

CHURCHILL DOWNS LOUISVILLE, KENTUCKY

KEY PARAMETERS

- Type of Facility – Existing (EB)
- Function – Sports, Hospitality
- Area – 404,000 sf, 6-stories
- Project Completed – 2007

Challenge: IAQ for patron comfort and effective filtration. A primary objective in the six-story expansion was the ability to handle larger crowds at a variety of events; from races to large concerts. A second objective focused on comfort and performance. With club suite owners spending a lot of money on their suites, anything less than perfect comfort was not acceptable, including temperature and humidity control, ventilation and effective air filtration in a smoking environment -- without compromising efficiency or simplicity. Lastly, Churchill Downs wanted an efficient system that was easy to understand and operate.



Solution: Dynamic V-Banks. The system was designed to meet the specific needs of the new facility. For Phase 1, engineers chose a low-temperature, low-flow, variable-primary-flow (VPF) system capable of supplying 38°F water



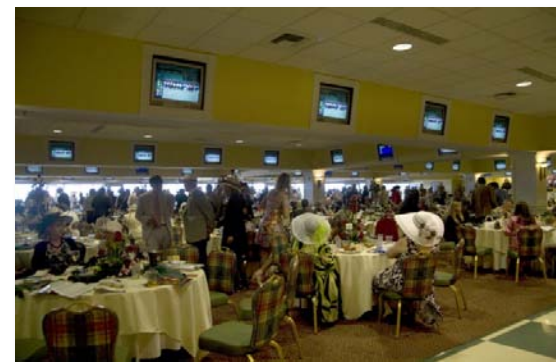
CHURCHILL DOWNS



with two 1,000-ton chillers. The system included a water-source heat pump package and a large number of AHUs, some inside and some outside and hidden from view. Many of the AHUs were fitted with Dynamic V-Bank air cleaners for filtration and odor control.

A 400-ton packaged, air-cooled chiller was used to condition the facility until the completion of the main central chilled/hot-water plant during Phase 2 which included Millionaires Row and the club-house. Two

built-up, 175,000-cfm air-handling units serving the majority of the wagering facility were fitted with two and one-half stories of V-Bank air cleaners for filtration. The polarized-media air cleaners remove 97 percent of particles down to 0.3 microns in size and are also effective at capturing odors and gas-phase contaminants. The entire system is controlled by a Trane Tracer Summit building automation system which maintains the desired indoor comfort conditions and energy consumption.



Results: The Dynamic V-Banks have exceeded client expectations in keeping the air clean and free of smoke and odors. And maintenance has been easy. Replacement media pads have had a long service life, lasting an average of two (2) years.

TEAM

- Owner – Churchill Downs, Inc.
- Architects – Luckett & Farley
- Engineers – Luckett & Farley

MECHANICAL SYSTEMS

- HVAC – Trane, Systecon
- Ventilation – Trane
- BAS – Trane Tracer Summit

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