

**C2CN**  
**Fourth Thematic Seminar**

**BUILD**

**EAST OF ENGLAND**  
**Cambridge**  
**15<sup>th</sup> – 16<sup>th</sup> September 2010**

**GUIDE**

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## 1. The Cradle to Cradle Network

The Cradle to Cradle Network (C2CN) is an Interreg IV C capitalisation project consisting of ten partners from ten European regions which aims to reduce raw materials' utilisation, to generate less waste and less environmental pollution, as well as to enhance innovation and economic development.

By encouraging the designers of buildings, infrastructure and products to incorporate cradle to cradle concepts at the design stage, the project will lead to the generation of less waste and less environmental pollution, as well as enhancing innovation and economic development. This contributes directly to the movement of our society towards a resource efficient, zero waste, greener economy.

It is an 'Interreg IV C' project and is funded primarily (75%) by the European Regional Development Fund with contributions from the ten partner regions. The 'East of England' is the UK partner region and is being coordinated by Suffolk County Council.

The project is split into four main themes;

- Governance
- Area Spatial Development
- Industry
- Build

This is the fourth and final thematic seminar of the C2CN and will be focussed on Cradle to Cradle and how it may be incorporated in build design and practice to provide environmental and economical benefits.

Day 1 of the seminar aims to provide an overview of C2C and introduce some good practice examples of sustainable construction, where Cradle to Cradle principles may have been applied in the design and construction of a building, as well as challenging the group to think about how the learning from these good practice examples may be applied to some proposed developments.

On Day 2 study visits to 'good practices' within the region will demonstrate components of the 'Cradle to Cradle' concept as they have been applied 'on the ground' before we bring the group together to discuss the learning to take from these two days and what the next steps may be in incorporating the C2C concept into the way we build.

## 2. The Cradle to Cradle Concept

Cradle to Cradle (C2C) is a concept of sustainable development based on the idea of doing things "right" the first time rather than later to compensate for past errors. It involves a consideration of the use of materials and environmental effects at the design stage of buildings, products and infrastructure, including end of life deconstruction and re-use. The Cradle to Cradle approach contributes to economic growth by reducing our dependency on raw materials, enabling better use of land and its resources and creating less pollution. It interprets the challenge of sustainability as an opportunity for economic development, also transforming the processes of innovation and economic growth.

Three principles are essential in developing Cradle to Cradle:

- "waste equals food": everything is a nutrient for something else. Biological and technological "nutrients" are reused as nutrients for natural and/or human production processes.
- "use of current solar income": The use of energy sources that are renewable in the timeframe they are used.
- "celebrate diversity": promoting and combining biological, cultural and conceptual diversity.

The power of the C2C concept lies in its ability to mobilise and inspire. The C2C approach is a positive one, starting with an initial intelligent design. It covers supply chains (the recycling of natural resources, via product and manufacturing design, to high value re-use and finally to raw materials), systems (key supplies, ecosystems, space and energy) and management (via money, rules, spatial planning). The concept contributes to a reduction in the use of raw materials, generates less environmental pollution and can contribute to our economic growth by allowing us to make better use of scarce space.

### 3. Draft Agenda

#### Day 1 : 15<sup>th</sup> September

#### Howard Building, Downing College, University of Cambridge

**0900 :**            **Registration and Welcome Tea and Coffee**

0930 :            Welcome and Introduction – *Suffolk County Council*

0945 :            Theoretical Framework – *VITO*

1000 :            Strategic and Operational Linking – *Royal Haskoning*

1020 :            Keynote Speaker – *Dr. Peter Bonfield, Chief Executive BRE*

**1050 :**            **Tea and Coffee Break**

1105 :            Introduction to the Best Practices – *Royal Haskoning*

1110 :            Best Practice 1 – *Adnams UK*

1130 :            Best Practice 2 – *Autogrill, IT*

1150 :            Best Practice 3 – *SEArch Architects, UK*

1210 :            Best Practice 4 – *Floriade, NL*

**1230 :**            **Buffet Lunch**

1330 :            Introduction to the Workshops – *Royal Haskoning*

1335 :            Workshop 1 : Existing Examples

1420 :            Workshop 2 : Undeveloped Examples

1505 :            Summarising – *Facilitators*

1605 :            Information on Day 2

**1615 :**            **Day 1 End**

Time for European Delegates to enjoy the City of Cambridge.

