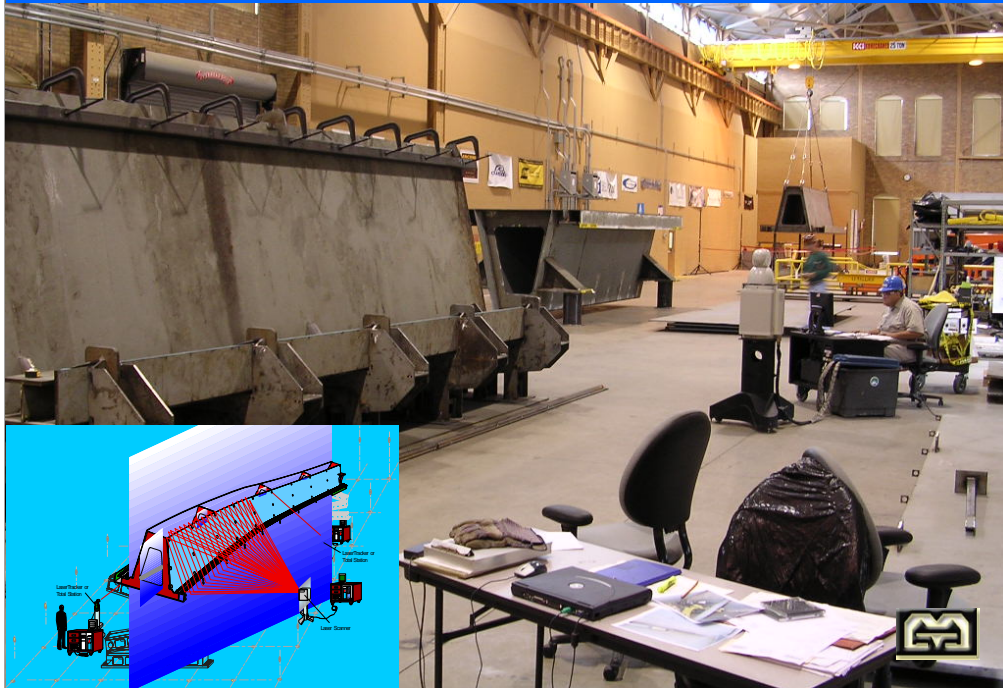


Verifying Precision Dimensions by Coherent Laser Radar



Verifying that a large complex curved structure has been precisely fabricated to design specifications is a challenge in itself. The approach utilized by MAGLEV, Inc. is to incorporate a new coherent laser radar technology metrology system. The technology allows dimensional measurement accuracies to approximately 25 microns (0.001 inch) and it is applicable to very large structures of all materials. This technology operates in a somewhat similar way to underwater sonar, but with an added feature that a raster array of the reflective signal or points is obtained. Using advanced computer software programs allows the exact structure to be obtained digitally and modeled in 3-D while simultaneously allowing the exact dimensional measurements to be obtained.

Application of this technology to precision fabrication allows verification of the quality of the fabricated component and that only those components are placed in service. Integrating this measurement system into the total fabrication process allows real time measurements to be obtained concurrently with the fabrication process. It can be employed on simple components and also on those with large complex curved surfaces. Application of this type of precision metrology system into industry can result in higher quality end products and faster time to market.