VIRTUAL PROJECTIONS OF IDEAL URBAN LANDSCAPES

Using City Building Games to Examine Landscape Values

Landscape Architecture Senior Theisis

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VIRTUAL PROJECTIONS OF IDEAL URBAN LANDSCAPES

USING CITY BUILDING GAMES TO EXAMINE LANDSCAPE VALUES

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ABSTRACT

The purpose of this two-part study is to identify urban landscape preferences, determine if there is a relationship between landscape values and design choices, and to open a dialogue between designer and user about landscape values. The reasons why people love a landscape are diverse. Within the field of environmental perception, researchers and planning professionals have worked to identify landscapes that elicit strong attachments and to deduce the reasons for such attachments. The first portion of this study is an analysis of how people design virtual cities in simulation city building games. Subjects who play games such as *SimCity* and other similar games for the computer, console, and Smartphone are surveyed to determine 1. Where the subjects have grown up and what landscapes—urban, rural, or suburban—they value most and 2. What elements or ideas they find important when designing their ideal city. Their survey results and city design screenshots are compared to find a relationship between where the subjects were brought up, their design intentions, and what they design. The second portion is a conceptual design for an online video game modeled after other simulation city building games. Community participation methods are examined to determine how city building games can contribute to the design charrette process. The intent of this game is to aid landscape architects in community participation.

INTRODUCTION

Simulation city building games are strategy games where the players build and manage a city as if they are both the planner and mayor of the city. Players pick, place, and manage buildings and other elements within their city in the manner they choose. The options are seemingly limitless; however, experience points (points gained through achieving specified goals) and monetary gains within the game often motivate players. Probably the most well known city building game is *SimCity*. It was first published under the name *SimCity* in 1989 for IBM PC, Macintosh, Amiga, Atari ST and Commodore 64 ("SimCity History," 2012). The *SimCity* franchise has become widely popular since making way for many other city building games. More recently simpler city building games have appeared for the iPhone and Android. These games are less time consuming than the original *SimCity* and often free, making the genre more accessible to the general public.

I first became interested in these games after playing *WeRule*. *WeRule* is a simple city building game for the iPhone where players create their own kingdom, collect taxes, and harvest crops. The original building blocks of the game are Medieval European, however, there are options of using other themed buildings. As a student of landscape architecture, I applied my knowledge about sustainable development to the game. Aware of these biases, I compared my own city to other cities people had designed for the same game. As expected, there were a number of different city designs. However, what was particularly surprising was that many of these cities –made up of Medieval European buildings –resembled the American suburbs in their structure and organization. Most common were separate residential and commercial building

Fig. 1: A screenshot of WeRule. Housing is separate from the commercial area and organized in neat rows (Frost, 2010).

Fig. 2: Quintessential American housing in fictional Medival Europe. Houses in neat rows with individual lawns and mailboxes ("We Rule for iPhone," 2010).

Fig. 3: The suburbs, Chicago (Scorpions and Centaurs, 2008).

zones and neat rows of buildings similar to the orderly organization and separation seen in the suburbs. Perhaps this was because people were recreating what they knew and

grew up with. With the recognition of these patterns arose questions about how much the places we grow up in form our sense of aesthetic, influence our ideas about design, and shape the way we think about the city, and furthermore, how city building games can be applied to design and planning.

The primary concern of this study is what influences landscape preferences. The concern will be addressed through the analysis of a survey that is designed specifically for this study. I will make sense of this topic through the background overview, which is provided in the following section.

BACKGROUND SURVEY

Much has been written on the inquiry of landscape preferences (Tuan, 1978; Lowenthanl, 1978; Marcus, 1978; Hester, 1979; McNally, 1990) but it is not clear which of these preferences are innate, culturally specific, or acquired through experience. It is possible that some universally common preferences are innate (Tuan, 1978; Hester, 1979; Marcus, 1978) while other more specific preferences may be associated with individual experiences (Hester, 1979; Marcus, 1978) or cultural ideals (Lowenthal, 1978). The following studies discuss what landscape values people hold, and how different factors can affect these values.

It is clear that difference of environment accounts for varied human experiences. This means that landscape, either directly or indirectly, shapes our worldviews. What is interesting is how we value and prefer one landscape or type of design over another. It is clear that all people do have a connection to a landscape. Geographer Yi Fu Tuan (1978) calls this strong connection between people and place topophilia (p. 4). Although it is obvious that any organism will have a connection to its environment, what does the connection constitute for humans, since we live in such a variety of environments? And how should this connection be studied? In *Topophilia* (1978), Tuan begins to explore the topic through human's sense perception, environmental adaptation, and worldviews.

Tuan suggests that a human's view of the world is formed through the accumulation of perceptual experiences (p. 4). Such perceptions are constituted by human senses. Most notable is our strong eyesight; we rely heavily on visual rather than audio and olfactory sensory (p. 6). Tuan goes further by saying that people see the environment through the context of them selves and understand it as they would understand themselves (p. 27). Humans view the self as the "center" and concentric circles of importance radiate beyond this center (p. 27). Humans also have a hierarchical concept of front and back (p. 27).

Fig. 4: Overlay of human (top view) and the Vatican City (plan view) showing the relationship of body and space.

These spatial understandings of the self, explain how people see, structure, and build their world; cities often have a center, front, and back, with radiating circles of importance (p. 27). The relationship we have with landscape is complicated: it shapes our perception not only of the world around us, but also of ourselves. Clearly, the effect of environment is not uniform. Instead, people attach different values to the same landscape, value different landscapes, and hold many different worldviews. If worldviews and landscape values differ across cultures then to what extent does environment influence the forming of these worldviews and values?

John Dewey (1896) was the first to make such a point. He argued that stimulus and response are not separate. "It is absolutely impossible to think of the eye center as monopolizing consciousness and the ear apparatus as wholly quiescent. What happens is a certain relative prominence and subsidence as between the various organs which maintain the organic equilibrium (Dewey, 1986, p. 362)". According to Dewey, no action is single and complete, but always arises out of another action. Eyesight is not the center of activity; it is a part of the brain that puts all of the perceptions together, recognizing patterns from previous experiences. Likewise, historian Diane Ackerman (1990) explains that "[t]he senses feed shards of information to the brain like microscopic pieces of a jigsaw puzzle" and when enough of these "shards" come together our brain makes sense of it (p. xvii). Drawing from Tuan (1978), Dewey (1986), and Ackerman's (1990) discussions on sense and perception, it would make sense if our preference, at least in part, was based on previous experience. In design, it would be based on something we may have liked or disliked; either way, our design would be an action growing out of our response to landscapes.

Our environment, in the way that we adapt to it, shapes our perception. The BaMbuti rainforest dwelling pygmies, from the Republic of the Congo, live in a place of little sun and constant season where the forest is insulate and encompassing (Tuan, 1978, p. 79). They have no concept of cyclical time and have difficulty comprehending vast distances; for example a BaMbuti will see large game in the distance and think it is small game (p. 79). In another example of the way a landscape can influence sense perception, the Eskimos learned to differentiate the nuances of their landscape using all their senses not just sight, while someone who is

Fig. 5: The Alaskan tundra (Rose, 2010).

from a more seasonally varied environment might perceive the same landscape as barren and unchanging (p. 77). The environment changes the way people see the world. It is not that different peoples have evolved to specific environments but that humans have a certain plasticity that allows them take advantage of various environmental conditions. In the case of the BaMbuti the dense forest environment limits their ability to comprehend depth of field because in the forest everything is close so there is neither opportunity nor need to understand such perspective illusions as herds of game in the distance. On the other hand, the Eskimos learn to perceive their environment using all their senses because of the lack of visual landmarks. Their skill set allows them

to survive in the tundra environment. While people share a common set of senses, the environment can influence the way we use these senses. The way in which they perceive the environment is learned. Differences in environment, which result in different perceptual experiences, lead to differences in how people perceive.

The term topophilia "can be defined broadly to include all of the human being's affective ties with the material environment," thereby including aesthetic or tactile sensory responses to a landscape as well as the more complex feelings one has towards a place because it is home, a locus of memories, or a means of gaining a livelihood (Tuan, 1978, p. 93). Tuan also suggests that worldviews are influenced by environment (p. 82). The Pueblo Indians of the American Southwest, who inhabit a vast and expansive land, have a structured cosmos where cardinal directions play an important role in their legends. Interestingly, they live on a plateau with visibly layered rocks and they have a legend that people lived in the earth and climbed out of the layers (p. 82). Clearly the legend is inspired by the landscape. What

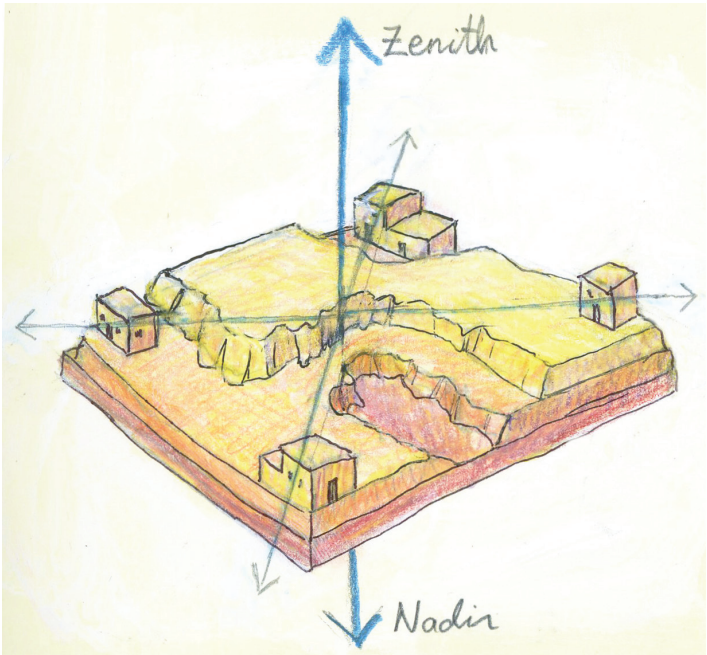


Fig. 6: Pueblo Indian legends emphasize houses, direction, and space (Tuan, 1978, p. 82).

Tuan suggests is that our human biases, formed by uniquely human experiences in a range of environments, play a major part when understanding and structuring our environment. People are limited by what they experience, which in turn is limited by what experiences the environment has to offer. Thus, people, at least in part, are constituted by their landscape.

These studies of isolated societies of people reliant on their immediate environment for survival, do not account for how people in highly globalized societies may form their landscape values. They may be influenced by a multitude of landscapes besides their place of upbringing and less directly dependent on their environment for subsistence. The people who play city building games have more opportunities to see different landscapes through travel, movies, television, and various print and online media. Respondent 51 wrote about the landscapes he saw as a child,

> I remember... growing up in a rural area with a lot of woodland, lakes and open spaces, (our closest neighbor lived 3 kilometers away) I was much more fascinated with images of dense urban settings, [natural] landscapes were incredibly boring to me since I was surrounded by beautiful vistas my entire adolescence... I remember my grandparents had a of series of books with some kind of photographical studies of different places, and I would spend hours looking at pictures of New York City and Hong Kong with endless fascination, these man-made mountains of glass and steel intersected by valleys symbolized to me, as a small country boy, all the potential and capacity of human beings. The place I grew up seemed hopelessly backwards and uncivilized in comparison... However, after having grown up and traveled a bit more and seen some of the places I idealized as a child, I have gotten a more nuanced attitude.

For respondent 51 it was not his home that

influenced his landscape values, but his lack of interest in the natural landscapes around him and fascination with the urban landscapes he saw in book that shaped his values.

Of specific interest to this study, are the landscape values of those that have grown up in suburbia. Kenneth Jackson's *Crabgrass Frontier* (1985), Adam Rome's *The Bulldozer in the Countryside* (2001), and Dolores Hayden's *Building Suburbia* (2004) chronicle the development of contested suburban landscapes. The suburban home with its front lawn and separation from the congestion of the city, has become a standard for the comfortable American life; looking into the landscapes and architecture of suburbia reveals much about American cultural ideals (Jackson, 1985).

In *Remembrance of Landscapes Past* (1987), Clare Cooper Marcus discusses her students' essays on landscape values to make comparisons on different upbringings and environmental preferences. Particularly relevant to my study is Marcus's findings on how students who grew up in the suburbs did not recall their place of upbringing as a favorite landscape but preferred natural or urban settings (p. 42). They found the suburbs too manicured for exploration and play (p. 42). This implies that suburban landscapes are not well liked. Her findings further suggest that, if suburban residents were asked to design their perfect neighborhood or residence their design will most likely be consistent with Marcus's findings that those that dislike the suburbs will design urban or rural residences. Yet, why then do so many people prefer to live in the suburbs? Clearly, there is a discrepancy between what people say they prefer and their ultimate residency decisions. However, as Marcus's findings are based on samples of essays written by students taking her course (p. 35), it only represents the landscape values of those either studying landscape architecture or interested in the subject. A larger more diversified sample size may produce different results. It could be that the average individual not concerned with landscape and the environment may fondly recall their childhood in the suburbs.

If Marcus's (1978) findings––that people who grew up in the suburbs tend to lack fond memories of them––hold true, it should be expected that people will not design their ideal virtual cities in the image of the suburbs; instead they will either design a rural village or large dense city. Why, then, did I find so many suburban recreations in my study? Perhaps what people say they like and what they create are different, or while people find rural or urban landscapes beautiful and fun, they may consider the suburbs to be more convenient or efficient, simply because they are used to them and know how they function.

