BARCELONA PROTOCOL

European Action Plan for the CITY and the EARTH
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The future of the earth, its ecosystems, and our own civilization will be decided in and by our cities. Only if we ensure that the material, means, and methods with which we build and manage our cities are primarily drawn from regionally available and sustainably managed biological resources can we transform our urban settlements from culprits of climate change to catalysts of eco-systemic healing. The vision for a regenerative built environment has been described in the 2022 Charter for the City and the Earth, presented in Rome. Now is the time to put this vision into reality. The Barcelona Protocol calls on European cities to take a lead.

SHORT-TERM MEASURES
Signatory cities commit to the immediate implementation of the following actions:

CO2 CENSUS – stage one
Conduct a city-wide census of greenhouse gas emissions from all existing public and private buildings to establish a baseline assessment and benchmark. Institute investment strategies and establish a critical time frame for the drastic reduction of emissions from existing building stock and the elimination of all future building emissions.

DEMOLITION MORATORIUM
Halt the destruction of existing buildings to allow for assessments of alternatives such as upgrades, retrofits, adaptations or expansion/densification.

NEW BUILDING GUT CHECK
Pass regulations requiring emissions declarations by all construction projects seeking building permits that quantify their production and operational stage carbon footprint. Establish a critical transition period in which future lifecycle emissions must be zeroed out.

MICROCLIMATE MONITORING
Monitor, measure, and publish air temperature and air quality of the city and impact assessment of urban heat island effects and their mitigation. Encourage citizen participation, shared risk assessment and management through crowd-sourced, application-based reporting programs.

PUBLIC GREEN PROCUREMENT
Tie the tendering and approvals of all public construction and renovation projects to specific carbon targets and reward regional building products that promote low carbon solutions.

NEXT STEPS ALONG THE DECARBONISATION PATHWAY
In a second stage of building decarbonisation, each city will develop an eight-year road map that defines activities, identifies instrumental stakeholders, and establishes clear metrics for success supported by municipal budgets and funding opportunities for each of the proposed measures:

CAREFUL CITY REPAIR (existing buildings and infrastructure)

CO2 CENSUS – stage two
Refine the precision of the stage one census and expand its scope to include infrastructure and construction waste emissions, as well as carbon stocks of bioregional land areas.

CARBON TRIAGE
Identify the most significant emission sources within existing urban building stock, set reduction targets and establish subsidy programs that incentivize biomaterial and circular renovation and upgrade in the repair of poorly performing building assemblies, and the substitution of low emission heating, cooling, and ventilation systems.

CO2 BUDGETS
Based on the results of the CO2 census, establish strict budgets for the emissions of urban and suburban buildings and construction sector activities with progressive annual targets that achieve net zero emissions within an established timeframe. Review and adapt building regulations to require the decarbonization of existing buildings through regulatory restrictions and requirements.

NET ZERO CARROTS
Create, develop and promote incentives through public and private financial investment programs and land-use instruments such as zoning exceptions and bonuses for low or no carbon projects.

CARBON POSITIVE CONSTRUCTION (new building and infrastructure)

NO WASTE CONSTRUCTION
Eliminate construction waste by adopting a regulatory framework that favors stringent design strategies capable of demonstrating material optimization and prefabrication techniques. This includes industrial manufacture of building components that direct manufacturing byproducts into second uses.

LIFE CYCLE DESIGN
Require cradle to cradle life cycle assessments for demonstrative building project with net zero or carbon positive results from raw or reused material and energy sourcing to end-of-life.

DESIGN FOR DURABILITY, DISASSEMBLY, and REUSE
Require all new buildings seeking regulatory approvals to demonstrate a minimum 75-year lifespan, end-of-life disassembly methods, and scenarios for system, component, and material reuse and recycling. Require building product manufacturers to support end-of-waste objectives through product recovery and reuse programs.

