



TPC Potomac at Avenel Farm

Stream and Floodplain Restoration

Challenge

Existing unstable conditions along Rock Run and three unnamed tributaries to Rock Run were determined to be a result of nearly a century of gold mining operations in the watershed. Subsurface investigations confirmed the presence of sediments that filled in the stream channel and adjacent floodplain. Over time, the stream channels eroded vertically to an incised and entrenched condition. Numerous small bridge crossings, legacy sediments and floodplain encroachments increased the frequency and depth of flooding areas of play. The challenge was to provide solutions for long-term stability and flood mitigation while enhancing play and improving the aesthetics as part of the course renovation in anticipation of a major 2010 PGA event.

Solution

LandStudies, Inc. designed and constructed a restoration of 6,900 linear feet of stream channels, excavating the floodplains closer to historical elevations, and creating 9.3 acres of functional wetlands in the restored floodplains. The restoration has provided the following:

- Allowed more frequent over-bank flow reducing the frequency and depth of flooding during high flows
- Reduced maintenance of the course by creating a stable, naturalized system
- Reduced the 2 and 10 year flood elevations up to 3 feet with significant reduction in channel velocity and shear stress
- Improved water quality by reducing bed and bank erosion and capturing nutrients and sediments in floodplain wetlands where they are naturally treated and infiltrated

Services

Assessment | Design | Permitting | Construction Management

Client: Professional Golf Association - PGA
Location: Potomac, Maryland



Before



During Construction



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