ANTWERP
A GREAT EUROPEAN PORT CITY WHERE HISTORY MEETS INNOVATION
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COLOFON
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More so perhaps than any other European city, Antwerp is quickly becoming the rising star of capital investment. Rich in history, Antwerp is a great port city where innovation has become the driving force in its real estate developments. Public private partnerships, value investors and world class research institutes are joining hands to create the city of the future.

From being awarded the world’s first local policy award for entrepreneurship and digital innovation, to a meteoric rise in the Financial Times’ top ten cross-border investment locations, right through to becoming Europe’s largest Internet of Things (IoT) living laboratory, it is no idle claim when we say Antwerp is the one to watch.

In this issue we explore the role of technology in real estate. We discover how innovation and research play their part in creating an almost utopian city: one that grows, lives and breathes in function of its residents, its tenants, its entrepreneurs. Where expansion doesn’t just mean sprawling suburbs but includes an inner city development policy that considers the needs and wants of those who choose to make Antwerp their home.

We invite you to discover the very definition of value creation in a liveable, future-oriented and sustainable city. Join us on our exciting journey.

Happy reading!
Ranks and scoreboards are mere snapshots in time and are only useful in the context of a broader story of growth and evolution. Even so, a snapshot makes for good comparison. The annual Financial Times fDi Intelligence Portfolio 2016/2017 has awarded Antwerp a top ten position in their listing of large European cities that offer promising economic potential.

The fDi ranking lists the very best cross-border investment locations and is compiled on the basis of broad, relevant economic parameters. The 2016/2017 fDi report ranks Antwerp eighth of ten European cities when it comes to economic potential. Only ranking as a medium-sized city in the 2015/2016 list, this jump to the top ten large cities means this David among Goliaths deserves some special attention. Even more so when we zoom in on the fDi report for the Benelux countries, where metropolises such as Brussels, Amsterdam and Rotterdam are held up against each other: “Antwerp ranked third for both projects and capital investment. Antwerp Port is at the heart of European chemical manufacturing and this is reflected in its inbound foreign direct investment. A growing number of transportation companies are also establishing operations in Antwerp, with one-third of investors citing the city’s excellent infrastructure and logistics environment as motives.”

**Broadening the Scale**

As a port city, Antwerp has the potential to punch its way further up in the rankings, especially when it comes to economic and investment potential. Antwerp ranks in the top 120 cities globally for its international corporate networks and its innovation capacity. Its relatively strong growth profile means that it far outperforms its size when it comes to overseas real estate investment. Compared with other cities this size, Antwerp has a fairly high concentration of science and technology specialisation and high R&D spending, as well as registering a strong retail presence. When it comes to competitive assets, Antwerp performs well in the area of human capital, liveability, opportunity and innovation, technology and enterprise. The digital and circular economies are at the heart of the city’s future innovation economy and promising new sites are being established for digital start-ups and chemical companies.

**Start-up Policy: At the Level of Copenhagen**

Antwerp was also awarded the 2015 Local Policy Award by StartupNations for promoting entrepreneurship and digital innovation. The award serves as a special acknowledgement to the strength of the city of Antwerp’s policy when it comes to promoting entrepreneurship and facilitating start-ups. Additionally Antwerp was awarded the European ‘Select for Cities’ programme alongside Copenhagen and Helsinki, an important European subsidy for start-up policy.

Antwerp has named it ‘buy from start-ups’ where digital entrepreneurs are offered an IT platform from which they can build innovative applications that enhance the city’s attractiveness.

1 source: fDiintelligence.com / 2 source: Brussels and Antwerp: pathways to a competitive future - Urban Land Institute, 2016
"WE SEE THE REAL ESTATE SECTOR AS AN ACTIVE PARTNER IN TOWN PLANNING"

As the Antwerp Vice Mayor for Urban Development, Heritage and Green, Rob Van de Velde coordinates policy on macro data mining and monitors urban development. “We have a very strong vision on town planning through the interaction between public domain, real estate, economy and innovation. We are detailing our socio-demographic data in order to align developments in real estate with the city’s needs.”

