Abstract: Field construction can be planned, monitored, and controlled at two distinct levels: 1) the activity or schedule level; and 2) the operation or process level. Graphical 3D visualization can serve as an effective communication method at both levels. Several research efforts in visualizing construction are rooted in scheduling. They typically involve linking activity-based construction schedules and 3D CAD models of facilities to describe discretely-evolving construction "product" visualizations (often referred to as 4D CAD). The focus is on communicating what component(s) are built where and when, with the intention of studying the optimal activity sequence, spatial, and temporal interferences, etc. The construction processes or operations actually involved in building the components are usually implied. A second approach in visualizing construction is rooted in discrete-event simulation that, in addition to visualizing evolving construction products, also concerns the visualization of the operations and processes that are performed in building them. In addition to what is built where and when, the approach communicates who builds it and how by depicting the interaction between involved machines, resources, and materials. This paper introduces the two approaches, and describes the differences in concept, form, and content between activity level and operations level construction visualization. An example of a structural steel framing operation is presented to elucidate the comparison. This work was originally published in the proceedings of the 2002 IEEE Winter Simulation Conference (Kamat and Martinez 2002). This paper expands on the original work, by describing recent advances in both activity and operations level construction visualization.