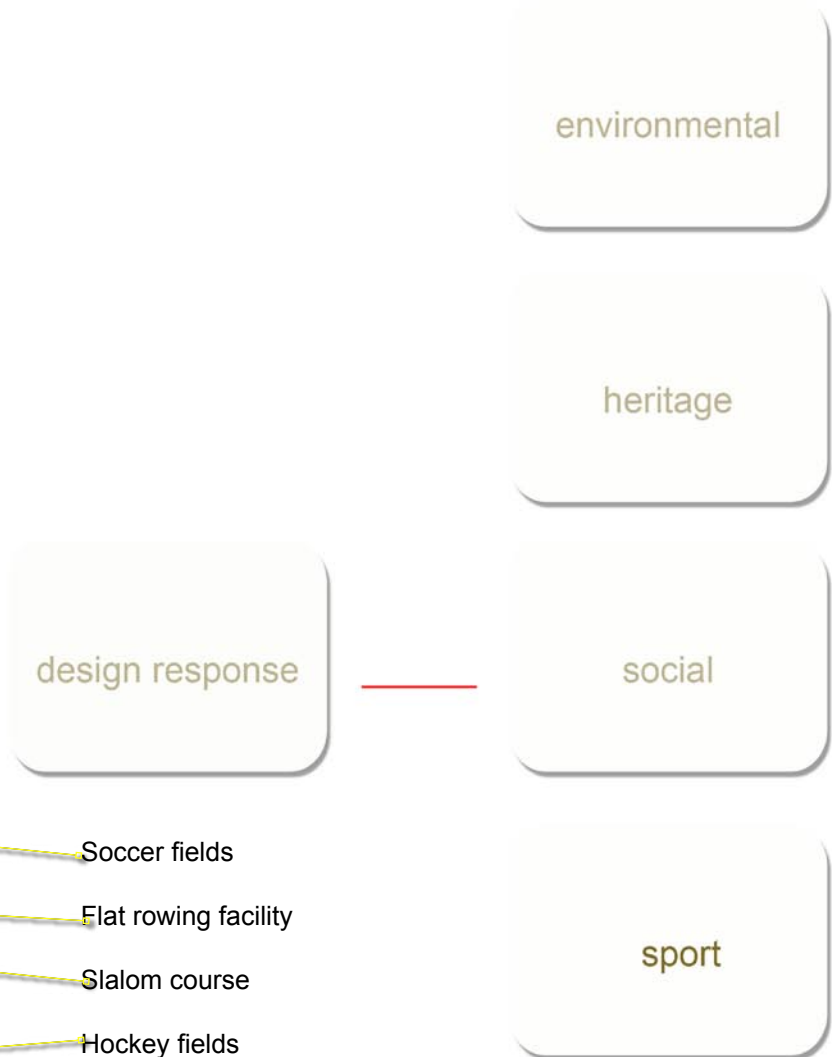


Chapter 8



8 Sport

- 8.1 Case study
- 8.2 Hockey
- 8.3 Soccer
- 8.4 Water sport



- Soccer fields
- Flat rowing facility
- Slalom course
- Hockey fields

Sport framework

FIGURE 243 View from Unisa onto Groenkloof HPC, Author, 2008

8.1 Case studies

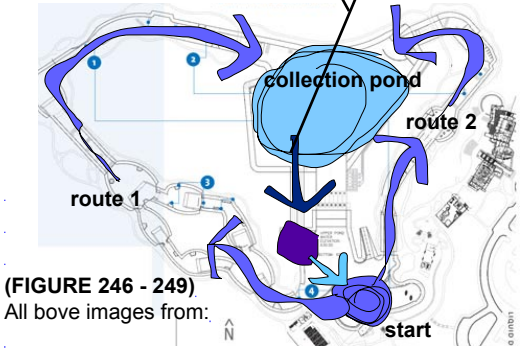


Project M ,Golder Africa Associates 2007
 This world class soccer facility being developed in South Africa is an initiative to promote and develop soccer. All the sportsfields at Project M will be synthetic fields. The master plan of Project M (Figure 244) shows that fields are placed within the 32m line from the wetland. According to Theron (2008), synthetic fields are more environmentally friendly than lawn. Astro (synthetic lawn) turf has higher implementation costs, with less maintenance and water needed over the long run.



