# BT To Honour Computer Pioneer Tommy Flowers, MBE

## BT is marking the 70th anniversary of the creation of the world's first programmable computer by unveiling a memorial sculpture of its inventor and launching a new award and scholarship in the field of Computer Science

- **In November 1943, Tommy Flowers, an electrical engineer working in the telecommunications department of the General Post Office (which became BT in 1984), designed and built the world's first programmable computer**
- **Flowers developed 'Colossus' at the Ministry of Defence's code-breaking facility in Bletchley Park to counter the supposedly unbreakable Lorenz cipher used by the German High Command**
- **After World War II, Flowers went on to direct ground-breaking research in the field of telecommunications, including the development of the first all-electronic telephone exchange**
- **In December 2013, a memorial bust of Tommy Flowers created by the sculptor James Butler MBE will be unveiled at Adastral Park, BT's global research and development headquarters at Martlesham, Suffolk**
- **The Tommy Flowers' Computing Science Scholarship in association with BT will offer academic mentoring, financial support and professional experience to students starting Year 12 in September 2013**
- **Two Tommy Flowers' Awards for Commitment to Computing will also be launched by BT in September 2013 in order to celebrate the inspirational teaching of Computer Science at Key Stages 2 and 3**

BT is celebrating the life and work of Tommy Flowers MBE, a telecoms pioneer and creator of the world's first programmable computer, with a memorial sculpture and the launch of a scholarship and award in his name.

The unveiling ceremony of the bronze portrait bust in December 2013 will mark the 70th anniversary of Flowers' development of 'Colossus', a thermionic valve-based programmable computer that successfully broke the Lorenz cipher used by Hitler and the German High Command during the Second World War.

Colossus went on to provide intelligence that proved critical to the success of the D-Day landings and made a significant contribution to the Allied war effort.

The memorial will be officially unveiled at Adastral Park in Suffolk, BT's global research and development headquarters. The sculpture, which was commissioned by Ian Livingston, Chief Executive of BT, in close consultation with the Flowers' estate, will be executed by James Butler MBE, RA, FRBS, a member of the Royal Academy, Fellow of the Royal Society of British Sculptors and one of the UK's foremost figurative sculptors.

In addition, BT is launching a Tommy Flowers Scholarship for students in Suffolk who will be starting Year 12 in September 2013. Aimed at supporting career development within the IT sector, the scholarship will comprise academic mentoring, financial support for participation in relevant courses or activities and work experience at BT.

In conjunction with the scholarship, a Tommy Flowers Award for Commitment to Computing will also be launched. Eligible for schools in Suffolk, each award will honour the inspirational teaching of Computing Science at Key Stage 2 and 3. The awards programme will comprise of workshops provided by BT to both students and teachers, and access to BT events and experiences. BT will also provide a financial contribution to support the development of the Computing curriculum of the winning school.

Tim Whitley, Managing Director Research & Innovation, BT, and Managing Director Adastral Park, said:

*"Tommy Flowers is an unsung hero of computer science and BT is proud to be commemorating his life and work. Adastral Park continues to innovate in computer science and we want to play our part in finding the next generation of innovators.*

*"The Tommy Flowers Scholarship provides real support and mentoring to students but also to teachers and schools who are vital in encouraging the next generation."*

This is just one of a number of schemes that BT sponsors to encourage and develop skills in this area. BT is also the lead sponsor of the Cyber Security Challenge 2013-14 Masterclass and Finals. The Challenge is designed to find talented people for the increasing number of cyber security job opportunities.

