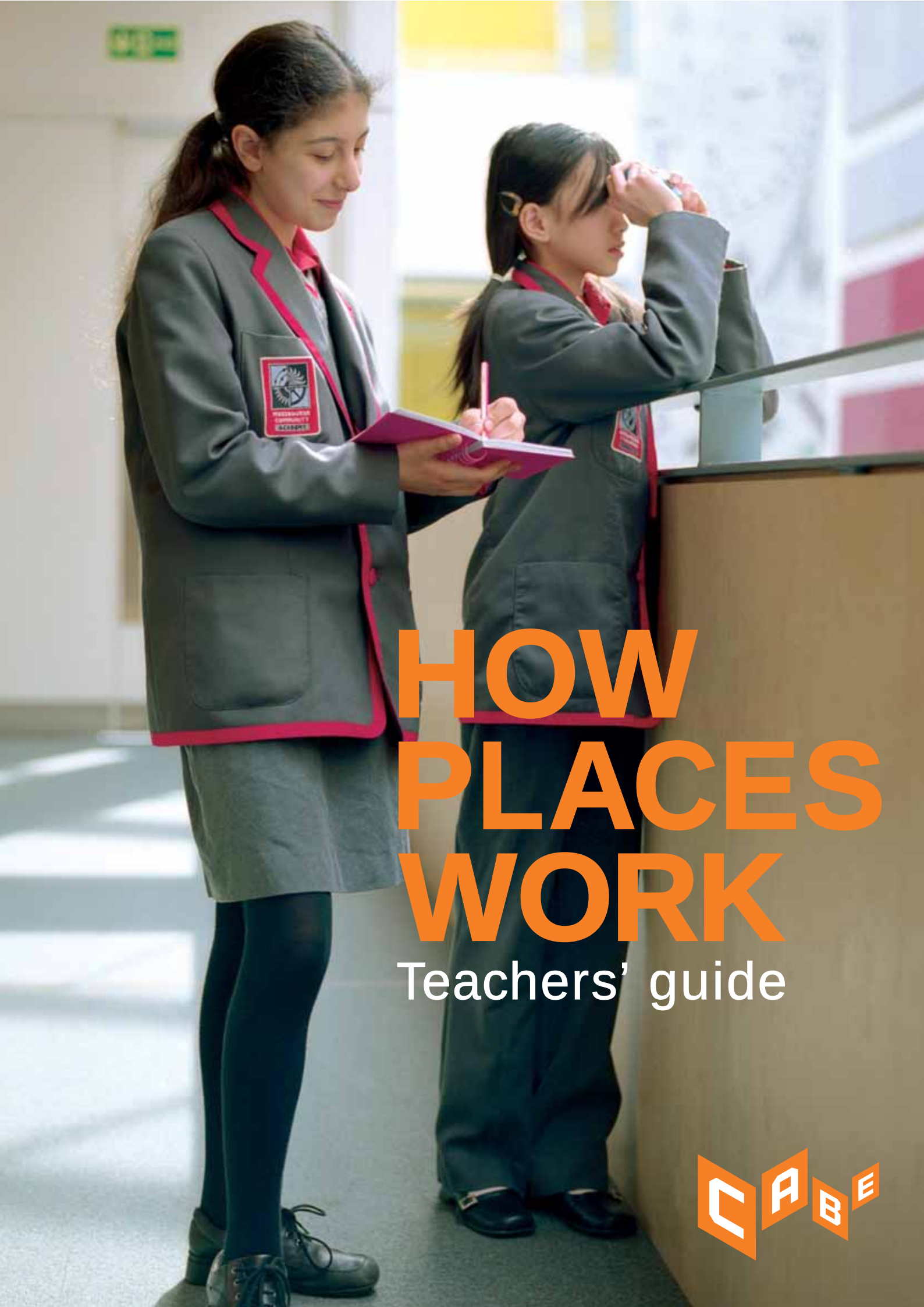


HOW PLACES WORK

Teachers' guide

Foreword

Thank you for getting involved in ***How Places Work***.

At CABE, we believe that the best way to understand architecture and public space is to experience them. Photography can capture some of the excitement of a building, but it can never fully convey the complexity of space, the quality of light and how it changes, the feeling and even the smell of building materials. All that must be experienced first hand.

That is why, in partnership with the Architecture Centre Network, we have created the *How Places Work* programme of visits to buildings and public spaces.

But even when we directly experience a place, it can be difficult to understand just what it is that makes it exceptional, especially when buildings are modern and unfamiliar. This is where the *How Places Work* 'inspirers' come in. These are men and women with a deep knowledge of and passion for particular buildings and spaces. They will guide you and your students through these places and reveal exactly what it is that they think makes them special.

Of course, the people who will, ultimately, make all this work are people like you: teachers with the vision and commitment to help young people understand the importance of good design in the places that surround them. This teachers' guide is intended to support you in this task and especially in using the experience of the visit to create project work on the subject of 'How my place works'.

We hope that you find the guide useful and that your experience of *How Places Work* is an inspiring one.

John Sorrell CBE
Chair, CABE

Introduction

How Places Work is a programme of facilitated visits to buildings and spaces for secondary schools designed to inspire young people to learn about the built environment through first-hand experience.

What are the benefits of taking part?

- *How Places Work* provides an opportunity to experience and discuss architecture and public spaces through a visit in the company of an inspirational expert. This is an excellent way to develop young people's ability to evaluate what they see, and to learn how to make informed judgements.
- Students will be introduced to 'inspirers', architects or professionals who have either been involved in the design process or are personally involved with or passionate about significant buildings and public spaces.
- *How Places Work* enables young people to develop a better understanding of buildings and places, their identity, heritage and context, and the influences that shape our towns and cities.
- The visit provides a catalyst for a variety of classroom-based activities, and an opportunity to relate the curriculum to the world beyond the school walls.
- There is great potential for cross-curricular approaches to learning and the development of transferable skills for researching and learning about the buildings and places that surround us.

What approach does it take?

- A visit to a significant site facilitated by an 'inspirer' and your local architecture centre.
- A framework for cross-curricular activities.
- Suggestions for pre-visit and post-visit activities, and curriculum links that maximise the learning potential of the visit.
- A chance to contribute towards a national celebration of students' work.
- Opportunities for students to work independently or in small groups, to research, gather information, record their feelings and impressions, and carry out a variety of activities that support different learning styles.
- Skills learnt will help students to assess and demand more from design in their local places and spaces including Building Schools for the Future or other building activities in their schools through the *How my place works* follow-up project.

If you are not already taking part and would like to know more about how to get involved in *How Places Work* please contact us at howplaceswork@cabe.org.uk.

In this publication

Planning a visit

This teachers' guide contains:

- Practical advice on organising a visit and what to expect.
- An introduction to architecture for teachers.
- Information about how architecture can assist in the teaching of different parts of the national curriculum at key stage 3.
- Suggested pre-visit, visit and post-visit activities.

At the heart of ***How Places Work*** is a visit to a notable building or public space.

