

## FIND YOUR MATCH FACILITATOR'S ACTIVITY NOTES

### SUMMARY OF ACTIVITY

- This game can be used as an icebreaker to help students relate the construction industry to buildings or structures they may know
- Students need to work in groups to match names of buildings with photos and facts.

### LEARNING OBJECTIVES

- Tap into students' existing knowledge about buildings and infrastructure
- Learn some key facts about iconic structures as well as innovations in their construction and use
- Spark students' interest in the construction industry.

### AGE GROUP

14–19

### GROUP SIZE

Up to 40 students

### LENGTH

15 – 25 minutes

### PREPARATION

- There are 16 sets of cards. Each set contains 1 name card, 1 photo card and up to 2 fact cards
- We suggest you give 4 groups to each pair/group
- Choose/adapt cards as necessary, print and cut
- You may want adapt the facts given by age – for younger groups keep more of the clues in the facts – for older groups you can remove a few of the clues (e.g. location/ type of building etc.)
- If possible and desired, laminate the cards for future use.

### RESOURCES

- Prizes (with the school's permission you can give small prizes to the winners)
- Find Your Match cards
- PowerPoint presentation.

### SKILLS

Group work

### CONSTRUCTION SECTOR LINKS

General

**FIND YOUR MATCH**  
**SUGGESTED TIMINGS****5 MINS****INTRODUCE/SET UP THE ACTIVITY**

- If this is your first exercise, introduce yourself
- Explain that they're going to play a quick game to see how much they know about famous buildings
- Ask the group to work in pairs or in a group on their table
- Explain that the objective is for each group to match the names of the buildings with the photos and the facts – they should arrange them on their table in front of them
- Give each group a set of cards, placing them face down
- Ask them to arrange the cards side by side with their matches. Each building has 3/4 cards: 1 with a name, 1 with a photo and 1 or 2 with key facts
- Once they think they've matched, they should put their hands up so you can check their answers
- The first group of students to match the cards correctly wins. However, the game continues until all the students have found their match. You may need to help any students that are struggling
- Explain that they have a maximum of 5 or 10 minutes to complete the task and that the first group to complete should sit down and put their hands up (prizes optional)
- Set the timer.

**5–10 MINS****DURING THE ACTIVITY**

- Circulate among the groups to make sure they understand the activity
- Once the first group thinks they've completed the task, check their answers and announce the winner if they've completed it correctly
- Give a 5 and 2 minute warning for remaining groups.

**5–10 MINS****FEEDBACK AND CLOSE**

- To round up the activity, ask each group to tell the rest of the class about a building they found particularly interesting or a fact they learned
- Using a few of the facts – highlight some of the key messages you want to bring across about the industry.

**FIND YOUR MATCH  
REFERENCES****Tyne Bridge**, Newcastle

[www.newcastlegateshead.com/things-to-do/tyne-bridge-p603151](http://www.newcastlegateshead.com/things-to-do/tyne-bridge-p603151)

[www.bridgesonthetyne.co.uk/tynebri.html](http://www.bridgesonthetyne.co.uk/tynebri.html)

**Beetham Tower**, Manchester

[www.beethamtowermanchester.com](http://www.beethamtowermanchester.com)

[www.beethamtower.org/manchester/10-interesting-facts-about-the-beetham-tower](http://www.beethamtower.org/manchester/10-interesting-facts-about-the-beetham-tower)

**The Bullring**, Birmingham

[www.bullring.co.uk](http://www.bullring.co.uk)

**Principality (Millenium) Stadium**, Cardiff

[www.principalitystadium.wales](http://www.principalitystadium.wales)

**Eden Project**, Cornwall

[www.edenproject.com](http://www.edenproject.com)

**Titanic Museum**, Belfast

[www.titanicbelfast.com](http://www.titanicbelfast.com)

**The SSE Hydro**, Glasgow

[www.thessehydro.com/about](http://www.thessehydro.com/about)

**The Shard**, London

[www.the-shard.com/shard/a-vertical-city](http://www.the-shard.com/shard/a-vertical-city)

