Figure 1. Schematic diagram for the crew allocation problem in the precast concrete industry (Al-Bazi et al. 2010)

Figure 2. “S_MLSA” System Architecture
Figure 3. Multi-Layered Crew’s Vector representation for crew allocation problem

Figure 4. The Probabilistic Dynamic Mutation (PDM) strategy
Figure 5. The proposed decomposition simulation methodology, (modified from Banks, 1999)
Figure 6. The simulated annealing algorithm (modified from Buseti, 2003)
Figure 3. Simulation snapshot of the parallel repetitive operations layout

Figure 4. Validation of the manufacturing system
Figure 5. The average cost reduction using “S_MLSA” system

Figure 6. Optimisation of process-waiting time (production line 1)
Figure 7. Optimisation of process-waiting time (production line 2)

Figure 8. Cost comparison study of SA with Monte-Carlo and “As-Is” scenario