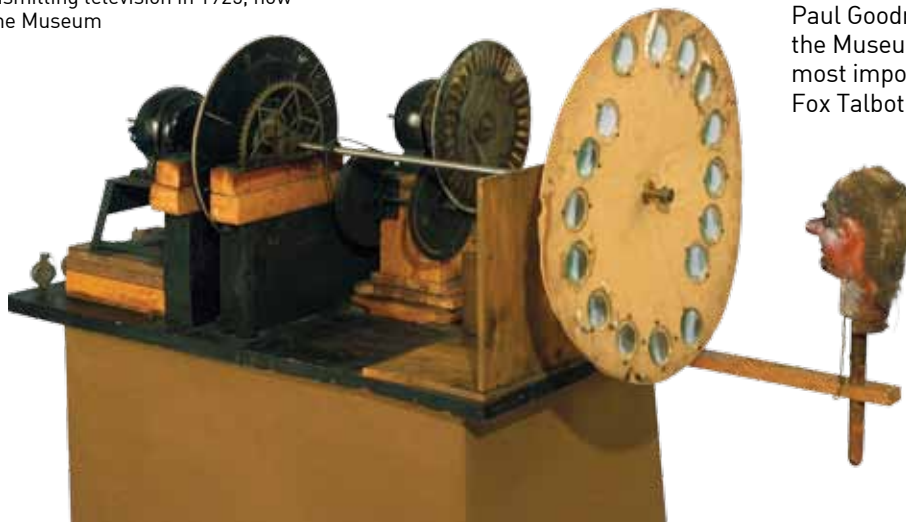


A unique collection that shaped modern media

The National Media Museum cares for 3.5 million significant items. These start with collections of National Photography, National Cinematography, National Television and National New Media, to which this year were added the BBC TV heritage technical collection and National Videogames Archive from BFI. This year the Museum also began to receive the personal collection of world-renowned animation master Ray Harryhausen with a sequence of rotating displays and a conference.



Two ages of television: the National Media Museum's studio where visitors control the camera; and below, John Logie Baird's original mechanical apparatus for transmitting television in 1925, now in the Museum



Outgoing Director Colin Philpott has encouraged members of the curatorial team here to raise their media profiles, and has watched the Insight Collections and Research Centre become an unexpected treat for everybody who makes an appointment to explore the vaults. There are interactive galleries across eight floors, three cinemas and, with Bradford's status as UNESCO City of Film, three major film festivals to organise every year, chief among these being the Bradford International Film Festival.

The opening of the *Life Online* permanent gallery in the foyer was a serious benchmark for the Group as a whole (see highlights on page 12). On a hectic calendar standout exhibitions included *In the Blink of an Eye* demonstrating techniques for simulating motion through photography, and *The Lives of Great Photographers* drew exclusively from the Museum's holdings, including work by Muybridge, W H F Talbot and Julia Margaret Cameron. New work from Afghanistan has also been commissioned by the Museum from Magnum photographer, Donovan Wylie.

Paul Goodman, Head of Collections at the Museum, says: 'We have the world's most important collection of the work of Fox Talbot, including the earliest known surviving negative, taken in August 1835, and three of the earliest known examples of photographic images, made by Niépce in c.1827.' (Read more on page 18.)



The Museum has two broad audiences: those who visit primarily for the galleries and exhibitions (77%) and those who choose the full-length films (23%). Of the year's 488,000 visitors, four out of five came from the Yorkshire and Humber regions, and voted the Museum the top indoor attraction in Yorkshire's Magnificent Attractions awards. Yet despite the tantalising gems in its collections, Bradford's location can deter distance visitors, and even funding for projects relies substantially on public-sector sources, while private donations are minuscule compared with York and London.

To compensate and to raise the profile of those hidden gems, the Group's landmark project for spring 2013 is to open a flexible new permanent gallery called *Media Space* within London's Science Museum. Joint programming aims to generate a two-way exchange of attractions.



Above: The National Media Museum's exhibition *In the Blink of an Eye*; right, Claire Bloom guest-starring at the 17th Bradford International Film Festival; Ray Harryhausen with two of his animated stars; and from the Museum's collection, Charles Dodgson's portrait of Alice Liddell (1858), inspiration for 'Alice's Adventures in Wonderland'

Manchester was the **first modern city** and still sets its sights high

First impressions of MOSI from Chicago-born Jean Franczyk, who took over as Director when the museum joined the Science Museum Group this year



What's striking about MOSI, what distinguishes it from every other museum in the Group is this: not only does it have an amazing collection, but a historic site that is our most precious legacy – the oldest surviving passenger railway station in the world and characteristic warehousing from 1830, the era that made Manchester the 'warehouse of the western world'. The architecture itself tells the story of the world's first truly modern city and the great innovators who revolutionised manufacture, industry and trade.

The Power Hall came back into full glory last year, and 21 pioneering engines came humming into action. To stand in their midst and smell the engine oil gives a buzz I bet the great Boulton and Watt would have envied. Those engines are powered up almost every day while even more machines in the Textiles Gallery are set running twice a day. The thrill of all that tangible power is a credit to the staff who maintain and interpret them. There are hands-on exhibits, you can watch yarn being spun – there's an epic story to be told about Manchester and MOSI is geared up to tell it best.

Manchester's scientific genius reaches from Dalton and Rutherford to the creators of electron microscopes at Trafford Park and the first stored-program computer at the University of Manchester. Science underpins the region's whole strategic plan, which has undoubtedly been bolstered by the 'Brian Cox effect', not to mention the Geim/Novoselov Nobel Prize effect. Great minds are still shaping Manchester's future, along with very many significant business interests who have provided MOSI with generous funding in the past. We hope more will come on board to help us keep our 839,000 visitors a year coming back for more. This requires contemporary science exhibitions that connect people to where they live.

MOSI's greatest programming strength is also our best-kept secret: curation of the Manchester Science Festival, which brings together 50 partner organisations and local universities. The team is so entrepreneurial they doubled previous visitor numbers to 115,000 last October, not just increasing family visits substantially but taking events into communities across Greater Manchester. There's a can-do energy here I hope we can build on.





Jean Franczyk, newly arrived at Manchester's most historic museum... Far left, little clay men patrol the perimeter wall, while a visitor explores the *Manpowered* exhibition challenging disability





OTHER WAYS WE RAISED OUR PROFILE THIS YEAR



**‘In the 18 months we’ve been asking
for a donation at the doors of our
museums, we have seen the average
donation per head increase 20-fold’**

– Sue Fisher, Director of Development,
Science Museum Group

'MISSING LINK' ART GALLERY SHAPES SOCIAL HISTORY OF RAIL

In the spring of 2011 a state-of-the-art, climate-controlled exhibition space was created at the National Railway Museum in York. Funded by the Foundation for Sport and the Arts, it is seen as the 'missing link' which finally enables the NRM to showcase its 1052 paintings by important British artists including Spencer Frederick Gore, Abraham Solomon, William Powell Frith and John Piper. Without the new gallery an exhibition of 19th-century woodblock prints of the first railway in Japan could not have been loaned from the Modern Transport Museum in Osaka.

