NEWSLETTER
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gadget

Good Practice Pilot Action for Innovative Industries: Education, Training and Exploitation

WELCOME TO THE NEWSLETTER FOR THE GADGET PROJECT!

GADGET CAFE STUDENTS WORK WITH APPLEGREEN HOMES

AppleGreen Homes

Students from Glasgow Caledonian University joined forces with The University of Technology of Compiègne (UTC) in France to develop innovative ideas for construction company AppleGreen Homes during a week-long project on campus. AppleGreen Homes, which builds modern, eco-friendly housing, tasked students with designing scaffolding and support mechanisms for its construction company.

Fifteen GCU BA International Product Design students worked alongside 25 Mechanical Engineering students from UTC. The students were encouraged to think of new ways to reduce costs using alternative building materials which would provide an eco-friendly solution to the company's scaffolding requirements.

Speaking at the final student presentations, Alan Wallace, Managing Director of AppleGreen, said: "The students were asked to come up with ideas to improve the efficiency and costs that scaffolding incurs.

As this was a live project, we were able to gather a mix of product design ideas and engineering solutions to solve an onsite issue which could impact upon the way in which we construct homes in the future."

Students delivered presentations to lecturers, AppleGreen's Alan Wallace, and former Saatchi & Saatchi Chairman, Robert Fletcher. Mr Fletcher commented that the students were at the "forefront of lateral ideas".

Martin Gigli, 29, International Product Design at GCU student, said: "The project gave us the opportunity to work on a real-life problem and to work together to address the cost and designs of scaffolding. In teams we were able to combine ways of thinking to complete the project and it gave an insight into how different disciplines approach a problem."

Professor Bruce Wood, Director of GCU's Centre for Creative Industries and Professor of Design Innovation, said: "This project provided the students with a real problem and an opportunity to create potential solutions which would have a positive impact for the company. This model of working could be used to suit a number of academic disciplines to allow students to gain practical work experience."

INTERVIEW WITH AN ENTERPRISE

In a series of interviews, successful stories of University-Industry co-operation will be presented in our Newsletter.

No 2. Juan Bornay of Bornay

Bornay is a company with a long history of working in the field of renewable energies and the environment, and a strong commitment to university-business collaboration as a strategic alliance to strengthen the sector as a priority for environmental, economic and social well-being in the future.

After four decades of continual development, Bornay is currently one of the leading international players in the manufacture of small wind turbines, with an insight into how to combine technology, innovation, open to international markets, mass production and tailor made project solutions.

As such we have decided to ask him to tell us first hand the current and future outlook for the sector.

'We are continuously innovating in order to bring clean energy closer to people.'

Juan Bornay defines himself as a dreamer more than an entrepreneur. The motto of his company is "Green Energy to change the world", a task that was begun by his father in the 1970's which he has taken forward thanks to continuous innovation and close collaboration with the University. They are changing the world. They export small turbines to more than 50 countries where the wind and sun can be transformed into energy for development.

How was Bornay born?

■ It was established in 1970 as a family business, when my father had the idea of supplying electricity to places where there was no electric light. The first turbine had wooden blades and was build using a car alternator and a few mechanical attachments. Back then no one talked of wind energy in Spain and we only had a company from Barcelona as a reference.

How did Bornay evolve?

■ By meeting the needs of our customers. The 1970s saw an industrial boom: families acquired second homes in the countryside where there was no electricity and other demands arose like in the Guardia Civil buildings and foreign residences. We incorporated solar energy into the business in 1998 so that homes could be completely self-sufficient because when there is no sun, there's wind and vice versa.

Juan Bornay, of Bornay

How has Bornay incorporated University know-how into its business?

■ The development of our products has always been by trial and error. Our engineering department began to work with the Universidad Politecnica de Valencia for the development of a solar inverter and from there we have collaborated with universities to meet our needs and to develop new projects. Now we are working on the control of machinery from the same piece of equipment in order to make it more usable without generating excess energy and varying the energy usage. We work with two research groups, one specialising in internal combustion engines and the other in electrical technology. The ability to combine basic research from the universities with the depth of experience and knowledge of the sector at Bornay is the key to the success of our products.

