

## ARCHITECTURE

## UNIT 5

## UNLOCK YOUR KNOWLEDGE

Work with a partner. Discuss the questions.

- 1 Do people in your country generally live in houses or apartments?
- 2 What is the most important room in your home? Why?
- 3 What would you change about your home, school or workplace to improve it?
- 4 Are there any famous old buildings in your country? Are they protected? Do you think this is important? Why / Why not?



## WATCH AND LISTEN

ACTIVATING YOUR  
KNOWLEDGE

## PREPARING TO WATCH

- 1 Work with a partner and answer the questions.
  - 1 A lot of energy is wasted in buildings. How do people waste energy in their homes?
  - 2 How can people reduce the amount of energy they waste in their homes?
  - 3 Can the government help reduce the amount of energy that is wasted in our homes? How?
- 2 Look at the pictures from the video. Discuss the questions with a partner.
  - 1 The workers in the first and second picture are making these homes more energy-efficient. How do you think they are doing that?
  - 2 What do you notice about the house in the last picture?
  - 3 What do you think the climate is like where these homes are? Do the homes need heat? Air conditioning?

## GLOSSARY

**insulation** (n) covering that prevents heat, sound, or electricity from escaping

**intense lobbying** (n phr) a powerful effort to convince the government to do something

**be a rarity** (v) to be very unusual

**the norm** (n) the usual way that things happen

**scrap** (v) to not continue with a plan

**set something back** (phr v) to make things happen more slowly than they should

## WHILE WATCHING

- 3 Watch the video. Write *T* (true) or *F* (false) next to the statements below. Correct the false statements.
  - \_\_\_\_\_ 1 Most homes in Britain are not very well insulated.
  - \_\_\_\_\_ 2 The government helps low-income home owners with the cost of insulation.
  - \_\_\_\_\_ 3 Britain will reach its target of an 80% reduction in emissions by 2050.

UNDERSTANDING  
MAIN IDEAS



- \_\_\_\_\_ 4 Builders are struggling to work out how to build more energy-efficient homes.
- \_\_\_\_\_ 5 The government no longer supports the zero-carbon home standard.
- \_\_\_\_\_ 6 Housing developments with energy-efficient homes are uncommon in Britain.

**4** Watch again. Complete the notes.

<sup>1</sup> \_\_\_\_\_ of the money that people in Britain spend on heating is wasted because their homes do not have enough <sup>2</sup> \_\_\_\_\_. The government wants to change that, aiming for an 80% <sup>3</sup> \_\_\_\_\_ in emissions. Builders already know how to build <sup>4</sup> \_\_\_\_\_ homes. They can build homes that maintain a comfortable <sup>5</sup> \_\_\_\_\_ without using much energy. Nevertheless, the emissions rate in Britain is <sup>6</sup> \_\_\_\_\_. Earlier, there was a <sup>7</sup> \_\_\_\_\_ standard for building homes, but after an intense lobbying effort, it was <sup>8</sup> \_\_\_\_\_. Today, with no clear standard, builders are <sup>9</sup> \_\_\_\_\_ about what kind of homes they should build.

**5** Work with a partner. Discuss the questions. Give reasons for your answers.

- 1 The 'passive-house standard' means that houses stay warm enough without extra heating. How do you think that works?
- 2 Why do you think there was 'intense lobbying' against the passive-house standard? Who do you think was lobbying against it?
- 3 The expert in the video says that zero-emissions homes are within our grasp. Do you think Britain will reach this goal soon? Why / Why not?

## DISCUSSION

**6** Work with a partner and answer the questions.

- 1 Is the home you live in energy-efficient? Give some examples to support your answer.
- 2 Who makes the decisions about how homes are built (for example, how much insulation is used) in your community?
- 3 Is your community concerned about energy efficiency? Give some examples.
- 4 What are some other major sources of carbon emissions outside of homes?

## UNDERSTANDING DETAIL

## MAKING INFERENCES

## READING

## READING 1

## PREPARING TO READ

USING YOUR  
KNOWLEDGE

1 You are going to read an article about 'green' buildings. Work with a partner. Answer the questions.

- 1 Why do some people care about buildings being environmentally friendly?
- 2 How can architects design buildings that use less energy?
- 3 How can we reduce the amount of energy we use in our homes?

