

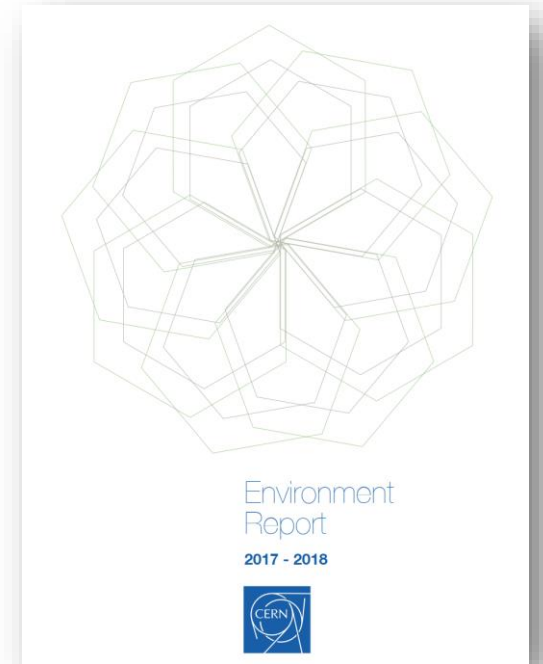
# CERN'S GREEN VILLAGE Initiative

Mar Capeans (*SCE Dept. Head*)

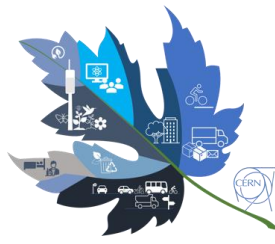
Pablo G. Tello (*CERN EU Office*)

# Societal Contributions: Part of CERN's Mission

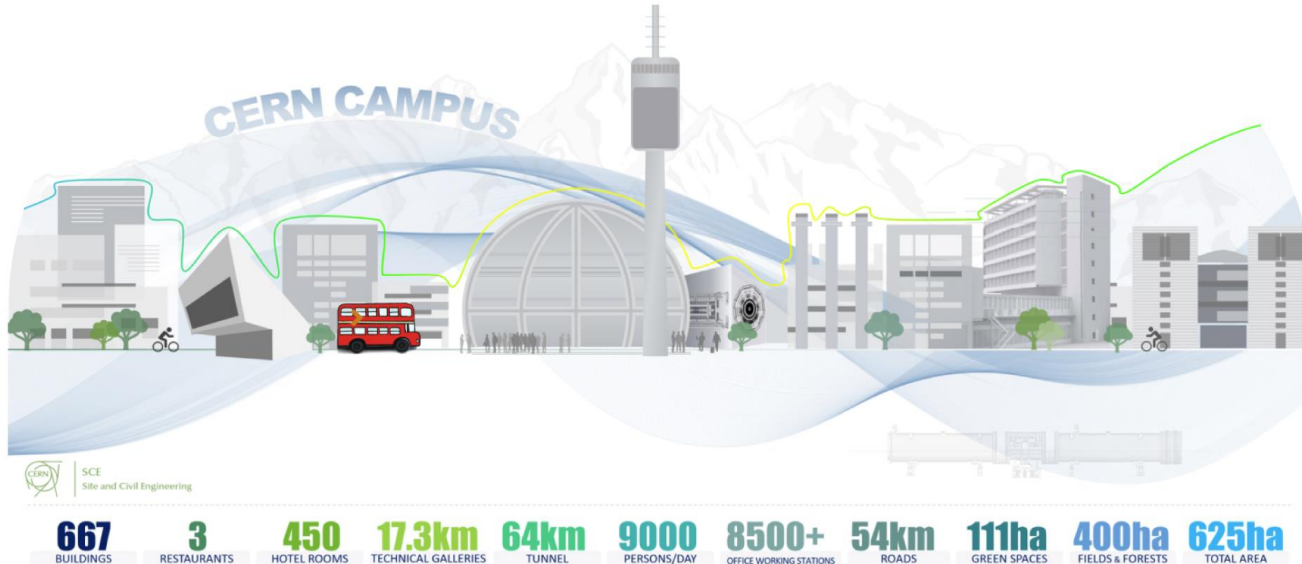
- **CERN Commitment:** “A role model for an environmentally-aware scientific laboratory.” - *Fabiola Gianotti*
- **Objectives:** Knowledge expansion, efficiency improvements, cost reductions, community engagement, science diplomacy.
- **Aligned with the UN Sustainability Goals (SDGs):** Particularly focused on *SDG7 (Clean Energy)* and *SDG9 (Industry, Innovation and Infrastructure)*.



