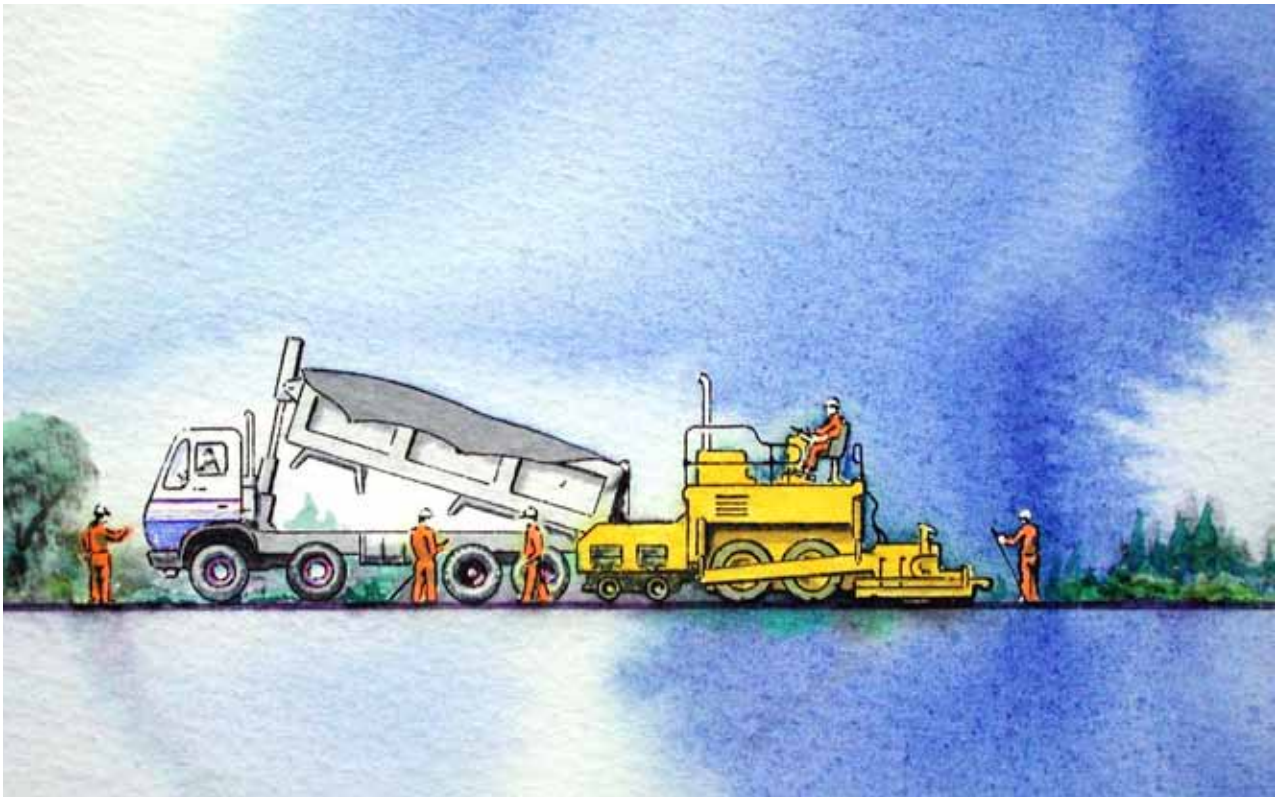


HIGHWAY ENGINEERING BY DISTANCE LEARNING



HIGHWAYS OPEN TECH

www.citybathcoll.ac.uk

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About Highways Open Tech

City of Bath College has provided highway engineering courses for both the public and private sector, nationally and internationally, for over 20 years.

- Qualifications are gained by studying Distance Learning materials with no examinations.
- All assessment is by assignment or project work.
- Courses can be started at any time and fitted in around full-time work.
- Students are allocated an industry-based tutor.

Enrolment includes:

College registration
Personal programme of study
A study guide (new students)
A student guide (new students)
Guidance and counselling
Complete course materials
Tuition by telephone, post, fax or e-mail
Assessment by assignment(s)
Marking and feedback on assignment(s)
Record of achievement
Certificate on completion

Qualifications

Who can use Highways Open Tech?