A look into the game *Second Life* suggests that people hold onto reality so strongly that they bring reality into their own fantasies. In Herbert Wright's Instant Cities (2008), he describes how the real world can make its way into a virtual world. *Second Life* is a fully immersive online game where multiple players can experience a 3D world (Wright, 2008, p.106). Since the game has no storyline and all the content is created by the players, anything is possible and the game simply allows the player a chance at a second life (p.106). What started out mainly as a niche for alternative communities such as elves and "furries" has recently taken on more real world characteristics (p. 108). For example, there are land brokers and architects; what is especially interesting is that while players could easily teleport within the game they often buy expensive plane tickets and drive around in cars to get from place to place (Wright, 109). As a consequence, *Second*

Fig. 7: A city in Second Life *("Sneakpeak virtual city Nederport," 2012).*

Life is suffering from real world issues as well: sprawl and congestion are current major problems within the game. These in-game phenomena illustrate how in a place that is supposed to be an escape from real life, people bring reality –along with all if its problems and inconveniences –into their fantasy.

Philip Rosedale (2008), founder of *Second Life,* believes that the infinite possibilities that virtual realities allow, answers the question as to why people build virtual worlds in the first place. Whereas in the real world not all ideas can take form, virtual reality creates a "space between us and imagination" where anything can happen (Rosedale, 2008). This does not entail that *Second Life* is a utopia. On the contrary, the freedom of the individual in *Second Life* contrasts most utopian bottom up schemes (Rosedale, 2008). With multiple individuals contributing to the creation of the space within the virtual world, *Second Life* is far from being bottom up. An example of a real world attempt at utopia is Celebration Florida. In *The Celebration Chronicles*, Andrew Ross (2000) discusses the issues behind this idealistic planned community developed by The Walt Disney Company. The question is whether the virtual cities in *SimCity* are the players' attempts at utopia and to what extent.

While these games may be places where players try to create their own personal utopias, these utopias might be influenced by more than just what people might deem beautiful or ideal. David Lowenthal's (1978) critique of many landscape preference studies is that too much importance is put on the aesthetics of a landscape when there are many other circumstances that affect landscape experience. What we find functional and what we find aesthetically pleasing are sometimes different. This might be the explanation for why I found in my study that many people recreated their suburbs because they are used to them, know how they function, and deem these landscape forms to be most efficient with regard to their daily lives.

What might be useful about knowing about one's landscape values? Randolph Hester (1979) writes about "emotionally charged places" associated with fond memories and distinguishes them from archetypal preferences (p. 476). He points out the importance for the designer to become aware of these personal preferences so that personal values can be distinguished from sound design and the client's wishes (p. 475). Likewise, Marcus (1978) assigned landscape preference essays to students to have them understand their own biases so that as future designers they will be able to do the same (p.). For the landscape architect it is important to know the origin of one's landscape values so that one's biases do not influence the client. Assuming that most players of city building games are not landscape architects or planners, why might evaluating the landscape values of those outside the field be important?

Opening a discussion about landscape values could be useful in design charrettes and other community participation workshops. Henry Sanoff (2000) discusses the importance of clarifying values in community participation methods (p. 78). Differences in values are what often create conflict and not understanding the nature of one's own values can prevent resolution (p.78). Participation workshops aim to accomplish either one of three goals, awareness of specific environmental issues, teach concepts and relationships, or clarify value differences (p. 78). The third goal is what the second portion of this project aims to accomplish.

Youth participation can be particularly valuable. Many youth want to be more active members of society but are often constrained by their status as "youth." Where youth have been allowed to take part in community participation, the results have been successful. The Dudley's Young Architects and Planning Project (1994) was a particular success in its mission to engage youth into the process. Often youth can make unique contributions (Sanoff, 2000, p. 18-19). Assuming that most people who play city building games are youth and young adults, incorporating city building games into participation workshops can encourage youth to become more involved.

Sanoff (2000) describes *SimCity* in his discussion on the use of technology in community participation initiatives for residents of all ages (p.72). Although, he does not explicitly suggest that *SimCity* should be used he brings up the possibility of using such technology and discusses how others have used similar methods (p.72). Cornell University has developed a structure called the *VisionDome*, where technology can aid community participation, and similarly the Center for Housing Innovation initiated a project to create a community based decision model game to assist in community participation workshops (Sanoff, 2000, p. 74). Technology provides the opportunities to model spaces, which can help both designer and client in imagining these future spaces.

Many games are already used in workshops (Sanoff, 2000, p. 77). Games simulated real situations and allow participants to act out different scenarios. These games can be useful in that they help the participant to explore the values, ideas, and behaviors of themselves and others (p.78). Sanoff breaks down the benefits of games into three parts.

1. Participants are prompted to take a role and argue that point.

2. Games allow the participants to see details otherwise lost because they provide the opportunity to

organize complex details into an overview model.

3. Games require trial decisions and commitment to these decisions sharpens the participant's thought process. (p. 78)

While games can be useful in immersing participants into issues and situations, games based on a winning and losing model can be deleterious to consensus efforts. Creating two sided arguments should be avoided because they may force participants to take extreme sides in order to win; instead games should encourage collaborative discussions (Sanoff, 2000, p. 76). The second part of this project is a conceptual design for a city building game that incorporates Sanoff's suggestions.

City building games create an opportunity for players to get a feel for virtual 3D spaces. Respondent 51 writes, "that's what I like to do when I play, just zoom in and kind of wonder what it would look like if I was on the street level." These games allow players to imagine complex landscapes such as cities. Playing city buildings games can also prompt players to think about their landscape values. Respondent 39 identifies his landscape preferences, "the screenshot [of his *SimCity*] shows the amount of greenery [that] should be present in every city, in this case even "industrial" cities." For this study, the survey prompted some responses about landscape values. Respondent 51 says, "After I took [sic] your survey I gave some thought to my own experience." The game alone cannot bring these issues to the table. For community participation to be successful participants must discuss their city designs and experiences with the game so that landscape values can be further identified.

PART 1: RESEARCH

Determining Landscape Values and Landscape Influences Using City Building Games

The objective of this study is first, to determine the differences in landscape values between people who grew up in urban, suburban, and rural landscape and second, to find dissimilarities between the landscape values people hold, their design goals, and what they design.

The hypotheses were:

1. People from urban, suburban, and rural landscapes design differently. In particular, people from the typical suburbs will respond that their ideal place to live is not the typical suburbs, but that the most practical place to live is the typical suburbs.

2. There are differences in what people design and their design goals. Instead there will be similarities between what people design and where they are from.

METHODOLOGY

First, the people who play the following games are asked to participate in this study by answering an online survey and sending in screenshots of their virtual city. The games include *SimCity* and *SimCity* Deluxe for Smartphone, *City Story, Virtual City, X City, Cities XL*, and other similar city building games where players create and manage their own city. The subjects are contacted through Facebook and game forums.

Second, the surveys are used to collect data on residency of the subject and his/her landscape values. Residence (urban, suburban, or rural residency) is compared to landscape values. Landscape values are defined here by ideal and practical places to live.

Third, the screenshot images of city designs are analyzed first before matching them to the survey responses. Seven sets of images from seven random respondents are chosen. Approximate land uses are mapped out for each image to make apparent any patterns. The images are discussed and predictions are made about the respondents' landscape preferences.

Finally, The predictions are compared to respondents' survey responses. Most important here is the relationship between the design intent and design.

DATA ANALYSIS

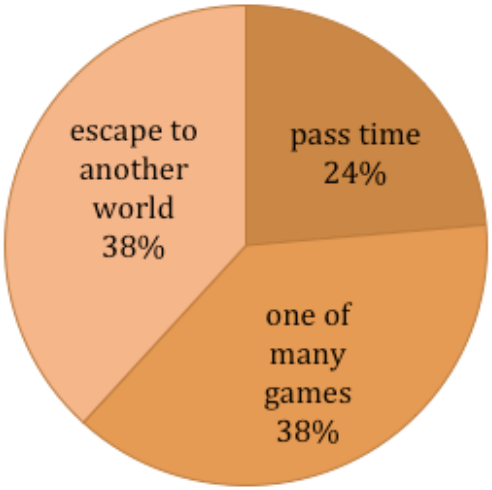
The following is a quantitative analysis using the survey results to compare landscape values to place of upbringing. For the purpose of this portion of the analysis, landscape values are defined in terms of ideal and practical places to live.

	SimCity	SimCity Deluxe	Virtual City	Cities XL	Other
# of players	67	6	2	15	11

Table 1: Games played by respondents.

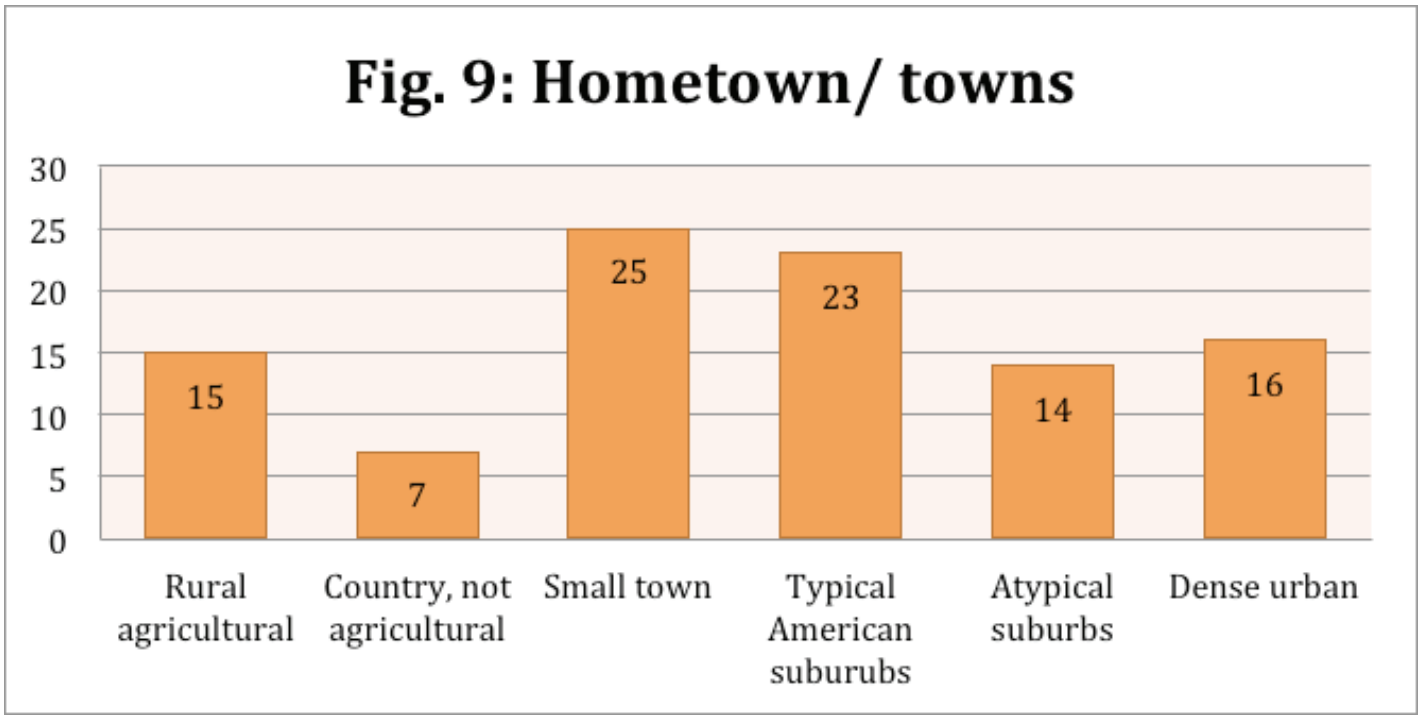
A total of 71 people took the survey. Of these 71, an overwhelming majority of the survey respondents (67 respondents) play *SimCity* while the second most common game is *Cities XL* (a city building game where multiple players can interact online). 11 players play other city building games, such as *City Life, Terraria, Anno 1404, Tiny Village, Fantasy town, Castleville, Caesar IV,* and *Civilization* among others. Among these games are ancient civilization games and simple iPhone app games

Fig. 8: Why players choose to play the game



In the survey, respondents had a choice of choosing between: *I am a serious gamer, I am a first time gamer,* and *I am a casual gamer.* 45.9% of respondents are serious gamers, 4.1% are first time gamers, and making exactly half of the respondents casual gamers.

The reasons why people play these games are diverse (fig. 8), however, for the purpose of this study respondents only had three options to choose from: *I play these games to pass the time, I play many games and this is just one of them,* and *I play these games to escape to another world.* I am mostly interesting in how many people play to escape to another world. If they play as an escape it suggests that they are building an ideal world within these city building games



because they may be unhappy with the environment they are from. Over a third of respondents play the game as a way of escaping to a virtual world. This could mean that over a third of respondents will chose a different residency category for where they grew up and where they think is the most ideal place to live. Although as in the *Second Life* study, this could also mean that players will try to escape to a virtual world only to recreate their real world problems in a virtual world.

Respondents were allowed to choose multiple answers if they grew up in multiple places. Most of the players come from small towns. However, *SimCity* is not designed for building small towns and rural environments. If the respondents from small towns and rural areas want to recreate their hometowns they cannot do so in *SimCity; SimCity* is programmed for building urban environments. The next most common category is "Typical American suburbs." Some of the respondents who pick this category are not from the US. For example, Respondent 12 is from Adelaide, South Australia. The category is open to the respondent's interpretation but the assumption is: "Typical American suburbs" refers to low-density residential areas on the outskirts of cities. There are also a generous number of players from dense urban, atypical suburban (defined as a "dense community development outside of town, older neighborhoods, and new urbanism projects" in the survey), and rural agricultural areas. If respondents from typical American suburbs do not like the suburbs (Marcus 1978), then it is expected that they will not choose typical American suburb as their ideal place to live.

