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Figure 1. A structure built by an architect using the Virtual-SAP application. Modeling such a large structure would be time-consuming if not impossible using conventional 3D interaction techniques in VEs; with our domain-specific interaction techniques, it takes less than two minutes.
Figure 6. Various cloning techniques sorted by domain specificity.
Figure 7. Techniques designed with higher specificity lead to shorter task completion time than lower ones when generating hundreds of architectural elements. Lower specificity increases flexibility in the range of objects architects can build. Arrows indicate a statistically significant difference for overall task completion time.
Figure 8. New Virtual-SAP user interface. The semi-transparent box was used for multiple object selection: objects intersecting with the box were selected. The wireframe structure was generated using one of our cloning techniques.