Highways Open Tech courses are for anyone working, or planning to work, in the highways industry. Our advisors can help you choose the programme to meet your needs.

How does Highways Open Tech work?

Highways Open Tech uses distance learning packages in a similar way to the Open University and no attendance at a college is necessary. Students may enrol at any time and study at their own speed at home or work. Students can take up to two academic years to complete a full course and up to one academic year for a short course.

Who will help me?

- At City of Bath College, the Distance Education Unit will administer your course and provide guidance.
- You will be allocated an industry based expert tutor, aware of the day-to-day work of students in their chosen field of study.
- Students are also encouraged to nominate a local tutor or mentor through their employer.

How can I obtain qualifications with Highways Open Tech?

There is a wide range of options open to students. On the successful completion of a course, students will receive a Highways Open Tech Certificate issued by the City of Bath College - a nationally recognised qualification.

Other qualifications include both single and grouped courses certificated by BTEC (Business & Technology Education Council) that can be used as a part of the qualifying process for professional registration with the Engineering Council.

Grouped courses (foundation and full specialist)

Highways Open Tech courses can be grouped together and certificated through BTEC. The qualifications gained by this method can be used as part of a professional development programme to gain registration with the Engineering Council.

Entry Requirements

Highways Open Tech is open to everyone, from those with no formal qualifications to those who may be graduate engineers. Those who enrol are advised that they will need to commit themselves to a very significant study effort. Recent study experience is not necessary however, as we provide Study and Student Guides.

Assessment and Certification

All Highways Open Tech courses come complete with assessment and certification and students are provided with full tutorial support from our panel of expert tutors. Highways Open Tech is widely recognised as Britain's top distance learning system for the highways industry, and a Highways Open Tech Certificate of success is a valuable independent proof of determination and competence.

Qualifications

Whatever your individual, personal reason for choosing a Highways Open Tech course, we can guarantee that the Highways Open Tech route provides the most effective method of obtaining nationally recognised qualifications in the highways industry.

Registration with BTEC

Highways Open Tech has registered the Foundation course and all Full Specialist courses with BTEC. Students successfully completing these courses will receive a Certificate of Achievement for each course completed.

Individual certificates can be grouped with a project to give a BTEC Level 4 Professional Diploma in Civil Engineering, which can be used to gain registration with the Engineering Council as an Engineering Technician (ENG TECH). This Diploma also provides you with credits towards the package needed to meet I Eng entry level with IHE.

BTEC Professional Diploma (Civil Engineering)



For mature students, City of Bath College Distance Education Unit runs the BTEC Level 4 Professional Diploma Programme. A 60-hour project, Highway Technology and Highway Maintenance are required plus two courses chosen from: Highway Legislation and Administration, Highway Materials and Testing, Traffic Planning and Transport Management, Estimating and Costing and Highway Design.

The total time to study a BTEC Professional Diploma (PD) is the sum of the individual courses chosen; maximum time 760 hours. UK residents pay for the course fees only. You will need to add postage and packing costs if you live outside the UK.

Engineering Council Qualification

The BTEC PD can be used as Route B to Eng Tech. Route B is a combination of part-qualification and part-mature candidate route with a structured form of Professional Review using Engineering Council forms held at the work place.

Highway Technology

The Foundation Course

The foundation course will give you a general introduction to Highway Technology. It is clearly written and easy to understand, even if you have no experience of highways.

The subjects it covers

- Responsibility for public highways
- Investigation and design of highways
- Ground investigation
- Introduction to safety
- Planning and design of earthworks
- Earthworks methods and plant
- Principles of drainage
- Subsoil drainage
- Surface water drainage
- Pavement design
- Sub-bases and roadbases
- Bituminous materials
- Surfacing
- Quality control of surfacing
- Rigid pavements
- Footways
- Signs and markings

The courses are complete teaching materials in themselves. They refer to standard authorities such as Euronorms (EN) and Highways Agency publications. Highway Technology includes a 15 minute DVD - The Riding Surface.

