

and use natural daylight from windows whenever possible.

To raise awareness, a series of presentations were made to staff and pupils, explaining how climate change is affecting the planet. The extremely convincing result was a halving of the school's electricity bills within two weeks, and savings of over £2,000 a week! Following presentations to a panel of judges by the twenty local schools involved in the "Go4SET" project (many larger than Vale of Berkeley) the team was

awarded the prize for 'Best Teamwork', a tribute to the pupils and their mentor.

Congratulating the team, Andrew Robinson says: "The project highlighted the transferability of good environmental practice and demonstrated how enthusiastically pupils became involved and engaged. They showed in just ten weeks that whether in a school, an office or a factory, anyone irrespective of age, can save energy, save money and save the environment in the process."

Commenting for the college Richard Park, Head of both Year 8 and the Science Department, says the experience was invaluable for the students as working with local industry made them aware of the many different opportunities in science, maths and engineering. He adds that Arc Energy provided outstanding support and experiences for the students and as a result, as well as enjoying the whole project, they were also very successful. (According to press information from Arc Energy Resources)

## Electromagnetic pulse technology for Polish aluminium profiles producer

Sapa Aluminium Sp. z o.o. from Trzcianka/Poland has ordered an electromagnetic pulse technology system from PSTproducts GmbH, Alzenau/Germany, and Sapa is now the first aluminium extruder to apply this process commercially on the shop floor.

The need for aluminium lightweight structures becomes more and more evident, and Sapa specialises on adding value to aluminium extrusions by producing prefabricated parts using various innovative joining processes. The electromagnetic pulse technology (EMPT) is the newest of these enabling processes. It has been used for more than a decade for joining, welding, forming, cutting and compression of powders, but only now reliable equipment becomes available for industrial applications.

The EMPT can be used to join dissimilar materials, e.g. hybrid joints between aluminium and high-strength steel, or for anodised or powder coated extrusions. Sapa uses its EMPT machine initially mainly for testing, prototype manufacture, small series production and back-up in close cooperation with experienced staff of PSTproducts.

The EMPT provides non-contact processes for joining, welding, forming and cutting of metals. For EMPT processing electromagnetic coils are used, to which a short



*EMPT joining of lightweight seat structures from Sapa extrusions at PSTproducts*

but very high-power electric current is applied from a pulse generator. The coil produces electromagnetic forces which can for instance change the diameter of tubes by compression or expansion. Non-magnetic metals such as aluminium tubes can also be processed, as an eddy current is temporarily induced in the skin of the tubes. Non-symmetric cross-sections can be expanded or compressed, resulting in a me-

chanical interlock, a solid phase weld or simply a geometry change if required.

Sapa offers high-quality profiles and fabricated parts, which meet different surface quality requirements – as extruded, anodised and powder coated – for the following applications:

- automotive components such as instrument panel beams, longitudinal members and crash boxes,
- furniture, lighting fittings, refrigerators and freezers,
- shower cubicles, bathroom equipment and decorative strips,
- façades, windows, doors, railings and building systems,
- products used in public buildings such as shop equipment, display cases, electronics boxes, cooling fins and ladders,
- roofs, solar collectors, gates, sunshades and banister posts,
- yacht masts, truck bulkheads/sideboards and football goals,
- load-bearing structures, guides, scaffolding, corner joints, industrial railings, fencing posts, platforms and floors,
- components for telecommunications and electronics industry.

(According to press information from PST-products)