

Concept Plan for eLab City: Live, Work, Play in the Virtual World

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What is eLab City? eLab City will be a two-island academic sim in Second Life. It is being developed by the University of California, Riverside, Sloan Center for Internet Retailing, for the purpose of studying consumer behavior in virtual worlds. eLab City will be a “live-work-play” community, providing a working laboratory and a subject pool for academic research.

As an academic research facility and platform, eLab City combines a panel of Second Life users, survey and experimental research capabilities, and tools for unobtrusively tracking user behavior. In addition eLab City will contain a microcosm of key Second Life entertainment activities, such as shopping for virtual goods, a dance hall, an exhibition hall, and a virtual cinema. eLab City will also offer housing options for Second Life residents. By combining a wide range of Second Life activities with a set of data collection tools, eLab City will allow the Sloan Center to achieve an in-depth understanding of Second Life users’ attitudes and behaviors.

This concept plan is divided into two phases:

- 1) build and basic scripting
- 2) advanced data collection features
- 3) management
- 4) research projects

We are primarily seeking bids on Phase 1, but would also entertain bids or inquires regarding Phases 2 and 3. The four Phases overlap to some degree, rather than being sequential.

Guiding Principles. eLab City is guided by three principles.

- 1) **Form.** High quality design is of the utmost importance. Most academic builds in Second Life are not particularly inspired (the same can be true for much of Second Life). We seek a high quality, compelling immersive experience, and quality design is essential to achieving this experience. Build quality (not necessarily style) to be comparable to sims such as: Amsterdam, Dublin, Kowloon, Glam City, Virtual Starry Night, Arcana Nuevo, Caribbean Breezes, Bogarts, Svarga, Relic, Apollo, Avilion, Gardens of Bliss, Straylight. (Phase 1)
- 2) **Function.** eLab City exists to support academic research on consumption in virtual worlds. We need to capture data on avatar movement, objects touched/purchased, and chats. eLab City will have survey and experimental research capability, and we will create a research panel of visitors willing to participate in academic research projects. (Phases 2 and 4)
- 3) **Community.** eLab City needs people for the research to succeed. Living, retail, and club space will be leased at no charge to select Second Life residents who will help manage eLab City on a day-to-day basis. We seek a core set of resident avatars, who will make eLab City one of their primary destinations, and who bring others to it. Significant social features combined with active in-world promotion – plus the cutting edge design and concept - will be designed to attract other avatars to eLab City. Building community is also the motivating factor for design; design should enable community. (Phase 3)

PHASE 1: Build and Basic Scripting

Overview. eLab City will support three broad categories of activities, outlined in the table below:

Live	Work	Play
Residential apartments	Behavioral labs Offices Conference rooms Library Visitors center Survey stations	Exhibition hall Entertainment complex (dance club, music hall, cinema, restaurants) Shops Outdoor stage Garden and park space “Just for fun”

The space in the two-island sim will be roughly allocated per the plan to the right, with half the space dedicated to play activities, and a quarter of the space each to live and work activities. The living and research areas are relatively lower traffic areas, and could be located on opposite sides of the sim. The entertainment and shopping areas span both islands in the center of the sim to allow for higher traffic. This also allows living and work areas to connect to entertainment and shopping area to increase traffic flow. There will also be extensive park and natural areas.



Actual plan to be determined prior to beginning Phase 1.

Design Considerations. The points below detail the key design considerations for eLab City.

- Aesthetics.** Quality design and textures with a “wow factor” is critical. eLab City will have a strong sense of place. The overall look should be realistic, with a modern urban-influenced style – but with natural components. One look that could work is a renovated urban theme. At the same time there should also be components of a natural environment with green space and interesting terrain. Architecture that defies the laws of physics may be considered, but only if it contributes to community building, not as an end in itself. We seek a familiar sense of place that draws the visitor in and creates a sense of belonging, beauty, and community. Openness is important – both open vistas, but also the ability to see into key structures from the outside (and vice versa). We don’t want impressive monoliths that hide what is insiet. eLab City must look impressive and coherent when zoomed out from a distance, as well as when viewed from any angle. Needless to say, visible and mismatched seams in building walls and ground areas are unacceptable.
- Theme.** A unifying theme is essential. Examples of strongly “themed” sims include Apollo, Svarga, Amsterdam, Greenies, and Glam City. We are looking to the designer for guidance on a theme for eLab City. It is important to note that we do not want the theme of a college campus. One example of a theme might be a city of constant reinvention and renewal. This would fit with an aesthetic of combining historical and richly textured building foundations with modern updating (and also with the “flexibility” bullet points below).

