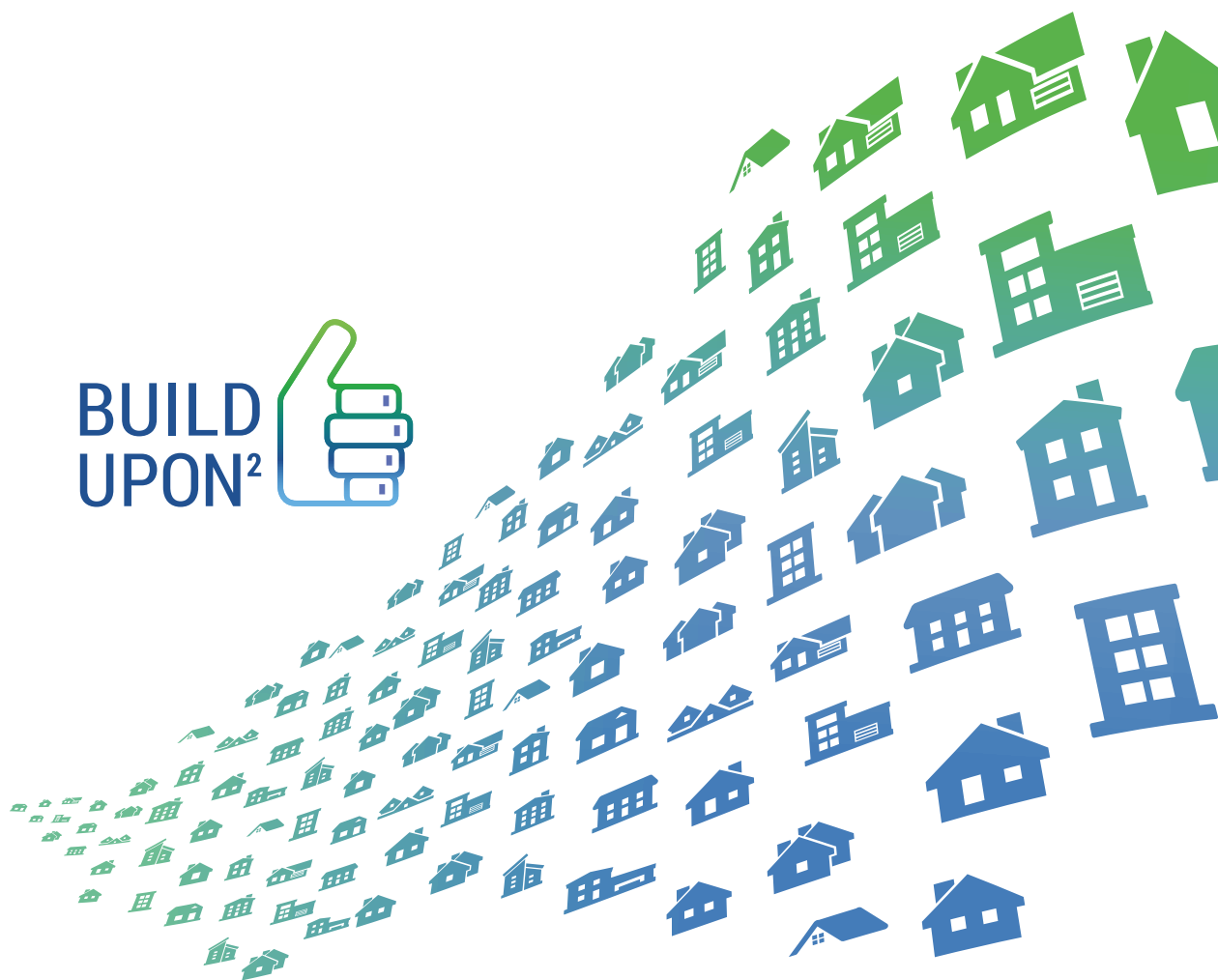


# Starting a Renovation Wave

April 2020

BUILD  
UPON<sup>2</sup>



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**"Reduction of CO<sub>2</sub> emissions and increase in the resilience of the territory, these are the objectives of Padua to be aligned with the European Union. A new business model to give impetus to the renovation of the property stock and the energy upgrading of public buildings."**

- Arturo Lorenzoni



Deputy Mayor  
Municipality of Padova



Project Manager  
Urbanism and Public Space  
BCNecologia  
@BCNecologia

**"If we want to scale building renovation we have to view buildings as part of the city's overall ecology, and explore how we can transition whole districts efficiently towards net zero carbon."**

- Dr Cynthia Echave





# The decade of climate action must start with a renovation wave

Europe has seized its 'man on the moon' moment, inspiring the seemingly impossible to become possible. In setting out a bold vision to become the first climate neutral continent, the EU is looking to inspire a global 'space race' to net zero emissions.

