Introduction

Techniquest, based in Cardiff, Wales, was established in 1986 as an educational charity. Our mission is to engage people with science and to motivate them to learn more. From humble beginnings to our award winning current home, Techniquest has something to offer everyone.

Many know Techniquest for its main exhibition centre in Cardiff Bay, however, the centre operates a wide range of activity beyond its flagship main site, including design and engineering services, extensive off-site operations and a leading role in research into science communication.

Since the very beginning, the capability to develop and build high quality exhibits and programmes has been a top priority and a key part of our success with visitors. These skills and facilities have often been in demand from further afield, and Techniquest has a successful track-record of supplying excellent products and services to other science centres, museums and other organisations around the globe.

Techniquest also operates large-scale outreach activities. In recent years we have developed highly innovative Wales-wide schools outreach services, in a range of formats including shows, workshops, Starlab, and Kits, all delivered to schools via a network of hubs. This cost-effective service has attracted considerable attention and Techniquest now works in partnership with centres in other countries helping to expand their outreach activities.
Motivational learning is at the core of Techniquest and the organization has leading expertise in research in this field. Techniquest’s development work always follows best practice in terms of impact measurement, formative evaluation and quality standards.

Above all, Techniquest prides itself on an outward looking, partnership approach. We have proven experience in working with others, and have the staff and skills to put together successful arrangements with a wide range of organisations. These include commercial organization, governmental bodies, and most importantly other science centres based both in the UK and around the world. Uniquely amongst UK science centres Techniquest builds nearly all its own exhibits recognised for their reliability, engineering excellence and educational effectiveness. This standard is achieved through a rigorous evaluation process, carried out within the context of its exhibitions in Cardiff Bay and in Wrexham (TQ@Glyndwr), which together welcome more than 280,000, people annually. This capability has led to it becoming one of the leading exhibit builders in the UK working on over 250 contracts in more than 30 countries, supplying more than 700 exhibits since 1986.
In-house Resources

Operating from a dedicated 2000m2 fabrication facility, the Technique workshop is a well integrated multi-disciplinary team of 15 exhibit fabricators with all the skills required to produce interactive exhibits. Amongst other awards Technique Phase 3 was granted Millennium Product status by the Design Council of the U.K.

In-House skills include:

- Mechanical Engineering (Pneumatics, Hydraulics, Structural)
- Electrical Engineering
- Electronic Engineering (Micro-controller, Digital and Analogue)
- Computer Software Programming (Flash, Director, Visual Basic, C++, Assembler, Java, Javascript, HTML and PHP)
- Microprocessor programming (PIC)
- Machining (metal work)
- CAD-CAM
- Welding
- Plastics Machining & Vacuum forming
- 2D and 3D CNC capabilities
- Specialist cabinet building and woodworking
- Painting, in particular spraying MDF
- Technical Design
- Graphics Design
- Illustrator
- Draftsman
- Technical Authoring
Sub Contractors

In addition to the staff of Techniquest, Techniquest has access to a well-disciplined local group of sub-contractors for services including:

- Aesthetic Design
- Illustration & artworking
- Laser + Plasma cutting
- Large scale metal fabrication
- Glass Reinforced Plastic Fabrication
- General Engineering work
- Software development
- Graphics production
- Modelmaking
- AV hardware

Partners and Associates

In addition to the key personnel detailed above, we have access to a worldwide network of specialists in this field, and can through our staff and associates can provide guidance in areas including:

- Masterplanning and feasibility studies
- Fundraising
- Business planning and financial projections
- Marketing analysis and
- Architectural development
- Cost control and quantity surveying
- Project management
Recent Relevant Projects

Techniquest capability has led to it becoming one of the leading exhibit builders in the UK working on over 200 contracts in more than 30 countries, supplying more than 700 exhibits since 1986. In the last 3 years Techniquest has been commissioned by over 80 separate organizations to design, manufacture and install a huge variety of exhibits, educational activities and programmes from clients based in the UK, Europe, the Far East, Australia and the USA, in addition to carrying out work to refresh our own exhibition floor funded by core funding or external support. Many of these commissions have been valued at £15,000 - £30,000, and below we highlight our more substantial contracts from the last three years.

