

The background is a collage of three images. The top image shows two industrial valves with greenish growth on a brick wall. The middle image is a vibrant graffiti piece with a person's face and the word 'Smug' in white script. The bottom image shows a large, rusted industrial pipe with various fittings and a graffiti tag 'D&B' in the background.

# DIGITAL CITY PROGRAM

URBAN DEVELOPMENT INITIATIVE  
BRAINPORT EINDHOVEN

**UDI**

# ACCELERATING URBAN SOLUTIONS

Urbanization is a global challenge accompanying population growth. While the world's urban areas are highly varied, all cities and towns face the environmental and social consequences of urbanization. They struggle with challenges that require smart combinations of innovative technologies, attractive and functional design and applied knowledge in order to get scalable solutions that add sustainable value with social impact.

The Urban Development Initiative (UDI) provides answers through continuous innovation in ecosystems for urban development & the building industry in order to solve the complex urban challenges of the 21st century. By quickly anticipating the worldwide changes and continuously forming new connections, we create new opportunities for everyone. This attracts talent and companies from all over the world. In the unique business climate of Brainport Eindhoven, we work together in finding solutions for societal challenges concerning health, mobility, energy, food, housing, special quality and safety. An international leading region should be a top-quality place to work, live and visit.

Brainport Eindhoven has become the world's smartest region because of the ability to cooperate within the Quadruple Helix: government, business, research and society. The region has the unique power and position to function as one large Living Lab by continuously creating, evaluating, validating, producing and scaling up innovative solutions for and with citizens and civil society in the 21st urban century. Thereby, making Brainport Eindhoven one of the global leaders in solving the challenges addressed in the urban agenda.

# URBAN DEVELOPMENT INITIATIVE

The Urban Development Initiative (UDI) is an organization that aims to solve complex urban challenges. In collaboration we research and develop strategies on building-innovation, energy transition and digitalization in the built environment.

UDI consists of an innovation ecosystem that brings together an ingenious portfolio of living labs that collaborate to scale innovation. Founders of the UDI are City of Eindhoven, City of Helmond, Eindhoven University of Technology (TU/e), Brainport Development and the Fraunhofer Research Institute. Building this ecosystem, we are looking forward to expanding our network with your expertise!

The UDI community will represent the entire Quadruple Helix and stimulate collaboration and citizen involvement by setting up innovation partnerships through network activities, cutting-edge projects and business- and user impact labs. Together we will set the agenda, work on innovative challenges and help to put them into practice. UDI combines existing and new knowledge, testing and living labs, EU funding programs and upscaling possibilities.

UDI is a partner within the network of the European Digital Innovation Hubs and provides you with the opportunity to get connected to a relevant European network of experts in your field of work.

The Urban Development Initiative (UDI) addresses the complex urban challenges of the 21st century through the development of the following lines of focus:

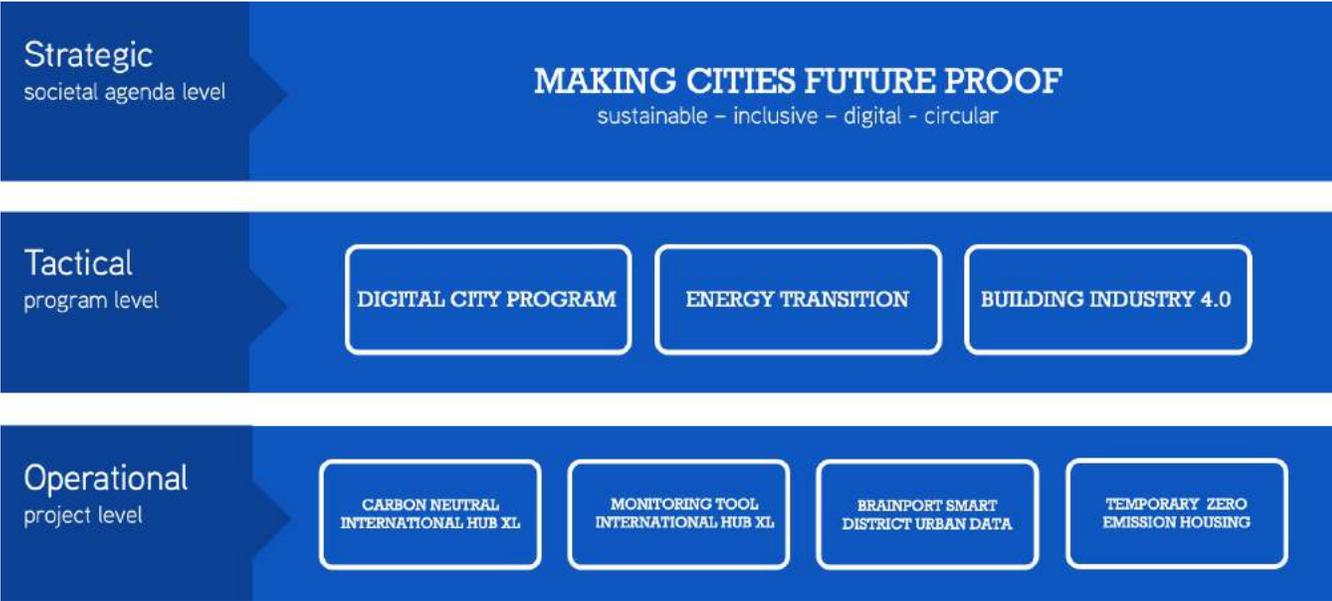
- Digital City
- Energy Transition
- Building Industry 4.0