UNDERSTANDING  
KEY VOCABULARY

2 Read the definitions. Complete the sentences with the words in bold.

**compromise** (n) an agreement between two sides who have different opinions, in which each side gives up something it had wanted

**conservation** (n) the protection of plants, animals and natural areas from the damaging effects of human activity

**durable** (adj) able to last a long time without being damaged

**efficiency** (n) the condition or fact of producing the results you want without waste

**relevant** (adj) related to a subject or to something happening or being discussed

**second-hand** (adj) not new; having been used in the past by someone else

**sector** (n) a part of society which can be separated from other parts because of its own special character

- 1 Buildings which are tough and last a long time are usually made from \_\_\_\_\_ materials.
- 2 The city planning committee may have to make a(n) \_\_\_\_\_ in order to both save money and use high-quality building materials.
- 3 It is important for developers to consider the \_\_\_\_\_ of their plan so that they avoid wasting time, money or labour.
- 4 Developers cannot build in certain locations, such as rainforests, due to environmental \_\_\_\_\_.
- 5 If previously used wood is still in good condition, a builder may choose to use it for construction even though it is \_\_\_\_\_.
- 6 Most architects work in the private \_\_\_\_\_, which means they work for companies and not for the government.
- 7 The architect who designed the building does not think people's opinion of its appearance is \_\_\_\_\_ to its purpose.

### Skimming a text

Skimming is reading a text quickly in order to get a general idea of its main points. It is particularly useful when you have a great deal of information to read in a short space of time, or when it is not necessary to understand a text in detail. Readers often skim a text to find out if it will be useful or not before reading it more thoroughly. This is particularly important in academic reading where you may only have time to read the most useful information.

#### Do ...

- ✓ look at the title, any subheadings and illustrations – they will often give clues about the content.
- ✓ read the introductory paragraph, which should tell you what the text will be about.
- ✓ read the concluding paragraph.
- ✓ read the first sentence of each paragraph, which may present its topic.

#### Don't ...

- ✗ stop to look up unknown words.
- ✗ say the individual words that you read in your head. Try to just focus on the meaning.
- ✗ read examples.

- 3** Look at the photos with the article on page 108. Read only the title, the introductory paragraph and the concluding paragraph. Complete the statement below.

This article will be useful for a student who needs to find out about ...

- a houses in New Mexico.
  - b the causes of climate change.
  - c the conservation of ancient buildings.
  - d arguments for ecologically responsible construction.
- 4** How did you find the answer for Exercise 3? What was most helpful – the photos, the title, the introductory paragraph or the concluding paragraph?
- 5** Skim the article and write the corresponding paragraph numbers next to the ideas below. Then check your answers with a partner.
- a a type of eco-building \_\_\_\_\_
  - b a specific example of an eco-home \_\_\_\_\_
  - c a current trend in construction \_\_\_\_\_
  - d the need to produce eco-buildings \_\_\_\_\_
  - e the pros and cons of producing eco-buildings \_\_\_\_\_
  - f an example of a public eco-building \_\_\_\_\_

