

TECHNOLOGY TESTBED

Technology Testbed was set up in the Large Object Store of the Merseyside County Museum and is intended to draw links between the principles illustrated by simple hands-on exhibits and the museum objects stored there. The exhibition was set up in a remarkably short time with great enthusiasm mixed with practical manufacturing skills, and was the subject of an evaluation study by the University of Liverpool's Education Department.

The number of exhibits is increasing to include science among the predominantly basic engineering ones. A fearsome compressed air and water powered rocket sled has joined the other water exhibits outside the store and work is in hand to turn some of the more rugged museum objects into truly hands-on exhibits.

The exhibition started out as a small section of the object store, which contains telescopes, cranes, rockets, buses and lorries amongst other items, and has now been enlarged to occupy other areas. The hands-on exhibits and the large objects are beginning to work well together; the hands-on activity brings the store to life and the objects extend the visitors' experience in a way which would not be possible in the more formal atmosphere of the main museum building.

Location:	Large Objects Collection, Princes Dock, Liverpool L3 0AA
Date opened:	3 March 1986
Floor area:	350sq m
Number of exhibits:	80
Number of staff:	4 permanent 1 temporary plus 8 explainers
Number of visitors:	150 per day more than 50% children, in organised school parties
Opening times:	4 April to 9 September 10-5 daily including Sundays
Entrance fees:	Free

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Dr P V Sudbury



Patrick Sudbury's background is in physics and astronomy. He is currently Assistant Director at the National Museums and Art Galleries on Merseyside.



Technology Testbed is housed in the Large Object Store of the County Museum. Many exhibits relate to the Museum's collection.

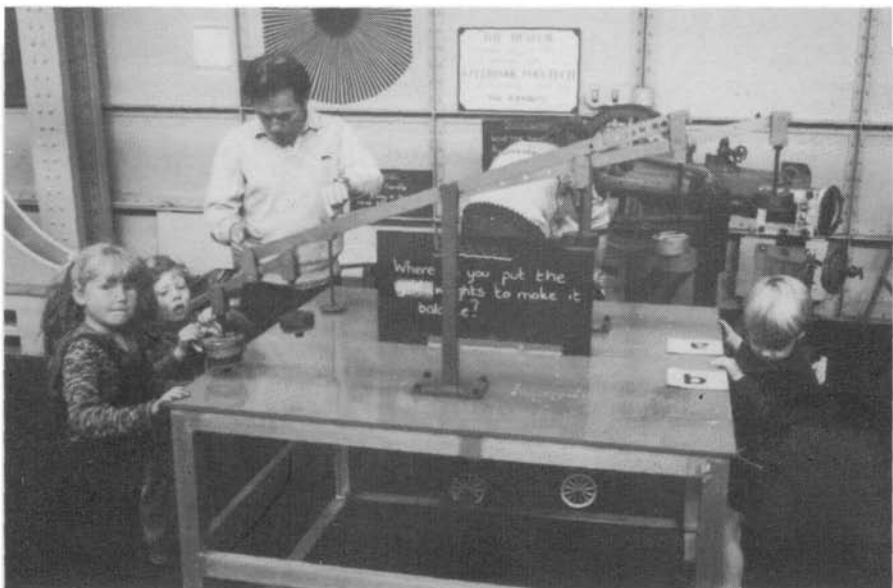
Museum staff at Liverpool had been interested in interactive displays since the late 1960s and had made use of the Science Museum travelling exhibitions during the early 1970s. The problems of exhibit maintenance under heavy usage led to a swing away from mechanical systems towards computer-based interactive displays. However, ideas for mechanical exhibits were revived during the 1980s as a result of a visit to the United States and Canada by the Keeper of Physical Sciences, Julian Ravest. He returned very enthusiastic about the interactive displays he had seen at the Ontario Science Centre and elsewhere.