How Places Work means we get to visit interesting buildings and public spaces to experience them first hand.

Who chooses the places?

CABE has worked with the Architecture Centre Network to select a series of exemplary buildings and public spaces. In most cases the buildings will be contemporary or recently refurbished in a contemporary manner. Public spaces might include parks or town squares or any of the spaces that connect and situate the places we live in.

Who organises the visit?

Visits will be organised by your local architecture centre in partnership with CABE. They will identify a building or public space in your area, and introduce you to an 'inspirer'. Together, you will agree a date and time for the visits to take place, including a pre-visit without the students. Coach hire, lunches, risk assessments and class management are the responsibility of the school.

Who are the inspirers?

Inspirers are expert volunteers who are passionate about architecture and public space and keen to share their knowledge with young people. In most cases they will have a personal or professional connection to the building or place you visit, and will be able to present students with an 'insider's view', revealing how the design responds to function and context, why particular design decisions get made and what it is like to create or work within these spaces and places.

A step-by-step guide to the ***How Places Work*** process.

- 1. Signing up: Once you have agreed to take part in *How Places Work*, you will be asked to sign an agreement. As soon as you return the agreement to CABE you will be sent a cheque to contribute towards the costs of taking part.

- 2. Getting started: Your local architecture centre will contact you to discuss the building or space and the inspirer who will facilitate your visit. Between you, you will agree a date and time for the visits, including the pre-visit that will take place without the students.

- 3. Pre-visit: The pre-visit may be the first time that you meet the inspirer. It is an opportunity for you both to discuss what you hope to get from the visit, any issues or concerns that are on your mind and the learning potential of the place or building.

Inspirers may welcome your advice on how best to connect with the students and be interested in your curriculum needs, preparatory work and plans for post-visit project work. There will also be an opportunity to conduct risk analyses and to talk over the practical logistics of bringing the group on the visit. For instance, where the coach will park, where the toilets are, what facilities there are for disabled students, where students can wait and what they will be doing if you decide to divide up into smaller units for the tour(s), as well as the amount of time likely to be needed for the visit.

- 4. Preparing for the visit: Preparation can make all the difference to the success of a visit. Newspaper cuttings, maps, models, photographs and plans can all help bring the place to life in advance and place the building or space into context. You might collect some of these materials during the pre-visit to the place and your architecture centre or the inspirer may be able to help you source some of them too. In this teachers' pack we discuss some ideas for approaching the visit and preparing for it and the follow-up *How my place works* project.

- 5. The visit: As well as ensuring that the students arrive in good time to the building or place on the day of the visit(s), we would ask you to obtain parental permissions in advance and to ensure that there are enough adults in attendance to ensure safety and good behaviour. The inspirer may not have much experience of dealing with school-age children and so your help and support managing the groups will be essential. A representative from the architecture centre will attend some of the visits and will let you know in advance if they are able to come.

Advice about taking students on educational visits can be found in the DfES good practice guide, *Health and safety of pupils on educational visits*. Copies are available free of charge from the DfES or can be downloaded from www.dfes.gov.uk.

- 6. After the visit: In some ways the post-visit activities are the most important part of *How Places Work*. This is the opportunity for students to apply their ideas and learning to a study of a place of their own in the *How my place works* project. This might focus on school, home, a local public space or some other place that is significant to your students and can be in any medium or combination of media, from poetry to digital video.

An exciting part of the programme will be the creative learning work that takes place back in the classroom. The form this takes will vary from school to school. The students will have the opportunity to develop work in a number of creative strands back in the classroom, facilitated by either the architecture centres or by you as their teachers. This could include art and design, creative writing, photography, design and technology or even wider creative arts such as dance and drama. It is envisaged that work will be judged and awarded regionally, culminating in a national celebration which will demonstrate the breadth of creative learning opportunities stimulated by the built environment.

You will also be asked to complete an online feedback form following the visit that will be sent to you automatically by email. Later on we may invite you to attend an evaluation event or complete a telephone interview.

What is architecture?

Architecture starts when you carefully put two bricks together.

Ludwig Mies van der Rohe, architect

Architecture is unique to human beings

No other living organism can plan, construct, inhabit and adapt three-dimensional structures in the way that human beings can. Architecture holds a mirror up to culture, history and society.

Architecture is more than construction

The historian Nikolaus Pevsner famously wrote that Lincoln Cathedral is architecture but a bicycle shed is not. What he meant was that architecture addresses aesthetics, unlike purely functional buildings. Some critics disagree with Pevsner about this (including Reyner Banham who was a keen cyclist!), but the main point is that architecture aims to fulfil our cultural needs as well as provide for our basic need for shelter.

Architecture is roughly concerned with carefully balancing horizontal things on top of vertical things.

Reyner Banham, design critic

All architecture is shelter, all great architecture is the design of space that contains, cuddles, exalts or stimulates the persons in that space.

Phillip Johnson, architect

Architecture is complex

Contemporary buildings have to deal with many issues. The design of a building or public space must address three main areas:

- Function
- Location
- Construction

Function

Can you tell the function of a building or place, and the needs of its users by looking at it? What message does it send out? Does it represent the values of its users and of local people?

Clues

- The size and prominence of the entrance. Is it civic, public or private; formal or informal?
- The number and size of windows. Is its purpose leisure and recreation, arts and entertainment, religious, spiritual, commercial, retail, industrial, healthcare, or educational?
- Decoration, colour and signage. What ideas and information do they communicate?
- Scale and sense of proportion. Is it grand or humble? Civic or domestic?
- Symbols, codes and conventions. Do they communicate hierarchy, identity, history or originality?
- Access, inclusion and navigation. Is it welcoming or intimidating? Is the entrance level? How clear is the signage?

Location

How does the building design respond to its location? Is it polite or rude to its neighbours? What are the most common local materials? Does it contribute to the regeneration of the area?

Swiss Re building

Clues

- Orientation. What direction is it facing, and how is it affected by sunlight and wind?
- Height. Does it offer views out, or block anyone else's view? Is it a local landmark?
- Historic. Is it within a conservation area?
- Space around. Does it occupy the entire site?
- Access. How do you enter the site? Is it linked to a road?
- Topography. Does it cut into the site or rest on top of the site? How does it relate to the landscape? Is it naturally formed or man-made?
- Neighbouring buildings. How do the scale, style and materials relate?
- Transportation. How do people get there? Are parking spaces required?
- Context. Is it in a city, the suburbs or the countryside?
- Geology. Are there any local materials such as stone or clay for bricks?
- Vernacular. Is there any reference to the local craft or building traditions?
- Local economy. Is the area affluent or poor?

City of Manchester stadium. © Michele Turnam

Bournemouth Library. © Michele Turnam

Construction

How does the construction of a building relate to its function and location? How does the method of construction influence the atmosphere of the rooms inside? How does it determine the external form? Does it conserve or waste energy?

