

# From Buildings to Points and Lines and Back Again

*E. Shult*

Point-line geometries arise from buildings as  $J$ -Grassmannians. Recent work of A. Kasikova clarifies how strong gatedness of residues of a building gives rise to convex subspaces of a  $J$ -Grassmannian, and how shadows of apartments can be recognized. The reverse process is to characterize the building whose truncation covers the resulting point-line geometry, by simple properties exhibited by a  $J$ -Grassmannian. In this connection, the vital Lemma of Cohen ushers in the study of parapolar spaces. This Lemma now has a proof independent of Tits' classification of rank three polar spaces, using simpler basic properties of spherical buildings. We conclude with a progress report on parapolar spaces, going back to the fundamental work of Cooperstein and Cohen.