Biotech Clusters in Europe: Summer 2004

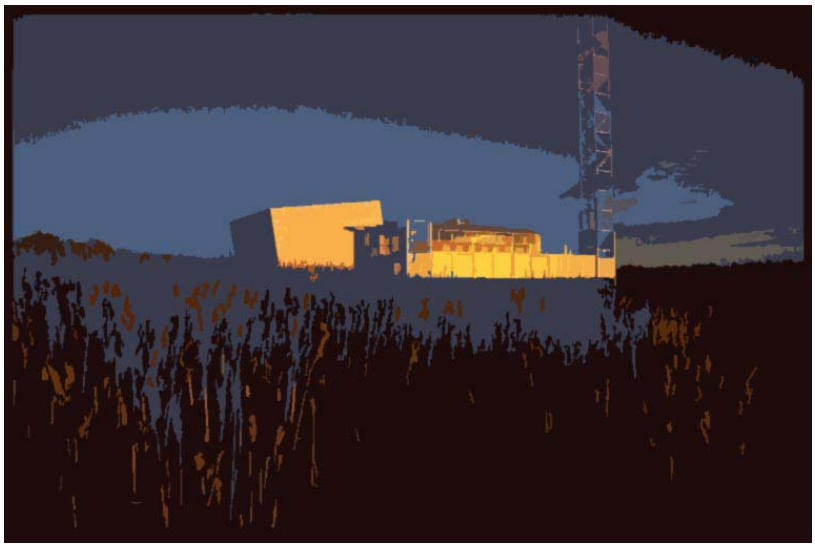
Mark Kelly – Woods Bagot

Biotech Clusters Get a Shot in the Arm

If the biotech sector proves to be "the next big thing" after the IT boom, does Europe have the facilities to reap the benefits?

The global biotechnology industry is showing encouraging signs of coming back from a dose of post-2000 depression, with implications for Europe's real estate sector. Recovery in the biotech sector during 2003 was almost six months ahead of predictions. Overall growth continues to be more robust than expected, and in the United States—the powerhouse of the biotech sector—the industry's market capitalisation is up 40 percent on its level at the end of 2002. In short, as international consultancy Ernst & Young put it in its most recent market review, the "biotech cycle is turning up."

Despite the more subdued recent climate, Europe has continued to cultivate its biotech market, particularly through encouraging and developing clusters of expertise.



Across Europe, the newly well-respected biotech regions are placed to take advantage of the more positive economic indicators and capitalise on what are strong prospects for growth. By 2005, biotech-derived products are predicted to account for €144 billion (US$180 billion) of worldwide output, a 43 percent increase on its current level. Such growth will have significant implications for related industries, not the least of which will be the property sector, in responding effectively to the needs of biotech companies, according to London-based real estate consultants Knight Frank.

The main European countries that have already seen a proliferation of biotech clusters are the U.K., Germany, France, the Netherlands, and the Scandinavian nations. Driving their continued evolution is a set of essential, locational elements, led by proximity to world-class universities and access to a highly skilled workforce. Biotech companies also like locating near one other, and the presence of a large pharmaceutical company can play an important role in engendering confidence on the part of embryonic firms to cluster nearby.

This is a particular feature of the Swiss biotech market, says William Powlett Smith, head of life sciences with Ernst & Young. In addition to the psychological support that clustering brings, there also is an important financial issue. "It means you have corporate venturing as opposed to academic spin-offs," he explains. "And that demonstrates the fact that access to early-stage capital is very important."

Incentives are key to the growth of biotech clusters, particularly in the form of support from the immediate region and the activities of investment agencies. Site specification also is essential: the high-tech work undertaken by biotechnology companies means there is a core requirement for high-quality accommodations.

The global nature of the business means a cluster location must command good communications and physical logistics. But it is the people power factor that is crucial.

"More important than anything else is the ability to attract and remunerate good people,".

That is because growing companies at some stage will question their choice of location.

"You will get a start-up that is looking very promising asking itself, 'Are we right to be developing our business here? Or should we up-sticks and relocate to say, Carolina, Boston, or California?'

They may see that is where there is access to people—not only in volume but in expertise in developing companies,".

"It's also where there is access to venture capital, which is a very important part of the equation."

While the United States remains attractive as a biotech company site, within Europe, several countries have established a strong reputation in the biotech market, creating clusters that could do for the biotech industry what Silicon Valley did for information technology.