Study hours

Depending on your experience and other commitments, this course will take between 170 and 220 hours of study to complete.

Assessment and Certification

A BTEC Certificate of Achievement and City of Bath of College Certificate are awarded on successful completion of four assignments. There is no examination.

Course Code: Q7HTD4/OL11

Fee: £545

Highway Materials and Testing

A Full Specialist Course

The course objective is to provide a comprehensive study of ground investigation, bituminous materials, carriageway faults and remedies, concrete and concrete products.

The subjects it covers

- Introduction to highway materials and testing
- Principles of ground investigation
- Investigation and sampling
- Principal soil tests
- Roadstones and aggregates
- Bituminous binders
- Bituminous materials
- Carriageway assessment and surfacing
- Bituminous surfacing
- Surface dressing
- Concrete design and production
- Design and manufacture of concrete products
- Changes in highways materials and testing

The course is self-contained and extends the foundation course Highway Technology for those wishing to study the subject in more depth. They refer to standard authorities such as Euronorms (EN) and Highways Agency publications. Highway Materials and Testing includes a 30 minute DVD - Testing Concrete Materials.

Study hours

Depending on your experience and other commitments, this course will take between 100 and 200 hours of study to complete.

Assessment and Certification

A BTEC Certificate of Achievement and City of Bath of College Certificate are awarded on successful completion of four assignments. There is no examination.

Course Code: Q7MTD4/OL11

Fee: £545

Highway Maintenance

A Full Specialist Course

The course objective is to provide a comprehensive study of all aspects of the maintenance of highways, including the inspection and measurement of the condition of roads, the maintenance of flexible roads, rigid roads, footways, signs and markings, highway structures and the problems of cyclic maintenance and emergency works. .

The subjects it covers

- Maintenance codes of practice
- Designing for maintenance
- Carriageway assessment and condition surveys
- Maintenance rating systems
- Maintenance personnel
- Flexible roads: faults, causes and remedies
- Flexible roads: planning and organisation of surface dressing
- Flexible roads: the process of surface dressing
- Flexible roads: treatment of faults in surface dressing
- Flexible roads: resurfacing
- Flexible roads: recycling
- Flexible roads: patching and reinstatement
- Flexible roads: reconstruction
- Rigid roads: faults and causes
- Rigid roads: inspection
- Rigid roads: surface repairs
- Rigid roads: joint repairs
- Rigid roads: structural repairs
- Rigid roads: routine maintenance
- Footways
- Defects and repairs of signs and markings
- Highway structures: components
- Highway structures: inspection
- Highway structures: routine maintenance
- Highway structures: construction and major maintenance
- Cyclic maintenance
- Emergency works
- Winter maintenance

The course is self-contained and extends the foundation course Highway Technology for those wishing to study the subject in more depth.

Study hours

Depending on your experience and other commitments, this course will take between 150 and 250 hours of study to complete.

Assessment and Certification

A BTEC Certificate of Achievement and City of Bath of College Certificate are awarded on successful completion of four assignments. There is no examination.

Highway Design

A Full Specialist Course

The course is for students who have a background knowledge of highways and mathematics. Its objective is to give guidance and practice in the principles of good highway design. Emphasis is placed on efficiency and safety of design within the national recommendations of the Highway Link Design. The combined effects of physical construction with traffic management are explored. Manual calculations are explained and demonstrated, and the course describes the use of appropriate computer programs in highway design. .

The subjects it covers

- Introduction to the elements of highway design
- Horizontal alignment
- Vertical alignment
- Priority junctions
- Roundabouts
- Traffic signals

The course is self-contained. It is designed to offer a suitable level of study to those likely to be involved in the theory and practice of highway design, in the preparation and design of schemes and in traffic management.

Study hours

Depending on your experience and other commitments, this course will take between 150 and 250 hours of study to complete.

Assessment and Certification

A BTEC Certificate of Achievement and City of Bath of College Certificate are awarded on successful completion of four assignments. There is no examination.

