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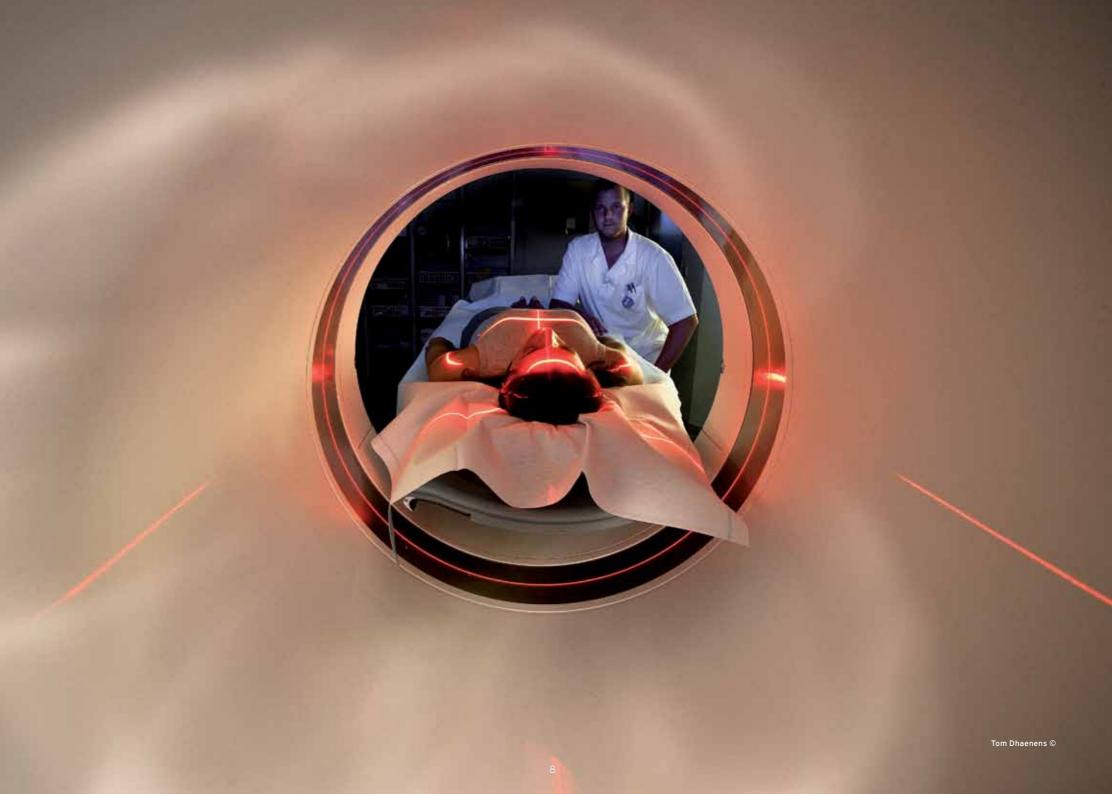
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# Knowledge, a driver for prosperity

## A smart growth strategy

Life is good in Flanders. Having paid great attention to efficiency and increased productivity levels, over the past decades we have produced more wealth than the other Belgian regions, neighboring countries and the rest of Europe. On a global scale, our high labor productivity has even elevated Flanders to the status of productivity champion, while explaining, to a large extent, our high standard of living. Furthermore, our multilingualism and our eagerness to learn have allowed us to look beyond our borders for economies of scale to reduce the cost of our industrial processes.

However, due to the rapid emergence of a number of new players in the world economy such as China and India, unprecedented competition has been raging in Europe for a number of years. This means that cost competitiveness remains a growing challenge for Flanders.

In fact, the new economic players enjoy significant cost advantages, which puts pressure on the prices of the traditional European industries. If we are to maintain the competitiveness of Flemish companies, we must fully invest in a smarter way to create added value. Knowledge and innovation must be the basic ingredients in this recipe for success. Given our high level of training and education, our central location and our well-established talent for constantly looking for synergies and partnerships, we already have a lot of assets to turn the tide of new economic challenges in our favor.

## From efficiency to innovation through knowledge

Flanders has chosen to switch to an innovation-driven economy, based on the valorization of the available knowledge.

In this growth strategy, creativity and entrepreneurship are important conditions for competitiveness. Investing in the application of knowledge and innovation, in the broadest sense, is required to ensure sustainable growth and job creation.

In Flanders, we therefore spare no effort to find ways to translate R&D results into concrete market applications. In this process, we also seek to involve as many foreign companies and knowledge workers as possible, because we believe that working together leads to a win-win situation for all. The location of Flanders in the heart of European decision-making centers certainly makes our region the ideal hub from which foreign partners can tap new markets.



### Get to know Ghent

Thanks to its leading position in basic research and knowledge acquisition, Ghent is a strong economic driver for growth in Flanders. The city has placed the development of the knowledge economy on its agenda as a valuable area of policy, aimed at fostering innovation and supporting entrepreneurs with expert guidance.

Ghent is the birthplace of biotechnology in the region. In recent years the city of Artevelde has emerged as the pivot of the Flemish biotech. The clustering of high-tech bio-business (including Innogenetics, Devgen, CropDesign), in synergy with the laboratories of the Ghent University Association and VIB in the Ardoyen Science Park has played a major part in this development.

Alongside advanced industrial biotech companies, Ghent Bio-Energy Valley (GBEV) also accommodates service providers and public partners. GBEV will expand the Port of Ghent, among others, into an internationally recognized growth area of industrial bio-energy products and activities.

During the last century, the port was a major economic hub for Belgium and Europe; it is now poised to act as a vital link in the emerging knowledge industry. With a workforce of over 70,000 people, it handles around 48 million tons of freight annually.

In addition, Ghent has managed to strengthen its economic assets in recent decades with a very strong reputation for hospitality, open-mindedness and quality of life. Ghent is a young city with a vibrant cultural life that pays tribute to its rich history.

Ghent is a wonderful and compact city, complete with medieval castles. Ghent people are very friendly, polite, and little reserved. I find it always difficult to choose from the wide variety of breads, beers and chocolate.

Amir-Behzad Samii (Iran), Professor of Operations Management, Vlerick Leuven Gent Management School.







## A never-ending influx of new talent

Due to the wide variety of third-level institutions in Ghent, the city has the largest student population in Flanders. Every year, as many as 67,000 students prepare themselves here for the working life. Each college offers a broad range of social services, allowing students to blossom in optimum conditions.

Young people will flock en masse to Ghent, mainly to attend its renowned university. Ghent University is recognized worldwide as one of the best scientific research institutes.

The university was honored in the scientific magazine The Scientist, specifically for its achievements in the field of life sciences. In addition to the University, Ghent also boasts several colleges and a high number of other research institutes. The large influx of students not only has an important rejuvenating effect on the demographic pyramid of the City, it also ensures that the knowledge pool is constantly supplied with fresh talent. The knowledge companies that come to Ghent to set up activities are assured of a smooth cooperation with various universities. For instance, this is illustrated by the growing numbers of PhD students and of doctorates awarded, the number of publications, and the number of patents that are granted each year within the city limits.

### Working in a knowledgeintensive city

In Ghent, paid employment is characterized by a specialization in knowledge-intensive sectors. 92,000 workers are employed by companies which use knowledge as their main raw material. That's 60% of the total number of wage earners. This ratio is well above the average in Flanders. Furthermore, 12,000 self-employed professionals are also active in knowledge-intensive sectors.

A significant portion of knowledge workers are employed in the high and medium tech production sectors, where the automotive sector and its suppliers in particular would play a major role. The strong presence of biotech companies in the Ghent region is also crucial.

The wealth creation in the Ghent region (based on gross domestic product per capita) is among the highest in Flanders. This is particularly good news for a prosperous future. Indeed, it is necessary to ensure significant wealth creation to structurally improve competitiveness and guarantee employment with full-fledged, quality jobs.

### Room for innovation

Ghent's local government is well aware that its ambition to see the region grow into an economic area of knowledge and innovation at international level is only possibly through cooperation. It is imperative that all actors in the city join forces. The City of Ghent has therefore entered key partnerships.

In 2006, for example, an agreement was concluded with the university to work closely on the development of a favorable environment for the further development of knowledge activity. This involved, among other things, putting more emphasis on increasing the supply of infrastructure for the establishment of knowledge-intensive firms. It goes without saying that the availability, today and in the future, of space for knowledge activity in science parks, sites earmarked for knowledge companies and incubators is certainly crucial for a city that embraces the knowledge economy.

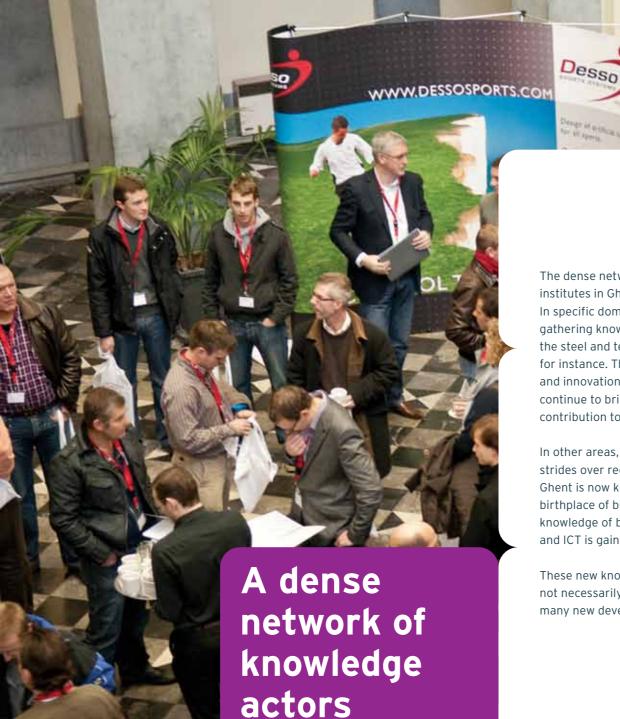
Science is everywhere in this university town, and is supported by the government. As a researcher I have access to a large range of facilities such as libraries, different faculties, conferences and seminars.



