work required substantial manpower, it became a pilot project where the municipality subsidized part of the wages while companies would provide the workforce, building on the four-day workweek trend that gained momentum in 2025.

Malmö's generate district became the test bed for this model, where hybrid contribution contracts became a standard. To establish a presence in the attractive professional district, individuals and organizations had to commit part of their time to community-critical tasks such as gardening, local food and biomaterial

production or maintaining shared infrastructure and resources.

Today, this approach has expanded across the entire city, reshaping how residents perceive work and community. Hybrid contribution contracts now adapt flexibly to individual skills and passions, supported by platforms that connect people to projects blending personal growth with societal impact.

Residents proudly embrace their dual identities as professionals and active contributors of a resilient Malmö. Neighborhoods has become living networks of shared responsibility; community gardens supply fresh food to families and local cooperatives alike. Waste is nearly eliminated through local recycling, upcycling, and composting efforts, closing the loop in a truly circular economy.

Education focus on interdisciplinary learning, ecological restoration, technical skills, and collaboration. Malmö today stands as a global example. By blending innovative work structures with ecological stewardship, the city demonstrates that economic vitality and environmental resilience can thrive together.

Good for the Planet

From a planetary perspective, this approach supports sustainability by reconnecting economic activity with natural cycles and local resources. When people spend regular time engaged in local food cultivation or maintaining shared infrastructure, it reduces reliance on long supply chains, lowers carbon emissions, and helps regenerate the environment.

Good for Individuals

For individuals, this model offers meaningful engagement and a stronger sense of purpose. Participating in community-based activities fosters skills development, social connection, and wellbeing, as people contribute directly to the health and vitality of their immediate surroundings. It also allows diverse forms of contribution beyond traditional office or factory work, making participation more inclusive.

Good for Businesses

Businesses can benefit by integrating hybrid contribution models into their operations or corporate social responsibility strategies. Supporting employees or partners to spend part of their time on neighborhood needs can improve team cohesion, creativity, and employee satisfaction. Moreover, businesses that invest in local resource cycles, like urban farming, material reuse, or community workshops, help build resilient ecosystems that support both economic stability and social wellbeing.

HYBRID CONTRIBUTION MODELS

How can we make this happen?

In Sweden, urban lifestyles and conventional work structures often limit opportunities for physical activity and community engagement. Integrating hybrid contribution models where residents dedicate part of their workweek to activities such as urban gardening, infrastructure maintenance,

and community resource projects could be a pathway towards more healthy, resilient people and cities.

Municipalities and planners can support this vision through combining local self sufficiency goals with urban planning, employers can implement hybrid contracts and track wellbeing benefits, and community organizations can provide training, mentorship, and platforms for engagement.

Together, these measures help residents contribute meaningfully to their neighborhoods while improving mental and physical health, skill development, and supporting sustainable urban systems. Professional neighborhoods and innovation districts, such as Malmö’s Generate District, could serve as leading examples, demonstrating how hybrid contribution programs can combine social interaction, environmental stewardship, and economic participation.



Local self sufficiency targets

Micro-grants

Tax breaks for contribution

Subsidized urban plots

Mixed-use urban neighbourhoods

Education and training

Investment in shared infrastructures

Micro grants for urban production

POLICY

Set local targets

City governments can define targets for local production, ensuring urban agriculture meets a meaningful share of community needs. Clear goals incentivize participation, enhance food security, and support regional resilience.

4 day work weeks and new hybrid contribution contracts

Municipalities and employers can establish contracts integrating community-focused tasks, such as urban gardening or infrastructure maintenance, into regular workweeks. This strengthens local resilience, encourages citizen engagement, and promotes wellbeing.[1]

Ensure equitable access to participation

Cities can provide free or subsidized garden plots, tools, and training, ensuring residents across all neighborhoods can contribute to and benefit from hybrid contribution programs, fostering inclusion and social cohesion.

[1] 4 day working weeks are becoming increasingly popular. For instance, the Swedish company Sandqvist, als part of the company's strategy to improve employee wellbeing and attract talent 2023

GOVERNANCE

Local governance committees

City districts can create participatory committees where residents, businesses, and authorities jointly plan, prioritize, and evaluate community projects, fostering inclusive decision-making and accountability.

Monitor and report local production

Authorities can track local food and resource production and integrate results into city planning and CSR reporting. Transparent monitoring encourages broader participation and demonstrates measurable impact.