Course Code: Q7HDD4/OL11

Fee: £545

The Project

To complete the professional qualification you will need to do a work-based project of your own choosing. You will be given guidance in your choice and expert supervision in your research and planning. There is also a detailed Project Guide for you to refer to. Once you have completed your first draft, your tutor will advise and comment on the document, so that your final work is the best you can produce.

Study Hours: Approximately 60 hours

Assessment: Graded on the final presentation.

Course Code: Q7HPD4/OL11

Fee: £180

Estimating and Costing

A Full Specialist Course

The course objective is to provide a practical, working knowledge of estimating and costing for those working in the fields of civil engineering design, construction and maintenance. The relevant theoretical principles and how they are applied to highway design, construction and maintenance are explained clearly.

There are two courses available as there are two recognised methods of estimating and costing.

One course deals with the Method of Measurement for Highway Works (MMHW). This is the method used within highway authorities and government funded schemes. The other course deals with the Civil Engineering Standard Method of Measurement (CESMM) and is used on civil engineering construction contracts by practising engineers and surveyors.

The subjects it covers

- Estimating quantities of materials
- Estimating labour requirements
- Estimating plant requirements
- Assessment of costs
- Method of measurement
- Bill of quantities
- Schedule of rates
- Construction contracts
- Cost control
- Computer applications

The course provides practical, workaday calculations in the form required by the industry in practice.

Study hours

Depending on your experience and other commitments, this course will take between 100 and 200 hours of study to complete.

Assessment and Certification

A BTEC Certificate of Achievement and City of Bath of College Certificate are awarded on successful completion of four assignments. There is no examination.

Estimating and Costing: CESMM
Course Code: Q7ESD4/OL11 Fee: £545

Estimating and Costing: MCDHW
Course Code: Q7EMD4/OL11 Fee: £545

Highway Legislation and Administration

A Full Specialist Course

The course objective is to provide a comprehensive study of the main legal and administrative requirements impinging on the management of highways, both as requirements and in terms of good practice.

The course is a must for all those with management or administrative responsibilities in the highways industry.

The subjects it covers

The law in the United Kingdom
Health and safety at Work Act
Further regulations
Environmental Management
Public Health
Control of pollution
Refuse disposal
Transport and traffic
Introduction to the Highways Act
Highways, highway authorities & statutory undertakers
Powers and duties of Highway authorities
Liability for highway maintenance
Organisation of highway maintenance
Introduction to the NRSWA 1991
NRSWA Part I New roads in England and Wales
NRSWA Part III Street works in England and Wales
NRSWA Part II New roads in Scotland
NRSWA Part IV Road works in Scotland

Study hours

Depending on your experience and other commitments, this course will take between 100 and 200 hours of study to complete.

Assessment and Certification

A BTEC Certificate of Achievement and City of Bath of College Certificate are awarded on successful completion of four assignments. There is no examination.

Course Code: Q7HLD4/OL11

Fee: £545

Transport Planning and Traffic Management

A Full Specialist Course

This enhanced new edition of our former Traffic Planning and Engineering course includes a new section on Sustainable Transport Initiatives. .

The subjects it covers

- Transport administration
- Traffic and growth
- Environmental aspects
- Sustainable transport
- Surveys, analysis and presentation
- Traffic modeling
- Accidents
- Design: roads, signals and junctions
- Parking
- Environmental improvements
- Other traffic management aspects
- Public consultation
- Orders, signs and markings
- Sustainable transport examples

Study hours

Depending on your experience and other commitments, this course will take between 100 and 200 hours of study to complete. This includes four assignments.

Assessment and Certification

A BTEC Certificate of Achievement and City of Bath of College Certificate are awarded on successful completion of four assignments. There is no examination.

Course Code: Q7TPD4/OL11

Fee: £545

Short Courses

The short courses are designed to provide training on specific aspects of the highways industry and are an efficient and effective way to acquire knowledge in a limited area.

The short courses have been extracted from full courses and after successful completion students will receive a Highways Open Tech Certificate. If at a later date, students choose to study a full course, it is not necessary to study again any part of the course that has been successfully studied in a short course on a previous occasion.