	Rural agricultural	Country, not agricultural	Small town	Typical American suburbs	Atypical suburbs	Dense urban
Practical place to live	3	1	15	13	12	27
Ideal place to live	9	13	14	9	12	14
Home town/ towns	15	7	25	23	14	16

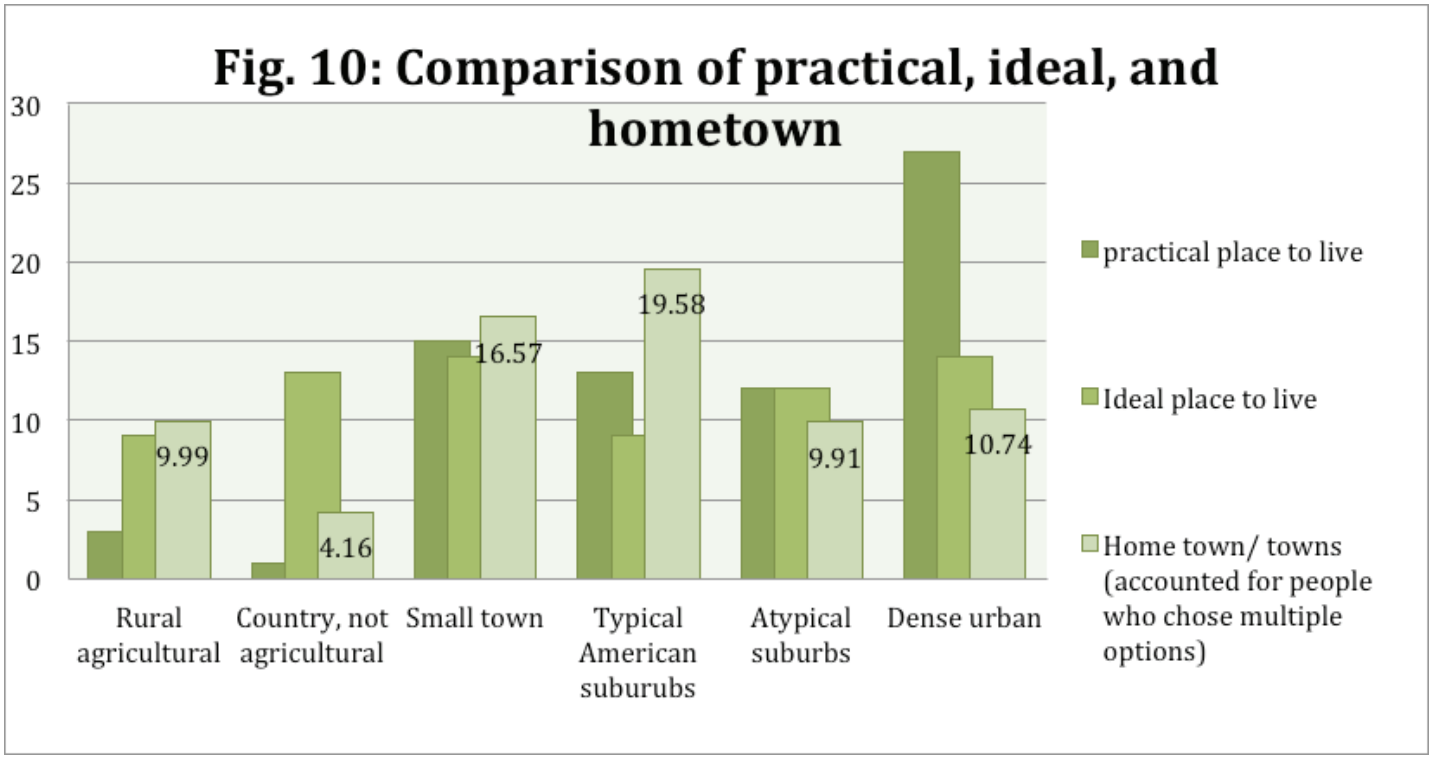
Table 2a: Comparing practical, ideal, and home towns (unadjusted)

The above chart (table 2a) shows the total number of respondents who prefer each category as their ideal place to live, most practical place to live, and the place/places they grew up (home town/towns). While respondents could only choose one residence category for most practical and ideal places to live, they could choose multiple residence categories for places they grew up. In the following chart (table 2b) and graph the hometown variable is adjusted for respondents who chose multiple residence categories so that values from the hometown categories can be compared with values from the practical and ideal categories.

Once those who choose multiple hometowns are accounted for, "Typical American suburbs" is the most common residence category with 19.58 (real value: 23) respondents. However, only 13 respondents think that the typical American suburbs are a practical place to live and only nine respondents prefer it as their ideal place to live.

	Rural agricultural	Country, not agricultural	Small town	Typical American suburbs	Atypical suburbs	Dense urban
Practical place to live	3	1	15	13	12	27
Ideal place to live	9	13	14	9	12	14
Home town (adjusted for people who chose multiple options)	9.99	4.16	16.57	19.58	9.91	10.74

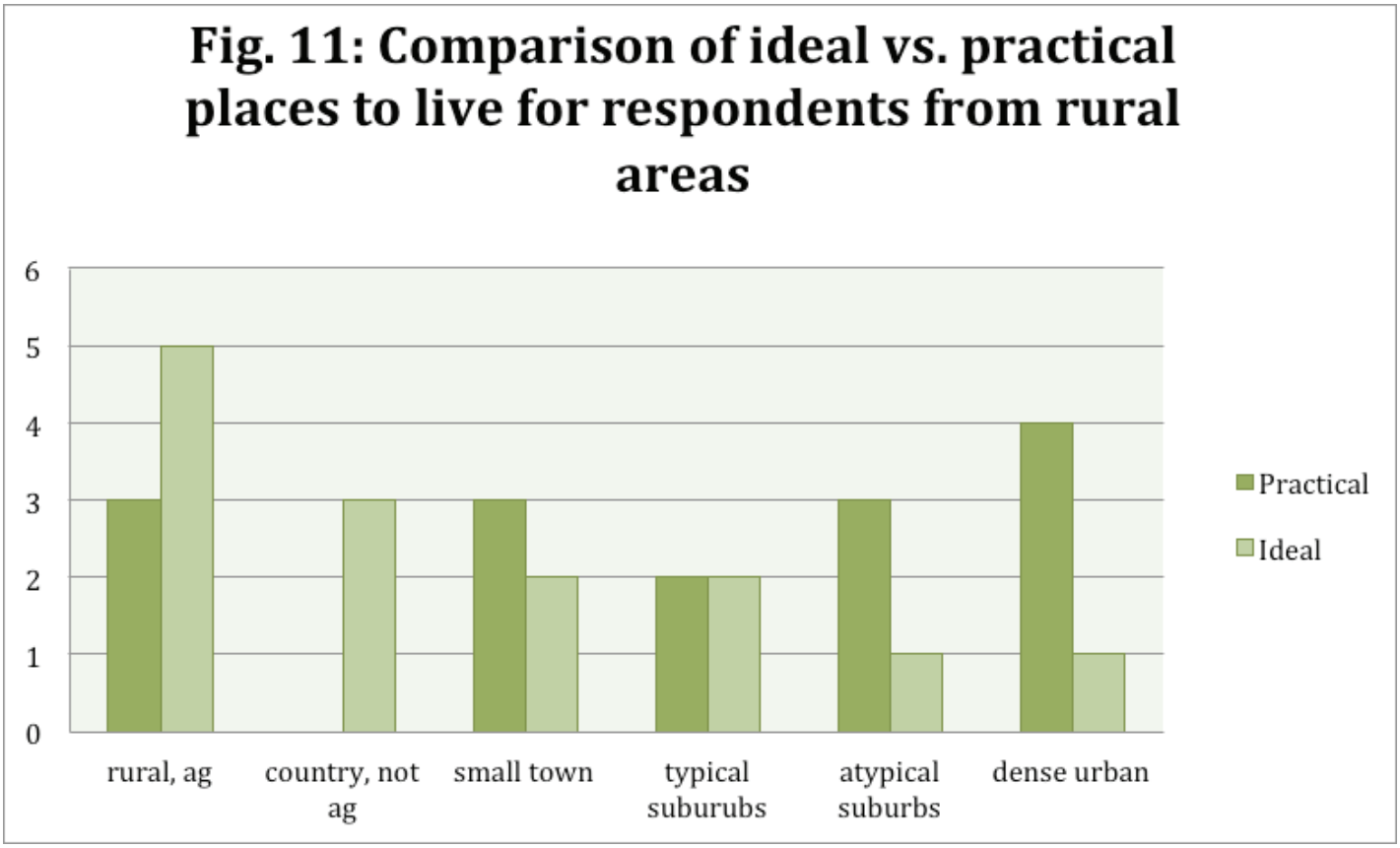
Table 2b: Comparing practical, ideal, and home towns (adjusted).



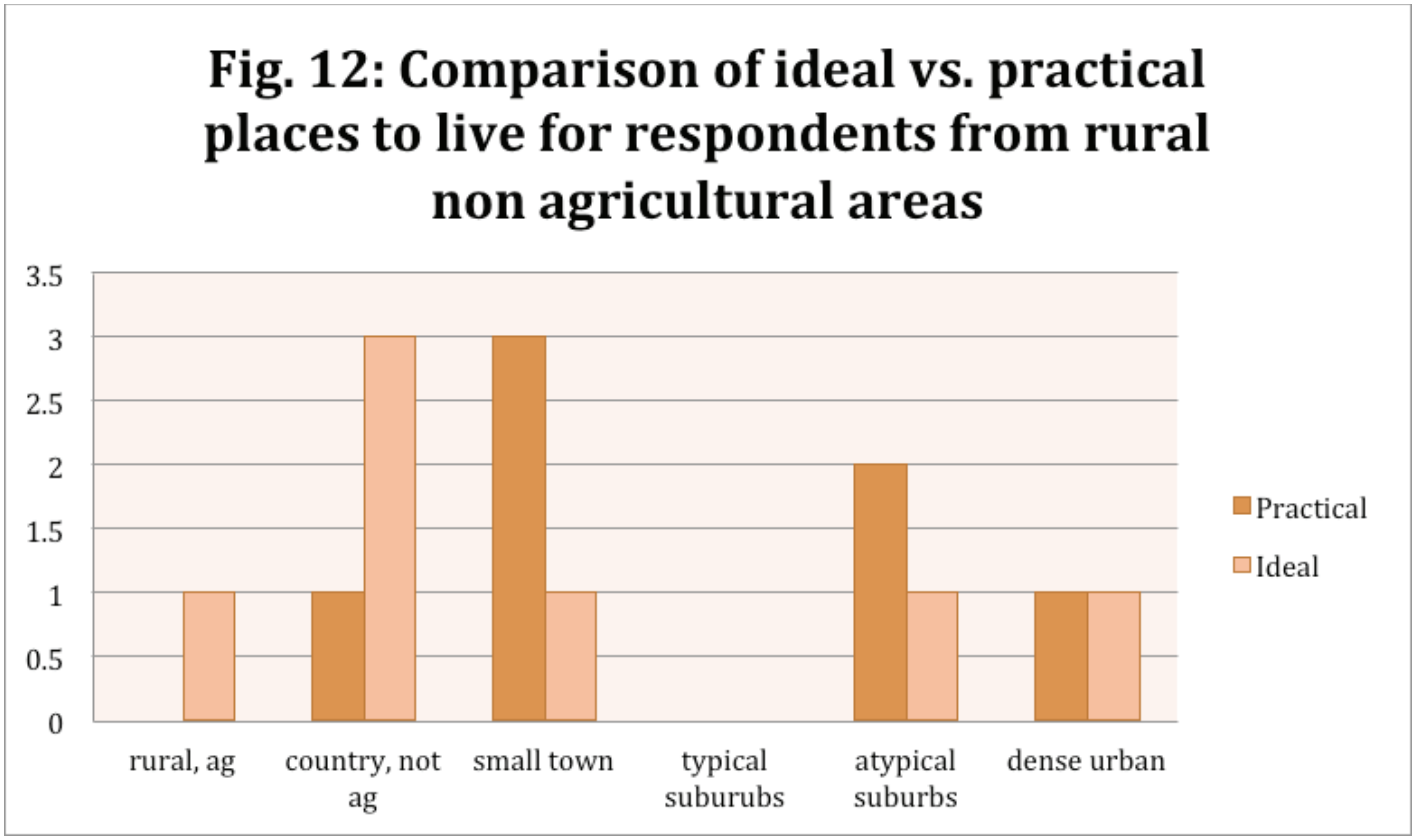
The graph (fig. 10) illustrates how many people live in the typical suburbs however, less people prefer it is a practical place to live and even fewer prefer it as an ideal place to live. In contrast, while only 10.47 (real value: 16) grew up in the suburbs, an overwhelming 27 respondents think this is the most practical place to live and 14 chose it as their ideal place. Similarly there are few respondents from rural non-agricultural areas but many choose it as their ideal place to live. However, only one respondent prefers it as a practical place to live. The analysis shows a similar preference towards atypical suburbs from all three categories. Rural places were also generally liked but few respondents chose it as a practical place to live.

This preliminary analysis of the data is consistent with the hypothesis that respondents from the suburbs do not like the suburbs. In addition it suggests that urban areas are considered the most practical places to live and that urban areas, small towns, and rural non-agricultural are the most ideal places to live followed closely by atypical suburbs. However, this data analysis does not take into account that respondents may be choosing entirely different categories for each variable; i.e. all respondents from dense urban areas may choose completely different categories as their most ideal or practical place to live. What it does show is that respondents choose differently for each category for ideal, practical, and hometowns. Therefore, preferences for ideal and practical places to live are not always contingent on where the respondent has grown up. Interestingly, the respondents' preferences for ideal places vary evenly across the different residence categories, while the there are slightly more stark differences in the respondent's preferences for practical places.

