Digest 486 Reducing the effects of climatic change by new design
Summary This presentation explores the existing industry in known study design or mitigate the effects of climatic change.
Good Repair Guides
Guideline on the specific location, diagnosis and repair of defects. Repair and maintenance of FRP structures (BR 434) Site safe recommendations for the inspector, repairer and FRP producers. Check repair techniques and given together with their bibliography.
Information Papers
The latest BRE research information and how to apply it.
IP544 Wood-plastic composite: market drivers and opportunities in Europe
An audit of UK heating and innovation (FB 84)
Reviews of the trend for using wood-plastic composites in UK the latest understood as a material for innovation; E41.
Effective use of fibre reinforced polymer materials in construction (IP 4/04)
Build your commercial and investment (IP 4/04)
Enables the effective specification and application of the fibre reinforced polymer materials (FRP) to various construction materials.
Digests
Concrete: review of building technology.
Digests 480 Wood-plastic composites and plastic lumber
Wood-plastic composite, which combines wood with thermoplastics and/or rubber or plastic, usually made from recycled plastics with a bonded material, can be used in numerous structural applications.
Digests 481 Timber bridges
Timber offers a multitude of possible bridge forms ranging from simple beams to glue-laminated arches, trusses and space frames. Timber is increasingly used in Europe for both pre-cast and cast-in-situ concrete.
Digests 482 Sustainable buildings – why become sustainable?
Three-day conference explores the benefits of low-carbon buildings and current practice.
Digests 483 Wind loads on temporary stage decks
Digests 484 Backprop forces and deflections in flat slabs: practical application at St George Wharf (BR 462)
Dialysis of the latest BRE research information and how to apply it. These publications are available from:
Information Papers
- BRE Training, 01923 664800, train@bre.co.uk, or visit www.bre.co.uk/training
- Contact: Camargue PR, 01242 577 277
- For information on the above training courses contact
- For more information about publishing or advertising research, visit www.research4.co.uk
- Email resource04@bre.co.uk or visit www.resource04.com

BREconnect is a subscription scheme that gives unrivalled access to BRE’s expertise on buildings, construction, energy, environment, and risk.
For the latest and BRE Connect subscriber resources:
- on BRE Connect, any publication by BRE, Guide Repair Papers and Information Papers such as those listed on this page – installing at over 10,000 publications per year. Each publication by BRE is available at a special price to BRE Connect subscribers.
- at a REDUCER each year containing over 300 BRE publications this year is still limited – includes access to an extensive range of tools and services – such as our subscription to an extensive range of BRE Events. BRE Events are accredited to Continuous Professional Development (CPD).
- See Page 6 for more information.
- Claire Allen, 01923 664761, Email ClaireAllen@emap.com

Diary of fortcoming events
11-12 May in London
Sustainable buildings – why become sustainable?
Three-day conference explores the benefits of low-carbon buildings and current practice.

BREbookshop.com
For the latest BRE bookshop information and how to apply it.
- www.brebookshop.com
- BRE Training, 01923 664800, train@bre.co.uk, or visit www.bre.co.uk/training
- For more information about publishing or advertising research, visit www.research4.co.uk
- Email resource04@bre.co.uk or visit www.resource04.com

Training courses
4-5 May 2004 at BRE, Watford
Ecobuild, assessor training course
Two-day training course to become an Ecobuild assessor. Contact: Claire Allen, 01923 664761, Email ClaireAllen@emap.com
12, 19, 26 May and 5, 12, 19, 26, 30 June 2004 at BRE, Watford
BRE Training
- BRE Training, 01923 664800, train@bre.co.uk, or visit www.bre.co.uk/training
- For information on the above training courses contact
- For more information about publishing or advertising research, visit www.research4.co.uk
- Email resource04@bre.co.uk or visit www.resource04.com

BRE Connect
BRE Connect is a subscription scheme that gives unrivalled access to BRE’s expertise on buildings, construction, energy, environment, and risk.
For the latest and BRE Connect subscriber resources:
- on BRE Connect, any publication by BRE, Guide Repair Papers and Information Papers such as those listed on this page – installing at over 10,000 publications per year. Each publication by BRE is available at a special price to BRE Connect subscribers.
- at a REDUCER each year containing over 300 BRE publications this year is still limited – includes access to an extensive range of tools and services – such as our subscription to an extensive range of BRE Events. BRE Events are accredited to Continuous Professional Development (CPD).
- See Page 6 for more information.
- Claire Allen, 01923 664761, Email ClaireAllen@emap.com

