

# BRIGHT BRABANT

A satellite view of Europe at night, showing city lights and a red dot in the Brabant region. A vertical line connects the red dot to the top of the text.

Beyond boundaries, Brabant's  
solutions to global challenges

## OUR CHALLENGE

# Building a healthy future

In Brabant, we are working on future-proof improvements in health and the promotion of everyone's quality of life and prosperity. Brabant contributes to this together with entrepreneurs by focusing on personalized treatment methods, digital healthcare, and the application of key technologies such as photonics, nanotechnology, and robotics.

*Philips Eindhoven Scan. From light bulb factory to specialist in health technology: Philips has been involved in health care since the early years.*



# LIFE SCIENCES & HEALTH

**Brabant holds a strong position in the Netherlands when it comes to the Life Sciences & Health industry. The presence of the full value chain in the field of MedTech and Pharma shows that Brabant has a mature and thriving LS&H industry. The presence of research, production and logistics in a relatively small geographical area is something to be proud of, but above all it is an invitation for foreign companies to be part of this ecosystem.**

Within the Life Sciences & Health (LSH) sphere, the Netherlands is described as Europe's Connected Life Sciences & Health Metropolis. The compact nature of the country and the high density of LSH assets make it an attractive, centrally located ecosystem on the European continent. Furthermore, the typical Dutch propensity for collaborations and joint ventures that symbolizes the character of the LSH sector is at its strongest in Brabant. The openness of the people, coupled with a high number of family businesses, has created an easily accessible, open-door culture where collaboration and co-creation are the norms – among companies and knowledge institutions.

### Firm foundation

Over a century ago, the establishment of two very different family businesses laid the ground for excellence in LSH in the region – one in manufacturing and production, the other in pharmaceuticals. Gerard Philips and his father Frederik established their fundamental research, design, and manufacturing plant to produce lightbulbs in Eindhoven in 1891. Its rich legacy of innovation and production has led to many High Tech businesses and a thriving industrial ecosystem in the region. Philips' world-renowned R&D facility eventually became what is now the High Tech Campus Eindhoven, home to 12,500 innovators, researchers, engineers, and some 300 companies in what has been called 'the smartest square kilometer in Europe.' In addition to Philips' considerable industrial

legacy, the company restructured in 2011, moving from electronics to health and medical. Its research today focuses on innovations for clinics, software, and High Tech imaging systems such as MRI & CT scanners, X-rays, and Artificial Intelligence. It also develops the hospitals of the future.

The presence of Philips has acted as a catalyst for the formation of a complete MedTech supply chain in Brabant. The region houses a network of specialized suppliers, manufacturers, research institutions, and skilled workforce, all collaborating closely to support and enhance Philips' innovations and contribute to the overall growth of the medical technology industry in Brabant.

**The High Tech Campus Eindhoven has been called 'the smartest square kilometer in Europe.'**

### Key Pharma

The Pivot Park in Oss is Europe's foremost campus for biopharmaceutical innovation and drug discovery and is the beating heart of the Pharma ecosystem in Brabant. Its purpose is to help entrepreneurs to accelerate their growth by providing top-class facilities and infrastructure. Furthermore, it stimulates knowledge exchange and collaboration among a close-knit Pharma R&D and manufacturing community of established companies, startups, scale-ups, and spin-offs, allowing them to fast-track their progress, whether they are involved in product development, contract research, contract manufacturing, or Pharma-related services – all complementing the existing value chain.

For example, Oss is renowned as the location for

# Why Brabant excels in Life Sciences & Health

### Complete value chain

Presence of the complete value chain from R&D, production to logistics.

### High-value manufacturing industry

The high-value manufacturing industry surrounding Pharma and MedTech.

### Dynamic innovation hubs

Well-developed campuses and shared facilities such as Pivot Park and High Tech Campus Eindhoven.

### Relevant knowledge institutions

The presence of relevant knowledge institutions in the region, including TU/e, Radboud University Nijmegen, Holst Centre, and JADS.

### Pharma dominance

More than fifty percent of pharmaceutical production in the Netherlands takes place in Brabant.