Track health and productivity outcomes

Employers and municipalities can measure health improvements and cost savings from employee participation in community projects. Data on reduced absenteeism, stress, or healthcare costs reinforces the societal and economic value of hybrid contribution models.

TECH

Digital participation platform

Currently, coordination of community projects in Sweden is mostly manual or informal. Developing a digital platform to match residents’ skills and availability with local needs would streamline participation, increase engagement, and make hybrid contribution models scalable

Use data for planning and impact assessment

City authorities can deploy sensors and GIS mapping to monitor urban agriculture, participation rates, and resource use. Data-driven planning improves efficiency and demonstrates impact.

Incorporate gamification and local incentives

Platform designers can implement point systems, rewards, or social challenges to encourage participation and sustain engagement in community projects.

FINANCE

Tax incentives for CSR integration

National and local authorities can provide tax breaks to businesses whose employees contribute to community sustainability projects, aligning private incentives with public resilience and societal goals.

Micro-grants

Municipalities and foundations can offer micro-grants for community gardens, upcycling, or shared infrastructure. Funding local initiatives stimulates civic engagement, social cohesion, and community ownership.

Investment in shared infrastructure

Public and private actors can co-invest in tools, greenhouses, and flexible urban farming infrastructure, enabling scalable, sustainable hybrid contribution activities that support long-term participation.

DESIGN

Mixed-use neighbourhoods

Urban planners and municipalities can design neighborhoods and public areas that combine housing, urban gardens, workshops, and recreational spaces.

Indoor and alternative facilities

Cities and community organizations can provide indoor gardens, community kitchens, maker spaces, and vertical farms that enable year-round participation.

Maintainable green infrastructure

Urban planners and municipalities can integrate green roofs, community orchards, pollinator gardens, and green corridors that require active care. Residents maintain and benefit from these features, supporting biodiversity, local food production, and environmental stewardship.

BEHAVIOUR

Education and training

Municipalities and NGOs can offer structured workshops in gardening, urban agriculture, and circular resource management. Accessible training increases participation, skill development, and project effectiveness.

Mentorship programs

Experienced participants or companies can mentor new residents and youth to spread knowledge and engagement in hybrid contribution models.

Promote community engagement campaigns

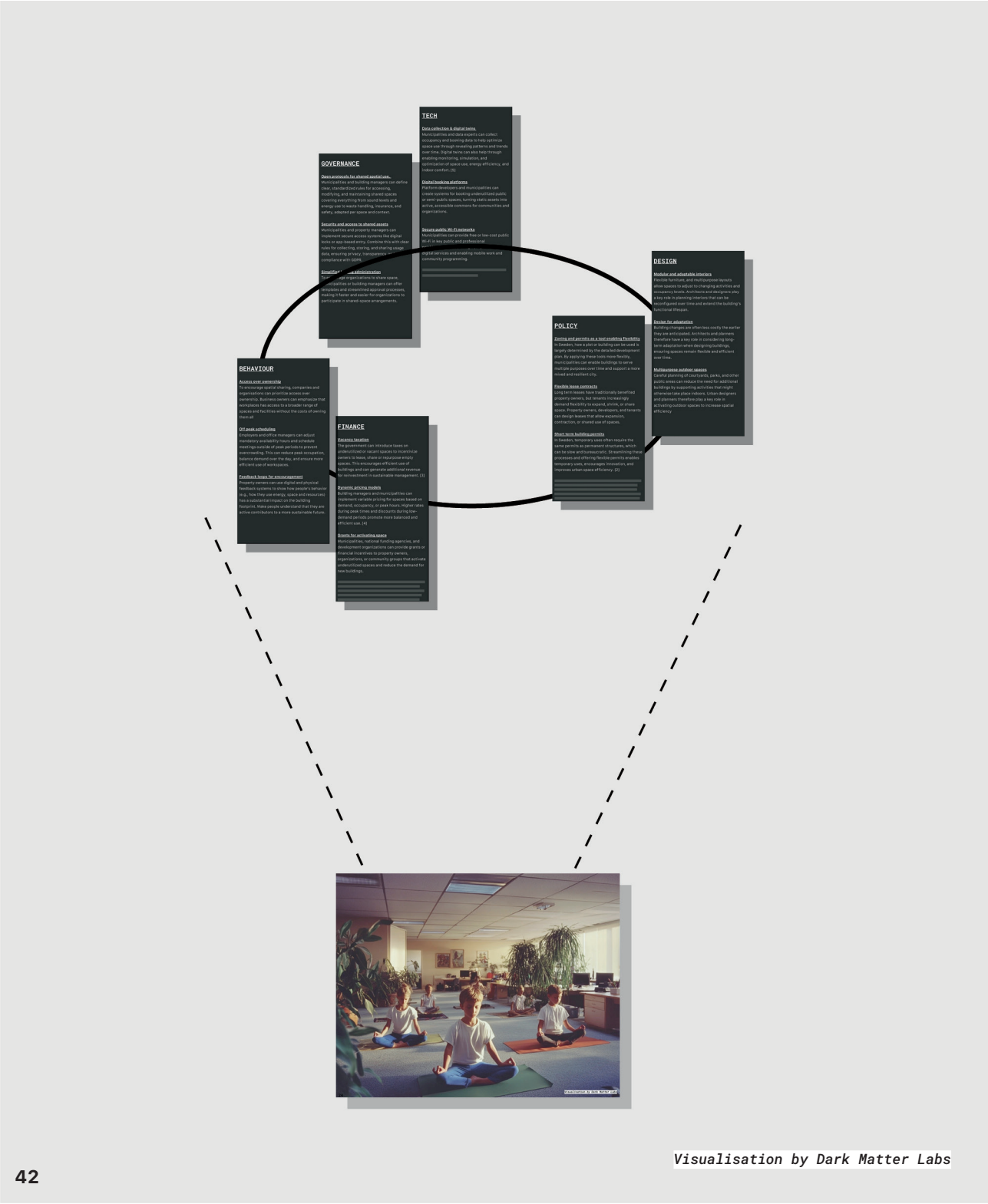
Municipalities and civil society can highlight successful local projects, inspiring wider participation and cultivating a culture of shared responsibility.