For the latest and BRE Connect subscriber resources:
- on BRE Connect, any publication by BRE, Guide Repair Papers and Information Papers such as those listed on this page – installing at over 10,000 publications per year. Each publication by BRE is available at a special price to BRE Connect subscribers.
- at a REDUCER each year containing over 300 BRE publications this year is still limited – includes access to an extensive range of tools and services – such as our subscription to an extensive range of BRE Events. BRE Events are accredited to Continuous Professional Development (CPD).
- See Page 6 for more information.
- Claire Allen, 01923 664761, Email ClaireAllen@emap.com

For the latest and BRE Connect subscriber resources:
- on BRE Connect, any publication by BRE, Guide Repair Papers and Information Papers such as those listed on this page – installing at over 10,000 publications per year. Each publication by BRE is available at a special price to BRE Connect subscribers.
- at a REDUCER each year containing over 300 BRE publications this year is still limited – includes access to an extensive range of tools and services – such as our subscription to an extensive range of BRE Events. BRE Events are accredited to Continuous Professional Development (CPD).
- See Page 6 for more information.
- Claire Allen, 01923 664761, Email ClaireAllen@emap.com

For the latest and BRE Connect subscriber resources:
- on BRE Connect, any publication by BRE, Guide Repair Papers and Information Papers such as those listed on this page – installing at over 10,000 publications per year. Each publication by BRE is available at a special price to BRE Connect subscribers.
- at a REDUCER each year containing over 300 BRE publications this year is still limited – includes access to an extensive range of tools and services – such as our subscription to an extensive range of BRE Events. BRE Events are accredited to Continuous Professional Development (CPD).
- See Page 6 for more information.
- Claire Allen, 01923 664761, Email ClaireAllen@emap.com

For the latest and BRE Connect subscriber resources:
- on BRE Connect, any publication by BRE, Guide Repair Papers and Information Papers such as those listed on this page – installing at over 10,000 publications per year. Each publication by BRE is available at a special price to BRE Connect subscribers.
- at a REDUCER each year containing over 300 BRE publications this year is still limited – includes access to an extensive range of tools and services – such as our subscription to an extensive range of BRE Events. BRE Events are accredited to Continuous Professional Development (CPD).
- See Page 6 for more information.
- Claire Allen, 01923 664761, Email ClaireAllen@emap.com

For the latest and BRE Connect subscriber resources:
- on BRE Connect, any publication by BRE, Guide Repair Papers and Information Papers such as those listed on this page – installing at over 10,000 publications per year. Each publication by BRE is available at a special price to BRE Connect subscribers.
- at a REDUCER each year containing over 300 BRE publications this year is still limited – includes access to an extensive range of tools and services – such as our subscription to an extensive range of BRE Events. BRE Events are accredited to Continuous Professional Development (CPD).
- See Page 6 for more information.
- Claire Allen, 01923 664761, Email ClaireAllen@emap.com

For the latest and BRE Connect subscriber resources:
- on BRE Connect, any publication by BRE, Guide Repair Papers and Information Papers such as those listed on this page – installing at over 10,000 publications per year. Each publication by BRE is available at a special price to BRE Connect subscribers.
- at a REDUCER each year containing over 300 BRE publications this year is still limited – includes access to an extensive range of tools and services – such as our subscription to an extensive range of BRE Events. BRE Events are accredited to Continuous Professional Development (CPD).
- See Page 6 for more information.
Renewables join the mainstream:

Building designers and specifiers can now calculate the impact on performance levels and our link-

said John Frankiewicz. ‘It can have a crucial

important areas for the future of our industry,’

key element in our strategy of imbedding

relationship with Willmott Dixon as another

clients to BRE’s R&D skills.’

strength in this area.’

The findings of the project will be published

Email dunstera@bre.co.uk

Tackling the ‘radon issue’ in the

property market

Radon is the latest in a long list of building

issues that need to be considered as part of a property purchase. A new publication –

buying homes in radon-affected areas – provides practical advice on the subject for those involved in property transactions.