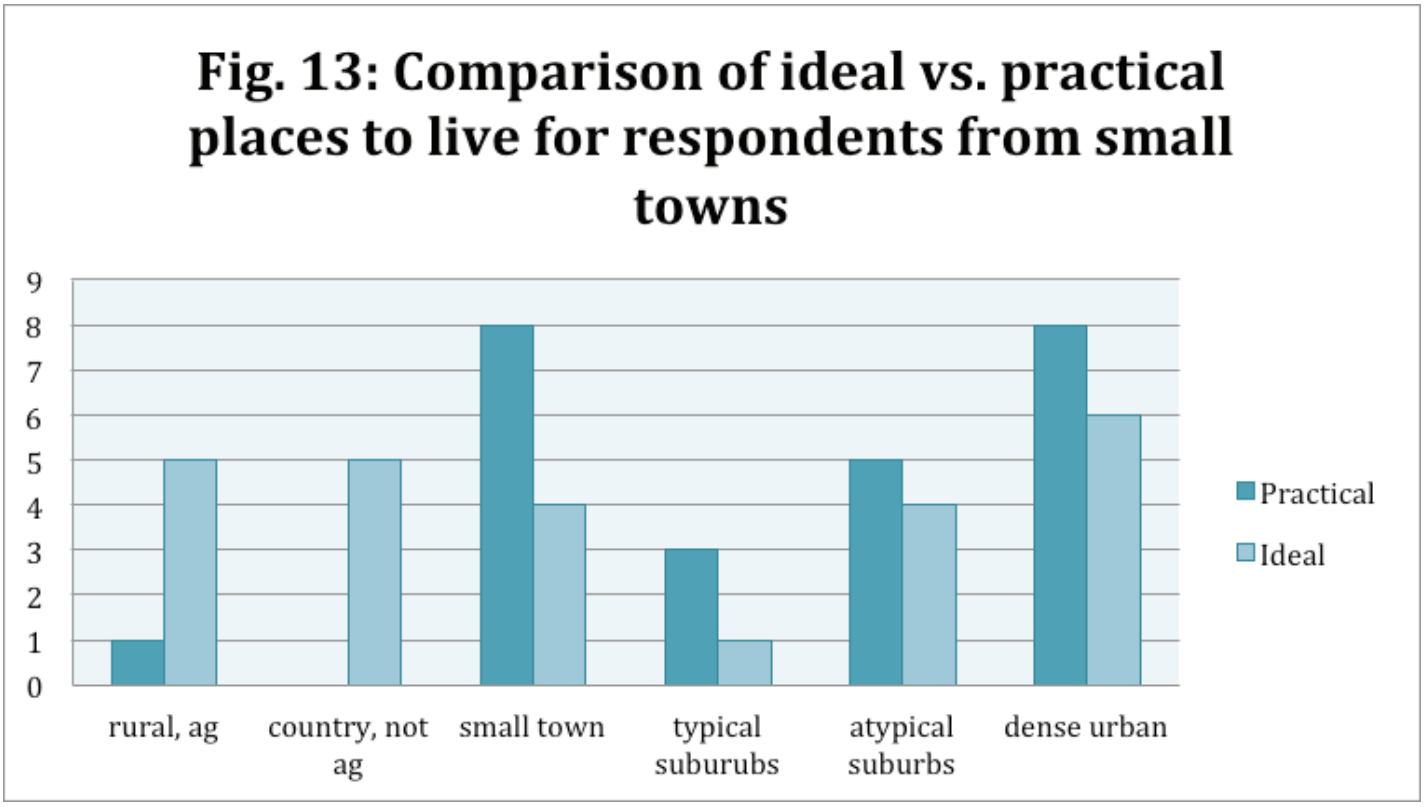
In the subsequent analyses, the hometown variable is isolated to show preferences of respondents from each residence category.



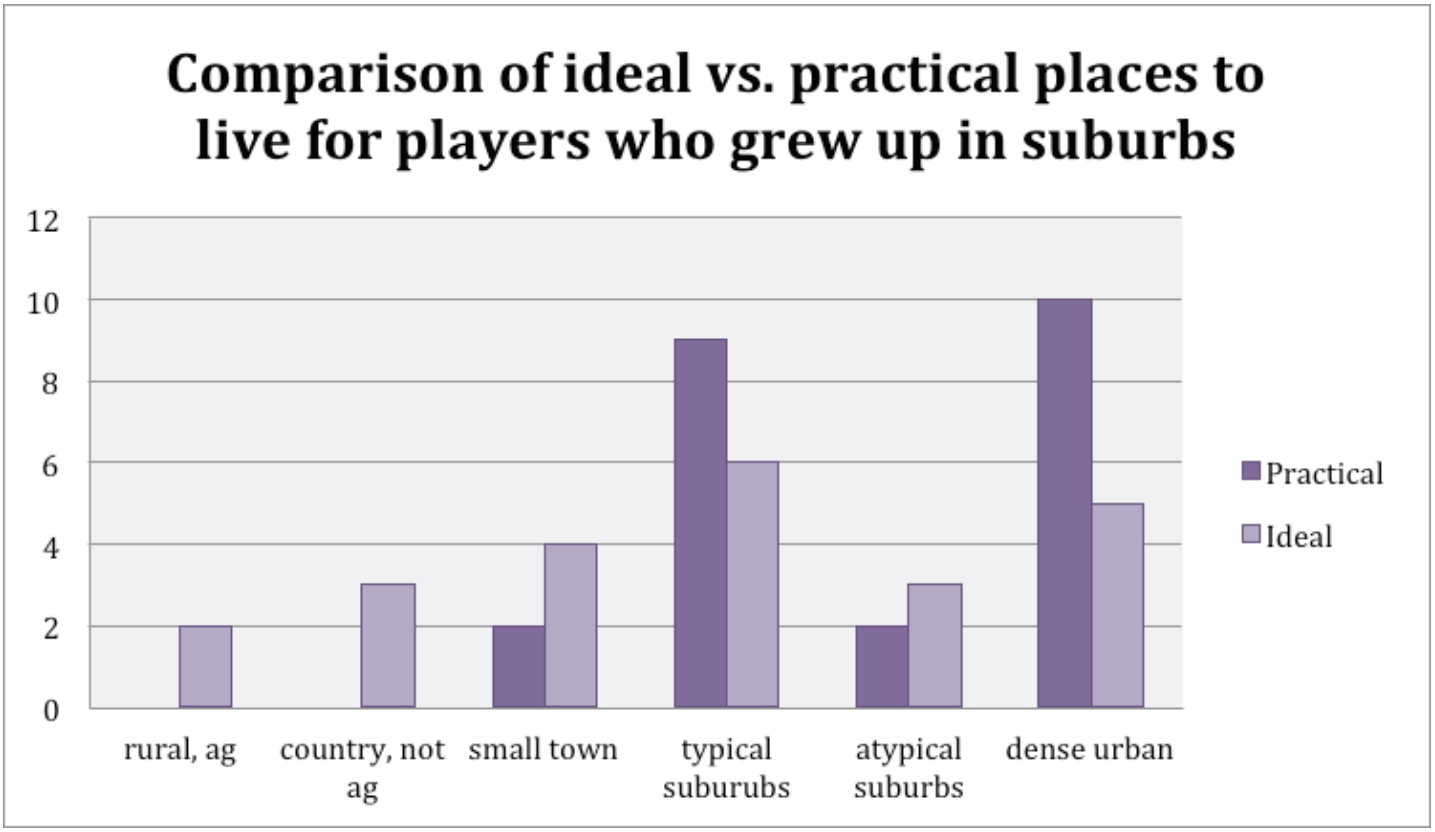
By only looking at the choices of respondents from rural areas (fig. 11) it is apparent that a majority value rural areas (both agricultural and non agricultural) most. However, none of them prefer rural non agricultural as a practical place to live. This analysis suggests that landscape values, particularly values for ideal places, are generally dependent on where people have grown up if they have grown up in a rural area.



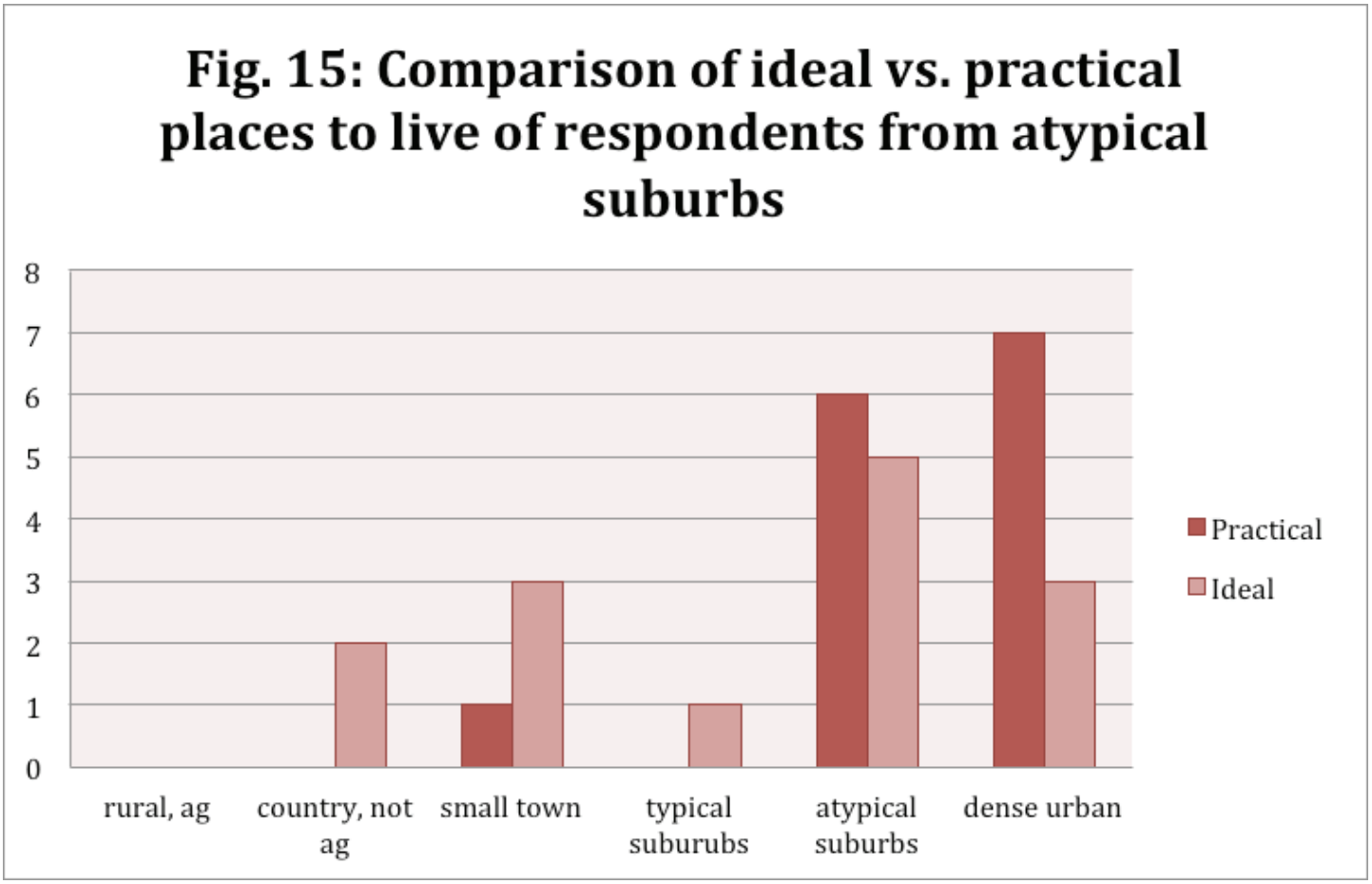
Less than half of the respondents from rural non-agricultural areas (fig.12) generally prefer rural agricultural areas as their ideal place to live and prefer small towns as the most practical place to live. They do not find typical American suburbs to be ideal or practical places to live. Form the small sample size (seven) respondents who grew up in rural non agricultural areas it can be assumed that people who grow up in rural non agricultural areas like their home towns but may not find them to be practical places to live.



In contrast to the last two graphs (fig. 11 & 12) that both showed that respondents from rural areas like their home towns environments the most – even if they did not find them to be practical places to live – this graph (fig. 13) shows that most respondents who grew up in small towns thought that small towns and dense urban areas are the most practical places to live but not as many thought small towns are ideal places to live. Most respondents from small towns prefer dense urban, rural agricultural, and rural non-agricultural as ideal places to live. Only one respondent prefers the typical American suburbs as an ideal place to live. This graph differs from the previous two graphs in that, the value for ideal place does not correspond to where the respondents have grown up.