One of the mission critical pathways to reach this goal is through Europe's buildings. Varied in age and style, and so hugely inefficient in their use of energy this contributes towards 36% of the region's emissions. The EU remains a world leader in its building energy codes, but rapidly scaling deep building renovation to deliver needed emissions savings remains one of the most wickedly complex societal, technical and financial challenges of our time.

This is why the new European Commission has set its sights on creating a 'Renovation Wave'. Rather than a sonic boom setting off shockwaves from Brussels across the region, this will be a wave that builds up in strength from the local level. Led by cities and companies who have the vision to join the EU's space race, the renovation wave must be supported at national level by the long-term national renovation strategies governments must deliver under EU law.

As the last decade ended, the BUILD UPON<sup>2</sup> project hosted a unique European Leaders' Summit to begin building the commitment to make the wave a reality. This short report highlights how leaders are committing to a net zero emissions building stock - and we're calling on you to join them...

## Work with us

BUILD UPON<sup>2</sup> is the world's largest collaborative project on building renovation. It is Europe's foremost effort to establish a framework for national renovation strategies and build the commitment of local governments and companies to net zero emission buildings by 2050. [www.worldgbc.org/build-upon](http://www.worldgbc.org/build-upon)

### Cities, Regions, Companies

To commit to net zero carbon buildings.

### Countries

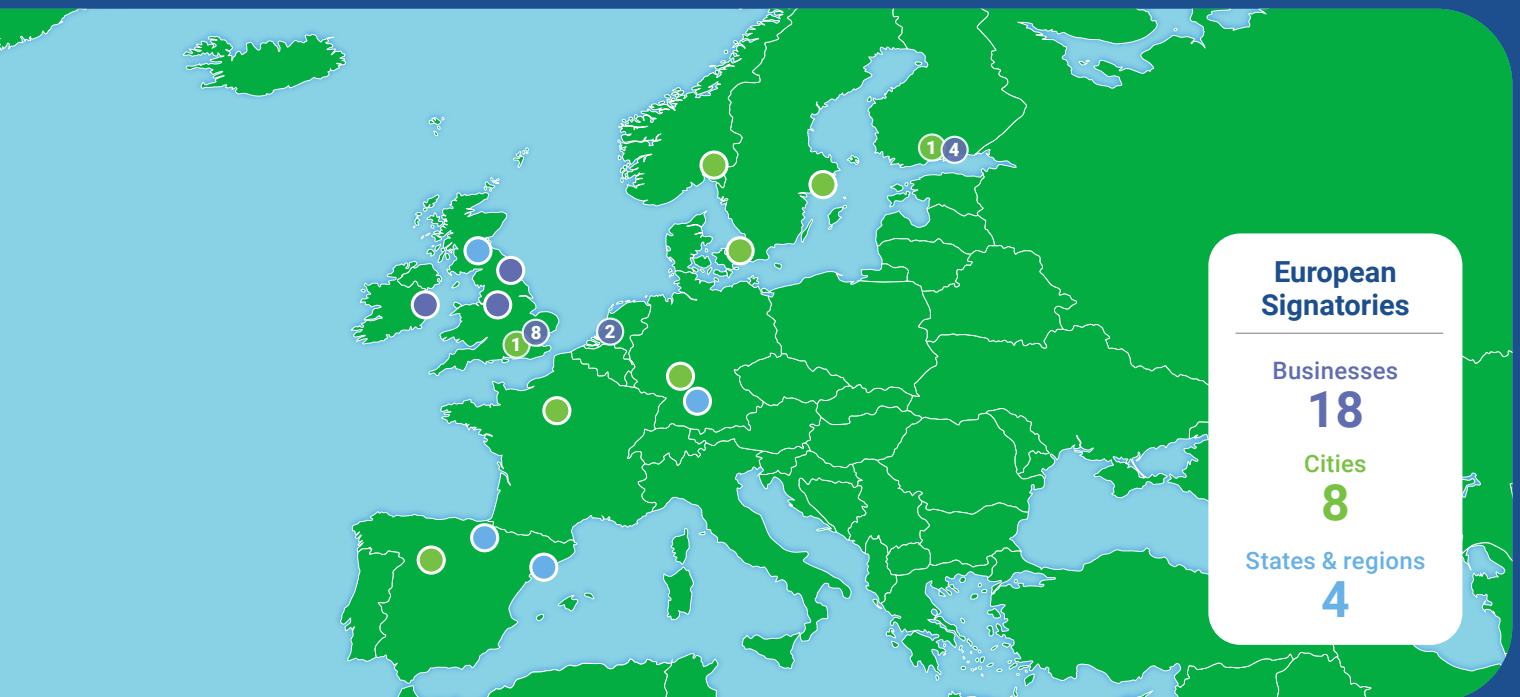
To deliver strong national renovation strategies, supporting these leaders and incentivising laggards

