

MATRICS

# Tunnel Control System

SYSTEM INTEGRATION FOR TRANSPORTATION INFRASTRUCTURE

The **MATRICS Tunnel Control System** offers architectures to meet the installation needs for new tunnels and refurbishment projects, using high integrity and redundant systems, MATRICS provides the ability to retrieve and manage data for the display and control of the road tunnel environment, traffic and plant.



## Introduction

**MATRICS Tunnel Control System** consists of a semi-configured package that together with the necessary hardware can realise the customers exact tunnel control system requirements. This ensures a cost effective solution whilst avoiding the inflexibility normally associated with standard "off the shelf" products.

## Applications

**MATRICS Tunnel Control System** is suitable for all tunnels requiring a control and monitoring system, and there are extensive applications and reference sites available, including the Tyne Tunnel in Newcastle, the Mersey Tunnels in Liverpool, the Butetown Link tunnel in Cardiff, the Clyde tunnel in Glasgow and the Jack Lynch tunnel in Ireland. Most of these projects include the control and monitoring of all plant, including traffic signage, tunnel lighting and ventilation, sumps and pumps, electrical distribution and standby supplies, communication systems and fire and security systems.

## Features

- Semi-configured package
- Tailored to individual requirements
- System interfaces developed
- Intuitive user interface
- Extensive control capability
- Password Protection
- Dual redundant PCs (hot standby)
- Tunnel specific maintenance facilities
- Fully integrated solution

## Typical Matrics package

**MATRICS Tunnel Control System** is a comprehensive tunnel control system tailored to the individual project requirements. A complete MATRICS Tunnel Control System can include ( but is not limited to ) :

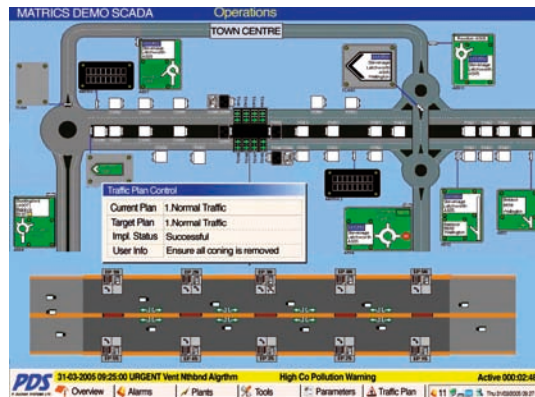
- Engineering investigation
- Control system recommendations and concept design
- Tailoring of MATRICS Tunnel control system to individual requirements
- Equipment installation
- Test, validation and commissioning
- Training and optimisation
- Through life support

***"Advanced functionality, proven reliability and cost effective solutions"***

MATRICES

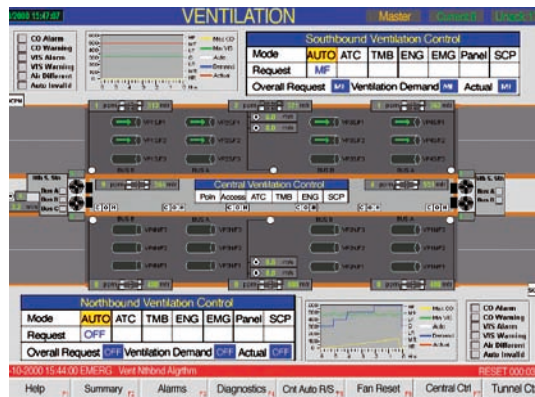
# Tunnel Control System

SYSTEM INTEGRATION FOR TRANSPORTATION INFRASTRUCTURE



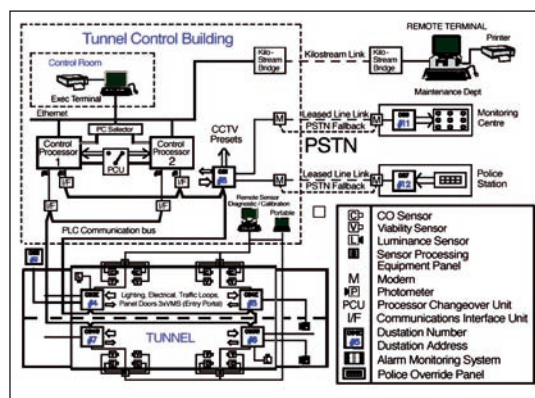
## User Interface

- Simple effective mimic layouts
- Intuitive look and feel
- Client involvement at an early stage
- Use of simulators to prove user interaction
- On-line help and alarm diagnostics
- Password protection and multiple user levels



## Control Algorithms

- In-built ventilation, lighting and pumping algorithms
- Wide range of ventilation control strategies
- On line parameter adjustment and optimisation
- Energy and plant efficiency monitoring
- Auto / Local / Emergency & Remote Control Access



## System design

High Integrity overall designs, including:

- Redundant PLC Controller
- Redundant SCADA server
- Closed loop communication network
- Wide range of system connection formats
- Integrated data from other systems (CCTV, Fire, PA, Telephones etc)

## Maintenance and Management Tools

- User specified alarm and data search
- Integrated fault report and logging
- Online help and diagnostics
- Operational Statistics
- Automated maintenance scheduling
- Multiple User levels

***“Advanced functionality, proven reliability and cost effective solutions”***