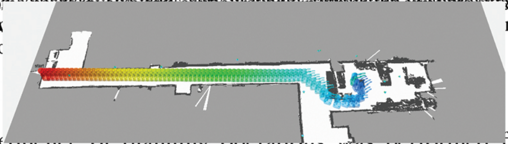

Fig. 8. A collection of poses used for planner performance testing. From an initial pose (not drawn in red), plans were attempted from each pose to the next in sequence. The paths vary in length, ranging up to approximately

A sequence of planning operations was performed from one goal pose to the next using the poses shown in Figure 8. SBPL was used to compute plans, and performance was compared against the distance field collision checker currently used by SBPL. A median motion planner speedup of 44% was obtained when replacing the existing distance field collision checker with the depth-map based collision checker,

but it is likely that a GPU variant could significantly improve performance without requiring any exotic techniques. In any implementation, this startup overhead compares favorably with the 10-15s required to initialize the distance field used for the large point cloud collected for these experiments (~1M points over a volume spanning $40m \times 21m \times 2m$).

B. View Selection

The experiments described here relied on manual selection of views from which depth maps were captured. The only requirement of depth map view selection is to capture any free space a part of the robot might occupy, and there is little penalty for selecting too many views. While the limitation that plans may only be computed between fully observed locations is not onerous, coverage of intervening