ARTIST'S BRIEF
'SPIRIT OF ENQUIRY'

Sir Maurice Wilkes Building, St John's Innovation Park, Cambridge

I. Introduction

Expressions of interest are invited from artists with experience of working in the public realm whose practice explores the cross-over between the Arts and (computer) Sciences. The proposed artwork is to be located at the St John's Innovation Park, Cambridge for the new 'Sir Maurice Wilkes Building. The building will be a prominent landmark, with the artwork designed as a focus of celebration for the discoveries of Sir Maurice Wilkes.

The Innovation Park itself has a large central water feature, 'Tureen', created by William Pye in 2000. The addition of the Sir Maurice Wilkes building to the Innovation Park scheme now provides an opportunity to complement 'Tureen'. In a site where innovation is the norm, an approach could be adopted which extends public art practice in directions new to Cambridgeshire yet with specific relevance to its more recent technological heritage. The artist will be required to create a work which enhances the setting and references the distinctive context of the Innovation Park.

II. Background

St. John's Innovation Park was established by St John's College, part of the University of Cambridge in 1987. The Park now hosts a number of buildings occupied by knowledge companies and professional services firms. The site provides a campus setting close to both the city centre and major transport arteries.

The Sir Maurice Wilkes Building will offer 63,313sqft (NIA) of prestigious Grade 'A' office accommodation arranged over five floors, with an impressive and roof terrace providing views across Cambridge. The Building is located north-east of Cambridge city centre.

Sir Maurice Vincent Wilkes FRS, FREng, DFBCS 1913–2010 A British, Cambridge-based computer scientist credited with several milestone developments in computer technology. Amongst other achievements, he led the University of Cambridge team that built the world's first operational stored-programme computer. The Emeritus Professor of Computer Technology had spent thirty-four years as Head of the Computer Laboratory (formerly the Mathematical Laboratory) and was a Fellow of St John's College, Cambridge, where he had studied Mathematics and Experimental Physics as a student in the 1930s.

Sir Maurice Wilkes was a central figure in the development of practical computing in the UK. He lead the development of EDSAC, the first stored-program digital computer to go into service in the 1940s, he and his colleagues at Cambridge University made significant contributions to software development, and built one of the first high-speed distributed computing networks, the Cambridge Ring. His vision was less about producing cutting-edge designs than about developing machines that could reliably do calculations for the university's scientists and engineers. In the early 1950s, EDSAC, the Electronic Delay Storage Automatic Calculator, was the basis for the world's first business computer, LEO (the Lyons Electronic Office) was used to run the operations of the eponymous tea-shop company.

Wilkes considered himself lucky to be in at the birth of the computer industry that grew out of the wartime development of ENIAC, the Electronic Numerical Integrator and Computer, which had calculated shell trajectories for the US army. The Americans planned to follow this with a more sophisticated machine that could run stored programs, and Wilkes was

given an overnight loan of John von Neumann's seminal paper, First Draft of a Report on the EDVAC, the Electronic Discrete Variable Automatic Computer, which explained the concepts. Wilkes recognised that this approach was the future – computers became known as "Von Neumann machines".

In 1946, he was invited to lectures on the Theory and Techniques for Design of Electronic Digital Computers at the University of Pennsylvania, the birthplace of ENIAC. Wilkes got there late, but met many of the American computer pioneers, including Harvard University's Howard Aiken and ENIAC's developers, John Mauchly and Presper Eckert. He thus become one of relatively few people who had some idea how to build a computer, in theory, and began to sketch the design of EDSAC on the Queen Mary on the way home.

By today's standards, EDSAC was amazingly primitive. It used valves – vacuum tubes – for computation, like ENIAC and Colossus, Bletchley Park's secret code-breaking machine. Its first memory units used sound beams traversing baths of mercury, which required very precise manufacturing. But EDSAC was up and running in 1949, and performed useful calculations for many years.

In the days when computers were big, expensive things, they could earn their keep by taking on a small number of very large tasks. Wilkes had other ideas. He envisaged EDSAC performing relatively large numbers of smaller tasks for Cambridge researchers working in fields such as mechanics, economics, crystallography and radio astronomy. This led Wilkes and his team to develop ways to make computers easier to program and to use. In 1951, Wilkes and two colleagues published the first book on computer programming: The Preparation of Programs for an Electronic Digital Computer.

Wilkes also came up with the idea of microprogramming as a way of controlling the computer's operations, by building complex high-level instructions from small ones – microcode. The lab's second valve-based machine, EDSAC 2 - which came into operation early in 1958 - was the first computer to have a microprogrammed control unit. The technique was used later in the IBM 360 mainframe, and became a fundamental part of modern computing.