Helen Ashby, Head of Knowledge and Collections, says: 'The only way our better pictures have been seen till now is as loans to other galleries.' The vast collection reflects society's often emotional relationship to the train and embraces 11,270 posters, 1,750,000 photographs which date back to 1850, and 2358 prints and drawings. Choicest among these, Helen says, are prints by J C Bourne made around 1838 during the construction of the London and Birmingham Railway.

From the art collection: 'London', LMS poster 1924 by Charles Sims; 'Victoria Bridge over the Wear' 1838, oil painting by John Wilson Carmichael; 'The Night Mail, The Enginemen' c. 1924 by Sir William Orpen RA





LATES PROVE RUNAWAY SUCCESS AMONG ADULTS WITHOUT KIDS IN TOW

Stand-up comedy, silent discos, pub quizzes, speed dating, bars, free entry! What do they think the Science Museum is? A nightclub? Over the past year 50,000 young adults have formed queues in Exhibition Road for Lates, every last Wednesday in the month.

'Lates are among the unsung treasures of our programme,' says Director Ian Blatchford. 'On the evening about the science of surgery the energy levels and excitement were palpable. Some of the world's most eminent surgeons – Professor Lord Ara Darzi, Professor Harold Ellis and Professor Stanley Feldman – simulated an operation from 1983 in the Wellcome Collection's operating theatre at the Museum. People realised they were watching something unrepeatable.'

Other themes have included mental health, world music and space exploration with a Mars Rover driving challenge. Diversions include adult experiments run by real scientists, expert talks, Talkaoke debates, hands-on installations, theatre performances, motion effects simulators, live filming and free drinks for MasterCard members.

Providing high-quality experiences for adult audiences is a key priority across the Science Museum Group.



'Science and snogging, it seems, are not altogether incompatible'

– Eureka magazine on Science Museum Lates

Recent Lates: Professor Lord Darzi leads a simulated operation; visitors test their powers of perception in Lotto Lab; and others enjoy the silent disco



OUR OWN NEWSROOM FOR CUTTING-EDGE SCIENCE AND TECHNOLOGY

Antenna is a hotbed of breaking news, active experimentation and daily public feedback – the Group's point of contact with the issues of the day. Last year the *Antenna* team delivered 22 displays at the Science Museum in various guises as Live events, updates to the Topic Zone and to the *Who am I?* gallery funded by the Wellcome Trust, not to mention pop-up festivals. It organised a host of discussion events at the Dana Centre and four Live Science residencies where university scientists come in and involve visitors in their research projects, generate masses of data and polish their own communication skills.

Antenna's blog hosts a daily opinion poll and a point of view from one of our own communicators to encourage debate among visitors. One of the most popular responses was to the question: Would you let your car drive itself? Research has shown that swarming locusts automatically avoid crashing, so if technology copied locusts we could have driverless cars that wouldn't crash. Answer: 48% of visitors said 'I'd want to keep control', but almost as many, 40%, would hand it over.

An *Antenna* gallery 'feature' such as *Water Wars* takes an investigative stance towards a controversial or emergent issue of contemporary science: here five water-capturing technologies were discussed, and among them sea water greenhouses have since won an award. *Antenna* Live events showcase experts with their latest interactive technology, such as 3D printers. Siemens brought in the GB Olympic rowing team, who became guinea pigs for a demonstration on blood gas analysis and how it could improve performance in sport.





'All research groups who come in for Live Science residencies are astounded how much data they get and how quickly they get it'

– Kat Nilsson, Head of Contemporary Science, Science Museum



Opposite: The *Antenna* display *Water Wars* features beetles that show how they collect water droplets in a desert

Above: GB Olympic rowers participate in a live experiment; online the Talk Science blog spotlights topical news for classroom teachers; while the *Antenna* site, below, polls public opinion. For example, would you trust your car to the collision avoidance robot, above right, which mimics the no-crash behaviour of swarming locusts?





CONSERVATION RACE

Conservation and Collection Care completed remedial conservation work on 1250 objects to support exhibitions and loans out. Preventative conservation work included upgrading the environmental monitoring system at South Kensington and Blythe House and training collections-focused staff. Major projects to improve the group's off-site storage facilities at Blythe House and Wroughton involved moving over 26,000 objects to new locations. Among them a collection of safety clothing was transferred from London to a new textile storage area at Wroughton. One example of a conservation research project found a safe cleaning method for the crash test dummies which were all deteriorating quickly and weeping a sticky dark orange liquid. After extensive testing, this was safely removed although the plastic will continue to degrade.



RENDEZVOUS FOR SERIOUS GAMERS

Not only did the family of Group websites attract a record 16 million visits last year, but we have further built upon our reputation for launching killer online games. The success of *Rizk* – played 5 million times in a single year – can only be described as phenomenal, says Daniel Evans, Head of Web. 'Games are an important part of our national culture and a bigger industry than UK film. *Rizk* is a Tower Defence Game aimed at young thinkers, late teens and adults. It's not remotely dumbed down. As a giant metaphor for climate change, it's about risk management, sophisticated options and trade-offs demanding hard decisions.' The latest suite of games based on emergent technologies, *Futurecade*, is designed for younger players and was played almost half a million times in its first two months. The Group has built a brand for games such that players return to find our next challenging new title, and BAFTA staged a workshop with us to find young games designers of the future.

JAMES MAY'S VIRTUAL TOUR

Wired magazine's verdict: an 'appropriately awesome use' of augmented reality. In the Science Museum's latest app, *James May's Science Stories*, your own personal iPhone avatar of the TV presenter and science enthusiast walks you through the exhibits in the *Making the Modern World* gallery and tells why his favourites have earned their place in history. These include *Puffing Billy*, the Model T Ford and the Rolls-Royce Merlin engine. Use the app at the Museum, or download to browse at home.



HAPPY BIRTHDAY, TELEVISION

In partnership with the BBC, the National Media Museum hosted a symposium with prominent television historians to commemorate the 75th anniversary of television. The Museum holds the original apparatus, built in 1925 by John Logie Baird, that produced the world's first television pictures. His grandson Iain Baird, Curator of Broadcast Culture, reflects: 'A mere 75 years ago, television was new media!' The Museum also hosted a conference with the Photography and Archives Research Centre in response to Donovan Wylie's new work *Outposts*, created during his tenure as Bradford Fellow.