Students can enrol at any time of the year, and study with assessment and certification. The study time allowed for completion of these courses is one year.

Sustainable Transport Initiatives

This course covers the objectives of the Government White Paper A New Deal for Transport and helps the student to obtain a clear picture of the transport and environmental needs of the UK in the 21st century. The course examines the measures the Government is taking to provide a sustainable transport system; it looks at pilot schemes within the UK, methods used in other countries, the problems of congestion, speed and areas of conflict affecting road safety, and it considers local initiatives and national support mechanisms.

Subjects Covered

A New Deal for Transport
Safer Routes to Schools
Home Zones
Dealing with Speed
Quality Bus Partnerships
Local Strategies for Cycling and Walking

Assessment: 1 assignment

Study time: approximately 70 hours

Qualification: City of Bath College certificate is awarded on successful completion of the assignment. There is no examination.

Course Code: Q7STI4/OL11

Fee: £200

Short Courses

Responsibilities for Public Highways

The objective of this short course is to provide a broad introduction to the legal, financial and administrative responsibilities for the UK highway system.

Subjects Covered

Historical development of the UK highway system
Legal responsibilities for highways
Powers and duties for highway authorities
Financial responsibilities for highways

Assessment: 1 assignment

Study time: approximately 20 hours

Course Code: Q7RPH4/OL11

Fee: £150

Investigation and Design of Highway Works

The aim of this short course is to develop a basic understanding of the perception, investigation, preliminary design and final design of highways.

Subjects Covered

Stages of a project	Timescales
Identification of needs	Desire lines
Measurement of needs	Survey of current traffic
Route location	Cost benefit analysis
Investigation reports	Surveys
Outline schemes	Consultation
Geometric design factors design into construction	

Assessment: 1 assignment

Study time: approximately 30 hours

Course Code: Q7IDH4/OL11

Fee: £150

Ground Investigation

The objective of this course is to introduce the aims and methods of ground investigation and develop an understanding of the properties of engineering soils.

Subjects Covered

BS 5930
Planning and ground investigation for highway works
Geological exposures
Trial pits
Bore holes
Record keeping and reports
Soils

Assessment: 1 assignment

Study time: approximately 50 hours

Course Code: Q7GRD4/OL11

Fee: £150

Short Courses

Highway Design and Construction Safety

This short course introduces the importance of safety in the construction and highway industries. Develop an understanding of the principles of construction safety and promote the design and construction of safe roads.

Subjects Covered

Roadworks and danger at roadworks
Health and safety at work act 1974
The need for awareness and sources of danger on site
Safe pavement fabric
Control of traffic conflicts
Safety legislation
Signing for roadworks
Cost constraints
Signs and markings

Assessment: 1 assignment
Course Code: Q7HCS4/OL11

Study time: approximately 30 hours
Fee: £150

Earthworks for Highways

This short course provides a broad knowledge of earthworks theory and practice for highway construction

Subjects Covered

Earthworks terminology and practice	Stability of cuttings and embankments
Site clearance	Excavation
Loading	Hauling
Spreading and compaction	Topsailing
Selection of plant	

Assessment: 1 assignment
Course Code: Q7EAR4/OL11

Study time: approximately 50 hours
Fee: £150

The Highways Act 1980

The aim of this short course is to provide a thorough understanding of the content and application of the Highways Act to the management and maintenance of highways.

Subjects Covered

The Highways Act 1980
Highways and highway authorities
Powers and duties of highway authorities
Liability for highway maintenance
Organisation of highway maintenance

Assessment: 1 assignment
Course Code: Q7HAC4/OL11

Study time: approximately 75 hours
Fee: £200

Short Courses

Road Signs and Markings

The aim of this short course is to provide an introduction to traffic signs and markings as used permanently and to those used at roadworks.

