HEAT-TIMER CORPORATION

CASE NO. 09

PROJECT: Shoreline Star

LOCATION: Bridgeport Conn.

Engineer: Kasper Group Design

Contractor: O&G Industries

Mechanical
Contractor YoneyMech Cont.
Heat-Timer
Representative Goodyer Zonino

Dog Track Maintains Safe Track Conditions Year Round With Radiant Heating System & Heat -Timer Controls

PROBLEM: The owners of Shoreline Star Entertainment Center in Bridgeport, CT wanted a dog track that was second to none in terms of speed and safety: Furthermore, they wanted to maintain consistent track conditions for year round performances.

Like all other professional athletes, greyhounds are prone to certain muscular and skeletal injuries from training and competition. The quality of the racing surface can go a long way in preventing most of these injuries. Steve Alford, Director of Racing at Shoreline Star and an expert on dog track surfaces, was given the task of building that most perfect track.

As animal lovers themselves, track proprietors, Mr. and Mrs. Robert Zeff gave Mr. Alford all the latitude he wanted when it came to selecting a safe surface.

"Everything that we're doing revolves around the greyhounds and keeping them in healthy, tip-top shape," said Mr. Alford, who searched the entire state of Connecticut for the perfect combination of sand, silt, and clay for the new track. At first, he took samples from local tracks, mixing them together in varied amounts. When this process got too complicated, he looked to Lincoln, RI, a location well known for its track surfaces. There he found what he considered the racing ideal. The dirt alone cost $60,000.00, and that didn't even include the cost of transporting it from Rhode Island to Bridgeport, CT.

The Challenges of Year Round Racing

Keeping such a costly surface in shape for year round racing presented another set of challenges. First, the track had to avoid snow and ice accumulation-not an easy task in the Northeast. Second, Mr. Alford had to be able to maintain consistent track conditions despite changing outdoor conditions. To avoid undue stress on the bones and muscles of the greyhounds and to maximize each dog's racing performance, the track must provide a precise balance of traction *and* cushion. This requires watering the track, which in the winter can cause freezing.

Whether freezing is caused naturally or by watering, the end result is the same: unsafe racing conditions and subsequent cancellation of racing. According to Jim Gartland, General Manager at Shoreline Star, canceling races for just one day can cost a track like Shoreline Star anywhere from $20,000 to $30,000.00 in revenues.

SOLUTION: It was fairly apparent that the best way to maintain consistent track conditions in the winter was to maintain a consistent track *temperature.* Although a costly proposal, Steve Alford suggested an underground heating system to keep Shoreline operational throughout the winter. Having worked at other tracks which used radiant heat tube, he believed this was the most efficient way to maintain adequate track conditions for all season racing.

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Over six miles of pex tubing was installed beneath the surface of the race track. Two, 2-stage, gas fired boilers were selected to heat the propylene glycol mixture that circulates through the tubing, keeping the race track and sprint track at an acceptable temperature.

Since operational costs can easily get out of hand in an underground heating system, Heat- Timer controls were selected to monitor track surface temperatures and adjust boiler output accordingly. Jack Welch of Goodyer-Zonino, the Heat- Timer rep in Connecticut, worked with the Kasper
Group design firm in the selection and design of the control system.

To prevent snow and ice accumulation, Welch selected a Heat-Timer Snow Melt Control (SMC). Through a precipitation sensor installed in the track surface, the SMC senses both temperature and moisture, activating the heating system whenever there is a threat of snow or ice accumulation.

For added efficiency, Welch suggested a Heat- Timer sequencing control (SEQ-4) to operate all four stages of the boilers. Based on commands from the SMC, the SEQ-4 brings on the boilers one stage at a time to maintain an adjustable set point. Ultimately, these controls work together to maintain adequate track temperatures while minimizing boiler run time.

"It makes my job a whole lot easier," said Mr. Alford. "All I need to do is punch in a high/low range into the panel. "

A sensor located in the track surface tells Alford what the track surface temperature is. Based on this temperature, the controls maintain the track at the desired temperature. The boilers and the control system are conveniently located next to the track, in the maintenance room, so monitoring and adjusting the system requires less legwork.

During the winter, Alford prefers to keep the track between 38 and 40 degrees. Overheating the track can dry **it** out, so the controls must be able to maintain fairly close temperature tolerances.

The Winter of '96

Thanks to the combined efforts of many, Shoreline Star Entertainment Center opened for betting November 1,1995, a full two weeks ahead of schedule.

The following months put the underground heating system to the test. Despite record low temperatures and snowfall, the track never lost a day of racing due to poor track conditions although it did close on a few occasions due to poor road conditions!

Jim Gartland praised Heat- Timer and all concerned for "setting an industry standard" in track heating systems. According to him, they have made an important contribution to the industry in terms of maintaining the safety of the greyhounds that race.

Jack Welch cited some specific reasons why the Heat- Timer SMC was a good fit for this particular application, including:

.Heat- Timer's ability to incorporate the Snow Melt Control into the Boiler Sequence Panel (SEQ-4)

.User friendly controls, which benefited both the installer and the operator

.And, Heat- Timer's willingness to come to the job-site for sensor placement, and again after the installation for a product demonstration and fine tuning.

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