Where have the greatest difficulties occurred in working with the university sector?

■ I think that the greatest difficulties come when the pace of work in the company and the university are very different. That and internal bureaucracy means that most of our projects can become bogged down and hampered. There should be a much more agile and flexible system of management. In any case you can't generalise and it often depends on the research group we are collaborating with. We have had very good experiences – as we do with the internal combustion group, and we are still working with them in fact -, and others that haven't been so positive.

What training to you ask for from professionals hoping to work at Bornay?

■ The ideal profile is someone who has knowledge of both electrical and mechanical engineering because we need the two systems to be coordinated. We need mechanics applied to electricity and a turbine that is mechanically perfect is useless to me if it doesn't function electronically as well.

Is it easy to find this type of profile?

■ When we wanted to incorporate university graduates we have found the c.v.'s perfect in terms of their technical knowledge but there is very little knowledge of business management which has made it difficult for them to adapt and less capable of resolving the kinds of problems encountered by a business. I this sense, we have had much better success employing students from professional training colleges that have taken subjects in electronics and later mechanics. The practical experience they gain is essential Perhaps this kind of model could be transferred into the university setting.
Universities should review their study programmes looking at incorporating business experience during their studies to combine the theoretical with the practical and at the same time to adapt the theoretical contents to technological changes and scientific advances that are now being made so quickly.

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INTERVIEW WITH AN ENTERPRISE

As far as the future of the sector is concerned, how have you been affected by the latest energy legislation in Spain?

■ It has affected us less that those installations that are connected to the grid. We take energy to isolated places, we are meeting a need and even then the bureaucratic complications are excessive. For example, we have spent 14 months getting approval for a 3KW turbine, with a price tag of about 150 euros - I don't even want to think how much it has cost us in terms of time lost. It makes no sense.

Bornay exports to more than 50 different countries. Do you always encounter these types of obstacles?

■ No. In all countries, green energy has become a priority and we are increasing our sales and working much more effectively than in Spain. We are working a lot in developing countries above all in Africa, Latin America and the East. They are very interesting and significant projects.

Can you describe any one in particular?

■ In Tanzania, for example, we are starting a collaboration with two Spanish missionaries who needed a fridge to conserve vaccines and a transmitter to communicate with their families. They brought other institutions onto the project and now, what was once a small hamlet where they supplied vaccines and treated children, is a thriving town of about 20,000 inhabitants which has a school, a church, a hospital, running water and street lighting. Everything. And it all started with a turbine.

Your motto is "green energy to change the world" and it really seems like it is changing.

■ I can talk about another project, this time in Congo where a priest asked for a budget to bring electricity to a school. It came to about 300,000 euros. It seemed like a lot of money but he took out a calculator and he told us to go ahead with it because the consumption of candles for each child was more than the whole project. After installing the electricity, we put in a radio transmitter for the whole valley and because there wasn't anything to eat we supplied them with material to bring energy to a chicken farm which was able to produce 2000 chickens and we're hoping to expand it even further.

What will Bornay look like in five years' time?

■ We are working to make our products more accessible. On the one hand offering more services, facilities and a greater range of products to places where the grid won't reach, always helping the client in the management of the project from beginning to end. And on the other hand, in the cases where there is a connection to the grid, but where we are subject to political decisions that aren't forthcoming, we have to innovate in such as way that the technology can move forward.

Any project in particular?

■ We are working on a new turbine. If the market is opened up in the grid, anyone can become a direct user, even in cities because the technology of turbines is now able to be used in the cities too. Our project is a turbine that will be very different from the ones being produced currently because we will be replacing the rudder thereby reducing excess noise and allowing it to be effective with less wind. There are not public funds for this and there isn't a lot of demand so we are having to work at reducing our costs somehow so that green energy can be available to individuals.

Would you describe yourself as a businessman or a dreamer?

■ More a dreamer than a businessman. We like our work so much that we have the sensation that we are not going to work but to have fun.

Lifelong Learning Programme

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