ROB VAN DE VELDE “The socio-demographic challenges for Antwerp are big,” says Rob Van de Velde. “We’re looking at a population growth of 15% over the next twelve years, which equates to 75 to 80,000 new residents. They all require new homes and services. Additionally, the composition of families is changing. On the one hand the number of singles is on the rise: already 47% of our families are single parent households. On the other hand the number of multi-user families is growing and becoming more complex. Cohousing, temporary or permanent, is a growing trend that requires different and >
larger homes. Our objectives are to better align supply and demand and to retain the middle classes and families with children. People with purchase power who stimulate the economy. We want to achieve this by offering them more space in our city in every way we can.”

**What is your data strategy for anticipating the location behaviour of households and businesses?**

**VAN DE VELDE** “In the past data collection was somewhat ad hoc. Today analyses and studies are the standard. We focus on four different angles for this. First there is the GIS-monitor where we define neighbourhoods and spot potential shortages. In order to know the impact of our spatial interventions we analyse the various area specific developments within the city by measuring who moves there. Examples of area specific developments are Regatta, Eksterlaar, het Groene Kwartier (the Green Quarter), Groen Zuid (Green South) and het Eilandje (the Island). We monitor who moves there, where they’ve come from and what motivates them. We do this outside of the city too: we work together with the surrounding municipalities that are part of our greater metropolitan area. We want to use the effect studies on projects that are happening there to measure their impact on our city’s development. At the same time we’re looking at the number of planned builds in function of our socio-demographic evolution. Analysis has shown us that too many residences have been planned in the suburbs for example. We have to adapt our planning to meet residents’ demand. Finally we are collecting data on building permit policy. Type and number of building permits were not charted until now, but we want to align our policy with the socio-demographic evolution. From the first responses we can already conclude that, despite the evolution towards smaller families in Antwerp, buyers preference still goes out to relatively large areas. Larger living spaces offer a greater quality of life. We focus on this as a city too, because you want to ensure Antwerp remains attractive to everyone. You can always divide a larger property, whereas you can’t change a smaller home. Additionally, smaller families can still grow, even if only temporarily, by for example co-parenting or cohousing. We’re going to continue aiming for larger living spaces in...
What product is the city offering and can the real estate industry play a part in this?

VAN DE VELDE “We’re launching an annual fact based trend report. It’s important for owners, developers and landlords to know how the city is evolving socio-demographically and what the current market trends are. We are now systematically releasing figures, trends and new projects. The next step is to collect purely commercial data: purchase and sales transactions, vacant properties ... this way we are able to gain valuable industry information that enables us to offer a comprehensive overview of needs and potential oversupply. We can accurately set and manage our permit policy on the basis of these figures. The city of Antwerp sees the real estate industry as an active urban planning partner. Until now we primarily had a supply-driven property market but if you, as a city, can get a grip on this and become responsive to what is available and what is needed, it’s good for everyone. And last but not least: technology plays an important role in creating synergy and interaction. That’s why we’re developing a broadly accessible software platform that allows all data to be linked transparently between different parties. A powerful tool for our urban development. We’re offering the real estate industry a buy-in that allows us to create such a platform. The city of Antwerp is giving potential partners a perfect pass with this.”

Antwerp energy technology: Energy Demand Response by REstore

The energy transition is creating new hidden heroes. The Antwerp energy technology company REstore was named as the 2016 Deloitte Technology Fast50 Winner. The company facilitates renewable energy through smart demand response. The REstore FlexPond platform connects thousands of building sensors via internet so that utility companies know exactly how much flexible energy they need to be able to provide at any point in time. Smart boilers in homes for example can be controlled by IoT technology sensors. If the power grid becomes overloaded REstore technology transitions users back to real time so that the grid maintains its balance. Power stations needn’t be turned up, energy production needn’t peak, electricity becomes cheaper. For the end user - the resident - this means a plug & play solution that doesn’t require any additional hardware and the environment comes out on top too as the power distributed by the REstore technology is exclusively derived from clean energy.

restore.eu
“A CITY WITH A LOCAL FEEL AND A GLOBAL REACH”

How do you, as an international urban development expert, see the competitiveness and the potential of Antwerp?

