A NATION OF INNOVATION

On a global scale Wales is a small, but smart country, in which every opportunity has been taken to optimise resources, designs and processes. Shaped by landscape and culture it made its mark on the world through the maximisation of the great natural mineral wealth found here. Wales continues to make its mark through in-depth scientific and technical understanding and commercial innovation. From the past to the present an impressive list of achievements, many of which are the first of their kind in the world, have given Wales a great momentum for the future.

INNOVATION - THE SUCCESSFUL EXPLOITATION OF NEW IDEAS

Innovation is changing the way we live. We need new ideas to stay competitive, new technologies to improve lives, and new insights to lead the way.

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A NATION OF INNOVATORS

Thomas Telford's Menai Suspension Bridge of 1826 was the world's first large scale road crossing by an iron suspension bridge.

The development of the Internet followed on the pioneering work on packet switched data communication by Donald Davies of Treorchy at the National Physical Laboratory in the 1960s.

The largest single span glasshouse in the world was designed by Lord Norman Foster and partners for the National Botanic Garden of Wales at Llanarthne.

William Weston Young 1776 – 1847
Entrepreneur and inventor, developed a high quality firebrick for furnace lining that used Dinas silica rock quarried and manufactured in the Vale of Neath from 1822. It was exported worldwide and even today the Russian word for 'firebrick' is 'Dinas'.

Sir William Henry Preece 1834 – 1913
b. Caernarfon. Electrical engineer and inventor who developed his own system of wireless telegraphy and telephony in 1892 but who would later champion Guglielmo Marconi's system and assist with his experiments and in securing funding.

Earl Bertrand Russell 1872 – 1970
b. Trellech, Monmouth. Pioneer of the study of mathematical logic.

Dr Tom Parry Jones 1935 – 2013
b. Anglesey. Inventor of the 'Breathalyser' and the later electronic version, the 'Alcolmeter', which was adopted world-wide.

Sir Chris Evans 1957 –
b. Port Talbot. Entrepreneur in the field of biotechnology and founder of companies in the fields of genes, enzymes and micro-organisms.

Hon. Charles Stewart Rolls 1877 - 1910
b. Monmouth. Developed his engineering skills as one of Britain's earliest aviators and joint founder of Rolls Royce.

Donald Davies 1924 – 2000
b. Treorchy. Working at the National Physical Laboratory, he laid the foundation for the Internet through his work on packetswitched data communication.

Professor Julie Williams 1957 –
b. Merthyr Tydfil. A global leader in research into Alzheimer's disease at Cardiff University, work highlighted by Time magazine as one of the world's top 10 medical breakthroughs of 2009.

In 2009 the Centre for NanoHealth, the first facility of its kind in Europe, is established at Swansea University to focus on the diagnosis of disease and medical intervention at a molecular level.

The first building to exploit the technique of reinforced concrete in Britain was the multi-storey Weaver's Mill of 1897 in Swansea.

In 1940 Edward Bowen from Swansea developed airborne radar for use as a reliable, operational system in World War II.

Lion Laboratories of Barry developed the world's first electronic breathalyser in 1974 and sold the product to police forces around the world to measure the evidential alcohol levels of motorists.

Fully customer-qualified 6" semiconductor wafers were produced for the first time by IQE plc of St. Mellons, Cardiff.

In 1750

Benjamin Franklin invented the glass-enclosed type-printing telegraph and used paper and a inked stylus, a forerunner to the modern telegraph.

In 1855

The type-printing telegraph was invented by David Hughes from Bala and used throughout the expanding USA.

A nation of innovators...

In 1797

John Hanbury pioneered the rolling of sheet iron at the end of the 17th century leading to the establishment of Pontypool as the foremost producer of tinplate and Japanware in the 1800s.

In 1847

The type-printing telegraph was used in the first post office in Britain.

In 1895

Sir William Henry Preece patented his own system of wireless telegraphy and telephony.

In 1931

Earl Bertrand Russell was awarded the Nobel Prize for Literature.

In 1940

Edward Bowen developed airborne radar for use as a reliable, operational system in World War II.

In 1974

Lion Laboratories of Barry developed the world's first electronic breathalyser.

In 1979

The development of the Internet followed on the pioneering work on packet switched data communication by Donald Davies of Treorchy at the National Physical Laboratory in the 1960s.

In 1990

Sure Chill in Mid Wales invented technology that enables refrigerators to work without power for 10 days or more, providing eco-friendly cooling that has the ability to save lives and change lifestyles.

In 2000

The first over-water transmission of radio waves was made by Guglielmo Marconi between Lavernock and the island of Flat Holm in the Bristol Channel in 1897.

In 2009

The Centre for NanoHealth, the first facility of its kind in Europe, is established at Swansea University to focus on the diagnosis of disease and medical intervention at a molecular level.

In 2010

Earl Bertrand Russell was awarded the Nobel Prize for Literature.

In 2011

The type-printing telegraph was invented by David Hughes from Bala and used throughout the expanding USA.

In 2013

Dr Tom Parry Jones died.

In 2015

Edward Bowen from Swansea developed airborne radar for use as a reliable, operational system in World War II.

In 2017

Sure Chill in Mid Wales invented technology that enables refrigerators to work without power for 10 days or more, providing eco-friendly cooling that has the ability to save lives and change lifestyles.

In 2020

William Weston Young 1776 – 1847
Entrepreneur and inventor, developed a high quality firebrick for furnace lining that used Dinas silica rock quarried and manufactured in the Vale of Neath from 1822. It was exported worldwide and even today the Russian word for 'firebrick' is 'Dinas'.

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