

Abstract

Over the recent years, there has been an increase in extreme flooding due to hurricanes. Hurricanes Harvey, Irma, and Maria catastrophically damaged many areas that have still yet to recover. The renewed media attention into flood protection has caused many new construction projects to consider designing for flood conditions even if they are not within a flood zone. The intention of this paper is to explore the history, applications, and design methods for flood protection. This task was accomplished through research into the origins of flood protection both nationally and internationally, as well as looking into the new technologies and their implementations. Designs considering flood conditions were made for a theoretical project that is within a flood zone. These designs include a coastal retaining wall and a foundation for an exposed structure. In an effort to design an accurate and viable structure, local and governing codes were referenced, accurate site information was obtained, and working professionals were consulted. The goal of this case study was to examine – as well as learn – practical applications of design with regard to flood protection.