

**The Stanford Cricket Ground**  
at  
**V.C. Bird International Airport**  
Antigua, West Indies



Presented to

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by

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## **Overview**

The Stanford Cricket Ground forms the centerpiece of a mixed use development that began in 1993. A number of improvements still continue to this day as enhancements specific to the worldwide broadcast of the Stanford 20/20 event are constantly being made. Although this paper is intended to focus primarily on the Stanford Cricket Ground, the association, relative interaction of other components and shared infrastructure of the development needs to be explained to fully understand the project as a whole. The project includes buildings such as: The Bank of Antigua, Stanford Trust Company, Stanford International Bank, the Observation Tower, Antigua Sun Newspaper/Sun Printing and Publishing, Sugar Mill Hotel and The Pavilion Restaurant. There are two key structures immediately within the environs of the Stanford Cricket Ground and they are the Antigua Athletic Club and The Sticky Wicket Bar and Restaurant. Infrastructure such as vehicular and pedestrian circulation, storm drainage, sewage and wastewater treatment, electrical and fiber optic cabling, landscape irrigation/drainage, site lighting, auxiliary power and comprehensive freshwater sharing systems run throughout the development. All utilities are underground.

## **Pre-development site conditions**

The site of the development is approximately 60 acres and is located immediately adjacent to the V. C. Bird International Airport. The terrain slopes eastward and drains a major storm water course from Barnes Hill. Historically, the site was prone to seasonal flooding and major ponding occurred during tropical storms. This condition required the design team to closely study and resolve storm water drainage that traversed the site and develop effective drainage and catchment systems to facilitate the mixed use development.

Further, it was identified that large portions of the site had been used for dumping refuse over the previous decades. In some cases this necessitated extraordinarily extensive excavation for the various structures and infrastructure installations, and drove design to include specific foundation types responding to soil conditions of the location.

The close proximity to the international airport required all aspects of the design to be closely coordinated with airport operations, terminal and traffic functions and aviation regulatory guidelines such as ICAO and IATA standards.

## **The Stanford Cricket Ground**

### **a) Initial Design**

The 442 foot diameter playing surface was originally constructed for club cricket in 2001 and served the community well providing practice facilities for international test matches and was a competition venue for regional & local matches. Weekend children's cricket schools were held at the grounds for several years providing a contribution to youth cricket in Antigua. The traditionally styled cricket grandstand seated over 1100 spectators and was constructed as part of the original program housing facilities such as food and beverage concessions, locker rooms, players' pavilions and public restroom facilities. The original design concept was to create a relaxed park setting with soft seating in the grassed berms surrounding the playing field. This component remains today and provides casual seating for an additional 7000 spectators.

The facilities have been upgraded in 2006 and 2007 to accommodate the Stanford 20/20 event.

### **b) Grandstand and Player's Pavilions**

The grandstand is constructed of structural steel and was fashioned after traditional historical cricket grandstands with a detailed façade incorporating finials, gussets and lattice ornamentation reflecting the Caribbean Style vernacular. The workmanship in these details is a testament to the steel fabricator's craftsmanship. Recent upgrades to the grandstand have replaced some spectator seating with a state of the art broadcast booth facilitating radio and television broadcast commentators as well international print media, all with the latest in technology such as internet and satellite connectability.

Upgrades undertaken in 2006 more than doubled the size of the food and beverage concession area in the grandstand and include plasma screen monitors, so that spectators being served will not miss a moment's action on the field.

Stanford Cricket Ground has two separate player's pavilions for each team. Each of the pavilions includes locker rooms, showers, physiotherapy areas and easy access and visual communication with the field.

### **c) Playing Surface and Pitch**

Major upgrades to the cricket field took place in the 2006 renovation. Although the playing surface served well the club cricket patrons, a faster playing surface with the latest in irrigation and drainage technology was needed for the fast paced Stanford 20/20 matches. The entire field was built on an 8" substrate consisting of 3/8" crushed stone for the drainage layer. This layer was crisscrossed with drainage pipe tied to specifically designed pitch drainage and a perimeter ring drain. The field playing surface of manicured Bermuda #419 grass is grown in a 10" layer of laser leveled calcareous sand. The entire field is crowned 18" from the six clay pitches sloping to the perimeter drainage system.

Field irrigation is tied into the grandstand freshwater system which utilizes rainwater recapture and includes a cistern in excess of 100,000 imperial gallons.