*Focal Meditech. Brabant-based company that develops assistive technology for everything: from eating and gripping tools to social robotics.*

# Facts & figures

- 1,030** companies
- 23.8%** (18,740) of the total LSH jobs in the Netherlands
- 73%** of MedTech Manufacturing jobs are in Brabant
- 40%** of Pharma Manufacturing jobs are in Brabant
- >50%** of Pharma production in the Netherlands takes place in Brabant
- €4.8 billion** Total export LSH Brabant 2021
- 90%** share of MedTech patents in the Netherlands
- 28.3%** growth of foreign companies in LSH

## Recent foreign investments in Brabant

**Lonza**

RESOLUTION MEDICAL

**AXION** BIOSYSTEMS

discovering Keytruda, a promising potential cure for various types of cancer, produced by MSD (Merck) via the legacy of Organon. Additionally, Acerta Pharma, set up by two ex-Organon employees at Pivot Park, merged with Astra Zeneca in 2015 to secure and continue the development of its promising cancer treatment drug Acalabrutinib. Pivot Park is continuously growing and expanding to facilitate park development and to be able to keep attracting new companies into the fold. The entrepreneurial ecosystem at Pivot Park in Brabant has deep roots in Organon, with many entrepreneurs having a history of working there. This shared background fosters a strong sense of affinity and familiarity, enabling accessible communication and the willingness to support each other.

This willingness to collaborate and innovate together typifies and ultimately fortifies the ecosystem in Brabant as knowledge is continuously fed back into the loop.

### Feedback loop

The links and collaborations with academia in the region are the lifeblood of the sector. Eindhoven Technical University (TU/e), with its broadly focused “engineering health” program, is one of the key hubs driving advances in LSH. Many TU/e spin-offs, such as Xeltis, Vivolta (Smart Biomaterials), Preceyes, and MicroSure (Medical Robotics), operate on the world stage. The majority of the research that these companies engage in is carried out at the TU/e, so the innovative network remains intact. This willingness

to collaborate and innovate together typifies and ultimately fortifies the ecosystem in Brabant as knowledge is continuously fed back into the loop. The same is true for talent. Many (international) students that come to study at TU/e and other regional knowledge institutes (such as Summa, Fontys, JADS, Avans, and BUAS) end up being exposed to all manner of companies through their research or internships. The result is that many of them go on to work in these companies or form spin-offs themselves, and thus the specialized talent and knowledge remain concentrated in the region.

### Cross fertilization

Another prime example of fruitful collaboration is the Smart BioMaterials Consortium (SBMC). The SBMC consists of around 50 national and international organizations, ranging from biomaterial product

developers to industrial ceramics manufacturers, working together to accelerate bringing the product to the patient. Smart BioMaterials Consortium (SBMC) facilitates the accelerated development and clinical production of smart biomaterials for regenerative medicine, bringing together researchers, entrepreneurs, leading companies, and strategic investors. SBMC enables the advancement of product development through shared translational platforms that address critical bottlenecks in the commercialization of regenerative medicine. Collaborating with renowned research institutions and fostering new ventures, SBMC accelerates the translation of promising technologies, processes, and therapies into transformative health outcomes. SBMC manages a development facility on the Eindhoven University of Technology campus and is opening a new pilot production facility for biomaterials at High Tech Campus Eindhoven. The pilot factory for regenerative medicine is being constructed

*Philips Ambient Experience is a design approach for clinical environments aimed at enhancing the patient and staff experience.*



# 5 most promising Life Sciences & Health start-ups in Brabant

With over 1,500 startups, Brabant has truly become a startup province with a strong focus on technology. The Brabant40 is an initiative of several Brabant-based organizations in the startup ecosystem, including BOM, The Gate, Braventure, Rewin, and Brainport. It is a list and an award for the most promising startups in a year. The following startups made the top 40 in Life Sciences & Health innovations.