Project M pamphlet, Golder Associates, 2007

The National Whitewater Center, (N.C.)
 CLIENT **Jeff Wise, Executive Director, U.S. National Whitewater Center**
 DESIGN PROJECT MANAGEMENT **Liquid Design**
 ARCHITECT OF RECORD **Michael Williams, Liquid Design**
 LANDSCAPE ARCHITECTURE AND CIVIL ENGINEERING **ColeJenest & Stone**
 WHITEWATER DESIGNER **Scott Shipley, S2O Design/REP Building**
 COST **\$37 million**



(FIGURE 246 - 249) All above images from:

www.architectmagazine.com/industry-news-print
 A slalom course is a large channel with obstacles that simulate rapids. The National Whitewater Center has a slalom course that never ends. The course has two routes that start in the same pond and spills into a collection pond at the lowest point in the course (Figure 249). A conveyor system hauls kayaks, canoes and other boats back to the start pond, where the course continues. These course designers used boulders for the obstacles in the course.

Obstacle Obstacle System

“S2O has created a conveyor system, for bringing boaters back up to the top pool and four separate moveable obstacle systems to accommodate a variety of differing whitewater design needs. These obstacle systems include:



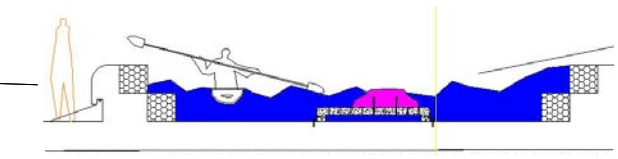
FIGURE 250 - http://www.s2odesign.net/images-obstacles_dry_jpg_files/scobstacleb.ht

The Wave-Maker--a constriction obstacle that can be either automatically adjusted through computer controls, or simply adjusted when the flows are turned off. This obstacle helps to constrict the flows making steep V type reaction waves that are favored by surfers. If put below drops these obstacles make fantastic pillow and guarded eddy features favored by slalom boaters.

The Head Gate-- This pneumatically adjustable head gate doubles as a design feature. The head gates allow for a completely adjustable bottom plate with constrictors on each side, all moved at the flip of a switch. The obstacles serve double duty by also serving to shut off flows to the selected areas when fully shut. At the USNWC, these head gates save tens of thousands of dollars a year in wasted energy and water.

The Peg-Board System-- This system allows the owner to completely reconfigure the layout of all of the eddies and constrictions. Typically used for slalom courses, this system allows the owner to set a harder course one day, and an easier one the next. The system also allows for cheap and effective tailwater and headwater control over a variety of wave-shaping features. These features allow the owner to keep up with the state-of-the-art for boating long after the course has been designed and built.” www.s2odesign.net/scobstacleb.html

FIGURE 251 A section of a slalom course with peg board system, Author 2008



- Rough edge design
- Not pedestrian friendly
- Looks like a river
- Spectator stands are close to water
- This course is not adaptable



FIGURE 251-Perth Whitewater stadium , Australia ,Findeis, M. 2007



FIGURE 253 - 254Parc Olimpic del Segre, Spain,Findeis, M. 2007



Interactive edges
Large obstacles and rapids
This course is not adaptable

Walkways in and around the course
Access to the water
Spectators sit on grassed slopes

This course is adaptable
No trees



FIGURE 255The Helliniko Olympic Centre in Greece ,Findeis, M. 2007

Slalom courses around the world were analyzed to better understand this facility. Some courses have “natural” rocky edges (figure 253 & 254) others have stepped concrete edges (figure 255). Boulders are used as obstacles in courses that simulate rivers (figure 250). Adjustable obstacle systems enables course layouts to be changed. The slalom course is emptied out and the obstacles (peg board system by S2O design) moved around to preferred rapid location.

This is a specialized design area and a team of specialists are needed to develop a slalom course. As a landscape architectural student the circulation in and around the course, the edges of the course, spectator seating and how a slalom facility functions on a master plan level will be investigated.



FIGURE 256 - Marathon world champion (South African), Findeis, M. 2007



FIGURE 262-Spectator seating,

FIGURE 263-Spectators at soccer field

FIGURE 265-Hockey safety nets

FIGURE 264-Drainage and spectator seating

FIGURE 261 shows the sport design guidelines setup in Chapter 3, implemented on Groenkloof campus.