Laban © Michele Turriani

Clues

- Materials. Can you identify all the materials that have been used? For instance, bricks and blocks, steel or timber frame, concrete, glass and stone. Are they natural or man-made? Are they permeable or impermeable? Are they sustainable? How have they weathered? Is there evidence of wear and tear?
- Light. Are there any glass walls or openings for windows in solid walls? What apertures have been used to manage light?
- Span. How strong is the structure and how large the spans?
- Technology. Are the methods used basic or sophisticated? Are they borrowed from other industries, like shipbuilding?
- Biomorphic. Does the construction mimic that of a plant, animal or animal's home?
- Legible. Can you tell how it stands up? Is the structure exposed or concealed?
- Plan. How does the structure determine the layout and routes around it?
- Cladding (skin). What material keeps the weather out? Is it transparent or solid; hard or soft; textured or smooth?
- Construction methods. Are they pre-fabricated off-site or built in situ?
- Access. What methods have been used to provide access both externally and internally? Do they include everyone's needs?
- Influences. Are there any references to other cultures, values, traditions, geographies or politics?
- Aesthetics. Are there any references to architectural styles or traditions? Are there any details or decorations? How do these contribute towards a sense of place or monumentality?
- Sustainability. Is this building or place environmentally friendly? Is it sympathetic to its context and landscape? Does it use sustainable energy sources?

Gateshead Millennium Bridge © Michele Turriani

The SAGE © Michele Turriani

Architecture is… sustainable

Let's look at a range of recent buildings and public spaces to see how their designs combine different considerations

Jubilee Library, Brighton © Lomax, Cassidy & Edwards

Architects, engineers and urban designers need to think about the long term impact of a place on the environment, the community and the local economy. One of the biggest challenges is to reduce the amount of energy consumed by buildings.

Jubilee Library, Brighton

Key facts
Cost: £8 million
Architect: Bennetts Associates with Lomax Cassidy & Edwards
Client: Brighton & Hove City Council
Date of completion: 2005
Internal area: 6,500 square metres

Function

- It is a grand civic building, occupying two sides of a new public square.
- The entrance is inviting and activity is visible from the street, to encourage people to visit.
- Public art and exhibitions make it an exciting place to come back to again and again.
- It helps to regenerate a run-down area of the city.

Location

- Locally made blue tiles are used on the façade as a reference to the sea and neighbouring buildings.
- The use of public space at the front of the building extends its public use onto the street.

Construction

- The concrete structure helps the building stay cool in summer and warm in winter.
- It has lots of glass so that light floods into a cathedral-like reading room.
- Its concrete columns are arranged in a grid, so the plan is clear and formal.
- Rainwater is collected from the roof and recycled for flushing toilets.
- Wind towers create natural air conditioning.

Architecture is…iconic

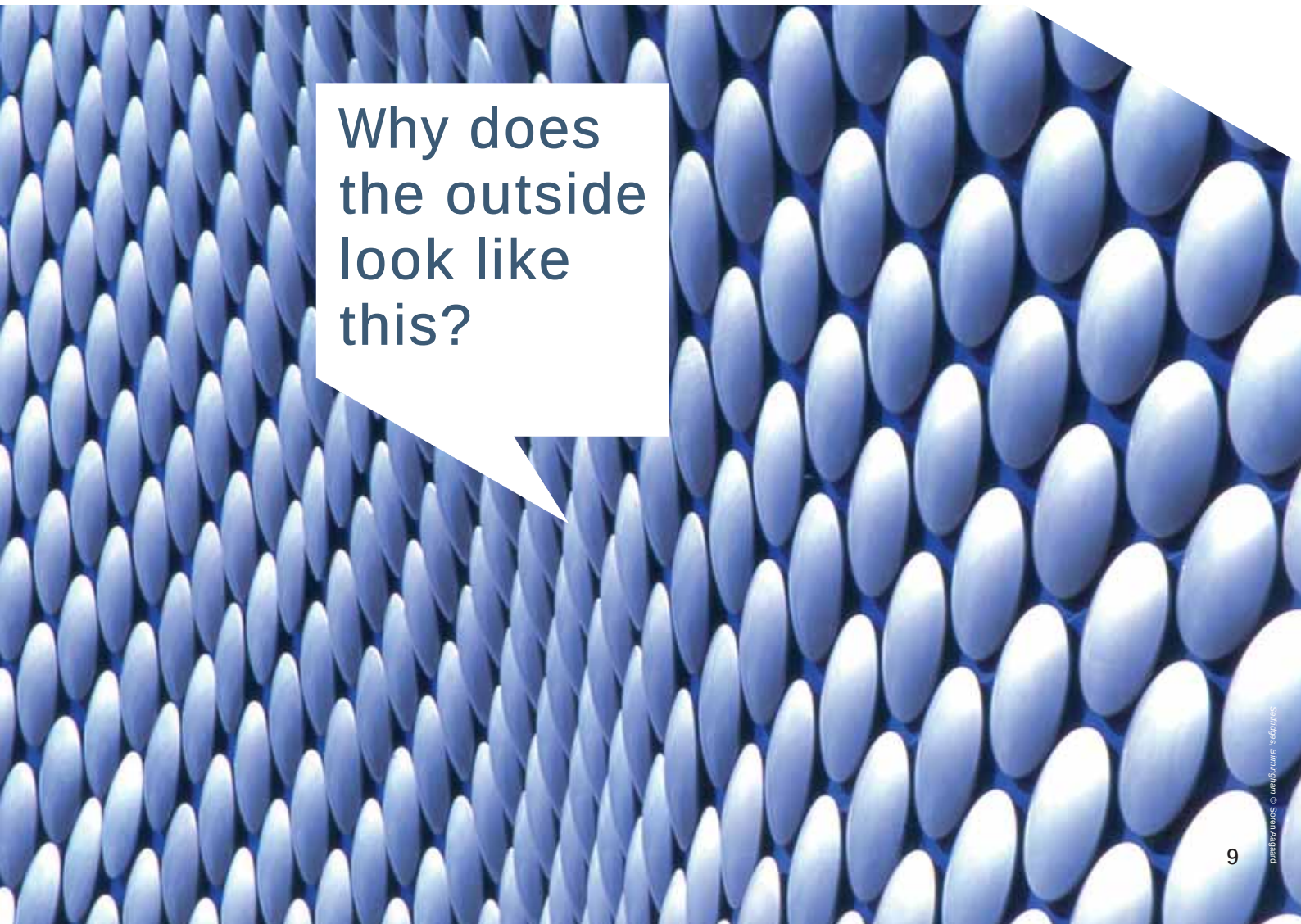
At the start of the 21st century architecture is characterised by an interest in experimenting with three-dimensional form. This is influenced by advances in computer drawing tools, and by the demand for buildings to act as local landmarks and catalysts for urban regeneration.

Selfridges department store, Birmingham
Cost: £60 million
Architect: Future Systems
Client: Selfridges
Date of completion: 2003
Internal Area: 25,000 square metres

Function
- Instead of having a shop window, this department store uses its whole shape to attract customers.
- Creates publicity and defines the brand of Selfridges.
- Puts Birmingham on the map as a shopping destination.

Location
- Set within a large public space.
- Adjacent to a shopping centre.
- In a former light industrial part of the city.