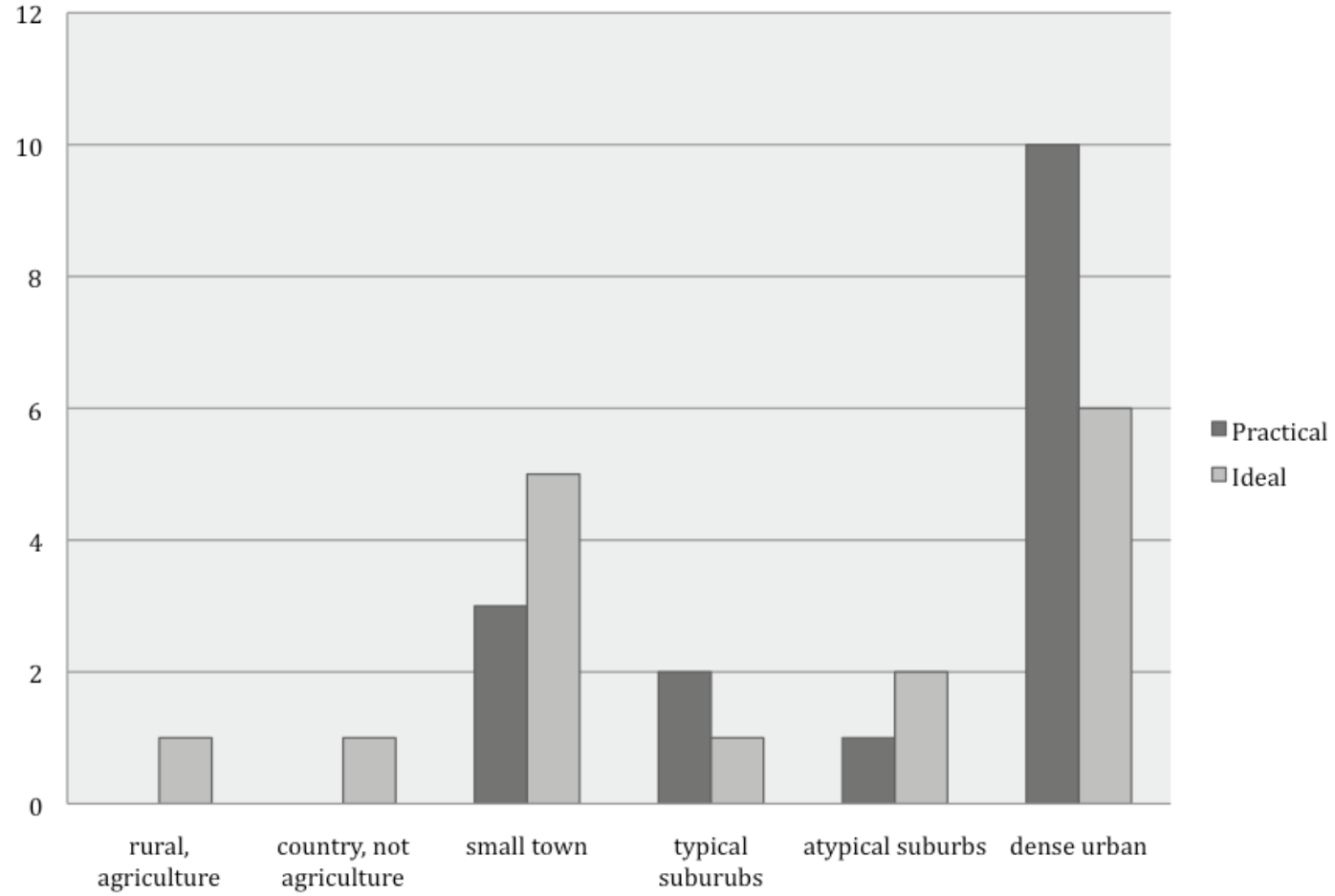


Six respondents from typical American suburbs chose the same category as their ideal place to live. This means that the typical American suburb is the more popular choice compared to other choices. Contrary to the predictions from the preliminary analysis (fig. 14); respondents from the suburbs generally do like the suburbs but of the six categories the typical suburbs is the more popular. The results from the preliminary analysis may be explained by how most respondents from the typical American suburbs had varying choices for ideal place (more so than respondents from rural and small towns). Respondents from typical American suburbs who picked the same category for ideal place, are more common but they are not a majority. The majority of people from the suburbs choose other places as their ideal place to live. However, these respondents overwhelming choose typical suburban and dense urban areas as the most practical places to live. This is consistent with the hypothesis that while most people do not find the suburbs as their ideal place they find it to be the most practical, suggesting that landscape values are contingent on utility value as much as aesthetics and ideals.



Of the respondents from atypical suburbs (fig. 15) most of them prefer dense urban or atypical suburbs as the most practical place to live. No respondents prefer rural agricultural, rural non-agricultural or typical suburbs as practical places to live. Five of the 14 prefer atypical suburbs as their ideal place to live. These respondents generally liked areas of higher density. Only one respondent prefers the typical American suburbs as an ideal place to live and none prefers rural agricultural as a practical place to live. Again, while respondents' preference for ideal place is divided almost equally, there are stronger preferences for practical places to live. The analysis implies that people from the atypical suburbs have a preference for higher density, particularly in terms of practicality.

Fig. 16: Comparison of ideal vs. practical places to live for players who grew up in urban areas



Of the 71 respondents about 41% prefer the same place as where they grew up as the ideal place to live, and about 52% prefer the same places as where they grew up as the most practical place to live. Suggesting that, place of upbringing is a slightly better predictor of what places people find most practical than it is of predicting places people find most ideal.

The following is an analysis of the images respondents sent. After analyzing the land use and other features of the virtual cities, I made predictions about where the respondents were from and what they ranked highly as their design goals. Seven random image sets were selected.

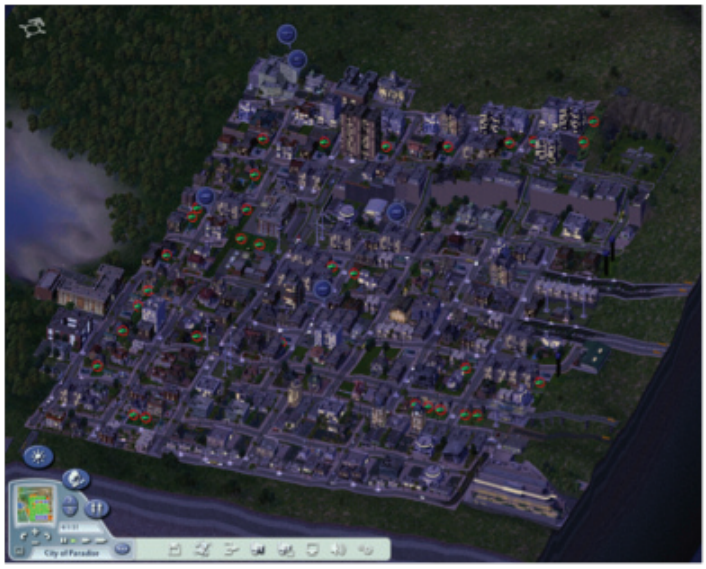


Fig.17a: Original image from respondent 2.

Fig.17b: Landuse map.

Respondent 2:

At first glance the city (fig. 17a) looks like several blocks taken out of a commercial area in the suburbs of Los Angeles. There appear to be no centralizing features such as a civic or high-rise commercial center. Instead commercial and residential uses are mixed throughout.

An approximate land use analysis (fig. 17b) shows that there are two main commercial areas. Most of the small green spaces are empty lots rather than parks.

There are a surprisingly large number of parking spaces in this city. Overlaying the parking spaces and commercial centers (fig. 17c) reveals that parking is concentrated in commercial areas. The respondent made good use of space by placing many of these spaces on top of buildings.

Fig.17c: Analysis of roads, parking, and commercial zones.

Predictions:

The prevalence of parking spaces, medium low density, and resemblance to typical suburbs in LA all indicate that respondent 2 grew up in a typical suburb. However, efficient use of space and the general mix of uses are similar to atypical suburbs. Respondent 2 answered typical suburbs or atypical suburbs to all residence questions.

Functionality is relatively important to respondent 2 because the parking lots are conveniently located, the streets are organized in a grid, and the city is shaped into a neat square. Aesthetics and community are not as important because most of the green spaces are actually empty lots and there are few public spaces.

Survey response:

Grew up: typical suburbs

Ideal place: typical suburbs

Practical place: typical suburbs

Leveling up and making money is the primary goal. Functionality and aesthetic are important as well. Creating a community friendly and ideal place is somewhat important. **The city matches where he grew up, goals somewhat match the design.**

Fig.18a: Original image from respondent 12.

Fig.18b: Landuse map.

Respondent 12:

The city looks similar to Sacramento (fig. 18a), and other such cities with high-density centers and suburban sprawl on the outskirts. A land use analysis (fig. 18b) shows that much of the city is single-family housing. There are also mid to low-density commercial and multifamily residential areas mixed throughout. The roads are organized in a semi-grid system. There appears to be a hierarchy of roads. Figure 18b shows the main roads.

Predictions:

The city is built based on a real city. Whether it is intentionally, or unintentionally respondent 12 is probably building his virtual city in the image of his hometown. Respondent 12 is from a suburban area of a medium sized city or from a medium sized city with a substantial suburban area. Respondent 12 ranks functionality high on his list because the city is very organized and there is careful attention to street hierarchy.

Survey response:

Grew up: typical suburbs

Ideal place: typical suburbs

Practical place: typical suburbs

Functionality, creating an existing place, and creating an ideal place are all very important goals. The other two are easy to predict but it is difficult to predict if a city is designed to fit the respondent's ideals. Aesthetics and community are also important. Creating a city based on a theme is somewhat important. **The city matches where he grew up; goals match the design**

Fig. 19a: Original image from respondent 39.

Fig. 19b: Housing arrangements from figure 19a.

Fig. 20a: Housing arrangements from figure 20b.

Fig. 20b: Original image from respondent 39.

Fig. 20c: Mapping green spaces and roads.

Respondent 39:

The first image (fig. 19a) shows a very suburban neighborhood. Single-family houses are lined up along roads and organized around green spaces (fig. 19b). The second image (fig. 20b) also shows a similar arrangement (fig. 20a), but with multifamily housing. This image shows a more urban setting that looks like an atypical suburb. Green spaces and roads appear to be the main organizing feature of both these spaces. Figure 20c is a map of green spaces and roads from the second image (fig. 20b). Figure 21 shows the possible land uses. Higher density areas have smaller green spaces.

Respondent 39 also provided explanations with his images; "The [first] screenshot, represents my favorite layout of roads I use, [it] is the most effective traffic wise." Clearly functionality is important. He also explains that the second image shows "the amount of greenery should be present in every city, in this case even "industrial" cities."

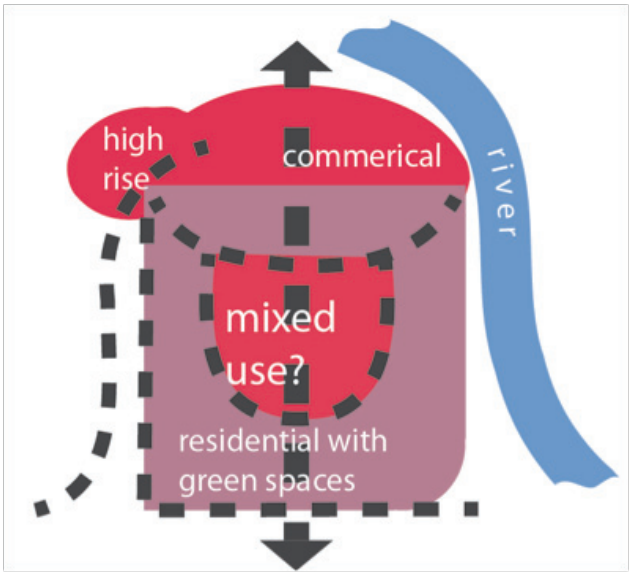


Fig. 21: Approximate land uses.

Predictions:

Respondent 39 grew up in a suburban or atypical suburban neighborhood. Green spaces are very important. Considering the number of green spaces, aesthetics and community are the most important goals.

Survey response

Grew up: Rural agricultural, small town, dense urban

Ideal place: dense urban

Practical place: Rural agricultural

Functionality, making money/leveling up, aesthetics, and creating an ideal place are all important but not very important. The most important goal is something other but not specified. Creating a sense of community is somewhat important, as are other goals. **The city does not match where he grew up; goals match design.**

Fig. 22a: Image of city sent by respondent 45 is the first to show agricultural areas.

Fig. 22b: Apporximate land use map.

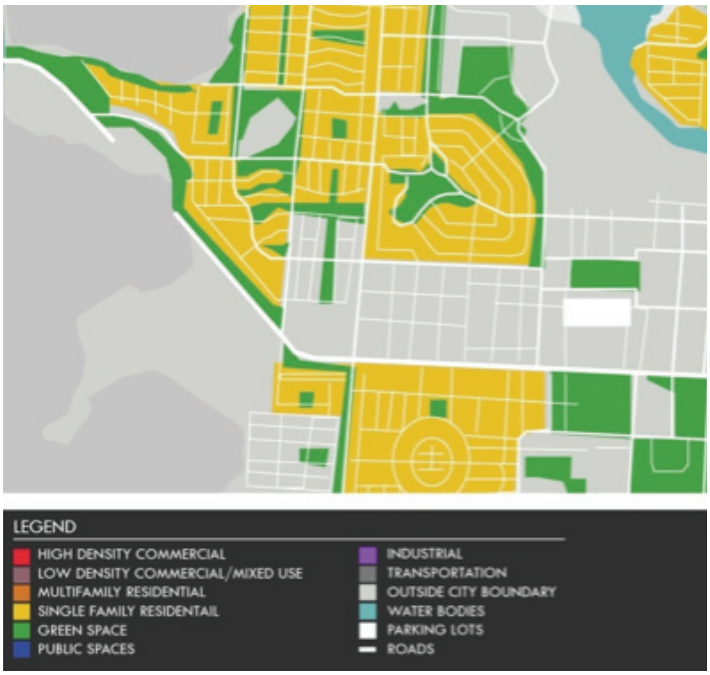


Fig. 22c: Close up of residential area.

Respondent 45:

At first glance the city looks like an example of suburban sprawl, particularly the winding streets, green belts throughout, and what appears to be many low-rise buildings. The housing arrangement (fig. 22a) is similar to that of respondent 39's (fig. 19b) housing arrangements.