FIGURE 261-View from Unisa onto Groenkloof HPC, Author, 2008

8.3 Water sport

Rowing

The flat water rowing facility is 300m long and 18m wide. The edges of the rowing straight absorb wave energy to minimize water turbulences in the channel. Access into the rowing facility is provided at both ends of the channel by jetties. Parking is located in close proximity to the rowing facility. Spectators are accommodated for on the spectator berm and linear parks on either side of the rowing channel. A walkway underneath the vehicle bridge connects the flat rowing facility to the slalom course. Athletes easily move from the rowing facility to the slalom course without crossing a road.

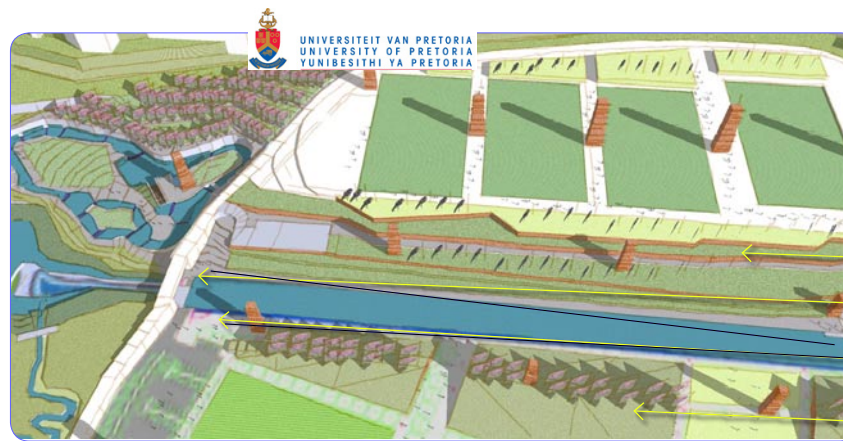


FIGURE 266-Flat rowing channel and slalom course, Author, 2008

Slalom course

The slalom course is not in the stormwater drainage way due to possible damage of this course during a flood. This facility is constantly maintained and can be emptied at any time. Water is pumped from the irrigation dam to maintain the slalom course. This course caters for advanced slalom athletes and beginners. The challenging leg of the course is the route to the right and the less challenging leg is the course to the left of the starting point. Spectators, coaches and life guards are able to move in and around the slalom course. A lookout tower (red brick) houses the equipment store and pump room for the slalom course. The pump can be run on several speeds to make the flow speed of the course water adjustable.

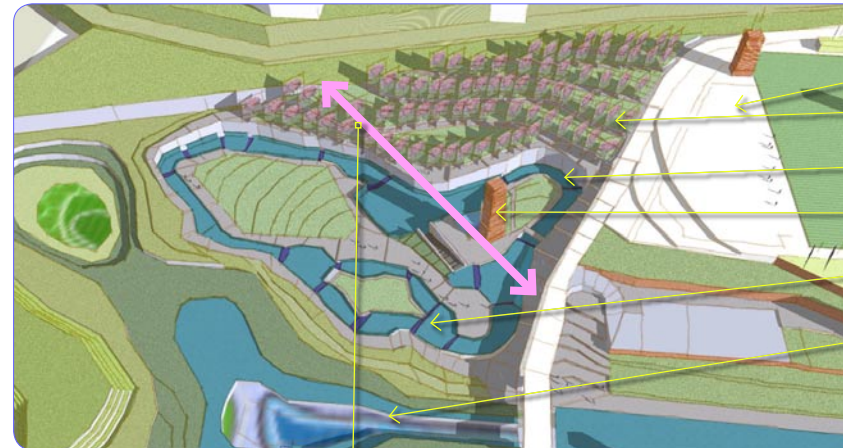


FIGURE 267-Slalom course, Author, 2008

The peg-board system is used as obstacles in the course. **“The Peg-Board System”** –“This system allows the owner to completely reconfigure the layout of all of the eddies and constrictions. Typically used for slalom courses, this system allows the owner to set a harder course one day, and an easier one the next. The system also allows for cheap and effective tailwater and headwater control over a variety of wave shaping features. These features allow the owner to keep up with the state-of-the-art for boating long after the course has been designed and built” (S2Odesign:2008).