Dmitriy Borodin (Russia), Postdoctoral Researcher at Production Information Systems Laboratory, Ghent University







Gent BC ©

The dense network of research institutes in Ghent is unique in Europe. In specific domains, the City has been gathering knowledge for centuries, in the steel and textile industries for instance. Thanks to their dynamism and innovation, these two sectors continue to bring a significant contribution to the region.

In other areas, we have made great strides over recent years. Thus, Ghent is now known worldwide as the birthplace of biotechnology. And our knowledge of broadband technology and ICT is gaining importance.

These new knowledge domains are not necessarily new industrial sectors; many new developments through collaboration and networking between the various research institutes can also be quickly translated and applied in the existing sectors - sometimes erroneously called traditional - such as health care and metallurgy.

A strong interaction between a great variety of academic programs, on the one hand, and business on the other, creates a dynamic that thrives on innovation. The mutual cooperation between knowledge actors and business creates a crucial synergy. This also ensures a fruitful crossfertilization which brings about new knowledge centers and businesses - the ultimate guarantee for the continuous development of the Ghent knowledge network.



# A dense network of knowledge actors

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# A dense network of knowledge actors

### Ghent BC

The agreement concluded in 2006 between the City of Ghent and Ghent University not only focuses on collaboration on "Space for a knowledge economy". it also entails the promotion of entrepreneurship and innovation in the Ghent region and raising the profile of Ghent as a knowledge region.

One of the actions toward this goal was to launch the Ghent Big in Creativity (Ghent BC) knowledge platform. Ghent BC is an online and real-life network that brings together all the actors in the field of technological entrepreneurship and innovation and provides information on entrepreneurship and innovation.

The Ghent region has secured a significant lead in terms of technological knowledge. The aim of the knowledge platform is to build on to that advance by combining and reinforcing the efforts of the actors in the Ghent knowledge economy, boosting technological entrepreneurship in the Ghent knowledge region and promoting the Ghent knowledge region in Flanders and abroad. Once a month, Ghent BC organizes a Business Café where researchers and entrepreneurs can exchange views on technology, innovation and entrepreneurship. In addition, often in collaboration with partners in the region as well,

specific workshops and conferences are held to speed up the transfer of knowledge from research institutions to industrial applications. As a knowledge platform, Ghent BC is supported and partly financed by the European Regional Development Fund (ERDF).

www.gentbc.be

event was attended by over 180 participants (athletes, trainers, physiotherapists, coaches, physicians, researchers). Its objective: bring together those involved in soccer in Flanders and the Netherlands to inform them on how research can contribute in the world of football. Renowned researchers from Ghent University, the University of Groningen and VU University Amsterdam presented recent scientific findings and practical tips on talent identification, injury prevention, the analysis of training and competition and technological developments in that sport.

**Exchange for Feed, Food and Health** International conference with over 150 participants from research institutes in Flanders and from the industry (food, feed and health sector).



### **Ghent University**

At Ghent University more than 130 research groups spread across 11 departments offer high quality research-based courses in all scientific disciplines. The campuses are scattered across the city, from the historical center to the green suburbs.

Renowned research centers and specialized laboratories attached to the university are active in a variety of scientific fields. A number of projects



in disciplines such as history, biotechnology, aquaculture and microelectronics have attained international recognition and even world fame. Moreover, many innovative companies are rooted in research stemming from Ghent.

### A very strong international presence

The active internationalization policy is, on the one hand, reinforced by strategic alliances with universities in neighboring countries and, on the other, by a targeted commitment towards growth poles such as China and India. The university boasts a long-standing tradition when it comes to cooperating in research and development. Many collaborative development projects are based on research work in the Bioscience Engineering and Science faculties. The number of doctorates awarded by the university has been growing steadily in recent years. As many as 20% of the 438 doctoral theses in 2009 were defended by foreign PhD students. Meanwhile, the number of spin-offs continues to rise year after year: in 2008 there were 5, in 2009 already 7.

### Close ties with the industry

Approximately 30% of research funds come from the private sector, a figure that clearly illustrates the close interdependency between the university and industry. Research-based companies seeking infrastructure and support can establish themselves in two purpose-built science parks. Because of the high concentration of research groups from the university and the presence of VIB (biotech), IMEC (nanotechnology), IBBT (broadband and ICT) and SIM (materials), the Ardoyen science park in Ghent (Zwijnaarde) is an ideal location for high-technology, R&D-based companies. In Ostend, about 60 km from Ghent, on the North Sea coast, the Greenbridge Science Park facilitates research into and applications of new energy technologies.

### A university with global ambitions

Five multi-disciplinary research platforms were selected over the past years in order to take the lead at international level. On average, they receive 2.5 million Euro in research funding and 5 additional professor positions. This research is directed at the areas of inflammation and immunity, neurosciences, nano- and biophotonics, bioinformatics, and biotechnology for a sustainable economy. Ghent University is conducting other projects ranking it among the world top institutions. These include building a new data center with a high-performance supercomputer for scientific research and the creation of five doctoral training centers. The relaunch of TechTransfer, which detects opportunities for technological innovation and is responsible for the development and commercialization of knowledge and technologies out of university research, is bound to reinforce the university's activities.



### **Ghent University in short**

Ghent University is one of the leading universities in the Dutch speaking region. It is an open, socially committed and pluralistic university with a broad international perspective.

With over 33,000 students, Ghent University is one the largest universities in Flanders and Belgium. Many of its research groups are world-famous. A research position there is appealing, also due to the available research budgets and relatively low teaching load.

- Staff: 7,500 employees, including 67% researchers (more than 80 nationalities)
- R&D budget in 2009: 212 million Euro

www.UGent.be

### Vlerick Leuven Gent Management School

With the Vlerick Leuven Gent Management School, Ghent boasts an international academic business school with international standing. The research into and training in management, entrepreneurship and leadership development began back in 1953 under the auspices of Ghent University. Today, the autonomous business school enjoys a unique partnership with the two largest Belgian universities, Ghent and Leuven, and involves more than 250 organizations in its

research work. Its campuses are located in Leuven, Ghent and St Petersburg (Russia). The School has also entered partnerships with Beijing University (China) and the University of Stellenbosch Business School (South Africa). The school's researchers are in contact with many international research centers. In this context, it is mainly through peer

networks that they develop fruitful collaborations. They present the knowledge in their specific field at leading world conferences. For many foreign workers, the attraction of the business school lies in the widely available financial and technological resources it offers and its exceptional reputation in research.

### Vlerick Leuven Gent Management School in short

The Vlerick Leuven Gent Management School offers three accreditations: AACSB, Equis and AMBA. It is also making its way up business school rankings, such as those established by the Financial Times or the Economist. Every year, some 800 students follow master's and MBA studies, while approximately 6,000 executives attend management development programs.

- Staff: 180 employees, including 116 researchers
- R&D budget in 2009: 6 million Euro

www.vlerick.be

Ghent is a wonderful city for expats to live in. The rich history and tradition, combined with the lively atmosphere of a college town offer an academic like me a stimulating environment for my stay here. There are no typical urban problems here; instead there are loads of great places to discover.

Deva Rangarajan (India), Associate Professor, Vlerick Leuven Gent Management School.



# Hogeschool Gent University College

The wide range of professional bachelor and academic bachelor studies, as well as master's programs in various disciplines, from Engineering to arts, offered at the Hogeschool Gent University College creates a strong added value for research and potential collaborations. Some 450 researchers participate in more than 300 national and international research projects.

These focus mainly on applied training and research aimed at the social, economic and cultural fabric of the region. Drawing from immediately applicable expertise, Hogeschool Gent is increasingly profiling itself as a partner in innovation for SMEs and nonprofit organizations.

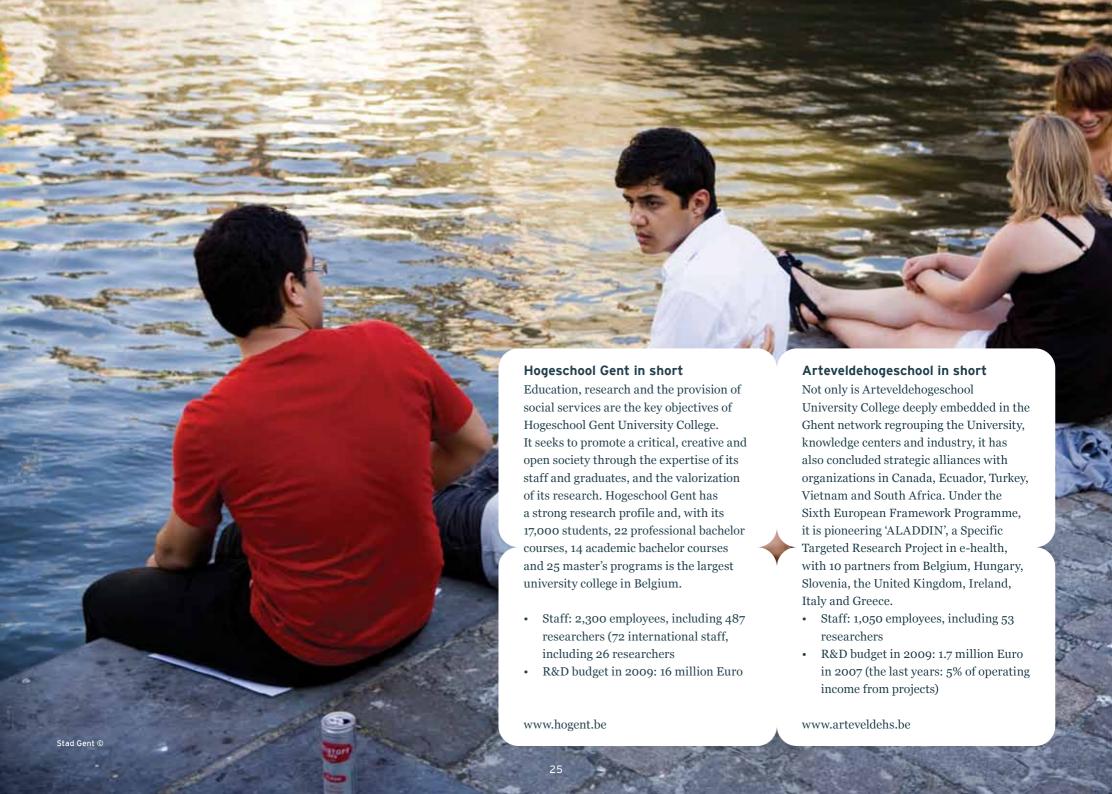
On the international scene, the university college has recently been in the limelight following:

- The making of the short film Candy Darling by Sylvia Defrance, which has won many international awards;
- The optimization of the cultivation of the kiwi berry;
- The development of an equipment bag for NASA, premiered by Ghent born astronaut ISS commander Frank De Winne.