GREG CLARK “Let’s make a quick SWOT analysis. Antwerp shows an important and interesting development in high degree industries. Of course it has a great port and logistics sector but there’s also the smart energy sector, fashion, design … and of course diamonds, which form an intrinsic part of Antwerp’s DNA and are some of its most important strengths. Add to this an emerging film and TV industry which surprises many. Antwerp is specialised in high value sectors where technology drives productivity and the possibilities for high value jobs in Antwerp continue to grow. The city has an important place in the value chain of a number of industries. Moreover Antwerp sits within a broader region that boasts a large cluster of high value added technology and science enterprises, with other successful cities in Belgium, The Netherlands and Germany surrounding it on all sides. It’s also a region that offers high quality of life, good connectivity, education, connections across the region and the rest of the world. Its labour and housing market benefits from this larger environment. Antwerp as a city offers an exceptional standard of living with great amenities, strong human capital and a relatively high employment participation rate. On the weaknesses side, I would mention an ageing population. Attracting and retaining a younger population is very important. From a tax and regulatory and institutional point of view Belgium tends to be regarded as one of the more complex countries: a notable perception problem. It’s important to communicate that the city is open for business but Antwerp needs to actively encourage reforms that will simplify the business environment. Antwerp’s identity and brand are not particularly strong, despite the fact that it is a hugely important European city when it comes to history and trade. Our smart energy, cleantech, fashion, film and TV industries are not as well known as they could be and unless you are active in the logistics sector you might wonder whether our port activity is historic or current. Finally the land use and transport model are highly dependent on private car ownership. The city centre has a low density and relatively limited public transport. If Antwerp is successful, can it really grow in a way that is healthy and sustainable or will it become more congested? Cities that succeed in the long term need to grow and adjust their land use and infrastructure to different population sizes.”

What are the best practices for healthy urban planning?

CLARK “Healthy can mean healthy residents: clean air, access to medical systems … and then there is a healthy city: a city that is not congested, that doesn’t pollute or carry excessive debt. That’s another way to think about a healthy city. A healthy city works and lives within its own means. The way to achieve this is by implementing an active housing policy and staging interventions.”

INTERVIEW

Prof. GREG CLARK is urbanist and senior fellow at Urban Land Institute Europe. He is a widely published author on city development and investment issues and advises a wide array of international organisations. Launched at ULI Belgium’s inaugural Annual Conference in May 2016, a new report analysing the competitiveness of Brussels and Antwerp was presented. The report illustrates the value of a metropolitan growth strategy and an infrastructure pipeline that allows Antwerp to promote business and living in the city.

@TheBizOfCities
that ensure a diverse range of housing at various price points is provided, great public transport links, a diverse labour market that is able to generate different kinds of income and an environmentally friendly energy system. Cities like Malmö are a great example as they achieve this kind of balance. Residential areas in Antwerp tend to sprawl out towards the suburbs which has caused this high dependency on cars, but with the right kind of guidance Antwerp has the potential to become a healthy city as it grows. High quality gentrification, mixed use of land and property, densification, public transport ... These things all contribute towards a healthy society.”

What important factors will influence real estate value in the future? How can real estate add value to an urban economy?

CLARK “Real estate can contribute to an urban economy in many ways. In the next cycle real estate will have to deal with a number of imperatives. First, the digital economy will define how and where we live, work and shop. Buildings will need to be adaptive in order to meet this change. We’ll start seeing a shift towards more public amenities like shared spaces and less private space. This in turn leads to an innovation economy that can accommodate start-up businesses with dynamic life cycles. Again, real estate solutions need to be flexible to provide for this change in use. Real estate entrepreneurs need to think about how they can serve this innovation economy, not just how to provide assets. Real estate becomes a mechanism of curation, a facilitator of communities and networks. The circular economy will also become increasingly important which means the environmental interaction of real estate with energy and transport becomes essential. Thirdly the experience economy will take a firm centre stage. We long for places where we can meet, interact and have fun. This means the quality of place becomes just as important as the location. In all of these ways real estate can make a massive contribution to the cities of the future and the urban economy. Antwerp has an active real estate community that wants to provide these kinds of solutions and make the city more attractive.”

What are the most effective IoT applications for urban development? What should be the strategic focus for a city that wants to become a city of things in real estate? Is Antwerp catching up or setting a trend?

