

the city region. On the river front within this main system is the city itself.

Now it is this city grid of Savannah that can be used as a first example of a city grid. A view of Savannah in 1734 illustrated in John Reps' book describes the principle: the plots and streets of the embryo city are being laid out: some buildings are complete. The unit of the Savannah grid is square: it is called a ward and is separated from its neighbours by wide streets. Within each square (or ward) building plots for houses are arranged along two sides, the centre itself is open, and on each side of this open square are sites for shops and public buildings. Savannah grew by the addition of these ward units. In 1733 there were four units: in 1856 no less than twenty-four. The city became a checker board of square ward units, marked out by the street pattern. But within this again, the plaid is further elaborated. The central open spaces of each ward are connected in one direction by intermediate roads, in the other direction the central areas become a continuous band of open spaces and public buildings. Here is a unit grid with direction and orientation.

The second example of a grid is absolutely neutral. It lays down an extensive and uniform pattern of streets and plots. The whole process can be illustrated in one single large scale example. In 1811 the largest city grid ever to be created was imposed upon a landscape. The unlikely site for this enterprise was an area of land between two geophysical provinces in which a succession of tilts, uplifts and erosions had brought through the younger strata two layers of crystalline rock. These appeared as rocky outcrops under a thin layer of soil and vegetation. Into their depressions sands and gravels had been deposited by glacial action to create swampy areas through which wandered brooks and creeks. Some of these still wander into the basements of the older areas of what is now Manhattan.

In 1613 the original Dutch settlement was limited to the tip of the island. In 1760 there was little expansion beyond this and contemporary illustrations depict to the north a rolling landscape. Taylor's plan of 1796 shows the first modest growth of a city laid out on a gridiron pattern. Surveys in 1785 and 1796 extending up the centre of Manhattan set out the basis for a grid, and in 1811 the special State Commissioners confirmed this in an 8 ft long plan which plotted the numbered street system of Manhattan as far north as 155th Street. The plan showed 12 north-south avenues each 100 ft wide and 155 cross streets each 66 ft wide. The size of

the rectangular building plots set out by this grid are generally 600 ft by 200 ft. There were some public open spaces. (Central Park was of course carved out later.) And it is this framework that has served the successive developments of the built form from 1811 to the present day.

The third example of a city grid is of interest because of its dimensional links with the land ordinance, suggested by Thomas Jefferson and passed by Congress in 1785. Under that ordinance a huge network of survey lines was thrown across all the land north and west of the Ohio river (Robinson 1916). The base lines and principal meridians of the survey divided the landscape into squares 36 miles each side. These in turn were subdivided into 6-mile squares or townships and further divided into 36 sections each one mile square. The mile squares are then subdivided by acreage: the quarter section 160 acres with further possible subdivisions of 80, 40, 20, 10 or 5 acres. The 5-acre sites lend themselves to further division into rectangular city blocks (not unlike those of Manhattan) and subdivision again into lots or building plots.

In 1832, according to Reps (1965), Chicago was not much more than a few log cabins on a swamp. The railway came in the mid-century and by the seventies and eighties a mile square grid had been extended over a considerable area of the prairie and the city framework had developed within this through a plaiting and weaving of the subdivisions that have been described.

Here then are three types of grid, that of Savannah, the gridiron of Manhattan and that of Chicago. Each one is rectangular. Each one has admitted change in the form and style of its building. Each one has admitted growth, by intensification of land use or by extension. Savannah, as it grew, tended to produce a green and dispersed city of open squares (Fig. 8.1). In Manhattan, the small scale subdivision of the grid and the exceptional pressure to increase floor space within this, forced buildings upwards. Chicago spread, continually opening out the pattern of its grid. In each case the influence of the original grid remains: each one offers different possibilities and choices of building and of living.

In order to trace the influence of the grid, we can examine the building arrangement that developed within it in New York. We can identify at once what might be called the streets and the system that is established by the grid. If we now use the language of the urban geographers, we know that this defines the general plot pattern. The building arrangement develops within this (Conzen 1962).