The land use diagram (fig. 22b) shows that higher density is in the center with lower density surrounding. It is similar to many typical cities. There is a surprisingly great amount of land dedicated to what appears to be single-family housing.

A closer look at one single-family residential area (fig. 22c) reveals how the housing area is organized around streets and green belts. The winding streets in this area are not as well connected as the grid streets in the commercial area. The residential area looks particularly suburban.

Predictions:

Respondent 45 is from the suburbs. He might be designing using the suburban model because he finds the suburbs to be the most practical place to live. While it does not look highly functional in terms of traffic efficiency – the land uses are separated and not all the streets connect – there appears to be a lot of consideration in street hierarchy. Functionality, especially of traffic, is important to this player. Green space and access to natural resources are also important. The prevalence of green space in residential areas indicates that the respondent #45 is at least somewhat interested in creating a community friendly place. Overall, the city looks like it could be based on a real place.

Survey response:

Grew up: typical suburbs

Ideal place: rural agricultural

Practical place: typical suburbs

Functionality, leveling up, aesthetics and community are equally important to him (rated 3). However, creating an existing place is not important at all; rather creating an ideal pace is most important to him. Considering his city looks more like the typical suburbs but does not look like a rural agricultural would suggest the contrary. His professed goals were not carried through to the design, unless by creating an ideal place he means and ideal place other than his own. **The city match where he grew up: goals do not match design.**

Fig. 23a: Image sent by respondent 51.

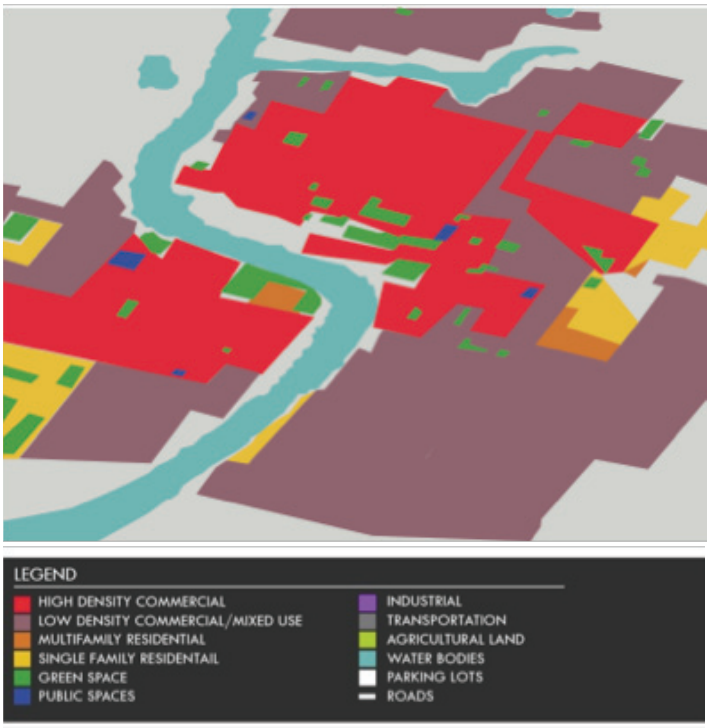


Fig. 23b: Approximate land use map.

Fig. 24: Close up of plaza.

Respondent 51:

At first glance the city (fig. 23a) looks to be about medium density and covering a small amount of space. The city is along a river and high-rise core a little like Sacramento without the massive suburban sprawl on the outskirts.

The brown areas are either low density commercial (fig. 23b), mixed use commercial, or high density residential. At the resolution that the image is in it is difficult to discern exactly what the area highlighted in brown is. There is a clear dense commercial center but it is not as stark a contrast to the outskirts as in respondent 45's city. Small green spaces are scattered throughout the city.

The respondent also sent many close up images figures 24-26), stating that when he plays he likes to "zoom in and kind of wonder what it would look like if [he] was on the street level." The close up images shows respondent 51's attention to civic spaces such as green spaces, play fields, and

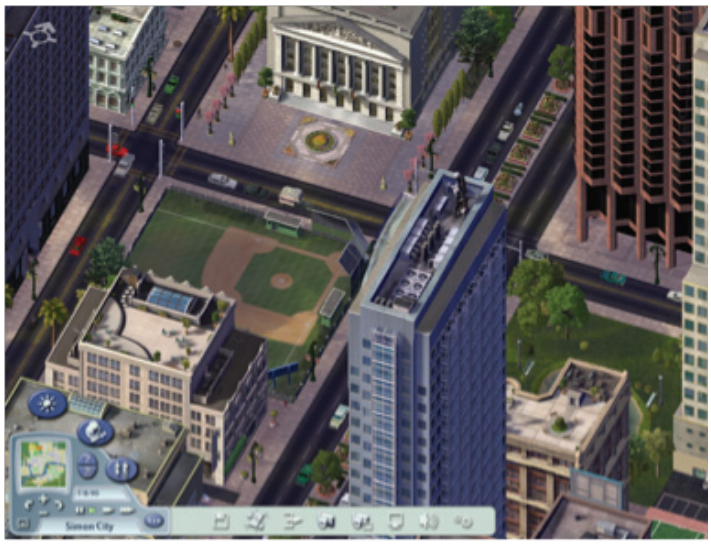


Fig. 25: Close up of another civic area. There are many parks, play fields, and plazas in this design.

Fig. 26: Close up of street with median strip.

plazas.

Predictions:

Respondent 51 has an appreciation for green spaces and civic spaces. There is clearly a consideration of community in his design because of the prevalence of public spaces (fig. #). He regards making a fun place for people to live an important goal in designing his city. The grid layout of streets suggests that creating a functional place is important while the image of the median strip shows how aesthetics is also a consideration. The respondent's concern for what it feels like to be in the spaces he designed and his wish to communicate this by providing several close up images, are other indicators that aesthetics and community are important when building the city.

Survey response:

Grew up: rural non-agricultural, small town

Ideal place: small town

Practical place: rural non agricultural

Functionality, aesthetics, community friendly, and creating an ideal place to live were all ranked equally highly. While it is impossible to discern the place where the respondent grew up and the ideal and practical place preferences by looking at the city images alone, the images – or rather the images and description the respondent sent – do reveal the goals the respondent had while building. **The city does not match where he grew up, design matches goals.**

Fig. 27a: Original image.

Fig. 27b: Approimate land use map.

Fig. 28: Image sent by respondent 53.

Respondent 53:

The first image (fig. 27a) shows a single-family residential area and little of a commercial area in the right corner. This image is similar to respondent 39's first image (see fig. 19a), although, the roads are less organized. Housing is organized around the green spaces.

The second image shows wind turbines (fig. 28), indicating a concern for sustainability and energy efficiency. However, he has not learned how to address that concern through increasing density.

Predictions:

Respondent 54 is concerned with the aesthetics of his city because there are many green spaces. He prefers less dense ideal and practical places to live and has grown up in a typical suburban area.

Survey Response:

Grew up: typical suburbs

Ideal place: dense urban

Practical Place: dense urban

Making money and leveling up is the most important goal. Creating an ideal and aesthetically pleasing place are important but not very important. This is interesting considering he prefers dense urban areas as an ideal place to live but the image shows a low-density neighborhood. Functionality and community are somewhat important. **The city matches where he grew up; not all his goals carried through into the design.**

Fig. 29a: Orginal image.

Fig. 29b: Approximate land use map.

Fig. 29c: Roads, commercial areas, and green spaces.

Respondent 55:

Water bodies divide the city and bridges connect the different parts of the city. The lower and upper left sections are mostly high rises and the right section has high rises in one cluster with industrial uses along the coast. At first glance, it resembles the San Francisco Bay Area or Manhattan.

A further analysis of land use (fig. 29b) reveals further similarities. The city is very urban but the density is broken up with sporadic pocket parks, much in the way that San Francisco or Manhattan is. The roads are organized in a grid system (fig. 29c) and all the pocket parks are clustered near the densest areas (fig. 29c).

Predictions:

Respondent 55 is from an urban area or has a great appreciation of large existing cities. He has answered urban areas to all three questions regarding residency. He also has an interest in traffic so traffic functionality is important. Although less important to traffic, a place for community – public plazas and green spaces – is another important goal.

Survey results:

Grew up: typical suburb

Ideal place: typical suburb

Practical place: typical suburb

Functionality, making money/leveling up, and aesthetics are all very important goals. Creating a place for community is important but not very important. Creating an ideal place is only somewhat important. **The city does not match where he grew up or his ideal place; the goals match the design.**

DISCUSSION

The survey data shows that respondents from urban, suburban, and rural environments answer questions differently. In general, most people do not prefer the typical suburbs as the most practical or ideal place to live. But as Marcus' findings suggest (1978), this is not because people who grow up in the suburbs do not like the suburbs. On the contrary, respondents from the typical suburbs most commonly choose the typical suburbs as the ideal place to live compared to any other category. There are two reasons why it might appear that while many people live in the suburbs few of these people choose the typical suburbs as their most ideal and practical place to live: 1. People from the typical suburbs are more likely to choose categories other than the place they grew up, compared to people from urban, rural, and atypical suburbs, who usually chose the place they grew up. 2. People not from the typical suburbs very rarely prefer the typical suburbs. It is more likely that, while people from the suburbs are generally indifferent to the suburbs, it is the people from rural, urban, and atypical suburbs that dislike the suburbs.

The image analysis shows that design goals do occasionally match the actual design. However, the opposite is not always true either; two respondents did not successfully carry through their design goals into the design. A larger sample sized must be analyzed and different survey questions should be asked in addition to the current ones to get a further understanding of what design goals players had. Examples of possible design goals are: maximum green space, access to nature, access to water or other natural resources, sustainability and technology efficiency, and economic vitality. Almost every virtual city is next to a water source suggesting that access to water is universally important. The best way to determine these goals is for respondents to write them down themselves, as did player 39 and 51.

Nothing can be said about respondents designing their virtual cities in the image of the place they grew up. Four respondents designed cities that were similar to their hometown, but three designed cities entirely different from their hometown. This may be due to different definitions and ways of understanding the terms urban, suburban, and rural. Without knowing the name of the place respondents grew up and comparing images of these real cities with the virtual cities it is difficult to make any conclusions. Furthermore, it is also difficult to discern landscape influences in a highly globalized society. As respondent 51 mentioned, his ideals were partly born out of a fascination with images of cities in books while he grew up in a rural environment. This implicates that ideals would better match city design; however, in almost every case where the respondent's ideal place to live is not the same as where he grew up, the ideal place is very different from the city he designed. One possible reason for this may be because *SimCity* is a city-building game and not a rural area or small town building game. Therefore the players are already biased or they are not able to build what they want.

PART 2: GAME DESIGN

Conceptual Design for a City Building Game that can be used for Design Charettes

The proposed Design Charrette Game is a conceptual design for an online computer game that can be used by Landscape Architects to aid them in opening up discussion in landscape values during design charrettes. It is a tool for community participation in design that is modeled after simple simulation city building games. The main difference between this app and the games is that there are no incentives to level up or make money within the game; rather, it can be used as an outlet for creating an ideal town or city.

More important than what is designed within the game is what kind of discussions playing the game can bring to the table. From my study I found that playing these games made respondents think about their own landscape values. The app will hopefully encourage youth and younger residents to participate in design charrettes.

The proposed game is an online game via facebook. The facilitator (the planning professional or designer leading the participation workshop) can invite participants to join the game. The facilitator will choose either one of two prompts.

> Prompt 1: Starting with a blank canvas, players should express their ideals through building their neighborhood, town, or city using the basic building blocks provided.
>
> Prompt 2: Using the base map of the neighborhood, town, city, provided by the facilitator players should add and subtract to their design imagining how they would improve it.

There is a fictional currency within the game. With this currency the facilitator will assign each building type a price and set a budget that the players can use. Players can choose from the different buildings and built elements provided to create or add to their design but as each element has a price they will have to maximize their budget in the way they see most fit. This prompts players to make decisions based on what they think is most important for their virtual city.

Fig. 30: Status bar at the corner of the game showing number of buildings, number of residents, and remaining budget.

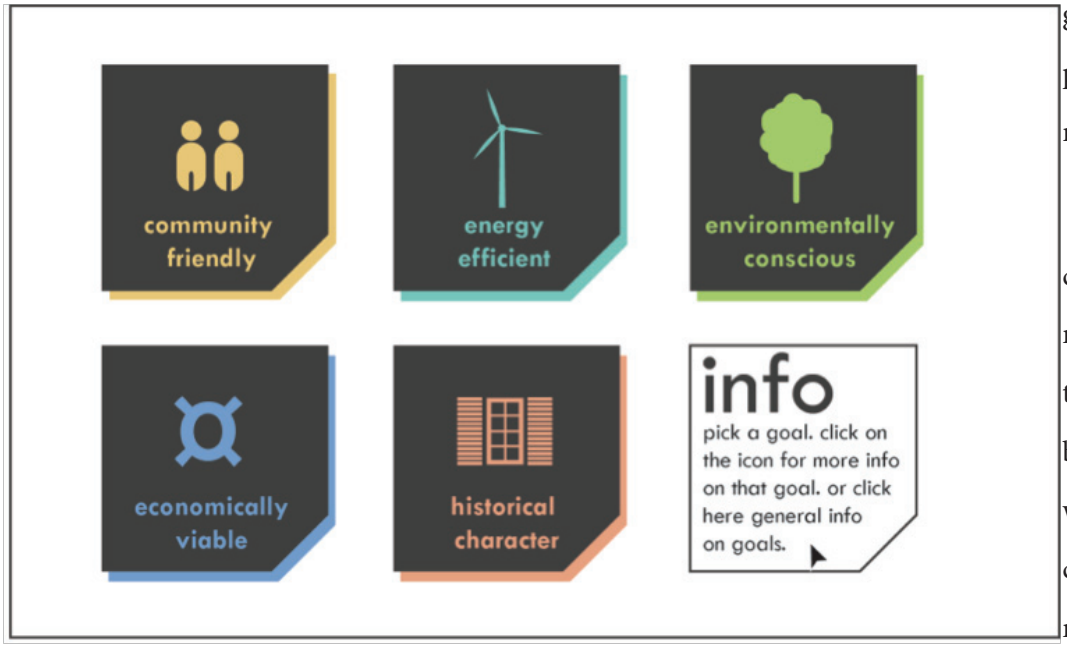


Fig. 31: Opening menu showing goals.