1930 :            Dinner at Downing College (for all C2CN delegates attending on Cradle to Cradle costs)

**Day 2 : 16<sup>th</sup> September**

**Meeting at Coach pick-up point**

- 0815 : Study Visits (TBC from list below)
- BRE Innovation Park, Watford
  - The Foundry, Lavenham
  - Tesco, Zero Carbon Store, Ramsey, Cambridgeshire
  - Mill Green Brewery, Edwardstone
- 1330 : **Return to Howard Building, Downing College – Buffet Lunch**
- 1400 : Summarising of visits, Sharing Learning
- 1500 : Perspectives Study (Build) – *Royal Haskoning*
- 1530 : Reflections on all thematic seminars. Moving forward.
- 1600 : **Seminar Ends.**

**We hope that you and members of your own networks will be able to join us for what promises to be an exciting, informative and productive two days!**

#### 4. Keynote Speaker Profile

**Dr Peter Bonfield**  
Chief Executive of BRE



Dr Peter Bonfield joined BRE in 1992 as a Senior Scientific Officer progressing to Director of the Timber Division and then Managing Director of BRE's Construction Division. Peter was appointed Chief Executive of BRE in 2007.

A materials engineer with a PhD in wind energy and the design of turbine blades, Peter's focus as BRE's Chief Executive is to drive innovation and improve sustainability across all sectors. He believes that research has a key role to play in this, providing the crucial evidence base that underpins successful delivery. Peter has led major initiatives in the areas of new build and existing housing, as well as in commercial and public sector buildings. The award winning BRE Innovation Park, designed to give a glimpse of how the future delivery of sustainable buildings and communities can be achieved, was Peter's brainchild. It has had a significant impact on the UK and the global sustainability arena since its inception in 2005. Since mid 2006 Peter has been on part-time secondment to the Olympic Delivery Authority (ODA) where he has helped create the sustainable development strategy for the Olympics and support its delivery. Since November 2006 he has led for ODA on construction products, playing a key role in ensuring that the significant quantities of materials required to construct the games are sustainably procured and delivered and perform as required.

To enhance the delivery of a new research resource for the built environment Peter has been instrumental in establishing University Partnerships with Strathclyde (Energy), Cardiff (Design and Engineering) and Bath (Materials) Universities.

He is a Visiting Professor at Bath University and also fulfils a number of additional roles including representation on

- Low Carbon Construction Review Cross Cutting Group (Mandleson review)
- Modern Built Environment Knowledge Transfer Network Industrial Steering Group
- Energy Saving Trust Microgeneration Advisory Board
- National Platform (the industry group representing priority construction research needs to Government)
- East of England Science and Industry Council
- NHBC Foundation Advisory Board
- Bovis Lend Lease Sustainability Board
- Building Hub (Board Director)
- Smartlife (Director)
- BRE Environmental Management Board (a partnership with City Climate Exchange)

Peter's passion is sport - he is a former National Cycling Champion and acted as Trainer for the Women's Triathlon Team in the 2004 Olympic Games in Athens.

Dr Bonfield is often invited as a key note presenter, after dinner speaker and to judge a variety of construction industry awards. His views are regularly sought by television, radio and publishing media.



## 5. The Venue

### **Downing College, University of Cambridge**

Downing College is set amidst 20 acres of lawns and trees within half a mile of the historic centre of Cambridge. Many of the buildings date back to the beginning of the 19<sup>th</sup> Century and are predominantly neo-classical in style conveying a sense of elegance and spaciousness.

We will be using the new Howard Theatre (pictured) for the majority of the presentations and sessions that will form the thematic seminar.

Although a new build, the theatre has been designed in a Georgian-style by Quinlan and Francis Terry LLP, combining the latest technologies with traditional classic architecture.

Interestingly, the venue also incorporates a range of environmentally-sustainable features including ground-source heating, solar panels and rain water harvesting.

For more information on the venue please visit

[www.downing-conferences-cambridge.co.uk](http://www.downing-conferences-cambridge.co.uk)



## 6. Study Visits

Details of these study visits are still to be confirmed but potential visits include;

Visit 1 : Aspirations

### **BRE Innovation Park, Watford**



The BRE Innovation Park is a world leading and ground breaking demonstration development designed to give a glimpse of how the future delivery of sustainable buildings and communities can be achieved not only in the UK but around the world.

