Abstract

Available space has a dramatic affect on the productivity of construction trades. Congestion between different trades and materials can decrease the production and the profitability of a specialty contractor on a project. Mechanical, electrical, plumbing, and fire protection trades are often suffer the greatest losses as work areas become congested, and trades begin to stray from planned work sequences. Space planning is often necessary to avoid or minimize losses due to such spatial conflicts. This research studies the spatial needs of mechanical, electrical, and fire protection trades and explores space planning techniques for predicting and avoiding spatial conflicts in multi-story building construction. Case studies were performed to monitor the physical spaces used by mechanical, electrical, and fire protection trades on four different projects. The relationship between space planning, sequencing decisions, and interferences on each project was also investigated for each of these trades. The results of this study provide useful planning examples to avoid spatial interferences, and crowded work areas. Guidelines for developing work sequences for mechanical, electrical trades, and fire protection trades are also included. Conclusions address the necessary steps to improve space planning and future directions for space planning research.
Fire protection includes both fire containment and fire suppression. Ways of accomplishing fire protection in a building. Preventing fires, early detection and alarm, providing for quick exiting of building occupants, containing the fire, suppressing the fire. 2 ways fire containment is achieved. 1. Compartmentalization. 2. Smoke Control. Becoming more prevalent in construction because of increasingly more stringent building code regulations and the awareness of owners and insurance companies of the systems' ability to minimize property damage and improve life safety. IBC requires sprinklers in buildings over 75ft high. Types of sprinkler systems. This standard classifies the relative fire hazard of buildings into three groups: light, ordinary, and extra hazard. Further information: Real estate development. In architecture, construction, engineering and real estate development the word building may refer to one of the following: Any human-made structure used or intended for supporting or sheltering any use or continuous occupancy, or. An act of construction (i.e. the activity of building, see also builder). In this article, the first usage is generally intended unless otherwise specified.