# Arteveldehogeschool University College

Arteveldehogeschool University College provides education, research and services in health, social community work, education, commercial sciences and business administration, industrial sciences and technology. It offers a comprehensive choice of courses with 15 professional bachelor's programs. The largest Catholic university college in Flanders with 9,600 students, Arteveldehogeschool puts specific emphasis on projects relating to sustainability and entrepreneurship. It boasts many achievements as regards the development of methodologies and materials for practical applications.





# KaHo SintLieven Ghent Technology Campus

The Ghent Technology Campus of the Catholic University College Hogeschool Sint-Lieven (KaHo Sint-Lieven) offers courses in industrial engineering and a variety of bachelor's programs in fields such as agriculture and biotechnology, business management, biomedical laboratory technology, chemistry, electromechanics and electronics-ICT. The education-related technological research is highly focused on implementation.

Yet, through its direct link to basic research on the one hand and business experience and entrepreneurship on the other, it constitutes an ideal breeding ground for innovation. 3,300 students attend KaHo Sint-Lieven. In 20 years' time KaHo Sint-Lieven Ghent Technology Campus has grown into a renowned research center involved in regional, national and international R&D partnerships.

### KaHo Sint-Lieven Ghent Technology Campus in short

Together with companies and/or the Flemish agency for Innovation by Science and Technology (IWT), KaHo Sint-Lieven conducts basic research in the fields of sustainable building and geomatics; meat technology; enzyme, fermentation and brewing technology; materials mechanics; products and processes; mechanics and control of drive systems; electrical energy, data mining and process control; wireless & mobile communications and security; automated planning, scheduling and timetabling (IT). Collective research is carried out into scent and flavor technology, as well as energy saving using light (lighting technology).

Three spin-offs were born out of the KaHo campus: Indurium Engineering Services, which analyzes the influence of mechanical and thermal loads on complex structures and products; the biotech company Fugeia, which (together with K.U.Leuven) has developed a method to extract fiber from wheat bran; and Engineering and Solutions in Transport and Logistics (ESTL), which develops solutions for cargo lost during transport.

- Staff: 500 employees, including 180 researchers
- R&D budget in 2009: 4.5 million Euro

www.kahosl.be

## Interdisciplinary Institute for Broadband Technology (IBBT)

To achieve economic and social impact through innovation in ICT, that is the IBBT's mission. Maintaining a close cooperation with industrial partners, nonprofit organizations and government is key in this respect. This ensures that research findings are translated smoothly into marketable products and services. To that end, the research institute also participates in many ICT related consultation structures and network organizations in Flanders and Europe. Since its inception in 2005, the IBBT has given birth to six spin-offs. Because of their close link with IBBT, some of them are housed in iCubes, the IBBT's business center in the heart of Ghent. VRT-medialab, the technology research unit of the Flemish public TV broadcasting company, and other innovative starter enterprises are also established there.

Ghent looks like a fairytale city with gingerbread houses and two rivers that seem to lap quietly along the streets. But underneath this facade, Ghent is bubbling like a steamy research and education factory, which challenges you to look further, to ask questions and dare to think. Nora Srzentic (Croatia), Research Assistant in Financial Economics, Ghent University



#### **IBBT** in short

IBBT stimulates innovation in ICT through over 100 projects with more than 300 organizations. Its goal? The joint development of innovative applications by interdisciplinary teams in a whole range of areas: from healthcare, mobility and logistics, culture and media to green ICT. In addition to technology, at every stage of the research consideration is given to such issues as usability, policy, legislation and business models.

- Staff: 120 employees, including 90 researchers (9 nationalities)
- R&D budget in 2009: 23.2 million Euro

www.ibbt.be

## **Ghent University Hospital**

Ghent University Hospital is a leading care and research center in Flanders. With more than 1,000 beds and over 5,600 employees it stands for highly specialized, quality and patient-friendly care. Every day about 3,000 patients are diagnosed, monitored or treated in a wide range of specialties.

The provision of optimum care and comfort to patients is the number one priority of all physicians,

Ghent University Hospital in short

The hospital's annual budget is approximately 500 million Euro. The hospital has state-of-the-art technology at its disposal, both for care and research: 3 CT scans, 4 CAT labs, 2 angiography rooms, 3 MRI scanners (1 Tesla, 1.5 Tesla and 3 Tesla), 4 linear accelerators, 1 EP exam room, 1 PET scanner, 1 PET-CT scanner, and 1 cyclotron.

Each year, there are about 500,000 outpatients at the hospital, while 30,000 procedures are carried out in the operating theaters.

- Staff: 5,600 employees
- Budget: 500 million Euro

www.uzgent.be

nurses and other health experts there.

As a teaching hospital, Ghent University Hospital also plays an important part in scientific research and training. It therefore works in close cooperation with the Faculty of Medicine and Health Sciences of Ghent University. Over 400 medical specialists are trained at Ghent University Hospital.

As a research center, Ghent University Hospital accounts for more than 1,000 A1 publications each year based on translational and clinical research in several laboratories and directly in the clinic. The research focuses on genetics, immunology/inflammation, neurosciences and oncology among other fields.





The Ghent area has traditionally been home to a thriving steel industry. It has produced a rich knowledge network over the years.

# Research Center for the Application of Steel (OCAS)

OCAS was set up to develop skills and knowledge in the areas of steel and metal. On this basis, the research center works together with its customers on steel applications and solutions.

OCAS valorizes its knowledge through spinoffs, joint ventures and licensing. OCAS employs researchers representing 16 different nationalities to answer research questions from all over the world. It collaborates closely with ArcelorMittal and other companies in the industry, with non-profit organizations and several Belgian and international universities.

## Center for Research in Metallurgy (CRM)

CRM studies the synergy between process and product aspects of the steel industry. It has a modern laboratory equipped with state-of-the-art simulators used to optimize products and processes. Enjoying an excellent reputation, the research center maintains close ties with industrial partners at home and abroad and participates actively in European projects. A recent partnership with OCAS and the establishment of the joint venture Metal Processing Center with ArcelorMittal will allow the center to expand further its expertise internationally.

Ghent may look like a medieval city, but by contrast, it is mainly populated by young people.

For me it is the most vibrant and livable city in Belgium.

Farhan Azmat Ali (Pakistan), student, Ghent University

#### OCAS in short

OCAS, the high-tech, market-oriented research center for steel applications is located in the Port of Ghent. It is a joint venture between the Flemish government and ArcelorMittal that is very active in Ghent. It offers strong expertise in metallurgy, coating development and steel applications research.

- Staff: 140 employees, including 75 researchers (16 nationalities)
- R&D budget in 2009: 17 million Euro
- Locations: Headquartered in Zelzate, metallurgical lab in Zwijnaarde with an extension under construction also in Zwijnaarde (opening planned in 2011)

www.ocas.be

#### **CRM** in short

CRM carries out demand driven research for the metals industry. The emphasis is on developing new products whose mechanical properties are improved through new compositions and process innovation, and on the optimization of rolling processes (improved productivity, lower energy consumption, less maintenance, etc.).

- Staff: 21 employees, including 10 researchers (4 from abroad)
- R&D budget in 2009: 2.6 million Euro (for the Zwijnaarde department)

www.crmeur.com

### Clusta

Clusta is the recognized umbrella organization for the steel plating industry. The organization strives to raise knowledge among the Flemish metal SMEs by conducting R&D with them and hence creating a lever for innovation. Based on its own research, Clusta also organizes training and seminars to promote innovation. Wanting to keep its finger on the pulse, Clusta is a member of regional, Flemish and European innovation networks. In the short term, the local network is set to become even stronger through an intensive collaboration with OCAS, BWI (Belgian Welding Institute) and SIM (Strategic Initiative Materials).

#### Clusta in short

Thanks to its scale and knowledge of the Flemish market, Clusta is able to meet new needs rapidly. The experienced Clusta consultants focus mainly on small businesses, as they can best use the support offered by organization.

- Staff: 7 employees including 4 FTE researchers)
- R&D budget in 2009: 500,000 Euro

www.clusta.be

#### **BWI** in short

The BWI conducts highly specialized research and is affiliated to a network of global exchange laboratories. The organization is also an active member of the International Institute of Welding (IIW) and the European Federation for Welding, Joining and Cutting (EWF).

- Staff: 24 employees, including 18 researchers
- R&D budget in 2009: 2.8 million Euro

www.bilibs.be

### **Belgian Welding Institute**

The Belgian Welding Institute (BWI) conducts research on welding and joining of metals and alloys. It focuses on new processes, test capabilities and applications. The BWI is planning to set up a Metal Structures Center in Zwijnaarde, in collaboration with OCAS and Ghent University. Bringing together 200 researchers, the center will work on durable metal constructions for the energy market.

# Strategic Initiative Materials (SIM)

SIM is a virtual research organization grouping existing research centers on materials in Flanders. Its primary goal is to conduct theme-based strategic research within international partnerships for the benefit of Flemish companies. All the Flemish universities and companies from the Flemish materials industries are represented on the SIM management board.