One of the earliest entrants to the market was France; whose government, in an effort to boost genome and post genome research, announced it would support the development of a network of biotech science parks called Genopoles. The first of these was established at Evry, just south of Paris in the Essonne area of the Ile-de-France region; Genopoles developed since include those at Lyon, Strasbourg, and Grenoble.

The Evry Genopole has blossomed as a biotech cluster and helped Paris to be recognised as one of Europe's leading biotech regions. In 1998, there were just two biotech companies in the area, but by April 2003, there were more than 40 and the business population on site had grown to about 1,600. The campus extends to over 55,740 square metres (600,000 square feet), of which around 25,083 square metres (270,000 square feet) is earmarked for biotech businesses. Currently, 12,077 square metres (130,000 square feet) of space is rented to laboratories and companies specialising in, amongst other areas, biopharmaceuticals, agri-biotech, and bioinformatics.

Officials say Evry has three goals in terms of its real estate offering to prospective occupiers: it wants to pay particular attention to spatial coherence within the Evry agglomeration in order to create a "harmonious campus"; it is progressively establishing common services; and it is offering space that can be adapted to scientific needs at market prices. Having undertaken a short-term programme to increase its immediate real estate offer, a number of new development projects are underway.

The area is also home to the Université d-Evry-Val d'Essonne—a source of biotech expertise. For postgraduates who choose to start a business at the Evry Genopole and for others involved in start-ups, there is support from the biotech incubator. The Chamber of Commerce and Industry of Essonne, together with Genopole and local authority finance, is working on an expansion of the facility to help nurture very young companies.

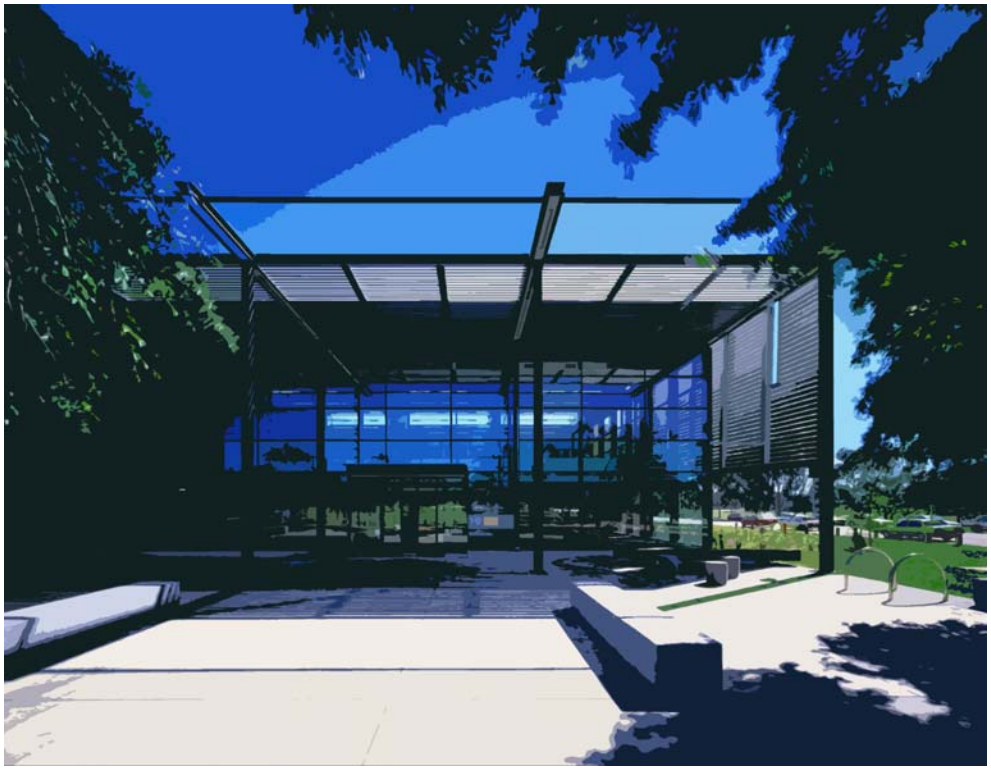
Lyon in the Rhone-Alps region is another hotbed for biotech clustering, spawning numerous NASDAQ-quoted start-ups. The Greater Lyon Technopole initiative was launched in the late 1990s to prepare and support the Lyon conurbation. Branding its cluster as Lyon's Life Sciences Network, Lyon says it emphasizes to potential occupiers its built-in expertise and its location: 20 percent of the French health industry is based in the Rhone-Alps region, and Switzerland, which Lyon describes as one of Europe's foremost biotech countries, is on its doorstep. Lyon aspires to be one of the top European bio clusters by 2005.