# Green Village: Value Proposition for Society



- **Dynamic Collaboration:** CERN as a demonstration partner in Horizon Europe projects or as a testbed for sustainable technologies by companies and start-ups.
- **Access to Resources:** Benefit from our extensive infrastructure, expert personnel, and international network.
- **Outreach Potential:** Over 100,000 annual visitors and cutting-edge facilities for impactful dissemination & exploitation activities.
- **Agile Decision-making:** As an international organization, CERN's autonomous rules enable swift decisions, bypassing protracted permitting procedures.
- **Neutral & Optimal Venue:** An ideal, impartial setting for executing single or multi-partner pilots and demonstrations.



# CERN's Green Village Initiative



- **A Village-Size Laboratory:** Embracing CERN's environmental roadmap with scalable industrial solutions and the talent of young innovators.
- **Agile & Flexible:** Swiftly adapting and evolving to address sustainability challenges.
- **Ideation & Experimentation Space:** A sandbox for developing cutting-edge sustainable technologies.
- **Platform for Engagement with Young Innovators:** Engaging with the brightest minds to foster eco-friendly innovation (CERN IdeaSquare <http://ideasquare.cern/> ).
- **Showcase for Innovation and Societal Engagement:** Demonstrating how science and technology can make the world greener.



<https://sce-dep.web.cern.ch/cerns-village-home>

Science and Civil Engineering Dept. @ CERN

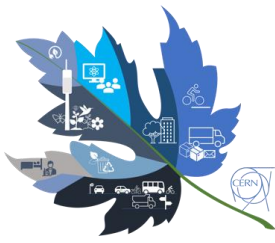


# Green Village: Divers Opportunities



- **Expert Talent & Computing Power:** Leverage CERN's seasoned engineering and computing scientists, along with computing capacity for expedited, valuable feedback.
- **Knowledge Exchange Hub:** Engage with the innovative minds of multidisciplinary students through IdeaSquare's project-based course, unlocking creative solutions and novel applications.
- **Versatile Testing Infrastructure:** Utilize CERN's diverse assets including roads, tunnels, and roadside amenities, supported by an active bicycling community.
- **Dynamic Building Demonstrations:** Showcase advancements in structural, insulating, or energy-efficiency improvements across varied building types, from high-traffic facilities to technical infrastructure hubs.
- **Autonomy & Flexibility:** Benefit from CERN's agile, streamlined processes as a self-governing organization, instilling confidence in your demonstrations.
- **High Visibility & Global Reach:** Present research results to an audience of over 100,000 visitors, including political dignitaries, shareholders, and the public.
- **Bountiful Green Testing Ground:** Explore CERN's extensive green landscapes with rich biodiversity for deploying monitoring sensors.
- **EU Grant Funding Partnership:** Collaborate with CERN, a leading Research Infrastructure, in EU grant funding programs as a demonstration partner or coordinator.

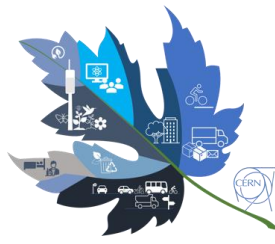
# Green Village: Focus Areas for Collaboration



## *Main conditions:*

- **Technology Maturity:** Must be beyond proof-of-concept (TRL 4-6).
- **Sustainability Focus:** Address a clearly identified sustainability challenges at CERN.
- **Timeliness:** Should be feasible in reasonable timescale.
- **Acceleration of sustainable solution**
- **Realistic Testing Environment:** Should necessitate a city-like environment to accelerate the sustainable solution.
- Focus on **research collaboration**; not procurement.
- **Compliance:** Must adhere to CERN's Health, Safety, and Environment (HSE) standards and access rules.

# Green Village: First Project Example



## Direct Collaboration



### Example: AQM

- Lead: Univ. Witwatersrand (SA)
- Demonstration: CERN
- Duration: Approx. 3 years
- Status: Collaboration Agreement approved by CERN Legal Service

### *CERN Contribution:*

Air Quality Monitoring: Placement & testing of air quality nodes & dashboard using low-cost air quality sensors, IoT and machine learning to provide real-time air quality measurements and predictions.

### Benefits & Compliance:

- Benefits CERN air quality monitoring needs.
- Research oriented. Meets Global South needs.
- Univ. Witwatersrand has collaboration with ATLAS + Univ. Valencia and Nordic Semiconductors are part of CMS collaboration.



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Thank you.

Questions?