# DIGITAL CITY PROGRAM

The Digital City Program of UDI focuses on digital solutions like Digital Twinning and Virtual Reality for more evidence-based decision making and citizen empowerment. Building on the region's existing digital backbone, vibrant ecosystem and disruptive start-ups and research, this program focuses on developing digital solutions for integrated, sustainable city planning. Goal is to open up new markets and create new business opportunities for involved companies at the same time.

The Digital City Program:

1. Kick-starts projects towards user friendly and adaptive digital solutions for the flagship showcases in Brainport Eindhoven that offer actionable insights for complex and integrated urban challenges, based on big urban data and open standards.
2. Builds an ecosystem that will drive digital innovation trends and have competitive technical advantages



*Digital City Program as part of UDI Framework*

# DIGITAL CITY PROGRAM

The digital planning solutions that we aim to develop at the project level of the Digital City Program will be the result of collaborations within the quadruple helix group of stakeholders. These digital planning solutions will enable stakeholder participation and aim to analyse current urban challenges, measure the impact of future urban interventions, and forecast the future demands. This new way of urban planning will allow integrated, evidence-based decision-making and increase citizen empowerment. Digital Twins – as urban planning decision support tools – will be at the centre of the digital solutions.

With the Digital City Program the UDI aims to create digital tools for real and current urban challenges within showcases such as:

- 'International Hub XL' in the City of Eindhoven
- 'Brainport Smart District' within the City of Helmond
- 'Eindhoven AI Systems Institute' at the TU/e



*Example of the process steps of Digital twinning as an urban planning and decision tool.*

## INTERNATIONAL HUB XL

Over the next twenty years Eindhoven municipality is planning to expand the International Hub XL district north of the city's Central Station from a population of 200 residents to over 15,000. Decisions made at the planning stage will determine most of the environmental and social impact of the area over its lifetime.

35% extra trainpassengers  
45% extra bus passengers  
75% decrease in cars

7.000 extra housing units  
More space for water and park  
700.000 m2 Extra floor space  
250.000 m2 Transformation