CARBON BANKING
Promote whole life cycle decarbonization strategies that favor construction based carbon storage through biogenic material substitutions across the building assembly to include primary structure, interior partitioning, finishing and fixtures, insulation and cladding systems. Create scenarios for the transfer of those bio-material storages into second building or similarly durable product lifecycles.

OPEN SPACES and BIODIVERSITY

CITY AS A FOREST
Infiltrate the city with nature. Identify former brownfield sites and decommissioned infrastructural corridors to incorporate and promote urban photosynthesis of large plant biomass for carbon storage and oxygen generation, shading, vapor transpiration, and cooling.

TALKING TREES
Establish a continuously updated inventory of urban tree, forest, and green spaces, making use of innovative digital and IoT technologies, to implement effective long-term monitoring and planning for planting, managing, and protecting city trees.

BIO-SUBSTITUTIONS for CONVIVIAL URBAN MOBILITY
Replace impervious surface areas devoted to the use of automobiles with permeable surfaces and biologically productive soils and living plant biomass to reduce heat island effects, increase storm water filtration, and create inhabitable, walkable spaces and wildlife corridors.

ECOSYSTEM SERVICES
At both the zoning and building design scale, create frameworks and recommendations for the optimization of natural systems of energy generation, passive heating, cooling, and ventilation by maximizing the opportunities of building and district context (winds, solar orientation, etc.)

ENRICHING BIODIVERSITY
Promote the eco-systemically rich and sustainable distribution of tree and other plant species within urban and peri-urban areas of the city as habitat and green infrastructure, reserving an ample representation of native flora capable of adaptation to changes in local climate and environmental conditions.

BIOREGIONS

CARBON SINK RESTORATION
Develop regional land use strategies and forest and agricultural management plans to increase by at least 30% Carbon sequestration capacity across working farm and forest lands, forest and wetland preserves that surround the city.

NATURAL ECOSYSTEM ACCESS
Advance closer-to-nature management strategies for at least 50% of the forest area in the region to ensure biodiversity conservation and ecosystem health benefits across society, using innovative technologies for monitoring and planning of forest ecosystem resources that promote and sustainably generate wood building products for application in dense urban construction.

NATURAL CAPITAL INVESTMENT
Develop industrial infrastructure through regulation and incentives based on LCA carbon targets that encourage the use of wood sourced from regional forests. Close the virtuous supply cycle that prioritizes the restoration and expansion of bioregional forests, utilizes agricultural by-products, and builds the biomaterial value chain to help form the carbon positive city.

CROSS-CUTTING ACTIONS

CREATIVE GOVERNANCE AND FINANCE
Form inter-departmental management teams to coordinate public spending on actions and launch experimental trans-sectoral pilot projects to form feedback loops, gather data, and promote effective and durable examples of climate positive action.

EXPERIMENTATION
Support technical and social innovation and learning through fast permit processes and exemptions from planning rules to promote nature-based approaches.

CARBON POSITIVE KNOWLEDGE BUILDING AND EXCHANGE
Promote and expand interdisciplinary collaboration and knowledge sharing among all stakeholders and peers. Ensure access to professional education and/ or workforce and post-professional skills programs that highlight the value and mainstream the use of biogenic material assemblies and circular economic construction, repair, and deconstruction/reuse techniques, and carbon impact assessment tools.

ACTIVE AND INFORMED GREEN COMMUNITIES
Implement life-long learning programs to diffuse awareness about benefits of urban forests and their risk management. Establish a Municipal Tree Board that ensures the ongoing care of trees, forests, wetlands, and other green spaces within municipal boundaries by encouraging public-private partnerships.

ACTION FRAMEWORK
This action plan should be embedded within a broader transformation framework for urban-rural territorial and strategic planning as well as economic decarbonization. It should be detailed and implemented with the broad participation of all citizens, all relevant levels of government and key business stakeholders and it should make use of processes and methodologies consistent with local/ regional development. Wherever possible, digital tools should be used to make actions transparent and accountable. The implementation of experimental demonstrators and prototypes in partnership with researchers and practitioners should accompany measures.

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