MOVIE MARVELS AT THE MEDIA MUSEUM

The National Media Museum attracts two broad audiences: gallery goers and, this year, the 23% who came to enjoy the full-length films programme. We can screen every cinema format including IMAX and Cinerama, which has its own cult following, while Watch with Baby means mums can do exactly that. The tenth annual Fantastic Films Weekend celebrated all things horror with special guests film-makers Peter Sasdy and Sir Jonathan Miller. Seven thousand delegates attended the 18th Bradford Animation Festival, where guests included senior Pixar animator Andy Schmidt and Brendan McNamara from Team Bondi, creators of *L. A. Noire*.

Under the UNESCO City of Film umbrella, our learning expertise is helping to improve primary-school literacy. Cine Yorkshire, the partnership project intended to increase cinema provision in rural areas, has been extended to the East Riding. A subtext here is to spread insights into film-making as well as encouraging more local production, such as Charles Sturridge's *Brontë* film for 360 Degrees Media.

Clockwise from here: Andy Schmidt at the Bradford Animation Festival; Sir Jonathan Miller at Fantastic Films; and the National Media Museum IMAX, Europe's first

Clockwise: The National Railway Museum's Deltic Volunteers who restored No 55002; other Group volunteers at the Museum of Science & Industry; an explainer and the Learning team at the Science Museum; more at the National Media Museum





THREE CHEERS FOR OUR INDISPENSABLE VOLUNTEERS

This year almost 700 individuals volunteered at our museums. They are an increasingly valued resource and we thank them all for helping make our work possible across the Science Museum Group.

Leading the field is the National Railway Museum in York where 300 volunteers gave 29,000 hours of their time to information provision, rail operations, research support, tours and gardening. The Heritage Railways Association John Coiley Award for Locomotive Preservation (named after the first keeper of the NRM) went to our Deltic Volunteers who spent three years restoring Deltic 55002 *King's Own Yorkshire Light Infantry* to working order. Michael Wallace, Honorary Secretary of the Friends, received an MBE for voluntary services to the NRM. At Shildon, 85 volunteers gave 6500 hours of their time to operating steam train and other visitor services, conservation and care of collections.

At the Museum of Science & Industry, Manchester, 111 active volunteers gave 31,000 hours of their time. The Science, Technology, Engineering and Mathematics (STEM) ambassador programme boasts 787 volunteers supporting schools across Greater Manchester and Manchester Science Festival. At the Science Museum 103 volunteers actively fill 49 different types of position, from ambassadors who work with visitors to specialists helping conserve the Pegasus computer. At the National Media Museum 66 volunteers gave 4100 hours of their time to assist with research through the Library project and with programmed events.





Left, Inventor in Residence Mark Champkins with his inventions, his mobile phone audio horn being created by 3D printing; below, artist Conrad Shawcross's sculpture, 'Chord Harmonic Trees'



TALENT IN RESIDENCE KEEPS US ON OUR TOES

The Science Museum's creative trio of Writer in Residence, Inventor in Residence and Artist in Residence are so lucky to be let loose in this hothouse of extraordinary ideas that have transformed society. 'I'm the least scientific person here,' says Faber author Mick Jackson. Bringing his fresh eyes to bear prompted a Joycean epiphany the moment he visited the rooftop observatory and its Victorian telescopes. Outcome: a short story for Radio 3. Another visit prompted the item about the Red Cross brooch, opposite.

Mark Champkins is a former British Inventor of the Year who has created, among other things, self-heating crockery, healthy 'fruit-friendly' lunchboxes and voting rulers. He says: 'This is my dream job, designing a range of Museum products. The golden rule for inventing is to notice things. The Museum asked me to invent five products in two years. I did that many in my first two months.'

Conrad Shawcross is Artist in Residence and embraces science and philosophy to create epic-scale structural sculptures. At the Museum he chose to investigate certainty in science and produced surprisingly playful artworks responding to the way mathematics is expressed. These include a tangled length of swarf that has echoes of a spinning drill and a set of 'celestial metres' that might act as standard measures for alien inhabitants of distant planets.



Brooch that tells the story of a war

By Mick Jackson, Science Museum Writer in Residence

Since people assume that being the Writer in Residence at the Science Museum is a job of the utmost cushiness I've rather got into the habit of emphasising all the hard work I've done on behalf of the Museum, including the writers' 'surgeries' I've offered to its staff. All the same, in my quieter moments I still can't quite believe my luck.

Much of my time is spent either in conversation with highly knowledgeable curators or rifling through the drawers and shelves of the Museum's sizeable stores. I began the residency last September with several research projects in hand, but it's a rare day when I don't encounter something (heliographs... tape loops... spirit photography) which I'm convinced has the makings of a brilliant new piece of work. The arcane and the obscure are my stock in trade. By the time the residency concludes in the autumn I'm hoping to have enough material to furnish the rest of my career.

A common principle when setting up artists' residences is that granting access to an outsider will bring a new perspective to some part of the host institution. At worst, I'd like to think that I've allowed the employees of the Science Museum to articulate their own private passions – areas of research or collections they feel have been unjustly neglected.

Personally, the most powerful objects tend to be those which come laden with their own idiosyncratic history. For example, I tripped over the piece pictured [right] in the company of the Museum's Photography Manager, David Exton. It's a brooch, made from the wire of a Zeppelin, which was sold to raise funds for the British Red Cross. Zeppelins were state-of-the-art technology during the First World War and the one destroyed on 3 September 1916 was the first to be downed by the British, over Cuffley, just outside London.

Contained within that simple twist of wire are any number of very potent narratives. It represents the first aerial bombing of British civilians and the beginning of a new era of mechanised warfare. It may also be seen to represent the doomed history of airships. More specifically, it evokes the circumstances of the airship's demise: the heroism of Lieutenant William Lee

Robinson who was later awarded a VC for bringing it down with machine-gun fire from his open-cockpit biplane; and the deaths of the 16 German crew in the ensuing conflagration.

Some objects take on the power of a religious relic: in one of the collections is a lock of Napoleon's hair, taken from him whilst he was kept prisoner on St Helena. Different objects will resonate more or less profoundly, depending on the person who stands before them. What makes the Science Museum such an exceptional place is that you're never more than a couple of metres from the next discovery.

Mick Jackson's latest novel from Faber is The Widow's Tale.



