

# Safer Car Design

Engineering vehicles to minimise harm and enhance safety for all road users.

## What's it about?

Safer car design prioritises features that protect not only drivers and passengers but also pedestrians, cyclists, and other road users.

Large vehicles, such as SUVs and trucks, present unique challenges, including poor visibility and increased collision severity. Design elements like bull bars can amplify injury risks, while reversing sounds in trucks aim to reduce accidents in blind spots.

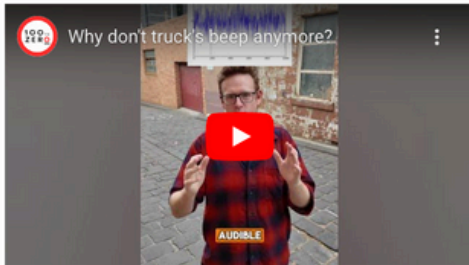
Safer car design solutions reduce the impact and severity of collisions between cars and pedestrians. In Australia, incorporating pedestrian-friendly designs and technology is vital to creating safer roads for all [1]. This includes features such as:

- **Aerodynamic design with** streamlined and sloped bonnet can help deflect pedestrians away from the most dangerous impact areas should there be a collision.
- **Bonnet design** which includes space between the bonnet and engine allowing for better energy absorption and minimizing head injuries when a pedestrian is struck [2].
- **Crumple zones** absorb the energy from the impact of a crash. Pedestrian Friendly Bonnet Design with softer materials can reduce injury to the pedestrians whilst maintaining structural integrity [2].
- **Bumper designs** with flexible materials and rounded edges can reduce impact.
- **Pedestrian detection and autonomous braking systems:** Advanced driver assistance systems can detect pedestrians and automatically apply brakes to avoid collisions.



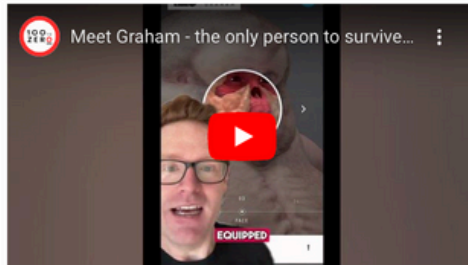
## Watch Videos

Explore road safety topics in 100 seconds or less.



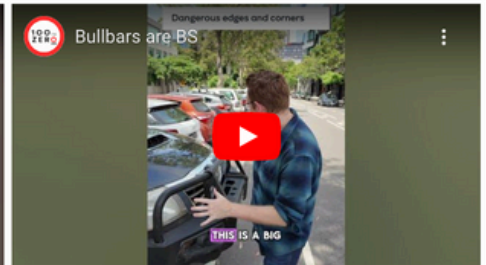
### Why don't truck's beep anymore?

We're curious too 😊



### Meet Graham

The only person to survive on our roads...



### Bullbars are BS

We called it. Have you ever thought about the impact of a bulbar in the city? 🚚

## Benefits

How safer car design reduces impact on pedestrians and vulnerable road users.

### Reducing Impact Damage

Bull bars, though common in rural Australia, can increase the severity of injuries in collisions with pedestrians or cyclists. Alternatives like energy-absorbing bumpers reduce impact forces, saving lives [2].

### Pedestrian Safe Features

Vehicles with pedestrian detection systems, automatic emergency braking (AEB), and softer front-end designs significantly reduce fatalities in urban areas. Advanced driver-assistance systems, such as lane-keeping assist and adaptive cruise control, prevent high-speed crashes and reduce accident severity

### Improved Reverse Safety

Trucks equipped with reversing sounds and rear-view cameras help prevent backover incidents, which are a major cause of fatalities, especially involving children[1].

## Safer Car Examples

### Reversing Camera Mandate

Since 2018, all new cars sold in Australia are required to have reversing cameras, dramatically improving rear visibility and reducing backover incidents.

**Key Features:**

- Wide-angle camera views.
- Integration with proximity sensors for added safety.
- Improved protection for pedestrians and small children.



### Pedestrian-Friendly Vehicle Fronts (ANCAP Standards)

Australian safety ratings, provided by the [Australasian New Car Assessment Program](#) emphasise softer vehicle fronts and pedestrian detection systems to reduce fatalities in collisions.

**Key Features:**

- Energy-absorbing materials in front bumpers and bonnets.
- Automatic braking systems activated upon detecting pedestrians.
- Higher safety ratings for vehicles meeting these criteria.



### Truck Safety Enhancements

Many Australian freight companies are retrofitting trucks with blind-spot cameras, reverse alarms, and side underrun guards to protect vulnerable road users.

**Key Features:**

- Side underrun guards to prevent cyclists from being pulled under trucks.
- Audible alarms for reversing to alert nearby pedestrians.
- Improved mirror systems covering wide-angle views.



## References

- [1] [Road Safety Education Victoria](#), Safer Vehicles Save Lives
- [2] Australasian College of Road Safety, Protection of the unhelmeted head against blunt impact: [The pedestrian and the car bonnet](#)

## Helpful Guides

- [ANCAP Safety](#) - Australasian New Car Assessment Program
- [Road Safety Education Victoria](#)
- [Australasian College of Road Safety](#)