

WiBORNE, INC.

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Design & Implementation WiFi Mesh for Queen Street, Auckland, New Zealand

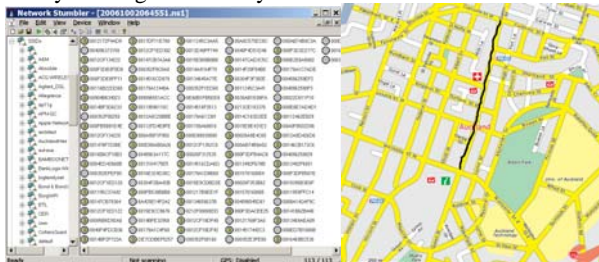
Queen Street is the major commercial thoroughfare of the Auckland CBD in Auckland City, New Zealand's main population centre. It rises from Queens Wharf on the Auckland waterfront, adjacent to the Britomart Transport Centre and the Downtown Ferry Terminal, and extends uphill for almost 3 KM in a mostly straight south-southwesterly direction towards the Karangahape Road ridge, and the residential suburbs in the interior of the Auckland isthmus.



WiBorne of NZ office proposed the WiFi hotspot service on lower Queen Street for range of 1.5 KM on Sept. 2006. **Challenge** for such deployment is:

- Maximum concurrent users is 1000
- Wireless clients can be online with existing wireless cards from laptop or wifi phones
- APs must reside inside buildings while utilize outdoor antennas
- Intermediate APs would repeat each other without wired internet.
- Heavy interference zone with the most restricted city regulation in New Zealand

We can see 113 APs with 9 minutes of driving on the road for site survey, which indicate highly interference zone from this street. We then guide to understand the following components of any thorough site survey:

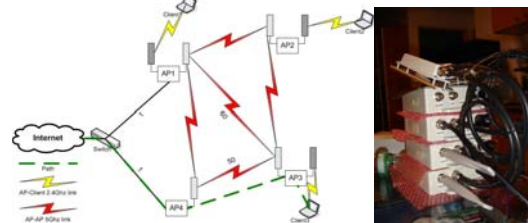


- The architecture of the access points, cable routes, and electrical needs

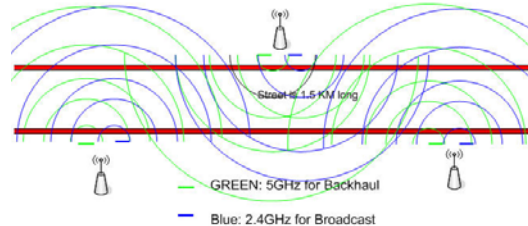


- The proper site survey technique and usage of appropriate utilities
- The structural and installation obstacles, including building construction, transmission coverage area, building contents, present cable configuration, area regulations, and building codes
- The documentation that outlines the necessary parts and equipment, and diagrams exhibiting the proper placement of the equipment

A design with WiBorne's Mesh node WAP-500 which has dual radios, one 2.4GHz is for broadcast while the 2nd 5GHz runs backhaul from satellite internet (VSAT), and HSG-200 for local and centralized billing systems.



A Directional Wireless Mesh Network: We consider a typical single-channel, single-interface WMN deployment with omni-directional antennas in which mesh routers are placed behind window of department stores, and are interconnected via 802.11a links. The practical directional antennas used in directional mesh are non-steerable and they always point to the direction toward which they were manually placed during the network deployment.



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Designed & Implemented on Sept. 2006.

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