

TECHNOLOGY PLANTS THE SEEDS OF GROWTH

STORY BY JIM SIMPSON IMAGES BY AMRC

THE ADVANCED MANUFACTURING PARK IS BEGINNING TO FULFIL ITS POTENTIAL IN TRANSFORMING SOUTH YORKSHIRE TO THE KNOWLEDGE ECONOMY.

Anyone travelling in to Sheffield along the Parkway will have noticed the rapidly growing number of high-technology buildings springing up on what was once the battlefield for one of the most violent industrial disputes in modern British history. Where the massed ranks of the National Union of Mineworkers once fought a running battle with the police, men in lab coats now battle to give Britain's manufacturers a competitive edge against the Asian tigers.

The speed with which the Advanced Manufacturing Park is gaining a critical mass is remarkable as yet another private sector developer has moved onto site alongside the likes of Castings Technology International, The Welding Institute (TWI) and the recently-opened Innovation and Technology Centre. And now a former South Yorkshire name – Dormer – is moving back to its roots.

The strategy behind the AMP itself hinges on the success of the adjoining Advanced Manufacturing Research Centre (AMRC) that occupies 20 acres of what used to be the site of the Orgreave coking plant and an opencast mine. Owned and operated by the University of Sheffield, the AMRC is a centre of excellence that works with world-class companies such as Boeing, Rolls Royce and Messier Dowty.

The idea is that the AMRC not only produces the technologies and knowledge to keep British manufacturers globally competitive, but also acts as a powerful magnet attracting some of the world's leading research teams to move nearby. And what could be nearer than the Advanced Manufacturing Park, right next to the AMRC, offering 80 acres of brownfield site with excellent connections to the UK's motorway and rail networks. The site is owned by UK Coal and being developed as a joint venture with Yorkshire Forward, the regional development agency.

As a strategy it is plausible enough but it depends on the gravitational pull of the AMRC to really work, to demonstrate that the cluster theory of connected businesses being drawn together actually works. With the return of Dormer Tools scheduled for this autumn, there is evidence that it does. Now part of the Swedish-based Sandvik Group, Dormer is to build a new 20,000 sq ft state of the art facility at the AMP. It will include a major research and development facility and a custom-built international standard training centre as well as housing global corporate functions such as IT, sales and marketing and product management plus an international export service to support emerging and developing markets.

"The original intention was to get as close to the AMRC as possible because of the ties we ▶





have with people on the site," says managing director Nick Garner.

"We are the rotary drilling partner for the development of drilling products for composite materials and work alongside key end-users such as Boeing and Airbus. Over the next five years all aircraft will be built from composite materials so this is crucial to us."

The aerospace industry is particularly demanding in its hunger for new materials and reducing production time, Garner explains, which fits exactly with Dormer's own strategy of developing ever new products that push productivity and so save money for the end-user.

"So their ethos and ours complement each other very well – plus they're at the cutting edge of drilling tool technology so it seems an obvious solution to put your research and development facilities right next to people who are working on the same issues," he says.

Innovation is the key to Dormer's market in Garner's view, with a growing proportion of sales coming from products that are less than five years old. Lead times – the time between conception and coming to market – is also being reduced so that a product can be on the shelves within six months in some cases, all of which makes the case for being on the AMP and near the large end-users working within the AMRC.

"The emphasis on new products means that

we're investing a huge amount in our R&D but there is a pressure to ensure that we're getting a return on that investment," he says.

"So we're seeking effective feedback from the metal cutting industry on how our innovations are performing. The best way of doing this is to work in collaboration with them to see where they think the next generation of tooling is coming from so that we incorporate this into our R&D."

The region's growing expertise in providing tools for the medical sector is another positive point for Dormer, which will work closely with one of the world's largest machine tool manufacturers, DMG, both in R&D and in its training facility.

Both DMG and Dormer's parent, Sandvik, are active in the sector as Sandvik showed last year when it bought Doncasters Medical Technologies, a contract manufacturer of orthopaedic implants and instruments in high-alloy stainless materials, titanium and cobalt-based alloys.

But Garner says the move from Worksop is also pushed by the legacy of skills that the area offers.

"Our company and cutting tool technology has been around Sheffield for more than 100 years and with that comes a heritage of base knowledge that you don't realise you have until you look at other places," he says.

And Garner is also aware of the effect that Dormer's move to the AMP could have in

encouraging other manufacturers.

"I think that Sandvik, a huge global player, putting one of its primary brands right in the middle of the site will make people look at the AMP very seriously. This could be the catalyst."

That would be the fervent hope of Strategic Sites, now the developer for the AMP in a 50:50 joint venture with UK Coal called UK Strategic Partnership. Dormer will occupy a large part of what is the first phase of development for the AMP, a 6.5 acre tranche of land to be called Evolution that will offer premises ranging from 2,500 sq ft to 27,000 sq ft. Once this phase is completed in September 2008 the joint venture will then go on to develop the remaining 60-70 acres of the site either speculatively or as a design and build contract, producing bespoke buildings for particular occupants.

