Ayla Golf Clubhouse - Aqaba, Jordan Essay by: Abeer Amro

The Ayla Golf Clubhouse is a 1.8 billion dollar mixed use resort, which features a 18-hole champion golf course[1]. The golf course is one of the most eco-friendly in the world[1]. The clubhouse is located 80 miles south of Petra and is surrounded by beautiful local landscape. This inspired the design for the clubhouse, taking materials from the local area and form from the surrounding landscapes and culture. The club house is made up of two elements, a steel substructure and a technique called shotcrete developed by local craftspeople. These two elements develop the building's distinctive curves and allow for detailed, high end craftsmanship and fluid complex forms.

The building's form was inspired by bedouin traditional architecture that compliments the landscape well. The effort was led by contractor Greuter AG who sourced local materials and local workers to build the steel substructure and shotcrete facade[2]. The first step in construction is to cut the steel substructure using the templates taken from the architect's computer design model. The sections are cut into flexible thin-gauge ribbons. The structure is reinforced with a steel mesh and steel bars to form the structural elements.

The non structural elements of the building are constructed next. First they cover the steel structure with a layer of insulation, being careful to follow each of the volumes. Then the shotcrete is mixed using native materials and dyed with pigments taken from the nearby hills[2]. The mixture is then sprayed onto the structure at high speeds. A concrete pump was the only piece of machinery needed to complete the shotcrete construction[1]. Shotcrete was an ideal candidate for this design because of its ability to be molded into curved and thin elements[3].

Arabic Mashrabiya patterns were used on large openings to protect the interior from the outdoors. This facade helps to control the amount of sunlight let into the interior space[2]. Ventilation of the building was done naturally without the use of traditional HVAC equipment so filtered light was key to maintaining a comfortable temperature. Another factor that helped control temperature was the use of shotcrete. The shotcrete is a thermally dense material and will help absorb heat in the day and release it at night.

Sources:

1) https://oppenoffice.com/works/ayla-golf-clubhouse/
2) https://shotcrete.org/wp-content/uploads/2020/04/Ayla-Golf-Academy-and-Clubhouse.pdf
3) https://www.concrete.org/tools/frequentlyaskedquestions.aspx?faqid=746