He also helped pioneer networking, having seen some early work in digital telephony at the telecommunications firm of Hasler in Berne, Switzerland. He immediately saw the potential for using the technology to connect computers instead, and started the Cambridge Ring project long before the idea of computer networking became fashionable. Some commercial Rings were installed, but the industry adopted Ethernet instead.

He returned to Cambridge in 1945 after the Second World War and became head of the Mathematical Laboratory (1946-70), head of the Computer Laboratory (1970-80), and in 1985 published Memoirs of a Computer Pioneer. Wilkes was the first president of the British Computer Society, a fellow of the Royal Society, and a fellow of the Royal Academy of Engineering. His numerous awards included the Faraday medal from the Institution of Electrical Engineers in London, and in 2000 he was knighted.[1]

[1] Wikipedia 21.12.15

III. Objectives of the Public Art

The following have been identified as the key aims and objectives of the Public Art commissioning programme.

- To provide a high quality public art programme encouraging excellence and innovation in public art, which encourages artistic practice that interrogates and communicates the relationship between the Arts and (Computer) Sciences.
- To provide an outcome with enduring physical presence.
- To reference and enhance the function and aspirations of the Sir Maurice Wilkes Building and St John's Innovation Park as a whole.
- Throughout the research and development of the commissions to engage the businesses and researchers located at St. John's Innovation Park, Cambridge University students and the public in order to explore potential collaborations and to ensure relevance and sense of ownership for the artwork whilst stimulating curiosity.
- To improve the quality of life for the companies and communities within the area, encouraging a sense of shared space and community.
- To aid legibility, orientation and pedestrian movement across the site.
- To establish a collaborative approach between the key stakeholders and members of the design team.
- To facilitate an approach to the commission that capitalises on resources and opportunities internally and externally to the new development, encouraging artistic enquiry to be informed by and in celebration of the work of Sir Maurice Wilkes.
- To assist publicity and marketing opportunities that will attract business to the new building and build long-term relationships with existing businesses based at the Innovation Park.
- To provide a meaningful addition and inform future public art commissions within Cambridgeshire.

IV. The Commission

The public art commission for the Maurice Wilkes Building at St. John's Innovation Park is an exciting opportunity to produce innovative, site-specific public artwork. The artwork should be developed in collaboration with the architects and delivery teams working on the project. The artwork will need to be developed in accordance with the policies of both Cambridge City and South Cambridgeshire as well as the City Council's Adopted Supplementary Planning Document for Public Art.

The appointed artist should take into consideration the ability for the public to view the work from outside the Innovation Park in addition to future tenants of the building and users of the Park. Attention is to be given to the evolving relationship and experiences with the resulting artwork, whilst providing creative interpretation for the pioneering work of Sir Maurice Wilkes and its impact globally

In establishing the research and discoveries of Sir Maurice Wilkes as the principal theme for the commission, there are a number of potential routes to exploring his work and its on-going influence that the public art commission for St John's Innovation Park could take. The commission provides the potential to examine Maurice Wilkes' pioneering work in the context of early computer technology or in relation to the developments they have led to.

Wilkes' EDSAC (Electronic Delay Storage Automatic Calculator) was the first stored-programme computer in regular use. The system he developed was primitive by today's standards incorporating valves – vacuum tubes – for computation; the first memory units using sound beams traversing baths of mercury. Equally the development of the Cambridge Ring, an experimental local area network, developed in the mid-late 1970s and early 1980s by Wilkes at Cambridge University demonstrated the possibility of networking computers.

Data since the EDSAC, which ran its first programme in 1949, has grown exponentially; developments in data storage have seen a radical shift in the volume and speed of data created. The technology we use to store data, access and analyse it – with the advent of the 'cloud' we theoretically now have unlimited space for storage of personal and business data – has revolutionised how we live and transformed our world.

A series of potential themes have therefore been outlined as starting points for the commissioned artists.

- Memory and Information
- Networking/ Connectivity or Interactivity
- Perception and Interpretation
- Digital Technology

Community Engagement

The artist will be responsible for developing an innovative community engagement programme and to ensure the outcomes of the engagement programme are reflected within the final artwork.

St. John's Innovation Park has a Centre Management Team which coordinates social events for tenants, facilitates peer-to-peer networking; group workshops and individual assistance is provided for tenants, virtual tenants and other growth firms. It is proposed that, in collaboration with the management team, the appointed artist will have routes into network with the companies and individuals based at the Park to engage and consult them regarding the proposed artwork. The majority of tenants at the Innovation Park are involved in commercializing innovation, with major sectors in recent years including information technology, communications (including wireless), digital printing, cleantech, electronics and design, though some bio and medical firms also have offices at the Park. It is the commissioner's intention that the appointed artist explores the potential for partnerships and collaborations with relevant companies based at the Innovation Park.

