

Editorial

For this special edition of *Studies in Design Education Craft and Technology*, devoted to the theme of Education in History of Technology, we have a broad range of contributions from a variety of practitioners in the field. The industrial working museum is a recent phenomenon: few of those who made and saw the film – now a classic – *The Titfield Thunderbolt* in 1952 ever thought it would become a reality so soon; a branch-line saved by the local community and operated with historic stock and equipment. Yet such working conservation is now operating on a nationwide scale: Ironbridge will soon be the only place making traditional wrought iron; Manchester has the last working self-acting spinning mule, Stafford the last steam-powered waterworks, Brighton its Victorian pumping-station and training workshop on restoration engineering.

From Saxon times, when England had a watermill for every 50 households, to the 1950s when, before the Beeching cuts and the demise of steam, locospotting was still a national pastime, nearly everyone grew up with an awareness of large machinery. Technology education could be based on this assumption; no longer is it so. The adolescent with a transistor-radio has no idea how it works and opening the box leaves one no wiser; the experience of simple and comprehensible technologies has to be brought to our pupils if they are to understand the fundamentals on which advanced technology is based.

Angus Buchanan, well known for his educational work in industrial archaeology, develops his concept of 'physical history' in the opening paper, and Roland Rhodes relates how the physical experience of industrial history is built into his OND Technology programme and how local initiative has conserved a steam-powered waterworks in going order for the experience of future students of engineering.

Jonathan Minns writes about his vision of the Brighton Engineerium, where not only are irreplaceable engineering artefacts conserved but also the skills that made them are being taught to a growing number of mature students aware of the de-skilling of much in competitive industry.

Next comes a group of contributions from, and about, industrial museums both long-established and recently founded. The Iron Bridge has been a static exhibit (as it was planned to be) for just 200 years, but Manchester realised only just in time that the trade that built the city had all but vanished; Bob Manders recounts how Manchester pupils are made aware of the city's great achievements, whilst Alastair Arnott is still in the process of initiating museum education in Swansea.

Jennifer Tann reviews progress in the educational use of industrial museums and introduces the Gladstone Pottery Museum, whose Director, Francis Celoria, reports on activity there. Julie Wilkinson writes on research into teachers' and pupils' attitudes to the museum. Returning to the textile industry, but this time from Yorkshire, Alan Machin reports on museum education in Halifax.

As evidence of the quality and variety of work that can be expected from higher education students, extracts from two projects completed for Liverpool College of Higher Education are included, one demonstrating analytical skills learnt in examining watermills and the other investigating the practically obsolete trade of rose-engine turning.

Technology education for the technically-minded student has evolved continuously from the trade-apprentice tradition to the technological universities of our own time, but only in the present century has it become apparent that this nation is running short of committed and imaginative engineering designers. Now that most technologies have become too complex for immediate comprehension, it has become our responsibility, in the education service, to provide practical and physical experience for our pupils of the fundamental, simple and easily comprehensible mechanisms and techniques on which complex technologies are built. Industrial museums with enthusiastic directors are the key to these fundamental technologies that are no longer commonplace experiences, and it is the motivation generated by teachers of design and creative skills, and of the physical history of basic industries, that will give us the next generation of imaginative professional engineers with insight into what was, and is, possible.

The small band of pioneers in History of Technology education have imaginative things to say: here are some of them.

Two other short contributions complete this issue. The first is the response by the Editorial Board of *Studies in Design Education Craft and Technology* to the important recent consultative document from the Design Council on Design Education at Secondary Level. The second, closely linked, contribution is by Bruce Archer and Phil Roberts on some of the current thinking of the Royal College of Art's Design Education Unit.

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