Activity Flow Architecture
Environment Design in Active Worlds and Everquest

We all acknowledge the importance of carefully planning urban environments to make them functional for the people living and working there. Everything from creating a working infrastructure to considerations of socio-cultural character has to be taken into account. When virtual worlds reach high enough levels of complexity, these issues become relevant there as well. In this mini essay I will contrast two systems in an attempt to illuminate the connection between structural and procedural aspects of virtual worlds.

Active Worlds
Active Worlds started out as a single world – Alpha World – which went live in June 1995. Active Worlds is a system of three-dimensional graphical environments that participants can move around in and interact with each other. Each world is a continuous space. The environment is downloaded and rendered based on what is within view. The participants navigate using the arrow keys and can teleport to any place in the world by typing in the coordinates of the destination.

Alpha World is now one of over a thousand different worlds in the Active Worlds universe. With an area greater than the state of California, it is the largest world in the system. In Alpha World, anyone can build their creations out of a library of over three thousand different objects and textures. There are over a hundred million objects in Alpha World.

Teleportation Architecture
The architecture surrounding a road exclusively for cars is typically very different from one where people are walking in the physical world. This is sometimes referred to as 50 km/h architecture versus 5 km/h architecture. It comes from the fact that it is impossible to take in as much visual information when passing by in a car, compared to when walking. While a store owner by a freeway puts up a big billboard with limited but easily perceivable information, an inner city merchant fills his store window with an abundance of items and offers.

This difference in architecture is hard to see in Alpha World. The set speeds of avatar movement seems to be a key feature to consider in these worlds but the reality is that the avatars in this world are not using their feet that much. Alpha World inhabitants are instead more likely to teleport to their destination which has given rise to what could be called a teleportation architecture.

In a world where teleportation is possible, it does not matter so much how far away a place is, it matters more how easy the coordinates are to remember. Since one number is easier to memorize than two, it has become popular to build along the x and y axis where one of the coordinates is zero, and along the diagonals where both coordinates are the same. This emergent behavior was not discovered until a tool was constructed that could produce birds-eye maps of the world. The star pattern is particularly noticeable in the picture to the left taken in 1996. (fig.1) In the picture to the right, taken five years later,

we see how the building activities have sprawled out to most parts of the center area of the world.
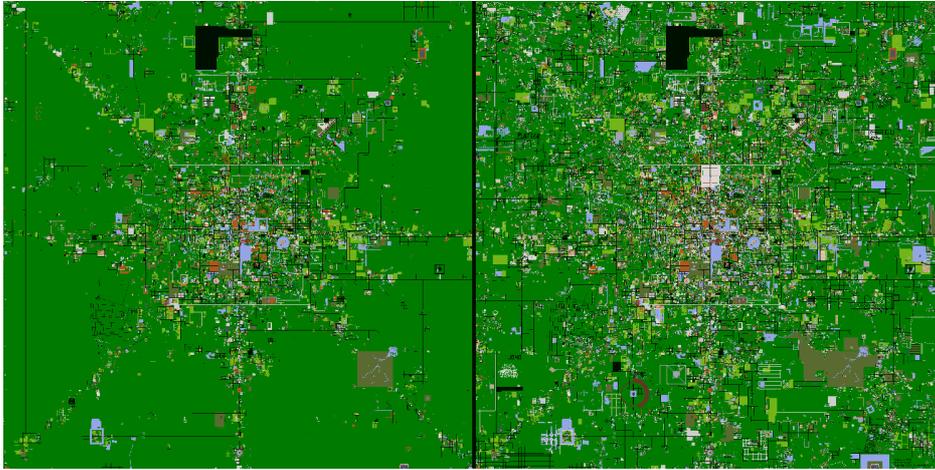

Figure 1. Alpha world seen from above. The pictures were taken in 1996 and 2001.

In a system where the center of the world serves as the point of entry for all avatars we can expect the colonization of space to follow the template of Alpha World. At first the central areas are the most desired but since the core activity of these worlds is building, not dwelling, people will be drawn to the rim of the developed areas in order to find free space to claim for their own creations. This development with sprawling city landscapes and suburbanization does in some ways resemble that of many big cities in the physical world.

The very center of Alpha World is not open for free building and maintained by the owners of the system. This area is very well structured and lively, reminding me of Times Square or Piccadilly Circus but it is surrounded by an inner city area that has transformed into a ghost town. This problem parallels the problem of the deterioration of inner city areas in many big cities that also have become seen as less appropriate for dwelling for different socio-economical reasons. Just as efforts are made to rejuvenate inner city areas in physical cities, it has been suggested that old developments should be deleted in Alpha World. But who should decide what to tear down and what to leave. Some argue that all buildings are equally valuable and should be kept in order to preserve the history of the place. In relation to this debate it has been suggested that it would be good if virtual buildings deteriorated the way physical buildings do so you could see which were cared for and maintained and get rid of the ones that were not. The persistence of the digital building material turns out to be a mixed blessing when virtual urbanization is concerned.

