

## **Arun District Council Ford Eco-Town Select Committee**

### **Science Parks**

#### **CAFÉ Submission by C.J. Humphris**

#### **Ford Enterprise Hub – Proposal for a Science Park**

##### **How to fail through wistful thinking**

One of the core elements of the proposed Eco-Town development on the fields of Ford is the creation of an enterprise hub with a science park. The claimed objective is the creation of 4000 jobs. This supports the contention that a complete new town is being created comprising residential areas, commercial activity and industry/employment. The investment opportunity for housing is clear in terms of the economic benefit to the developers, however the assumption that Ford offers a competitive location for industry and science should be questioned closely.

The attractions of the proposal are clear. Much of the local Arun manufacturing industry has declined and although there has been some growth in local service industry, a visit to the current industrial parks shows the high proportion of empty units and derelict factories - such as the old LEC plant at Bognor Regis. There is a pressing need for regeneration and suggestions for cutting edge science and high technology businesses at Ford are tantalizing. There are some fundamental questions to ask of Ford first however:

- How can such a development be initiated effectively?
- How competitive is Ford as a location for a science park?

Entrepreneurs and businessmen invest rationally to ensure the highest likelihood of earning a good return. They will not take unnecessary risks with the location; innovation in technology is risky enough in its own right.

In his paper Alan Black<sup>1</sup> outlines the accepted benefits and principles of Science Parks and Business Clusters but he also makes a key but flawed assertion that “*Objections based on the perceived lack of a research centres or existing technology based business networks in the area are not based on fact*”. What a shame that he appears not to have read the references he provides.

The development of new business clusters and science parks is one of the most studied areas of business management and entrepreneurship. Much of this goes back to the pioneering work of Michael Porter (Harvard Business School) and his books on the competitiveness of companies and of countries<sup>2,3</sup>.

This accepted wisdom is well summarized in Alan Black’s references as follows.

In the article by David Brown et al of Arthur D Little<sup>4</sup> seven key success factors for science cluster development are defined which highlight the critical importance of access to a science base:

- *“A diverse and dense industrial network of companies including start-ups, mature companies (e.g. medical devices and pharmaceutical companies) and associated services providers.*
- *Strong scientific and research capabilities with academic and private labs*
- *Easy access of all cluster stakeholders to sector-specific infrastructures (e.g. clinical research infrastructure).*
- *Effective collaboration between stakeholders in the network, especially between private and public research institutions.*
- *Availability of highly educated human resources with competencies adapted to industrial needs.*
- *The availability of public and private funding such as seed funds, venture capital and public grants.*
- *International reputation and visibility.”*

The reference on the benefits of clustering<sup>5</sup> considers Cambridge as a case study and emphasizes the pivotal role of the University in this, as well as describing elegantly the interactions and dynamics of a successful cluster. It simply would not have happened without the University:

*“The high-technology cluster centred around Cambridge serves as a model of how successful clustering activity has led to a world-renowned competence. Growth in output and employment has been sustained since the mid-1980s and, in a highly dynamic and competitive sector, the cluster continues to develop and evolve. By 1998 there were 1,350 high-tech firms employing some 32,500 people in the area. As well as development of established specialisms, such as in software, there has been significant penetration of new markets in pharmaceuticals and biotechnology. The success of high technology companies in Cambridge corresponds with many facets of the classic clustering model. As well as hosting offices of leading multinational companies (e.g. Microsoft) there is a significant group of go-ahead independent companies. New firm spin-outs, often with high-growth ambitions, continue to be a feature of the Cambridge scene, with founders coming from both existing high-tech firms and the research community. Cambridge University, regarded as the UK’s leading university for teaching and research, has actively sought to engage with front-ranking science-based companies. Within the Cambridge locality, a significant support infrastructure now exists following a proliferation of specialist incubators and science parks. Technology consultancies, a distinctive element of the cluster, have continued to prosper and are evolving into more rounded technology houses, acting as a major source of spin-outs and providing seed and venture capital. Legal specialists on intellectual property rights and related issues operate from Cambridge. Also, financial and professional services companies and the local investor community have increased their scale and have focused on the needs of high-tech businesses”*

This example underlines the point made by David Rowe<sup>6</sup> that successful science parks are much more than simple business spin-offs from universities and Rowe goes on to explain the role that Warwick University also plays in coordinating the business support and services for its park. He explains that from its origins in 1984 the Warwick cluster hopes to achieve critical mass by 2011 - this is not an easy or fast path!