4. FAST-TRACKING DEEP SHIFTS:

**HOW CAN WE RE-GROUP
TO DRIVE THESE DEEP
SHIFTS IMMEDIATELY?**

ALLIANCES FOR CHANGE



Everyone is Needed for Change to Happen

The tools introduced in this paper are designed to bridge the gap between intention and impact, offering concrete methods for driving transformation across different system dimensions. They are not blueprints for a single solution, but invitations to act.

Creating enabling conditions for change means recognising that no one can do it all, but everyone can contribute. Small, purposeful actions—whether individual, organisational, or civic—can act as sparks that unlock wider shifts. When connected across an ecosystem, these efforts amplify one another, breaking through rigid structures, challenging outdated norms, and creating momentum for innovation to thrive.

This requires reflection on the role you play within the systems around you. Whether as policymaker, designer, entrepreneur, community organiser, or neighbour, your choices carry influence. Understanding where you can push, support, or connect—where you can start conversations or form alliances—helps identify the levers that make change possible.

The following pages present a set of co-created pathways and practical tools. Some have already been tested, others remain speculative, but each represents a way to act across different impact levels. We encourage you to also bring forward your own ideas and resources, combining them with those of others to strengthen the conditions for systemic change.

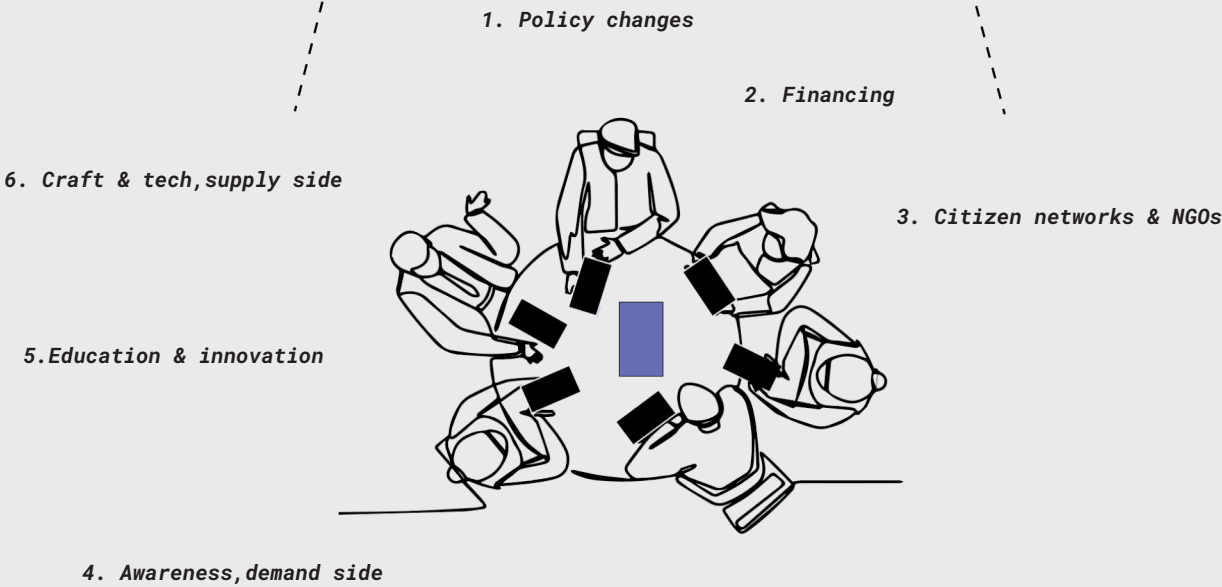
1. One of the desirable futures:

