Contrasting Orientation Just as two structural grids may have contrasting geometries, they also might have differing orientations to address unique features of a site, accommodate an existing pattern of movement, or express contrasting forms or functions within a single composition.Although structural framing systems are usually developed in plan, consideration should also be given to the effect of the structure on the vertical aspects of a building––its elevations and the scale of its interior spaces.66 / BUILDING STRUCTURES ILLUSTRATED IRREGULAR GRIDS Plan and section: Palmach Museum of History, Tel Aviv, Israel, 1992–1999, Zvi Hecker and Rafi Segal STRUCTURAL PATTERNS / 67 IRREGULAR GRIDS Plan and section: Valley Center House, San Diego County, California, 1999, Daly Genik Architects Plan and section:Lois & Richard Rosenthal Center for Contemporary Art, Cincinnati, Ohio, 2001–2003, Zaha Hadid Architects The examples on this and the previous page illustrate several ways in which contrasting orientations can be accommodated within a single composition.The structure of the Lois & Richard Rosenthal Center for Contemporary Art is based on a regular rectilinear grid but the columns have the shape of parallelograms to reflect the skewed geometry of the full–height, skylit atrium space housing the vertical system of stairways.68 / BUILDING STRUCTURES ILLUSTRATED IRREGULAR GRIDS Accommodating Irregular Spaces Design ideas are often generated not from the pattern of structural supports and spanning elements but rather from the desired ordering of program spaces and the formal qualities of the resulting composition.In the latter two cases, the resulting irregular or nonuniform layout of vertical supports and varying span lengths make it difficult to use repetitive or modular structural members.70 / BUILDING STRUCTURES ILLUSTRATED IRREGULAR GRIDS Accommodating Irregular Shapes It is advisable to try to recognize the inherent geometry embedded in irregular plan shapes when attempting to develop a strategy for its structural system.Although appropriate to accommodate the spatial requirements of such spaces as theaters, concert halls, and large galleries, this strategy typically requires long–span spanning systems.The transitional or interstitial space formed by the intersection of two geometries having contrasting orientations can, if large or unique enough, begin to attain an importance or significance of its own.The Palmach Museum of Historyconsists of three parts, two of which are skewed to preserve an existing cluster of trees and rocks and define an irregularlyshaped courtyard.Discrete irregularspaces may be framed bythe structure to conform with and reinforce the program requirements of the spatial volume.STRUCTURAL PATTERNS / 69 IRREGULAR GRIDS Accommodating Irregular Shapes See plan and section of Centre Le Corbusier, pg. 16.