

# U R B A N **TRANSITIONS ALLIANCE**



## **InnovationCity Ruhr | Model City Bottrop A Blueprint for a Futureproof City**

Case study by WBCSD and ICM - November 2018



The Urban Transitions Alliance, an initiative led by ICLEI and funded by the Stiftung Mercator, presents an opportunity for industrial legacy cities across the world to demonstrate their commitment to sustainable urban development.

The Alliance is a growing network and knowledge-exchange hub of innovative urban transition policies and projects. It supports industrial legacy cities from across the globe to identify common challenges, share knowledge and develop solutions to successfully guide their individual sustainable transitions. The Urban Transitions Alliance cities shape the exchange focus according to their most-pressing needs and interests. They have jointly decided to explore the key topics of Infrastructure, Mobility, Energy, and Social Transition.

More information on [www.urbantransitions.org](http://www.urbantransitions.org)

## ABOUT WBCSD

WBCSD is a global, CEO-led organization of over 200 leading businesses working together to accelerate the transition to a sustainable world. We help make our member companies more successful and sustainable by focusing on the maximum positive impact for shareholders, the environment and societies. Our member companies come from all business sectors and all major economies, representing a combined revenue of more than US\$8.5 trillion and with 19 million employees. Our Global Network of almost 70 national business councils gives our members unparalleled reach across the globe. WBCSD is uniquely positioned to work with member companies along and across value chains to deliver high-impact business solutions to the most challenging sustainability issues. Together, we are the leading voice of business for sustainability: united by our vision of a world where more than 9 billion people are all living well and within the boundaries of our planet, by 2050. [www.wbcsd.org](http://www.wbcsd.org)

## ABOUT ICM

Innovation City Management GmbH is developing and implementing solutions for cities and companies to meet all the challenges of climate and structural change. Our services include the creation of concepts for city quarters and climate protection. Since 2010, Innovation City Management GmbH is the responsible project management company for InnovationCity Ruhr. It is located at Südring-Center-Promenade 3 in Bottrop.

## ABOUT ICLEI

ICLEI is the leading global network of 1,500+ cities, towns and regions committed to building a sustainable future. Through our collective efforts, we impact more than 25 percent of the global urban population.





# INTRODUCTION

Bottrop, a midsize city in Western Germany, is a typical city of the Ruhr region. It is strongly influenced by coal mining and heavy industries. Its industrial character is, however, a thing of the past: Bottrop's last coal mine will shut down at the end of 2018. Bottrop started in 2010 to get ready for the challenges of climate change. The

corresponding change in energy supply, from coal to renewables, has turned out to be a good opportunity to futureproof the city. A lot can be learnt from Bottrop's efforts to transform from an industrial center into a climate-resilient and sustainable city.



## QUICK FACTS

- **Timeline** of the pilot project: 2010-2020
- **Location:** Bottrop, Western Germany
- **Population:** 116,000 people (pilot area with 70.000 inhabitants)
- **Goal:** Reduce Bottrop's CO<sub>2</sub> emissions by 50% by 2020 and increase citizens' quality of life
- **Key result:** An increased modernization rate and a 38% reduction in CO<sub>2</sub> emissions (in estimated 10,000 tons of CO<sub>2</sub> less per year) since 2010 as well as projects that enhance the quality of life in the city<sup>1</sup>
- **Key impact:** Bottrop's blueprint has become a framework for climate protection, the energy transition and quality of life
- **Approach:** Convening local stakeholders and facilitating communication

<sup>1</sup> [InnovationCity Ruhr Half-time results, 2015](#) (accessed: 22 Oct 2018).

Image: Bottrop's Prosper-Haniel coal mine, due to close at the end of 2018.

## BACKGROUND

It all started with a competition. In 2010, a group of around 70 companies, mostly multinationals headquartered in the region, launched a competition on “The Climate City of the Future”. Municipalities from the Ruhr area nominated pilot districts capable of reaching a 50 percent reduction in CO<sub>2</sub> emissions in just ten years. This group of companies, called the “Initiativkreis Ruhr”, would become shareholders of the pilot project and provide one million euros start-up funding. The City of Bottrop nominated their district and won, strongly supported by the enthusiasm of its residents. From then on, the city called itself “Innovation City Ruhr”. The panel of judges was convinced by Bottrop’s nomination for a few reasons. Bottrop’s Lord Mayor and citizens supported bringing the innovation project home; citizens collected a phenomenal 22,000 signatures in support of making their city futureproof. Also, the judges considered Bottrop as a typical Ruhr city in terms of its building stock, energy supply system and social structure.

If the project were to work in Bottrop, the judges reasoned, it could also work in other Ruhr cities. Before the project could start, an organization had to be set up to deal with the project management. Therefore, a consulting and project management company was founded in 2010, called Innovation City Management (ICM). The organization started to work immediately. Its first assignment was a tall order: they needed to draft and set up a roadmap that would describe all critical areas, goals and steps to make the pilot district - with 70,000 residents - climate proof. The development of this plan took 18 months, partly due to the coordination of many stakeholders involved in the process. Apart from four engineering, planning and consulting offices, several groups of local citizens were involved. Together, these local and regional stakeholders were motivated to reduce Bottrop’s CO<sub>2</sub> emissions by 50 percent while improving the local quality of life.

