

Introduction

Best Practice Considerations

This book is an introduction into the issues that drive the designs of warehouse/distribution facilities for the general leasing marketplace. It has been generated by the architectural firm HPA, Inc. HPA has over 25 years of experience with these facilities and over 125 million square feet of this type of space designed. Designing these facilities with both the for-lease developer client and the corporate distribution client, HPA has identified a number of key issues that contribute to a successful warehouse/distribution project. The particular numbers and materials comprising these issues change with location and over time, but the framework of the discussion remains the same.

We endeavor to present the key ingredients of each issue and then illustrate how they contribute to the current best practice for design, particularly in the Southern California marketplace we work in. For each section, the best practice is always a balance optimizing function, quality, and cost. Understanding the ingredients of successful designs can help readers to form a framework for decision making. Actual decisions on specific projects will vary according to the balancing act for that specific project.

Scale changes the balance significantly. These discussions are most directed to medium- to large-scale facilities (100,000 square feet and larger). A separate discussion is probably more appropriate for buildings less than 30,000 square feet, although many of these same issues apply. As buildings approach 100,000 square feet the issues dis-

cussed here become more critical and what we derive as best practices are directed to this scale.

Overview

Chapter I examines the functional requirements of the primary tools used in operating the distribution facility: Trucks, Forklifts, Pallets, and Racking. The actual geometries of trucks and their maneuvering capabilities are put together with forklift configurations, pallet sizes, and racking system strategies to discuss the implications for site plan layout, truck door spacing and column bay spacing.

Chapter II looks at the methodologies for building the horizontal layers of the floor slab and the roofing assembly. Floor slab construction is heavily influenced by subgrade conditions and the material handling equipment to be used on it. The dominant roof assembly varies geographically, as weather conditions like snow and humidity interact with local traditions. This section seeks to create a framework for discussions on specific projects in different regions.

Chapter III examines the issues that come into play as product is stored vertically to maximize the “Cube” utilization of a facility. Ever-increasing clear heights begin to place special requirements on floor slabs, column spacing and fire suppression systems. ESFR (Early Suppression Fast Response) systems are currently the best practice to eliminating in-rack sprinklers in high-bay facilities.