We are calling on you!

BUILD UPON<sup>2</sup> 

# City leadership

At the BUILD UPON<sup>2</sup> European Leaders Summit Valladolid and Helsinki became the two latest cities to sign the Net Zero Carbon Buildings Commitment - joining a global coalition of 28 cities, 48 companies and 6 states and regions.



The Net Zero Carbon Buildings Commitment (the Commitment) challenges cities, states, regions and companies to reach net zero operating emissions in their own buildings by 2030. Many of the city signatories have also committed to ensuring all buildings in their cities reach net zero by 2050 by setting policy pathways towards this goal.

By setting ambitious 'absolute' targets, the Commitment aims to maximise the chances of limiting global warming to below 2 degrees, and

ideally below 1.5 degrees, by drastically reducing operating emissions from buildings.

The Commitment provides a framework for organisations to develop globally ambitious yet locally relevant, flexible and universally viable solutions for their portfolio to both reduce energy demand and achieve net zero carbon emissions.

Join the Commitment:  
[www.worldabc.org/thecommitment](http://www.worldabc.org/thecommitment)

## The five stages of the Commitment

- |   |              |
|---|--------------|
| 1 | Commit       |
| 2 | Disclose     |
| 3 | Action       |
| 4 | Verification |
| 5 | Advocate     |

All buildings within direct control of the organisation to operate at net zero carbon by 2030, and all buildings by 2050





“The climate challenge is huge and Valladolid has demonstrated its ambition to improve citizens’ lives by improving our buildings. We are working on innovative energy efficiency projects in public and private buildings, retrofitting our buildings and using solar energy. Becoming the first city in Spain to sign the Net Zero Carbon Buildings Commitment is a great opportunity to demonstrate what must be done.”

**Óscar Puente Santiago,  
Mayor of Valladolid**

Valladolid is a BUILD UPON<sup>2</sup> Pilot City and first Spanish signatory of the Net Zero Carbon Buildings Commitment

## How Valladolid will get there...



325,000 inhabitants

Warm-summer mediterranean climate

### Existing / Planned Regulations & Roadmaps

- ☒ Developing a Sustainable Energy Plan since 2011. Current target to achieve 20% reduction of CO<sub>2</sub> emissions by 2020
- ☒ Pilot city for EU projects (including Remourban Project, Cityfield and R2Cities) that target energy consumption reduction in households
- ☐ Develop a new General Urban Plan and new Atmosphere Protection Ordinance in 2020 that favours district heating and renewable energies in new buildings, as well as the energy efficient rehabilitation of existing households
- ☐ Develop a roadmap in 2020 that progressively achieves energy rehabilitation rates in the order of 4,000 homes per year between 2020 – 2050
- ☐ Lead the development of a Carbon Neutrality Protocol for cities in Metropolitan Area
- ☒ Signatory of Covenant of Mayors Initiative since 2010
- ☒ Fiscal/financial incentives provided for installation of solar energy in buildings and for replacement of inefficient heating systems

### Municipal Buildings

- ☒ Implementing energy efficiency projects across municipal facilities and installing PV onto city-owned buildings
- ☒ 100% eco-labelled electricity procured for municipal buildings
- ☒ Monitoring performance of all municipal buildings and subsequently developing efficiency and decarbonisation measures such as thermal envelope retrofits and smart thermostats
- ☐ Create a condition for the lease of buildings that Valladolid City Council will occupy to be net zero carbon in 2030
- ☐ Annual upgrade of lighting and heating systems to 10% of municipal building stock each year
- ☐ Draft a project pipeline in 2020 to increase the area of PV installations on municipal buildings to 100% by 2030
- ☒ Benchmarking energy, waste management, and water consumption in municipal buildings
- ☒ Offering non-financial incentives for municipal workers to achieve best results in building performance

“Climate change is the most crucial challenge of our time and buildings are at the heart of the fight against it. The City of Helsinki is committed to taking very ambitious measures in its building stock to reduce heat consumption and increase the use of renewable energy. About 45 percent of Helsinki's emission reduction potential is related to buildings, so for us it's the natural place to take climate action.”

