



Texas Council of Engineering Companies  
2004 Engineering Excellence Awards  
Silver Medal Winner – Category I: Special Projects, Land Development

Fall Creek Master-Planned Community  
and Redstone Golf Club



# Development on the Greens

In April 2002, when Redstone Golf Club was notified that it had been selected as the new site for the Shell Houston Open, the scheduled design and construction quickly shifted into “overdrive.” Redstone Golf Management and Fall Creek Development Partners, LP, both had hired Brown & Gay Engineers to oversee this project and to coordinate with all owner representatives, design consultants, and government agencies for timely review.

With a new goal of completion in under 13 months, design and construction of a 33,000-square-foot clubhouse and its associated parking lot, golf cart barn and maintenance facilities continued, and several new items were added to accommodate the 2003 Shell Open. These included a 56-acre event parking area; a parking and staging area for TV and media trucks; and a 40,000-square-foot office building that would provide office space for the Houston Golf Association (HGA), which manages the Shell Houston Open.

Recognizing that the golf tournament would boost name recognition, Fall Creek Development accelerated the completion of 230 lots, for a total of 500 to be completed by April 2003. The Fall Creek 10-acre recreation complex—aquatic center with two pools, tennis courts, picnic areas, playscape, hiking trails, and 4,500-square-foot community center—opened September 2003. In addition to a challenging schedule, key issues tackled by Brown & Gay Engineers included drainage, flood prevention, floodplain mitigation

and conveyance, future development, and environmental conservation.

Greens Bayou borders the southern edge of the golf course, and the southern portion of the course is in the 100-year floodplain. Brown & Gay Engineers designed two systems of interconnected lakes on each side of the course (linked together by swales and pipes), which would function as drainage facilities for the golf course and portions of the residential development.

The Redstone Companies, of which Redstone Golf Management is a division, has a keen



*Treated effluent irrigation lines located beneath the golf course reduced dependence on groundwater for irrigation.*

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*Brown & Gay Engineers coordinated with an environmental consultant to preserve forested wetlands within the golf course.*

interest in sustainable development. To enhance the environment, Brown & Gay Engineers coordinated with the golf course architect and an environmental consultant to create 5.46 acres of shallow water wetlands within the golf course. The golf course was reconfigured to disturb only 1.09 acres of forested wetlands, which resulted in a net gain of 4.37 acres of wetland.

Brown & Gay designed the 56-acre, 6,000-car event parking lot with a grass surface. This more visually appealing approach saved \$2.2 million and cost 55 percent less than gravel paving. The most environmentally friendly solution for the once yearly crush of cars coming to the Shell Houston Open turned out to be the most cost-efficient for the owner.

Consistent with The Redstone Companies' interest in sustainable development, the Brown & Gay team explored the use of wastewater effluent from a nearby City of Houston wastewater treatment plant. Understanding the future regulations that would require golf courses to limit the use of groundwater or pay a fine, the team planned to install

transmission lines for water reuse early in the project. Tearing up established infrastructure at a later date to install these lines would have been costly and disruptive.

To minimize the client's maintenance needs on the golf course after extreme flooding events, the team raised the tees and greens located within the 100-year floodplain above base flood elevation. The challenge was to satisfy the client's desire to preserve mature trees while ensuring proper drainage, floodplain mitigation, floodplain conveyance, and overall dirt balance.

The 2003 Shell Houston Open helped HGA raise a record \$5.2+ million for 300 local charities. The owners reported that first year home sales exceeded projections by 25 percent, in large part

due to Brown & Gay Engineers' performance in delivering lots below estimate and ahead of schedule. The golf course was planned using environmental preservation principles that earned The Redstone Companies its 2002 Mayor's Proud Partners Award, presented by Keep Houston Beautiful.