Subjects Covered

Traffic management	Classification of signs
Road and sign lighting	Signs for use at roadworks
Road lamps, traffic cones and barriers	Permanent signs and markings
Road markings	Signing of roadworks
Traffic control	Recommended signing procedures

Assessment: 1 assignment
Course Code: Q7RDM4/OL11

Study time: approximately 30 hours.
Fee: £150

Resurfacing and Surface Dressing

The objective of this short course is to provide you with a thorough treatment of resurfacing and surface dressing projects. It is designed for students who do not need the breadth of topics covered in the Highway Maintenance course. In this course you will learn about the requirements and standards for the road surface, equipment for and organisation of resurfacing and surface dressing projects, the processes involved in resurfacing and surface dressing, as well as faults and how to correct them.

Subjects Covered

Introduction
Surface dressing
The process of surface dressing
Faults in surface dressing
Resurfacing

Assessment: 2 assignments
Course Code: Q7RSD4/OL11

Study time: approximately 75 hours
Fee: £250

Introduction to Highway Law

The aim of this course is to develop an understanding of the UK legal system as it affects highway law and of the application of various acts to the management of highways.

Subjects Covered

Acts of Parliament	Refuse disposal (Amenity) Act 1978
The law in Britain	Weeds
Public health	Transport and traffic
Control of pollution	Health and safety at work

Assessment: 2 assignments
Course Code: Q7IHL4/OL11

Study time: approximately 75 hours
Fee: £250



Highway Drainage

The aim of this course is to provide a thorough understanding of the effect of moisture on road construction and methods dealing with it in practice

Subjects Covered

Impermeability	Run-off and catchments
Moisture and road construction	Methods of sub-soil drainage
Disposal of sub-soil water	Surface water drainage
Topography	Chemical types
Location of gullies	Culverts
Sewers and pipes	Gullies and manholes

Assessment: 1 assignment
Course Code: Q7HDR4/OL11

Study time: approximately 75 hours.
Fee: £200

The New Roads and Street Works Act

The objective of this short course is to provide an understanding of the content and application of The New Roads and Street Works Act 1991 to the management of highways, excavations and reinstatements.

Subjects Covered

Background and origins of NRSWA 1991	NRSWA Part III: Street Works in England and Wales
The main aims for the NRSWA 1991	NRSWA Part II: New Roads in Scotland
Development of codes of practice	NRSWA Part IV: Road Works in Scotland
NRSWA Part I: New Roads in England and Wales	

Assessment: 1 assignment
Course Code: Q7NRS4/OL11

Study time: approximately 75 hours
Fee: £200

How to Enrol

Enrolment process

You can enrol at anytime - by post or fax. You will find the necessary forms and instructions accompanying this booklet. If not enclosed, please phone Mary-Anne Couzins on 01225 328690. When applying please make sure you send:

- The enrolment form - the whole form must be completed
- Any necessary supplementary forms
CO15 - Authority for Invoicing Fees
CO24 - Standing Order Mandate
- The payment for the fees due.

Age Limit

There is no age limit, but mature students or people already in the industry will benefit particularly from these courses.

Overseas Students

As the courses are by distance learning, the College is pleased to accept students outside the EU and overseas. There is an additional charge for postage.

Services for Employers

We can invoice employers if Form CO15 is completed.

If requested we can keep you informed of your employees progress.

If you are enrolling 6 or more students on full courses, please contact us and will be able to negotiate a group discount.

Please note that course fees may be subject to change without prior notice.

Additional Information

Professional Institutions

For the latest information on membership and requirements, please contact Institutions directly:

BTEC Student Services
Edexcel Customer Service
190 High Holborn
London
WC1V 7BH
Tel: 0844 576 0026
www.edexcel.com

Institute of Asphalt Technology (IAT)
Head Office
Paper Mews Place
290 High Street
Dorking
RH4 1QT
Tel: 01306 742792
Website: www.instofasphalt.org.uk

The Institution of Civil
Engineers (ICE)
One Great George Street
Westminster
London
SW1P 3AA
Tel: 020 7665 2216
www.ice.org.uk

The Engineering Council
246 High Holborn
London
WC1V 7EX
Tel: 020 3206 0500
www.engc.org.uk

The Institute of Highway
Engineers (IHE)
De Morgan House
58 Russell Square
London
WC18 4HS
Tel: 020 7436 7487
www.theihe.org