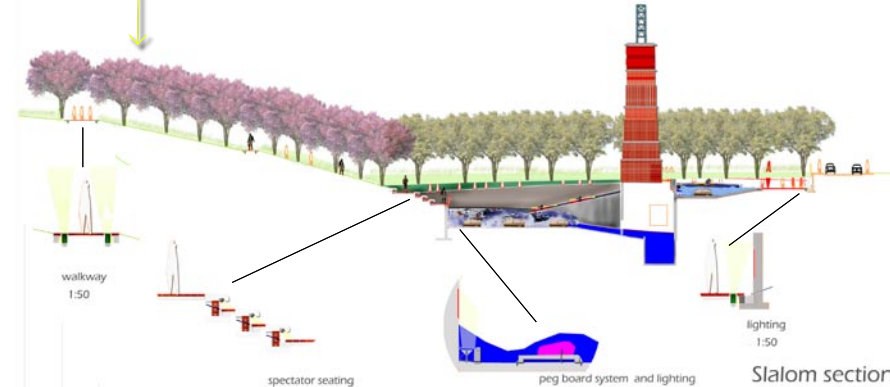


Figure 268 shows the sport design guidelines setup in Chapter 3, implemented on Groenkloof campus.

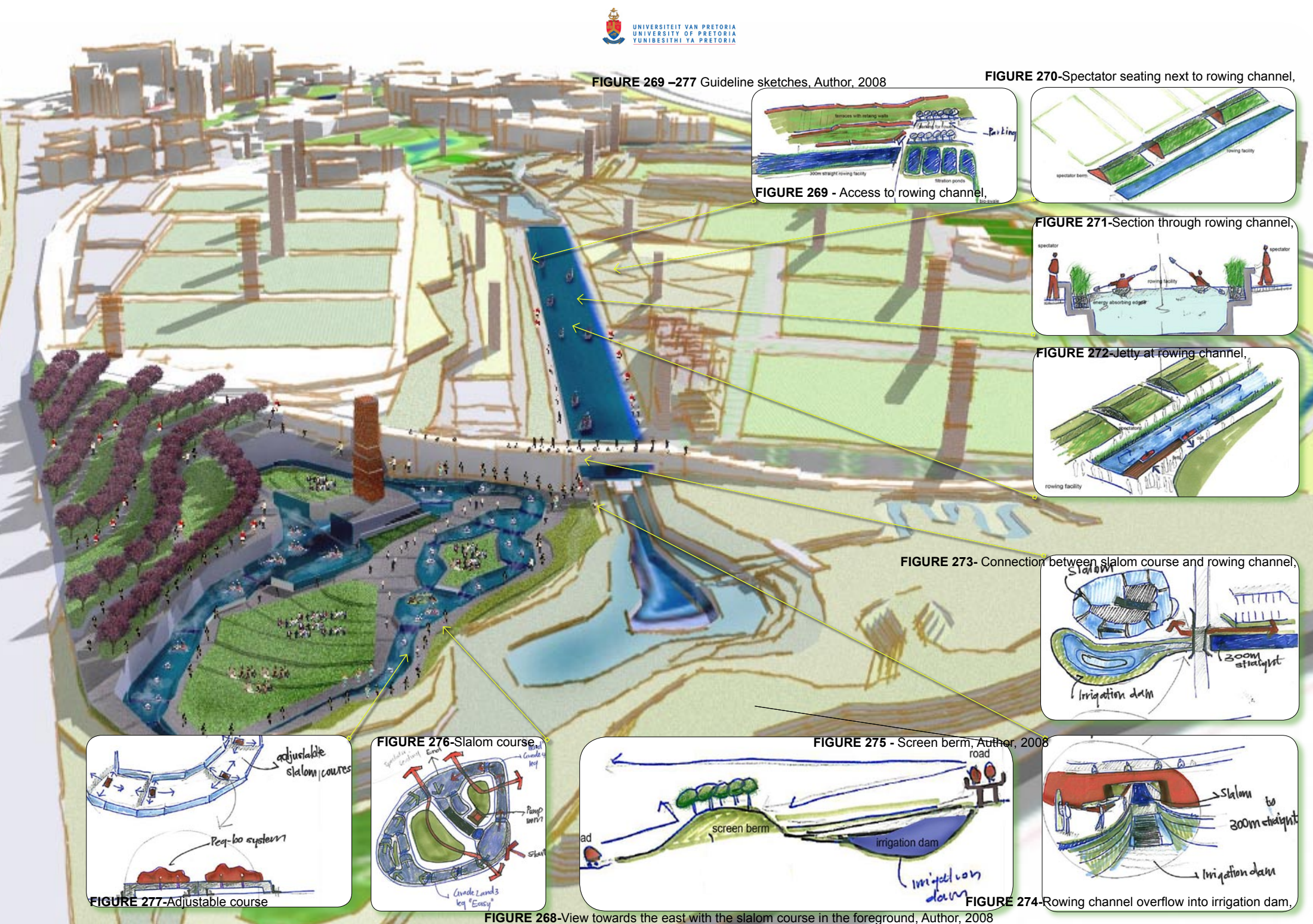


FIGURE 269 -277 Guideline sketches, Author, 2008

FIGURE 270-Spectator seating next to rowing channel,

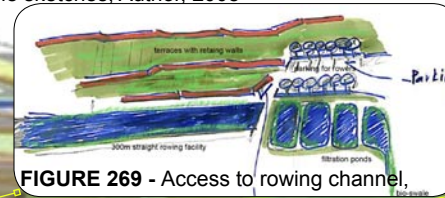


FIGURE 269 - Access to rowing channel,

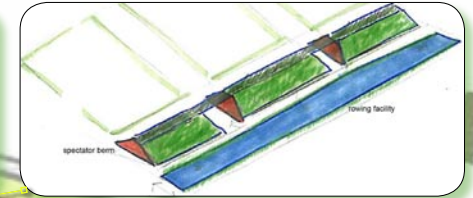


FIGURE 271-Section through rowing channel,

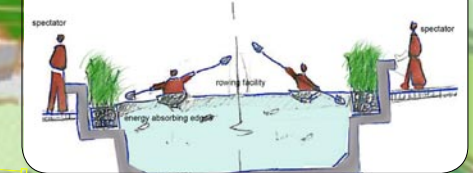


FIGURE 272-Jetty at rowing channel,



