

HELP US BUILD A



## Workshop 4

**14 March – 6 days to go!**

# Overview

- Updates
- Set up information
- Spaces left to build
- Photo competition
- Vehicles of the future!
- Building, bricks and show and tell for posters



# Our display case!



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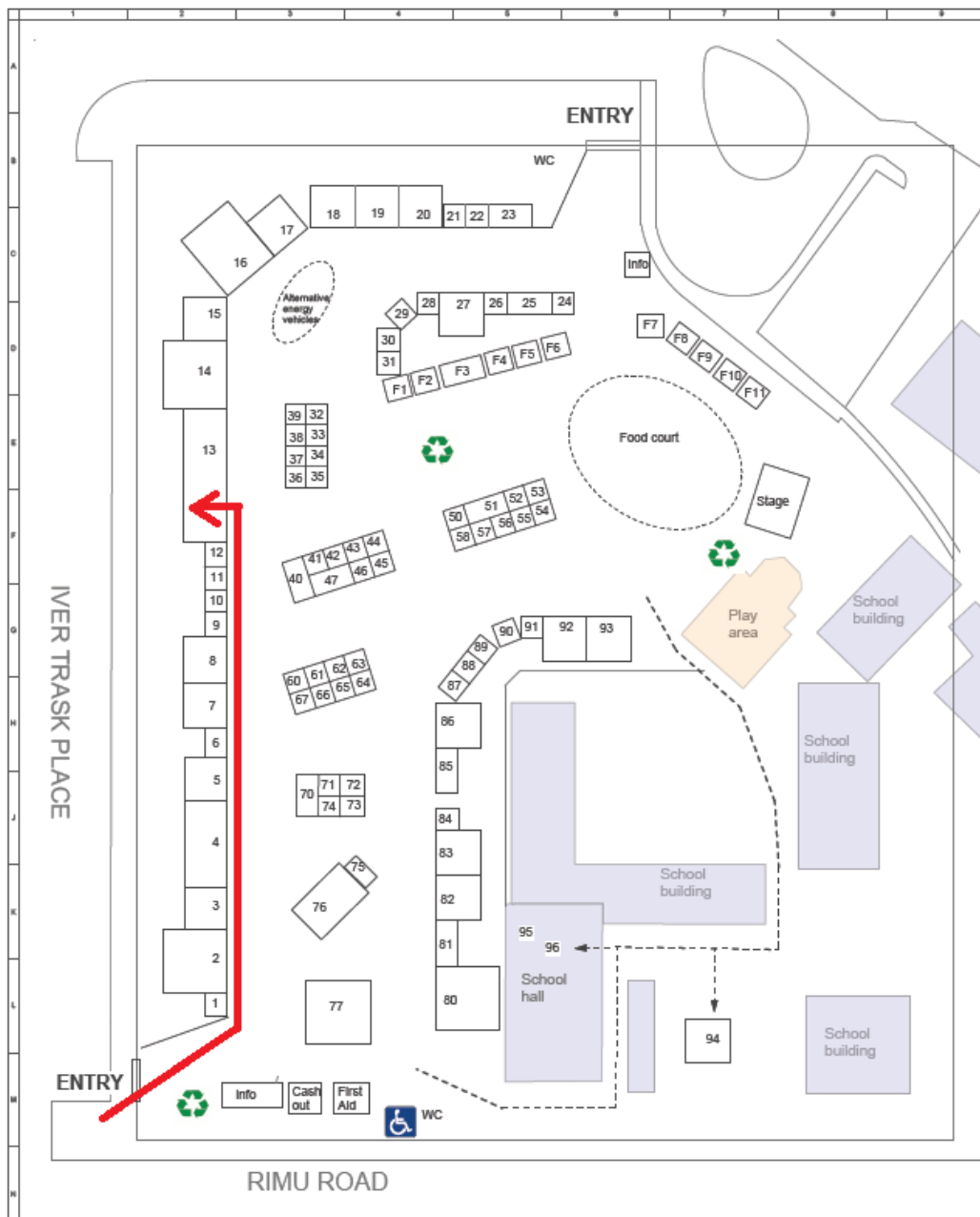
# Set up

**Flying vehicles:** 3:30 - 4:30pm on Thursday 19 March at the Kāpiti Community Centre (TBC)

**Large buildings at back** – by arrangement on before 3pm, or 3:00 – 4:00pm on Friday 20 March at the Kāpiti Primary School back field

**All other models** – 4:00pm -6:30pm on Friday 20 March at the Kāpiti Primary School back field





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# Spaces remaining

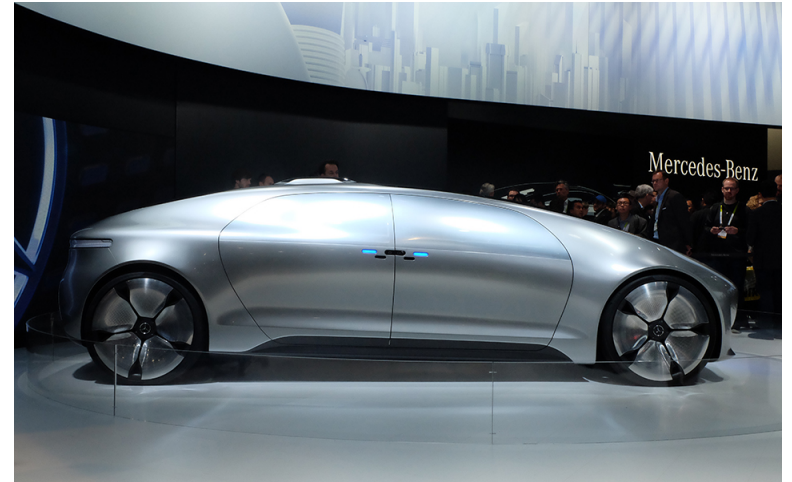
- Garden Show exhibits x 4 – want a double plot?
- Side entrance to the Show