CLARK “Instead let’s talk about the Internet of Cities (IoC) ... we are heading towards a future where everything interacts. Flood defences interact with weather forecast systems, traffic lights interact with traffic flows or emergency services, buildings talk to one another to counteract energy shortages, schools can talk to households about what time the kids will be coming home. The Internet of Cities is not far away. It means interaction of intelligence information. Residents will be able to enjoy their city as fully as possible. We will be more aware of risks and crime, which allows us to increase safety, and we can make our cities more environmentally efficient whilst at the same time accommodating more people through more efficient use of land. We’re already well into the sanctuary of the IoC and even for us it’s difficult to grasp just
how highly interactive and multifunctional our cities will be in 80 years time. Antwerp is currently looking to develop the IoC with the private sector and the scientific community. This should not happen randomly but must be based on the specific DNA of the city. It’s why Antwerp’s identity is important when aligning the IoC with the future, in creating an attractive destiny.”

Where do you think Antwerp can make a difference on a European and global scale?

CLARK “City marketing is not necessarily effective in this respect. Identity is more important than advertising. Antwerp should project a clear identity and create an attractive and effective reputation for the city. This begins internally, with the residents and the stakeholders of the institutions within Antwerp taking a frontrunner role in promoting and positioning the city clearly. Cities like The Hague and Amsterdam have been doing this for years. It should be an identity that appeals to human values and aspirations. Antwerp has historically been a city that is open to the world, technologically innovative, a gateway to a continent as well as specialising in high value objects – art and diamonds. It’s interested, open, smart and clean, beautiful and precious. That’s a unique mix a proposition can be built on, one that links back to the history of entrepreneurship of Antwerp and its people who wanted to create value out of things. There’s great potential for a story that can be communicated internationally and help shape that identity. Antwerp is so much more than the second city of Belgium. When I first visited Antwerp 25 years ago I had a great time with local friends whom I met in the Med. We had a wonderful time eating the most delicious food. Antwerp has a local feel and a global reach. There’s something about that combination in customs and culture that appealed – and still is highly appealing to me.”

CADIZ // MINI TOWN NESTLES COSILY IN METROPOLIS

CORES Development and Builprom developed a multifunctional and integrated living concept named ‘Cadiz’ on the site of the former customs building in the Cadix district of Antwerp. As well as 184 apartments, space was created for a nursing home with 120 care beds, 48 authorized service homes, 32 social apartments, a polyclinic, a supermarket, a bank office and a number of independent professions. A green courtyard was created inside the building. Below ground there is ample parking. A climate was created in this developing neighbourhood that would attract shops and restaurants which were integrated into the concept of the building. Through this mix of functions Cadiz has become the beating heart of the Cadix neighbourhood. Interweaving residential with other urban functions, the building becomes a small city within the city, relating itself directly with the new neighbourhood square and surrounding streets.
WE HAVE A VERY STRONG VISION ON TOWN PLANNING THROUGH THE INTERACTION BETWEEN PUBLIC DOMAIN, REAL ESTATE, ECONOMY AND INNOVATION.”

ROB VAN DE VELDE
ANTEP’S VICE MAYOR FOR URBAN DEVELOPMENT, HERITAGE AND GREEN
The Consensus?

“Antwerp offers lots – and lots – of space”

Three simple questions offered surprising insider replies on the future of property development in Antwerp. We asked an architect, a project developer, a real estate agent and the CEO of AG Vespa, the Autonomous Council Organisation for Property Management and Urban Projects Antwerp, what works and what can and should be improved.

Jordens Goossenaerts
CEO Conix RDBM Architects

Dirk Vanhoutteghem
Co-Owner Building Today For Tomorrow

Ingrid Ceusters
CEO Group Hugo Ceusters-SCMS

Myriam Heuvelman
CEO AG Vespa
What do you feel is Antwerp’s most important asset in the field of real estate development?

JORDEN GOOSSENAERTS “There are a lot of opportunities when it comes to the diversity and density of our urban fabric. Antwerp can be scaled up as it already has the right structure. The relaying, covering and completion of the Antwerp Ring and the further development of the Left Bank are great examples of this. The ring itself will become an actual ‘tenth district’ with a huge amount of space for new development as well as offering an enormous urban green area. Antwerp is ideal for both living and working. The Left Bank district lends itself perfectly to a multifunctional commuter infrastructure: Central Station is only 10 minutes away by tram. This aspect is still very much underutilised in our office market. We shouldn’t be going for mono-functional offices anymore, it’s an outdated concept.”