Construction
- Curves created with concrete are reminiscent of a human body.
- An unusual cladding system – aluminium discs attached to a bright blue coloured concrete – was inspired by the design of a classic 1960s dress.



Selfridges, Birmingham © Solvent Aspect

Architecture is... regeneration

Public spaces have as important a role to play in transforming places as the buildings that surround them or are contained by them. Good quality design can set high standards for future development and can attract people and businesses to invest in an area that they wouldn't previously have considered.

Thames Barrier Park, East London
Cost: £12.5 million
Landscape architect: Groupe Signes
Architect: Patel Taylor
Client: London Borough of Newham
Date of completion: 2000
Area: 89,000 square metres

Function
- To provide fun and relaxation, to attract people to a fast-developing area of the city and be an amenity for local people already living there.
- To improve the local ecology and environment.
- To provide views of the Thames Barrier and over the river.
- A memorial for local people killed in the Second World War.

Location
- On a former industrial site alongside the River Thames.
- Close to areas of housing.

Construction
- Different areas of planting, such as orchards, aromatic herbs, flowers, grass for playing games, fountains, and areas paved with concrete.
- A sheltered, sunken garden made from gabion walls (steel wire cages containing rocks.)
- Timber pavilion for indoor activities.

Why did they use these materals?

Thames Barrier Park © James Winspear/VIEW and Patel Taylor Architects

Architecture is…local and national identity

The design of a place can create a sense of belonging, and reinforce local culture and identity so that people feel a sense of ownership and pride. Buildings and public spaces help to make places distinctive and inspiring.

Welsh Millennium Centre, Cardiff
Cost: £104 million
Architect: Capita Percy Thomas
Client: Wales Millennium Centre
Date of completion: 2004
Internal Area: 31,500 square metres

Function
- Multi-use performance space for concerts, opera and theatre. The complex also includes offices, a café and rehearsal studios.
- To celebrate and define Welsh national identity.
- To regenerate Cardiff docks area.

Location
- Cardiff's former docks, adjacent to the Welsh Assembly building.
- Site is exposed to wind from the sea.
- Set within a large public space.

Construction
- From the outside the shape of the auditorium looks like the hull of a ship, and is made from riveted metal.
- Local slate is layered to look like a Welsh cliff face.
- In the auditorium different shades of wood are layered to remind one of local geology.

Welsh Millenium Centre © John Evans


Who might live in a place like this?

Architecture is… stylish…extraordinary

In the past, architecture of a particular period tended to follow certain stylistic rules. For example, Georgian architecture followed classical principles. Now, designers often try to break the rules and use unusual materials to solve practical problems in new ways, and to make us question our surroundings.

Beach House, Dungeness
Cost: £122,000
Architect: Simon Conder Associates
Client: Private
Practical completion: November 2003
Area: 127 square metres

Function

- A small private house for a couple with a limited budget.
- Takes advantage of wonderful views to the sea with a large deck and sliding windows.

Location

- Within an area of special scientific interest that is highly controlled by local planners.
- An exposed beach, exposed to strong winds and sunlight.
- Use of black rubber, reminiscent of local fishermen's cottages which are painted with black tar.

Construction

- The cheap wooden structure is wrapped in black rubber (the sort used for making conveyor belts) to protect it from salt water.
- An aluminium Airstream caravan is located alongside the house to act as a cheap spare bedroom for guests.
- The appearance of the materials change in response to light, the weather and people passing by.

Beach House, Dungeness © Stephen Ambrose

What makes good design?

The buildings and places described over the previous pages are considered examples of excellence by many in the architectural and design professions and by a large proportion of the general public. That is not to say there is universal agreement. Often, the more challenging design is the more it divides people - even architects cannot agree whether the Scottish parliament building is a masterpiece or a waste of money. Still the public flock to see it, which is one measure of success. It should also be recognised that impressions and opinions can change over time.

One of the aims of ***How Places Work*** is to move young people beyond their immediate, instinctive response to a building, which might be 'I like it,' 'I can't stand it' or 'it looks like a factory', to a response which considers why a building looks the way it does, and whether it is successful.

Of course critical judgements about design, style and aesthetics should be encouraged, so it is important to build on students' gut-level responses by getting them to ask questions.

Design quality indicators, or DQI, provide one way of assessing the success of a design. They are the things we look for in a well designed building and offer a way of discussing design in a shared language that won't make everyone agree, but will help them to disagree better and more fruitfully about what is good and what is bad in design.

The design quality indicators come under three main headings:

- Functionality: how the building does its job.
- Build quality: is it well made?
- Impact: does it look and feel good?

These three things link together like the circles in a Venn diagram. The best designs will be right at the centre, strong in all three areas, although a building or place can be well designed and still have weaknesses in one or more area.

Functionality

This is concerned with the arrangement, quality and interrelationship of spaces and how well the building is designed to be accessible and useful to all.

- Is the building easy to use?
- Is the building easy for everyone to get to and move around in?
- Are the rooms and spaces the right size and well arranged?

Build quality

This relates to the engineering performances of a building, which includes structural stability, the integration, safety and robustness of the systems, finishes and fittings and measures taken to make sure it is sustainable.

- Were the right materials used to make the building?
- Is the building well made?
- Is the building sustainable and environmentally friendly?
- Do you feel healthy and safe in the building?

Impact

This refers to the building's ability to create a sense of place and to have a positive effect on the local community and environment. It also covers the wider effect the design may have on the art of building and architecture.

- Does the building have its own character and personality?
- Do the shape and materials add to the quality?
- Do you like being inside the building?
- Does the building fit in well with the community and surroundings?

For more discussion of the DQI and an interactive design quality analysing tool, see www.whichplaceswork.org.uk

You can find out more about the complete professional DQI tool at www.dqi.org.uk

Tate Modern © Michele Turriani

Architecture and the curriculum

One of the great advantages of using architecture as a teaching resource is that buildings and places are all around us. Bricks and mortar, glass and steel, facts and figures and urban myths can all become triggers, bringing life to many subjects and skills in the national curriculum.

Curriculum links

The following curriculum links are suggestions for studies to link architecture with the national curriculum at key stage 3.

Art and design

- Examine the visual language in both the building's surface and sculptural form. Use a range of media and approaches to record scale, proportion, shape, colour, pattern, materials, texture and surfaces, natural and man-made. How have images and text been incorporated in the design of the building? What is more expressive?
- Was the designer influenced by contemporary trends in art, history, society or cultural issues, geographical, spiritual, economic or political values?
- What is the building's style, and how does it represent the culture or beliefs of its users?
- To what extent is the building crafted on site? Does the building incorporate artworks or site specific installations? How might these improve or enhance the building or site?

