

Jalousie Resort Beach Restoration Soufriere, St. Lucia, West Indies

Coastal Science & Engineering (CSE) was retained by Resort Services Company to evaluate beach erosion and hurricane damage at Jalousie Plantation Resort (now Hilton Jalousie Plantation), St. Lucia. The site presented several unique problems because of exceedingly steep offshore slopes. Natural sand beaches are rare around most of the island, yet the owner needed a viable beach amenity for the resort. Prior attempts at nourishment had met with little success.

CSE scientists conducted a detailed site investigation and surveys to determine if an artificial beach could be maintained at reasonable cost. The evaluation also included review of wave heights, water levels, and runup limits during Hurricanes *Iris* and *Luis* (1995), both of which eroded the existing beach down to the native gravel level.

Our studies indicated a sand beach was only feasible if the beach face and backshore slopes could be reduced. This would allow normal cross-shore movement of sediment and lessen the tendency for rapid losses down-slope.

CSE developed a design which achieved more natural slopes and expanded the useful recreation area by 50 percent. The design also incorporated a backshore "stockpile" area which could be used to renourish the profile gradually as needed. With no local sand source, CSE located a suitable borrow area in Guyana and arranged to deliver it to the site by barge. The project was constructed in record time so the resort could reopen on schedule.

Client:

Hilton International Corp
London & Leeds Development Corp
Arlington VA 22209



Key Design Problems Addressed

- Exceptionally steep nearshore slopes
- Little wave action except during rare storms
- No suitable on-island or inshore deposits
- Sensitive reefs nearby
- Difficult site access
- Owner desired expansion of beach area
- Budget-limited and tight deadlines