

# CASE STUDY

VVB Innovation - Tidal flow lane

## Overview

Client: VVB Engineering  
Product: Lane Control Signs  
Site location: A470 North Road, Cardiff



## About VVB Engineering

VVB Engineering offers Mechanical, Electrical, and Telecom engineering expertise and services for UK infrastructure projects. They design, install, commission, and maintain various projects, including supporting multiple Highways programmes – to help keep the UK moving.

## Introduction

The team at Messagemaker Displays was contacted to provide a new tidal flow solution along the A470 North Road in Cardiff.

Our signs were reverse-engineered to replace the old Thermotor Lane Control Signs whilst maintaining integration with the existing UTC control system.



## The Problem

The original signs at the site on North Road were regularly failing due to water ingress issues. The system that these signs relied on consisted of 3 separate gantries with 6 signs on each gantry (3 primary and 3 secondary signs).

The main issue is that all 18 signs needed to be functional at all times for the whole system to be operational - so when one or more signs failed, the system would be forced into failsafe mode. This meant that for safety reasons limits were imposed on the operators in the control room for setting different modes until the issue is fixed.

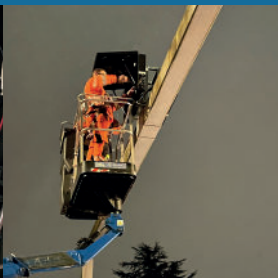
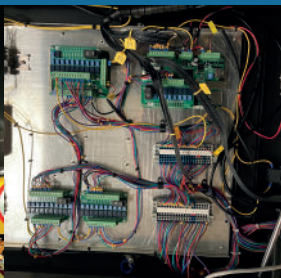
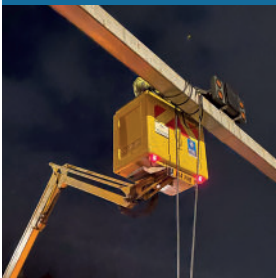
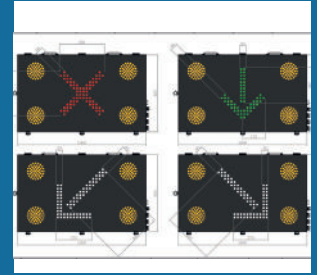
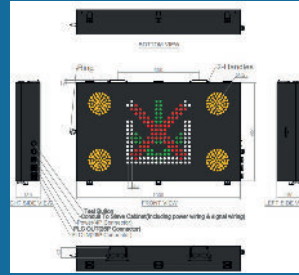
Due to the age of the existing signs, it was becoming very difficult and costly for VVB to repair failed signs to maintain the system. Every time a sign failed, either a lane closure or complete road closure had to be set up to access and remove the failed signs.

## The Solution

The team at Messagemaker Displays built new high-quality signs with quality components for this project, reverse engineering our signs to be able to work with the existing UTC control system.

Our gantry signs consisted of:

- A red cross facing the direction of traffic that the lane is closed to
- A green arrow to the lane and direction of traffic that it is open to
- White directional arrows, used in conjunction with amber wig wags as a MOVE OVER signal



## The Outcome

The LEDs used in the new signs are rated to work for at least 100,000 hours, equating to an over 11-year life cycle. We are confident that the products we supplied will outlast the rated value and be operational for around 15 years before maintaining them becomes a non-viable option.

As the new signs require little to no maintenance over their life cycle, workers will spend less time on the road. In turn, this reduces risk of harm and allows workers more time to work on other sites.

By providing a solution that works with the existing UTC control system, VVB was able to avoid replacing the whole control system and cabling - saving VVB, the local Council, and Taxpayers a lot of money.