FIGURE 273- Connection between slalom course and rowing channel,

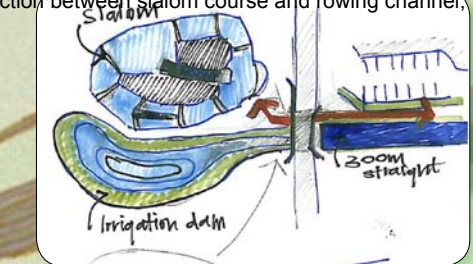


FIGURE 275 - Screen berm, Author, 2008

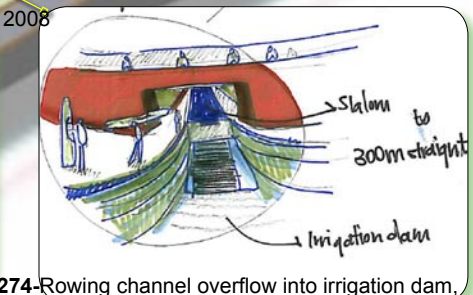
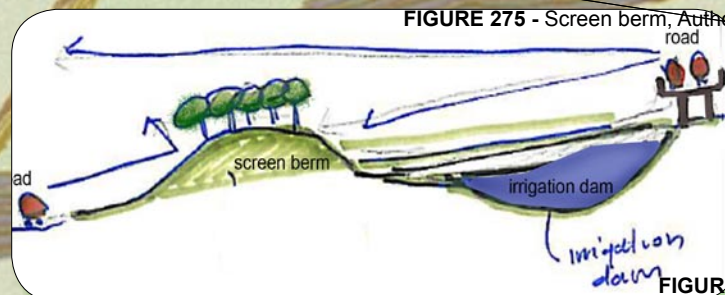


FIGURE 274-Rowing channel overflow into irrigation dam,

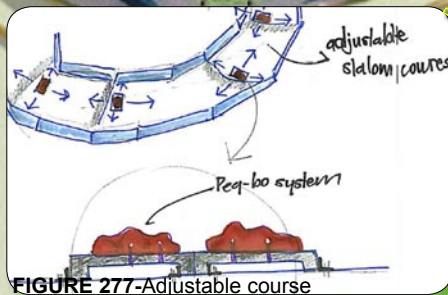


FIGURE 277-Adjustable course

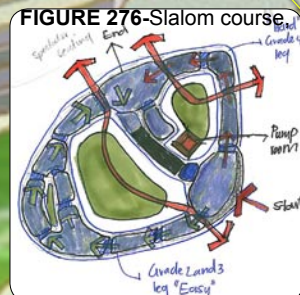


FIGURE 276-Slalom course

FIGURE 268-View towards the east with the slalom course in the foreground, Author, 2008