## Photo competition

- If it won't fit anywhere – can be displayed on poster by case
- Good photo, title, description, name – emailed to me by Wednesday



# Vehicles of the Future!



- Self driving vehicle

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## Under the bonnet

How a self-driving car works

Signals from **GPS (global positioning system)** satellites are combined with readings from tachometers, altimeters and gyroscopes to provide more accurate positioning than is possible with GPS alone

**Lidar (light detection and ranging)** sensors bounce pulses of light off the surroundings. These are analysed to identify lane markings and the edges of roads

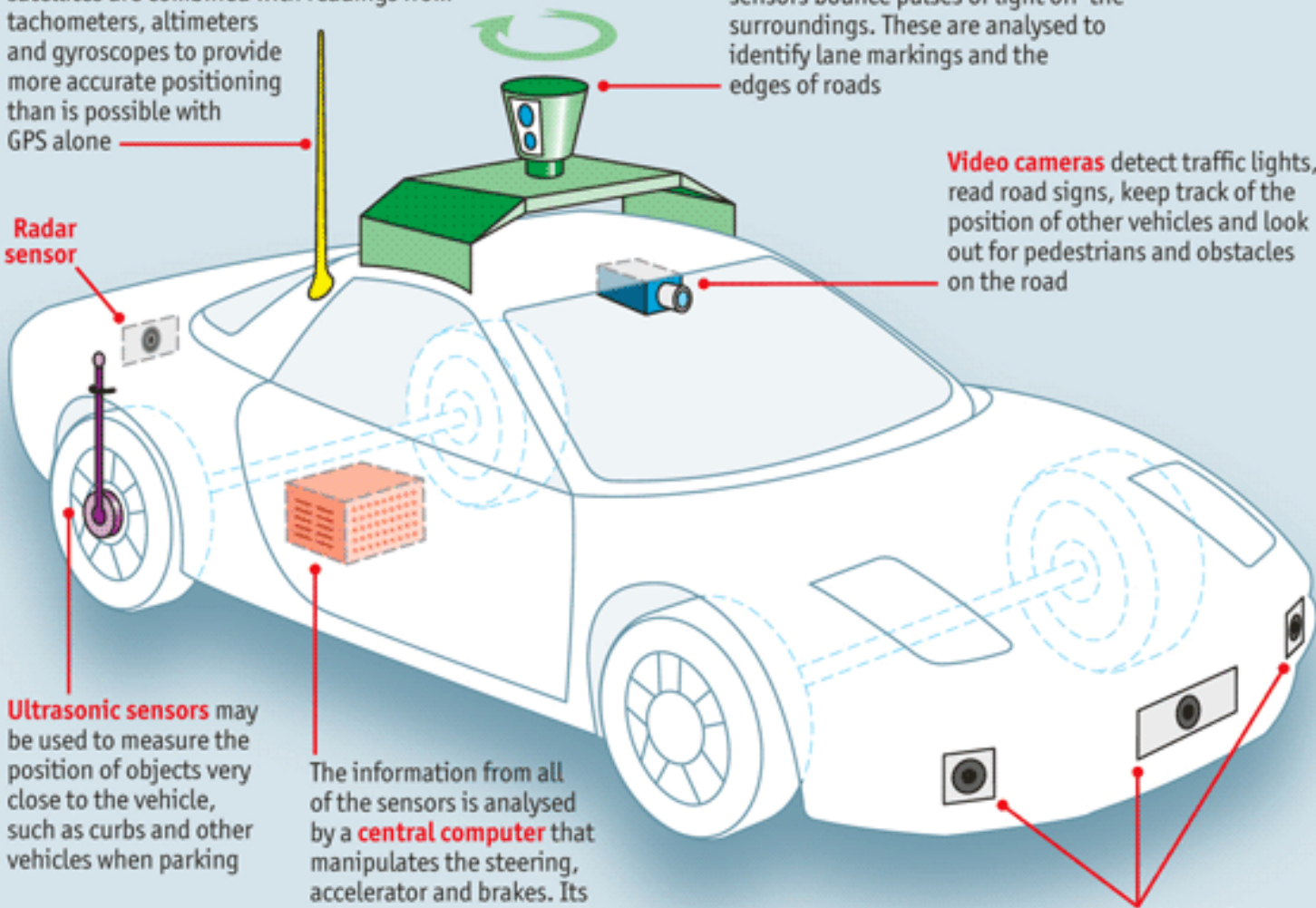
**Video cameras** detect traffic lights, read road signs, keep track of the position of other vehicles and look out for pedestrians and obstacles on the road

**Radar sensor**

**Ultrasonic sensors** may be used to measure the position of objects very close to the vehicle, such as curbs and other vehicles when parking

The information from all of the sensors is analysed by a **central computer** that manipulates the steering, accelerator and brakes. Its software must understand the rules of the road, both formal and informal

**Radar sensors** monitor the position of other vehicles nearby. Such sensors are already used in adaptive cruise-control systems





# Vehicles of the Future!



- Electric drive
- Compact



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# The future is already here!



- Council's Electric refuse truck
- Electric power can work for heavy vehicles that don't need to drive too far each day
- Longer range – need bio fuels, hydrogen or electric trains



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# Building time!

- Show and tell models then break out to
  - Build things!
  - Get some free bricks
  - Talk to Vanessa about signage
  - Give info on your models for posters
  - Questions?
  - Drink and biscuits

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