'Building the Shard', Ingenia online, Issue 52, September 2012,

[www.ingenia.org.uk/Ingenia/Articles/790](http://www.ingenia.org.uk/Ingenia/Articles/790) (use of 'top down' construction)

**Burj Khalifa**, Dubai

[www.burjkhalifa.ae/en/the-tower/factsandfigures](http://www.burjkhalifa.ae/en/the-tower/factsandfigures)

**Petronas Twin Towers**, Kuala Lumpur, Malaysia

[www.petronastwintowers.com.my/facts](http://www.petronastwintowers.com.my/facts)

**Sydney Opera House**, Sydney, Australia

[www.sydneyoperahouse.com/about/house\\_history\\_landing.aspx](http://www.sydneyoperahouse.com/about/house_history_landing.aspx)

**Guggenheim Museum**, Bilbao, Spain

[www.guggenheim-bilbao.eus](http://www.guggenheim-bilbao.eus)

**Empire State Building**, New York, USA

[www.esbnyc.com](http://www.esbnyc.com)

**The Eiffel Tower** Paris, France

[www.toureffel.paris/en/everything-about-the-tower/themed-files/69.html](http://www.toureffel.paris/en/everything-about-the-tower/themed-files/69.html)

**HS2**, England

[www.gov.uk/government/publications/high-speed-two-an-engine-for-growth/high-speed-two-an-engine-for-growth](http://www.gov.uk/government/publications/high-speed-two-an-engine-for-growth/high-speed-two-an-engine-for-growth)

**Crossrail**, London

[www.crossrail.co.uk/news/crossrail-in-numbers](http://www.crossrail.co.uk/news/crossrail-in-numbers)



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**TYNE BRIDGE**  
NEWCASTLE

**FACT 1:** Built by Dorman Long and Co. of Middlesbrough who later went on to build Sydney Harbour Bridge.

**FACT 2:** A steel truss arch bridge, which took 3 years to build at a cost of £1.2m and at the time of its construction was the world's longest single span bridge.

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**FACT 3:** Officially opened in 1928 by King George V.

**FACT 4:** Created to handle increasing traffic, and provided work for hundreds at a time of increased unemployment.



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**BEETHAM TOWER**  
MANCHESTER

**FACT 1:** Is 171 metres and 48 stories high.

**FACT 2:** Has over 528,000 square feet of space.

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**FACT 3:** Contains a five-star, 285-bed Hilton International Hotel across 22 floors.

**FACT 4:** Completed in 2006 at a cost of £150 million.



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**BULLRING**  
BIRMINGHAM

**FACT 1:** Over 8000 new jobs have been created as a result of the development which is part of Europe's largest retail-led regeneration project, representing an investment of over £1 billion.

**FACT 2:** Over 400 million people have visited the development in its first 10 years of existence.

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**FACT 3:** Has involved the installation of 15,460 tonnes of structural steelwork – twice that of the Eiffel Tower.

**FACT 4:** On-site labour force peaked at 1,500 during main construction, and over 2,500 during the latter stages of fit-out.



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**PRINCIPALITY (MILLENNIUM) STADIUM**  
CARDIFF

**FACT 1:** 56,000 tonnes of concrete and steel went into its creation.

**FACT 2:** Is the UK's first certifiably sustainable event stadium.

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**FACT 3:** Has welcomed, on average, over 1.3 million visitors per year since opening in June 1999.

**FACT 4:** Sports the first fully-retractable roof in the UK.



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**THE EDEN PROJECT**  
CORNWALL

**FACT 1:** Comprises two Biome buildings – areas designed to represent distinct climates found around the world – the Rainforest Biome and the Mediterranean Biome.

**FACT 2:** Uses innovative examples of recycled building materials such as green tiles in the floor made from recycled Heineken bottles, and entrance mats made from recycled truck tyres.

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**FACT 3:** 230 miles of scaffolding were used in its construction, setting a new world record.

**FACT 4:** About two-thirds of the site's water needs are provided from water collected on site; harvested rain and ground water is used to irrigate its 2 million plants.