It features seven of the world's most sustainable houses (built to the Code for sustainable homes), a health centre of the future and over 300 different construction innovations and emerging technologies as well as a state of the art community landscape design.

Collectively these projects demonstrate diverse and innovative approaches to sustainable design and construction. They each share the common goal of having a low impact on the environment but a high impact on the quality of life of building and community occupants and CO2 emissions reduction.

Please see <http://www.bre.co.uk/page.jsp?id=634> for more details.

Visit 2 : Developed Examples – Visits to be confirmed

### **The Foundry, Lavenham**



The aim of The Foundry project was to produce a building that sits lightly on the earth both in its construction and user life, and to be a shining example of sustainable building skills using local materials and labour. The Foundry was built as headquarters for the Green Light Trust, whose mission is ‘bringing communities to life through working with nature’, and is often used for community environmental education sessions.

An existing redundant timber-framed traction engine shed – The Foundry – has been dismantled and refurbished to provide an Environmental Education Centre for the East of England. This provides the necessary training space for theoretical and practical skills in community development and sustainable woodland management. It also provides meeting rooms and office space for community use as well as environmental education.

Includes in its design; hemp and lime insulation, wattle and daub walls, a biomass boiler, natural paints, a rainwater harvesting system, reed bed sewage system and a wind turbine.

## The World's First Zero-Carbon Supermarket – Tesco



It's made from timber, uses sun-pipe lighting and collects rainwater to flush the toilets and run the car wash.

The new store in Ramsey, Cambridgeshire (opening 7/12/09) is the first zero-carbon store. It generates its own renewable energy on-site using renewable fuel, producing more than it needs and selling the excess back to the grid. The store also incorporates a number of environmentally friendly design features and technologies, including: sustainably sourced timber frame, roof lights and sun pipes that allow natural daylight into the sales floor and staff areas, energy-efficient heating and air conditioning systems, rainwater collection to flush the toilets and run the carwash, combined Heat and Power (CHP) plant to generate electricity using renewable fuel, no harmful refrigerants in the refrigerators, heating, ventilation and air conditioning systems, the first LED-lit car park in the UK, solar-powered streetlights and energy-efficient equipment, such as low-energy bakery ovens

As well as striving to be more environmentally friendly, Tesco have also sought to support the local community and industries through our new Ramsey store.

Local manufacturers and suppliers of materials were used in its construction, from supplying the timber cladding to the flooring, aggregate and windows. Many of the construction and store staff are from the surrounding area. In fact, 80 per cent of store staff are from within three miles of the site! A community centre has also been built as part of the development.

## Mill Green Brewery, Edwardstone



Mill Green Brewery is situated behind the traditional White Horse Inn at Edwardstone on the footprint of a derelict stable. The object from the start was to build a new business that was going to have minimal environmental impact including the building itself and the production process, raw material sourcing and distribution. The building needed space for raw material storage, office, brewing, bottling and casking and an insulated conditioning room.

The original concrete floor was incorporated in the new foundations and no concrete was used in the entire building, only lime. The structure was wood rather than steel. All wall bricks were reused and new floor bricks came from local brick maker with onsite clay. No hard conventional plaster or plasterboard was used, only lime plaster on waste woodchip board and bare clay board. The building is clad in wooden weather boarding.

All insulation is lambs wool.

Solar panels 25 sq m on the roof generating an average daily absorbed energy in the summer of 80kwh, costing around £8,000.

Wood boiler with 210 lt furnace generating 50 k/w. Cost £20k.

Waste materials from the brewing process are used as follows; brewers grains to local Red Poll cattle, hops are used as compost/mulch, waste beer will hopefully be used for vinegar production.