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An allocation of £1,000 has been allocated for the community engagement programme. Events will be coordinated to respond to citywide initiatives such as Cambridge Science Festival or Cambridge's Festival of Ideas, (depending on the build schedule) enabling both the potential involvement of the high-tech firms located at St John's Innovation Park alongside external specialists and leading researcher, thereby maximising the communication of the engagement programme through the existing marketing and promotion of these events.

Suggested options whereby interested individuals, groups and the wider public could interact with the commissioning process, including:

- Artist's consultations, presentations or informal drop-in sessions for the Park's business community, new tenants, Council and Parish Council members.
- Press releases to local media and Milton Parish Council.
- Graphic displays/information displayed at the Innovation Centre, other Park and new tenant's offices and partner websites.
- Meetings, workshops or talks at St John's College along with exploring opportunities with annual events taking place in Cambridge.

A detailed community engagement programme is to be developed by the appointed artist.

Potential Locations

There is potential for the artworks to be either stand-alone, 'focal point' pieces, integrated works or functional in nature. A potential location has been identified within the landscaped area to the south west of the site (indicated on the following plan) for the appointed artists to consider.

Options to locate an artwork to the southern side of the development will require careful placing of the work in order for it to be visible from Milton Road, avoiding tree screening and power lines that could compromise views from the perimeter of the site. An option to incorporate the artwork within the landscaped area would also need to ensure that the piece was sufficiently visible.

Although a suggested site has been proposed, options for the location of the artwork are flexible, allowing the artist to explore the potential in relation to their work. An aspect of the artist's role will be to consider the feasibility of locations with the project design teams and feedback from the community, whilst meeting both Councils' criteria for public art and access to the work being taken into consideration as part of the development process.

The application site has a pedestrian and cycle path running along the perimeter of the Park, where a work on the façade of the building or incorporated into the landscaping scheme would need to be clearly visible.


Platinum Building
Jeffrey's Building
Maurice Wilkes Building
Cowley Road
Davis
St John's College, Cambridge
Maurice Wilkes Building
Landscape GA

V. Artist's Role

- To collaborate with the project delivery team throughout the development of the commission.
- Undertake research and consultation with stakeholders, including members of the local community, involving them in the development process.
- In collaboration with the project manager, devise an innovative and engaging programme of community consultation that leads to meaningful input and involvement by local people in order to develop ownership and engagement of the artwork.
- To attend meetings and external consultation events related to the development of the artwork/s.
- Research the developments of future tenants within the new building and existing companies within the Park to investigate potential inspiration for the work and/or collaborations.
- To develop a minimum of three concept design proposals, able to be produced within the budget and design constraints. One proposal will be worked up to full design stage, on agreement with the steering group.
- Present information about the commission to businesses in the Park; students at St John's College Cambridge, council members and local residents.
- Create and install, or oversee the creation and installation, of the artwork in accordance with the proposal agreed by the St. John's College and the project group.
- Provide the budget and technical information required for all artwork proposed.
- Provide a schedule for fabrication and installation.
- Provide maintenance and decommissioning plans, as a requirement of the Supplementary Planning Document.
- Contribute to marketing and promotional activities linked to the public art.
- To provide a report evaluating the implementation and completion of the artwork

VI. Project Steering Group

The Project Steering Group includes representatives from the following organisations:

St John's College – Bursar's Agent
Barber Casanovas Ruffles Architects – Principal
Representative Turnstone Estates
Savills - Planner
Project Public Art Consultant – Place Services, ECC
Mott MacDonald, Landscape Architects – Senior Landscape Architect
Cambridge City Council – Senior Arts & Urban Design Officer
South Cambridgeshire District Council – Lead Officer Arts and Culture

The artist will be required to work with the Project Steering Group.

VII. Outline Timescale

It is proposed for the selected Artist to be appointed in September 2016. Once agreed, the final artworks will be produced in line with the building programme, currently due for completion in February 2018.

Outline Timeframe	
Stage	
Stage 1 **Deadline Applications – 5th September, 9am** **Interviews 20th September** **Appointing an artist w/o26th September**	August-September 2016
Stage 2 Design Development Research and community Engagement programme	October 2016 to February 2017
Stage 3 Presentation of designs and refinement and Steering Group approval. Initial concept proposals February 2017. Revised designs May 2017	February – May 2017
Stage 4 Planning Approval under reserved matters (if required)	June - August 2017
Stage 5 Fabrication **Including site visits to fabricators prior to works arrival onsite**	September – December 2017
Stage 6 Installation	January 2018
Stage 7 Launch event and record of the works	February 2018

VIII. Fees and Budget

The total budget for the public artwork is £52,000 inclusive of VAT and all costs. The budget is broken down into a fee for the appointed Artist's research and design £7,000, and community consultation, £1,000. The budget for the production and installation of the artwork is £44,000 inclusive of VAT. The lead artist will work on a self-employed basis.