**Jan Vapaavuori,  
Mayor of Helsinki**

Helsinki is the first Finnish city  
signatory of the Net Zero Carbon  
Buildings Commitment



## How Helsinki will get there...



600,000 inhabitants

Humid continental climate

### Existing / Planned Regulations & Roadmaps

- ☒ City of Helsinki has set a target to be carbon neutral by 2035. The target includes goals for emission reduction of 60% by 2030, and 80% by 2035 with the remaining 20% of emissions offset
- ☒ The Carbon-neutral Helsinki 2035 Action Plan sets out 147 specific measures across 8 sectors to be implemented to achieve 2035 target
- ☒ Helsinki Climate Watch is a digital real-time platform that tracks progress of the Helsinki Climate Action Plan
- ☐ An energy renaissance programme will be prepared to develop guidelines and provide technical support to improve the energy performance of the existing private building stock and increase uptake of renewable energy
- ☒ Helen, a City-owned energy company producing district heat in Helsinki, has committed to being carbon neutral by 2035 and is exploring options for substitution of fossil fuel energy sources with renewables
- ☒ Helen has also set reduction targets of 30% for consumption of district heating and 20% for total heat consumption

- ☐ Launch global one million euro Helsinki Energy Challenge to identify solutions to achieve full decarbonisation of district heating production in Helsinki
- ☐ Developing enhanced building performance requirements for obtaining a permit to build

### Municipal Buildings

- ☒ City of Helsinki energy efficiency targets for municipal buildings requires E-factor for new non-residential premises to be 20% lower than national code
- ☒ Renovations of existing non-residential buildings must achieve an E factor that is 20% lower than existing performance
- ☒ All new residential apartment buildings built by the City of Helsinki will achieve an EPC rating of A (75kWh/m2)
- ☒ Renovations of existing residential buildings must achieve an E factor that is 25% lower than existing performance
- ☒ Heavily investing in locally produced renewable energy for municipal buildings with targets to achieve 15% contribution from solar and geothermal within portfolio by 2035

# Supporting city and national renovation strategies

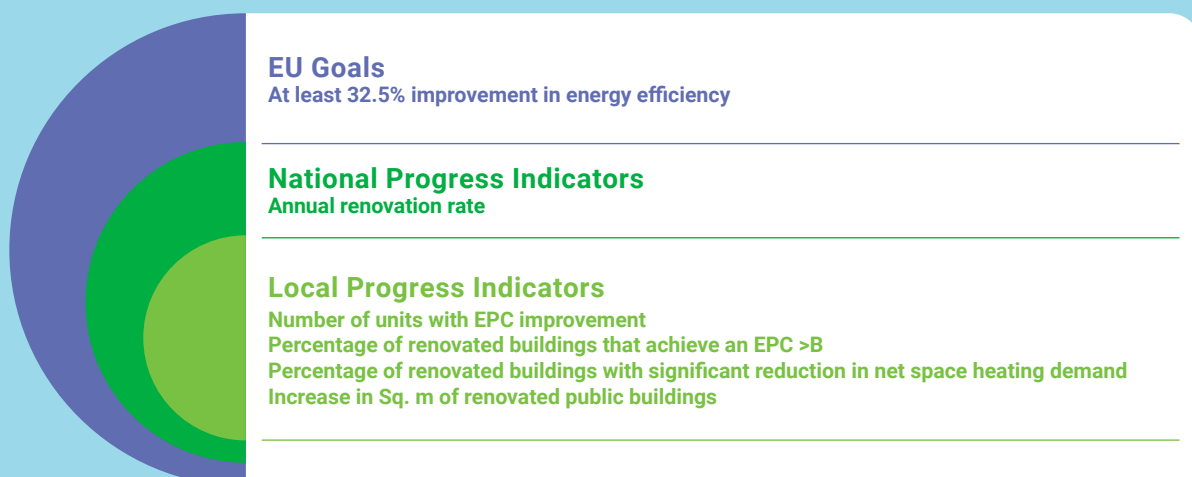
The 'Renovation Strategy Impact Framework' being developed by the BUILD UPON<sup>2</sup> project will provide cities with a practical tool for monitoring and scaling local renovation initiatives - which is also aligned with national and EU policy requirements.