In 1983 the concept of an Exploratorium was therefore built into the feasibility study for the Space Theatre on Merseyside. However, the scheme ran into funding difficulties and was postponed. The announcement of the Science Museum's 'Launch Pad' project led to discussions with Dame Margaret Weston and Dr Anthony Wilson at the Science Museum in the autumn of 1984. Again, there was no immediate prospect of funding a development on Merseyside. However, the Museum's bid for the funding of Industry Year exhibitions was included in the Merseyside County Council's draft programme for 1985/86.

Early in 1985 discussions were held with Professor Wynne Harlen, who had recently been appointed Professor of Education at the University of Liverpool. She had particular interest in the educational potential of interactive exhibits and there appeared to be considerable scope for co-operation between the Museum and the Department of Education in developing and evaluating exhibits.

During April 1985 Stephen Pizzey, Development Manager for the Fund for the Development of Interactive Technology Centres, visited Merseyside to see the various sites being considered for experimental displays and to discuss with the Keepers of Physical Sciences, Education and Social and Industrial History the concepts that were then being developed. The advantages of importing some ready-made exhibits seemed particularly attractive as a way of getting started.

Two possible sites were considered. The first was one of the galleries of the Liverpool Museum – a large general museum which receives over 500,000 visitors each year. The alternative was the Large Object Store at Princes Dock which had not previously been open to the public. It was decided to use the latter. It was an old ferry terminal a few yards from Liverpool's Pier Head and used by the Museum to house a miscellaneous collection of machinery from tram cars to



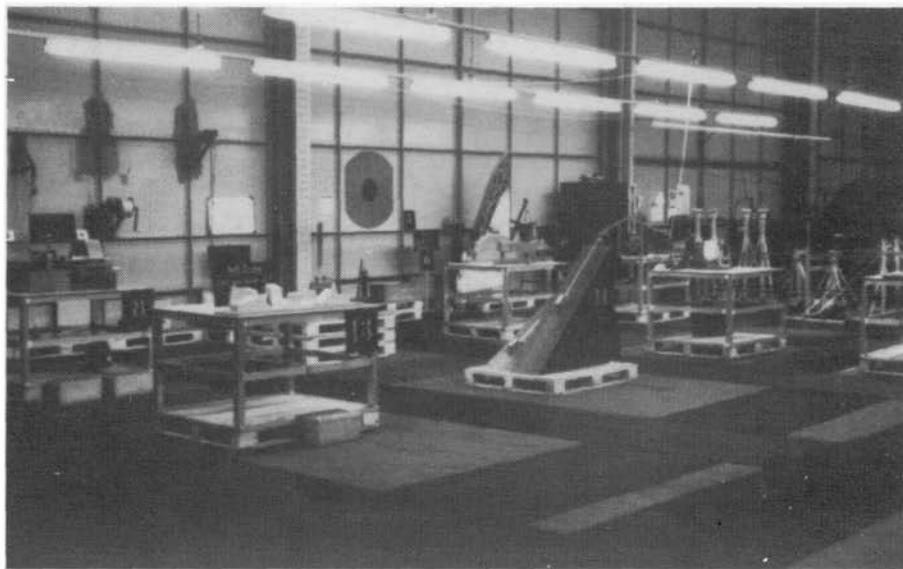
The exhibits are intended to be an educational resource for school parties as well as the general public. Simple mechanisms and basic principles are demonstrated as in the water pump exhibit (top) and the balance (above).

telescopes, some restored to working order, others not. The Store had sufficient space, good access and car parking, security systems and security staff. However, some money was needed to improve lighting and decoration to house the Testbed.

The problem of funding still remained. Although a draft budget provision was made for the exhibition, it would not have proceeded against the background of severe financial restraint in local authority expenditure without the grants received from the Information Technology Awareness Programme and the Urban Programme. A subsequent grant from the Gatsby Trust made it possible to consider a longer term programme with careful evaluation.