Radon is a naturally occurring radioactive gas. In some parts of the UK the levels of radon are higher than average, and it is

allowed to build up inside buildings. It can increase the occupant’s risk of developing lung cancer. For many people it is

only when they move into a radon-affected area that they become aware of the issue.

The National Radiological Protection Board has identified the highest risks in Cornwall, Devon, Dorset, Northumberland and Cumbria – but many other areas of the UK are also affected by above average levels of radon.

Since the mid 1990s the UK Government has been advising the public of the health risks associated with radon and how to

reduce the radon risk in homes and buildings. For many people it is the time to follow the advice of the structure, pre-empt guidance on the most appropriate repair strategy, and identify the most cost-effective way to meet the client’s service life requirement in mind the nature of the structure.

The model is supported by a guidance document that:
- assesses the process by which concrete repairs are procured and highlights the pitfalls and benefits of typical contractual arrangements
- provides a framework of developments in the new European Standards which influence the selection of repair techniques
- presents guidance on the appropriateness of repair techniques, including:
  - patch repair
  - electrochemical processes
  - concrete inhibitors
- surface treatments.

The web tool can be accessed at
http://projects.lae/ulceration/ulceration.html
For more information –
Kofi Abora 01923 664594
Email kofi@bre.co.uk

Web tool for selecting reinforced

concrete repair

The increased use of the concrete repair industry has led to many cases of concrete repair being undertaken in an uninstructed way. This has resulted in cases of inappropriate repair, maintenance and rehabilitation which needed further work.

To counter this problem, a Partners in Innovation (PI) project has brought together major clients, contractors, specialist engineers, material producers and experts in the construction processes, to develop an electronic, pilot-risk based web tool that will facilitate best practice in concrete repairs.

It provides guidance on the residual life of repair options selected.

The simplicity and flexibility of the web tool allows less experienced engineers, as well as experts to use a model that will predict the time to failure of the repair of the structure, pre-empt guidance on the most appropriate repair strategy, and identify the most cost-effective way to meet the client’s service life requirement in mind the nature of the structure.

The model is supported by a guidance document that:
- assesses the process by which concrete repairs are procured and highlights the pitfalls and benefits of typical contractual arrangements
- provides a framework of developments in the new European Standards which influence the selection of repair techniques
- presents guidance on the appropriateness of repair techniques, including:
  - patch repair
  - electrochemical processes
  - concrete inhibitors
- surface treatments.

The web tool can be accessed at
http://projects.lae/ulceration/ulceration.html
For more information –
Kofi Abora 01923 664594
Email kofi@bre.co.uk

Renewables join the mainstream:

Building designers and specifiers can now calculate the impact on performance levels and our link-

said John Frankiewicz. ‘It can have a crucial

important areas for the future of our industry,’

key element in our strategy of imbedding

relationship with Willmott Dixon as another

clients to BRE’s R&D skills.’

strength in this area.’

The findings of the project will be published

Email dunstera@bre.co.uk

Tackling the ‘radon issue’ in the

property market

Radon is the latest in a long list of building

issues that need to be considered as part of a property purchase. A new publication –

buying homes in radon-affected areas – provides practical advice on the subject for those involved in property transactions.

Radon is a naturally occurring radioactive gas. In some parts of the UK the levels of radon are higher than average, and it is

allowed to build up inside buildings. It can increase the occupant’s risk of developing lung cancer. For many people it is

only when they move into a radon-affected area that they become aware of the issue.

The National Radiological Protection Board has identified the highest risks in Cornwall, Devon, Dorset, Northumberland and Cumbria – but many other areas of the UK are also affected by above average levels of radon.

Since the mid 1990s the UK Government has been advising the public of the health risks associated with radon and how to

reduce the radon risk in homes and buildings. For many people it is the time to follow the advice of the structure, pre-empt guidance on the most appropriate repair strategy, and identify the most cost-effective way to meet the client’s service life requirement in mind the nature of the structure.

The model is supported by a guidance document that:
- assesses the process by which concrete repairs are procured and highlights the pitfalls and benefits of typical contractual arrangements
- provides a framework of developments in the new European Standards which influence the selection of repair techniques
- presents guidance on the appropriateness of repair techniques, including:
  - patch repair
  - electrochemical processes
  - concrete inhibitors
- surface treatments.

