

Abstract

The rise of industrialization and the growing dependency of fossil fuels have spurred a movement towards sustainability, which promotes environmentally, economically, and socially conscious design and construction practices. The United States Green Building Council (USGBC) has made an impact on the aviation industry as it has also begun to incorporate sustainable initiatives into its operations. This thesis explores sustainable initiatives through various organizations and airports, focusing on sustainable design, construction, and operations manuals and guidelines. Recommendations for the sustainable aviation industry are also provided.

The Federal Aviation Administration (FAA) and its various environmental programs are discussed. The Sustainable Aviation Guidance Alliance (SAGA) is discussed as well, which focuses on the planning, implementing, and maintaining of sustainability programs through its Sustainable Aviation Resource Guide and Sustainable Initiatives Database.

The sustainable initiatives and sustainable design manuals at Chicago O'Hare International Airport, Stewart International Airport, John F. Kennedy International Airport, and Boston-Logan International Airport were explored, as well as specific sustainable construction projects such as warm-mix asphalt on runways and a Radiant Deicing Facility.

Though these initiatives provide operational and environmentally conscious improvements, more research must be done on aviation-specific strategies where LEED-influenced practices may not apply. Federal funding must be directed towards small airports that lack the capital to start a sustainable design and construction program.