A raft of initiatives is designed to foster development of biotech companies in the area, including BioAm, a public venture capital fund; Crealys, a business incubator; and Aderly, an inward investment agency that, among other things, helps with finding large-scale property.

Among Lyon's offerings is Lyon-Gerland, identified as a dedicated pharmaceuticals district. Facilities there include modular buildings holding 929 square metres (10,000 square feet) of space; business incubation zones; and the Novacite Omega, a centre for new business activities where more than 1,115 square metres (12,000 square feet) of space is earmarked for new enterprises and more than 2,787 square metres (30,000 square feet) is set aside for more established operations.

Meanwhile, near the Rockefeller Health Complex, one of Lyon's newest developments is adding critical mass. Lyon Bioparc, occupying 3.3 hectares (8.2 acres) on a former military site and dedicated to research and development in the health field, last year saw the start of its phased opening with the launch of a business incubator established in the renovated La Buire barracks. The facility now offers space to start-ups through several rental packages.

During 2004, construction is scheduled to begin on four R&D facilities providing up to 25,083 square metres (270,000 square feet) of space, plus technical facilities. From 30,000 to 45,000 square metres (323,000 to 484,000 square feet) of space for health companies will be created, and, in addition to the provision of scientific platforms and research centres, Bioparc will include ancillary services such as meeting facilities and an on-site hotel.



Those promoting the Lyon bio cluster say they are "prospecting for business to relocate to the city," and that in addition to its skills base, Lyon has a cost structure that is lower than many other locations and rents that are more favourable.

In Germany, clusters have developed at a feverish pace on the back of federal government promotional activity. Fearing that the country was falling behind the United States and the U.K. in such activity, Germany launched its BioRegio competition in the mid-1990s under which it offered three prizes of DM50 million (US$22 million) to the regions that presented the most innovative plans for encouraging commercial biotechnology. The winners—Munich, Rhineland, and the Rhein-Neckar-Dreieck triangle—have all become well-established clusters. Employment in the sector in Munich, for example, has exploded from 300 jobs in 1997 to nearly 3,000 now.

Also, BioRiver Rhine—a region encompassing Dusseldorf, Cologne, Aachen, Julich, and Bonn—has become a major force. With 80 new companies opening there in the past four years, it has established itself as one of the top three clusters in Germany.

The region provides two technology centres. One, the 21,000-square-metre (226,000-square-foot) Life Science Centre at Dusseldorf, is located alongside the Heinrich Heine University, the proximity of which is seen as an attraction for biotech companies. The facility comprises two buildings, one dedicated to the provision of high-tech laboratory space, including expansion capacity for growing businesses, and the other an office complex that houses advisory and service companies.

The second technology centre, ten minutes away at Neuss, is a 16,000-square-meter (172,000-square-foot) health care centre that combines laboratory and office space to provide a hub of expertise in the development of medicines, medical products, and diagnostics. A third complex, Bio-Park Flehe, is at the planning stage. It, too, will be located alongside the university and is expected to comprise a network of buildings, each targeted at specific areas of biotechnology.

Germany is also home to an even newer generation of clusters as a result of a subsequent initiative called the Bio Profile competition. Three winners emerged—based around Berlin, Stuttgart, and Hanover—each receiving a share of DM100 million (US$44 million) that will be fed to them over five years.

Medicon Valley in the Oresund region of Scandinavia, ranking third in Europe after London and Paris for health, pharmaceuticals, and

biotechnology R&D, is home to 60 percent of Scandinavia's pharmaceutical industry. The regional cluster, which combines the area around Copenhagen, Denmark, and Malmo and Lund, Sweden, has developed into Scandinavia's largest biotech growth area. In recent years, its strength has been bolstered by development of the Oresund Fixed Link roadway system, which makes it possible to drive between Denmark and Sweden in minutes. Medicon Valley's name is inspired by Silicon Valley, and officials claim clear parallels with the California concept in terms of its concentration of academic know-how and the amount of high-tech R&D clustered there.

Government support through funding and local venture capital backing is a key driver for the continuing expansion of Medicon Valley, with biotech companies such as OXiGENE, Acadia Pharmaceuticals, and Phytera among those benefiting. "We had many good reasons for settling in Medicon Valley," an official at OXiGENE says. "However, the strongest argument for other biotech companies to follow suit is the extremely positive investment climate." Acadia Pharmaceuticals says it was enticed to the region by the government-backed business development fund.