### **d) Flood Lighting**

Field lighting was installed by ABACUS Lighting of Nottinghamshire U.K. The system includes four masts approximately 115 feet tall. Each of the masts has a bank of 52 double ended linear metal halide light fixtures. The lamps and lenses were engineered to include short, medium and long distance optics and all are individually focused to floodlight the playing surface to 2500 lux on the wicket, 1500 lux on the inner circle and 1000 lux on the outfield. This level of illumination meets the requirements for crystal clear broadcast resolution during standard play as well as "super slow motion" TV coverage. Each light fixture is fitted with directional baffles to direct lighting precisely onto the playing surface and minimize light spillage. This feature increases energy efficiency and greatly reduces any glare to the airport and air traffic control tower operations.

Each lighting tower is bottom hinged and equipped with two 5000 psi hydraulic plungers which lower each tower to a horizontal position for regular maintenance and hurricane protection.

### **e) Practice Facilities**

As part of the upgrades for 2007, five new practice pitches were constructed. They incorporate the latest in fast set-up netting systems from Ezy Net Systems. There are two artificial practice pitches manufactured by ClubTurf Ltd. and three traditional rolled clay pitches. The entire practice area, including players shelter, is illuminated for night use.

## **f) Food & Beverage and Spectator Amenities**

Due to the enormous success of the 2006 Stanford 20/20 cricket tournament, the plaza area north of the playing field was enhanced to accommodate more comforts for the spectators. This included recapturing the north parking area and installing upgraded utility services, architectural paving stones, lighting and the addition of food and beverage service as well as public restrooms for the event. The plaza accommodates custom made and state of the art concession and washroom trailers which are moved into place for cricket events. During non-event times, the trailers are easily towed off-site and the plaza is then returned to its normal function of a mixed use space for the balance of the year.

## **g) Broadcast and Audio-Visual Amenities**

The entire field and surrounding area has been refurbished to include permanent facilities for 20/20 management, print media, cameramen, radio & TV commentators and production crews. This included construction of a new 4000 sq. ft. management, media and ticket sales building in 2007. Television control room and press conference room are also part of this building.

The cricket event is further brought to life by two 19'-0"high X 34'-0" wide, high resolution multi media screens. These state of the art screens are the same technology one sees in Time Square, NYC. The versatility of the screens allows them to be used as scoreboards, and also show close-ups of the action complete with slow motion replays and enhanced animation. The spectator experience enjoys increased energy with the use of these screens when images are coordinated with the multi frequency public address system. The electronic operating systems are enclosed behind the display area in a three storey environmentally controlled structure which supports the screens to withstand 160 mph winds. Both screens are fitted as needed with Armorscreen hurricane protection which is an easily installed and stored Kevlar type fabric.

## **Freshwater Management System**

The entire airport development shares underground storm drainage systems and a sewage treatment facility via the Marsh Bio-filtration System detailed below. Further, we have designed an underground freshwater sharing system which connects each building's rainwater catchment system and cistern. This engineered design allows facilities management personnel to move water where it is needed as desired and permits water to be moved from active collection cisterns to non-catchment cisterns such as under the main roundabout cistern which has a capacity of over one quarter million imperial gallons long term storage.

## **The Sticky Wicket Bar and Restaurant**

The Sticky Wicket was constructed in 2002 and provides casual dining and beverage service on the east flank of the cricket field. The interior dining areas are terraced to provide optimum viewing to the field and plasma screens and sound system bring the playing field action inside to the patrons. The 23,000 sq. foot facility can seat 350 people and acts as the premier box seats for cricket matches and provides seating in air conditioned comfort as well as exterior balconies and terraces.

The Sticky Wicket is also home to the West Indies Cricket Hall of Fame, and displays commemorative plaques and memorabilia in a celebration of West Indies cricket history and its' legends.

The structure deliberately departs from the traditional styling of adjacent buildings to present a more contemporary façade with large insulated glazed walls, 'Paralam' wood post and beam construction and 'Thermopan' insulated sandwich panel roof structure. Natural stone cladding covers the concrete structure and the 50,000 gallon cistern and catchment system is tied into the development's overall freshwater management system. Kitchen and smoke-house environments are protected with automated fire suppression systems.

The insulated argon filled thermo-pane glazing, automated Nysan shading system and 'Thermopan' structural roof panels make the Sticky Wicket one of the most energy efficient buildings in the complex.