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**TITANIC MUSEUM**  
BELFAST

**FACT 1:** The design comprises a number of maritime metaphors including water crystals and ships bows.

**FACT 2:** The total cost of the project was over £100m.

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**FACT 3:** The 14,000 sq.m structure accommodates nine galleries of interactive exhibition space.

**FACT 4:** Is at the centre of the world's largest urban waterfront regeneration projects.



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**THE SSE HYDRO  
GLASGOW**

**FACT 1:** The unique façade of The SSE Hydro uses a special film originally developed for the space industry, allowing natural light to illuminate the foyers during the day and the arena to 'glow' at night.

**FACT 2:** Its distinctive elliptical sloping shape has been inspired by ancient Greek and Roman amphitheatres to offer the optimum balance of viewing angle and distance from the stage.

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**FACT 3:** Designed to be flexible, accommodating a wide range of concerts, conferences and events.

**FACT 4:** Has a 125 metre wide roof, with the diagonally latticed steelwork forming a shallow silver dome standing 45 metres at its highest point.



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**THE SHARD**  
LONDON

**FACT 1:** It is 309.6 metres tall and has 95 storeys.

**FACT 2:** It made bold and imaginative use of 'top-down' construction which allowed the first 23 storeys of the concrete core and much of the surrounding tower to be built before the basement beneath it had been fully excavated.

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**FACT 3:** The building is served by 44 lifts, some of which are double-decker, and travel at speeds of up to 6 metres a second.

**FACT 4:** Its exterior is covered by 11,000 glass panels – equivalent in area to eight football pitches or two and a half Trafalgar Squares.



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**BURJ KHALIFA**  
DUBAI

**FACT 1:** Is over 828 metres and more than 160 stories high.

**FACT 2:** Construction will have used 330,000 m<sup>3</sup> of concrete and will have taken 22 million person-hours.

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**FACT 3:** It holds the following records (among others):

- Tallest building in the world
- Tallest free-standing structure in the world
- Highest number of stories in the world.

**FACT 4:** The landscaping is irrigated using water condensation from the tower's cooling equipment, providing an estimated 15 million gallons of water a year, enough to fill 20 Olympic-sized swimming pools.



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**PETRONAS TWIN TOWERS**  
KUALA LUMPUR, MALAYSIA

**FACT 1:** The towers are 88 stories high; 452m from ground level.

**FACT 2:** The design of each tower's floor plate is based on simple Islamic geometric forms of two interlocking squares, creating a shape of eight-pointed stars.

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**FACT 3:** Each tower weighs 300,000 tonnes (equivalent to 42,857 elephants).

**FACT 4:** The towers are 'intelligent' structures, built with a system that seamlessly coordinates telecommunications, environment control, power supply, lighting, fire and smoke control, and building security.



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**SYDNEY OPERA HOUSE**  
SYDNEY, AUSTRALIA