- **Wayfinding.** Teleport system needs to be well designed to move avatars intuitively into main sections of eLab City. Signage with a uniform theme also will be used to provide directions. Paths, roads and walkways will be used to encourage exploration of the sim.
- **Avatar Scale.** Despite the focus on aesthetics, eLab City is ultimately about the community of avatars who visit, not the buildings. We don't want an endless maze of corridors that provide little visual cues as to where you are and where you go next. The sizes of the structures, the vistas from one location to another, the openness of the walkways, need to be thought of from the point of view of the avatar in eLab City.
- **Flexibility.** We need to design for change, and to make that change as easy as possible. Here are three areas in which flexibility is desirable:
 - **Modification.** Structures need to be constructed so that they can be later moved, modified, or added to with a minimum of effort by Sloan Center staff. Some structures, such as experimental stores and behavioral lab space, need to be extremely flexible inside, with highly configurable walls and floors. The exhibition hall is a large multi-purpose building; walls, floor, presentation displays, etc. will need to be modified inside depending upon the current function. The entertainment complex will also require some degree of flexibility as various parts of the complex are used for different purposes over time. In all cases, focus is on modifications *inside* the structure rather than *outside*.
 - **Transparency.** Key structures, particularly the exhibition hall and entertainment complex, should be designed with sections of walls that can be easily changed from transparent to opaque. For example, for a major design exhibition, we may want to make large sections of the walls of the exhibition hall transparent so that the objects inside the exhibition hall can be viewed from the outside.
 - **Dynamic aspects.** To create a sense of ongoing change, it is desirable to incorporate dynamic aspects into the build. This "automatic change" would include lighting effects, plants that grow, animated animals, and so on that create a sense that something is happening in eLab City, even when no other avatars are around. In addition, interactivity should be built into various structures and objects; as in the game *Myst*, one never knows what will happen when you push a button.
 - **The unpredictable.** Some details in this concept plan may turn out to be impractical, while others features may turn out to be essential. Within reason, we seek flexibility on the specific, with the full scope of the project remaining the same as outlined here.
- **Technical considerations.** A key guiding principle is that once constructed, all structures should be readily modifiable and moveable by Sloan Center staff. Permissions will need to be set or transferred so this will be possible. We do not want to be "locked in" to the original layout, and need to be able to make changes ourselves at some point in the future. Design needs to be sensitive to system load. Structures need to be placed so that both island on average receive roughly the same amount of traffic. Approximately 2/3 of prims should be used, with 1/3 held in reserve. Megaprims should be used judiciously, preferably not at all.

The next pages describe the key components of eLab City in greater detail.

1. LIVE: Details

Residential apartments. Pre-built unfurnished apartments for UC Riverside students (and possibly students from around the world) will be provided at no cost, with a prim allotment to encourage product acquisition. Apartments are given out, for free, for a fixed period of time, and students must apply to continue living in the apartment (decision based upon degree of use/contribution). Larger apartments can be made available for those who take a management/leadership role in eLab City. Some of the apartments may have a rooftop or outdoor area and allow resident building. This would have to be managed, and this right “earned” after a period of occupation or demonstration of building skills. We will need a system to manage occupancy/permissions of residential apartments. [interior at launch: interior is unfurnished]

2. WORK: Details. The “work” section of eLab City is a complex of research-related buildings. Below are the needed functions. Some of these functions can be combined in the same building.