Three bays (1250sq ft) in the Large Object Store were allocated to the initial Testbed Show which was to open in March 1986. Concepts were discussed by a team including staff from the Museum, Liverpool University, Liverpool Polytechnic and the various organisations contracted to build the exhibits. Exhibit production was managed by the Keeper of Social and Industrial History, Adrian Jarvis, supported by his staff.

No single philosophy was adopted in deciding what to make and show although it was generally preferred that



Interior view of Testbed. Exhibits are mounted on movable pallets and instructions chalked onto blackboards.

experiments should relate to the various transport and other objects in the Store. Other considerations included what could be done for the money available and, more pressingly, in the time available between the confirmation of funding in October 1985 and the opening in March 1986.

Construction of the exhibits was carried out by the Museum itself and three outside sources: Liverpool Polytechnic's Department of Mechanical Engineering, Francis Evans of Sheffield Polytechnic and Jim Baxter of Lark Lane Motor Museum in Liverpool. All the people involved were paid but all were also very enthusiastic about the project. Certain exhibits were made simply because they were easy to make and the materials were to hand. Others exploited ideas that had been used successfully elsewhere.

By March 1986, 21 exhibits were ready and still more were being built. Three of the more potentially messy (water-based) exhibits were placed outside in the yard, the rest inside the Store. All the exhibits were being built on pallets so that they could easily be moved around if more spaces were needed or if the order were to be changed. The Testbed



These bicycles are not all they appear. The steering and pedal mechanisms have been altered so they behave in unexpected ways.

opened on 3 March 1986 some five months after funding had been confirmed.

Running Testbed

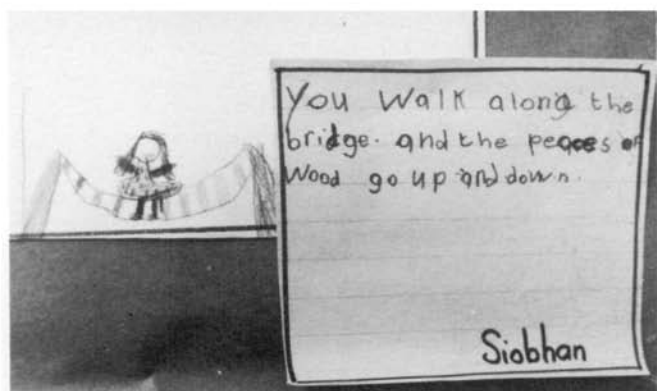
Responsibility for marketing and training and organising the demonstrator staff rested with the Keeper of Educational Services, Paul Rees, and colleagues in the Department of Social and Industrial History already mentioned. There was no difficulty in attracting the school groups to whom Testbed was primarily directed. In addition, many family groups enjoyed visits on Sundays. Attendance was 31,000 by the time Testbed closed in September.

Six demonstrators were employed to help run the exhibition. They acted as guides, took advance bookings from groups and served in the shop and/or cafe. As there were only six demonstrators, group visits were effectively limited to about 70 children. Each demonstrator took charge of about a dozen children and guided them around Testbed and the other exhibits, encouraging visitors to experiment and learn as they played. The whole tour took about one and a half hours.

Apart from the demonstrators, two uniformed attendants



The giraffe 'drinks' by means of a peristaltic pump which is operated by turning a handle, and transfers water from a drinking bucket to another marked 'stomach'.



Two drawings and a model from a primary school's exhibition inspired by a visit to Testbed, showing an electric motor made from a bicycle wheel, a bridge structure, and a revolving chair.

were employed to patrol the Store, sign people in and out, to provide first aid and to act as a security presence. There was no charge levied although voluntary contributions were sought.

The future

While Testbed has been open, an evaluation study has been carried out which will provide the information to enable staff to make improvements and changes for the future in discussion with Professor Harlen and her research team of Ardrie Van der Waal and Marian Whitelock. At present, the exhibits are aimed at children of 8 to 11 years of age. The Museum would like to expand the range of exhibits in order to broaden their appeal to children from 5 to 13 years old.

Testbed opened for the 1987 season on 4 April, after a winter of exhibit rebuilding and augmentation.