Record Nr. UNINA9910595060403321 Autore Pak Chin-ho Titolo Architectural and Urban Subsymmetries / / by Jin-Ho Park Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Birkhäuser,, 2022 3-031-08946-4 **ISBN** Edizione [1st ed. 2022.] Descrizione fisica 1 online resource (272 pages) Collana Mathematics and the Built Environment, , 2512-1561;; 6 Disciplina 729 720.151 Soggetti Mathematics Arts Architecture - Mathematics Group theory Mathematics in Art and Architecture **Group Theory and Generalizations** Simetria (Matemàtica) Arquitectura Disseny arquitectònic Llibres electrònics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Spatial Transformations of Shapes -- Plane Symmetry Groups -- Cayley Nota di contenuto Diagrams.-Subshapes and Subsymmetries -- Subsymmetries of the Point Groups in Architectural Designs -- Subsymmetries of the Frieze groups in Architectural Designs -- Subsymmetries of the Wallpaper Groups in Architecture and Urban Designs. This book focuses on symmetries in the analysis and synthesis of Sommario/riassunto architectural designs. Crucial in the history of architecture, principles of symmetry provided the means to achieve balance and harmony of spatial composition in architecture. Less well known is the importance of symmetry principles in the analysis of the distinct constituents in a contemporary architectural design which may, at first glance, appear

disorganized or even random. The revelation of different hierarchical

levels wherein various types of symmetry or subsymmetry are superimposed provides a key for deciphering the underlying structure of spatial logic. The interaction between local and global subsymmetries is of particular interest. Operating with symmetry concepts in this manner offers architects, designers and students an explicit method for understanding the symmetrical logics of sophisticated designs and gaining insights into new designs. This book has two complementary objectives: to explore the fundamental principles of architectural composition founded on the algebraic structure of symmetry groups in mathematics and to apply the principles in the analysis and synthesis of architectural and urban designs. By viewing and decomposing architectural and urban designs in this manner, the hidden spatial logic and underlying order in a design become transparent.