The game begins with the above menu. Participants can choose from five categories. These are categories deemed relevant after analyzing different virtual cities and seeing that the goals specified in the survey are not enough to cover the goals participants have. Many players specified "other" when ranking goals.

When participants choose a goal they unlock more building types related to that goal but unlock less buildings types that compete with that goal. As seen below, choosing "Historical Character" means that the participant has more old apartments, parks, plazas, multiuse buildings, and downtown style buildings, etc. to buy from as the play the game. But this is at the cost of having less modern buildings.

Fig. 32: Information on goals page.

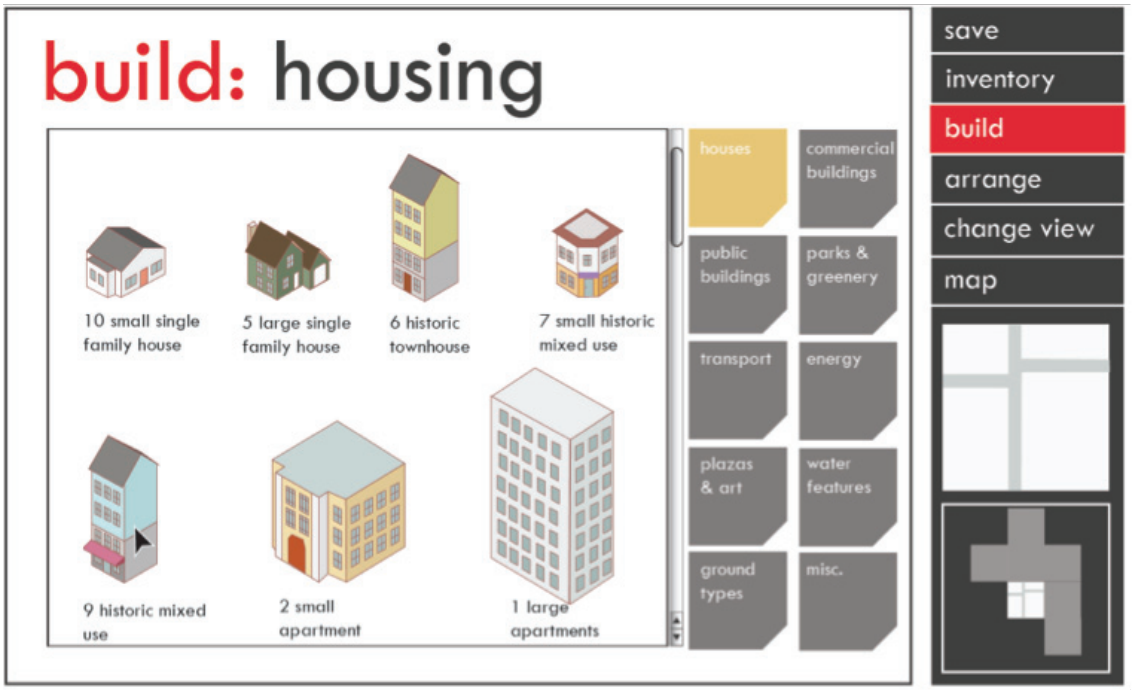


Fig. 33: Housing options. The square tabs on the right are categories for buildings and elements. The tabs on the far right are basic menu options

To start building, participants must buy buildings to place into their virtual city. The buildings and elements are organized into the following categories (included are some examples of buildings within each category):

Housing: Single-family, multi-family, historic town house, contemporary town house, small apartment, large apartment, and mixed-use buildings.

Commercial buildings: Shopping mall, large shops, downtown shops with 2nd or 3rd stories for mixed uses, large office building/skyscraper, medium office building, small offices. Players have a choice of designating what the building is used for.

Public buildings: City Hall, courthouse, library, school, university building, museum, and community center.

Parks and greenery: parks, trees, gardens, urban farms, rain gardens, and bio-swales.

Transport: Small roads, large roads, highways, train stations, train tracks, bus stations, bus lanes, bike lanes, pedestrian streets, pedestrian paths, and gas stations

Energy: nuclear power plants, solar panels, solar farms, and wind turbines.

Plazas and art: plazas, sculptures, farmer's market structures, and benches.

Water features: water fountains, lakes, ponds, retention basins, wetlands, wetland treatment centers, and water treatment facilities.

Ground types: grass, ground cover, concrete, asphalt, and unique paving types.

Miscellaneous: including all buildings and elements that do not fit into a category.

Once participants select what they want to buy they can place it in their virtual city and rearrange it at any time. The following image shows the game play windows.

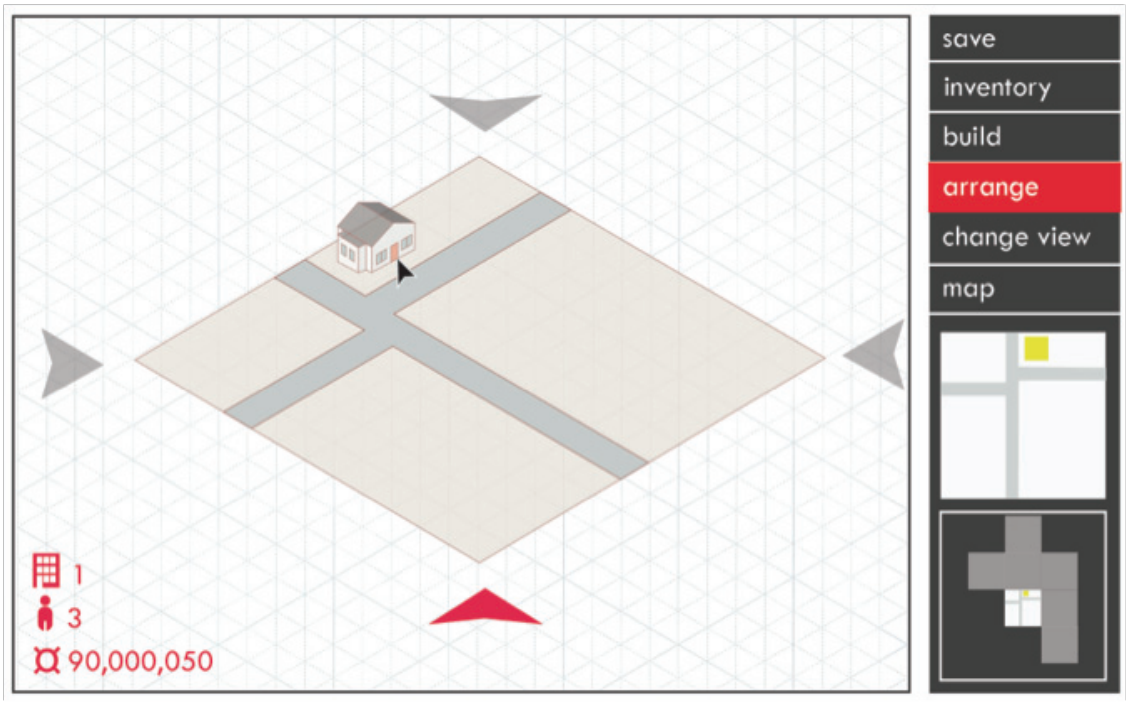


Fig. 34: The modeling space for the city is isometric. The isometric grid helps with placeing pieces. There are four views available. The current view is highlighted in red.

Data about the number buildings and number of residents per housing type, and the total amount of currency the participant has is shown at the bottom left corner (fig. 34). The menu on the right shows a map of the virtual city.

Throughout the game, players are prompted to make decision about what they want to unlock. These decisions are recorded so that they may be discussed at a later time.

Fig. 35: Pop-up option. While playing the game the player will be faced with occasional decisions such as this.

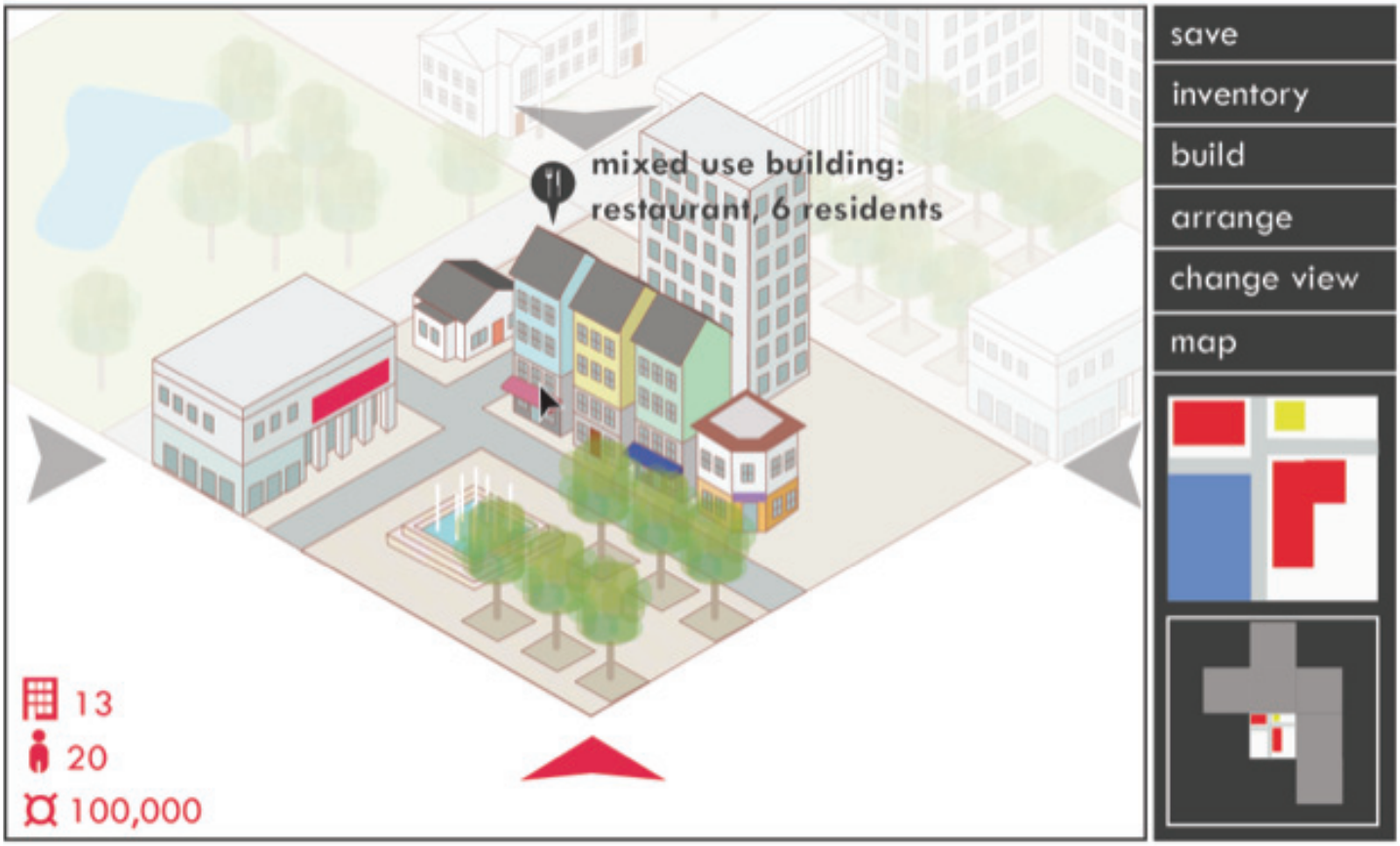


Fig. 36: The modeling space after the player has spent some time on the building the city. It is possible to focus on specific blocks, change views, and click for info on specific buildings. The "map" tab on the bottom right of the screen shows two land use maps: a map of the whole city and a detail map of the block the player is focusing on.

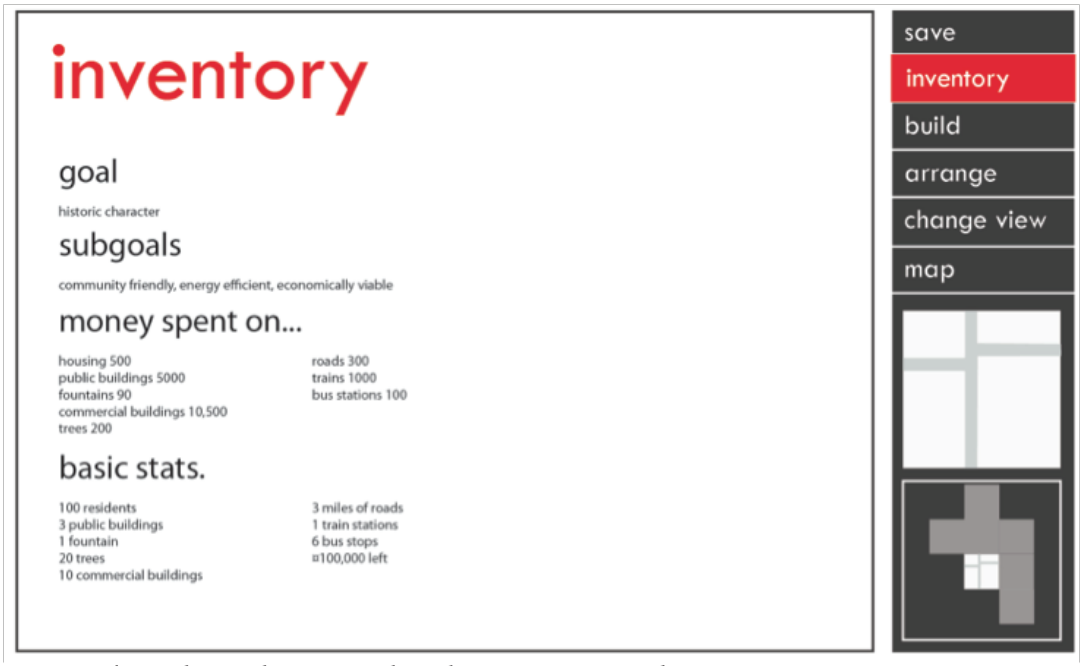


Fig. 37: The inventory page shows goals, subgoals, money spent on specific buildigs and elements, and basic statistics. The inventory can be viewed at any time during the game.