Design and Build Contracts

Techniquest’s team of designers are responsible for the aesthetic and technical development of exhibits for our own visitors and for external clients. We continuously seek external funding to replenish the stock of exhibits on our own floor, working within the established Techniquest design style. Over the past three years we have manufactured over 30 exhibits for use in by Techniquest’s visitors, developing all aspects of the design of the exhibits from earliest principles.
Centre for Life, Newcastle upon Tyne, UK

We designed, developed and manufactured a 250m² under-7s area for the Centre for Life, which was opened by Lord Robert Winston in February 2011. The project included the development of themed areas such as a scaled down shop, café and treehouse, and the manufacture of a large scale reconstructed badger set. The entire themed area was built in Cardiff and transported to site for installation by our team.
Woolsthorpe Manor, National Trust, UK

Techniquest managed the fabrication, delivery and installation of an exhibition at the birthplace of Isaac Newton, owned by the National Trust. The project involved working with external designers to develop original interactive exhibits, manufacture of showcases, refurbishment of existing exhibits and fabrication of replica exhibits from Techniquest’s catalogue. The exhibition was installed in February 2010.
Cardiff University, UK

In 2008 Techniquest designed, manufactured and commissioned a touring exhibition celebrating Cardiff University’s centenary. The exhibition was built in 9 weeks and installed in launched in that year’s Eisteddfod, where it received over 20,000 visitors in one week.
Bezier for GSK, UK

In 2009 advertising agency Bezier were commissioned Techniquest to manage the development of an activity to promote the launch of a new painkiller. We came up with an original method of demonstrating the improved dispersion of the new tablets, developed the full design for the transportable units, and manufactured three copies of the units which toured the UK as part of a major promotional event.
In 2009 Techniquest manufactured a series of original tabletop activities looking at methods of power generation. All of the exhibits were bespoke and were designed to be lightweight and portable whilst conveying clear messages about energy generation.
In 2010 we designed and manufactured three exhibits which examined the technical aspects associated with nuclear decommissioning and management of reactors. The exhibits were launched in Cheltenham Science Festival, gaining significant publicity for the clients.
Wales & West Utilities, UK

Techniquest provided a combination of interactive exhibits and touch-screen interactives to Wales & West as part of their travelling exhibition stand. Following the successful partnership between Wales & West and Techniquest that saw the creation of a Key Stage 2 Gas Detectives workshop as part of our Outreach programme, Techniquest was commissioned to create four bespoke interactive exhibits focussing on gas detection. The exhibits were of sufficient scale to allow for ease of transportation and installation whilst maintaining the usual high quality level of engagement. In addition to the exhibits, Techniquest created 4 touch-screen interactive programmes that complimented the Fernleigh designed set created for the Pavilion. The touch-screen interactives allow visitors to identify potential sources, and evidence of carbon-monoxide in the home along with information on the most commonly asked questions around the subject.
Exhibit Build Contracts

Techniquest has extensive expertise in the manufacture of exhibits, having developed hundreds of exhibits for use on its own exhibition floor, which are then refined and made available to other clients around the world. Often this involves working with external design teams to develop a design direction into a feasible, practical and engaging interactive experience. We frequently supply individual exhibits, but continuously engage with larger scale contracts delivering entire exhibitions or ranges of interactives.

Recent projects of this nature include:-

**Petrosains, The Discovery Centre, Kula Lumpur, Malaysia**

In April 2009 Techniquest provided copies of its successful educational outreach kits, comprising of tabletop exhibits based on Maths and Forces to this flagship centre where they are used as both outreach materials and tabletop activities on the exhibition floor. In 2011 Technquest delivered a further series of kits to Petrosains to enhance and extend their outreach and inreach programmes. This contract has been followed by several smaller sales of similar products to clients in the Far East, Africa, Australia, Europe and the UK.
Phaeno, Wolfsburg, Germany

Following a contract to supply a substantial range of exhibits for the initial launch of this science centre in 2005, in 2009 Techniquest manufactured a range of exhibits for a new exhibition focusing on emotions and senses. The exhibits included an interactive treadmill and copies of Techniquest replica exhibits. The exhibition was installed in Phaeno in February 2009. We again used a design manual developed by Phaeno to develop housings which complemented the overall style of their exhibits.

VILVITE, Bergen Vitensentar AS, Norway

Vilvite is the largest Science Centre in Norway, which opened in March 2007. The Vilvite project had a £10M budget overall. Techniquest manufactured 20 exhibits to the Vilvite cabinet design manual. Core technical packages were refined to meet the requirements of the design style of the client, and this contract included the build of replicas from our Musiquest exhibition for the first time. We also built novel exhibits and contributed significant design input to the final form of the exhibits.
Inspiria Science Centre, Sarpsborg, Norway

Techniquest was one of the principal contractors supplying a wide range of exhibits to this brand new science centre in 2011. We developed more than 20 interactives, drawn from our catalogue of existing exhibits and other original concepts. The project was developed over a tight 5 month schedule, and was delivered on time and budget. The centre opened in August 2011.
Expology, Aker Solutions, Engineerium, Norway

Techniquest was commissioned by Expology to provide interactive exhibits for Aker Solutions Engineerium on the theme of oil and gas. In response to an outline brief, Techniquest and Expology worked together to refine the desired phenomena and to manipulate the designs to work within the stylised furniture pieces. The interactives were a mix of design variations of standard Techniquest exhibits, tailored to not only fit into the Expology designed furniture but to also include specific competitive task for the visitor to enjoy, and bespoke exhibits designed specifically for the brief. Installed in two packages, Energy and Phenomena, Techniquest delivered and installed on time and on budget.
Chongqing Science Centre

Techniquest completed its first exhibit contract in China in 2011, supplying the Chongqing Science Centre with four exhibits drawn from its catalogue. The exhibits were shipped and installed in June 2011.