NC references: 1 a), b), c), 2 a), b), c) 3 a), b) 4 a), b), c) 5 a), b), c), d)

Citizenship

- Watch the television news and spot how many buildings and places crop up and why.
- Research newspaper reports for buildings associated with significant events and people – for instance, the 9/11 bombings of New York's World Trade Center, or who lives at 11 Downing Street.
- Conduct a poll showing people's different opinions of the building. Interview users, developers, planners, architects and local residents.
- Organise a debate or campaign about something you feel passionate about and suggest areas for improvement.
- Debate good and bad architecture. Link to a popular television programme, like *Grand Designs* and *Restoration*.
- Discuss the opportunities for sustainable and ethical ideas to shape the environment, encourage participation and responsible action. Assess how sustainable the building visited was.
- What methods were used to consult with the local community before the building or place was completed? How much influence did local people have on the completed design? How did they become involved?

NC references: 1 a), b), c), d), h), i) 2 a), b), c) 3 a), b), c)

Design and technology

- What criteria informed the designer's choice of building materials? Explore the characteristics and properties of materials. Were they chosen because they were affordable or because they looked right?
- Outline the processes and stages in the design and construction of the building.
- Explore the complex links between designers, manufacturers supplying the materials and contractors constructing the building. Are the materials available locally? Are they sustainable?
- How did computer aided design (CAD) assist with the design process?
- Consider how buildings and places are designed to serve the needs and values of different users and audiences.
- Explore structure through buildings and the affects of different forces.
- Review and evaluate the architect's response to the design brief and suggest alternative solutions and improvements.
- Explore DQI and apply to other buildings to compare and discuss findings.
- Explore mechanical and electrical systems – security cameras, lighting systems, alarms, ventilation.
- Research the influences that inspired the designer.

NC references: 1 a), b), c), d), e), f), g), h) 2 a), b), e) 3 a), b), c) 4 a), b), c), d) 5 a), b), c), d), e), f), g) 6 a), b), c) 7 a), b), c)

English

- Explore buildings and places featured in popular literature. What has changed? What has stayed the same?
- What is the building's story? Choose from the building's past, present or future and write a description of the building from the perspective of people using it.
- Write a poem to capture the character of a place. Can the words be arranged to create a pictorial representation of the place?
- Look at examples of pieces written by writers in residence. See writers in residence Archi-TEXTS www.art-architecture.co.uk/architexts.
- What is the language of the building, and what is its vocabulary?
- Describe a journey through the building using the sounds, emotions and sights experienced.
- Critique the inspirers' presentation, consider their delivery, relationship with and use of language for target audience (to inspire, describe, explain, argue, persuade, entertain), discuss and suggest other approaches.
- Explore different types and uses of language in buildings. Look at the signage used to describe formal places like a courtroom, and informal places like a cafeteria.

NC references: 1.1 a), b), d), e), 1.2 a), b), c), f) 1.3 a), b), c), d), e) 1.8 a), b), c) 1.9 a), b), c) 1.10 a), b) 2.1 a), b), c), d), e) 2.3 a), c) 2.5 a), b), c), d) 2.8, 2.9, 3.1 b), c), d), g), h), j), k), l), m), n), o) 3.2 c) 3.9 c)

Geography

- What makes a place? Explore the impact and contribution of cultural buildings on a city or region and their effects on tourism, industry, regeneration, population distribution and future development.
- Analyse the impact of buildings on the environment. Should new uses be found for old buildings? How do people travel? Are there good public transport links for access by foot?
- Compare the visited building with a similar building in a different context. Examine the impact of different urban density, local identity, materials and industry.
- Explore the impact of the environment, weather and climate on the building's design, construction and materials.
- Explain how the building's materials reflect the geological make-up and identity of the area.
- Consider how individual buildings and public spaces have contributed to the decline and development of the local area.

NC references: 1 a), b), c), d), e), f) 2 a), b), c), d), e), f), g) 3 a), b), c), d), e) 4 a), b) 5 a), b) 6 a), c ii) d iii), j ii) j iii), k), 7 a), b) c), d)

History

- Explore the social, cultural and political history of buildings and public spaces associated with significant historical events and people – for instance, the Houses of Parliament and Guy Fawkes.
- Analyse historical events and their impact on urban change and building technology – for instance, the Industrial Revolution and the glass tax. Create links between materials, construction, transport, trade, colonisation, technological advancements and cross-fertilisation of ideas before and after the World Wars.
- Examine current social, cultural and ethnic diversity and find evidence of contemporary trends in the building visit.
- Create a chronological timeline for the building or place. Plot significant local and national events and changes. Relate the findings to other buildings in the area.

NC references: 1, 2 a), b), c), d), e) 3 a), b) 4 a), b) 5 a), b), c) 7 a), b), c), d), e) 8, 9, 10, 11, 12, 13

Architecture and the curriculum

ICT

- Collect, enter, analyse and evaluate qualitative and quantitative data. For instance: survey pedestrian and visitor traffic, times of use, the types of users, use of spaces, routes, popular and unpopular areas, hot spots, traffic and congestion.
- Test predictions, patterns and relationships between different types of data.
- Explore different methods of recording the building visit and means of communicating ideas. Contribute to the school's website, news bulletin, publication or video.

NC references: 1 a), b), c), 2 a), b), c), d) 3 a), b) 5 a), b), c)

Maths

- Do the structural columns follow a regular grid or pattern? Is there a mathematical geometry, symmetry or pattern in the construction?
- Building statistics and data can be used to create graphs and statistics.
- Record the shapes found in materials, construction forms and details.
- Ratio and proportion: can a parallel be drawn with studies in geometry?
- Use a building component to test powers of deductive reasoning and estimation, and mental calculations.
- Analyse the units of measurement, the fractions and multiplication of quantities.
- Explore the gradients, angles, properties of triangles and rectangles found in the building. Explore triangulation.
- Look at examples of scale drawings used to construct the building and see how a building is represented in measured drawings showing cross-sections, plans and elevations that are measured with a scale ruler.

NC references: 2.1 e), 2.2 f), g), 3.1 a), d), e), f), h), i), j), 3.2 a), b), c), d), e), f), i), j), k), 3.3 a), b), d), e), 3.4 a), d), f), g), i) 4.1 a), b), c), d), e), f) 4.3 a), b) c) 4.4 a), b) 4.5 a), b), c), d) B1 a), e), f)

Science

- Examine the building's materials. Do they benefit or harm the environment?
- See how materials change when exposed to water. Explore the impact of weathering and corrosion.
- Investigate materials and their properties. Are any materials new and innovative?
- Consider the forces of pressure and gravity through construction.
- Explore the anatomy of a building as if it were a plant or human body. How does the building mimic natural processes?
- Observe the use of chemical and displacement reactions - ventilation, water purifying, heating and cooling - during a building visit.
- Explore the building's internal comfort levels and any natural sources of energy - bore holes, wind turbines, conduction, evaporation, temperature control and energy conservation.
- Explore the behaviour and effects of light and sound (acoustics) in a building and the relationship between the structure and materials.

NC references: 1.1 a), b), c) 1.2 a), b), c), d), e), f), g), h), i) j), k), l), m), n), o), p) 2.5 a), b), c), d) 3.1 a), b), d), e) 3.2 h), i) 3.3 a), f), g), h) 4.2 b), g) 4.3 a), c), d), f), i), j) 4.5 a), b), c), d), e), f), g) B1 a), b), c), d), e), f) B2 b)

The ***How Places Work*** programme can also be used to develop both cross-curricular approaches to learning and core skills such as communication, enquiry, information processing, problem solving, thinking, working with others and evaluation skills.