Red Cross fundraising brooch made from Zeppelin wire, 1917, now in the Science Museum's collections. During the First World War, Germany began bombing raids using its airships, known as Zeppelins, on British towns and cities. This brooch was made from wire from a Zeppelin brought down during a raid in 1916 just outside London and named after its location as the Cuffley Zeppelin



'I suspect the Museum is behind a Writer in Residence because artists tend to shake things up a bit'
– Mick Jackson



FACELIFT IN SOUTH KENSINGTON

Exhibition Road, the Science Museum's home in South Kensington, has been cleared of its street furniture and pedestrianised as a culture highway linking the institutions established in 1851 as Albertopolis. Some wag in the Evening Standard declared the leisurely 800-metre walk 'a Ramblas in waiting'. While the Museum's first facelift in memory revealed the magnificence of our newly cleaned Portland stone facade, in February Boris Johnson, Mayor of London, officially opened the £30 million development saying: 'This clever approach to rearranging the streetscape will make it more pleasurable for families visiting these unique attractions.'

NEW DIRECTIONS OF TRAVEL NEED SPONSORS TO PICK UP THE TICKET

Deciding themes to display and debate for the next decade is a serious task: climate, demographics, medicine and engineering are self-evident. People expect a museum to signify both current knowledge and all that yet remains to be discovered. No less ambitious a task is to increase the science literacy of society and the masterplan which SMG is unfolding aims to secure a systematic understanding of the modern world. Two permanent new galleries are imminent: *Making Modern Communications* takes its cue from the big bang caused by the internet; in London *Media Space* will draw on National Media Museum collections to test and discuss creative technologies. *Web Lab* is a temporary exhibition as an exclusive taster for both projects, while the National Media Museum is already trialling the next generation of television, Super Hi Vision.

The Group's international strategy is to exchange expertise with science museums across the world. At home, the Science Museum's IMAX auditorium is being adapted to establish an arena for talks. In Manchester, the Museum of Science & Industry plans to enhance its complex site by introducing a central coherent storyline, and to partner with Future Everything, the digital art exhibition and conference. In York, the National Railway Museum is determined to forge a productive relationship with the modern railway industry, to develop the South Yard as an outdoor space, and to expand Shildon's partnership with Durham County Council. *Flying Scotsman* will return to steam and the 75th anniversary of *Mallard's* 126 mph record will provide pause for reflection on the engineering excellence of the UK.

All of which mean asking generous friends to make it happen.



From the top: fundraising dinner to purchase climate scientist James Lovelock's archive; designer Vivienne Westwood who contributed garments for auction; artist's impression of *Media Space*; left, *Mallard* awaiting a birthday present

The working replica of *Rocket*, built in 1979, is in constant demand; *Cheltenham* has been undergoing an overhaul; No 563 starred in *The Railway Children* in Toronto



CELEBRITY LOCOMOTIVES GO TOURING

At the Steam Museum in Swindon, every single locomotive except one is on loan from the National Railway Museum. That's how important the NRM's historic rolling stock is and why a rolling programme of loans is part of the lifeblood of other museums and preservation societies. Celebrity locomotives are just as much in demand as pin-up actresses at heritage events and help raise the profile of the national collection.

The recently rebuilt replica of Stephenson's *Rocket* was filmed for the National Geographic channel; locomotive 563 starred in a new production of *The Railway Children* in Toronto; *Super D* visited Keighley & Worth Valley Railway, *Lord Nelson* the East Lancashire Railway, and *City of Truro* the Mid-Hants Railway. Helen Ashby of NRM says: 'We have a locomotive called *Cheltenham* on loan to Mid-Hants Railway, which had a problem with massive asbestos content. But the railway covered the whole expense of stripping it out, their volunteers overhauled the loco and in return they enjoy several years of revenue-earning service on their railway. It's a win-win.'





GROUP WISDOM RAISES OUR PROFILE ACROSS THE GLOBE

This year the Group joined the new European CEO Thinktank of seven leading science museums in Europe. Director Ian Blatchford draws attention to an envied British trait: 'Most science museums make a binary choice, either to be a science centre or a historical museum, and they are surprised how we manage to be both. We're seen as a leader in research of our collections and in our brilliance at communicating the science.'

Outreach delivered science shows for schools in Gibraltar, plus 18 more during the inaugural Abu Dhabi Science Festival. The Learning team delivered training to education staff at the Mishkat Science Centre in Riyadh, Saudi Arabia; have established a new partnership with staff at Santralistanbul in Turkey; and are continuing to work with the Unizul Science Centre in South Africa, delivering on-site training to local and regional teachers and science centre staff.

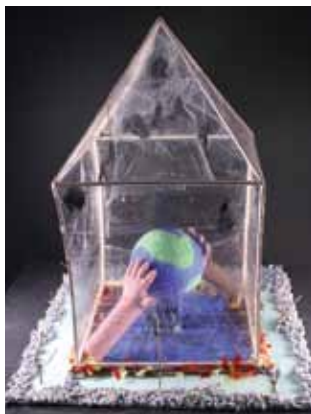
Science Museum collections continue to be shown around the world, including this year at the CosmoCaixa science museum in Barcelona and the Canadian War Museum in Ottawa. The National Media Museum toured photography exhibitions to France and the Czech Republic, sent loans to Moscow and Strasbourg, while its leading authorities spoke at Guernsey Photography Festival, FotoFest Paris 2011 and CENTER Photography Awards in Santa Fe, USA.



The Group's Learning team delivering on-site training in South Africa (top) and sharing expertise in Riyadh, Saudi Arabia



Inventive artworks: Rochdale students satirise the most polluting nations; York students put the globe inside a greenhouse; Manchester students imagine the polar bear's point of view