"The building product we want here is high quality factories that fit advanced manufacturing companies but, while there is a market for buildings that are tailored to fit the client, a lot of occupiers can't wait that long," explains Anuj Joshi, managing director of Strategic Sites.

"The park was missing speculative units for occupiers who wanted to buy or lease premises."

All the buildings will fit the overall development brief produced by Sheffield architects Bond Bryan, who designed the Factory of the Future at the AMRC, so the ▶



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whole park will not just be a series of crinkly tin sheds but a coherent collection of upmarket buildings. The brief covers the type of cladding, bricks, windows and colouring that can be used in constructing buildings that will, for most occupiers, be their headquarters and flagship.

“There are a lot of companies in the region that are in relatively poor accommodation but are doing really cutting edge work,” says Joshi. “We want to attract them onto the park with these high quality building and link them into the research centre so they can grow.”

Joshi believes that the key to attracting the types of highly technological company that fit the AMP template is not just providing the right type of accommodation but also in offering the right terms – so that occupiers can not only lease the units but also buy them, an option favoured by many owner-managers.

“We see our role as balancing the public sector aspiration to produce a world-class business park with the commercial reality of building units at a market value,” argues Joshi.

“To create a sustainable business park it needs to have buildings that are commercially viable, not gold-plated, and that’s what we bring to the party – properly priced accommodation that isn’t twice the price of what you could get in Sheffield city centre.”

Meanwhile the AMRC is continuing to grow and cement its reputation as a world-class research facility. Recently the centre received national recognition by winning the Queen’s Anniversary Prize for Higher and Further Education which commends ‘outstanding achievement at a world-class level’.

But the main aim of the centre, with the aid of its main partner Boeing, is to spread the news of the latest technologies throughout the region. The AMRC in fact came into existence because of a major change in

strategy by Boeing - to remain a global leader, it decided to move away from a US-centric, internal production model towards a global manufacturing plan. Part of that change was establishing Research Centres of Excellence around the world in various disciplines, one of which is the AMRC.

“We want to bring new technologies to our products to lower the cost and improve the performance of our aircraft,” explains Boeing’s David Heck. “Sometimes we stumble across something with a small local supplier that changes the way we think about how we want to do things.

“We don’t just talk to aerospace component makers – it can be hand tool manufacturers or the makers of fasteners. Or we might bring over a process we want to test and see how it works with manufacturing hand tools before we use it to make, say, turbine blades. There are a whole lot of synergies and a lot of opportunities to do new and different things.”

Heck’s argument is that if he can get local manufacturers to adopt new technologies that make their products better and cheaper then there is a strong chance they will then come within the price and quality that Boeing can use – a ‘win-win’, as he puts it. This is why Boeing persuaded Lem Hunter of Vibrant Corporation to come over from Albuquerque, New Mexico, to demonstrate Process Compensated Resonance Testing (PCRT), a novel non-destructive testing (NDT) technology. In layman’s terms this means measuring the resonance of a component over various frequencies and linking this up with software that will then be able to pick out the defective components – a technology Boeing want to use.

“To get these people exposed to the sort of technology that Boeing will adopt in the future before Boeing has started to specify it and demand that components are inspected using these techniques will put them well ahead of the curve,” says Hunter.

“For the short term they might be the only

ones using this method of inspection and so they will have a competitive advantage because they will be able to perform a parts inspection for 2p rather than £20 and so they will be cheaper,” adds Beck.

For other companies the very fact of the AMRC alone is sufficient for them to want to be on-site. LIFE IC, for example, is one of the companies in the Innovation Technology Centre and is the first dedicated business accelerator focused exclusively on new energy economy products and services. Its mission is help companies take concepts and develop them to the point at which they can attract investment so the technologies it is concerned with range from fuel cells and wind energy to wave power and bio-fuels.

“If we’re going to do something with any of the energy technologies that we’re developing we will need to use the advanced materials and advanced techniques that are available here,” explains chief executive Philip Johnson. “Having all these businesses on the park is a major attraction for us.” “We can provide organic growth from companies that will start small but have massive potential and will be embedded in the region.”

Johnson has actually seen this in action as one of the companies he is involved with, 3Cs, is now working with TWI – the Welding Institute – on the AMP to offer advanced laser welding.

“3Cs has some very advanced technology concerned with super-conductivity and currently has to go to Germany for some of its processing, which plays hell with its logistics. If TWI can provide the laser technology then this will be an example of how a company can be brought into the region through the resources that are available on the site.”

So, the signs are that the AMRC is fulfilling its role as the cornerstone of the AMP and that the AMP itself is providing the type of accommodation that will be needed. But there is still a lot of land to be developed. ■