

# THE POWER OF STEEL

## ARCELORMITTAL ORBIT QUEEN ELIZABETH OLYMPIC PARK, LONDON

The ArcelorMittal Orbit is the **UK's tallest sculpture** and the **longest and tallest tunnel slide** in the world. It is made of **35,000 bolts** and enough steel to make **265 double-decker buses**. Steel was partly chosen as a building material for its infinite **recyclability** – 60% of the ArcelorMittal Orbit is made from **recycled steel**, including washing machines and used cars!

## CHOOSING THE RIGHT MATERIAL FOR THE JOB

When creating a structure like the ArcelorMittal Orbit, great consideration must be given to choosing the right material for construction, reflecting on key properties of a material, including:

### HARDNESS

Resistance to scratching, deformation, cutting & wear.

### STRENGTH

Ability of a material to stand up to forces being applied without it bending or breaking.

### TENSILE STRENGTH

Strength of the material when stretched.

### ELASTICITY

The ability to get back to its original shape after it has been misshapen.

### MALLEABILITY

The ability to be easily pressed, spread & hammered into shapes.

### DUCTILITY

The ability of a material to change shape usually by stretching.

### PLASTICITY

The ability of a material to be changed in shape permanently.

### TOUGHNESS

Resistance to breaking, bending or deforming.

### COMPRESSIVE STRENGTH

Strength when under pressure.

### BRITTLENESS

Materials that can withstand little or no plastic deformation & break easily without bending.

The ArcelorMittal Orbit is 114.5m tall

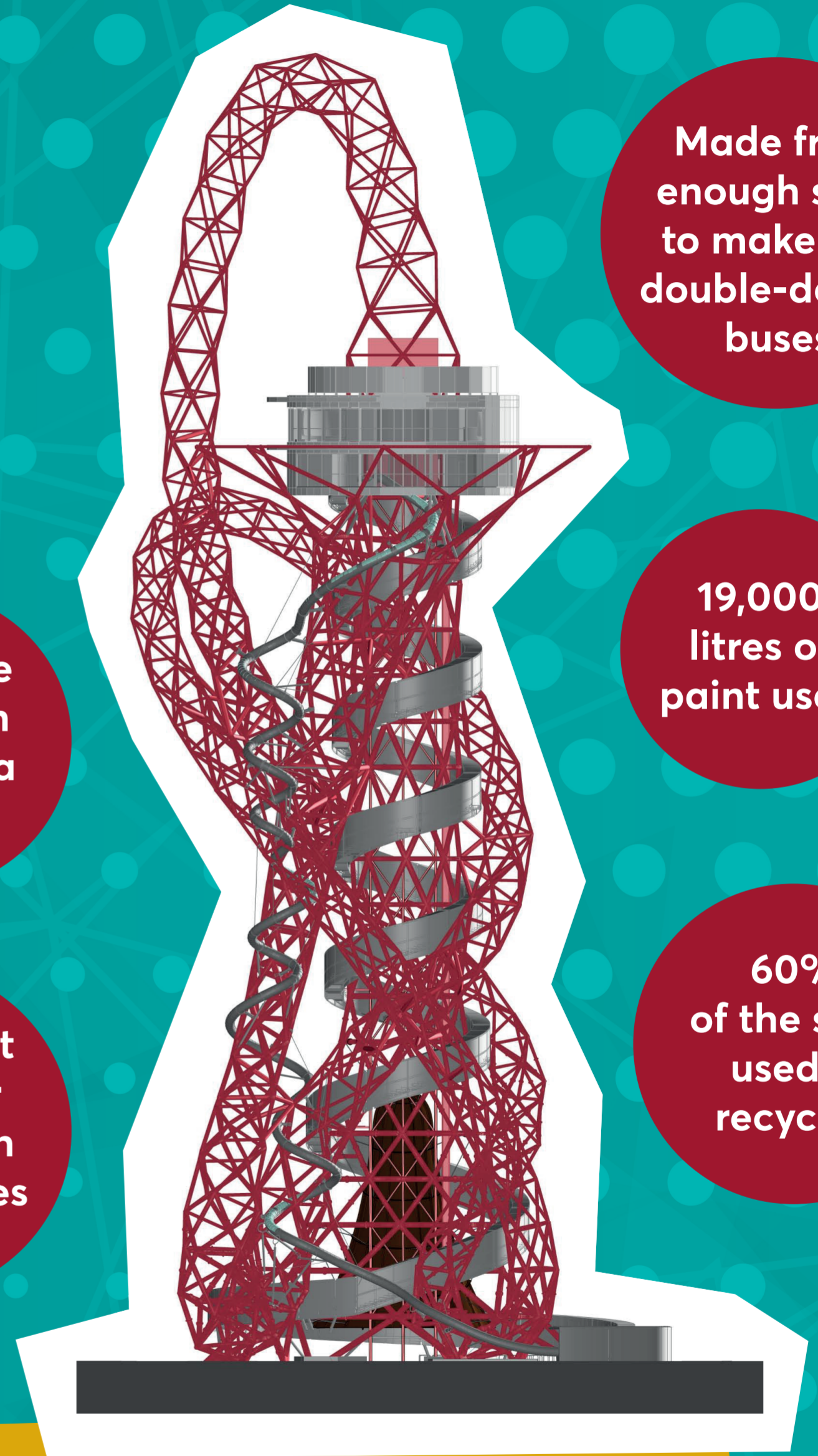
Made from enough steel to make 265 double-decker buses

There are five main loops of a 3D knot

19,000 litres of paint used

The vibrant red colour was chosen as it signifies luck

60% of the steel used is recycled



What properties make stainless steel a good choice for the Slide?