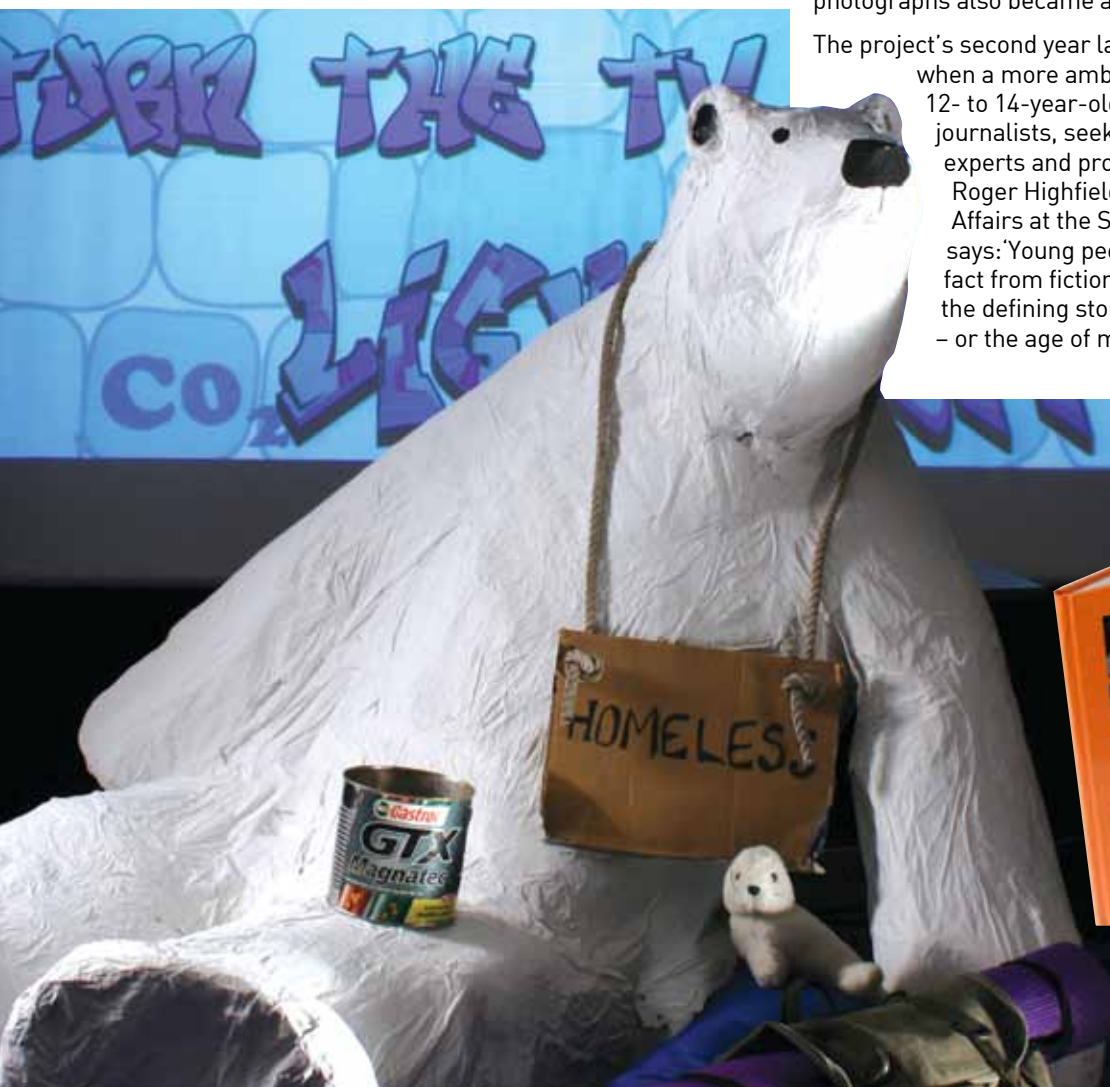


HITTING THE ROAD TO STIR THE DEBATE ABOUT CLIMATE

Climate change promises to be the biggest story of the 21st century and SMG's Climate Science Outreach Project is setting a series of challenges to the young. Last year 19 schools around York, Manchester and London were invited to create artworks expressing the issues posed by climate change. This was the first year of the project, which aims to reach 5000 Year 9 students and their teachers over three years, steered by the Science Museum, National Railway Museum and Museum of Science & Industry.

The ingenuity of our students stretched the imagination – a homeless papier-mâché polar bear, caring hands cradling an Earth in a greenhouse, a planet made from recycled materials, a world atlas made from crisp packets. All of these were turned into a beautiful photo book titled *Climate Art*, while the photographs also became a touring exhibition.

The project's second year launched in the autumn when a more ambitious challenge faced 12- to 14-year-olds: to become junior journalists, seek out the facts, interview experts and produce a magazine. Dr Roger Highfield, Director of External Affairs at the Science Museum says: 'Young people are helping us sort fact from fiction in order to understand the defining story of the Anthropocene – or the age of man.'



£1 MILLION PRIZE

The central role of the Group in promoting contemporary science and engineering was recognised last November by the launch at the Science Museum of the new Queen Elizabeth Prize for Engineering by Prime Minister David Cameron, Deputy Prime Minister Nick Clegg and Labour leader Ed Miliband. The £1 million prize, chaired for the Royal Academy of Engineering [raeng.org.uk] by Lord Browne of Madingley, will recognise outstanding advances in engineering that have changed the world and benefited humanity.



Cosmonaut Sergei Krikalev

ENDURING FASCINATION OF SPACE

Landmark celebrations in 2011 invited visitors to Spend Your Summer in Space, the climax of which was Deputy Keeper of Technologies and Engineering Doug Millard's two-year effort to secure a piece of Moon rock from NASA to display at the Science Museum. A themed show, *Russian to Space*, marked the 50th anniversary of Yuri Gagarin's first manned space-flight and visitors were given a passport inviting them to follow an innovative trail of discovery. Other events included talks by Natalya Koroleva, daughter of Sergei Korolev, Chief Designer of the Soviet space programme, who discussed her father's achievements; and another by cosmonaut Sergei Krikalev, world record-holder for the longest time spent by a human in orbit. British astronaut Helen Sharman also spoke. The Science Museum enjoys great kudos from its display of the Apollo 10 capsule which travelled round the Moon, and when it was opened for one day only visitors were continually shocked to see how tiny the interior was. Andrea Dearden, Marketing & PR Manager, says: 'This epitomised the point of a museum helping us to understand the realities of how far science and technology have brought us.'

SELECTED AWARDS WON BY SMG

Science Museum:

Recognised by Action on Hearing Loss as the top destination for visitors with hearing loss in a survey of 20 top London visitor attractions

Science Museum:

Winner of the Coolest Venue for Gala Dinners in the Prestige Events Cool Venues Awards 2012

Museum of Science & Industry:

The Sandford Award for Excellence in Heritage Education

National Railway Museum:

Security Supervisor Sarah Field received a regional (Yorkshire) award for 'Outstanding Act'

National Railway Museum:

The Rail Express Modern Traction Award was given to the Deltic Preservation Society

National Media Museum:

Top Indoor Attraction in the Yorkshire's Magnificent Attractions awards this year

The Science Museum, MOSI, NRM and Media Museum won World Class Service accreditation in 2011 for delivering outstanding customer service in the leisure sector.

'For someone who was painted and sculpted so much, it is remarkable that no record of this work were on record,' says Andrew Nahum, Senior Keeper, Science Museum, of this new portrait bust of James Watt. It derives from a plaster mould probably from 1807 that was in his Staffordshire workshop (see page 28). Until recently, it was not known what image lay within. To create this exhibit the mould was scanned by laser and the 'cast' produced digitally using rapid prototyping techniques at University College London



RECENT ACQUISITIONS ACROSS THE GROUP

Director Ian Blatchford writes:

For ten years the Science Museum has opted out of making regular acquisitions – even during the past couple of years they were modest. This is foolish because collections that don't grow will ossify. Acquiring objects means you're constantly engaged with either history or contemporary research and fully with the outside world.