DIRK VANHOUTTEGHEM “The cities of the future will be dense and green. It’s extremely challenging to anticipate both population growth and the development of open spaces and green structures in cities such as Antwerp. High rises along the 19th and 20th century belt will be strategically meshed with new parks and other public places. Dense, green cities are becoming increasingly important and will attract affluent families from the suburbs. That process is fully engaged in Antwerp.”

INGRID CEUSTERS “The strong dialogue between government and the private sector. We’re seeing the results with developments such as Berchem Post X, Blue Gate Antwerp or New South - well thought out projects with highly diverse private and public partners, where the city and the Flemish government participate too. This leads to a great economic impulse. The city is creating space for us and realises that further urban development is sorely needed. This leads to great mandates for us as real estate agents. We were able to house a hotel function in New South, we’re managing the Central Station site and have attracted tenants like the Flemish Centre for Traffic. We also promote the office market in Antwerp within a public-private partnership. As real estate agents we are truly able to explore our role. Employment benefits from these partnerships as well.”

MYRIAM HEUVELMAN “Contrary to for example The Netherlands or Spain, Antwerp has never known a dip in property prices. Our market grows slowly and steadily, thanks to the many public investments that have added to the city’s attractiveness considerably. The city council has a very clear market-oriented vision on urban and regional development and utilises its real estate company AG Vespa to enter into successful public-private partnerships. Antwerp holds many assets that strengthen the city’s structure. Quality of living is high and the scale is manageable. A lot has been invested in quality of place and the city exudes entrepreneurship. Antwerp is open for business, especially in real estate.”

What should the city council urgently be doing to truly distinguish itself internationally?

JORDEN GOOSSENAERTS “We need ambition! You need at least 800,000 residents to make certain major developments viable: look at Amsterdam for example which has state of the art facilities such as a football stadium. If we scale this city up and attract more residents - let’s aim for a million - then we too can realise this. Additionally we need to further develop into Antwerp in order to safeguard our green spaces. Young people are moving back to the city and more and more often they don’t want to have a car. I would accelerate the application of what Lab XX is researching in terms of densification and urban renewal in the ‘twentieth century belt’ - the suburbs outside the ring road - within the city centre, especially from a mobility standpoint. We’ve only recently introduced a new low emission policy and although this is a big step in the right direction, I feel it could be even stricter. We urgently need to dare to take decisions.”

DIRK VANHOUTTEGHEM “Antwerp could sell itself so much better across our borders. We need to learn to see ‘abroad’ as being an awful lot bigger than just our surrounding countries. We need to become even more international. We must also valorize our inherent strengths, instead of relying on the classic positioning of Rubens or our diamond industry. Our savoir vivre is..."
> truly unique, we’re trendy and fashionable, we have a real pop culture, we’re a city of entertainment and consumption, a gastronomic and culinary city - just think of The Jane. The hotel industry in Antwerp should play to this a lot more, on every level.”

INGRID CEUSTERS “Presence at tradeshows such as MIPIM is essential, we need to highlight our assets. International investors can discover a lot here. At the same time we have a great infrastructure, education, health care, labour ... the sky is the limit when putting Antwerp on the map. Politicians like George Osborne or Nicolas Sarkozy like to come and look at how we do things here. Our Chamber of Commerce takes initiatives, the mayor plays an active role. Being proud is in our genes. We are Sinjoren - seigneurs: it’s not without reason that this name has been our trademark since the sixteenth century. We earn projects that put us on the map such as the Antwerp Port House by Zaha Hadid.”

MYRIAM HEUVELMAN “What really sets us apart from other growth cities in Western Europe? The competition is ruthless and Antwerp isn’t making the most of its assets. We’d like to see more ambition when it comes to multimodality and new smart mobility applications within a city-regional vision. The city’s Investor Desk and AG Vespa have what it takes to professionally guide entrepreneurs and investors. We can only make this city with private and public partners. You’re welcome, is our leitmotiv.”