## Accommodation

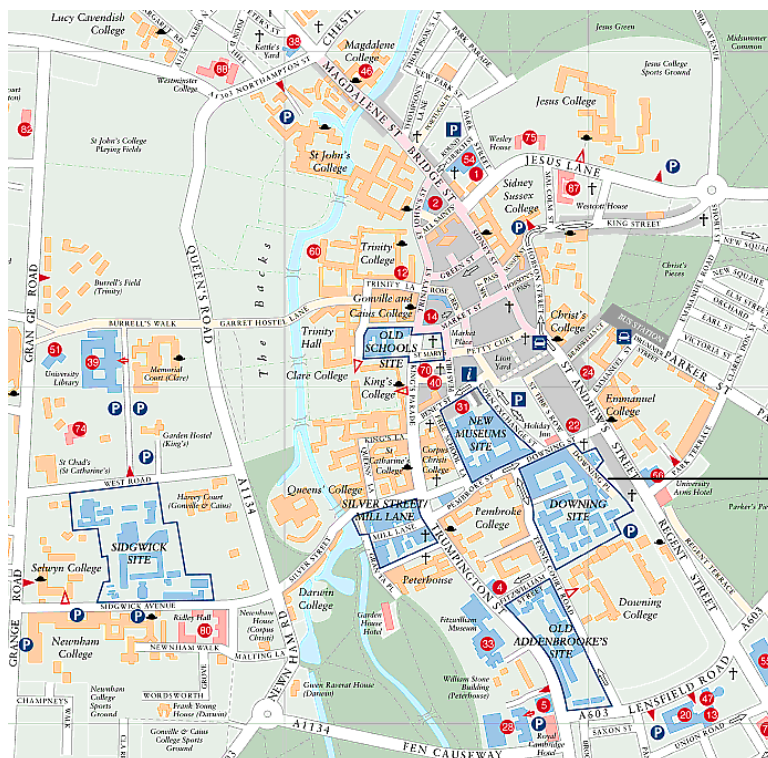
Downing College has 15 rooms available for the nights of the 14<sup>th</sup> and 15<sup>th</sup> September. These have been reserved for the C2C conference and are available on a first come, first served basis (please return the excel sheet attached with this email to [michael.gray@suffolk.gov.uk](mailto:michael.gray@suffolk.gov.uk)). Michael Gray will let you know if you have secured one of these rooms. If you book one of these rooms you will be invoiced directly by the college.

Once these 15 rooms have been taken, delegates can use the website [www.cambridgerooms.co.uk](http://www.cambridgerooms.co.uk) to book rooms at some of the other colleges at the University of Cambridge. Please be aware that the colleges are spread throughout the city so please use the map below to choose a college as near as possible to Downing College.

If you would prefer to use a hotel, delegates can use the website [www.visitcambridge.org/VisitCambridge/WhereToStay.aspx](http://www.visitcambridge.org/VisitCambridge/WhereToStay.aspx) but, again, please use the map below to ensure you are near to Downing College.

Of the options, The Lensfield Hotel, has reasonable rates and is situated near to the College.

Please contact [michael.gray@suffolk.gov.uk](mailto:michael.gray@suffolk.gov.uk) if you have any queries or any difficulties in securing accommodation.



Downing College

## Getting to the Venue

Please see [www.nationalexpress.co.uk](http://www.nationalexpress.co.uk) to plan and book a bus journey to Cambridge.

Please see [www.nationalrail.co.uk](http://www.nationalrail.co.uk) to plan your rail journey.

### From Stansted Airport

Stansted is the nearest airport to Cambridge although all London airports have good transport links to Cambridge.

Stansted Airport is well connected to Cambridge by bus. National Express run twenty one direct buses a day from Stansted Airport bus station to Parkside, which is next to Drummer street bus station in Cambridge. It takes approximately 50 minutes and costs about 14 pounds for a return ticket. You will, however, need to book in advance.

Another alternative is to take a train to from Stansted Airport to Cambridge station. This takes approximately 40 minutes and costs between 15 and 30 pounds for a return ticket, the price is dependent on the time you travel.

### From Luton Airport

Luton Airport is well connected to Cambridge by bus, National Express run nine direct buses a day from outside the terminal at Luton Airport to Parkside, which is next to Drummer street bus station in Cambridge. It takes approximately 1 hour 35 minutes and costs about 20 pounds for a return ticket. You will, however, need to book in advance.