There's another reason why it matters. There is much debate about art galleries raising huge public sums to acquire masterpieces, but science museums should be agitating too, for collecting and providing digital and physical access to our spellbinding science and technology stories. Why should the debate about national heritage centre on literary and visual arts alone?



'If a collector wants to dispose of something, a telephone call to the Science Museum should be their first move. People still feel a buzz about being represented here'

– Hadrian Ellory-van Dekker, Head of Collections, Science Museum



NATIONAL RAILWAY MUSEUM

Two cost books of Midland Railway locomotives compiled by S W Johnson, Midland Railway: 'New engines charged to capital', 1873–88, and 'New work in progress', 1880–88

Brass-faced steel tablet, Tyer's No. 6 electric tablet, School of Signalling, Manchester, made by Tyer's Co., c. 1920

Logbook containing handwritten entries by Ray Coleman, a BR engineer working on the APT-E project, 1975–76

LMS Royal Train dining car attendant's uniform (below) comprising jacket and trousers, London Midland & Scottish Railway, c. 1925

Station warning sign reading 'Cycling, skateboarding and rollerskating are prohibited within station limits. By order of British Railways Board', British Railways Board, c. 1985

Pamphlet by Thomas Hill (right), 'The Liverpool and Manchester, the consequent great change that will be effected by them on property, with respect to innkeepers, coach proprietors etc', 1829

Book *The David Shepherd Archive Collection*, collection of artist David Shepherd's work, 2011 – favourite paintings including his railway scenes

Plaque from HST power car 43078 Shildon County Durham giving details of the naming ceremony, 1983

Collection of 39 silver gelatin lantern slides in glass mounts, featuring Southern Railway posters, c. 1923–30

Silver-plated trophy, London & South Western Railway Track Inspectors Challenge Cup, 1904, presented by the Members of the Engineering Committee



SCIENCE MUSEUM

Previously unknown contemporary bust of James Watt, probably manufactured in 1807, revealed by laser scanning of plaster mould in 2010 (see page 62). In his later years the steam pioneer developed a strong interest in making sculpture and also collected many pieces

Clover chloroform inhaler with case (above), by Coxeter, London, and George Barth and Co., England, 1862–1900 – a safer way to administer anaesthetics

Early-20th-century sundial, after the original by Habermel, bearing false inscription 'Clarmc Artini et Emd. Doct. D Francisco de Padoani Erasmus Habermel Grati Ergo'

Evaluator's handbook for Valpar occupational aptitude tests (work samples nos. 1–17), made by Valpar International Corporation, Tucson, Arizona, c. 1976

Collection of 188 objects made by Alexander Parkes, inventor of Parkesine, c. 1862 – Parkesine (also known as celluloid) was the first man-made plastic

Prototype Synthi-E briefcase synthesiser for schools, designed by Tim Orr and made by Electronic Music Studios (London) Ltd, c. 1974 – among the first affordable analogue synthesisers

Wang PC personal computer manufactured by Wang Laboratories, including monitor, keyboard and printer, c. 1984 – a direct competitor to IBM's home computer

Hagelin B-21, first Boris Hagelin pinwheel cipher machine, superficially resembling the Enigma and used at Bletchley Park during the Second World War

Prototype of the Universal Patient Gown designed by Ben de Lisi and made by Silverreed, UK, c. 2009 for the Design Council's project Design for Patient Dignity

Mathematical puzzles including 'dickory dock', solitaire variant, 1920s – representative of the past 150 years, they provide rich material for a future exhibition



Clockwise from top left: Clover chloroform inhaler; railways pamphlet from 1829; Bolex brothers animation character; Royale projector; ornamental turning lathe; photograph by Julia Margaret Cameron; LMS Royal Train attendant's uniform



MUSEUM OF SCIENCE & INDUSTRY

Royale, Royale 250R and the Royale Digital projectors for dissolving slide shows (below), with associated slides, from CBAV, Leyland, 1981–2005

Personal papers relating to Daresbury Synchrotron Radiation Source Laboratory, Ian Munro (the first Director of the Daresbury SRS Laboratory), 1977–2000

Personal papers relating to the Turbine Generating Department at AEI, Trafford Park. Professor A W Crook, 1960s–70s

Substation transformer, made by Ferranti Ltd in Oldham and installed in the Manchester Corporation Electricity Department substation at Debdale Park in 1939, where it remained in operation until 2011

Ornamental turning lathe (below), Richard Roberts, Manchester, c.1820. Acquisition supported using public funding by Arts Council England

Silver salver presented to Percy Newton in recognition of 50 years' service at the Beyer, Peacock locomotive works, Gorton, 1959

Business records relating to textile trade with Armenia, Egypt, India, Russia, China, Argentina, Chile, Peru, Uruguay and Australia. Olivo & Bakirgian, Manchester, 1891–1895

Brass plaque commemorating the centenary of the opening of the Liverpool and Manchester Railway. John Whitehead, Manchester, 1930

Set of quarter-scale nuclear reactor aluminium fuel bricks made specially for laboratory tests, from AMEC, Birchwood (near Warrington), 2012

Company records of John Noble Ltd, textile merchants, 1893–1910, documenting an early mail-order venture that began in 1895



NATIONAL MEDIA MUSEUM

Panasonic colour television receiver with fastext, model TX-3370GR, 1987

Six digital c-type prints by Edmund Clarke from the SSSI series, printed by Genesis-Digital, London, 2011

Broadcasting Handbook, Olympic Games, London, 1948, issued by the BBC

Manuscript for the song 'Here's Looking at You', written by Ronnie Hill to launch the BBC Television service in 1936

Collection of animation sets, models and equipment (above) used by the Bolex brothers in the creation of their work, particularly *The Secret Adventures of Tom Thumb*, 1993

Wireless licence savings bank (with one sixpence piece), 1930s

Sony Betamax video recorder with Sony Trinitron television console, model LV-1901D, 1975

The Lambie Nairn Agency Archive comprising objects relating to the history of film and television, Martin Lambie Nairn, 1970s–90s

Photograph by Boyd Harnell, gelatin silver print, John F Kennedy pre-election press conference in San Diego, 1960

Three *cartes de visite* by the pioneering British photographer Julia Margaret Cameron, known for her portraits of celebrities, 1860s. Below, American poet James Thomas Fields.