# We need more green buildings

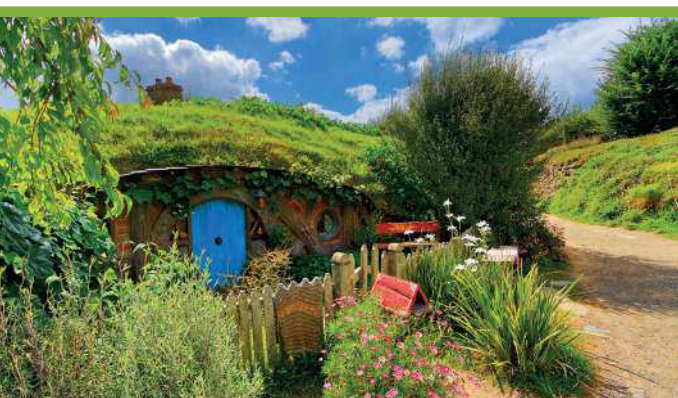
- 1 In recent years, there has been a general trend for new buildings to be more environmentally friendly, or more 'green'. Such a building is sometimes called an *eco-building*. These buildings use energy and water efficiently, which reduces waste and pollution. However, installing features like solar panels and water-recycling systems involves higher construction costs than in a traditional building. Despite these extra costs, green buildings are good for the planet and their benefits are clear.
- 2 In New Mexico, in the US, there are homes, called *Earthship houses*, constructed from recycled bottles, tyres, aluminium cans and other rubbish. Often the cans, bottles and tyres are filled with soil and then the outsides are covered with natural mud. These homes are designed to use solar power – the energy from the sun – rather than electricity produced from fossil fuels<sup>1</sup>. These recycled-construction designs are just as **relevant** for other types of buildings. In both Uruguay and Sierra Leone, for example, there are recycled-construction schools for local children.
- 3 In the UAE, the Zulekha Hospital in Sharjah was the first Middle Eastern building to be awarded 'platinum certification' by the Green Building Council. They received this by meeting various green requirements, including sustainability, water and energy efficiency and indoor environmental quality. The hospital executives researched ways to make the hospital green during the construction phase of the building, and numerous features were put into the design to make it sustainable and show their commitment to the environment.
- 4 Another example of an eco-building is a private residence in Wales known as the 'Hobbit House'. Its frame is made of wood and the walls are made of straw, which provides excellent insulation. The roof consists of mud planted with grass, which keeps heat in and has a low impact on



the environment. Solar panels provide electricity for lighting and electrical equipment. Water is supplied directly from a nearby river and is also collected from the roof for use in the garden, avoiding the need to waste clean water. Low-impact houses like this one are green because they use **second-hand** materials and do not rely on fossil fuels, but instead use renewable energy sources such as solar or wind power.

- 5 Critics of these kinds of eco-buildings say that while they may be good for the environment, there are practical problems with their affordability. They are often too costly to become a large-volume method of construction. There are further concerns over their long-term **efficiency**. Not much energy can be realistically generated by solar panels in places which do not have large amounts of sunlight, and not every location has access to a natural water source. However, overall, green buildings are worth it. Yet, in order to finance environmentally friendly construction and produce an affordable building, **compromises** have to be made. These may be that the building will have to be smaller or made of less **durable** materials and with technology which uses more energy. Perhaps these compromises are easier to make for schools, where ideas about **conservation** are useful for education, or for businesses where ecologically aware features are a useful marketing tool, rather than for private homes.
- 6 The argument for constructing green buildings is clear. According to the United Nations, material resource use in the construction **sector** is expected to reach nearly 90 billion tonnes very soon, and may more than double by 2050. Without greater resource efficiency, sustainable development goals will not succeed. We need to be wise about how we use these resources for the good of the planet. However, it remains to be seen whether we are able to accept the financial and practical compromises of producing and living in environmentally friendly buildings.

<sup>1</sup>**fossil fuels** (n) fuels such as gas, coal and oil produced in the earth from the remains of plants and animals



## WHILE READING

6 Read the article. Write *RC* (recycled-construction building), *HH* (Hobbit House) or *N* (neither type of building) for the architectural features below.

- |                                   |                               |
|-----------------------------------|-------------------------------|
| 1 a grass roof _____              | 5 a wooden construction _____ |
| 2 a local water source _____      | 6 straw walls _____           |
| 3 recycled cans and bottles _____ | 7 recycled tyres _____        |
| 4 gas heating _____               | 8 natural insulation _____    |

7 Read the article again. Write *T* (true), *F* (false) or *DNS* (does not say) next to the statements. Then correct the false statements.