The open innovation structure was designed to allow a maximum of Flemish companies, especially SMEs, to market the knowledge thus developed. Research centers involved in SIM projects are fully reimbursed. Participating companies are directly subsidized by the IWT (agency for Innovation by Science and Technology).

SIM is headquartered in the Zwijnaarde Technology Park, where in 2011 a number of materials-related research centers (e.g. OCAS, Sirris, Clusta, BWI, CRM, Ghent University's Department of Metallurgy and Materials Science, and Ghent University's Magnel Laboratory for Concrete Research) will be united under one roof.



#### SIM in short

SIM is the virtual research organization grouping all existing Flemish knowledge centers on materials. The three central research themes are Materials for Light and Energy, Sustainable Structural Materials and Nanomaterials. Within each of these areas, sustainability and 'cradle-to-cradle' constitute the priority issues and constraints.

• R&D budget for the period May 2009 to December 2011: 14.47 million Euro

www.simflanders.be

#### Flamac in short

As a department within the Strategic Initiative Materials (SIM), Flamac focuses on high-throughput technologies. Its aim is to significantly accelerate and broaden innovative research on new materials. With this in mind, it employs purpose-designed equipment and its strong expertise towards the high-throughput development of coatings, inks, cosmetics, detergents, alloys and ceramic materials to name but a few.

- Staff: 9 employees, including 8 researchers
- R&D budget in 2009: 1 million Euro

www.flamac.be

# Flanders Materials Center (Flamac, a division of SIM)

Flamac specializes in developing high-throughput technologies for accelerated materials research and in conducting research based on these technologies. To this end Flamac has established a number of unique automated systems. Flamac belongs to an international network of universities, collective centers and industrial partners. Every year, the research center organizes an international conference on high-throughput materials research involving many researchers and industry representatives.



Already back in the 13th century, Ghent was renowned in Europe for its textile industry. Today the city still holds extensive textile know-how that has been successfully applied in areas such as agriculture, industry, construction, road building, transport, sports and composites.

Centexbel

With over 800 member companies Centexbel embodies the vast knowledge of the Belgian textile industry. Centexbel, a research center with 140 highly skilled employees, carries out collective or demand-driven research, having at its disposal advanced laboratories to test the chemical, physical, microbiological, and fire behavior of all kinds of textile. It also provides technology consulting, stimulates innovation and provides support to companies, with patent applications, standardization and product certification for instance. Due to the large involvement of the textile producers, which, on such a scale is unique in Europe, many Belgian companies are active in European research and Centexbel itself is a valued scientific partner in many international private research projects.

## A global network with many ramifications

Centexbel is part of numerous local, national and European innovation and technology networks and professional associations. Truly, networks are essential for the applied research carried out there, usually at European level.

Centexbel is a driving force behind textiles innovation. This research is heavily applied to technical textiles, a niche market with huge growth potential. The close collaboration with Flamac and the Composites laboratory of Ghent University aims to increase the cooperation between the fields of composites and textiles and promote it as a growth sector.



#### Centexbel in short

In addition to its 800 member companies from the Belgian textile industry, Centexbel has about 130 associate member companies. These are European companies involved in research and services. Members mainly include companies from the textile, engineering and chemistry sectors, as well as major textile customers such as automobile, garment and distribution companies. More than 1,450 customers in 35 countries rely on the expertise of Centexbel's accredited testing laboratory.

It is also recognized as a 'notified body' for product certification including the CE labeling of protective textiles, carpet, toys and bus upholstery. Furthermore, it is an accredited laboratory for labels such as Oeko-Tex, Ecoflower, made in Green, GUT, Ecopur and Cradle to Cradle.

- Staff: 140 employees, including 90 university-trained researchers
- R&D budget in 2009: 11 million Euro

www.centexbel.be



# Flanders Institute for Biotechnology (VIB)

As a research institute, VIB has carried out groundbreaking research in life sciences. VIB researchers explore the molecular mechanisms that control the functions of the human body, plants and microorganisms. VIB then draws new conclusions out of these studies on normal and abnormal or pathological life processes.

### A constant supply of fresh blood

VIB works closely with four Flemish universities and has forged many ties, both nationally and internationally, leading to a high staff rotation of about 17% a year. This ensures a constant supply of fresh blood into the organization.

This high turnover is largely due to the outflow of doctoral students, as a further step in their career, either in the biotech industry or in academia. VIB is very keen to attract new talent at all levels, especially when it comes to group leaders.

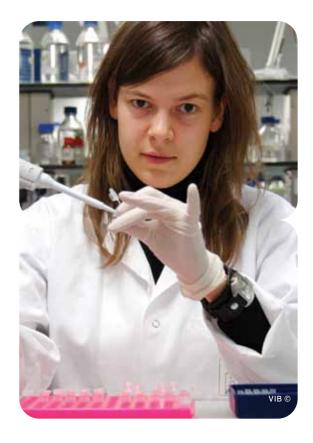
VIB strives to give young scientists with only a few years postdoctoral experience, but with extraordinary potential, the chance to start and develop their own group as an independent junior group leader. In 2009, 13 new group leaders were appointed, some below the age of 35.

As a result, the level of internationalization within VIB has now increased dramatically. For instance, the internationalization rate of all scientific positions is currently 40%, spread over 56 nationalities. There are 20% foreigners among the group leaders and experts, 45% among the postdocs, and 42% among the PhD students.

### Work leads to major economic activity

VIB's innovative basic knowledge is a continuous source of new technologies and discoveries. These can form the basis for new social and industrial applications such as diagnostics and pharmaceuticals. VIB aims to translate its scientific discoveries and conclusions into applications that will benefit society and lead to a better quality of life. Consequently, VIB's inventions are protected by patents. These patents are actively licensed to companies at home and abroad which are eager to convert the inventions into useful products or applications. Alternatively, VIB may develop new findings into technology platforms that form the basis for a new biotech company.

When establishing a new biotech company, VIB builds technology platforms in close consultation with the researchers. Following a concept stage, VIB draws up a business plan. This is followed by a search for experienced managers to run the company, and for domestic or foreign investors likely to invest in the start-up.



Vibrant and relaxing. Dynamic and romantic. Historical and ultramodern. Whatever you want, you can find it in Ghent. The famous French fries, beer and chocolate do the rest!

Massimo Marzorati (Italy), PhD, Ghent University



## THE PORTFOLIO OF VIB START-UPS INCLUDES:

Devgen: develops high yielding seeds and environmentally friendly crop protection technology by using a portfolio of advanced biotechnology and molecular breeding techniques. Devgen was established in 1997 and has offices in Ghent (Belgium), Singapore, Hyderabad (India), General Santos (The Philippines) and Delaware (USA); it employs over 280 people worldwide.

CropDesign: is a plant biotechnology company focused on identifying genes that improve the development, production and yield of crops. CropDesign started in 1998 as a spin-off from VIB and is part of BASF Plant Science since 2006.

Ablynx: is a biopharmaceutical company focused on the research into and development of Nanobodies, a new kind of therapeutic proteins based on single-domain antibody fragments, for a range of serious

and life-threatening human diseases. Ablynx was set up in 2001 in Ghent and currently has over 230 employees.

Pronota: a high-tech biomarker company, it is developing a new generation of diagnostic products. Pronota employs 28 people.

Actogenix: is a biopharmaceutical company focused on the development and commercialization of ActoBiotics™, a new class of orally administered biopharmaceuticals for the targeted treatment of severe diseases with high medical need.

### VIB in short

VIB embraces a unique concept in which the strong partnership with the four Flemish universities of Ghent, Leuven, Antwerp and Brussels plays a key role. In cooperation with these institutions, VIB employs over 1,200 scientists and technicians organized in 72 research groups. These are located on the campus of either of the four partner universities and are structured into eight departments. Through this unique collaboration, VIB brings together a broad expertise and scientific experience in the field of life sciences.

In 2009, VIB published 470 papers in international journals, 282 of which in high ranking journals. 106 were even published in top journals. Furthermore,

the number of publications in the highest ranking journals such as Nature, Cell and Science has grown exponentially in recent years. For the first time in its history, VIB achieved more than 100 scientific breakthroughs in 2009.

VIB also implements an active technology transfer policy. The creation of new jobs is an important objective of technology transfer within VIB. In 2009, the number of positions for highly skilled workers in VIB start-ups rose by 30 to 460.

- Staff: 1,200 employees, including 723 researchers from 56 nationalities
- Revenues in 2009: 68.1 million Euro
- Expenditure in 2009: 61.9 million Euro

www.vib.be



## **Ghent BioEnergy Valley**

Ghent Bio-Energy Valley is a public-private partnership set up to develop sustainable bio-energy activities and support the ensuing economic growth in the Ghent region.

The non-profit association promotes the development of the bio-based economy through close cooperation programs and the creation of synergy between the partners involved in R&D, logistics, structural measures and policy. Communication with the general public is also part of its remit.

In addition, Ghent Bio-Energy Valley brings together scientific expertise from nine research groups at Ghent University. This expertise encompasses knowledge on the entire production chains of bio-based products, ranging from the improvement of crops, the transformation of the agricultural raw material through green chemistry and industrial biotechnology, to bio-based end products.

Recently Flanders, the Netherlands and Europe invested 21 million Euro in the construction of Bio Base Europe. This pilot plant in the Port of Ghent focuses on scaling up bio-based technologies and processes to semi-industrial production levels. Read more about Bio Base Europe on page 55.

## Institute for Agriculture and Fisheries Research (ILVO)

The Institute for Agriculture and Fisheries Research (ILVO) carries out high quality research and provides services to both policy-makers and the sector. The research is divided into nine programs: Sustainable Plant Production; Innovative Agriculture, Fisheries and Product Processing; Quality Animal Husbandry; Sustainable Exploitation of Marine Resources; Agriculture and Fisheries in a Changing Climate; Agriculture and the Natural Surroundings; Agriculture and Fisheries for Safe and High-Quality Food; Dynamic Rural Areas; and Competitive Agricultural Systems. To that end, the institute enjoys a unique infrastructure: over 200 hectares (494 acres) of experimental fields, 5,000 m<sup>2</sup> of stables, 20,000 m<sup>2</sup> of greenhouses, accredited laboratories, a pilot plant... ILVO also runs internationally recognized reference laboratories for GMOs and plant pathogens. What's more, the Fisheries Unit is unique in Belgium and neighboring countries.