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The many individuals who have given to the Steam Our Scotsman appeal, the restoring Deltic 55002 appeal and the Station Hall appeal

All those who contributed at the Station Hall fundraising dinner

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All the individuals who contributed whilst visiting the Museum

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A full list of the many Patrons who support the Science Museum Group can be found in the Annual Report and Accounts 2011–12

FIVE WORLD-CLASS MUSEUMS

SCIENCE MUSEUM GROUP PURPOSE

The Science Museum Group (SMG) is devoted to the history and contemporary practice of science, medicine, technology, industry and media. Its collections, in the fields of science, technology, engineering, medicine, design and enterprise, transport and media are the largest, most comprehensive and most significant in their field anywhere in the world. SMG incorporates the Science Museum, the Science Museum Library and the Wellcome Collections of the History of Medicine at South Kensington; the Museum of Science & Industry, Manchester (MOSI); the National

Railway Museum (NRM) at York; the National Railway Museum at Shildon; the National Media Museum (NMeM) at Bradford; and Concorde 002 with its associated exhibition at Yeovilton. MOSI became part of SMG on 1 February 2012 and its objects are very similar to those of SMG with a focus on the County of Greater Manchester and surrounding areas. Collections stores are located in Wroughton, Swindon; Blythe House in West Kensington; Foundry Lane in York; Black Dyke Mills in Bradford and Brunel Avenue in Salford.

The name of the charity

The National Heritage Act 1983 created the charity, the Board of Trustees of the Science Museum. Previously the Board was generally known by the name of the National Museum of Science & Industry (NMSI). This year it was agreed to change this name to Science Museum Group (SMG) in order to better reflect our status as a group of museums with commercial subsidiaries

The Group comprises:

Science Museum

Museum of Science & Industry, Manchester

National Railway Museum in York and Shildon

National Media Museum

SCMG Enterprises Ltd

MOSI Enterprises Ltd (for two months, 1 February to 31 March 2012)

Principal museum addresses

Science Museum
Exhibition Road
London SW7 2DD
www.sciencemuseum.org.uk

Blythe House
23 Blythe Road
London W14 0QF

National Railway Museum
Leeman Road
York YO26 4XJ
www.nrm.org.uk

National Media Museum
Pictureville
Bradford BD1 1NQ
www.nationalmediamuseum.org.uk

Science Museum at Wroughton
Hackpen Lane
Wroughton
Wiltshire SN4 9NS

Museum of Science & Industry
Liverpool Road
Castlefield
Manchester M3 5BG
www.mosi.org.uk

National Railway Museum
Shildon
County Durham DL4 1PQ

BOARD OF TRUSTEES OF THE SCIENCE MUSEUM

The Board of Trustees of the Science Museum is responsible for the whole of the Science Museum Group. The Trustees, who may number between 12 and 20, are appointed by and responsible to the Prime Minister through DCMS. The Director of SMG, as Chief Executive Officer, is responsible to the Board of Trustees and, as Accounting Officer, is accountable to the DCMS for compliance with the Management Statement and Financial Memorandum.

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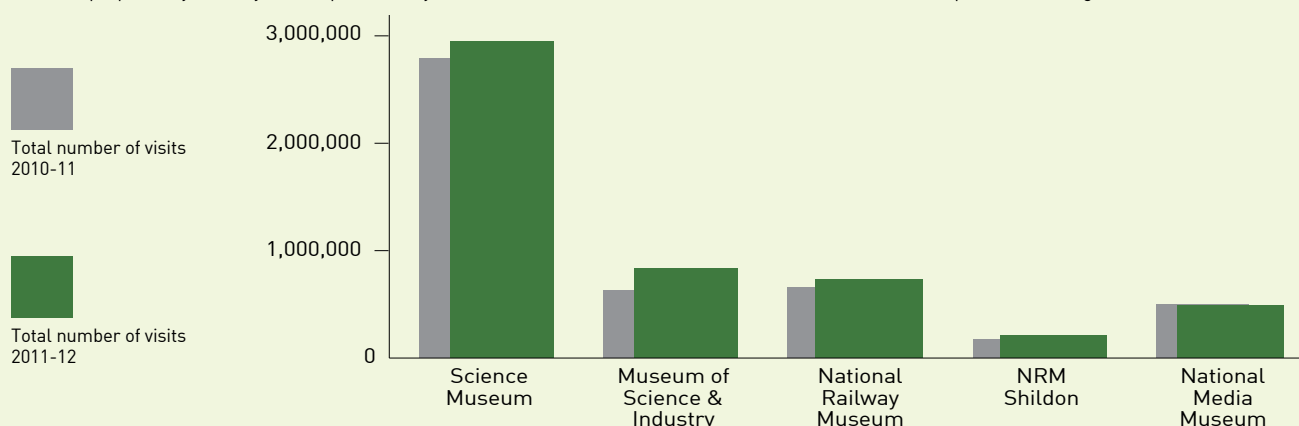
VISIT NUMBERS

Information is sourced through both internal records and periodic independent visitor surveys. There has been no change in the method of calculation this year compared with previous years for the Science

Museum Group. MOSI joined the group on 1 February 2012 and it should be noted internal records and external surveys to establish visitor profile used a different methodology from the rest of the Group.

Total number of visits to the Museum (including corporate hire)	Science Museum	Museum of Science & Industry	National Railway Museum	NRM Shildon	National Media Museum	All Science Museum Group
Outturn 2010–11	2,791,534	638,347	653,198	198,697	501,664	4,783,440
Outturn 2011–12	2,951,010	838,648	732,246	210,109	488,378	5,220,391
Visits by all visitors in educational groups	Science Museum	Museum of Science & Industry	National Railway Museum	NRM Shildon	National Media Museum	All Science Museum Group
Outturn 2010–11	367,470	56,642	41,687	75,709	51,582	593,090
Outturn 2011–12	408,570	63,440	40,614	71,067*	44,415	628,106

* SMG is currently reviewing the methodology used to collate this figure which has been identified as different from that used by its other Museums. For the purpose of year-on-year comparison they are included here for reference, but should not be used to compare Museum against Museum.



GROUP FINANCIAL REVIEW 2011–12

In a year of economic challenges for the heritage sector, the financial results for the Group show a small surplus, despite a reduction in income. Buoyant visit numbers, which exceeded targets, together with increased external income from grants, corporate sponsorship, donations and legacies, helped to make this a year of continuing success.

In February we celebrated a milestone when the Museum of Science & Industry in Manchester joined the Group. The assets of MOSI were gifted and are excluded here.

Nevertheless, our overall income fell slightly due to reduced government funding (Grant in Aid). In response, we had to reduce staffing, control costs and use resources as efficiently as possible. We are pleased that we have not yet had to compromise either visitor experience or the care of the collections.

