The Industrial Solutions Group

Providing World Class, Innovative Solutions

Engine Test Cell Cooling

- HVAC Engineering
- HVAC Design

The Challenge: The Toyota company needed to properly cool several engine test cells. These test cells are used to confirm 4 cylinder and 6 cylinder engine performance for environmental and mileage testing. Each test cell must be maintained at 25C ± 5C space temperature, with 100% outside makeup air. Also, properly conditioned combustion air must be provided directly to the engine in varying, controlled quantities. Each test may last from a few days to more than a week.

ISG's Innovative Solution

The Industrial Solutions Group (ISG) provided a solution that was able to make use of packaged roof top, HVAC equipment. A sidestream, variable frequency drive fan was able to properly control combustion air conditions.

Benefits to Client

- The ISG approach reduced capital by 40% over a custom-designed option.
- ISG was able to reduce outside air requirements by 50% — yielding significant energy savings.
- The combustion air control approach provided more consistent control of air volume for precise testing.

Exhibit I - Sketch of Toyota Test Cell HVAC System