Culverts are structures that allow water to flow under roads or other obstacles.To address this challenge, we explored various hydraulic design scenarios.So, the culvert must be large enough to accommodate the amount of water that is expected to flow through it. Our graduation project focused on redesigning the Wadi Alqura culvert, a crucial passage for water flow in the region.Eriksson software played a crucial role in optimizing the structural design of the culvert vents.Unfortunately, the existing culvert couldn't handle the design flood, causing water levels to rise and overflow onto the road.By simulating different flood events, we aimed to identify the most effective design modifications for preventing future overflows.