The web tool can be accessed at
http://projects.lae/ulceration/ulceration.html
For more information –
Kofi Abora 01923 664594
Email kofi@bre.co.uk

Web tool for selecting reinforced
concrete repair

The increased use of the concrete repair industry has led to many cases of concrete repair being undertaken in an uninstructed way. This has resulted in cases of inappropriate repair, maintenance and rehabilitation which needed further work.

To counter this problem, a Partners in Innovation (PI) project has brought together major clients, contractors, specialist engineers, material producers and experts in the construction processes, to develop an electronic, pilot-risk based web tool that will facilitate best practice in concrete repairs.

It provides guidance on the residual life of repair options selected.

The simplicity and flexibility of the web tool allows less experienced engineers, as well as experts to use a model that will predict the time to failure of the repair of the structure, pre-empt guidance on the most appropriate repair strategy, and identify the most cost-effective way to meet the client’s service life requirement in mind the nature of the structure.

The model is supported by a guidance document that:
- assesses the process by which concrete repairs are procured and highlights the pitfalls and benefits of typical contractual arrangements
First OHSAS 18001 certificate awarded

Argus Fire Protection Company Limited (contractor for the installation of fire detection and alarm system) has become the first company to achieve certification to OHSAS 18001 (Occupational Health and Safety Management System) through BRC Certifications.

This new standard gives requirements for an occupational health and safety management system so that organizations can ensure that their systems are in place to identify and manage the health and safety risks associated with work activities (not just the obvious hazards).

Einor Limited have been awarded the BREEAM Schools certification for the new £4 million Welshpool School.

BREEAM is a UK Government backed tool for the design and assessment of sustainable buildings. It is the most widely used such tool globally and has been adopted by developers, designers and constructors from the UK to China. It provides a means of evaluating sustainability by measuring the environmental impacts of a building throughout its life, from the design stage to the end of its life.

BREEAM was instigated by Sir Ifor (Ike) Jenkins, Chief Scientist at BRE and is the flagship of BRE’s research and advice programme. It has over 250000 buildings certified and 5000 new buildings certified every year.
Richard Moss reports.

Concrete innovations at St George Wharf

The construction of the St George Wharf development in London presented an ideal opportunity to apply innovative construction ideas.

Richard Moss reports.

Concrete innovations at St George Wharf

The construction of the St George Wharf development in London presented an ideal opportunity to apply innovative construction ideas.

Richard Moss reports.

Concrete innovations at St George Wharf

The construction of the St George Wharf development in London presented an ideal opportunity to apply innovative construction ideas.

Richard Moss reports.
Renewables join the mainstream

Manufacturers, power companies and government departments say that our homes and workplaces can generate their own power, and clients are beginning to ask for this ‘free’ energy. Renewables are on a roll, argues Melanie Thompson, and it’s time for the construction industry to respond.

The construction industry is notoriously slow to adapt to new challenges, but the past decade has brought some changes. The industry is becoming more market-led and is now listening to the marketplace and the other on their own futures should the bandwagon rolls right on by.

The ultimate objective is to create ‘low-carbon communities’ where the energy requirements of the building are fulfilled by renewables and low-carbon technologies. Integration in this context means that we must have energy solutions to individual homeowners, but we also work with architects, builders and local authorities. Prices are coming down and an added advantage is that these technologies are generally low maintenance and easier to use.

And even ‘new’ products are often based on tried and tested components. Renewables is a familiar business selling photovoltaics, wind technologies, wood energy and even small-scale hydro solutions to individual homeowners, but we also work with architects, builders and local authorities. Prices are coming down and an added advantage is that these technologies are generally low maintenance and easier to use.

For more information about exhibiting at or attending resource04, visit www.resource04.com. Email resource04@bre.co.uk or 01923 664531.

See also:
www.clear-skies.org
www.med.org
www.inec.org.uk
www.inreb.org
www.walesdcs.gov.uk
www.dulas.org.uk
www.resource04.com

BRE Watford
Innovative energy efficiency
www.resource04.com

www.bre.co.uk
Chinese Exports?

CE marking is bringing both new opportunities and challenges to UK construction product manufacturers and others in the construction industry.

Chinese Exports?