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# Investing in the Ghent knowledge region

# Flanders: an attractive investment region

Flanders is likely to be well positioned whenever a ranking is made of the most attractive investment regions in the world. And we don't owe this merely to our strategic location, in the heart of the most prosperous part of Europe. Nor is it simply because Brussels, the European nerve center, adds to the attraction. Our logistical strength, too, is an asset for many investors:

### At the top in Europe

Flanders ranks 7th in the overall classification established in the biannual study "European Cities & Regions of the Future 2010/11" of the Financial Times' fDi magazine. Flanders was also recognized as the European region with the best strategy to attract foreign investment.

According to the study, the City of Ghent did very well. It actually ranked among Europe's top 10 most attractive microcities (fewer than 250,000 inhabitants) for foreign investment.

Flanders is easily accessible through ports and airports. It also features a dense and extensive network of roads, waterways and railways. As a result, we traditionally rank among the best in Europe for logistical operations. Flemings also enjoy a good reputation: not only are we hard workers and productive — in 2009 we ranked third in the Global Productivity Index —, we easily speak several languages and we are eager to learn. These qualities are underscored by our high quality education, whose strength is reflected in numerous international comparative studies. These important aspects of human capital are the deciding factors in many investing cases.

In addition, the fiscal and financial policy in our country is business friendly. The notional interest deduction, for example, decreases the tax burden to an attractive level. And the government also creates a favorable environment for the knowledge society with a whole range of measures. Innovation and research are also backed by an extensive network of universities, research centers, incubators and knowledge clusters. Different sectors are therefore well represented: automotive, chemicals and plastics, life sciences, environmental technology, logistics, ICT, food, and lifestyle.

This picture would not be complete without the high quality of life, so valued by the Flemings: our region is known for its 'Burgundian lifestyle', for its excellent medical facilities, and for its excellent and diverse study programs. Advantages that every expatriate and his or her family will no doubt appreciate...

What makes Ghent a perfect city for business? A large pool of skilled and professional people, and authorities that work for local companies in a both supportive and flexible way. And if you add the friendly nature of Ghent's inhabitants, the rich culture and beauty of the city and the cozy restaurants and cafés, you will feel right at home here in no time.

Jens Holtinger (Sweden), Managing Director, Volvo Europa Truck.



# What do surveys on research expats tell us?

A survey carried out by Ghent University (2008) on 50 foreign researchers working in Flemish universities and research centers shows that they are very satisfied with the quality of life that our region has to offer, both for themselves and for their families. They mention, however, many other positive aspects:

- The attractiveness of a number of research positions (BOF-ZAP and Odysseus) is often mentioned. Through Odysseus, for example, top researchers can take up a position with a Flemish 'guest research center'. The FWO (Research Foundation Flanders) earmarks
   12 million Euro over five years to provide start-up funding for the research projects of Odysseus Researchers.
- Many researchers choose a specific research group based on its scientific reputation. In fact, many research groups in Flanders have built a reputation that gives them great appeal on the international scene.
- Stad Gent ©

- Flanders' central location in Europe also makes it a very attractive region for foreign researchers to travel or stay in touch with family (especially for European researchers).
- The multilingualism of the Flemings is often mentioned by researchers as an important asset. The fact that foreigners can express themselves in English in everyday life (in shops for example) facilitates their integration.
- Since many foreign researchers come to
   Flanders with their partners, the presence of
   international business gives Flanders a major
   advantage. It increases the chances of finding a
   job for the partner.
- The accessibility of the high quality Flemish health system is also seen as very positive.

# Innovation, life sciences & pharmaceuticals: preferential treatment in Flanders

In our knowledge society, research and innovation take a central place. Flanders has developed a variety of incentives to encourage research staff, investments directed at R&D and income from patents.

- Those companies which submitted or purchased a patent after a 2007 are able to deduct from their taxable earnings 80% of the income generated out of it. This allows them to quickly recover their investment in R&D.
- Investment in patents and R&D are eligible for a higher investment allowance.

 Companies in Flanders have to pay up to 75% less social security contributions for highly skilled staff, engineers and researchers.

Flanders is also one of Europe's top regions for the number of companies conducting (pre)clinical trials.

The close cooperation between hospitals, universities, research centers and pharmaceutical players has created an ideal environment for this vital stage in the development of any innovative therapy. National legislation provides for very short approval times in experiments on humans: 15 days for Phase I, and 28 days for Phases II to IV.

This gives a significant competitive edge to life sciences companies conducting trials in Flanders.



## Easily available R&D funds

The Flemish Government set up the IWT, the Flemish agency for Innovation by Science and Technology (www.iwt.be) in a bid to sustain innovation by industry in Flanders. Any company that is active within the Flemish territory can call on the IWT's support, whether in the form of advice or grants for research and innovative activities. In 2009, IWT awarded almost 300 million Euro to projects run by companies and/or knowledge centers. IWT promotes networking and cooperation among all innovative actors in Flanders and throughout the European Union.

Before a company sets up a business in Flanders, it can consult with the IWT over possible support. If the IWT decides not to support a given project, the applicant receives a detailed explanation and advice as to why and where the application file falls short. IWT also knows how to offer added value to innovative players.

# The next stage: helpful venture capital

Flanders also has a lot of business angels and venture capitalists that help innovative businesses grow. With 30 years of experience, Gimv (www.gimv.com), for example, is the most important venture capital provider in our country and a major player on the European and international investment market.

Listed on Euronext Brussels, Gimv manages a portfolio of 1.7 billion Euro in assets, including third party funds. Besides Gimv, there are dozens of other venture capitalists in the Flemish landscape who provide local and international companies with start-up funding.

# Ghent on the Flemish map

Flanders is the economic heart of the European pentagon linking Milan, Paris, London, Munich and Hamburg. Approximately 50% of the European GDP is generated in this pentagon. Ghent holds a strategic position within the pentagon, as it lies between several powerful economic regions: the Netherlands Randstad (Amsterdam, Rotterdam, The Hague and Utrecht) in the north, the German Ruhr region in the east, London in the west and the French cities of Paris and the Lille-Roubaix-Tourcoing conurbation in the south. Its strategic location gives Ghent huge potential. Other large cities such as Brussels and Antwerp and neighboring France and the Netherlands are a mere one hour's drive from the city. While Brussels International Airport is only 60 km away, Brussels and Antwerp are hubs of the European HST network.

The Port of Ghent is an ideal gateway for logistical operations. It lies at the intersection of busy inland waterways and occupies a central place in the important transport corridor between Ghent and Paris. The ambitious Seine-Nord canal project is planned for this high-capacity waterway link. This will improve inland access via the Upper Scheldt, the Canal Seine-Nord and Seine River.

The City of Ghent has 243,155 inhabitants and has seen its population increase by 8% over the past eight years. The ever-growing number of students and schoolchildren in Ghent – currently over 100,000 – makes investing even more appealing. Nowadays, the city welcomes 38,000 commuters

on a daily basis; extension work has now begun on Sint-Pieters railway station to make it the largest in Flanders. Once completed, commuter traffic is set to rise to 60,000.

Ghent records over 610,000 hotel overnight stays each year: 71% are for holiday purposes, and 29% for conferences, seminars and business. The fact that Ghent is a city with growing appeal for foreign investors is demonstrated by the recent biennial survey conducted by the Financial Times' fDi Magazine. In the 2010/2011 survey of attractive European regions and cities for investors, Ghent ranks in the top 10 in the category of cities with fewer than 250,000 inhabitants. An excellent performance that perfectly reflects the city's ambitions.

#### Zoom in on the Port of Ghent

The socioeconomic importance of the Port of Ghent for the Ghent and Flemish region as a whole should not be overstated . 70,000 people are employed in or around the port by over 300 companies. 70,000 people are employed in or around the port by over 300 companies. With an annual throughput of more than 48 million tons of cargo, the Port of Ghent is the third largest in the country. It is a medium, congestion-free port with 28 km of quay walls and 220 km of railway tracks, spread over 4,700 hectares (about 11,610 acres). The seaport of Ghent offers a perfect balance between sailing time and feeder traffic. 17 km inland, only a few hours' sailing from the North Sea, it helps save many kilometers and hours of road transport to the hinterland. Furthermore, the harbor is also located behind a sea-lock, creating calm, tide free access.

The Port Authority (www.havengent.be) seeks to diversify its activities, choosing to strengthen existing industries, and focuses heavily on markets with growth potential. As a result, by 2020 the Port aims to achieve an annual maritime cargo traffic of 30 million tons and 20 million tons through inland waterways.

While preserving existing industrial activities, the Port Authority intends to further expand the harbor into a logistics platform.

Providing fast sea access to Panamax ro-ro ships, the Ghent seaport is a preferred location for industrial groups in the steel, automotive manufacturing, food, paper production, energy and chemical sectors. Ghent is a renowned seaport for handling grain, coal, cars, chemicals, steel, timber, petroleum products, and building materials.

The Port of Ghent also offers room for further expansion. With the new Kluizendok terminal and surrounding business parks where 600 hectares (close to 1,500 acres) remain available, Ghent certainly holds yet another asset for investors who are keen to develop new activities in the harbor area. As a medium sized harbor, the Port of Ghent is strategically located in the logistics heart of Europe: a unique location therefore for investors looking for new, ready-to-build lots within the port area. The Port of Ghent intends to maintain its position as the seaport with the largest biofuel cluster in Europe. At the Kluizendok terminal, 80 hectares (198 acres) have been reserved for the biobased chemical industry.



The famous slogan "Large enough to cope, small enough to care", fits the Port of Ghent like a glove. Ghent is not affected by the congestion problems that many major European ports are facing. A smooth connection to various European highways is a plus.