IX. Selection Criteria

The artist will be selected on the basis of track record, suitability of practice, understanding of and sympathy with the brief and by the following criteria:

- Applicants should be experienced, practising visual artists with previous examples of a wide range of approaches and use of materials/media
- Applicants should have experience in fulfilling public art commissions, including drawing up proposals, budgets and technical requirements.
- They should have examples of previous complete landscape-based and or architectural fabricated work.
- Applicants should have a thorough understanding, including examples, of delivering robust, well performing works within the public domain
- Applicants should have experience of working with the public in developing their artwork, including being able to demonstrate previous examples of successful community engagement.
- Applicants should have good communication skills, both written and verbal, enabling them to address meetings, write reports, etc.
- Applicants should have good inter-personal skills
- Applicants should have good organisational skills.
- Applicants should be able to work effectively within a team and on their own.
- Applicants should have Public Liability Insurance cover of five million pounds

Selection will be made by a personal interview of short-listed artists. At the interview, each candidate will be asked to make a 10-minute presentation about their work, using a digital presentation, portfolio or other visuals, and will then be asked a range of questions related to the role and the selection criteria.

X. Application Submission Details and Deadline

Artists can register their interest by submitting the following:

- A written expression of interest, this should explain why you are interested in this commission and your project approach and methodology referencing any community engagement projects you have delivered or collaborated on previously (no more than two sides of A4).

- Visual material (maximum of 10 images) with brief accompanying information (please do not send originals).

- Current Curriculum Vitae

- Contact details of two referees of similar completed commissions.

Email applications are welcome, maximum size per email is 10MB. Please note applications should be PDFs, formatted for A4 printing.

Expressions of interest should be sent to:
Clare Cleary, Place Services
County Hall, Chelmsford, Essex. CM1 1QH
E: clare.cleary@essex.gov.uk

Application deadline: 5th September 2016 at 9am.
Interviews: 20th September, Cambridge

Further Information: St John's Innovation Park

St John's Innovation Centre was established by St John's College, part of the University of Cambridge in 1987 as part of St John's Innovation Park, which now hosts a number of other buildings occupied by knowledge companies and professional services firms. The site provides a campus setting close to both the city centre and major transport arteries.

St John's Innovation Centre has been granted full membership of the European Business and Innovation Centre Network (EBN) and thus became the first accredited "BIC" (Business and Innovation Centre) in the East of England, joining a network of only 10 such accredited organisations within the UK. It has been a member of the United Kingdom Science Parks Association since 1987, and a member of United Kingdom Business Incubation (UKBI) since 1998.

The idea for the innovation centre in Cambridge was first proposed by Dr Chris Johnson, Senior Bursar of St John's College, following a visit to the USA in 1984, during which he visited universities and science parks, which included an innovation centre in Salt Lake City, Utah, Returning to Cambridge, he convened a small group including architect Ian Purdy and Walter Herriot, a banker working with early-stage companies, to plan the St John's Innovation Centre.

The publication in 1985 of The Cambridge Phenomenon: The Growth of High Technology Industry in a University Town by Segal Quince Wicksteed, demonstrated to the College that investment in this sector was likely to be successful. St John's Innovation Park was subsequently established on a 21 acre plot of land, owned by St John's College since 1534. The Innovation Centre was opened in 1987 and visited by HRH Duke of Edinburgh in 1988.

Following the success of the original centre, a second phase, Dirac House, was completed in July 1989, and the self-contained Jeffreys Building was completed in February 1990. Dirac House (now the Dirac wing) is named after Paul Dirac, Nobel Prize winner and member of St John's College, while the Jeffreys Building is named after Sir Harold Jeffreys, a fellow of St John's College. Four further buildings, the Vitrium, the Platinum, St John's House and Edinburgh House, were added to the Park. The land remains the property of St John's College.

St John's provides a supportive environment for its clients, with access to shared facilities and services that they could not afford individually, enabling tenants to concentrate on business development.

Barber Casanovas Ruffles are the appointed architects developing the design. Barber Casanovas Ruffles are a Cambridge based firm of Chartered Architects formed in 1984. The Practice flourishes on a wide cross-section of commissions in a variety of different sectors.
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Essex County Council

place services