Unfortunately there is no efficient train connection from Luton to Cambridge so the best option is to book a National Express Coach. However, if you have to travel by rail you will need to catch a bus to Luton Airport Parkway and from there catch a train to St. Pancras before walking to King's Cross (These two stations share an underground station which you can walk through – follow the signs to King's Cross Station) and catching a train from there to Cambridge.

### Train from Gatwick Airport to Cambridge

By train, the journey from Gatwick Airport to Cambridge is just over 2 hours, and there are three trains per hour. You need to change at Victoria Station in London and take the northbound Victoria (light blue) underground line to King's Cross mainline station, from where you can catch one of the three trains per hour that go to Cambridge.

Allow extra time for negotiating the Underground system. Subway trains run every 2-3 minutes but there are often delays. Try to time your journey so you avoid travelling across London in the rush hour - subway trains can be impossible to board, especially if you are travelling with luggage.

A single fare is about 28 GBP.

### Train from Heathrow to Gatwick

This takes about 2 hours. The main routes for the trip between Heathrow Airport and Cambridge are either to take the Heathrow Express Train to Paddington then tube to Kings Cross or you could get the tube from Heathrow to Kings Cross then train to Cambridge.

One way train tickets on the Heathrow Express from Heathrow to Paddington cost £14.50. London underground can also be used which is cheaper but slower. The train from Kings Cross to Cambridge costs approx 20 pounds or less depending on time of day.

### Travelling by Eurostar:

If you are arriving at London, St. Pancras on the Eurostar you will need to walk through to King's Cross Station. (These two stations share an underground station which you can walk through – follow the signs to King's Cross Station). If you are arriving at Waterloo you will need to use the underground to travel to King's Cross Station (please see maps).

At King's Cross Station you can catch one of the three trains per hour that run to Cambridge.

### From Cambridge Station or Drummer Street Bus Station to Downing College

You can catch a taxi from both stations to Downing College for a small charge but Downing College and many of the other colleges are within walking distance of both stations.





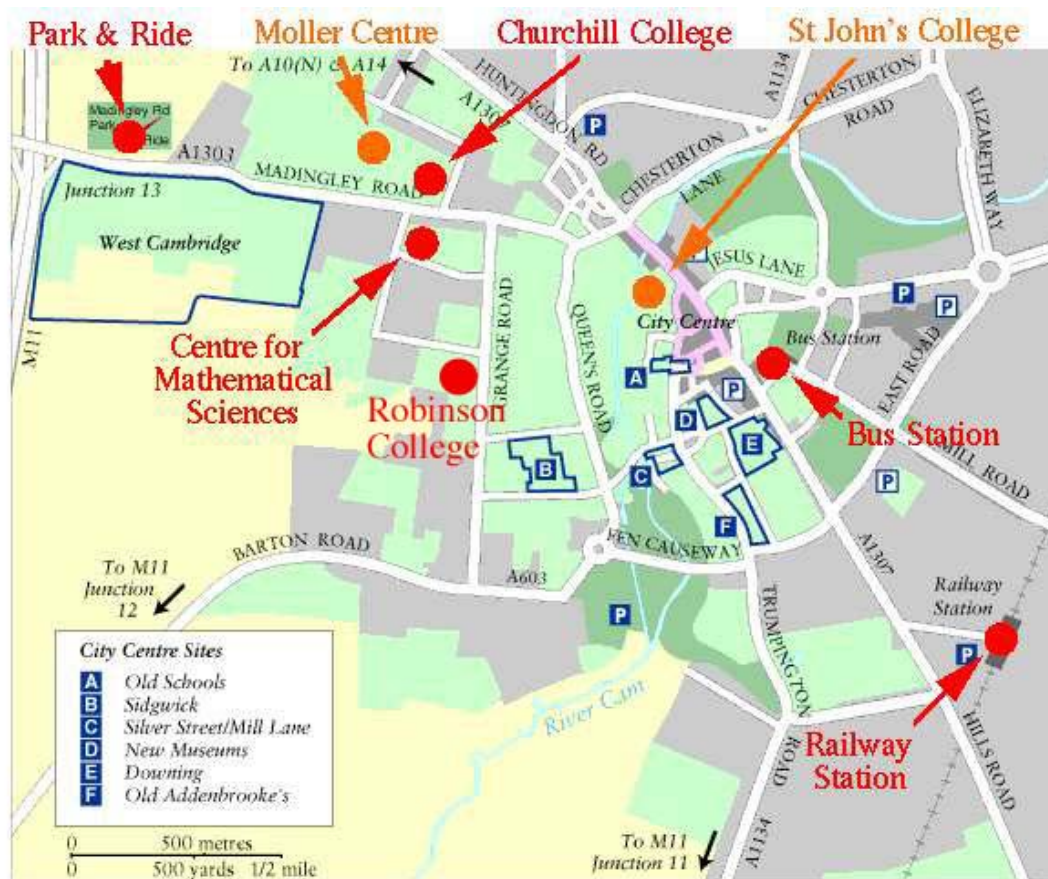
Please see the following section for some maps to help you plan and make your journey.