- \_\_\_\_\_ 1 Generally, eco-buildings are becoming more popular.
- \_\_\_\_\_ 2 Eco-buildings cost double the price of a traditional building.
- \_\_\_\_\_ 3 Environmentally friendly practices are relevant, no matter what size of building you are constructing.
- \_\_\_\_\_ 4 Some old construction methods can be useful in environmentally friendly construction.
- \_\_\_\_\_ 5 Fossil fuels are examples of renewable types of energy.
- \_\_\_\_\_ 6 Some schools are eco-friendly buildings.
- \_\_\_\_\_ 7 The United Nations produces data about global energy use.

## READING BETWEEN THE LINES

8 Work with a partner. Answer the questions.

- In the introduction, it is stated that 'the benefits are clear'. What do you think those benefits are?
- Why do you think it was necessary for the Zulekha Hospital in Sharjah to consider green features during the construction phase, rather than later on?
- How do you think recycled-construction schools might be effective educational aids for the students who attend them?

## DISCUSSION

9 Work with a partner. Discuss the questions.

- Would you live in an eco-home if you had to pay more for its environmentally friendly features? Why / Why not?
- Do you think there should be restrictions on how much energy individuals or institutions should be allowed to use? Why / Why not?

### READING FOR DETAIL

### MAKING INFERENCES



## READING 2

UNDERSTANDING  
KEY VOCABULARY

## PREPARING TO READ

1 You are going to read an essay on form and function in building design. Read the sentences and choose the best definition for the words in bold.

- 1 The **function** of an architectural drawing is to show what the building design looks like before it is built.
  - a complexity or detail
  - b a purpose, or the way something works
- 2 Buildings which have no windows and are box-like with no unique features or decoration can seem very **depressing**.
  - a making you feel unhappy and without hope
  - b making you feel physically weak and less active
- 3 When you see a magnificent work of art, such as a painting or a beautiful building, the creativity behind it can be **inspiring**.
  - a giving you new ideas and making you feel you want to do something
  - b informative or educational
- 4 I felt that the people in that city must be pretty **civilized** when I saw the beautiful parks and buildings that they have.
  - a having a well-developed way of life and social systems
  - b relating to legal issues
- 5 It **reflects** badly **on** citizens who do not take care of their public parks and buildings.
  - a reacts to
  - b causes people to think of someone or something in a specified way
- 6 That architect has a wonderful **reputation** in her field; she is widely admired by many other architects.
  - a the general opinion that people have about someone
  - b a collection of works
- 7 He **demonstrated** the new construction technique for the public at the building design convention.
  - a criticized or disapproved of something
  - b showed how to do something; explained

USING YOUR  
KNOWLEDGE

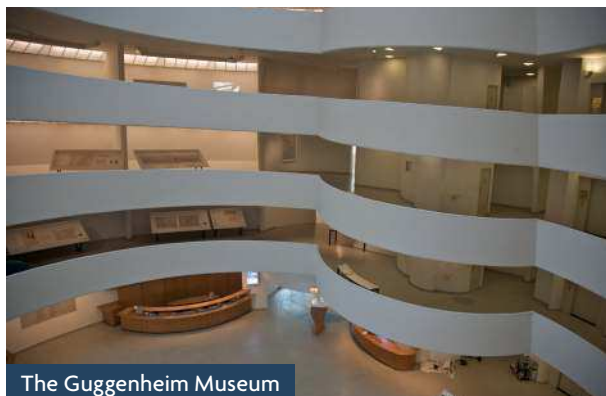
- 2 Work with a partner. Discuss the questions.
  - 1 What are the most beautiful buildings in your country?
  - 2 Are these buildings older buildings or modern constructions?
  - 3 Do people in your country generally prefer modern or older houses?
  - 4 Which is more important for a building: its beauty or its function?
- 3 Skim the essay opposite. Does the writer think it is more important to design a building which is beautiful or one which is functional?