How does your own organisation respond to the challenge of becoming leaders in digital innovation and IoT?

JORDEN GOOSSENAERTS “You need to plan for IoT capabilities right from the design stage. Conix RDBM Architects is going full out with IoT through BIM software (Building Information Modelling).

We integrate IoT capabilities into our design through virtual construction, allowing them to be implemented during the build. BIM lays intelligent links which immediately show the impact of every adjustment throughout the design. The advantage is that you can start thinking about things in a very early stage and can factor in commissioning - the phased process aimed at quality control and performance assurance of installations - such as consumption and maintenance. Designing buildings in this manner is a real game changer.”

DIRK VANHOUTTEGHEM “Our project The Residence attempts to organise 350 cars in 120 parking spaces. You can only achieve this by going all out with digital technology. You have to give new models of mobility sharing every opportunity. It’s the great challenge for dense and green cities to ensure better mobility with less cars. Clever solutions such as Uber present the mobility solutions that residents, companies and visitors seek. You can be fully mobile without needing your own transportation. The current generation of twenty-somethings is already well on track.”

INGRID CEUSTERS: “IoT offers massive potential for us as property managers such as the management of parking space or utility services. It will be a learning process for our employees, but highly skilled staff are easy to find in this city. And even the best of IT tools cannot function without the right people.”

MYRIAM HEUVELMAN “The importance of big data, real time data, energy transition, virtual reality and augmented reality is growing rapidly. Thankfully Antwerp has a rich and varied network of innovative entrepreneurs who really are one step ahead in that next economy. We want to sustainably strengthen that network in Antwerp with the development of an innovation hub in the heart of the city.”

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THE RESIDENCE // NEW LANDMARK FOR FORGOTTEN BOROUGH

Developers Today For Tomorrow, DMI Real Estate and AG Vespa joined forces to bring new life to this strategic, yet forgotten, location in the city. Through a design competition HUB Architects was mandated with the task of designing a mixed programme that included residential space (93 apartments), a hotel (140 rooms), offices, a supermarket, underground parking for 240 cars and a Total service station. The parking garage is partially used as rotation parking and the project will also join the heating grid. Additionally, a further public space of 1ha is being created as an important connection between the existing Bolivarplaats and the brand new park ‘New South’. Site demolition has already started and by mid 2018 iconic project ‘The Residence’ will become visible in the streets, forming the long-awaited connection between the city and New South.

NEW SOUTH // THE LARGEST GARDEN OF THE CITY

New South is a green, sustainable and mixed residential area in a prime location that offers an amazing sense of space thanks to the extensive public green spaces, courtyard gardens, play areas and bicycle paths. Commissioned by, and in collaboration with, the city of Antwerp, Triple Living and architects Secchi-Viganò developed the master plan for a vibrant new borough in a previously neglected and forgotten location, with shops, restaurants, a park, sports amenities, schools and service centres. The area is a magnet for entrepreneurs, families, students and lovers of architecture. Thanks to the construction of Belgium’s largest private heating network New South gets top marks for sustainable energy provision too.

ANTWERP ATTRACTS

Extraordinary talent, new families and innovative companies settle in the city. Massive investments in the “hard spine” have radically transformed and expanded the city. Het Eilandje and the Cadix neighbourhood have blossomed into very attractive residential and working areas, surrounded by the greenery of park Spoor Noord and the Droogdokkenpark. In the coming years a similar transition will take place with new sustainable residential areas such as The Residence and New South and the eco-innovative business park Blue Gate Antwerp. The redeveloped quays between North and South will firmly connect the city with the Scheldt. Living, working and doing business in the city come together nicely in Antwerp.
The MCS Group offers software & advisory services in real estate, workplace and facility management. Their technological knowledge and domain expertise means the Antwerp company is a potential partner in helping prepare the city of Antwerp for its transition to an IoT infrastructure. Smart buildings that currently function as autonomous islands will in time become the links for a broad application of IoT throughout the urban fabric. Antwerp is investing resources at an accelerated pace in order to facilitate this transition. CEO Koen Matthijs explains his vision on how drastic the effect can be when smart buildings become hubs in a broad, urban IoT network.