@Bristol – Various Projects

Techniquest has worked closely with the @Bristol's design team in the manufacture of a variety of interactive, exhibit housings and on gallery furniture for their most recent projects. This work has included the fabrication of GRP moulds, cabinets, and large scale structural and scenic elements for the Inside DNA and Animate It exhibitions, and the All About Us exhibition.

National Science Museum, Thailand

A major new development at the Science Museum allowed Techniquest to supply 35 new interactive exhibits in 2006/7. The exhibits were drawn from Techniquest’s extensive catalogue of exhibits, were built in Techniquest’s standard house style and were installed by our own technicians. The exhibition was implemented on time and within budget. Techniquest provided a turnkey solution, which included design and build, transportation, implementation and training.
Consultancy Projects

Techniquest has operated a successful Science Centre for 25 years and is able to offer expert staff training to both well established and new science centres as well as NGO’s around the world covering:

- Organisational Strategic Planning
- Staff Functions and Management
- Marketing
- Bookings Management
- Front of House Staff Scheduling
- Exhibit Maintenance
- Quality Standards and Checks
- Health and Safety Monitoring and Implementation
- Presenter Training and Evaluation
- Programmes Management and Delivery
- Recording and Managing Visitor Data
- Management of Schools Visits
- Daily Routines, Policies and Procedures of Front of House Staff
- Estates Management
First Hydro

In 2009 Techniquest carried out a full feasibility study of First Hydro’s proposed visitor centre in Llanberis. This included a full architectural assessment, floor planning, visitor projections, competition analysis, local consultation, business planning and content development. During the course of our work we commissioned Haley Sharpe, QS services and architectural consultancy to create a strong overall vision for the proposed attraction.
Kuwait Institute of Scientific Research

In 2011 Techniquest led the masterplanning and feasibility study for the development of a new science education and training centre in Kuwait City. This study was commissioned by the Kuwait institute for Scientific Research, and we worked with KCA London to develop a comprehensive report which detailed the architectural development, internal fit out, educational strategy, and operational plan for this exciting new development.
Experimenta, Bonn, Germany

in 2012 Techniquest delivered a consultancy document entitled A Science Theatre for Children - an Analysis for Experimenta. The Report was commissioned to analyse the potential for, and the implications of, a science theatre and programmes for schools audiences aged 4 - 10. The study focussed on areas including:

• How a science theatre is best included in to the current operationalal model at Experimenta.
• How shows should be tailored to audiences aged 4-6 and 7-10.
• What technical infrastructure is necessary for the theatre and what technical equipment should be considered.
• Staff structuring, recruitment and training needs.
• Trialling and evaluation.

The study was based on Techniquest experiences of running a sucessful in-house programe of over 100 shows and workshops during the 26 years of operation, whilst also looking at current trends across Europe and beyond.
Techniquest Programmes - Overview

Techniquest produces a huge range of educational material for both the public and formal educational audiences. We have a world-leading understanding of the latest developments in this field, and our expertise is demonstrated through the huge range and variety of the programmes we offer on, and off-site.

We run well over 100 different programmes across different age groups, including:

- Theatre shows – designed to run in our theatre at Techniquest, or as part of a travelling show to a school
- Planetarium shows, again both for our own in-house dome, and a travelling version
- Workshops, from pre-school up to A-level, and ranging in duration from 30 mins to full day sessions
- Laboratory workshop – Techniquest runs its own workshops in its own dedicated, highly equipped laboratory.
- Debate activities. We have used the Democs format extensively and enhanced and expanded this format to include bespoke demonstrations and novel props.
- Kits and tabletop activities
Programme Development

Techniquest produces all its programmes in-house, using a team of content developers with extensive scientific knowledge and huge experience in the production of engaging, informative programmes for all ages. A dedicated team of 4 programme developers are skilled in research, scripting, educational development, graphic design and AV production, and are supported by our team of designers and fabricators. We use a rigorous and well established process of trialling and evaluation, and work closely with our large team of presenters and training staff to ensure we produce programmes of the highest quality. We have produced copies of our programmes for science centres across the UK and wider afield, and have created new resources for a wide range of clients including large commercial companies and governmental organisations based in the UK, and around the world.

Hires

In addition to the design, build and programme capabilities Techniquest has a stock of nearly 400 interactives that are available for hire both for the short term, 1 day, to long-term agreements that can stretch to a year or more. The nature of Techniquest's standard hire allows large numbers of visitors for a low cost compared with purchase. Due to the modular nature of Techniquest's interactives, exhibitions are highly flexible both in terms of content and size. Techniquest encourages a collaborative approach with each client and provides renders that allow each space to be presented clearly.