

Abstract

Healing Alternatives is an acupuncture office space located in a repurposed house in San Luis Obispo. Healing Alternatives' current facility layout does not allow for an additional treatment room or the space to provide additional services because of the wasted space within the facility. Furthermore, patients can be disrupted by noise outside the treatment room causing a negative customer experience. The project team's objectives are to:

- o Design two layout alternatives
- o Provide a time estimate for each alternative
- o Provide a cost analysis of each alternative
- o Implement 5s methodology on the storage room
- o Provide a 2D-3D model for each alternative

To accomplish these objective, the team will use a variety of Industrial Engineering techniques learned in several courses. The facilities design course IME 443 teaches a methodology of how to analyze and redesign a facility. The project also touches on process improvement and 5S as learned in continuous improvement fundamentals IME 223, and finally cost accounting from IME 239 and IME 314 to be able to identify how much space will be required for adding a new treatment room, how to reduce wasted space and also to provide a complete cost analysis and investment plan.

Initially the team met with Melody Pickell, one of the acupuncturists and owner of the company, where she highlighted the problems with the current facility and explained her requirements for this project. The team created a Gantt chart that defined all the events and deadlines with a detailed schedule that helped the team keep track of every step throughout the duration of the project. Next, the team took measurements within the facility such as the size of the treatment room, wasted space and office space. After that, the team input the information gathered into Microsoft Visio and Sketchup to create a scaled and realistic 2D and 3D model of the facility's layout. The team proposed two different layouts, each of them added a new treatment room, providing a total of two treatment rooms, and also eliminated the wasted space. To separate the treatment rooms and minimize the noise within the facility the team selected two different options for a removable barrier based on their noise reduction coefficient. The first one is a movable wall with a NRC of 0.65 and secondly a curtain and beam with a NRC of 0.55.

After designing the two alternative layouts with two different room dividers, the team decided to conduct an interview with a contractor in order to be able to create a construction cost and timeline for each alternative. The team decided to breakdown the cost analysis into three different categories: cost of materials, cost of labor and duration. For this project, based on the information given by the contractor the team assumed that the labor cost was \$50/hour and the construction workers work an 8-hour day. The total cost of the project could be between \$5000-\$6000 and the duration would be 5-6 days. With the addition of a new treatment room, providing a yoga class and assuming that the space is utilized to its maximum capacity, the total maximum revenue for the facility is \$692,000 per year. In conclusion, the team recommended the new layouts to the client.