Preparing for the visit

The building visit is at the heart of the programme and the nature of the inspirer's presentation will shape and inflect the whole learning experience.

The inspirer will reveal

- How the place works.
- What the design does to ensure that the building or place is effective in its function for each of its prospective user groups.

The visit is not just a tour of the technical aspects of building design. It is essential that good design is seen in the context of the building's broader story or narrative, and this may include aspects of its history, the history of its conception, planning and build, the people who use it or have used it, anecdotes and personal reflection.

Preparation in the classroom

- Introduce students to the basic concepts of architecture as outlined in Architecture is… (pages 8–13)
- Explore the issues of function, location and construction and how they combine to make the building unique.
- Discuss key trends in contemporary architecture: sustainability; ordinary/extraordinary; iconic architecture; identity; regeneration.
- Introduce DQIs as a way of assessing architecture (see www.whichplaceswork.org.uk).

Research and development

Before the visit it is useful for students to find out as much as they can about the building through web searches, articles in local newspapers and discussions with local people.

First impressions count

One of the key learning outcomes from the visit is to demonstrate how a pupil's preconceived ideas about a building and a place can be changed and challenged by the visit.

Show your students images of the building. Briefly, ask your students the following questions (and others you might think of) and get them to record their reactions:

- What is it for?
- Who uses this place?
- What is it made of?
- How does it stand up?
- How old is this building and how long will it remain standing?
- Do I like it?

Notes from the discussion will be useful to show the difference between first impressions and understanding based on experience and knowledge.

The visit

Inspire active participation

Reporter, collector, explorer

The best way for students to understand architecture is for them to be active participants in the visit, rather than passive recipients of information. Visiting architecture is likely to be a new experience for them, so to help structure their questions and exploration of the building it could be helpful for students to adopt one of three roles: reporter, collector or explorer.

By assuming a role each pupil will be empowered to experience the building differently and in turn reveal aspects of the building's function, construction and location. Feedback from this kind of activity is an ideal way for the students to work in small groups.

You could either divide the visiting party into three groups, or invite students to choose their own role and activity.

You could organise a group discussion about the roles. For example, ask:

- If you were a reporter, collector or explorer how would you approach this building?
- What would you need to know about it?
- How would you record that information?

Reporter

Skills

Observation, asking questions, interaction, taking notes, written and audio recording, speaking in a new context, taking a lead, listening, the use of writing for thinking and learning, group discussion.

Tasks

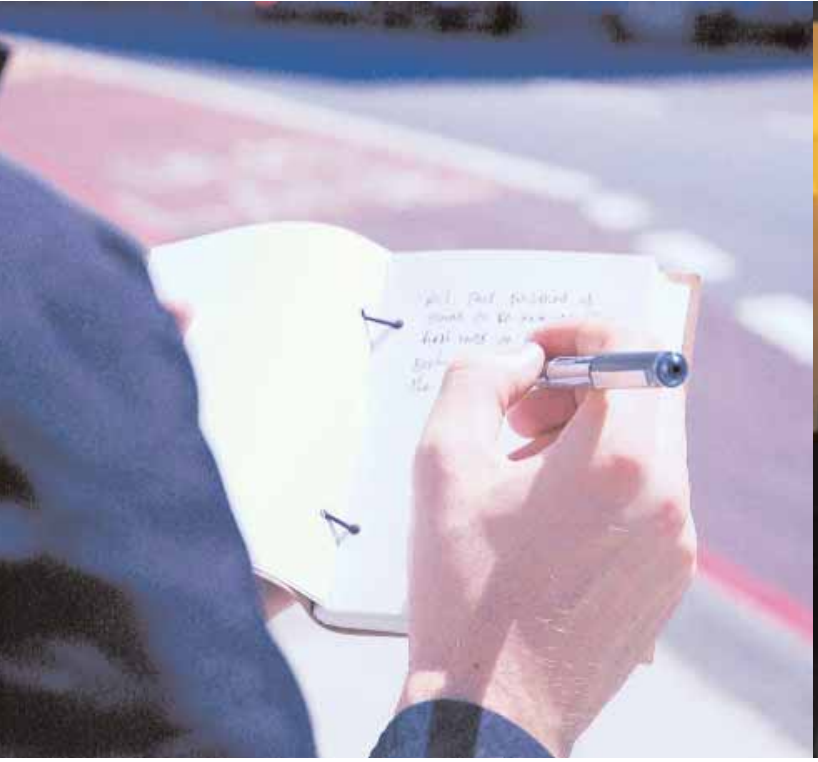
Working in groups or individually, each pupil should gather information, by making notes and sketches or by taking photographs, to answer the questions below. Students could interview the inspirer, building users or each other. In addition to finding out what others say about the building, students should record their own feelings about it.

- Whose idea was the building?
- Who uses it?
- How many different types of users are there?
- What effect does the building have on users?

- What is it made of?
- How does it stand up?
- How it was built?
- When was it built? How long will it last?
- Who paid for it, and how much did it cost?

- Do people enjoy using the building?
- What do people say about it?
- What does it feel like?

See also the suggestions for activities in architecture and the curriculum (p16–19)



Case study

Someone who records buildings in this way is…
Tom Dyckhoff

Tom Dyckhoff is architecture and design critic for the *Times* newspaper.

Q How do you prepare for a visit to a building?
A Reading, reading, reading... and lots of Googling. But the best visits, I find, are the ones where you do no reading at all and just come across something.

Q How do you feel before the visit?
A Jolly happy. And usually woefully unprepared. And in a huge rush because I try to pack in too much in any available space of time.

Q What do you look for when you first arrive?
A The front door. I like to do a quick tour round the extremities of a building to get its measure, then a long slow dawdle around, in, out, close up and far far away.

Q Who normally shows you round, and who do you talk to when you get there?
A I prefer to go incognito, like a restaurant critic. Usually that's not possible, alas, as buildings tend to be guarded by all manner of gatekeepers. I prefer to meet the architect and talk about the building separately, if at all. I'm more interested in the architecture's effect on the user, the person, than in what the architect intended. Chatting to users and the client on or off the record is helpful. But you can see most of what's good and what's bad with your own senses.

Q How do you record your visit?
A Writing of course, feeble sketches and photography. I wish I could say I spend hours drawing the minutiae of a building, Ruskin-style, and I know that way you notice things in more detail, but writing a weekly column, there just isn't the time.

Q Does visiting ever change your mind about a building?
A I never make up my mind before visiting. I'm very strict about that and never write about a building I haven't seen. The physical experience of a building is what architecture's all about. You only get a distorted perspective through photos or writing.

Q How do you decide if the building is any good?
A Blimey. No idea. It's one of those processes that is so innate you never question its inner workings. If any part of the whole fails it's a mark deducted. That said there are many 'unwhole' buildings which are still brilliant.