## BRAINPORT SMART DISTRICT

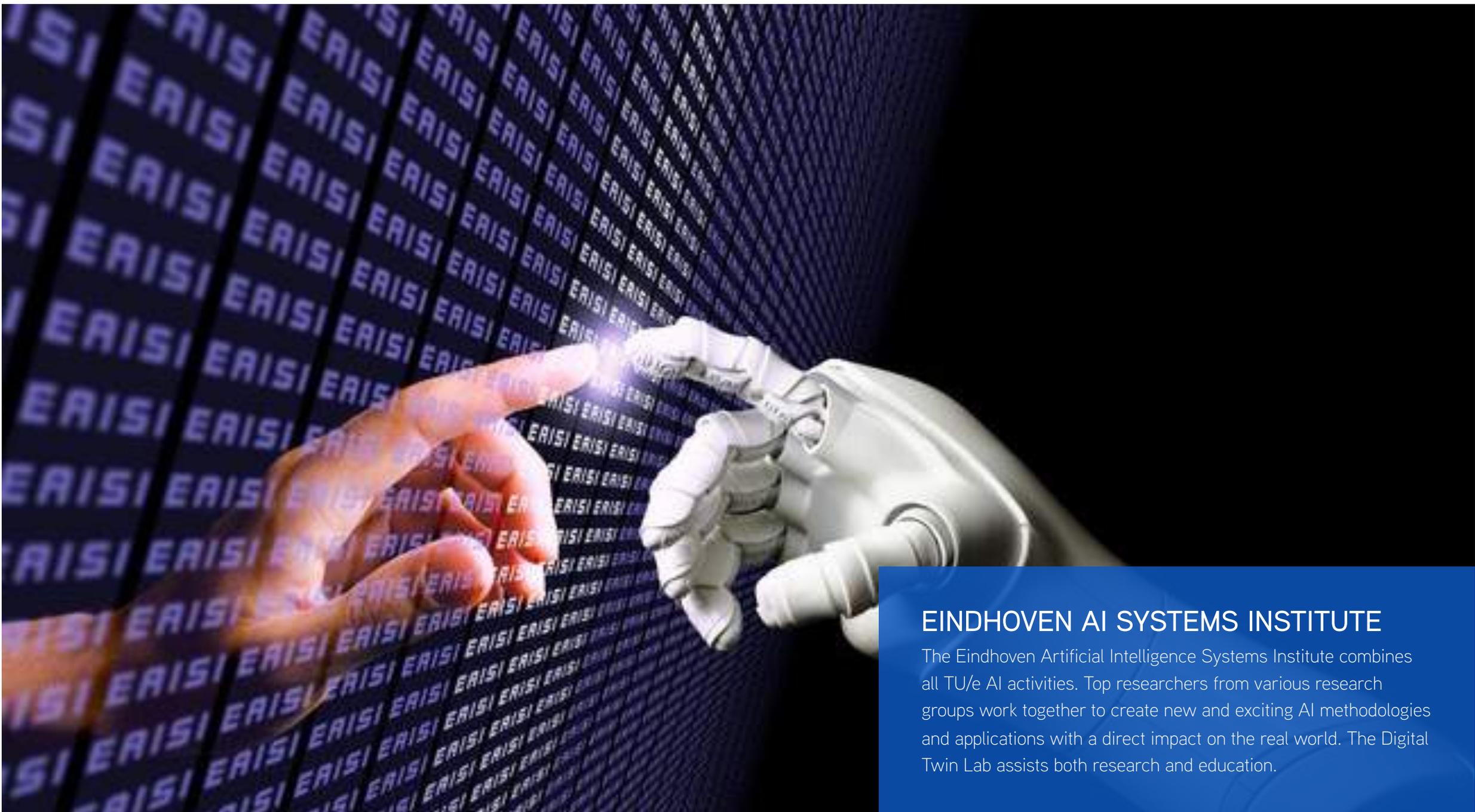
Brainport Smart District will be a smart residential and working district where the urban development environment is designed in conjunction with new technologies for transport, health, energy generation and storage and circular construction. The residents also play an important role in the development of their own living environment. This new part of Helmond is being built north of the Helmond-Eindhoven railway line

1.500 Houses  
4.500 Residents

27.000 m<sup>2</sup> Bio-intensive farming  
120.000 m<sup>2</sup> Business Park  
125.000 m<sup>2</sup> Park

300 Autonomous Vehicles  
1.5 km Smart Mobility Loop  
73.000 Solar Panels





## EINDHOVEN AI SYSTEMS INSTITUTE

The Eindhoven Artificial Intelligence Systems Institute combines all TU/e AI activities. Top researchers from various research groups work together to create new and exciting AI methodologies and applications with a direct impact on the real world. The Digital Twin Lab assists both research and education.

# INNOVATION PARTNERSHIP

The UDI Digital City Program offers an innovation partnership with cities, academia, industries and citizens. By participating in UDI Digital City Program, one can:

- Strengthen and accelerate their own R&D portfolio
- Participate in projects and living labs
- Validate digital solutions and technologies through living labs in Brainport Eindhoven and use learnings for replicable models and verifying new product-market combinations in practice
- Develop standards, enhance frameworks and guidelines for disruptive technologies
- Get connected to a relevant European network of experts in your field of work



# UDI

**BRAINPORT DEVELOPMENT**  
economische ontwikkelingsmaatschappij



Data- en Kennishub  
Gezond Stedelijk Leven



# TIMELINE

Aim is to have this manifest at the end of this year signed for commitment with the ecosystem partners to develop the program in depth in the first half of 2021

2021



2022

16 December

Signing the UDI Digital City Program manifest with the UDI Digital Program coalition

January – May 2021

Developing the full program for UDI Digital City Program

June 2021

 Go/No-Go moment for UDI Digital City Program

# UDI DIGITAL CITY TEAM

The Digital City team consists of representatives from the City of Eindhoven, City of Helmond, Eindhoven University of Technology (TU/e), Brainport Development and the Fraunhofer Research Institute.

For more information feel free to reach out to:

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**UDI**