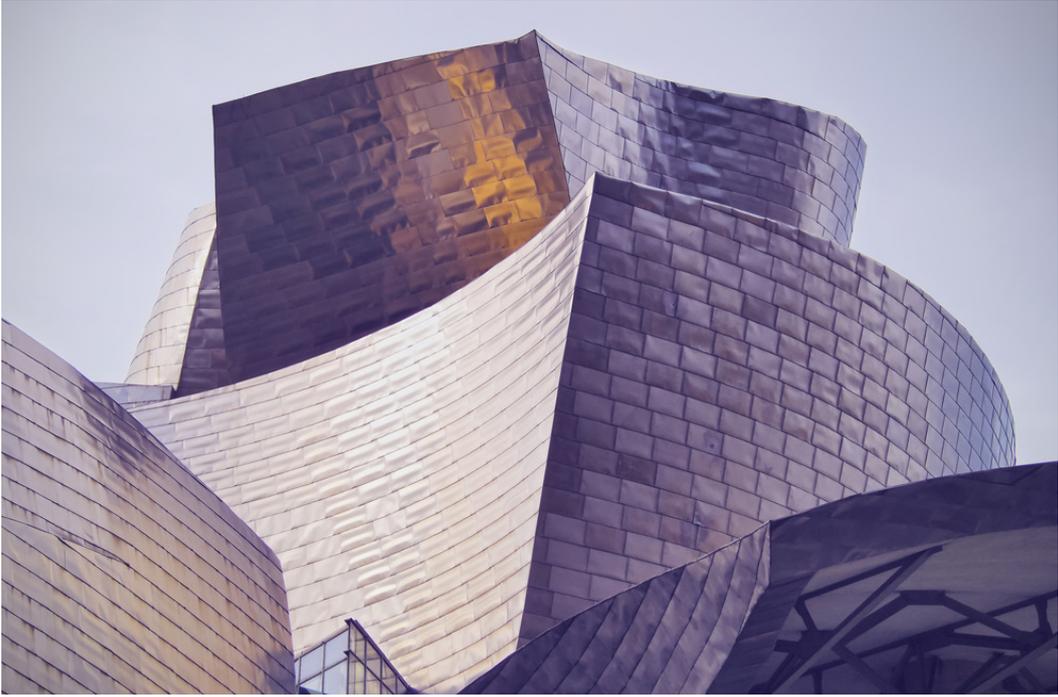
**FACT 1:** Denmark's Jørn Utzon was commissioned as the sole architect of the project as the result of an international design competition called by the New South Wales Government in 1956.

**FACT 2:** The design and construction of the shell structure took eight years to complete and the development of the special ceramic tiles for the shells took over three years.

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**FACT 3:** It is a UNESCO world heritage site.

**FACT 4:** The distinctive roof comprises sets of interlocking vaulted 'shells' set upon a vast terraced platform and surrounded by terrace areas that function as pedestrian concourses.



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**GUGGENHEIM MUSEUM**  
BILBAO, SPAIN

**FACT 1:** Opened in 1997, designed by Frank Gehry.

**FACT 2:** Is made of titanium, glass, and limestone.

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**FACT 3:** The architect used cutting-edge computer-aided design technology to faithfully translate his concept to the structure and to help construction.

**FACT 4:** The finish of the approximately 33,000 extremely thin titanium sheets provides a rough and organic effect, adding to the material's colour changes depending on the weather and light conditions.



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**EMPIRE STATE BUILDING**  
NEW YORK, USA

**FACT 1:** Is made up of 200,000 cubic feet (18,580.61 m<sup>2</sup>) of Indiana Limestone.

**FACT 2:** The recent environmental upgrade of the building is expected to reduce energy use by more than \$4.4 million annually and cut carbon emissions by 105,000 metric tons over a 15-year period.

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**FACT 3:** Was erected in a lightning fast 11 months and was officially opened in 1931 by President Hoover.

**FACT 4:** Is home to so many businesses that it has its own zip code: 10118.



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**THE EIFFEL TOWER**  
PARIS, FRANCE

**FACT 1:** Built for the 1889 Exposition Universelle, which celebrated the 100th year anniversary of the French Revolution.

**FACT 2:** Is 324 metres tall.

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**FACT 3:** Was constructed in record time (at the time) in 2 years, 2 months and 5 days.

**FACT 4:** Has 20,000 bulbs which sparkle for 5 minutes on the hour every hour from nightfall to 1 am.



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**HS2**  
**ENGLAND**

**FACT 1:** Will be 351 miles of new track linking London to Birmingham and Birmingham to Manchester and Leeds.

**FACT 2:** The budget is £42.6 billion over 20 years.

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**FACT 3:** Construction is expected to begin in 2017. Phase One is scheduled to open in 2026 and Phase Two in 2033.

**FACT 4:** Will link 8 of Britain's 10 largest cities.



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## CROSSRAIL LONDON

**FACT 1:** At peak construction, more than 10,000 people were working on more than 40 sites across London.

**FACT 2:** 42km of new rail tunnels were constructed below the streets of London for the project.

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**FACT 3:** Work started in May 2009 and the first services will start in late 2018.

**FACT 4:** The route will run over 100km from Reading and Heathrow in the west, through new tunnels under central London to Shenfield and Abbey Wood in the east.