### ICM, WHICH HAS 40 EMPLOYEES, HAS BEEN INVOLVED IN MORE THAN 300 PROJECTS<sup>2</sup>

Examples:

- **Living:** Free energy consultation to modernize existing houses
- **Working:** Sun panels on office buildings
- **Energy:** A waste water treatment plant that produces energy up to 10 MW, even exceeding its demand
- **Mobility:** More bicycle lanes and better traffic lights
- **City:** Conversion of a coking plant and industrial area to an energy and technology park
- **Activation:** A geo-database online tool that provides homeowners building-specific information on measures, funding and other options

The Masterplan identifies six main themes to concentrate on, namely living; working; energy; mobility; the city and the activation of citizens. It is unique as it goes beyond technological innovations required to meet emission reduction targets. Instead of just focusing on modernizing buildings for instance, the plan also pays

attention to potential improvements of the quality of life and innovative citizen participation. The Masterplan states that climate-proof urban redevelopment can only succeed when social, economic and technical aspects are considered together.

<sup>2</sup> [InnovationCity Ruhr Half-time results, 2015](#) (accessed: 22 Oct 2018).



## FUNDING/BUDGET

Apart from working on the Masterplan, ICM was also responsible for applying for funding. It managed to get contributions from the State of North Rhine Westphalia and from the European Regional Development Fund. It also managed to secure yearly contributions from local companies that are active in the area of urban

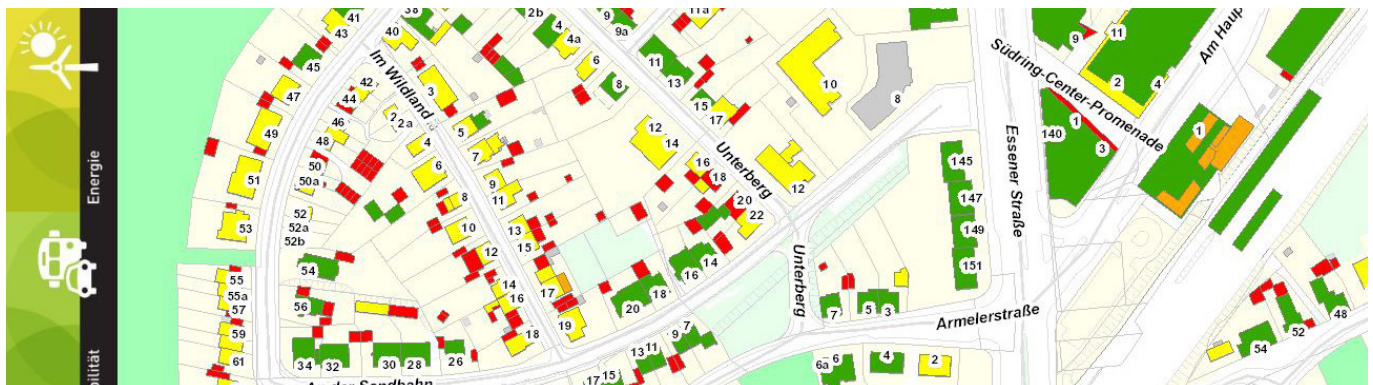
development, technologies, crafts and products. These sponsors in return gain access to a useful network of companies from the region, which they can use as a platform to test and showcase new technologies. The sponsors also benefit from the regional and national media attention received by ICM.

## KEY ACTIVITIES AND APPROACH

ICM has proven to be a successful communication and network facilitator. Unexpectedly, a key ICM activity turned out to be the provision of free energy consultations for citizens. Six service centers in Bottrop provide citizens with information, support and counselling on making their homes more efficient. Citizens can ask questions about technologically and economically beneficial renovations they can apply to their houses. Because the service is non-binding and free of charge, 3,100 property owners have already used it; with more than half taking action following the consultation. As a Bottrop home owner explains: *"When we undertook the energy-oriented modernisation of our own house, we already had a number of ideas of our own in addition to many open questions. The initial consultation brought us a big step forward".*<sup>3</sup> As a pre-step of the personal energy consultation, the City of Bottrop offers a geo-database online tool that gives homeowners building-specific information for their houses on measures, funding and other options.<sup>4</sup> These services have led to an average modernization rate of three percent per year in Bottrop, which is impressive compared to the national average of less than one percent.<sup>5</sup> Especially in consideration of the economic situation of citizens in the region, this modernization rate is exceptionally high. In some instances, buildings have even been modernized to generate more energy than they

use. Although these buildings are not yet cost-effective, they showcase state of the art technology and options for energy efficient and even plus energy buildings. Modernization has proven to be a great way to cut down energy costs and CO<sub>2</sub> emissions, increase the value of property and the comfort of homes. What is more, the local economy also benefits. Because of the increased interest in modernizing buildings, there are now 34 companies specializing in energy efficient modernization.<sup>6</sup> Local craftsmen and formerly unemployed residents benefit from this development, showing that climate protection can go hand-in-hand with stimulating the local economy.