Please feel free to contact me on +44 (0)1473 264053 or +44 (0) 7763184311 if you have any difficulties planning or making your journey.

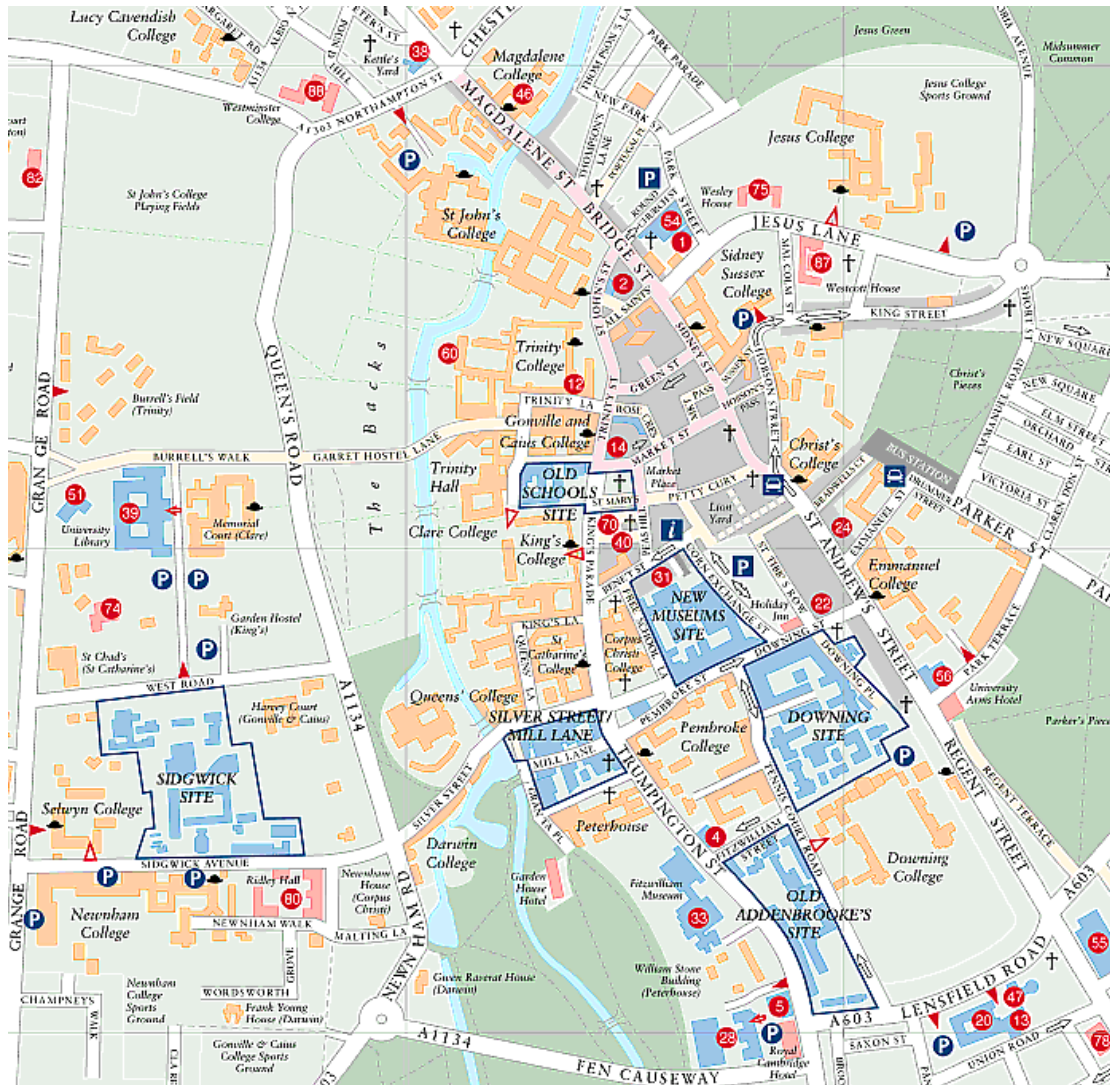


## 9. Maps

Walking Map of Cambridge (please note Downing College = E)