Although funding for infrastructure is hard to come by, we have continued to release significant amounts for investment in our property. These include the new art gallery at the National Railway Museum; early work on the new communications gallery and improved façade at the Science Museum; and the Life Online exhibition at the National Media Museum.

The group has become more focused, leaner and more efficient but, if public funding continues to fall, and the economic uncertainty persists, we may have to review the range of our operations. Even in the most difficult circumstances, however, we will endeavour to ensure that as many people as possible can enjoy our remarkable collections, which are of global significance.

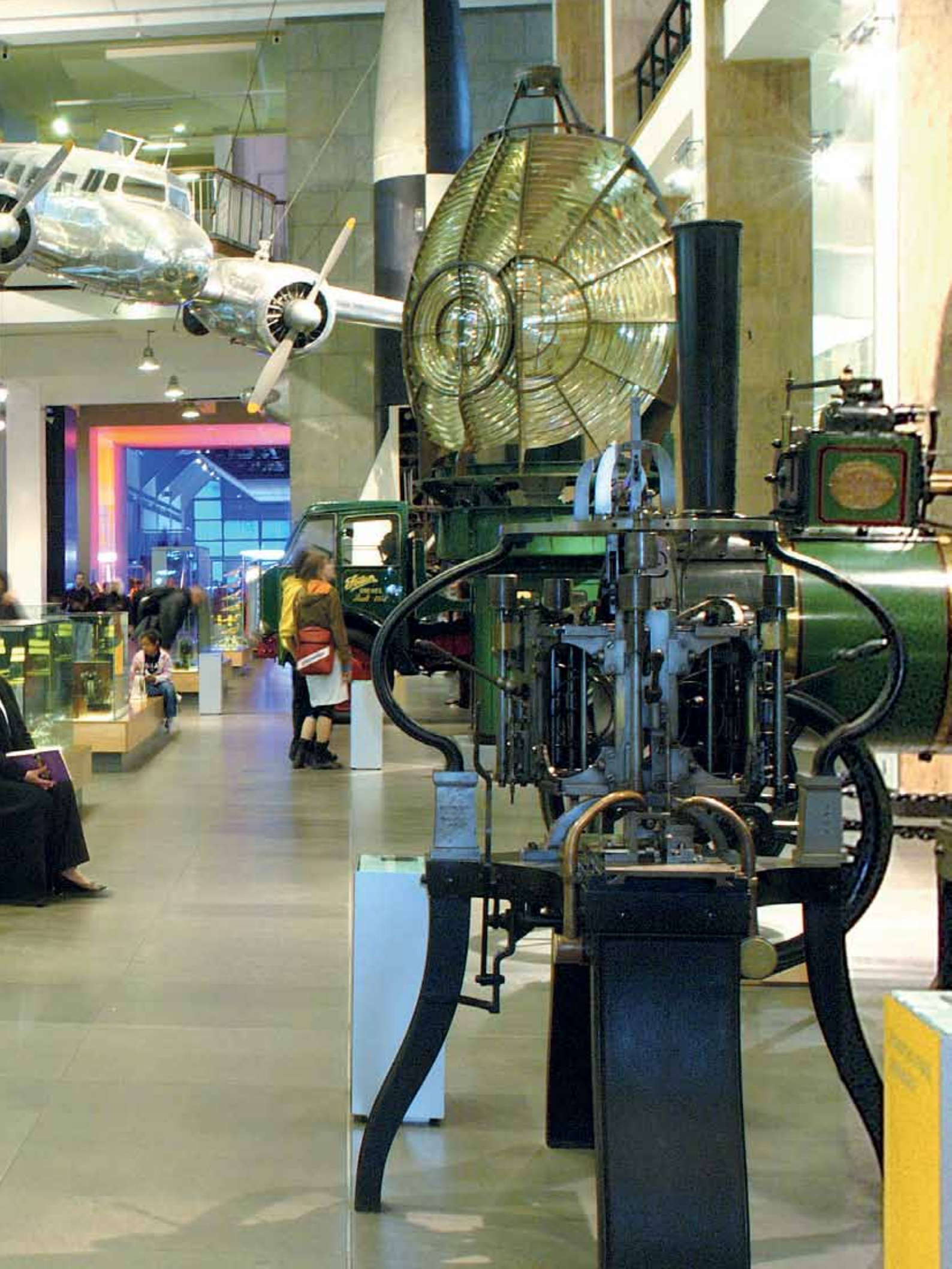
The full Annual Report and Accounts are available on the SMG website: www.sciencemuseum.org.uk/group

	2011-12 £m	2010-11 £m
INCOME		
Grant in Aid	38.3	40.2
Trading income	14.0	13.6
Grants, legacies, lottery, donations and sponsorship	7.3	7.0
Rental income	0.5	0.6
Other income	2.1	1.9
TOTAL INCOME	62.2	63.3
EXPENDITURE		
Collections care and research	11.8	12.6
Education and communications	18.0	18.1
Visitor services	9.7	10.0
Trading costs	12.2	12.1
Income generation	4.1	3.3
Governance	0.5	0.5
Fixed asset investments	5.8	6.6
TOTAL EXPENDITURE	62.1	63.2
SURPLUS	0.1	0.1

Excludes transfer of Museum of Science & Industry, Manchester



Making the Modern World at the Science Museum: this renowned gallery takes the visitor from the mid-18th century through to today along a timeline studded with a peerless collection of 'firsts' in science, industry and invention. You find Stephenson's original *Rocket* locomotive, Babbage's Difference Engine No 1, Crick and Watson's DNA model the 1937 Cavendish Laboratory atom smasher, the Model T Ford, Rolls Royce Merlin engine, a Lockheed 10A Electra aircraft that first flew in 1934 and the Apollo 10 capsule that took three astronauts around the Moon in 1969





'We all need the Science Museum Group to help us interpret the vast, complex and still mysterious universe, to understand what our destiny might be here on Earth and perhaps far beyond'

– Professor Martin Rees, Baron Rees of Ludlow, Astronomer Royal



This piece of Moon rock went on display as a loan to the Science Museum in July 2011 to mark the 40th anniversary of the launch of the Apollo 15 Lunar mission. The olivine basalt sample is about 3.3 billion years old and was collected by astronaut David Scott from the Moon's surface in August 1971



**'As a schoolboy I was in awe of the model engines
in the Science Museum, and even after I moved
into my father's theatrical business on a slack day
I'd sometimes sneak down to South Ken for a fix'**

– Lord Grade of Yarmouth CBE, Trustee,
Science Museum Group

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