Behavioral labs. These are highly configurable spaces that will be used by researchers for specific experimental studies. Some studies might require 6-10 relative small cubicles, others might require a large room for an interactive group exercise, others might require a large space for a simulated store. We need a door/floor/wall system that allows us to easily configure the behavioral lab for specific purposes into rooms of different sizes. Some lab rooms – or perhaps an entire lab building - will need a security feature to prevent entry when not in use. This security feature should be installable by Sloan Center staff as needed. [interior at launch: interior is unfurnished, but key items like chairs, tables, video displays are held in inventory]

Offices. UCR researchers and student workers active in the eLab City project will be given living/work space and a prim allotment for personal use. In addition, we may wish to have visiting faculty office space, as a way of getting other faculty involved and interested in this project. We will need a system to manage occupancy/permissions of residential apartments. [interior at launch: furnished]

Conference rooms. A multi-purpose conference room or auditorium than can be used to host lectures, concerts, or other events with audio/video capability. In addition, small meeting rooms can also be used for running small qualitative groups or for collaboration. [interior at launch: furnished]

Library. This will contain virtual reference material related to consumer behavior in virtual worlds. The contents of the library will develop over time. Initially, we will set up seating areas, bookshelves, etc. As the library will evolve over time, it needs to be customizable. [interior at launch: partially furnished]

Visitors center. The visitors center will showcase information about eLab City, and provide an orientation to eLab City activities. It will contain a few survey stations, and information about how to sign up for free living/shop space, as well as jobs in eLab City that pay in Linden Dollar. [interior at launch: furnished]

Survey stations. These are small stylish one-person kiosks, scattered throughout eLab City, that an avatar enters, is seated/stands, and completes a Web-based survey or signs up for the eLab City panel. [interior at launch: furnished but depends on Phase 2 for functionality]

3. PLAY – Details. The “play” section of eLab City is a complex of entertainment and shopping buildings. Some of the buildings can be multi-functional.

Resident-run shops. Similar to the residential areas, store space will be provided to established Second Life residents for merchant-run shops, leased for free for fixed periods of time, and subject to renewal based upon performance and activity. Merchants will be able to keep the proceeds from items they sell. In exchange, we will want the ability to track sales (see Phase 2). We may have a few large merchants run stores, or a larger number of smaller merchants. [interior at launch: unfurnished; shops to be furnished by merchants, will want key merchants in place at launch. We should provide a “merchandizing kit” with product display systems, walls, etc.]

Note: we may also want to allow students living in the residential apartments to sell merchandise from their rental units as well.

Experimental store. The experimental store will be used for field experiments in virtual consumption. In addition to large open spaces with adjustable walls, we will also want a set of fixed size, self-contained stores that can be used for individual research projects. At launch, we will either need to generate new merchandize to sell in the experimental stores, or else make arrangements with established merchants for product that we can sell in the experimental store. [interior at launch: furnished with customizable displays, product in place to degree possible]

Note: it is possible we will also one to offer items for sale in non-traditional locations; for example, all the furniture in a restaurant may be offered for sale.

Exhibition hall. A multipurpose exhibition hall for hosting corporate-sponsored product design competitions; also permanent exhibit space for art exhibitions. This will be centrally located, spanning the two islands to allow for larger number of avatars visiting. Ideally we will want a show (e.g. art exhibition) in place at launch, and the interior of the exhibition hall will be set up for this show. The interior should be highly configurable. Exterior walls should have adjustable transparency to allow for different effect. [interior at launch: furnished to support the opening exhibits]

Entertainment complex. This is a complex of one or more buildings devoted to entertainment activities. These include a dance club, music hall, cinema, and restaurants (other ideas: bars, clubs, etc.). The various pieces of the entertainment complex will be operated by Second Life residents. We will provide the venue at no charge, allow managers to keep proceeds, and possibly provide promotional support. At launch, we will want to have a couple of the activities up and running, for example dance club and music hall, with Second Life management in place. [interior at finished: partially furnished; Second Life managers able to customize interior furnishing and spaces]

Outdoor stage. A centrally located stage with an outdoor viewing area spanning the two islands for large outdoor events. Stage should have audio/video capability.

Garden and park space. Terrain of the island is varied, hilly in spots, with the coastline varied for interest. Could be beaches, caves, formal parks, nature areas, etc. to encourage exploration and for visual appeal. Throughout the sim, landscaping, footpaths, waterways, bridges, etc. to be added for visual appeal.

Just for fun. Throughout the sim, locate a variety of structures and objects that encourage exploration, discovery, and surprise.