The Bernard Butler Trust

The Bernard Butler Trust has kindly sponsored the new On-line Course Highway Safety. The Trust offers grants to individual students pursuing engineering qualifications. Please contact the Trust directly for information and conditions of eligibility:

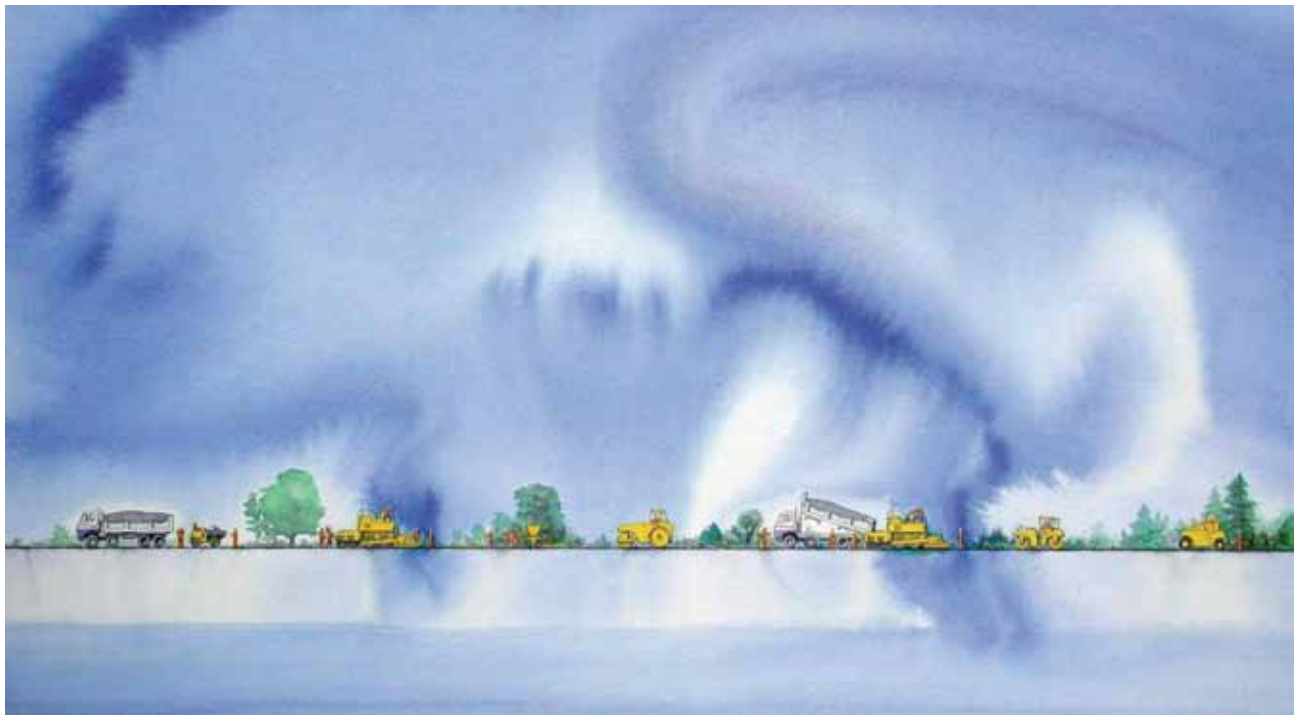
The Secretary
Bernard Butler Trust
37 Oasthouse Drive
Fleet
Hampshire
GU51 2UL
www.iwhm-trust.co.uk

The Distance Education Unit welcomes new tutors to join its team supporting the students. We are particularly interested in hearing from professionals seeking new challenges and/or those wanting the chance to enhance their own career opportunities. Please contact or send CV to Mary-Anne Couzins, details are on back page of this brochure.

Course Information Helpline:
Tel: (01225) 328690 Fax: (01225) 444213
International Tel: +44 1225 328690
International Fax: +44 1225 444213

E-Mail: couzinsma@citybathcoll.ac.uk

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Highways Open TechCity of Bath College
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Maximise Your Training Potential