Q What do you do when you get back to the office?
A Have a good sit down, a cup of tea and a hard think.

Q Do you think it is important to experience architecture, and why?
A Goodness yes. Architecture's all about physical and mental and emotional experience of place and space, and at its height can, like any experience, transport you to the heavens. And at its nadir, to hell.

Collector

Skills

Observation, drawing, recording materials, investigating art and building craft. Consider key factors that need to be taken into account when collecting and how items may be collected. Decide the extent and range of data to be collected and the techniques, equipment and materials to use.

Tasks

Collect information in a sketch-book or folder. Items could include: tickets, leaflets, information sheets, postcards and leaves.

- Take surface rubbings including signage and textures of materials.
- Record images using a mobile phone camera.
- Record the effect of light and shadows.
- Where is the building located? Is there a relationship between the construction materials and local buildings or geography? Sketch details which show the similarities.
- Collect and complete the colour swatches.

See also the suggestions for activities in architecture and the curriculum (p16–19)

Case study

Someone who records buildings in this way is… Vicky Richardson.

Vicky Richardson is the editor of the design magazine *Blueprint* and co-author of this guide. In 2003 she created the Dungeness Box, a collection of found objects and materials inspired by the Beach House at Dungeness by Simon Conder Associates. The idea of the box was to tell a story about the house and its site using building materials and found objects as well as words and pictures.

Q How did you prepare for visiting the Beach House?

A I'd take lots of plastic bags and containers for holding shells and bits of rubbish found on the beach. I'd also take a notebook for collecting observations.

Q How did you feel before a visit?

A Always excited because you never know what is going to be washed up on the beach at Dungeness. But also slightly nervous about meeting the owners of the house because I didn't want to intrude into their privacy.

Q What did you look for when you first arrived?

A Signs of life inside: is anyone at home? Is the tide in or out?

Q How did you record your visit?

A I gathered material that would describe the look and feel of Dungeness. It's the largest area of shingle in Europe, and the house sits directly on the pebbles, so I collected some of these. Also scraps of roofing felt and fragments of wood to describe other houses in the area. The flotsam and jetsam washed up on the beach can be very beautiful after it's been washed by the sea. I made notes about what the owners said about their house and what it's like to live there and took lots of photographs. I managed to persuade the builder to give me some off-cuts of black rubber (which the house is covered in) to put inside the box.

Q How did you decide if the design of the house was good?

A Comments by the owners about what it's like to live in were important, but also the feeling of being inside, the quality of light and the texture of the materials. Proportion and a sense of scale were key, as well as the way the house sits in the landscape.

Q Do you think it is important to experience architecture, and why?

A Architecture is all about places – you've got to use all your senses to really understand it. Dungeness looks great in photographs, but it's not till you've tasted the salt wind and heard the pounding waves that you really know what type of building is right for the place.

Explorer

Skills

Mapping, observation, understanding technology and structure and three-dimensional model-making. Collect, record and present evidence (for example, building measurements). Analyse and evaluate the evidence and draw conclusions.

Tasks

To raise awareness of scale and height. Each explorer will see how different visitors will see the building as a surface to climb and move easily around. Appreciation of how a two year-old child and a disabled person may also think of a building in the same way as the 'explorer'. Imagine you are an explorer and the building you are visiting is a mountain waiting to be climbed. This is an exciting activity and a new way of looking and thinking, but we are not asking for any actual physical climbing. During your visit record the following:

- Handholds
- Ledges
- Places you can tie a rope to
- Rough surfaces to give a good grip
- Smooth surfaces so you do not slip
- A place to rest and shelter from the wind and rain
- Make a map.

Draw the path you take into the building and record the number of steps you take and changes in direction. Think of inventive ways to record the route – post-it notes could be a very helpful way of recording a path.

- Measure a typical stair riser and count the number of steps to calculate the building height
- Find a 'welcoming entrance'
- Find a 'cosy corner'.

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Case study

Someone who records buildings in this way is… Alex Hartley.

Alex Hartley is an artist. He is working on an installation for the new entrance to the Barbican Arts Centre in London. An important part of his work is climbing buildings (with or without permission) and recording the experience. His book *LA Climbs: alternative uses for architecture* records 115 climbs around Los Angeles.

Q How do you prepare for a visit to a building?

A If I'm planning to climb a building I make an initial visit with a digital camera so that I can consider the possible routes later. I also take digital shots if I'm going to use it as part of a piece of sculpture, to work out the exact large format photograph I need to take later. I photograph details and take notes about texture, heights and escape routes. If I'm setting out to climb I have climbing shoes with me, and chalk to help make sure my hands don't slip.

Q How do you feel before the visit?

A Before the initial visit I am quite relaxed, but before a climb I do get nervous and if I've had to get permission to visit then I am aware that I only have one chance to get the photograph or to make the climb.

Q What do you look for when you first arrive?

A Security guards. Cameras. Ways down.

Q Who normally shows you round, and who do you talk to when you get there?

A I like to look round on my own and would normally try to avoid being shown round.

Q How do you record your visit?

A I take photographs and make sketches and from these I am able to work out what I want from the building.

Q Does visiting ever change your mind about a building?

A Always.

Q How do you decide if the building is any good?

A I look at materials, workmanship and design, but mostly how the building makes me feel.

Q When does the visit become art?

A I make photographs of me climbing, and drawings of the routes superimposed onto images of the building. I put photographs of buildings into sculptures and I put sculptures into photographs of buildings.

Q Do you think it is important to experience architecture, and why?

A Obviously everyone experiences architecture. However for me it's important that people see the way our lives can be improved through good design. Architecture is man's most obvious mark on our world and it should and can reflect our aspirations and achievements.

Back in the classroom

Through a range of individual and group activities and discussions it should be possible to draw out of the visit key aspects of the curriculum. Every teacher will have his or her own ideas about how best to make use of the visit to achieve their learning objectives, but here are a few ideas for some follow-up activities. The ***How my place works*** project (over the page) further encourages students to apply what they have learned to their own homes, school buildings or other places or spaces that have meaning for them.

Group discussion
Did the building meet students' expectations?
Did they change their mind about it?
What was good about the design and what was not so good? What was their favourite thing about it?
Did it make them look at other buildings and places differently?

Individual or group projects
Expand on the information found during the visit and use it to create a personal study of the building's functionality, structure and impact. Activities will vary depending on the roles adopted for the visit, the type of material and research gathered and the curriculum area.

Write or record a news story
Using notes and images, or recorded information create your own news story or radio programme based on the building you visited. How would you explain your experience to someone who has not visited the building? What were the most memorable aspects of the visit?

Compare the building to a natural form
Does the building remind you of a plant, animal or animal dwelling? How does it behave?
What are its distinguishing characteristics?
Think about which parts of the building match parts of the natural form, and make a drawing or diagram to illustrate this.

Make a colour and texture swatch book
This could describe the range of colours and materials you found in the building.
Think about the difference between natural and manmade materials and colours.