The paper from the British Council<sup>7</sup> explains that a Science Park is:

- ***“An initiative for the establishment and growth of technology-based enterprise.*** *There should be somewhere for the businesses to locate, but property should not be the most important driving force behind a science park development. Projects which focus solely on bricks rather than brains rarely turn into successful engines for innovation. [Note: in recent years there has been the development of a few so-called 'virtual science parks', in which the expertise of a university is made available to SME directly through systems such as the Internet. In the author's opinion, such initiatives are interesting and perhaps useful, but they are not science parks.]*
- ***Formally and operationally linked to a centre of technical expertise.*** *This is the feature which is most characteristic of a science park. The ‘reservoirs’ of technology are usually universities or research institutes, but they can equally well be the corporate research laboratories of large companies, which can provide a technological resource comparable to that of a university. There are a number of such parks in the UK, driven in many cases by the privatisation of hitherto Government-owned research centres.*
- ***An organisation which provides management support for its tenant companies.*** *Science Parks deal with technology-based businesses, and the provision, directly or indirectly, of business advice is at least as important as access to technological advice. Many science parks have concentrated on the support of technology transfer, both from the university to the park and between companies on parks”.*

The point being made is that success depends the intimate mixing of science, business, and business support. The key concern is effective Knowledge Transfer and this only happens effectively when all three are in close proximity. This specific point is made clearly in the Lambert Review of Business University Collaboration<sup>8</sup> which notes that the best forms of Knowledge Transfer involve human interaction. The Review makes several recommendations designed to encourage more frequent and easy communication between business people and academics. This is complemented by work by the Department of Trade and industry<sup>9</sup> with which I am personally familiar and built on by the Royal Society of Chemistry<sup>10</sup> where the principle of co-location of scientists and business people is emphasised.

So what are the implications for Ford and the key questions posed at the beginning of this paper?

1. The Enterprise Hub proposal seems to be property driven – “bricks rather than brains” as the British Council so aptly puts it. No mention is made of the incentives that would have to be given to attract the “brains”. Provision of housing is a minor point when all the other factors for success are missing.
2. It is not clear why a science park stuck in the middle of a massive housing development would be an attractive location. The photograph of the Southampton Science park<sup>11</sup> surrounded by fields and woodland is a striking comparison.
3. The Eco-Town proposal anticipates house building for 13 years so why would anyone locate to the Ford building site until the noise, dust and construction traffic have gone? As Alan Black points out quality of life is important; the Eco-Town development will hardly enhance this in the locality. If nothing else the science park is a very long term option.
4. There are simply no academic or corporate research and technology centres in the vicinity of Ford which can act as the initiation point. This type of industry does not exist in any material way today in Arun.
5. Alan Black claims the proximity to (presumably Southampton, Sussex and Surrey) Universities as an advantage obviating this need for the intimate links to a local technology centre. The trouble is each is approximately an hour travel time away and as he helpfully points out each already has a thriving science park<sup>11,12,13</sup>. They would surely represent a more attractive option compared to a fledgling Ford.
6. The Atkins report<sup>14</sup> is a comprehensive review the locations for new business development in the Arun /Chichester district. The locations are ranked according to a number of criteria relating to accessibility, sustainability and marketability. Despite scoring 100% on marketability, Ford still ranked only 17<sup>th</sup> out of 18 sites in Arun – hardly a glowing endorsement for the location.
7. Access is the key weakness. Alan Black tries to paint a picture of “*a West Sussex science park along the A27 corridor*” without recognising how long, narrow, clogged and congested the corridor actually is and how much worse it will get if the Eco-Town proceeds. The bottlenecks are not only at Arundel; Chichester and Worthing are awful at peak times.

8. The proposal also ignores completely where the likely customers for these high technology business will be, as it is important to visit them from time to time. If they are in the UK you face an hour drive before reaching the motorway network and if international, you are also an hour from the nearest airports. Proximity or access to your customers is a key investment consideration, as marketing and distribution costs are rarely irrelevant.

The key point is not that you couldn't try this at Ford, you could. This is not the issue. The issue is the complete lack of a distinctive competitive advantage to attract science start ups to Ford. There must be many places in UK within 50 miles of universities or centres of technology, that have some land, access to an A road and a railway station!

