



# CONNEXIONZ

## Christchurch Bus Xchange

### **The pain of public transport management**

Christchurch, a steadily growing city in New Zealand's South Island, was experiencing the typical urban growing pains of road congestion, pollution and the rising cost of public transport in a context of shrinking demand.

Public transport was a particular headache for the city's planners and decision makers. Usage was declining, and each of the city's 37 bus routes had its own bus stop on prime real estate around the central city's major tourist hub, Cathedral Square.

When Christchurch City Council decided to upgrade Cathedral Square as part of a wider inner city revitalisation project in 1996, it decided to reclaim this area for pedestrians, meaning that the unsheltered, uncomfortable and potentially unsafe bus stops around the perimeter had to go.

Meanwhile, Environment Canterbury, the city's regional council in charge of public transport management in Christchurch, had set targets to double the number of trips made by public transport from three to six per cent by 2011, eliminate congestion outside peak periods and contain carbon dioxide emissions.

The stage was set for a radical improvement in the way public transport was managed.

### **From bus park to through-point**

Property investor Philip Carter, who owns a heritage property close to the central city public transport hub, proposed the concept of a bus exchange that would include retail, educational, and car parking uses. The councils supported the concept enthusiastically and identified that Connexionz' real time passenger information systems would complement the bus exchange concept perfectly.

The Bus Xchange was designed with an airport style lounge in the middle of the building for waiting passengers to maximise the amount of space available for buses to turn.

Rather than queuing, passengers can wait in comfort in the lounge until moments before their bus arrives, meaning they spend minimal time on the platform. This information-assisted flow ensures platforms are occupied with embarking passengers for an average of 78 seconds at peak and 30 seconds off peak.

Connexionz installed a GPS device in each of the city's 215 buses, sending each bus's location back to the central computer via radio telephone every 5-30 seconds. Special Connexionz software combines this information with data gathered on previous trips to calculate how long the bus will take to arrive at the Xchange. Its system displays this arrival information for passengers, enabling them maximum comfort, safety and convenience.

Other Bus Xchange innovations included transforming the central city from a hub for bus routes into a central through-point servicing four "peripheral termini" providing layover and bus parking facilities on the outskirts of the city.

From 31 permanent stops in Cathedral Square at which buses would stop for up to 20 minutes at a time, the Bus Xchange became a central, dedicated drop off and collection point for passengers made up of five platforms, each handling multiple routes.



**CONNEXIONZ**  
Real Time Tracking



### Fast facts about Bus Finder

- The Bus Xchange has five platforms (three off-street, two on-street), with a total of 15 bus stops
- It serves 37 inbound and outbound routes and five through routes
- It handles 2220 daily trips from the off-street platforms and 1400 trips from on-street platforms
- Peak capacity from the main platform is 48 buses per hour
- Average loading at peak is 18 passengers per bus
- Average dwell time at the bus stop is 78 seconds per bus at peak and 30 seconds off-peak
- Displays are updated every 15 seconds
- Talking signs are deployed at each platform for the visually impaired.

### Passenger numbers soar

Since the Bus Xchange was opened in November 2000, the number of passenger trips has increased to more than 13.1 million trips, with patronage rising 22.6 per cent.

Managers at the councils are using the information supplied to improve the quality of their planning and to support decision-making on transport-related issues.

Christchurch City Council and Environment Canterbury are now installing Bus Finders on key bus stops along routes, so passengers on the way to and from the

city obtain the same high quality real time information as those at the Bus Xchange. Other innovations that the councils plan to implement include the ability for passengers to look up a bus's arrival times on the Internet and to link approaching buses to traffic lights to ensure a green light run and faster commutes for passengers.

### Connexionz' role

Connexionz was an integral part of the new state-of-the-art Bus Xchange terminal. By comparison with other real time passenger information providers Connexionz' systems are relatively inexpensive and easy to implement, meaning transport managers get a fast, scalable solution with minimal civic or social disruption and a fast impact on the quality of passenger experience.

Connexionz has a proven operational system, which can be easily deployed for other bus interchanges.