“We were awarded the MIPIM Innovation Award in 2015,” says KOEN MATTHIJS. “More specifically we were awarded it because we approach the smart building concept in a concrete and practical way, making it attainable. Smart buildings are strangely enough still largely a theoretical concept. The adoption rate is still quite low. We feel it doesn’t need to be that way and that the possibilities are enormous. A lot of trendy
buzzwords are thrown about, creating a lot of unnecessary vagueness and white noise. Yet it’s often about technology that has been around for twenty years or more: just think about the sensors in a parking garage. The potential value creation is nowhere near clear and tangible to everyone.”

**A smart building as the basis of a citywide IoT network.**

MATTHIJS “People ask us ‘Where is the actual added value of the sustainable building of the future and how does it place in the context of a smart city based on IoT?’ We want to make that link. What is currently seen as ‘innovative’- read: ‘difficult to achieve’ - will soon become obvious. You notice that a search like ‘smart building’ is a lot less popular on Google than ‘smart city’ or ‘internet of things’. Even though there are an awful lot more smart buildings than smart cities.”

**What determines and increases the value of a building today?**

MATTHIJS “It’s no longer as simple as making a building passive and energy efficient. That creates a profit of no more than 2-6% compared to a non-passive building. It’s quite a powerful new insight that ‘passive’ makes very little difference to the actual resale value. So what does? There are a number of parameters you want to take into account. You don’t need to go far for most of them. Firstly your user needs to be satisfied: it goes without saying that this makes it a lot easier to find tenants or buyers. Your building has to offer people quality of life: the boundaries between work and personal life are fading and this needs to be architetturally and systematically translated into your design. Additionally you need to enhance user experience. Isn’t it a fascinating thought that people would like to spend more time in a waiting room or at a ticket window, a place they want to leave as quickly as possible now?”

**You enjoy spending time in a building that you see as a buddy.**

MATTHIJS “Correct. Most of the questions regarding IoT in buildings relate to convenience, but ideally you want to utilise it to enhance experience too. It’s an entirely different reasoning. A building that knows what is happening in the smallest of details - availability of space, temperatures, length of queue … anything really - makes life a lot easier. You can make a building your buddy that tells you what to expect at any given time through your personal assistant on Skype or Messenger. A waiting room becomes obsolete in that context. A building that works like this is attractive and therefore valuable.”

KOEN MATTHIJS
Value creation also lies in ultra-precise facilities management and therefore cost savings.

MATTHIJS “You need to be able to manage operational costs: the intrinsic building cost is lower than the total operational cost of a building by a factor of five. When you can accurately predict that this operational cost will remain low you increase the value of a building. By continuously measuring environmental factors from which you can then distil certain trends, IoT helps you achieve these goals. This allows you to respond predicatively and proactively. You are better able to plan and can keep your costs down as well as offer users predictions. If you enter into a public-private partnership and have to guarantee a set cost - maintenance, management - as a developer, then systematically profiling your building is a huge asset as it lowers risk. Building a long term vision becomes attractive whereas building cheaply no longer offers a guarantee on investment.”

A building as virtual power station becomes the real disruption.

MATTHIJS “Urbanisation is happening in the energy sector too. Traditional energy producers want to be able to predict and influence use as much as possible. With the rise of renewable energy sources and their
fragmentation - wind, solar, biomass - you no longer have to try to predict usage, but production instead: a lot more spikes and drops are generated in a building that uses individually tailored energy. The potential value creation lies in the fact that producers can decide when energy is produced, stocked and released to a building. Whomever manages the energy production and use for buildings holds an important value leverage. Buildings become virtual power stations that are regulated by ESCO’s - Energy Service Companies - that align energy supply and demand so that property managers or owners can purchase flexible energy supplies. By having multiple buildings under one portfolio an ESCO essentially holds the keys to a massive virtual power station. This makes it interesting for financial institutions to take on the role of an ESCO and finance a large scale retrofitting of urban properties. This creates urban renewal where buildings are made ready for a clean energy future. The local economy and employment in the construction industry get to ride this wave and energy producers gain leverage to help reduce unwanted peaks in demand. Altogether this forms a huge value that is currently left latent in buildings. Sustainability comes forth from less energy use, which follows from utilising buildings as a virtual power plant, not by halting extra efforts in passive building.”