## SKIMMING



## BUILDING DESIGN: form vs function

- At the start of the twentieth century, Louis Sullivan, one of the creators of modern architecture, said that 'form follows **function**'. The term 'functionalism' is used to describe the idea behind architecture which primarily focuses on the purpose of a building. However, many people disagree with this and feel that beauty is a more important factor in architectural design. In the modern world, it seems that most architects try to combine both ideas, aiming to create buildings which are both functional and **inspiring** in their beauty.
- The reason for creating a building in the first place – its use – is clearly very important. When building an airport terminal, for example, you need to think of the needs of passengers as well as planes. Passengers want to get to their plane as quickly as they can, and planes need to be parked in a way which maximizes their ease of use. As such, many airport terminals have a circular shape with satellite areas. Residential homes need to have enough space for a family, art galleries need wall space to show pictures and factories need to produce goods as efficiently as possible. Each type of building has a different function, and, therefore, it has a different form.
- On the other hand, many people believe that architects have a wider responsibility to society than just designing functional buildings. Beautiful, well-constructed buildings are a symbol of a **civilized** society and they **reflect** well **on** a business or the **reputation** of the owner. Ugly public buildings, however, can project a negative image of the organization. People say that living or working in an ugly place creates a **depressing** and uninspiring environment. In contrast, an attractive building can make people feel happier and increase their motivation to work.
- In theory, there seems to be no reason why architecture cannot be both functional and beautiful. Yet in practice, this can cause problems. The Modern International style of the 1920s and 1930s, an example of which is the Guggenheim Museum in New York, was supposed to combine beauty with function. Many consider the museum's white spiral ramp beautiful, but there have been complaints that it is impractical, as it is difficult to stand back to view the art. Also, the ramp is so narrow that it can become overcrowded. The Farnsworth House by Ludwig Mies van der Rohe is another icon of beautiful design which **demonstrates** the idea that 'less is more'. However, critics have attacked it for a lack of privacy because of the huge glass windows. It also has a leaky flat roof and has been repeatedly flooded. It seems that even these two celebrated designs have problems with functionality.
- If architects focus only on function, buildings may be cold, ugly and uninteresting. There is no doubt that a building with a beautiful form is something we can all appreciate. On the other hand, if they focus only on making it look beautiful, the building may be completely impractical. Therefore, blending these two ideas is necessary to create the perfect piece of architecture.



The Guggenheim Museum



The Farnsworth House

## WHILE READING

- 4 Read the essay again. Then complete the summary.

While some architecture values <sup>(1)</sup> \_\_\_\_\_ over form, there is an opposing view that the <sup>(2)</sup> \_\_\_\_\_ of a building is more important than its functionality. In practice, most <sup>(3)</sup> \_\_\_\_\_ strive for a combination of both ideas.

Architects feel that they are expected to design attractive buildings. The appearance of a building can <sup>(4)</sup> \_\_\_\_\_ either positively or negatively on its owner. Also, it can have an impact on the users' <sup>(5)</sup> \_\_\_\_\_, which affects motivation.

Still, the first consideration in the design of a <sup>(6)</sup> \_\_\_\_\_ should be its purpose. The physical space should allow its <sup>(7)</sup> \_\_\_\_\_ to function as efficiently and comfortably as possible.

Although form *and* function is obviously the ideal, it is not always so easy to achieve, as shortcomings in several <sup>(8)</sup> \_\_\_\_\_ buildings have shown.

- 5 Match the original sentences (1–6) from the text to the correct paraphrases (a–f).

## Original sentences

- 1 Beautiful, well-constructed buildings are a symbol of a civilized society.
- 2 People say that living or working in an ugly place creates a depressing and uninspiring environment.
- 3 Many people believe that architects have a wider responsibility to society than just designing functional buildings.
- 4 'Less is more'.
- 5 It seems that even these two celebrated designs have problems with functionality.
- 6 Each type of building has a different function, and, therefore, it has a different form.

## Paraphrases

- \_\_\_\_\_ a Unattractive buildings can make people feel unhappy and bored.
- \_\_\_\_\_ b Attractive, safe buildings represent a cultured society.
- \_\_\_\_\_ c A minimalist design can actually create a more powerful effect.
- \_\_\_\_\_ d Every construction has a different purpose, and is therefore designed according to different criteria.
- \_\_\_\_\_ e These famous buildings may have won awards, but they still do not always fulfil users' needs.
- \_\_\_\_\_ f People who design buildings have a duty to the general public.

## SUMMARIZING

UNDERSTANDING  
PARAPHRASE