

HANDBOOK OF INCIDENCE GEOMETRY

Buildings and Foundations

edited by

F. BUEKENHOUT

Université Libre de Bruxelles, Belgium



1995

ELSEVIER

AMSTERDAM · LAUSANNE · NEW YORK · OXFORD · SHANNON · TOKYO

Contents

<i>Preface</i>	v
<i>Guidelines Connecting the Chapters</i>	vii
<i>List of Contributors</i>	xi
1. An introduction to incidence geometry <i>F. Buekenhout</i>	1
2. Projective and affine geometry over division rings <i>F. Buekenhout and P. Cameron</i>	27
3. Foundations of incidence geometry <i>F. Buekenhout</i>	63
4. Projective planes <i>A. Beutelspacher</i>	107
5. Translation planes <i>M. Kallaher</i>	137
6. Dimensional linear spaces <i>A. Delandtsheer</i>	193
7. Projective geometry over a finite field <i>J.A. Thas</i>	295
8. Block designs <i>A.E. Brouwer and H.A. Wilbrink</i>	349
9. Generalized polygons <i>J.A. Thas</i>	383
10. Some classes of rank 2 geometries <i>F. De Clerck and H. Van Maldeghem</i>	433
11. Buildings <i>R. Scharlau</i>	477
12. Point-line spaces related to buildings <i>A.M. Cohen</i>	647
13. Free constructions <i>M. Funk and K. Strambach</i>	739

14. Chain geometries <i>A. Herzer</i>	781
15. Discrete non-Euclidean geometry <i>J.J. Seidel</i>	843
16. Distance preserving transformations <i>J.A. Lester</i>	921
17. Metric geometry <i>E.M. Schröder</i>	945
18. Pointless geometries <i>G. Gerla</i>	1015
19. Geometry over rings <i>F.D. Veldkamp</i>	1033
20. Applications of buildings <i>J. Rohlfs and T.A. Springer</i>	1085
21. Projective geometry on modular lattices <i>U. Brehm, M. Greferath and S.E. Schmidt</i>	1115
22. Finite diagram geometries extending buildings <i>F. Buekenhout and A. Pasini</i>	1143
23. Linear topological geometries <i>T. Grundhöfer and R. Löwen</i>	1255
24. Topological circle geometries <i>G.F. Steinke</i>	1325
Author Index	1355
Symbol Index	1373
Subject Index	1381