STENTIT



*The production of a contraceptive implant at Organon. Organon in Brabant is a pharmaceutical company specializing in women's healthcare, particularly in the research, development, and manufacturing of contraceptive products.*

as part of the growth fund program RegMed XB. This accelerator is an initiative underpinned by the Province of Brabant, BOM, TU/e, and the specialized companies in the consortium, ranging from biomaterial product developers to industrial ceramics manufacturers. As a result, this combination of specialist knowledge stimulates valuable cross-fertilization that leads to joint projects and novel solutions.

### Future focused

Developing products and getting them to market is especially prevalent in Brabant, as every aspect of the supply chain is within easy reach. Furthermore, the legacy of multinational Philips developing, manufacturing, marketing, and shipping consumer products to a global market, means that there is also world-class logistics knowledge and infrastructure to enable rapid distribution of products. Due to the Netherlands' central location, a consumer market of 250 million customers (within a 1000km radius) can be reached within one day.

Most companies here, from startups to multinationals, work with a single purpose - to develop new, life-changing processes, therapies, and treatments and get them to the patient as quickly as possible. A recent localized initiative to facilitate this is the Pharma Manufacturing Cluster, which forms a unified body operating internationally to advance solutions for shared challenges in the branch, such as digitalization, sustainability, and talent. Combining forces can achieve economies of scale with heightened visibility in the region and beyond, being beneficial to attract international talent, secure growth, and have a more significant say in national policy.

### MedTech ecosystem

Companies that tackle complex medical manufacturing challenges, such as those associated with medical

robotics or biomaterials, are in the right environment in Brabant. Roughly 55% MedTech companies in the region focus on complex machine development and manufacturing necessary for processes such as precision surgery and medical robotics. In addition, the established High Tech sector, featuring world-leading companies such as ASML, is accustomed to critically high tolerances and working in cleanroom environments. As a result, the supply chain is highly attuned to the needs of High Tech medical manufacturing and production.

The convergence of two seemingly separate strands of industrial and medical technology has woven an exemplary network of knowledge and capabilities, interconnected by many crossovers, collaborations, and co-creations. Collaborative partnerships are the key to success here, and if the solution cannot be found in Brabant, it cannot be found elsewhere in the world. ●

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*Scan the QR-code for more information and facts & figures about Life Sciences & Health in Brabant.*

SHOWCASE

# Preceyes

Eye surgery is highly complex and even the most experienced surgeons can struggle to have steady enough hands for all procedures, with no margin for error. The slightest tremble of a surgeon's hand can cause permanent damage to a patient's eye and may lead to loss of sight. To address this, Preceyes has developed advanced surgical robotics that enables eye surgeons to conduct intricate retinal procedures by using a robotic arm controlled by a joystick. Using Preceyes technology, a surgeon can insert a needle through a tiny hole into the wall of the eye without damaging surrounding tissue from unintended movement. Preceyes robotics have been used to perform successful eye surgery all over the world.

Ophthalmic surgeon Professor Marc de Smet came up with the idea in 2007 when observing the difficulties with retinal surgery and realised that the answers lay in assistance from robotics. De Smet partnered with Professor Maarten Steinbuch at TU/e, who drafted in colleagues and medical professionals to research the potential of using robotics to support eye surgery. The projects were a success and Preceyes was established in 2015, with the first surgical procedures carried out in 2016. Gerrit Naus was responsible for establishing Preceyes as an independent commercial company and has seen the life-changing difference this technology can make to patients.

"We can directly influence the quality of people's lives with our system. Retinal disorders are currently the main cause of poor vision and blindness in the Western world and the number of patients is growing exponentially due to the strong link with old age and diabetes," stated Naus. "However, operations on the retina are extraordinarily difficult procedures. The assistance provided by our robot means that more surgeons can successfully perform these interventions. The extra capabilities mean that they can even develop new forms of treatment, which could never have been performed with the human hand."

"We can directly influence the quality of people's lives with our system"

## Value chain

RESEARCH & DEVELOPMENT



QUALITY CONTROL & PRODUCT APPROVAL



MANUFACTURING



SALES & MARKETING



LOGISTICS



(this is a selection of companies)

**BRABANT  
IS BRIGHT**  
POWERED BY  **BOM**