Chinese Exports?

Chinese Exports?

Chinese Exports?

Chinese Exports?

Chinese Exports?

Chinese Exports?

Chinese Exports?

Chinese Exports?
Ventilation in domestic basements

A basement can provide a useful extension of living space in a home, but raises particular ventilation issues, as Bridget Pierce explains.

Guidance for the ventilation of domestic basements is given in Approved Document: Basements for Dwellings, produced by the British Cement Association (BCA). The guidance forms part of the Building Regulations, and is intended to ensure that basements are well ventilated and provide a safe, healthy environment.

Modern dwellings often need the greater flexibility offered by the addition of a basement, to meet the potential under-ventilation in spring and autumn, the basement may still be under-ventilated in the spring and autumn as well as the winter months. This would not be considered together with the purposes provided during summer, as there is the potential to simply draw air in from the floor above rather than from outside.

In addition, there should be a 50mm gap under internal doors (or equivalent opening) to allow airflows when the doors are closed. The ventilation provisions in the Basements Approved Document were assessed by developing computer models of typical basements and simulating the building airflow movement. The computer models were constructed using BREEZE, a software package that predicts the air flows and contaminant movement in buildings.

Basements with single and multiple exposed sides (in the latter case, opposing sides) were modelled. Ventilation provisions were introduced according to the Basements Approved Document, with air leakage allowed through the building fabric. Leakage paths were also introduced to allow airflow directly between the basement and building above. Wind pressure coefficient data was derived based on wind tunnel measurements using a 1/80th scale model of the basement dwelling (shown in the photograph). A wide range of environmental conditions was considered.

A design target was set so that the background ventilation rate should be between 0.5 and 0.75 air changes per hour. This keeps indoor humidity and other pollutants to acceptable levels while minimising heat loss.

The main conclusions from the work are as follows:

- The airflow path between the basement and the dwelling above is particularly important. This provides stack ventilation through the difference in temperatures between the internal and external air.
- The ventilation provisions in the Basements Approved Document provide sufficient background ventilation when there is no airflow path between the basement and the dwelling above.

In practice, there will be some leakage between the basement and the dwelling above. Whether this leakage is sufficient will depend on the construction of the basement.

- Even with an airflow path between the basement and dwelling above, the basement may still be under-ventilated in the spring and autumn periods, when the difference between internal and external temperatures is lower. Opening windows in the basement may alleviate problems of under-ventilation to a certain extent.

Based on these conclusions the following recommendations are made:

- A purpose-provided airflow path of approximately 2000mm² per 10m² of floor area should exist between the basement and the dwelling above.
- When accommodation at basement level is separate from the upper storey, in order to meet Approved Document B (Fire Safety), special care is necessary in providing any purpose-provided airflow path between the basement level and the floors above. In this case, in situ or mechanical fire dampers should be used to maintain the integrity of the fire separation between floors.

- To meet the potential under-ventilation in spring and autumn, extract ventilation in west rooms in the basement may be employed. In particular, mechanical ventilation could be used during the warmer months. This would need to be considered together with the purpose-provided opening between floors, as there is the potential to simply draw air in from the floor above rather than from outside.

The ventilation provisions in the Basements Approved Document are intended to safeguard against under-ventilation in spring and autumn, and the potential for biological hazards, the recommendations have been assessed by a computer programme. The model predicts the airflows and contaminants movement in buildings.

Sustainable design – from best practice to common practice

It is now possible for building designers and specifiers to calculate the whole life costs of buildings, and to undertake whole life environmental impact assessments, during the design process.

Building designers can now easily calculate a building’s whole life costs and environmental impacts, during the design process.

Invent2

The tool is available in two versions, the:

- Invent2 Lite has a flexible pricing structure aimed to suit both large and small practices. Purchasers can select an introductory one-month licence from £99, a single user annual licence, or annual multi-user licence. Discounts are available on existing customers and for an annual BSS (Building Services) licence.

A demonstration version and further details can be found at http://www.bre.co.uk/envest2
Professional First prize winner
- Paul Jones, Stephen Baty, David McKenna, Peter Beacock – Lecturers in Architecture at Northumbria University’s School of the Built Environment.

First prize – £10,000 plus the opportunity for design team to present winning concept to the Co-operative Insurance Society.