Everquest
When Everquest went live in March 1999 it set a new standard for the scale and complexity of virtual world based games. It is a game in which players battle a variety of creatures in the virtual world of Norrath. The game is built on a system similar to Active Worlds but with a closed graphics library. The participants wander a vast terrain covering a number of continents which are divided into a large number of zones. The objective of

the game is to advance ones character by increasing its experience and skill levels by killing beasts and doing quests.

Designers of digital games have always had to deal with how to limit the freedom of movement of the players. The classic example is the use of islands which allows the designer to use the sea surrounding the island as a natural limitation for the exploration minded player. In Everquest it is the monsters that are used to restrict the freedom of movement. Low level creature surround the starting cities and the further out a player goes, the more dangerous the wildlife gets. In this way, the players are contained in a fairly limited area while they learn the basics and run less risk of becoming overwhelmed by the complexity of the game.

Everquest is both a game and a virtual world. As a game, it needs to drive the process of playing forward. The most important driving force in the game is to increase the abilities and experience level of one's character which in turn allows the player to see new zones and encounter new monsters. The pursuit of experience points can be seen in terms of a number of possible paths traversing the geographical space. This gives rise to a need for the players to map the game landscape in two different ways. The first is traditional geographical maps showing which zones are adjacent to each other and how to get from one place to another (fig. 2). The second is process-oriented descriptions related to game goals.
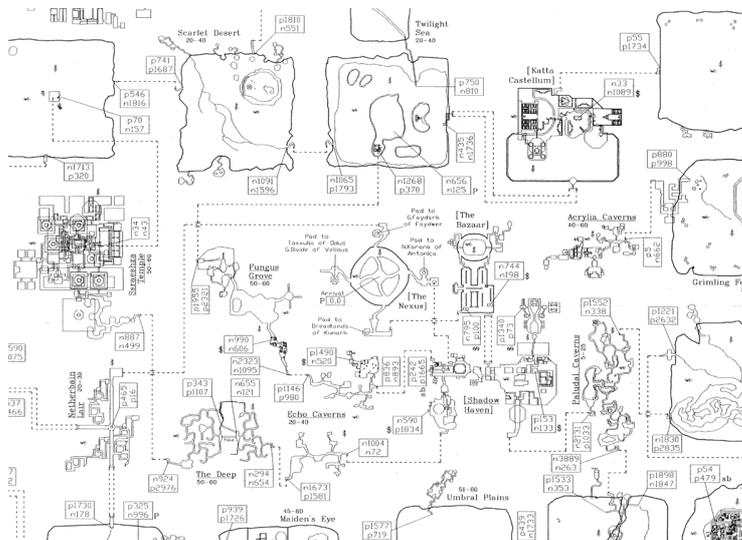

Figure 2. Map of the moon Luclin in Everquest.

The process-oriented progression through the game becomes even clearer in the high-end game. In figure 3 the high-end zones are ordered in a flowchart describing how to progress through the zones to get to the Plane of Time, the most rewarding zone in the game at the time of this illustration. This flowchart also tells us that this world can be understood as a flow of people through the environment working their way towards their goals.
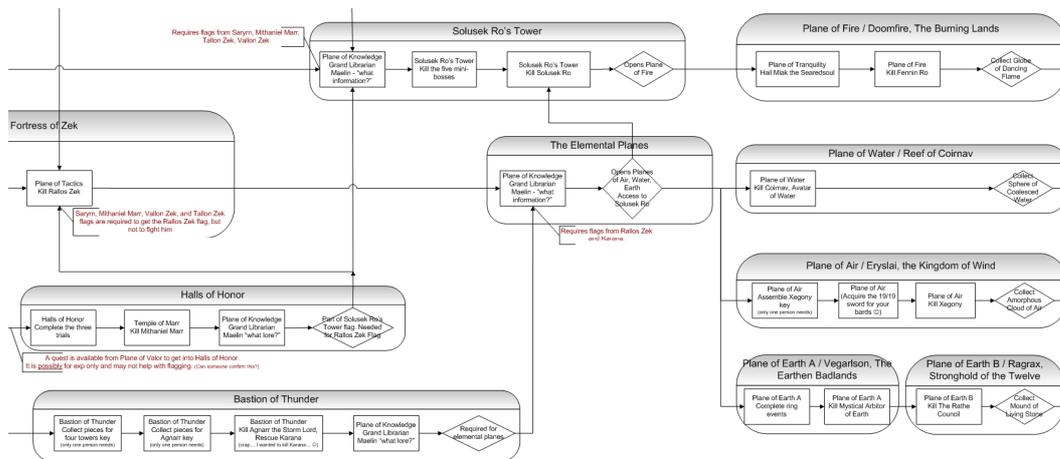
Figure 3. A flowchart showing how to get to the Plane of Time.

Activity Flow Architecture

In the case of Everquest, the process that the world is there to support – or provide a pleasurable resistance against – is the development of the player's character. The process-oriented nature of this task is not unique for game worlds. In Alpha World it is the activity of building that drives the world and defines its structure. Virtual worlds need an activity of some kind to keep them going and the architecture of the worlds should provide for the flow of this activity. Understanding this helps explain the success of massively multiplayer online games and tells us something about how to create successful virtual worlds for other purposes as well.