

9 High living: skyscrapers

LANGUAGE

1 GRAMMAR

Choose the correct option to complete the sentences.

- 1 No *speak* / *to speak* / *speaking* when the studio light is red.
- 2 *Not* / *Don't* / *No* forget to attach your safety harness.
- 3 Chemicals *must always* / *always must* / *always* be stored safely.
- 4 *Must you* / *Must* / *You must* check the oil levels regularly.
- 5 *Never* / *Don't never* / *Do not never* smoke near petrol or kerosene.
- 6 *Wear always* / *Always wear* / *You wear* a hard hat on the construction site.
- 7 Fork-lift trucks must not be *drive* / *driving* / *driven* over 20 kph.
- 8 *You switch* / *Switch* / *Do you switch* off the power before attempting maintenance.

2 Key words from the unit

Complete the sentences with the words from the list.

- 1 _____ covers the outside of the buildings.
- 2 A lot of the parts of a skyscraper are _____.
- 3 A _____ is horizontal.
- 4 A _____ is vertical.
- 5 They are paid a _____ if they finish early.
- 6 The safety harness has a _____.
- 7 The metal _____ is filled with concrete.
- 8 Do not remove the _____ from this machine.

pile
cladding
guard
girder
decking
lifeline
bonus
prefabricated

READING AND VOCABULARY

Very high buildings, often called skyscrapers, allow us to make good use of the limited and expensive land in cities. They can also show the confidence and importance of a company, city, or country. This leads to never-ending competition to build the highest skyscraper.

When we look at a skyscraper, we see shining metal and glass. But this is only the outer covering. All the structure is inside the building. A high building is like a human or animal body: it has a strong structure inside and an outer skin or covering. The structural part of the skyscraper is made of steel: vertical steel columns and horizontal steel girders. To prevent them from buckling or bending, they are often made in the shape of the letter I (I-shaped girders).

When the columns and girders for one storey of a building are in position, the concrete floor is made. This is done by putting metal decking (flat metal sheets like the deck of a boat) across the girders and filling them with liquid concrete. The decking acts as a former, which forms or moulds the concrete to the correct shape. Most high buildings are constructed using the process of prefabrication: complete floors are first fabricated (built) at ground level, then lifted by cranes and fitted into position.

When the steel structure is completed, the outside of the building is covered with its outer skin. This skin is called the cladding or curtain wall. It is made of materials such as glass, aluminium, or steel.

The weight of a finished skyscraper is very great, so it must rest on good foundations. Where ground conditions are not good, piles and concrete rafts are used. Piles are long columns of steel or reinforced concrete. Steel piles are driven into the ground by a pile-driver until they reach hard ground or rock. Reinforced concrete piles are made by drilling holes and filling the holes with steel and concrete. A concrete raft is a flat platform of steel-reinforced concrete, which is formed above the piles. This spreads the weight of the building over a wider area.

3 Comprehension

Choose the best answer (a, b, c or d) to complete the sentences.

- The first paragraph is about the _____ high buildings.
a disadvantages of b reasons for c cost of d highest
- The second paragraph is about the _____ of high buildings.
a outer covering b uses c strength d internal structure
- The third paragraph is about the _____ constructing the floors.
a concrete for b dangers of c process of d advantages of
- The fourth paragraph is about the building's _____.
a completion b walls c cladding d materials
- The fifth paragraph is about the parts of the building that are _____.
a underground b heavy c reinforced d finished
- A raft is _____.
a horizontal b vertical c made of steel d below the piles

4 Words from the text

Find words in the text with a similar meaning to the words and phrases below.

- bending *b* _____
- thin, vertical, structural parts of a building *c* _____
- floors of a building *s* _____
- machines for lifting very heavy things *c* _____
- the underground parts that a building rests on *f* _____
- made stronger *r* _____

5 Further vocabulary practice

Complete each sentence with the word in brackets and the correct affix below.

dis-
-ion
-ive
re-
-ty
un-

- 1 You need _____ clothing. (protect)
- 2 You must wear eye _____. (protect)
- 3 _____ the machine from the electricity supply before you repair it. (connect)
- 4 Do not _____ the guard when this machine is running. (move)
- 5 Be extra careful with _____ machines. (familiar)
- 6 Remember that _____ is more important than speed. (safe)

WRITING

6 Safety information

Read the list of safety advice for workers in a factory that makes construction materials. The manager wants you to rewrite the list adding reasons for each rule.

- 1 Learn to lift things correctly.
- 2 Do not smoke in the factory.
- 3 Do not stand below places where men are working.
- 4 Do not use chemicals without protection.
- 5 Do not wear soft or open shoes.
- 6 Always learn about a machine before you use it.

Rules and reasons

1 *Learn to lift things correctly because you may injure your back if you lift heavy things incorrectly.*

2 _____
