Collaboration
People and their effective engagement in project teams are the foundation of a project's success. Project management and the project manager’s role must transform to achieve integrated, cohesive teams that enable productivity.

Contracts/Risk Allocation
Contract and risk allocation structures should enable collaborative and cohesive relationships. Contracts should support collaborative and performance-focused delivery processes that engage design, construction and operations stakeholders. Risks should be identified, discussed openly, shared fairly, and problems resolved cooperatively and be allocated to the entity in the best position to mitigate that risk.

Technology/BIM
Technology including BIM, virtual and augmented reality, gaming, and 3D printing provide a wide range of opportunities to improve productivity throughout the project life cycle, as well as to attract new talent to the industry. Effectively capitalizing on these tools and their underlying data—particularly its interoperability—will allow the industry to improve quality, make process improvements and incorporate transformative innovation.

Metrics & Knowledge Sharing
Consistent metrics must be developed and adopted for use across projects and the industry. Systems and processes that encourage the sharing of knowledge to drive continual improvement should be implemented.

Safety & Quality
Hazards during the design stage for the entire facility life cycle should be eliminated through use of strategies like Prevention through Design. Such strategies can reduce injuries, the physical challenges of construction work to reduce manpower needs and increase attractiveness of the industry to young people. A proactive and effective focus on quality, from early design and throughout the project, will enable productivity improvements and deliver higher quality facilities.

Life-Cycle Focus
Projects should be focused on delivering the best possible performance across its life cycle to include design, construction, operations and reuse/deconstruction. Contracts and project teams should be set up to focus on optimizing life-cycle performance. Performance verification is a key piece in assuring long-term project performance.

Workforce
Efforts should continue and expand to expose more high school and college-age students to career opportunities and provide them with the basic skills they need to work in the industry. Such programs include career and technical education opportunities. Advance training of the existing industry workforce through competency-based programs that demonstrate individual mastery which leads to performance improvements.

Off-Site Construction
Off-site construction offers many advantages including better control of quality, schedule, jobsite safety and budgets. Consider utilization of off-site construction early in the project and in a collaborative manner to capture the most benefit. Other productivity enablers facilitate the expansion of off-site construction including BIM, collaborative delivery methods and project management strategies.

Recommendations from a Representative Hearing on Productivity and the Workforce