Entrants’ description – ‘The average UK meal has travelled over 2000 miles from farm to dinner plate. Fifteen million tonnes of household waste is disposed of in landfill sites each year. UK residents use one fifth of their considerable total energy consumption travelling to work.

How can the city develop to address these issues and still hold on to its vibrancy and excitement? We propose an infrastructure that promotes sustainable living.

Industrial business retail housing is stacked in high density blocks. Travel distances from home to work are minimised. Waste produced is recycled, recycled or used to power the central heating and power system. As much food as possible will be produced on-site using all available surfaces.

Construction methods are intended to be low cost and energy efficient and viable for self building and adaptability.

Professional Second prize winner
- Percy Conner Architects & Leavit Barnstein Architects, London

Entrants’ description – ‘We have explored the complex balance of use that will form new relationships within the city, creating an evolving urban organism. No sustainable strategy can have longevity without the formation of a new idea economic and social infrastructure.

We are exploring a new form of urban landscape, a mediator between the heterogeneous grids of the city and the topographical, topography of the old and the Pennine things beyond. By working with the natural geometry the site becomes malleable and adaptable, an emotive and sensory event. Simultaneously green and building, the new urban surface is a direct result of topographical, scale and infrastructure analysis. Sustainability is intrinsically linked to the architectural form, not just rationalised or applied, the aesthetic is urban in nature responding to urban resilience and changing demographics.

Student commended
- Thomas Kosibaj, Josh Chang, Tyson Gibb, Oregon, USA

Entrants’ description – ‘The driving concept of our proposal is the creation in use development promoting open green spaces.

Our new form of power is combined with further strategies involving onsite food production, water recycling and adaptive heating and cooling.

These are realised in a new form of mixed-use development promoting open green spaces.

Student commended
- Sam Bronhas, Jay Curt, Rich Hensaw, Fiona Scott, Cht Dickens, Sam Tuddal, Rufus Willis (The Arcola Initiative), London

Entrants’ description – ‘This project is an attempt to utilise an edible city to challenge the city’s inevitable consumption rate – which creates an ecological footprint up to a hundred times its own size. Our vision for sustainability takes urban agriculture as its starting point. Urban agriculture provides an opportunity to knit community and landscape to create a meaningful metropolitan mix inclusive rather than exclusive of nature. With food as the theme, the growth, nurture, production, distribution, consumption and disposal of food provides a framework for programming a site that will evolve over time.

This City is not a gated community of brown rice and micro-munchies – the development moves beyond the well-worn ‘model village’. Through the market square, public realm and open spaces your own, it provides not only an example but also a resource for the surrounding area.

Professional Second prize winner
- Percy Conner Architects & Leavit Barnstein Architects, London

Entrants’ description – ‘We have explored the complex balance of use that will form new relationships within the city, creating an evolving urban organism. No sustainable strategy can have longevity without the formation of a new idea economic and social infrastructure.

We are exploring a new form of urban landscape, a mediator between the heterogeneous grids of the city and the topographical, topography of the old and the Pennine things beyond. By working with the natural geometry the site becomes malleable and adaptable, an emotive and sensory event. Simultaneously green and building, the new urban surface is a direct result of topographical, scale and infrastructure analysis. Sustainability is intrinsically linked to the architectural form, not just rationalised or applied, the aesthetic is urban in nature responding to urban resilience and changing demographics.

Student commended
- Thomas Kosibaj, Josh Chang, Tyson Gibb, Oregon, USA

Entrants’ description – ‘The driving concept of our proposal is the creation in use development promoting open green spaces.

Our new form of power is combined with further strategies involving onsite food production, water recycling and adaptive heating and cooling.

These are realised in a new form of mixed-use development promoting open green spaces.

Student commended
- Sam Bronhas, Jay Curt, Rich Hensaw, Fiona Scott, Cht Dickens, Sam Tuddal, Rufus Willis (The Arcola Initiative), London

Entrants’ description – ‘This project is an attempt to utilise an edible city to challenge the city’s inevitable consumption rate – which creates an ecological footprint up to a hundred times its own size. Our vision for sustainability takes urban agriculture as its starting point. Urban agriculture provides an opportunity to knit community and landscape to create a meaningful metropolitan mix inclusive rather than exclusive of nature. With food as the theme, the growth, nurture, production, distribution, consumption and disposal of food provides a framework for programming a site that will evolve over time.