It will contain a set of milestones and measurable progress indicators that enable cities to understand the environmental, societal and economic impact of their renovation initiatives, by capturing this data in a structured way. The framework will thus enable cities to evaluate which energy renovation initiatives are generating impact and to make the case for scaling EU, national and broader investment in the renovation programmes that deliver the outcomes that are most important to their communities.

This will also enable national governments and the European Commission to be able to better identify energy renovation best

practice and gaps as well as how local initiatives contribute to national targets and policy objectives.

At the summit, city representatives, national authorities and industry leaders came together to shape the design of the framework. These discussions focused on the most relevant environmental, economic and social milestones/goals to be included in the framework, and the most relevant national and local progress indicators needed to track progress against these milestones. The feedback from this session is being used to inform a beta version of the framework which will be tested by 8 pilot cities across Europe in summer 2020.



If your city is interested in receiving renovation strategy support from the BUILD UPON<sup>2</sup> project and piloting the impact framework, we want to hear from you! Contact [europaeworldgbc.org](mailto:europaeworldgbc.org) to be put in touch with a local member of the project team.



# Corporate leadership

At the BUILD UPON<sup>2</sup> European Leaders Summit a host of private sector leaders announced their signature of the Net Zero Carbon Buildings Commitment. Here is a snapshot of how some of them plan to reach this ambitious goal, with a notable trend of leaders looking beyond energy savings alone, towards wider lifecycle impacts of their buildings programmes.

## Grosvenor



1,475 buildings  
2,724,256 m<sup>2</sup> total floor area  
42,237 tCO<sub>2</sub>e portfolio carbon emissions  
565 employees

Grosvenor Group is one of the world's largest privately owned property businesses, developing, managing and investing in property in over 60 cities around the world. Their purpose is to improve properties and places to deliver lasting commercial and social benefit. This means understanding cities and local communities, responding to global trends and driving change.

### 1 Commit

Commit to all buildings within direct control, including historic listed buildings, to operate at net zero carbon by 2030. Grosvenor will work towards all buildings directly and indirectly-managed, being embodied and operational net zero by 2050.

### 2 Disclose

Expand longstanding approach to measuring and assessing asset and portfolio energy demand and carbon emissions, disclosing whole building data for energy, water, waste and construction emissions using best practice industry benchmarks, including GRESB and the Real Estate Environmental Benchmark where relevant.

### 3 Act

Develop and implement a decarbonisation roadmap outlining key actions and milestones for whole life carbon emissions. This includes operational carbon (in terms of energy efficiency and renewables), and also embodied carbon to achieve the lowest whole life emissions.

### 4 Verify

Verify enhanced energy performance, reduced carbon emissions and progress towards net zero carbon assets and portfolio via third party verification.

### 5 Advocate

Demonstrate leadership by advocating, collaborating, researching and raising awareness across our value chain to support the wider transition towards net zero carbon buildings. Inspire industry through bold targets for net zero embodied carbon and scope 3 emissions by 2050.



## YLVA



8 buildings  
90,000 m<sup>2</sup> total floor area  
2,050 tCO<sub>2</sub>e portfolio carbon emissions  
30 employees

Ylva is the asset manager of the Student Union of the University of Helsinki, meaning the business is owned by nearly 30,000 future-makers. Ylva's goal is to contribute to the construction of an international, sustainable city of science and finance through their property and financial investments in the real estate, hotel and restaurant sector which have a total portfolio value of USD\$500 million.

### 1 Commit

Committed to owning, occupying and developing new and existing buildings to operate at net zero carbon by 2025.

### 2 Disclose

Disclose audited energy consumption and Scope 1 and 2 greenhouse gas emissions at asset and portfolio level via annual reporting.

### 3 Act

Implement energy efficiency measures including achieving an EPC Rating of A for all new developments. Upgrade building systems and automation within existing assets to enable energy-efficient and predictive operations. Implement building-integrated energy production and continue to procure renewable electricity (100% Finnish wind) for portfolio.

### 4 Verify

Undertake third party certification to LEED Gold or Platinum level for at least one third of assets. For remaining assets, undertake independent third party verification. Publicly disclose assured portfolio level data through annual reporting.

