

# EDUCATION WITH ALTITUDE

## THE EDGE FACTS

### THE EDGE IS A WORLD FIRST!

It's a huge moving glass cube that carries passengers 3 metres outside of the building. It works like a giant matchbox, projecting from the inside of Eureka Tower all the way outside of the building.

The Edge was designed by Dick Baird, Consulting Engineer and Chairperson on the Australian Standards Committee for amusement devices. Built by G&G Engineering of Melton, Victoria, the Edge has a 'switchable glass' substrate by iGlass of Ballarat, the first of its kind in the world, with glass manufactured and laminated by Pilkingtons.

**Time Taken to Construct:** Six months in total.

**Materials:** Two tonnes of glass, 45mm thick, reinforced between steel framework.

**Weight:** The cube is six tonnes in total, including glass. Passengers will add a further one tonne.

**Strength:** The cube is designed to hold at least 10 tonnes but is capable of withstanding much higher loads.

**Dimensions:** Height- 2.1m inside, width- 2.6m, depth- 3m of glass cube and 3m of 'vestibule' at rear.

**Hours of Operation:** 10am – 10pm

**Operating Conditions:** Extremely high winds (above 70km/h) would prevent operation. No other weather conditions should effect operation, although hailstorms and clouds may obstruct the view.

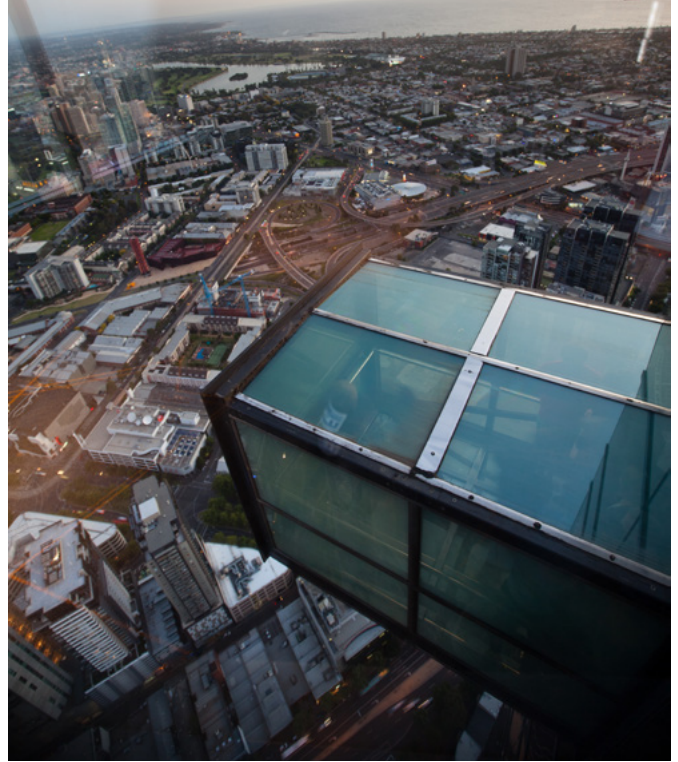
**The Edge Function:** The cube walls start off fully opaque. Once the cube is fully extended, the glass floor changes from opaque to clear instantly; followed by the other surfaces. A dramatic soundtrack accompanies this movement. Various sequences for glass effects have been programmed, so every experience can be different. Each Edge movement sequence takes approximately five minutes.

**Speed:** The Edge moves at a speed of one metre every 10 seconds.

**Capacity:** Twelve people at a time can experience The Edge.

**'The Edge Master':** A staff member ushers people in to the cube and explains procedures. Special Edge booties are snapped onto each person's shoes to prevent scratching the glass.

**Cameras:** Mounted inside the Edge is a camera which takes a photo of each group. These photos are then available for purchase from the Photo Shop located on the Skydeck.





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#### Pre-Visit Activity

Work out the average weight of students in your class \_\_\_\_\_

Investigate the average weight of students your age \_\_\_\_\_

#### Volume

1. Investigate the dimensions of the glass cube. Record these in the space below.
  
  
  
  
  
  
  
  
  
  
2. Use these dimensions to calculate the volume inside the glass cube. Show your working.

#### Weight

1. Investigate the weight of the Edge \_\_\_\_\_
2. Investigate the additional weight passengers will add the Edge. Record this in the space below.
  
  
  
  
  
  
  
  
  
  
3. How many people can the Edge take out at one time? \_\_\_\_\_
4. If the cube can take passengers to a total weigh to 1 tonne and twelve people at a time can travel on the cube. What would be the average weight of each person, in kg? Show your working.



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5. If the maximum weight the cube can take is one tonne, either:
- Using the average weight of students in your class, how many students could the cube carry?  
Show your working.
  - Investigate the average weight of students of your age and state your source of information.

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How many students of average weight for your age could the Edge carry? Show your working.

## Capacity

- If the cube can only take 12 people work out the below and show your working:
  - Using the average weight of members in your class, what would the total weight be?
  - Using the average weight of students your age, what would the total weight be?

## Speed

- Investigate the speed the Edge moves out of the building. Record this in the space below.
- How many metres does the Edge slide out of the building?
- How long does it take for the Edge to slide out of the building? Show your working.