Antwerp has laid the foundations that will help make these changes possible.

MATTHIJS “Sensors and IoT need to be approached in an integrated manner. The local government plays an important role in this. They have multiple objectives. Which is what makes the implementation of IoT affordable. A broad approach offers a better business case and ROI. Antwerp is currently laying the foundations to bring together like-minded parties around IoT in order to come to a coordinated smart city. In property development buildings are currently being made smart ready. This way any scenario can be anticipated. The city can play an important role in facilitating data accessibility. That willpower and attitude are very present in Antwerp.”

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“Antwerp absolutely wants to be a progressive force when it comes to value creation in buildings through added intelligence. Whatever function a building has, it can no longer just be a static pile of materials.”

ROB VAN DE VELDE
ANTWERP’S VICE MAYOR FOR URBAN DEVELOPMENT, HERITAGE AND GREEN
Our partner imec is a research facility of global proportions,” Philippe Muyters, Flemish Minister for Economy and Innovation, told attendees of the launch of the Living Lab City of Things in January 2017. “A smart city needs an open and expandable, yet safe foundation.” And this future vision doesn’t end at the city’s borders either: the Flemish government will be investing 40 million euro to turn Antwerp’s technological testing ground into a European reference point over the next five years.

Survival of the smartest
An intricate network of smart sensors and wireless gateways in buildings, homes, public amenities, streets, squares and objects, forms the basis for a City of Things. Residents and companies are given access to a wide variety of applications. City, port and companies collect targeted data for better decision making. “For the cities of tomorrow it is survival of the smartest, starting right now,” says Antwerp’s Mayor Bart De Wever. “Measuring is knowledge. Thanks to our unique collaboration with imec Antwerp is entering a new golden age. Antwerp wants to position itself in these domains both nationally and internationally. It’s the first step in putting Flanders on the global map as an innovative knowledge region: Smart Flanders.”

Another project currently being implemented measures energy use in real time and levels out consumption spikes during peak hours in collaboration with the company REstore (check p.7). A collaboration with network operator Orange looks at realising the latest technology: NarrowBand-IoT. Other projects around mobility and waste management are in full preparation. Last but not least, real estate transactions will increasingly be based on data analytics.

Antwerp: the ideal IoT test case
What makes Antwerp so suitable as a Living Lab?
“Antwerp is large enough to test applications thoroughly and small enough to manage development cost and lead times,” says Vice Mayor for Economy Caroline Bastiaens. “We have an interesting mix of offices, industry and retail. Antwerp also boasts a flourishing ecosystem of 350 start-ups, dozens of growth companies in digital innovation, nine incubators and accelerators - such as our StartupVillage - and strong international networks.”

Mayor De Wever: “In addition, this council leads an open city where innovation meets business. If it works in Antwerp, it works anywhere.”

Largest European testing ground
The Antwerp Living Lab is to become Europe’s largest testing ground for IoT applications. And it’s in full swing. Postal vans already measure air quality with a sensor.

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imec-int.com
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1 source: press release City of Antwerp, January 5th, 2017
BLUE GATE ANTWERP
// INNOVATIVE TOP LOCATION
WITH A GREAT VIEW

Blue Gate Antwerp, developed in a public-private partnership, is set to become a world-class industrial estate where global players in innovation and sustainability can realise their future vision. It provides space for smart logistics, innovative production and R&D. With a gross area of 64 hectares and a minimum lot size of 5,000 m², it’s bound to attract large-scale developments: top-ranking companies in innovation, international position, sustainability and use of waterways. The end user must conform with the BREEAM method, the world’s foremost environmental assessment method and rating system for buildings, with at least a ‘very good’ rating. Blue Gate Antwerp is close to the city centre and the University of Antwerp. A quay platform along the river Scheldt enhances its accessible feel. The first company to move into Blue Gate Antwerp is Bexco, a world leader in ropes for the offshore industry. Two further organisations are currently in their preparatory stages: BlueChem, an incubator for sustainable chemistry, and a branch of the University of Antwerp dedicated to water, air and chemistry. A cluster of sustainable chemistry businesses will be established around the BlueChem site.
Getting inspired?

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