

## Way-finding in the built environment

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## Project objective

Phase 1  
To identify alternative way-finding systems and/or technologies that may assist people with a sensory impairment to integrate with society.



## Process

### Future directions:

- **Phase 2** - Evaluation and recommendation of a preferred system to be trialed
- **Phase 3** – Assess the opportunity to install, trial & evaluate at the Melbourne 2006 Commonwealth Games



## Challenges

- Blind or vision impaired people have difficulty negotiating public spaces
- Currently approx. 330,000 suffer from a severe vision impairment
- Growing population of sensory impairment due to aging population
- There are no specific examples of way-finding legislation to benchmark



## Key research findings

- **Way-finding systems group into three areas:**
- **Passive systems** – provide feedback
- **Dynamic systems** – provide audio/tactile feedback
- **Infrastructure based systems** – require installation and maintenance of built-in systems within buildings



## Passive systems

Tactile ground indicators





## Dynamic systems

- Directional compass
- Infrared/ultrasonic obstacle locator
- Enhanced/specialist walking cane
- GPS position locator
- Personal digital assistant & notetakers
- Talking digital maps
- Tactile maps
- Mobile phones/communicators




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## Dynamic systems

- Infrared / Ultrasonic Obstacle Locator







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## Infrastructure based systems

- Accessible pedestrian signals
- Press & listen signs
- Line-following guide
- Directional sound evacuation
- Remote Infrared audible signage
- Online digital information & maps

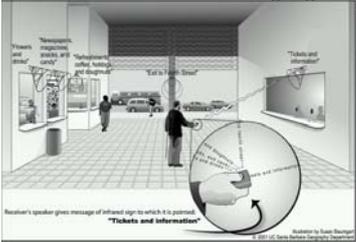



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## Infrastructure based systems

### Remote Infrared audible signage





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## Future directions

- Systems and technology will mature over the next few years
- Mobile phone handsets development
- Small handheld or Palmtop devices
- Data-gloves, smart clothing and tactual feedback devices
- Communications protocols
- International standard or protocol for navigation devices




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## Conclusions

- Immediate actions:
  - Consider building code requirements
  - Priority to standards & codes related to passive and active systems
  - Develop international standard or protocol
- Medium term actions:
  - Tailored information for users of in-built location specific transmitters
  - Portable devices modified for building users
- Long term:
  - 'Virtual reality' devices
  - Advanced 'smart clothing'
  - 'Robotic guides'




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**CSIRO**

**Project Partners:**  
 Building Commission, Victoria  
 Australian Building Codes Board  
 Queensland Department of Public Works  
 Queensland University of Technology - Department of  
 Construction Property Maintenance  
 CSIRO MIT

**Reference Group:**  
 Blind Citizens of Australia (Vic)  
 Office of Commonwealth Games Coordination (Vic)  
 Human Rights and Equal Opportunity Commission (NSW)  
 Disability Council of Queensland  
 Innovative Access Systems P/L







Queensland Government  
Department of Public Works



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