








# Technologies to boost productivity

Area	Examples	Benefits
 <p><b>Design for manufacturing and assembly (DfMA)</b></p>	<ul style="list-style-type: none"> <li>• Prefabricated pre-finished volumetric construction (PPVC), where building modules are constructed in factories before being assembled on-site</li> <li>• Precast concrete, engineered timber, structural steel and hybrid combinations</li> </ul>	<ul style="list-style-type: none"> <li>• Scalable</li> <li>• Fewer workers, less noise on site</li> <li>• Better construction quality</li> </ul>
 <p><b>Automated equipment/robotics</b></p>	<ul style="list-style-type: none"> <li>• Robotic assembly line in prefabrication hubs</li> <li>• Autonomous robots at work sites</li> </ul>	<ul style="list-style-type: none"> <li>• Able to work 24/7</li> <li>• Can perform monotonous tasks more quickly, accurately and efficiently</li> </ul>
 <p><b>Infocomm technology</b></p>	<ul style="list-style-type: none"> <li>• Data analytics to anticipate issues such as bottlenecks</li> <li>• Logistics simulation to predict potential delays and problems and smoothen logistics process</li> </ul>	<ul style="list-style-type: none"> <li>• Faster communication and data sharing</li> <li>• Reduces duplication and errors</li> <li>• Easy access to accurate and real-time information</li> </ul>
 <p><b>Building information modelling (BIM) and virtual design and construction (VDC)</b></p>	<ul style="list-style-type: none"> <li>• Smart BIM tools with artificial intelligence to optimise design, aid decision making and solve problems</li> <li>• Virtual/augmented reality for construction and facilities management</li> </ul>	<ul style="list-style-type: none"> <li>• Allows for holistic design and construction process</li> <li>• Improves communication and collaboration</li> <li>• Enhances visualisation</li> </ul>
 <p><b>3D printing</b></p>	<ul style="list-style-type: none"> <li>• Printing of complicated geometries and customised structures in various materials</li> </ul>	<ul style="list-style-type: none"> <li>• Able to work 24/7</li> <li>• Reduces need for moulds and formwork</li> </ul>
 <p><b>Advanced construction materials</b></p>	<ul style="list-style-type: none"> <li>• Ultra-high performance concrete</li> <li>• Alternative structural materials</li> <li>• Durable corrosion protection coatings</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces weight and amount of material</li> <li>• Easier maintenance</li> <li>• Increases strength and shelf-life</li> </ul>
 <p><b>Civil engineering works</b></p>	<ul style="list-style-type: none"> <li>• Advanced precast solutions like super-long-span bridge beams and large volumetric precast for underground spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Less disruption to surroundings</li> <li>• Faster construction</li> </ul>