Alongside pharmaceutical heavyweights are Medicon Valley's universities, which have ambitious biotech programmes: the two largest, at Copenhagen and Lund, are investing extensively to enhance their

research centres. Officials at U.S. firm Phytera say high-quality research was what drew the company to Medicon Valley when it toured the world looking for an expansion location. But it was locational issues that were core to the decisions of pharmaceutical conglomerates such as Pfizer, because Medicon Valley occupies a strategic position for serving the northern European market.

Medicon Valley also has developed a network of science parks designed to bridge the gap between academia and commerce. Among them are Ideon Science and Technology Park at Lund/Malmo, Danish Science Park at Horsholm, and Symbion Science Park at Copenhagen.

The U.K. biotech market, currently valued at Ä13 billion (US$16 billion), making it the largest in Europe, is home to around 500 dedicated biotech companies. It is one of the core markets that inward investment agency U.K. Trade and Investment has targeted for further growth.

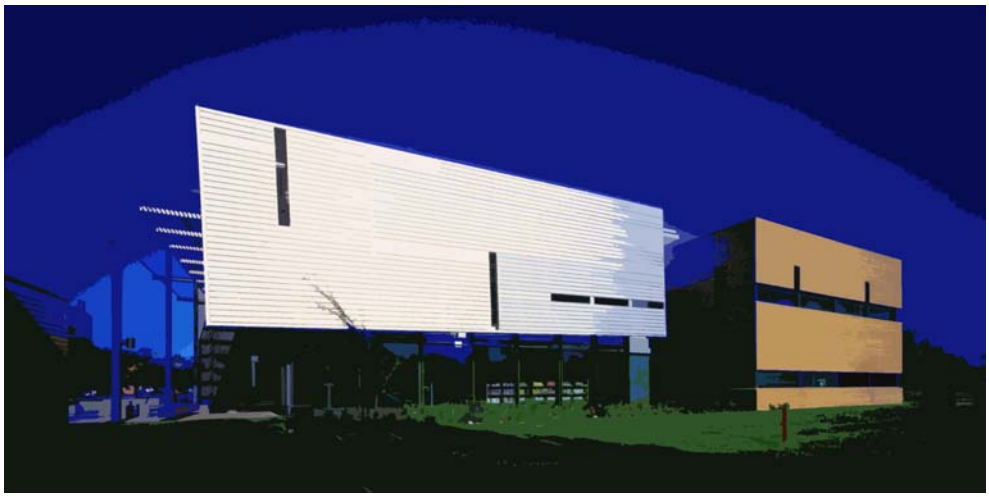
Unlike the U.S. experience or Europe's Medicon Valley model, the concept of the U.K. industry creating its own Silicon Valley is one about which Ernst & Young remains dubious. U.K. clusters are currently more fragmented and command less power than their U.S. counterparts.

Nevertheless, the U.K. market is characterised by a growing network of strong regional clusters described as “hot spots” .

Their growth is being driven, as with most other Europewide clusters, by three core requirements: intellectual background, available skills, and a stock of the right kind of property.

Science parks that have proliferated over the past 20 years are the main targets for the biotech sector, and 20 percent of science park occupants are biotech-related companies, Knight Frank estimates. Around 696,750 square metres (7.5 million square feet) of science park space exists in the U.K., and another 69,675 square metres (750,000 square feet) are under construction.

The largest and most notable cluster—and one of the largest in Europe—is located around Cambridge, where the presence of Cambridge University has powered the Cambridge Science Park and a subsequent network of dedicated biotech facilities such as Granta Park and Cambourne Business Park. Among them is the 2,833-square-metre (30,500-square-foot) Babraham Bio incubator on the campus of the Babraham Institute. Such is the demand for its facilities that further development is planned to nearly double its capacity.



Biotech property is a rarefied species—neither offices nor solely R&D space—and its provision is a constant challenge for the property development industry. Cambridge could be viewed as a victim of its own success: the popularity of its biotech sector has created pressure on the availability of specialised premises. Cambourne Business Park, however, is preparing to save the day by developing new space intended to meet such demand.

