

Sydney, Australia: May 2016

THE WORLDS GREATEST SCIENCE EXPERIMENT HEADS TO THE POWERHOUSE MUSEUM

The Museum of Applied Arts and Sciences (MAAS) 'transports' the world's greatest science experiment, the Large Hadron Collider (LHC), to the **Powerhouse Museum** in an Australian first exhibition from **11 August to 30 October** as a part of the **2016 Sydney Science Festival**.

An exhibition from the Science Museum, London, **Collider** provides a behind-the-scenes look at the CERN particle physics laboratory in Geneva that houses the LHC. The LHC is most famous for proving the existence of the Higgs boson, otherwise referred to as the 'God Particle'. The Higgs boson was theorised in the 1950s to be a subatomic particle responsible for giving other elementary particles mass.

"MAAS has a long history of championing science, technology, engineering and maths (STEM) in Australia and is committed to continuing to showcase work at the forefront of these disciplines. The LHC is heralding a new frontier in science with immeasurable possibilities for future discoveries and scientific advancements in technology." said MAAS Director, **Dolla Merrillees**.

"This one-of-a-kind exhibition offers visitors an insider's look at what it's like to visit the famous site, to take a walk through the CERN control room, talk to virtual scientists and engineers, and snoop around a researcher's workbench," said Ms Merrillees.

Deputy Premier and Minister for the Arts, **Troy Grant** said this exhibition would expand the minds of all who experienced it. "The work undertaken at CERN has far-reaching impacts on the world. This immersive exhibition places visitors in the heart of CERN and is the closest most Australians will get to the inside of the LHC. It is an experience that is at once educational and inspirational."

Blending theatre, video and sound with real artefacts from CERN, the exhibition puts visitors at the heart of an experiment that recreates the conditions that existed just after the Big Bang occurred 13.8 million years ago. Visitors are invited to follow the journey of particle beams as they are injected into the accelerator chain, ramped up to speed and steered around the 27km LHC tunnel. Moving along the tunnel, a wrap-around projection engulfs audiences to simulate one of the LHC's enormous experimental caverns, as particles smash together around them.

Australian researchers and students are involved in the LHC project through the ARC Centre of Excellence for Particle Physics at the Terascale (CoEPP), a collaborative research venture between the Universities of Melbourne, Adelaide, Sydney and Monash. The exhibition explores Australia's contribution to experiments that have been and are currently being performed at CERN. Two staff members at the Powerhouse Museum have also worked on the project first hand.

Collider is a highlight of the Sydney Science Festival. The Festival, now in its second year, is produced by the Museum of Applied Arts and Sciences, in collaboration with museums, galleries, universities, businesses, scientists, engineers and community organisations across greater Sydney, to deliver a vibrant 11-day program for National Science Week.

Collider exhibition

6 August – 30 October 2016

Powerhouse Museum

Adult \$20, Concession \$13, Child \$5, Family \$45

On sale 24 June

Includes general admission to the Museum

Free for MAAS Members and children under 4 years

Sydney Science Festival

11–21 August 2016

Powerhouse Museum and venues across Sydney

<https://sydneyscience.com.au/>

EDITORS NOTES

The Large Hadron Collider: facts and figures

- The Large Hadron Collider is the largest, most sophisticated and most powerful scientific device ever made. It is being used by thousands of scientists and engineers around the world to learn more about the tiny building blocks that make up our Universe and the laws that govern their behaviour.
- The precise circumference of the LHC accelerator is 26,659m (almost the same length as London Underground's Circle Line), containing thousands of the world's most powerful magnets.
- Not only is the LHC the world's largest particle accelerator, just one-eighth of its cryogenic distribution system would qualify as the world's largest fridge.
- When in operation, trillions of protons race around the LHC accelerator ring 11,245 times a second, travelling at 99.9999991% the speed of light. Altogether some 600 million collisions take place every second.
- When two beams of lead ions collide, they generate temperatures more than 100,000 times hotter than the heart of the Sun
- By contrast, the 'cryogenic distribution system', which circulates superfluid helium around the accelerator ring, keeps the LHC at a super cool temperature of -271.3°C (1.9 K) – even colder than outer space!

About the Museum of Applied Arts and Sciences

The Powerhouse Museum, alongside Sydney Observatory and Museum Discovery Centre, is part of the Museum of Applied Arts and Sciences (MAAS), Australia's contemporary museum for excellence and innovation in applied arts and sciences. The Museum of Applied Arts and Sciences has a vast and diverse collection of over 500,000 objects.

About the Science Museum, London

As the home of human ingenuity, the Science Museum's world-class collection forms an enduring record of scientific, technological and medical achievements from across the globe. Welcoming over 3 million visitors a year, the Museum aims to make sense of the science that shapes our lives, inspiring visitors with iconic objects, award-winning exhibitions and incredible stories of scientific achievement.

About CERN

CERN, the European Organization for Nuclear Research, is the world's leading laboratory for particle physics. It has its headquarters in Geneva. At present, its member states are Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, the Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom. Romania is a candidate for accession. Serbia is an associate members in the pre-stage to membership. Pakistan and Turkey are associate members. India, Japan, the Russian Federation, the United States of America, the European Commission, the Joint Institute for Nuclear Research and UNESCO have observer status.

About Winton Capital Management, International Tour Sponsor

Winton Capital Management is a leading global alternative investment company and a world leader in financial mathematics and empirical scientific research into financial markets. The company, founded in 1997, now employs some 280 people, including 120 scientists, at research campuses in London, Oxford, Zurich and Hong Kong. Winton Capital also has offices in New York and Sydney.