## **Observation Tower and Public Park**

North of the Stanford Cricket Ground and the airport roadway, we have built an observation tower that serves as a television gantry during the 20/20 matches and overlooks the entire airport development. The 70'-0" tower is perched on the highest point of the site and as visitors ascend to the highest observation deck, there are interpretive plaques telling the story of the airport development. It is located in a large public park with water features, bridges and water falls, and has become the number one place in Antigua for weddings and wedding photos.

Immediately adjacent to the Observation Tower is a 200,000 imperial gallon cistern hidden in the landscaping. This non-catchment cistern gravity feeds to the freshwater management system.

## **The Antigua Athletic Club**

This facility is a fully appointed and modern fitness club, offering a 25 meter lap pool, modern circuit training room with top of the line Cybex equipment, multi-purpose classrooms and full food and beverage service to its members. Oak and granite finishes are installed in the members' locker and massage and deck areas feature natural stone tile finishes.

The AAC flanks the western boundary of the Stanford Cricket Ground providing exclusive seating and service to its members during the events.

As with all the structures in the airport development, the AAC has been designed to withstand 150+ mph winds and level four seismic events.

Notable in the classrooms are cushioned maple flooring on fir sleepers which rest on rubber pads. This cushioning greatly reduces any impact related injuries when involved in exercises such as aerobics.

In the circuit training room, a 5/8" thick interlocking rubber flooring provides cushioning against dropped free weights and is made from re-cycled automobile tires.

## **Marsh Bio-filtration System**

Antigua and Barbuda has no sanitary sewer system, so each development depends on its' own treatment plant. We constructed a sewage treatment facility that uses very little power and no chemicals and treats sewage to the point it can be used for landscape irrigation.

Sewage treatment for the entire airport complex is done with a man made marsh bio-filter based on the principals of hydroponics. The sanitary sewer system collects all wastewater and effluent, and directs it to a double redundancy lift station. The effluent is then lifted to the top of a 60'-0" hill where it is screened and aerated in an activated sludge plant to start the natural purification process. With the natural microorganisms activated, the effluent is gravity fed to the bio-marsh system which is terraced down the hill appearing like Southeast Asian rice paddies. The first terraces of planting beds are constructed with a rubber membrane liner and approximately 24" of gravel. Semi aquatic planting material

such as Papyrus and Bulrush are planted in these gravel beds and their root networks form a filtration system cleaning the water as it travels down the hillside. The effluent is kept beneath the surface of the gravel beds so no odors emanate. Near the bottom of the hillside, the final membrane lined tanks are 'free flow', and aquatic plants such as Water Lily and Water Hyacinth complete the natural filtration.

The cleaned water is put to use through a drip irrigation system where it will pass through another set of root networks as it is introduced back into the ecosystem.

This environmentally sensitive approach to wastewater treatment is visually beautiful, allows a second use for effluent, uses no chemicals, and the only electricity used is for the lift station and several small blowers in the activated sludge process.

These types of installations can handle huge fluctuations in effluent output, where traditional mechanical plants would become overloaded emitting odors. This feature is particularly advantageous for stadiums which can lay dormant for long periods followed by major concentrated use.

### **Landscape Architecture**

The entire development is seamlessly tied together with world class landscape architecture. This includes planting material both imported and locally grown, landscape lighting, pedestrian comforts and water features. Landscape design at the airport development established an entirely new standard in Antigua and has been emulated in local developments ever since.

The Stanford Cricket Ground is maintained to a world class standard and has received many accolades including those from professional teams who practiced there during the 2007 World Cup.

## **Acknowledgements**

As Chief Architect of the Stanford Development Company during the course of this development, I was privileged to have the expertise of seasoned professionals on the design team who provided their considerable talents in pursuit of an exceptionally high level of quality. These individuals provided creative design solutions to meet the challenges of the development, and I would be greatly remiss if I did not express my deepest gratitude and acknowledge them, because their talent and commitment contributed so greatly to the airport development and Stanford Cricket Ground.

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Jerome Jenkins – Architect  
Sir Allen Stanford – Owner/Visionary

## *Appendix*

- 1. Airport Development Master Plan*
- 2. Cricket Grandstand / Flood Lights*
- 3. Practice Facilities / Multimedia Screens*
- 4. Sticky Wicket / Antigua Athletic Club*
- 5. Water Feature / Marsh Bio-filter*





Grandstand



Field Flood Lighting



Practice Pitches



Multimedia Screens



The Sticky Wicket



Antigua Athletic Club



Water Feature with Observation Tower in Background



Marsh Bio-filter