The creation of a science park is not dependant on a housing development and the fact that it has not been tried before the Eco-Town proposal is telling; it is highly likely to fail and investors know this.

Even if it were to succeed, experience around the world is that this is a long term process. Ford would be well established as a commuter dormitory town long before a science park could provide significant local employment.

The science park is a tantalizing opportunity but that is all it is, tantalizing and out of reach. Ford needs a real distinctive advantage if it is to compete for investment with other science parks. It has none. It is a nice idea but entirely wistful thinking.

C.J. Humphris BSc MRSC  
24<sup>th</sup> May 2008

The author worked for 34 years for BP as a research scientist, business strategist and held senior business management positions in Speciality Chemicals and in Plastics. He was project manager and author of the report Enhancing the Competitiveness and Sustainability of the UK Chemicals Industry to Lord Sainsbury before working for 4 years as Executive Director Research and Innovation, CEFIC in Brussels, [www.cefic.be](http://www.cefic.be). At CEFIC he was responsible for activities relating to European Policy in support of Innovation and Sustainable Development including a major programme on Sustainable Chemistry (SUSCHEM) in partnership with the European Commission. He represented the World Business Council for Sustainable Development on the WHO European Environment and Health Committee. He is an Alumnus of the business school IMD, Lausanne. He is a member of the Technology and Industry Forum Executive of Royal Society of Chemistry and is a titular member of the Chemistry and Industry Committee of IUPAC.

## References

1. "A Science Park for Arun" December 2007 by Dr Alan Black available at [www.fordairfieldecotown.co.uk](http://www.fordairfieldecotown.co.uk) under Publications, Ford Enterprise Hub, Science Park
2. Porter, M. (1980) *Competitive Strategy*, Free Press, New York, 1980.
3. Porter, M. (1985) *Competitive Advantage*, Free Press, New York, 1985.
4. David Brown et al. Coming together: success through clustering. New Generation Pharmaceutica , available at [www.ngpharma.com/pastissue/article.asp?art=269052&issue=185](http://www.ngpharma.com/pastissue/article.asp?art=269052&issue=185)
5. The benefits of clustering. West Midlands ICT Cluster, available at [www.wmictcluster.org/strategy/benefits](http://www.wmictcluster.org/strategy/benefits)
6. David N E Rowe. Evolution Applies to Science Parks Too. XVIII IASP World Conference on Science and Technology Parks. 11-13 June 2001, Bilbao, available at [www.warwicksciencepark.co.uk/information/conference\\_papers/documents/EvolutionappliesToScienceParks\\_000.pdf](http://www.warwicksciencepark.co.uk/information/conference_papers/documents/EvolutionappliesToScienceParks_000.pdf)
7. Science Parks, Business Incubators and Clusters. British Council, Briefing Sheet 18. December 2002. [www.britishcouncil.org/science-briefing-sheet-18-science-parks-dec02.doc](http://www.britishcouncil.org/science-briefing-sheet-18-science-parks-dec02.doc)
8. The Lambert Review of Business University Collaboration, HM Treasury 2003 available at [http://www.hm-treasury.gov.uk/consultations\\_and\\_legislation/lambert/consult\\_lambert\\_index.cfm](http://www.hm-treasury.gov.uk/consultations_and_legislation/lambert/consult_lambert_index.cfm)
9. Enhancing the Competitiveness and Sustainability of the UK Chemicals Industry – a report by the Chemicals Innovation and Growth Team to Lord Sainsbury December 2002 see page 39, available at <http://www.berr.gov.uk/files/file10002.pdf>
10. Chemical Science Spin Outs from UK Universities Review of Critical Success Factors, Royal Society of Chemistry, available at [http://www.rsc.org/images/ChemSciSpinOuts\\_tcm18-12643.pdf](http://www.rsc.org/images/ChemSciSpinOuts_tcm18-12643.pdf)
11. University of Southampton Science Park : [www.science-park.co.uk](http://www.science-park.co.uk)
12. Sussex Innovation Centre : [www.sinc.co.uk](http://www.sinc.co.uk)
13. Surrey Research Park : [www.surrey-research-park.com](http://www.surrey-research-park.com)
14. Arun and Chichester Assessment of Employment Needs by Atkins Consultants, see in particular Appendix D Table 10D Evaluation of potential employment locations <http://www.arun.gov.uk/cgi-bin/buildpage.pl?mysql=2679>