# Why - as a knowledge-intensive company - invest in Ghent?

Ghent offers a lot of advantages for international knowledge-intensive firms. As a large knowledge pool, the city offers a strong network in which companies and research institutions collaborate to push back the boundaries of innovation.

# The biggest and fastest growing knowledge pool

The third-level education population of over 67,000 students makes Ghent by far the largest student city in Flanders. With 33,000 students, Ghent University plays a leading role. The number

of students of the second largest university in Flanders has dramatically increased by 22% over the past four years. Thanks to the University, Ghent has a large, steadily growing knowledge pool at its disposal. For instance, 3,198 PhD students registered at Ghent University for the academic year 2010/2011: a 46% increase over the past 5 years. The University launched Doctoral Schools in order to deliver a high level and internationally recognized education and scientific training to these students. The development of these schools is set to help recruit researchers from the four corners of the world.



For me, Ghent is the Burgundian version of Silicon Valley. The convivial atmosphere of the gourmet restaurants, beautiful squares and great pubs. But there's something even greater than that: the innovative start-ups, the huge concentration of interesting people and an almost Dutch entrepreneurial spirit!

Polle de Maagt (Netherlands), Marketing
Consultant, InSites Consulting

# Foreign companies involved in research activities

In recent years, Ghent has succeeded in convincing a number of major foreign companies to start research activities within its boundaries.

 As a result, it is in Ghent that Yakult set up its first European scientific research center. Yakult is a global pioneer and innovator in preventive healthcare and probiotics, and plans to expand its scientific platforms in this European center. To that end the Japanese company has decided to establish itself at the VIB bio incubator in Ghent. Pfizer also chose Ghent for the establishment
of a research center: PARC or Pfizer Analytical
Research Center. This 'Center of Excellence'
combines the expertise of the research group
on separation techniques in organic chemistry
at Ghent University with Pfizer's expertise. The
center aims to develop rapid techniques for
pharmaceutical analysis and the discovery of
new drugs.

# Flourishing cooperation between businesses, universities and colleges

Ghent University scores high in terms of cooperation between industry and business as the level of services and collaborative research ranks relatively high. Indeed, many research groups conduct applied research. This is also felt by the knowledge-intensive firms in Ghent; they indicate that close partnerships have to be forged in matters of innovation. These collaborations primarily

involve other companies and universities and/or colleges, and, to a lesser extent, public or private research institutes.

The many research institutes also generate spinoffs. Thus, Ghent University, together with VIB, creates two or three spin-offs every year and the number of spin-offs is expected to increase in the coming years.



27 life sciences companies are currently established in Ghent. The presence of a technology park and two bioincubators certainly explains this. Furthermore, the biotech sector benefits tremendously from the close proximity of Ghent University Hospital, Flanders Institute for Biotechnology (VIB) and Ghent University. The presence of Ghent Bio-Energy Valley (and the Bio Base Europe project) for the further development of white biotechnology is equally important.



## Huge IWT support to the Ghent region

Companies and research centers and institutions can rely on government assistance for the development of new knowledge. In Flanders, the IWT awards project grants for R&D. In the period from 2007 to 2009, 240 different companies from the Ghent district received funding from IWT as sole applicants or partners in a project. Concretely, this resulted in 1272 IWT projects in that period.

# Strong patent position in technology areas such as biotech, chemicals, pharmaceuticals and telecoms

The annual number of patents from Ghent University has risen steadily from 2002 to 2008. If the patents in the portfolio are linked to their technology domain based on their International Patent Classification, over one third seems to be linked to biotechnology.

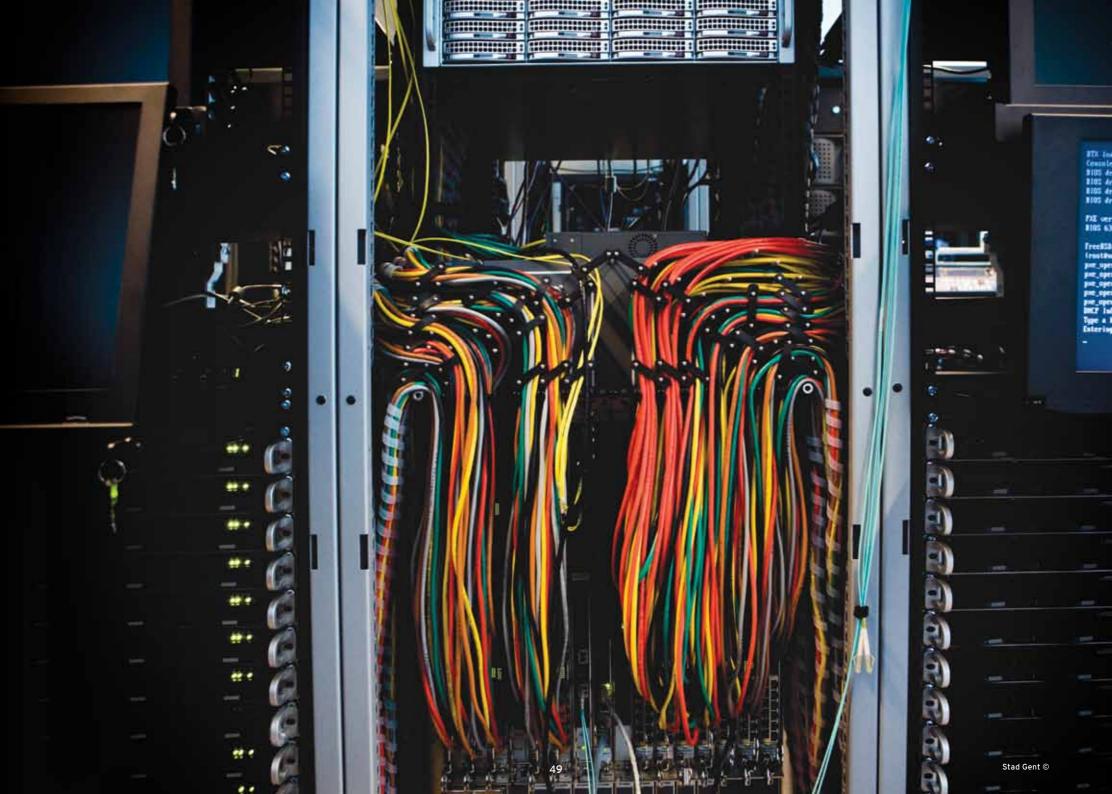
Still, Ghent does not rely solely on the university for its patents. Large companies and knowledge institutions like Innogenetics and VIB have developed and patented new technologies and processes. Taking this into account, the patent position in biotechnology is even better.

Ghent also ranks high in the field of telecommunications, a situation that is certainly attributable to the presence of IBBT. In addition to big names like TomTom and Netlog, many fledgling ICT companies choose to establish themselves in Ghent. The non-profit association Ghent Web Valley was founded in 2010. It seeks to market Ghent as the 'online knowledge center', and thus attract international investors and new talent to jointly expand the online event. The Waalse Krook center of knowledge and culture, scheduled for completion in 2015, will reinforce this movement even more.

## Emeritus Professor Marc Van Montagu: the birth of plant biotechnology

Ghent is the birthplace of biotechnology. Indeed, it was Professor Marc Van Montagu who along with his colleague Joseph Schell discovered the mechanism of "gene transfer", which is paramount for the genetic modification of plants. Van Montagu is the founder of two spin-offs: Plant Genetic Systems (PGS) and CropDesign. In 2000 he founded the Institute of Plant Biotechnology for

Developing Countries (IPBO) at the University of Ghent. The mission of the institute includes training, technology transfer and research in plant biotechnology aimed at meeting the needs of less developed countries. He is chairman of the PRRI (Public Research and Regulation Initiative) and EFB (European Federation of Biotechnology). Marc Van Montagu has received six honorary doctorates and several awards, including the prestigious Japan Prize.





# Ghent offers room for development

A vision was developed to accommodate in and around the city the often fast growing knowledge-based companies. This vision is bearing fruit today as international companies find the necessary infrastructure for sustainable growth in the incubation centers and industrial parks.

The Ghent office market is the largest in Flanders after Antwerp. Today, the bulk of the office space is in the center and in the southern part of the City.

#### IBBT incubation center for ICT

The Interdisciplinary Institute for Broadband Technology (IBBT) manages an incubator, iCubes, in the Zuiderpoort office complex. Here innovative ICT companies rent work space, close to their peers. The incubator not only aims to provide companies with logistical support, but also to bring them together to bring about cross-fertilization, leading to new innovations

www.icubes.be

Actually, most of the knowledge firms are located in the southern mosaic, primarily in the Zwijnaarde Technology Park. In the field of biotechnology, but also in other areas such as ICT and new materials, Ghent is a magnet for high-tech companies. And since each year a number spin-offs see the light, additional space is being provided.

In addition to the specific area dedicated to knowledge companies, the area earmarked for other businesses, whether or not international is also expanding. Moreover, the office space is set to increase by almost 300,000 m2 in the coming years.

- 82,000 m<sup>2</sup> of new offices are planned within walking distance from the Ghent Sint-Pieters railway station.
- The Loop project provides space for 155,000 m<sup>2</sup> of new offices.
- The Old Docklands ("Oude Dokken") urban renewal project will not only make it possible to live but also work on the waterfront. 23,000 m<sup>2</sup> of new office facilities are planned there.
- Almost 30,000 m<sup>2</sup> of new offices are to be built around the new Artevelde stadium.

In addition, there are many private initiatives to build business centers and office premises in the Ghent region. The master plan of the City of Ghent provides for considerable space for knowledgebased activity, multipurpose buildings, incubators, etc. Ghent is planning to develop the Rijvissche Science Park for example. Rijvissche will offer 65,000 m² of gross floor area to knowledge-based companies that have close links with knowledge institutions. This park will have a direct link with the nearby Technology Park.

From 2014, the Eiland Zwijnaarde 'smart logistics park' will be completed with a total allocable area covering some 35 hectares (86 acres), over a total area of 60 hectares (148 acres).