2. What are the financing, cultural, tech, design and other infrastructures that will enable and generate this desirable future?

3. Who needs to be included to successfully fast-track desirable futures?

The dark matter - or - the “invisible” structures—such as governance models, legal frameworks, financial systems, financing models, contracts, technological solutions, cultural norms, awareness building and education system, civic engagement and other invisible systems—that shape our societies.

These underlying systems, though not immediately visible, significantly influence societal outcomes and are the primary focus of Dark Matter Labs’ work.



This publication explores how cities can respond to the interlinked crises of climate change, biodiversity loss, social stress, and economic instability by reimagining the way we work, live, and build.

Developed through research, foresight workshops, and cross-sector collaboration, it maps today's planetary, human, and business challenges and translates them into four regenerative pathways: maximising use of the existing, creating a collective bioeconomy, shifting comfort standards, and hybrid contribution models.

The paper highlights that no single actor can solve these challenges alone—real transformation emerges when municipalities, businesses, communities, and citizens act together. It offers practical tools across policy, finance, design, governance, and behaviour, helping to turn systemic insights into concrete action.

More than a vision, this is a call to fast-track change: to see space, resources, and relationships as shared assets, and to shape neighbourhoods where planetary health, human well-being, and business vitality reinforce each other.

The Future is Here

This work is part of The Future is Here – a fast track from imagining to implementing regenerative futures. In this initiative, as part of ShiftSweden, Dark Matter Labs, Media Evolution and The City of Malmö's Generate District development initiative engage municipalities, businesses, researchers, civic actors, and innovators to co-envision and prototype pathways for systemic change. Two pillars guide the work: a science-based framing of what is truly needed for a regenerative future, and the creation of strong alliances to accelerate action.

This publication has been produced by Ivana Stancic and Alexandra Hansten with valuable input from Ulrika Forsgren Högman from the City of Malmö and Reeta Hafner, Martin Thörnkvist from Media Evolution, as well as the interdisciplinary team across Dark Matter Labs.

This work extends Dark Matter Labs ongoing mission XO (Extraction Zero) to reshape the economy of Europe's built environment, led by Ivana Stancic and Indy Johar.

About Dark Matter Labs

Dark Matter Labs is a multidisciplinary organisation of 80 people united by a passion for applying innovative approaches to complex societal challenges. With expertise spanning policy, law, urban design, architecture, engineering, ecology, finance, awareness-building, and organisational culture, we work in fluid teams to bring the multidisciplinary capacity required for the complexity of themes we explore.

We work closely with a global ecosystem of partners and funders, from policy and innovation agencies such as the European Commission, European Environment Agency, UNDP, Vinnova, Climate-KIC – to philanthropic foundations such as Laudes Foundation, Bloomberg Philanthropies, Lankelly Chase, Built by Nature and others.

Some of our other Swedish projects include Rapid Transition Lab with the Stockholm Resilience Centre, Vinnova Protein Shift Innovation Platform with RISE and Krinova, Universal Basic Nutrient Income Pilot in Malmö. Through Viable Cities, we support system demonstrators such as CoAction Lund, integrating clean mobility and energy, STOLT Stockholm, transforming inner-city land use and travel patterns toward climate-positive futures, in Västerås, we co-developed the Cornerstone Indicators, participatory metrics of community wellbeing.