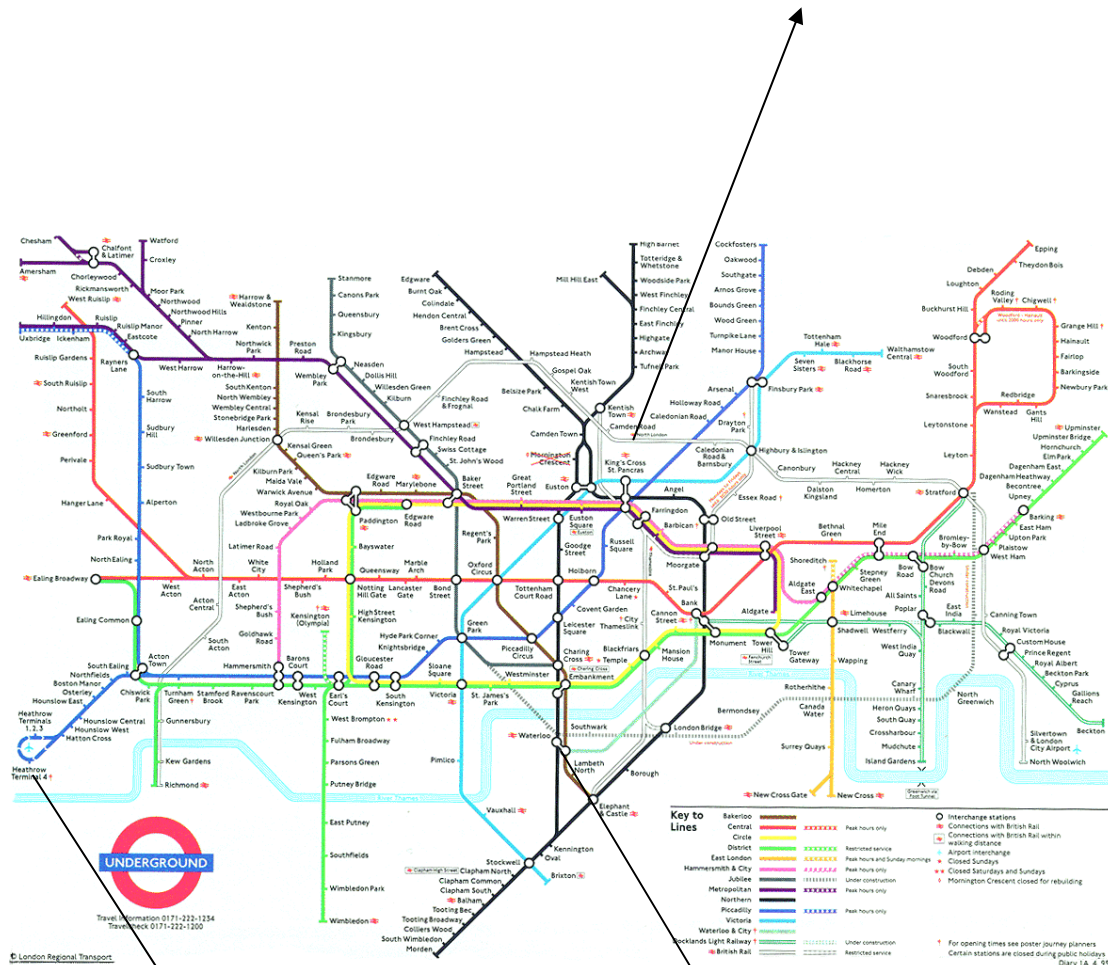


### Detailed Map of the Colleges



London Underground

King's Cross Station



Heathrow

Waterloo