Assemble and label a collection
Which objects or drawings most capture the building? Which are your favourite? Is your collection unique to the building you visited or can a similar collection be found in other buildings? Can you organise the objects you have collected into a scheme that expresses your response to and experience of the building?

Make a map or a model
Draw the path you take into the building and record the number of steps you take and any changes in direction.
Write directions for visitors.
Would this information be any different for a visually impaired visitor or a mobility impaired visitor?

Make a set of Top Trumps cards
Choose between five and ten buildings around the place you visited, or compare them with five to ten other places, and gather information, drawings and/or photographs to go on each card.

Make a box or container to capture the essence of a building or place
Assemble six to eight pieces of work that the class feels best capture its characteristics. Items should reflect the key components of successful architecture: functionality, build quality and impact. These could be objects, written work, photographs, drawings, samples of materials and fabric, sound recordings or colour swatches.

The box or container could take many different forms:
- Stage set
- Packaging
- Mail art
- Boundary between inside and outside
- Frame
- Cabinet of curiosities
- Map or chart.

Hold a class debate, to discuss differing opinions
Who thinks which buildings should be demolished, and why? Which buildings are worthy of preservation?

See also the suggestions for activities in architecture and the curriculum (p16–19)

How my place works

How my place works is the follow-up project to ***How Places Work***. The idea is for students to apply their new-found confidence and understanding of architecture and the built environment to explore and respond to places that are important in their own lives. This could be their home, street, block of flats, local park, school building or any other place that is meaningful to them. If your school is undergoing a Building Schools for the Future (BSF) or other new build project, this is an excellent opportunity to involve your students in the process.

Projects can be in any combination of media and any combination of curriculum subjects. All we ask is that you let us see what your students come up with by sending photographs or other representations of the work to your architecture centre. A selection of work will be displayed on the CABE website and certificate of achievement awarded to your students and school.

Here are some ideas for approaching the *How my place works* project that you might use to combine with or complement your own.

Taking roles

Students explore their own places by adopting the familiar roles they used in the *How Places Work* building visit and working on projects in small groups. When students have collected their information and responses, ask them to combine them into a multimedia narrative or display that captures the essence of the place, its strengths and weaknesses, its history and meaning, how it could be improved or adapted. This material could be used for an all-school assembly or class presentations, or displayed in the building that it explores.

Reporters

Using a notebook, voice recorder and/or video camera, interview friends, family and/or school staff or other users about the place.
Here are some possible prompt questions:

Do you find the building easy to use?
Is the entrance easy to find and is it large enough?
Once inside, is it easy to find your way around?
Are the rooms the right size and well arranged?
What do you enjoy about living/studying in the building, and what do you dislike?
What does the place mean to you?
What words would you use to describe your feelings for this place?

Collectors

Make a log book of collected materials, leaves, discarded items, rubbings, drawings and photographs. Think about:

What materials the building is made from and what character they give it. Does the building make any kind of statement? Does it remind you of anything?
How do the materials relate to other local buildings, or to the local environment and landscape?
Is the building well cared for? If not, why is this and could the building be improved easily, for example by having more rubbish bins or more plants?

Explorers

Draw a 'vertical' map or diagram of the façade of the building, including all the information you might need if you were going to climb it.

How many floors are there, and how does this relate to surrounding buildings?
What are the building materials, and how well made is it?
Which way is the building oriented – where is the sunlight coming from and how does this affect the rooms inside?
How does the climate affect the building? If there is a lot of glass, does it get too hot or cold?

What's over there?

Inside out

Engage students in the exploration of functionality by finding ways of expressing the functions and uses of interior spaces on outside or outer walls. This should focus on technical aspects as well as the human stories. It may involve the use of signs and pictures, labels, photographs, technical diagrams (including architect's plans and wiring diagrams or similar) and sound recordings. Information technologies can be incorporated through the use of projectors or data logging outputs.

This form of intervention will focus students on the expressive possibilities of a building as well as its functions and will lead to discussions of how spaces might be improved and their functions extended, either through remodelling or improving legibility, access and signage. Questions of accessibility will be raised through consideration of all the different users that define the space's function.

Video diary

A video diary is a good way of exploring how a building or space functions for different users over time. It is a particularly rich way of interacting with public spaces which change dramatically with the seasons and the weather and are often used by a very wide range of people. The diaries could include interviews, candid shots of users, time lapse, straight to camera comment and visual explorations of the physical properties of the place. The video diary can be incorporated with ideas such as the 'inside out' project by projecting images back on to the place that is the subject of the work and creating an installation artwork.

Numbers

Buildings and places can be thought of as physical expressions of mathematical properties. We are often aware that the proportions of a place feel right or wrong but cannot express this in any specific way. Bringing mathematics and geometry to bear through expression of a place's measurements is a way of focussing on the hidden qualities of a place in a new way. Encourage students to measure not just the heights and widths of spaces, but the distances travelled in particular patterns of use, distances between features, desire lines and views. These can be expressed visually though labels, photography, coloured tape on floors and walls, tapes pegged out to represent views or desire lines, signs etc. The exploration may reveal why some spaces feel better to be in than others and suggest ways in which the space might be improved or used differently.

Further sources of information

Academy for Sustainable Communities
www.acskills.org.uk

Architecture Centre Network
www.architecturecentre.net

Architecture Foundation
www.architecturefoundation.org.uk

Archi-TEXTS (Writers in residencies)
www.art-architecture.co.uk/architexts/

Building Connections
www.buildingconnections.co.uk/curriculum

Commission for Architecture and the Built Environment (CABE)
www.cabe.org.uk

CITB-Construction Skills
www.citb.co.uk/support/teach_support

Design Council
www.design-council.org.uk

Design quality indicators for schools:
www.dqi.org.uk/Schools/default.htm

Department for Education and Skills
www.dfes.gov.uk

Education Network
www.ten.info

English Heritage
www.english-heritage.org.uk

Great Buildings
www.greatbuildings.com

National Children's Bureau
www.ncb.org.uk

Open House
www.openhouse.org.uk

Primary Space
www.primaryspace.net

Placecheck
www.placecheck.info

Royal Institute of British Architects (RIBA)
www.architecture.com

RIBA Library
www.architecture.com/go/Architecture/Reference/Library_897.html

School Works
www.school-works.org

The Sorrell Foundation
www.thesorrellfoundation.com

Teachernet School Buildings Information Centre (a DfES website)
www.teachernet.gov.uk/schoolbuildings

V&A Museum
www.vam.ac.uk/collections/architecture

Which places work
www.whichplaceswork.org.uk

20th Century Society
www.c20society.org.uk

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When it comes to understanding architecture and the built environment, there is no substitute for first-hand experience. ***How Places Work*** offers thousands of school children the opportunity to discover the excitement of new buildings and spaces for themselves, guided by some of the UK's most knowledgeable and passionate advocates for good design. This guide offers teachers advice and ideas for making visits stimulating and informative.

If you are not already taking part and would like to know more about how to get involved in ***How Places Work*** please contact us at howplaceswork@cabe.org.uk.

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