The municipality is also a beneficiary. Due to the collaboration with ICM, different municipal departments who used to work in sectoral silos are now connected more closely, resulting in the faster exchange of information. This speeds up processes and projects. ICM has also helped to make municipal personnel more skilled in applying and developing sustainable urban development plans. Now that they are constantly working with such cases, city staff have become more experienced in applying for funding for instance, a relevant skill in a city with a limited municipal budget. This has led to an increase in local investments, which has stimulated the local economy.



<sup>3</sup> Quotes about the project (accessed: 22 Oct 2018, translation by ICM).

<sup>4</sup> ICRIS geo information tool (accessed: 22 Oct 2018).

<sup>5</sup> InnovationCity Ruhr Half-time results, 2015 (accessed: 22 Oct 2018).

<sup>6</sup> Project movie Innovation City Bottrop (accessed: 22 Oct 2018).

Image: The ICRIS geo information tool provides open accessible information on individual buildings. This includes data on modernization measures, available funding and other options.



## CHALLENGES

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The process has not been seamless; ICM has encountered certain challenges since the project started in 2010. Expectations were high when Bottrop won the competition, leading some citizens to expect direct and concrete benefits such as free modernization technologies for their homes. Citizens who had been involved in proposing ideas for their district were disappointed when projects were hindered by public budget constraints or regional or national laws. ICM tried to manage their high expectations by carefully explaining the project in the media, focusing on the

increased quality of life and value of buildings in the short term. They tried to convince citizens of the value of the project by starting with small but concrete projects, such as free e-bikes. Another challenge stems from the limitations of municipal governance. Not every local politician is equally convinced of projects on climate protection or mobility. ICM dealt with this challenge by providing information, bringing stakeholders together and focusing on seeking common ground. Of course, there always remain obstacles to overcome.

## SUCCESS FACTORS

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The Bottrop “blueprint” is relevant for urban areas interested in improving climate and energy efficiency, while increasing the living standard of its citizens. A mix of certain components has made ICM successful. First of all, ICM managed to involve Bottrop’s citizens from day one. Even today, citizens can still express their views and ideas on the project in continuous feedback loops. As the ICM website indicates, “You live in Bottrop – and know your neighborhood best”. The high level of citizen involvement has guaranteed solid local support for the project. An example of this is the large group of motivated home owners interested in modernizing their

homes. Another key principle of the Bottrop model is that it has framed climate-friendly urban redevelopment as not just good for the environment, but as an economic opportunity. The project has demonstrated that investing in climate protection pays off: it is a job engine for mid-sized businesses and craftsmen, and thus a stimulus for the local economy. A last key element is the involvement of a broad range of stakeholders. ICM has managed to bring together actors from housing construction companies, industries, craftsmen and administrators. It has shown that local climate action is not just driven by the municipality, but by all stakeholders.



Image: Engagement workshops with city administration, project managers and citizens provide a platform to exchange information and ideas as well as develop an agenda for the redevelopment of the city.





## NEXT STEPS

The pilot phase officially ends in 2020 but work towards multiplying the project started a while ago. For instance, interested municipalities and businesses are cooperating in innovative projects receiving consultation by ICM and using their network to test state of the art technologies under real-life conditions. ICM is using the Bottrop experience to roll out the concept to other municipalities interested in sustainable urban development. By now, 20 districts in 17 cities located in the Ruhr region are involved. The Masterplan, developed at the start of the project, plays

***"If it can work in Bottrop, it can work anywhere"***  
(Bernd Tischler, Lord Mayor of the City of Bottrop).<sup>7</sup>

an important role: it is used as a blueprint for successful climate-friendly and sustainable urban redevelopment. A new project currently under development is the rollout of the Bottrop blueprint to municipalities outside of the Ruhr region. Although the Masterplan was specifically designed with and for Bottrop, its conceptual frame can perfectly be used for other districts. Indeed, the building blocks remain the same: by connecting people and facilitating communication between stakeholders, real progress can be made.



"Particularly worthy of mention are the co-operations between industry, science, local craftsmen, energy consultants and architects, which have all made the project so successful. The entire setting of the project has gained international recognition, as no city district of this size has ever been transformed into a climate city of the future and such a place of learning".

The jury about Bottrop at the German Sustainability Award 2013<sup>8</sup>



<sup>7</sup> Project movie Innovation City Bottrop (accessed: 22 Oct 2018).

<sup>8</sup> Quotes about the project (accessed: 22 Oct 2018).

Image: "Stadtgarten" park in Bottrop's city center. Gardens and public parks enhance the quality of life in Bottrop.

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## CREDITS

Research and writing of this report by WBCSD,  
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Cover image: Arthur Kattowitz / Fotolia  
Bottrop's tetrahedron landmark is located on the slag heap  
Halde Beckstraße of coal mine Prosper-Haniel. The steel  
construction has a side length of 60m and serves as a  
walkable viewing platform.

All inside images: (c) City of Bottrop  
Roll-out graphic: (c) ICM