Throughout the game the player is prompted to make decisions. All of these decisions, starting with the first goal choice, are record. Sub goals are based on the individual questions participants are asked during the game. With the goals of each participants made apparent, participants can join others in a discussion of landscape values, Further evaluating why they made the specific decisions and their ability to carry through their goals into design.

CONCLUSION

Further studies on how city building games can be used to examine landscape values, are necessary in order to assert anything meaningful about the relationship between virtual cities, landscape preferences, and place of upbringing.

From this study, I found that hypothesis 1 generally holds true. Respondents from rural, suburban, and urban environments answer the survey questions differently. In general, urban landscapes are deemed the most practical, and both urban and rural landscapes are preferred as ideal places to live. The typical suburbs are the less preferred, in terms of ideal place to live, but more so by residents not from the typical suburbs than those from. Of those who grew up in the suburbs, some preferred the suburbs as an ideal place to live, but more preferred it as a practical place. Among those from the suburbs, the suburbs are considered more practical than ideal, but those who grew up in other environments do not prefer the suburbs. But as discussed earlier, it is not only the places where we grow up that influence our landscape preferences. There are multitudes of real and virtual landscapes that influence our preferences so it is difficult to conclude that growing up in the suburbs might affect preferences or that growing up in any environment might affect preferences.

Hypothesis 2 is more challenging to prove or disprove. More images must be analyzed and different survey questions must be asked to make any conclusions. However, I did find that the survey prompted respondents to further discuss their landscape values even if they were not asked to do so. City building games appear to create an opportunity for players to think about what they design and what type of landscapes they prefer; many players wanted to create ideal and functional cities, which would require some thought as to what is ideal and functional. In conjunction with the survey, these games allow players to further question the reasons for those preferences. Playing city building games is clearly a good way to open the floor to discussions on landscape values even if the games themselves are not the best medium for examining landscape values.

The proposed design charrette game can be used to clarify landscape values; therefore, it is less important what participants actually design but what decisions they make and what goals they prioritize throughout. The game further functions as a way of measuring these decisions so that players can discuss them in design charrettes. If the game is indeed successful in clarifying landscape values it can also be used in further studies of landscape values.

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APPENDIX

Survey Questions:

1. What game do you play?

2. Would you describe yourself as a...

Serious gamer

Casual gamer

First time gamer

3. Why do you play this game?

I need something to pass the time

I play a lot of games, this is just one of the many

I wanted a place of escape

4. The city I designed is supposed to be... (check all that apply)

Functional

Pretty

Whimsical and fun

Not functional

Designed based on a certain theme (i.e. medeival europe, magical kingdom, ancient egypt)

Designed after a real place. Where?_____

I didn't care about what the city looked like

5. What best describes the place(s) you grew up. (Check multiple if you have lived in more than one place).

Rural countryside, agricultural

Rural, not agricultural (i.e. woodlands, desert)

Small town

Typical American suburbs

Atypical suburbs (i.e. dense community developement outside of town, older neighborhoods, new urbanism projects)

Dense urban

6. Where is your ideal vacation spot?

The wilderness, national parks, getaways

Resort (I like to be near nature but with all the conveniences nearby and opportunities to socialize)

Small town, historic towns

Small historic cities

Large bustling cities

7. Where is the most convenient place for you to live?

Rural countryside, agricultural

Rural, not agricultural (i.e. woodlands, desert)

Small town

Typical American suburbs

Atypical suburbs (i.e. dense community developement outside of town, older neighborhoods, new urbanism projects)

Dense urban

8. Functionality and convenience aside, where is your ideal home located?

Rural countryside, agricultural

Rural, not agricultural (i.e. woodlands, desert)

Small town

Typical American suburbs

Atypical suburbs (i.e. dense community developement outside of town, older neighborhoods, new urbanism projects)

Dense urban

8. What was most important to you while designing your city? (Rank 0 through 3: 0 not important, 1 somewhat important, 2 important, 3 very important)

Functionality and efficiency

Making money or leveling up within the game

Aesthetics

Recreating an existing place

Creating a city/town based on a specific theme (Ancient Egyptian, fairytale land, etc.)

Creating a social community or fun place for people to live

Creating an ideal place you would want to live

Survey Responses Table:

Column1	9. importance (rate)	Column34	Column35	Column36	Column37	Column38	Column39	Column40	Column41
Player ID#	function	money, level	aesthetics	existing place	theme	community	ideal place	other	specify
1	4	4	3	1	1	1	1		
2	3	4	3	1	1	2	2	3	
3	4	4	4	1	2	4	4	0	
4	3	4	1	1	1	3	3	0	
5	3	3	2	1	2	3	4	3	
6	4	2	4	2	1	3	4	0	
7	1	4	4	1	2	2	1	0	
8	4	3	3	2	2	3	3	3	
9	3	1	3	2	2	3	4	4	based on reality
10	3	4	1	2	1	2	3	2	
11	4	4	2	1	1	4	4	0	
12	4	3	3	4	2	3	4	0	
13	3	2	4	1	1	2	4	0	
14	2	3	2	1	3	4	4	0	
15	4	3	3	3	2	2	3	2	
16	4	4	4	4	2	3	4	4	
17	4	4	3	2	1	1	3	2	
18	4	3	3	2	2	2	4	4	consistency, symmetry
19	4	4	4	4	1	4	4	0	
20	4	3	4	1	1	4	4	4	having fun while making the city
21	4	3	4	1	2	3	3	0	
22	4	4	4	2	2	3	4		creating realistic infrastructure
23	4	3	3	3	3	3	4	4	transport
24	3	4	3	3	3	3	3	2	
25	4	4	2	1	1	3	4	3	
26	3	1	4	2	2	1	3	3	
27	4	2	4	1	1	3	4	0	
28	2	3	2	4	3	1	4	4	
29	4	3	3	3	1	3	3	4	
30	4	3	3	2	1	1	2	0	
31	4	3	3	3	2	3	4	4	
32	3	4	3	2	2	3	4	1	habitation
33	4	1	3	2	2	3	4	4	
34	3	4	2	1	1	1	1	0	
35	2	4	2	1	1	3	1	0	
36	4	4	2	2	1	1	3	0	
37	4	1	4	3	3	2	4	4	
38	3	4	3	2	2	3	4	2	
39	3	3	3	2	2	2	3	4	
40	4	1	4	4	1	4	4	0	
41	3	3	3	3	3	3	3	3	
42	3	2	3	3	1	3	3	0	
43	3	3	4	1	1	3	4	0	
44	3	3	3	2	3	3	4	0	
45	3	3	3	1	2	3	4	2	
46	4	2	4	1	1	3	3	3	
47	3	2	3	1	1	1	4	0	
48	3	4	4	1	1	2	2	0	
49	4	3	3	1	1	4	4	0	
50	4	3	3	2	2	3	2	4	
51	4	2	4	1	1	4	4	4	
52	4	4	2	1	2	3	2	0	
53	2	4	3	1	1	2	3	0	
54	3	3	2	2	2	3	3	2	
55	4	4	4	1	1	3	2	0	
56	3	1	4	2	2	4	4	4	
57	3	4	3	1	1	2	3	0	
58	4	3	3	1	1	2	2	0	
59	4	3	4	1	2	3	3	4	
60	4	4	2	1	1	2	2	0	
61	3	1	4	1	1	1	3	4	
62	4	2	4	3	2	3	4	0	
63	4	4	3	2	1	2	3	0	
64	4	3	3	1	2	3	4	0	
65	4	4	2	1	1	3	2	0	
66	4	3	3	4	1	3	3	4	Transport Systems
67	4	1	3	2	1	2	4	0	
68	1	2	3	3	4	4	3	0	
69	3	3	3	3	3	3	3	0	
70	4	3	3	1	1	3	4	0	
71	4	3	4	4	4	4	4	4	

Player ID#	Sim City	simcity deluxe	virtual city	cities xl	other	specify	wilderness	resort	small town	large city	small historic	large historic
1	1											1
2	1							1				
3	1				1	rollercoaster tycoon	1					
4	1						1					
5	1		1								1	
6	1			1	1	anno series, tropico, caesar series						1
7					1	simsocial		1				
8	1	1			1	civilization	1					
9	1						1					
10	1	1						1				
11	1											1
12	1	1		1	1	city life				1		
13	1									1		
14	1											1
15	1									1		
16	1									1		
17	1						1					
18	1			1	1	Caesar IV						1
19	1											1
20	1									1		
21	1						1					
22	1							1				
23	1								1			
24	1								1			
25	1							1				
26	1							1				
27	1							1				
28	1						1					
29	1						1					
30	1									1		
31	1									1		
32	1							1				
33	1			1					1			
34	1			1				1				
35					1	Castleville	1					
36	1									1		
37				1			1					
38	1			1						1		
39	1			1			1					
40	1									1		
41	1											1
42	1						1					
43	1	1		1	1	City Life						1
44	1	1					1					
45	1				1	Terraria, Anno 1404				1		
46	1			1				1				
47	1									1		
48	1						1					
49	1			1				1				
50	1								1			
51	1											1
52	1						1					
53	1							1				
54	1	1	1		1	Tiny Village	1					
55	1							1				
56	1											1
57	1			1						1		
58	1									1		
59	1							1				
60	1											1
61	1									1		
62	1			1				1				
63	1							1				
64	1			1						1		
65	1											
66	1			1						1		
67	1						1					
68					1	Fantasy Town			1			
69	1									1		
70	1									1		
71	1							1				

functional	not functional	pretty	fun	theme	look not important	real place	where?
1			1		1		
1		1					
1		1					
1	1				1		
1		1	1				
1		1					
	1	1					
1		1		1		1	euro towns, villages
1							
					1		
1		1			1		
						1	home town: Adelaide, South Australia
1		1					
1		1					
1							
1			1	1			
1		1				1	homeplace, livingplace
1		1		1		1	one that I have lived in.
1						1	Klang Valle, Malaysia
1		1	1				
1		1	1				
1		1	1				
1		1		1			
1				1			
1		1					
1		1			1		
1				1			
1		1					
			1				
1		1				1	USA
					1		
1		1				1	France & USA
		1					
1				1	1		
1		1	1				
					1		
1							
1		1	1			1	USA
1			1			1	
1		1					
						1	New York City, Los Angeles, London
			1				
1		1					
1							
1				1			
1		1		1			
1		1				1	Las Vegas (mainly the suburbs), Almere (ne
1		1					
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1		1	1			1	Bellingham, Washington
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1		1					
1		1					
1			1			1	Tokyo, Japan
1							
	1	1					
		1		1		1	Netherlands
1		1					
1							

Column1	6. Where grown up?	Column19	Column20	Column21	Column22	Column23	7. most practicle place?	Column24	Column25	Column26	Column27	Column28	8
Player ID#	country, ag	country not ag	small town	typical suburubs	atypical suburbs	dense urban	rural, ag	country, not ag	small town	typical suburubs	atypical suburbs	dense urban	r
1				1								1	
2				1						1			
3	1		1								1		
4			1	1					1				
5		1	1	1							1		
6			1	1	1	1						1	
7			1								1		
8	1		1						1				
9	1								1				
10	1						1						
11					1	1						1	
12				1						1			
13					1							1	
14					1						1		
15				1		1				1			
16			1						1				
17			1						1				
18			1			1						1	
19	1				1	1					1		
20	1											1	
21						1						1	
22				1						1			
23	1		1				1						
24			1							1			
25				1								1	
26			1							1			
27	1								1				
28						1			1				
29		1	1		1						1		
30	1										1		
31					1	1						1	
32						1			1				
33		1						1					
34			1									1	
35		1	1						1				
36						1						1	
37						1				1			
38					1						1		
39	1		1			1						1	
40	1		1									1	
41						1						1	
42			1									1	
43				1								1	
44						1			1				
45				1						1			
46	vtown in Holland), Dubai			1								1	
47	1		1							1			
48				1							1		
49	1						1						
50					1				1				
51		1	1						1				
52		1										1	
53				1								1	
54	1			1						1			
55				1						1			
56	1		1			1						1	
57				1						1			
58				1								1	
59			1									1	
60				1						1			
61				1								1	
62				1					1				
63				1								1	
64					1						1		
65			1								1		
66		1	1						1				
67					1	1						1	
68					1							1	
69			1						1				
70				1	1							1	
71					1						1		

8. Most ideal place	Column29	Column30	Column31	Column32	Column33
rural, ag	country, not ag	small town	typical suburubs	atypical suburbs	dense urban
1					
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