The large urban economic projects in the pipeline also provide for offices and office-like premises to a large extent. For an overview on urban development, see also: www.agsob.be and www.investingent.be.

I find that Ghent is a big city that nonetheless feels like a small town, because everything is easily accessible by bike, bus or tram.

The old town is extremely beautiful and very cozy, with lots of shops, restaurants and nice brown cafes where you can enjoy the glorious local beers.

Niels Sluijs (Netherlands), PhD student, Ghent University



## Zwijnaarde Technology Park

The Technology Park in Zwijnaarde is strategically located near the junction of the E40 Ostend-Brussels motorway with the E17 Antwerp-Kortrijk motorway. The park covers an area of 52 hectares (128 acres) and consists of the Ardoyen Campus (30 hectares or 74 acres) and the Ardoyen Science Park (22 hectares or 54 acres). Various buildings of the Faculty of Engineering and the Faculty of Sciences of Ghent University are located on the Ardoyen campus. There are currently about forty research-oriented companies,

employing 1,500 people in total, in the Ardoyen Science Park. Most of these companies, especially in biotech and ICT, are spin-offs from Ghent University and start-ups from VIB (Flanders Institute for Biotechnology).

The VIB bioincubator and the Innovation and Incubation Center (IIC) at the Ardoyen Science Park are ideal locations for young R&D intensive start-ups. The concentration of biotech companies in the Ardoyen Science Park plays an important role in the development of the Flemish biotech cluster.

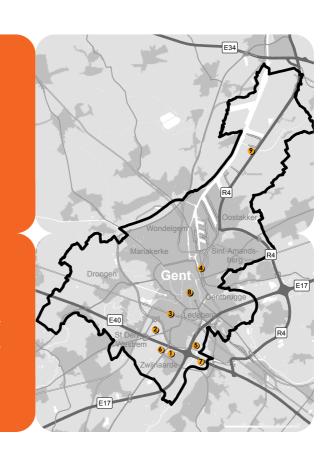
## Rijvissche Science Park

The City of Ghent has plans to develope the Rijvissche Science Park. Rijvissche provides space for new or established businesses that focus on fundamental or applied research and development, in conjunction with education and/or training activities. The total project area covers 13.47 hectares (33.28 acres), 10.88 hectares (26.88 acres) of which is earmarked as a science park. A gross floor area of 65,000 m² is available.

A selection from the list of companies and knowledge institutions in the Technology Park:

- Innogenetics, the first European biotech company listed on the EASDAQ;
- World leaders in agricultural biotech such as Bayer BioScience and CropDesign;
- A mix of starter and established biotech companies such as Ablynx Actogenix, AlgoNomics, BioMaric, Devgen, etc.:
- A biotech service center, which brings together companies specialized in services (BIP, Careers in Life Sciences, etc.);

- Academic knowledge centers (Ghent University, VIB) conducting world-class research on agricultural and medical biotech;
- VIB's head office and three research departments, two in red biotechnology and one in green biotechnology.
  - 1. Technologiepark Ardoyen
  - 2. The Loop
  - 3. Project Gent Sint-Pieters
  - 4. Oude Dokken
  - 5. Artevelde Stadion
  - 6. Wetenschapspark Riivissche
  - 7. Eiland Zwiinaarde
  - 8. Waalse Krook
  - 9. Biobase Europe



#### The role of FlandersBio

Flanders and other countries.

and seeks to be the driving force

Located near the future Rijvissche
Science Park, FlandersBio is the industry
organization for life sciences and
biotechnology in Flanders.
A non-profit association, FlandersBio
was founded in 2004 as a membership
organization and currently has over 180
members. "Building Biotech Bridges" is
the slogan of FlandersBio.
Bridges between biotech companies,
government and academia. Between

The organization represents the industry,

provides a positive working environment

behind the sustained growth of Flemish knowledge-based biotech business. Its main activities are networking, information and advocacy.

FlandersBio in figures:

- 140 members, including 95 biotech companies;
- 600 to 700 visitors at the annual 'Knowledge for Growth' convention;
- Represents about 10,000 workers in life sciences in Flanders (the total turnover of the biotech sector in Flanders amounts to 2.9 billion Euro, with 0.5 billion Euro earmarked for R&D).

www.flandersbio.be

The science park is part of the Groenpool Parkbos area, and is located south of Ghent, near the University and Technology Park. Situated close to the E40 motorway, it provides businesses with good access to the harbor, Antwerp and Brussels.

# Eiland Zwijnaarde

Bordered by three waterways, the Eiland Zwijnaarde area is being developed as a sustainable regional business park. Not only will it accommodate offices, but also transportation, logistics and distribution. The total allocable area covers some 35 hectares (86 acres), over a total area of 60 hectares (148 acres). High quality natural and landscape framing is also taken into consideration in the layout of the site.

The site is being developed as a 'smart logistics park', with:

- 14 hectares (34.5 acres) for knowledgebased activity with room for the R&D of big companies or for knowledge companies with production and storage;
- 18.6 hectares (46 acres) for logistic and mixed activity, waterborne wherever possible;
- A flexible area of 3.1 hectares (7.66 acres), filled with either knowledge activity, or with logistics activities; this area is to be allocated last.

Eiland Zwijnaarde is accessible by highway, waterway and an extensive bicycle network; the industrial sites will also be accessible via public transport. The first companies will be able to open their doors in late 2014.

## The Loop

'Ghent The Loop' is the public-private development of a new district. Laid out over 145 hectares (358 acres), it is aiming for an international atmosphere. It will provide a concentration of professional and retail activities, as well as leisure and residential amnenities in a high quality and stimulating environment. The first stage includes the construction of 336,500 m² of floor space out of a planned total of 552,500 m². In addition to 150.000 m² dedicated to office-like premises, there is also room for 155.000 m² of new offices.

The development is phased over a period of about

The development is phased over a period of about 20 years. Furthermore, The Loop is located in the southern part of Ghent, near the E17/E40 motorway interchange.

#### The Waalse Krook

The City of Ghent is planning to create the 'Library of the Future' and the 'Center for new media' on the "Waalse Krook" site. There, knowledge and culture will be collected, stored, accessed and used on both traditional (paper) and high-tech media. To keep up with the latest developments, the library will work with Ghent University and the IBBT. The IBBT and some departments of the University have expressed great interest in the possibility of establishing themselves on the site. This will allow a direct flow of innovations towards the library, where they will be available for every visitor. Researchers and users will also be able to meet there. As a result the Waalse Krook will be a living laboratory from which all parties can draw direct knowledge.

The project also includes the restoration of the former Winter Circus which is part of the site so that it can accommodate the Flemish Institute for Archives and Access to Audiovisual Heritage (VIAA). The Center for new media will also offer space to young, innovative companies.

Furthermore, housing, thematically related retail, catering and leisure initiatives will get a place in and around the former circus. The construction work will start in 2012, with the opening of the Library of the Future and the Center for New Media planned for late 2015.



# Bio Base Europe: Pilot Plant for Industrial Biotechnology and Biorefining

Bio Base Europe is a partnership between Ghent Bio-Energy Valley and Biopark Terneuzen in the Netherlands. Both organizations have long campaigned for the development of a bio-based economy in the border region of Flanders and the Netherlands. This economy is not just about biofuels; it also involves the development of bio-based products such as natural dyes, bioplastics, biochemicals and biological detergents. Bio Base Europe is a progressive European initiative aimed at developing the bio-based economy of the future.

Bio Base Europe is the first initiative of this kind in Europe. It seeks to develop a unique platform for the promotion of sustainable bioprocesses, which facilitate the development of bio-energy and bio-based products from renewable biomass resources and reduces the dependence on limited fossil fuels. This transition is considered one of the

main paths toward industrial sustainability. Bio Base Europe consists of two parts: a pilot plant and a training center. The Bio Base Europe Pilot Plant will focus mainly on second-generation technologies. It will be used to convert agricultural byproducts and crops not intended for consumption such as wheat straw, corn cobs, wood chips, Jatropha and algae oils into biofuels, bioplastics and other bio-based products. The Bio Base Europe pilot installation is a flexible and diverse pilot plant covering the entire value chain in a single location, from green sources to the final product. It acts as an open innovation center for commercial companies and research institutions that focus on bio-based activities the world over. Even though scientists have already demonstrated the potential of these technologies in laboratory trials, the difficulty lies in scaling these processes up for mass production. The Bio Base Europe Pilot Plant is designed to overcome this hurdle, by creating

pilot facilities that make it possible to develop new bioprocesses to an industrial scale. The Pilot Plant (commissioned in the first half of 2011) is located in the Port of Ghent, in the Rodenhuizekaai area, right by the biorefinery.

In addition, the Bio Base Europe initiative will include a state-of-the-art training center, the Bio Base Europe Training Center, in order to tackle the industry-wide shortage of skilled process operators and technical maintenance experts. The Bio Base Europe Training Center will be located in Terneuzen, just across the border in the Netherlands and 30 km from the Pilot Plant.

www.biobaseeurope.org





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# Living and working in Ghent

# **Great shopping**

Even though Ghent, with over 240,000 inhabitants, is the second largest city in Flanders, it never feels overcrowded. A sophisticated traffic management plan respects both motorists and vulnerable road users. As a result, the historic heart of the city has turned a pedestrian area of approximately 36 hectares (89 acres) into a lovely retail center. Next to an extensive choice of specialty food stores and supermarkets, almost all popular clothing chains can be found near the pedestrian Veldstraat. All over the city, fans of top designer brands, original clothing, jewelry and home decoration items find what they are looking for in the many boutiques set up by local and creative entrepreneurs.

# Multimodal mobility

In the city, cycling is a popular mode of transport. Walking, too. Actually, the main services, the commercial center and tourist attractions are located in the city center, within walking distance of each other. The other side of town can also be reached in time via the dense public transport network of buses, trolleybuses and trams. Cars can be parked in one of the many underground car parks.