Basic Scripting, Media, Interactive Functionality for Phase I

- **Video and Audio.** Stream video/audio into Second Life, both pre-recorded and live. Systems to be deployed in outdoor stage, exhibition hall, visitors center, auditorium, behavioral labs.
- **Rental Unit Management.** We need a system to manage which SL residents are leasing space in apartments and stores. Apartments should be lockable by the current tenant. The leases are free, but access permissions need to be set, leases need to be renewed, and a “time remaining” counter needs to be visible prior to renewal date. Some multi-level units will have different access permissions for different levels (is this possible?).
- **Access Permissions.** The sim will need to be divided into regions; a system is needed for maintaining access permissions
- **Security Systems.** Systems to restrict access to certain parts of the property (e.g., some behavioral lab space should be able to lock out people when a study is not running, or restrict entry to only certain avatars). Systems to ban griefers.
- **Atmospherics.** Weather systems, day/night cycle, lighting and sound effects.
- **Navigation.** Teleport system (point-to-point within island, also well-thought out placement of teleports). Doorbell-style navigation for various buildings to TP avatars directly to rooms from front door.
- **Voting Mechanism.** We need a way for avatars to vote for their favorite items in a design competition. This could be a kiosk listing all entries with a way for selecting your top choice (for example pieces of furniture in a display area), or it could be a button located by each furniture item. Alternatively, we could have an “approval voting” system where you could vote for as many entries in a contest that you liked. At our discretion, we would like to be able to display results to-date. Controls need to be put in place so that an avatar can only vote once in a given contest (either voting “top choice” or “approval voting”). [Note: This feature borders on “advanced data collection” and could go with either with Phase I or Phase II].

PHASE 2: Advanced Data Collection Features

Informed Consent

- Avatars entering eLab City for the first time are given a notecard informing them of the privacy policy of eLab City, and the nature of the information that will be collected about them. If the avatar does not agree, they will not be permitted access to eLab City. If the avatar agrees, they will not be prompted again. If the avatar does not agree, they will be prompted each time they enter eLab City, until they agree.
- For studies run in eLab City that collect additional information about the avatar, a similar approach will be used for avatars entering the region of the study.

Unobtrusive Behavioral Measures

- **Avatar Location and Movement.** XYZ coordinates, avatar name and time stamps taken at regular intervals. However, XYZ coordinates need to be mapped into meaningful locations, which will be problematic if structures/layouts are changed over time. More useful would be scanners of varying sizes and shapes that track this information for pre-defined areas. Ideally, the intervals should be variable, and different regions should be able to be set up with different intervals. Intervals may need to be as low as 5 seconds for some experimental work, but can be 1 minute for routine tracking. We would need to know the avatars within the scanner location at the time of the scan.
- **Object Interaction.** We will need to track interaction with a variety of objects. In the stores, we track if an item was touched or purchased – and the avatar name and time stamp of this event. Additional object interactions would be things like a door opening, avatar sitting on an object, etc. Merchants in eLab City stores will need to insert scripts into their objects so that touch/purchase can be tracked. To provide an incentive for merchants to take this extra step, we can provide a Web interface that the merchants can use to access summary data on touch/purchase for items in their stores.
- **Reporting.** Only basic reporting is necessary for avatar and object interaction data. Of greater interest is the raw data. However, some mechanism for extracting subsets of the raw data (i.e. by campaign, region, scanner/sensor set, date, etc.) is needed.
- **Chat.** We may wish to capture public chat – most likely, we will not want to capture all public chat, but we will want to capture chat during specific studies and in specific locations (i.e., when it is relevant to a research project).. In some experiments, IM chat with the experimenter avatar or with a scripted object may also be need to be captured.

Survey Research

- **Web surveys.** Dedicated seats/cubicles where avatars sit while a survey is opened in an external web browser. Ideally, we want to interface with Qualtrics (or other Web survey packages) so that 1) avatar name is passed to Qualtrics, 2) incentives are paid, 3) respondent is prevented from repeating survey a second time, and 4) pre-screening based upon IP address or time since avatar created is used to prevent ballot box stuffing.