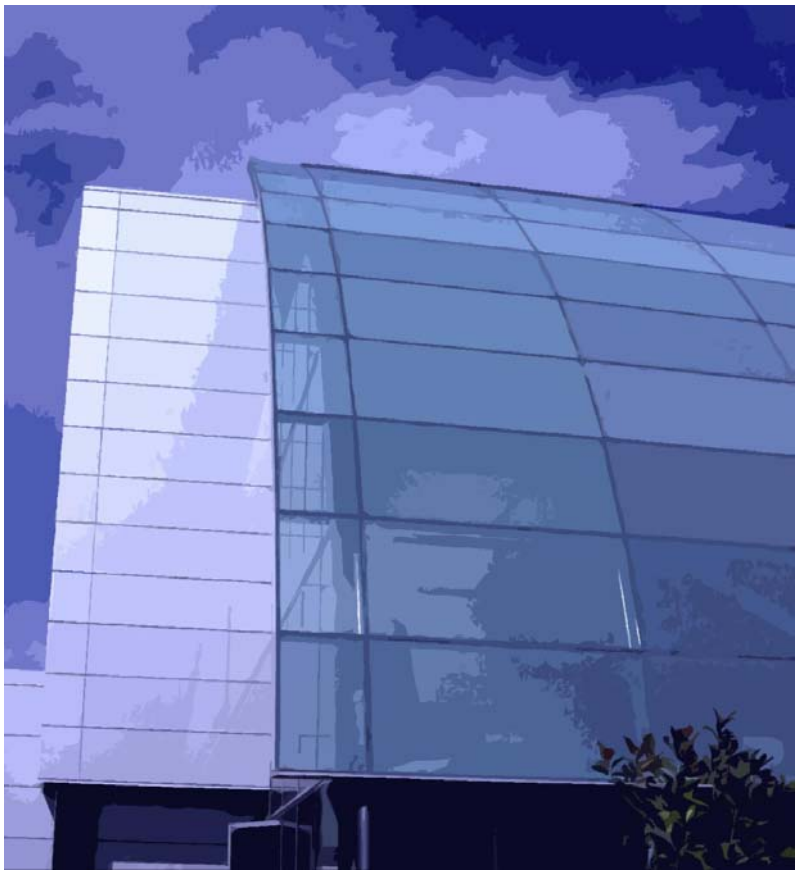
Another cluster driven by the proximity of a powerful academic base is Oxford, a major feature of which is Oxford Science Park, a joint venture between Magdalen College and the Prudential financial services company. The Oxford cluster started much later than its Cambridge counterpart and is less concentrated. Nevertheless, it is characterised by several notable success stories among quoted and nonquoted spin-off companies, he says, and as a cluster it is increasingly developing facilities specifically to service the market, such as the Oxford Bio Business Centre and the 101-hectare (250-acre) Milton Park, which now

extends to some 278,700 square metres (3 million square feet) of buildings.

London is a major biotech force; accounting for 60 percent of all clinical trials in Europe, and company spin-offs from the likes of Imperial College dominate. Two years ago saw the opening of the London Bioscience Innovation Centre, the first business incubator facility in central London, owned by the Royal Veterinary College and based at its Camden, north London, campus. When an extension to the complex is complete, the facility will extend to more than 1,950 square metres (21,000 square feet) of laboratory and office space. Further expansion is planned, and that, coupled with other developments in the capital, means facilities will exist to allow growth in the sector. However, London has its problems: land is scarce, so companies set up wherever they can and communicate via "virtual links with their brethren cells."

Other challenges also exist, namely the expense of labour and property, that may lead companies to look elsewhere as they grow. But they will still want locations convenient to London, ensuring the continued popularity of Cambridge and Oxford.

Another market emerging as a possible recipient of outflow from London is Reading. While it is more embryonic as a cluster, its university has been increasingly concentrating its efforts on the biotech sector. The other main industry cluster in the southeast can be found in Kent, where several major pharmaceutical companies are based, including Pfizer and Glaxo Wellcome. Other strengthening clusters are to be found in Scotland and in northwest England, centred heavily on Manchester and Liverpool.



In fact, Liverpool could be the seedbed of the next generation of global biotech activity. Analysis by real estate consultants Cushman & Wakefield Healey & Baker suggests there are distinct signs of government institutions and development agencies seeking to move the industry forward into bio manufacturing. To date, the work of biotech clusters has been characterised by innovation and scientific evaluation; but taking the results of this formative work to the stage of manufacture for clinical trials has generally required alliances with major pharmaceutical companies. Support is growing, however, for the concept of the biotech sector itself being able to manufacture. While across much of Europe this concept has yet to gain a foothold, the U.K. is taking the first steps into this heady new biotech world: Liverpool will be home to the National Bio manufacturing Centre, a dedicated manufacturing facility, providing one of the first indications of the direction biotech development may take in the future.