

# DESIGN SYSTEMS, INC.

## Manufacturing Engineering & Consulting

### Management Engineering Study of Emergency Department EMERGENCY DEPARTMENT OF HOSPITAL

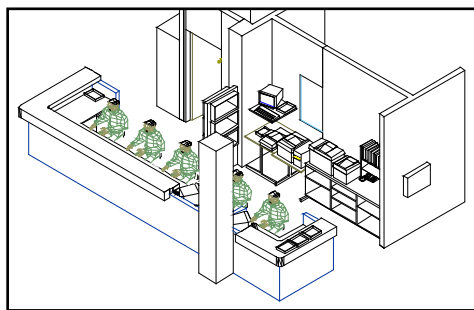
#### Project Description

Located in Farmington Hills, Michigan, this 325 bed hospital had an estimated patient census of 61,000 cases annually in 2001. In order to manage patients more effectively and improve operational efficiency, the manufacturing group of Design Systems, Inc. performed a detailed management engineering study of the Emergency Department. Recommendations were developed based on analyses of patient flow, processes, resources and facilities.



#### Client Objectives

- Gather and analyze patient, resource and facilities information.
- Determine congested areas of the facility using Proplanner's Flow Planner Software.
- Conduct a labor analysis to determine nurse and technician utilization.
- Provide 2D and 3D drawings of the current and future layouts of nurse station.
- Develop recommendations for future improvements based on findings.



#### PROJECT OUTCOMES

- 3 different layout proposals to reduce non-value added walk time (reduction of up to 4.75 hours per day)
- Increase the average number of admitted patients by 2 per day when service hours increase from 20 to 24 hours
- Recommended additional manpower to reduce utilization of physicians and nurses by 13% and 5% respectively while increasing service hours of the Emergency Department to 24 hours
- Redesigned nurses station to allow for improved flow in congested areas
- Provided recommendations that could yield revenue opportunities of approximately \$1.3 million for the Emergency Department and an additional \$6.5 million for the Hospital

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