- **eLab City Panel.** Avatar is directed to a Web page (see First Opinions, Market Truths). Incentive is paid upon sign up. Email address and background information is collected, and email used to notify panelists of upcoming studies.
- **eLab City Group.** Kiosks for automatically signing up for an eLab City group. This could be either a Second Life group, or a system like Synthetik Subscribe-O-Matic.
- **In world chat surveys.** Scripted objects and automated survey bots used to administer brief surveys through a chat interface. Data stored in an external database.
- **In world HUD surveys.** Short surveys can be administered through a HUD, that will allow the experimenter to program a variety of basic question types (multiple choice, rating scale, checklist, open ended). The HUD might also be programmed to pop up at pre-specified or random intervals to ask a series of questions about what the avatar is doing; also, could contain instructions to direct the avatar to a location to engage in an activity, and then answer a series of questions.

Experimental Research

- Basic experiments can be accomplished with the survey, scripting, and data capture tools described here. More complex experiments will need to be custom designed on a case by case basis – for example the Indiana University experiments on group behavior that involve large groups of avatars running around a red-white checkerboard for five minutes, earning \$1L for each red square you walk over in that time.

PHASE 3: Management

A management plan is essential for eLab City to be successful. Below we describe key pre-launch and post-launch management activities. We are seeking an individual to help coordinate the following activities below on a contract basis. At this point, we are focusing on the Pre-Launch part of Phase 3.

Pre-launch. Prior to launch (approx 2-3 months):

- Networking and establishing merchant and venue manager relationships:
 - Top priority:
 - Establish relationships with at least 2-3 key Second Life merchants and arrange for their merchandise to be in the resident-run stores.
 - Obtain product for sale in the experimental store by making arrangements with SL vendors to sell their products.
 - Establish relationships with 2-3 key Second Life residents to operate pieces of the Entertainment Complex. Highest priority is finding a venue manager for the dance hall. Again, the various pieces are dance hall, music hall, cinema, restaurants, bars, clubs, etc. – a couple of these need to be in place at launch with managers who will be responsible for the venue.
 - Set up an initial show for the exhibition hall. This could be an art show, product show, etc.
 - Second priority
 - Help set up a series of events (talks, concerts, etc.) for the first 2-4 weeks following launch, including a grand opening party.
 - Identify roles and hire/supervise a few SL workers (paid in Linden dollars) to assist with eLab City management activities.

Note: We also need a manager for the Residential Apartments who will be responsible for finding, screening, and managing permissions for the student no-cost rentals. The Sloan Center has hired a student assistant who can take on this role.

- Promotional activities
 - Identify blogs, SL groups, SL key informants, advertising outlets, etc. and publicize eLab City activities and job openings.
 - Develop a Web-based social networking site that will be used (this can be done on the current eLab City site).
 - Develop and promote the Second Life eLab City group (identify and assign roles, send out notices, etc.).

Post-launch. Following launch, we seek to hire one or more Second Life residents to spend a pre-determined number of hours/week continuing and expanding on the activities identified in the pre-launch section:

- Develop and maintain merchant/venue manager relationships. Provide assistance to existing merchants and venue managers. Identify new merchants to manage additional shops and venues. Identify performers, speakers, etc. for events.
- Continue promotional activities. Moderate and encourage use of the social networking site.
- Assist with configuring interior spaces as needed.

PHASE 4: Research Projects

eLab City will be the platform for a wide range of academic research projects in virtual consumption. Main research methodologies used for the projects include:

- Web based surveys (Second Life/Qualtrics integration)
- In-world surveys (method to be developed)
- Observational data (avatar tracking and experimental stores)
- In-world experiments (custom designed)

There are a tremendous range of topics that can be studied using survey, observational, and experimental data. Broad topics include:

- Pricing of virtual goods
- Product choice in virtual worlds
- Virtual store layout
- Impact of real-life brand names
- Merchandizing techniques for virtual goods
- Interactivity with virtual goods and the purchase decision
- Social influence in virtual worlds
- Factors affecting cooperation with intercept interviews in virtual worlds
- Measuring sense of place in virtual worlds
- The relationship of real life / Second Life personality congruence to behavior in Second Life.
- Physical vs. social presence in virtual worlds
- Creating loyalty
- Quality of virtual life
- Cross-cultural differences
- Wayfinding
- User experience: flow, time distortion, engagement
- Impact of Web social networks on user experience in virtual worlds
- Trust and credibility
- Factors contributing to adoption / discontinuation of virtual worlds