### 5 Advocate

Ylva aims to accelerate industry-wide transformation through ambitious actions including disclosure of Scope 3 emissions, climate neutral spaces for tenants, and piloting of new technological, service and business model innovations.



a member of Finland Green Building Council



## BuroHappold Engineering



24 offices  
17,824 m<sup>2</sup> total floor area  
978 tCO<sub>2</sub>e portfolio carbon emissions  
1,700 employees

BuroHappold Engineering is an international, integrated engineering consultancy operating in 23 locations worldwide with 1,700 employees. For over 40 years, BuroHappold Engineering has been building a reputation for delivering creative, value-led building and city solutions for an ever changing world and is committed to tackling climate change as a business priority.

### 1 Commit

Commit to being net zero carbon for business operations by 2021. This includes Scope 1 and 2 emissions from global offices and Scope 3 emissions from business travel.

### 2 Disclose

Disclose energy commitments via annual reports on Scope 1, 2 and 3 energy consumption and carbon emissions.

### 3 Act

Increase energy efficiency by identifying cost-effective energy saving measures available from government schemes, undertaking building refurbishments and embedding smart energy monitoring through 'best-in-class' energy reporting platforms. Identify potential for on-site renewable energy generation and procure 100% certified renewable electricity as much as possible.

### 4 Verify

Undertake third party verification of asset and portfolio level data through independent accredited auditors. Publicly report assured data via annual reporting.

### 5 Advocate

Continue to advocate wider industry towards targets for new build projects to be net zero carbon in operation by 2030, and all projects by 2050 through leading 'Engineers Declare', national policy advocacy with Aldersgate Group and publishing thought leadership on climate action and air quality in cities.

**BUROHAPPOLD  
ENGINEERING**

a member of 4 Green Building Council's

**EP 100** | °C

## Deerns



15 buildings  
1,820 tCO<sub>2</sub>e portfolio carbon emissions  
9,738m<sup>2</sup> total floor area  
7 countries of operation

Deerns is an international consulting and engineering firm, specialised in engineering design, sustainability and smart building strategies, with a mission to passionately create a positive impact on the built environment: tailored to its users and future-ready.

### 1 Commit

Commit to all Deerns occupied offices to operate at net zero carbon by 2025.

### 2 Disclose

Annual calculation of carbon footprint, considering Scope 1, 2 and 3 emissions. Calculation of 'Deerns Multiplier Indicator', resulting of the ratio between avoided emissions (through the energy efficiency of the projects designed) and own direct CO<sub>2</sub> impact.

### 3 Act

Set a decarbonisation plan with measurement of progress every year and recommendation of improvement measures: energy consumption reduction, transition to green/renewable energy contracting by encouraging landlords, and offsetting where decarbonisation is not possible.

### 4 Verify

Deerns ISO 14001 certified offices have their carbon footprint verified via 3rd party audits. Reporting and publication of annual results.

### 5 Advocate

Commit to educating and influencing industry to make net zero carbon mainstream. Support market transformation through awareness raising, capacity creation and knowledge sharing, and increasingly delivering future-ready, carbon neutral designs which enable a vital transition into a healthy, resource efficient and resilient society. Development of policy and plans to reduce waste and transport-related carbon footprint (mobility plans and electrical vehicle fleet). Calculating avoided emissions from nZEB projects developed each year.

**Deerns**

a member of 4 Green Building Councils

**EP 100** | °C

# Work with us!

As 2020 is the start of the decade of climate action, we are inviting all cities, states, regions and companies to work with us on solutions in the building sector.

The BUILD UPON<sup>2</sup> project is welcoming cities to join our work on renovation strategies, and would love to hear more about impactful renovation initiatives you are running in your city - which we can put on the European stage.

The pilot cities we are working with are: Velika Gorica, Croatia - Budaörs, Hungary - Dublin, Ireland - Padova, Italy - Wroclaw, Poland - Valladolid, Spain - Eskişehir, Turkey - Leeds, UK

We are calling on leaders across the public and private sector to join the Net Zero Carbon Buildings Commitment ahead of COP26 - to really make Europe's renovation wave a reality.

Read more about the project and get in touch with the team via the links and details below.



**Email** [europe@worldgbc.org](mailto:europe@worldgbc.org)

**Web** [www.worldgbc.org/build-upon](http://www.worldgbc.org/build-upon)

**Twitter** [@WorldGBC\\_Europe](https://twitter.com/WorldGBC_Europe) [#BUILDUPON](https://twitter.com/BUILDUPON)



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