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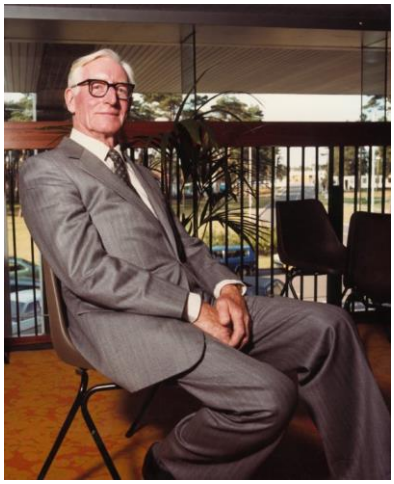
**Notes to the editors:**

**Thomas 'Tommy' Flowers MBE** was born in London's East End in December 1905. The son of a bricklayer, Flowers combined an apprenticeship in mechanical engineering at the Royal Arsenal with evening classes at the University of London to earn a degree in electrical engineering. In 1926 he joined the telecommunications branch of the General Post Office, where he explored the use of electronics for telephone exchanges working from the GPO research station at Dollis Hill. In 1941, Flowers began working alongside Alan Turing at the government's code-breaking



centre at Bletchley Park, where he was tasked with countering the German Lorenz cipher, an encryption system more complex the Enigma code that was used by the Nazi High Command. Flower's proposal for an electronic system based around the thermionic valves already in use in British telephone network was initially met with scepticism. Flowers and his dedicated team persevered and produced the first machine in 11 months. The world's first programmable computer, comprising 1500 valves and dubbed 'Colossus' by the staff at Bletchley Park due to its immense size, went into service in November 1943 and immediately began providing vital military intelligence, including information that proved crucial to the preparations for the Normandy landings. In all, 10 Colossus machines were created by Flowers and his team, remaining in service throughout World War II and going on to play a significant role in the code breaking operations of the Cold War. Constrained by the Official Secrets Act, Flowers was never able to discuss his wartime work and all of the Colossus machines were ultimately decommissioned and destroyed.

**Adastral Park** is BT's global research and development headquarters, undertaking pioneering work in optical technologies and digital switching through to advanced software techniques and protocols.

The 100-acre science campus accommodates 4,000 people and is recognised as one of the leading centres of technical innovation in the communication industries.

**James Butler MBE, RA, RWA, FRBS** is one of the UK's foremost figurative sculptors. He has been a member of the Royal Academy since 1964, he is also a Fellow of the Royal Society of British Sculptors and a Member of the Royal West of England Academy. His many monuments and memorials stand in London and other UK cities and also abroad in Kenya, Zambia, Saudi Arabia, France, Singapore, Madeira and in the USA.

**Tommy Flowers Award for Commitment to Computing Award**
The award is eligible to schools in Suffolk that can demonstrate a commitment to the inspirational teaching of Computing at Key Stage 2 and 3.

The award comprises:

- a grant of up to £2,000 to be spent by the winning school on the development of the Computing curriculum
- personalised workshops on the development of computational thinking for the

winning school's teaching and student bodies
- participation in relevant BT events and experiences

**Tommy Flowers Scholarship**
The scholarship is open to Suffolk students starting Year 12 in September 2013 who have achieved a minimum B grade in both Maths and Physics GCSE, who are studying Maths and a science (Physics preferred) at A Level and who intend to pursue a career in teaching or in Information Technology.

The scholarship comprises:
- personalised academic mentoring
- a grant covering course fees and expenses for attending additional courses and training
- participation in an 'Insight To BT' experiential week at Adastral Park
- a work experience placement at BT
- participation in relevant BT events and experiences

**Cyber Security Challenge Masterclass**
BT is the lead sponsor of the Cyber Security Challenge Masterclass and finals which is run by Cyber Security Challenge UK Ltd.

The Challenge began in 2010 as a series of national competitions aiming to find talented people for the increasing number of cyber security job opportunities. Now in its third year, the Challenge has broadened its scope to act as a source of advice, support and guidance for anyone interested in the profession. It is currently backed by over 50 organisations from across the cyber security landscape that contribute approximately £100,000 of career-enabling prizes each year to candidates.

The Masterclass competition is designed to challenge the technical skills of the finalists and identify the cyber experts of the future.

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