# Never-ending choice of delicious food

Ghent is a proud Flemish city. It is therefore the ideal place to find out why so many Flemings are described as 'Burgundians'. It's because good food is part of our national DNA. The aromas and flavors wafting from the numerous eateries in the city are a case in points. The traditional Flemish cuisine wins every battle, whether the appetite is large or a small.



Ghent may well be a smaller version of Flanders, yet there is ample room for the rest of the world. The hospitality of the city is reflected in the wide range of restaurants and eateries serving international cuisine. Just name an exotic corner of the world and you will promptly be served its national dish.

# A school for every child

According to the OECD, for years now, the Flemish education system ranks among the best in the world. This is reflected in the choice of schools in Ghent. The city boasts a large number of schools with a variety of courses, philosophies and methodologies. The urban education system alone includes about 30 primary schools (nursery and primary schools) with 44 locations in the center and the suburbs of the city. Secondary establishments in the city offer a wide range of courses, both in mainstream and in technical and vocational education, thus giving every young person the chance to reach their full potential. Even non-Dutch speaking newcomers and young people who want to work part-time and study can attend secondary education.

Some expatriates choose to send their children to international schools. A number of private schools in Flanders and around Brussels cater for this type of education. The City of Ghent also has plans for an international school.





# Made for culture lovers

In Ghent culture lovers are never disappointed. For each classical play, there must be at least five small theaters continuously showing independent productions. For every commercial cinema complex there is a cinema showing art-house films and quality productions from around the world. And the nightlife in Ghent offers both traditional pubs and trendy, original events that draw young people from across Europe. Ghent radiates art, culture and entertainment.

September and October are traditionally the months focusing on classical music. Flanders Festival then organizes a wide range of concerts usually held in the numerous historic buildings and churches adorning the city. However, Ghent's cultural season never stops. There is something for the culture lover all year round.

The Ghent Festival in July and the Flanders International Film Festival Ghent in October are two must-see events. The Ghent Festival seeks to encompass all kinds of cultural events, and has succeeded admirably in doing so for decades. Music, theater, multicultural encounters, street theater, gourmet paradise, carnival, circus and unique folklore performances: because of this wonderful mix, this is an unmissable event for those looking for authentic art, endless fun and unpretentious entertainment. The old town is taken over by the festivities for ten days and activities are planned around the clock. Every year half a million

people visit the Ghent Festival over the 10 days. The Ghent Film Festival has been attracting interest every year since 1974. The festival focuses primarily on film music, which has given it a solid position among Europe's top film events. Every year, the presentation of the World Soundtrack Awards and the traditional movie awards draw international movie stars and over 130,000 film buffs to the red carpet in Ghent.

# Attractive museums

The city holds a number of renowned museums. The Municipal Museum of Contemporary Art, **S.M.A.K.** in short, is perhaps the most famous or notorious. The collection features mostly modern European art from 1950 up to now. The museum covers art movements such as Cobra, Pop Art, Minimal Art, Conceptual Art and Arte Povera, with works by some of the world's top artists. Across the street, stands the **Museum of Fine Arts**. One of the oldest museums in the country, it gives a broad picture of Flemish art from the Middle Ages until the first half of the 20th century. Two paintings by Hieronymus Bosch feature among the masterpieces of ancient art.

The permanent collection of the **Ghent Design Museum** does includes a number of important
17th and 18th century interiors, but the museum
focuses on 20th century and contemporary design.
The **Dr. Guislain Museum** occupies a unique

position in the international museum world.

It is housed in what used to be the psychiatric institution. It describes life in psychiatry from 1860 up to the present and shows the evolution of the understanding of the mentally ill and people with disabilities. Outsider Art is another aspect of this fascinating museum.

Ghent was a major textile center from the Middle Ages until the 19th century. The Museum of Industrial Archaeology and Textiles, **MIAT**, gives a unique insight into the dramatic technological changes that our society has undergone over the past 250 years. The top floor of the museum building offers a magnificent view over the city.

**Alijn House** displays every-day life in Ghent from 1880 to 1970.

Since 2010, the story of the development of the City is being told in the brand new **STAM**. It is the perfect place to look at Ghent in its historical context, as today's real city reveals itself in an innovative and interactive way.

# For (professional) sports and leisure

In Ghent, you can keep moving. The city offers a wide range of modern sports halls and fields. In addition to an extensive sports infrastructure spread over the greater Ghent area, there is a concentration of sports amenities in and around the Blaarmeersen nature and recreation park. This is where you will find the city's sporting lung. The extensive sports and leisure infrastructure, the lake with its beach and sunbathing meadow, the

Stad Gent ®

camping with its hikers' cabins and on-site catering facilities offer an ideal setting for all kinds of sports activities.

Every athlete will find what they need in the wide range of outdoor and indoor sports facilities, including Flanders Top Sports Hall, the Flemish Eddy Merckx Cycling Center with the brand new BMX track, the Omnisport Hall, the Top Gymnastics Hall and the Trampoline and Rythmics Hall. Rowers are well catered for in the Watersportbaan rowing race course.

And the choice of activities for sports lovers does not stop there: go kayaking through the historic city; admire the Belgian top football club AA Gent or even play football in one of the many clubs around Ghent; experience the cycling madness during the Six Days of Ghent and the Flemish classic "Omloop Het Nieuwsblad" cycle race, participate in the Ghent City Run, or take part in

the many sports camps the city organizes for its residents: the possibilities for the active or passive enjoyment of sports are just as diverse as the people of Ghent themselves.

# Ready to come to Ghent?

If you plan to come and work in Ghent, you may find the following checklist useful. To ensure that you can get here stress-free, you might want to start by giving yourself plenty of time to apply for certain documents.

## 6 months beforehand

- Gather your tax assessments for the past few years. They will come in handy when completing your first tax return in Belgium, especially if you have worked part of the current year in another country.



#### **Useful websites:**

www.gent.be

www.visitgent.be

www.delijn.be

www.nmbs.be

- Collect your bank statements and credit card

#### 2 months beforehand

- Submit your visa application to the Belgian embassy or Belgian consulate in your country (not for EU citizens and residents of the European Economic Area (EEA)). It takes about four weeks before you receive the document in your mailbox.
- Contact the Ministry for Foreign Affairs of your country to see if there are bilateral treaties that apply to nationals working in Belgium.
- Check that your passport is valid for 15 months.
- Make sure all the pets you wish to bring to Belgium are vaccinated against rabies.

#### 1 month beforehand

- If you don't live in the EU, you have to request your work permit in time. To that end, you will need to contact your (future) employer in Belgium.

- Make copies of your birth, marriage or divorce documents, which may be useful for your registration in Belgium.
- Notify your bank of your plans to come and work in Belgium and ask what is the best way to carry out your banking transactions.
- Open a non-resident bank account in Belgium which will provide limited financial possibilities upon your arrival.

 Collect your children's school certificates. That will make it easier to find the right school in Belgium.

#### 2 weeks beforehand

- At the local authority where you live, get a certificate of good conduct, a requirement to obtain a residence permit.
- Find out how your health insurance can support the transition to the Belgian social security system.



#### 1 week beforehand

- Pets must have a health certificate issued at most one week before leaving for Belgium.
- Buy French and Dutch dictionaries or phrase books to facilitate your first formalities in Belgium. In Ghent, besides their mother tongue (Dutch) and their second language (French), people usually speak English quite fluently.
- Collect medical certificates and documents that can testify to your registration with a social insurance fund in your country.

# Work permit

As a foreign worker, you must hold a valid work permit to be able to work in Belgium. This prerequisite does not apply if you are a national of an EEA State or Switzerland, and for some categories of workers. Belgian employers must request a work permit type B if they want to employ a foreign worker. Based on this work permit you can then apply for a visa.



If you are not an EU national (except EEA nationals and citizens of Iceland, Norway and Liechtenstein) who intends to exercise a self-employed activity in Belgium, you need a professional card. You can apply for this card either with the Belgian diplomatic or consular representation in the country of last residence or with the local authority of the municipality where you are already legally residing in Belgium.

# Visa

If you come from a country outside the European Union, Iceland, Monaco, Norway, Liechtenstein or Switzerland and want to stay in Belgium for more than three months, you are subject to visa requirements. You must first have obtained a Schengen visa type D. You must submit the application to the Belgian diplomatic or consular representation in your home country.

If you want to come to Belgium to work, you must hold a passport valid for at least one year, a recent certificate of good conduct covering the last five years, a medical certificate and a work permit. This work permit must be requested by a Belgian employer and is delivered together with the professional card type B. When the visa is issued and you arrive in Belgium as a foreign national, you must register with the municipal authority of your place of residence in order to further regularize your stay.

# And your family?

Belgium has a progressive legislation with flexible provisions for the long-term heterosexual or

homosexual partners of people who are legally in the country. Obviously, their stay will also involve some paperwork. Your partner must be over 18 years of age and in possession of a passport that is valid for 15 months; a copy of your ID card; documents that show that you are (not) married; documents that show that you are in a stable relationship (photographs, letters, bills, etc.); a birth certificate; proof that your partner has sufficient financial means to live in Belgium; proof that you will be living together in Belgium; a declaration of good character; a medical certificate and a declaration stating that you are financially responsible for your traveling partner. Once that arrives in Belgium with a visa type D, he/she should register with the municipality where you will stay together.

Children under the age of 16 may stay in Belgium without their own travel documents provided they are accompanied by their parents. If you are divorced, you must be in possession of an admission certificate signed by your former partner and that was authorized by the authorities of your place of residence.

#### **Useful websites**

General information: www.diplomatie.be

Visas and residence permits: website of Aliens' Office –https://dofi.ibz.be

e-mail: helpdesk.dvzoe@dofi.fgov.be

Work permits: website of Immigration and Naturalization Services – www.werk.be

e-mail: arbeidskaart.gent@vlaanderen.be

Register Online / Ghent City Council: www.gent.be – population/foreign nationals/ foreign students/ E counter

e-mail: burgerzaken.expats@gent.be

Studying in Ghent: www.studentingent.be

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