This City is not a gated community of brown rice and micro-munchies – the development moves beyond the well-worn ‘model village’. Through the market square, public realm and open spaces your own, it provides not only an example but also a resource for the surrounding area.

Professional Second prize winner
- Percy Conner Architects & Leavit Barnstein Architects, London

Entrants’ description – ‘We have explored the complex balance of use that will form new relationships within the city, creating an evolving urban organism. No sustainable strategy can have longevity without the formation of a new idea economic and social infrastructure.

We are exploring a new form of urban landscape, a mediator between the heterogeneous grids of the city and the topographical, topography of the old and the Pennine things beyond. By working with the natural geometry the site becomes malleable and adaptable, an emotive and sensory event. Simultaneously green and building, the new urban surface is a direct result of topographical, scale and infrastructure analysis. Sustainability is intrinsically linked to the architectural form, not just rationalised or applied, the aesthetic is urban in nature responding to urban resilience and changing demographics.

Student commended
- Thomas Kosibaj, Josh Chang, Tyson Gibb, Oregon, USA

Entrants’ description – ‘The driving concept of our proposal is the creation in use development promoting open green spaces.

Our new form of power is combined with further strategies involving onsite food production, water recycling and adaptive heating and cooling.

These are realised in a new form of mixed-use development promoting open green spaces.

Student commended
- Sam Bronhas, Jay Curt, Rich Hensaw, Fiona Scott, Cht Dickens, Sam Tuddal, Rufus Willis (The Arcola Initiative), London

Entrants’ description – ‘This project is an attempt to utilise an edible city to challenge the city’s inevitable consumption rate – which creates an ecological footprint up to a hundred times its own size. Our vision for sustainability takes urban agriculture as its starting point. Urban agriculture provides an opportunity to knit community and landscape to create a meaningful metropolitan mix inclusive rather than exclusive of nature. With food as the theme, the growth, nurture, production, distribution, consumption and disposal of food provides a framework for programming a site that will evolve over time.

This City is not a gated community of brown rice and micro-munchies – the development moves beyond the well-worn ‘model village’. Through the market square, public realm and open spaces your own, it provides not only an example but also a resource for the surrounding area.

Professional Second prize winner
- Percy Conner Architects & Leavit Barnstein Architects, London

Entrants’ description – ‘We have explored the complex balance of use that will form new relationships within the city, creating an evolving urban organism. No sustainable strategy can have longevity without the formation of a new idea economic and social infrastructure.

We are exploring a new form of urban landscape, a mediator between the heterogeneous grids of the city and the topographical, topography of the old and the Pennine things beyond. By working with the natural geometry the site becomes malleable and adaptable, an emotive and sensory event. Simultaneously green and building, the new urban surface is a direct result of topographical, scale and infrastructure analysis. Sustainability is intrinsically linked to the architectural form, not just rationalised or applied, the aesthetic is urban in nature responding to urban resilience and changing demographics.

Student commended
- Thomas Kosibaj, Josh Chang, Tyson Gibb, Oregon, USA

Entrants’ description – ‘The driving concept of our proposal is the creation in use development promoting open green spaces.

Our new form of power is combined with further strategies involving onsite food production, water recycling and adaptive heating and cooling.

These are realised in a new form of mixed-use development promoting open green spaces.

Student commended
- Sam Bronhas, Jay Curt, Rich Hensaw, Fiona Scott, Cht Dickens, Sam Tuddal, Rufus Willis (The Arcola Initiative), London

Entrants’ description – ‘This project is an attempt to utilise an edible city to challenge the city’s inevitable consumption rate – which creates an ecological footprint up to a hundred times its own size. Our vision for sustainability takes urban agriculture as its starting point. Urban agriculture provides an opportunity to knit community and landscape to create a meaningful metropolitan mix inclusive rather than exclusive of nature. With food as the theme, the growth, nurture, production, distribution, consumption and disposal of food provides a framework for programming a site that will evolve over time.

This City is not a gated community of brown rice and micro-munchies – the development moves beyond the well-worn ‘model village’. Through the market square, public realm and open spaces your own, it provides not only an example but also a resource for the surrounding area.'