Abstract: The factors that are considered in analyzing technical solutions and the tools used to obtain technical solutions have changed for Construction Engineer’s over the past thirty years. This paper discusses these changes and their impact. It then outlines a process that several heavy civil contracting firms use to generate work plans for their field operations, using the details of the process at Granite Construction as an example. The paper concludes by identifying the key factors in the success of a work plan as well as providing some thoughts on what construction engineering education should emphasis.