Modeling large, detailed cities with complex buildings is now feasible with current procedural modeling techniques, which allow their use in large game and movie productions. However, this possibility of generating almost infinite amounts of detailed geometry can become a serious problem when generating a large urban model. In this paper we propose a new LoD technique that precisely selects the detail of the geometry to generate, reducing the geometric quality of those areas that accept simpler representations, according to a user-defined criteria. Our technique operates at all urban levels: at the block level, the building level, and it smoothly combines with previous asset-level efforts [BP13].