The Sims Design Document
Draft 7 – 10/02/98

Note to reader: the information here is for the use of The Sims development team. Sections that are decided and can be considered complete are in **bold**; other sections that are under discussion, or have competing opinions, or will be discussed at a later time in the milestone timeline, are normal font.

Live Mode - People

(NOTE: Live mode chapter below is based on the work done for 9/30 delivery milestone. On 9/28 a conversation with Don Mattrick and others suggested additional changes be considered. Those changes will be taken up in the next design milestone. So what you see here is first pass design for Live Mode, but some sections, particularly Autonomy, could be changed as a result of the new direction.)
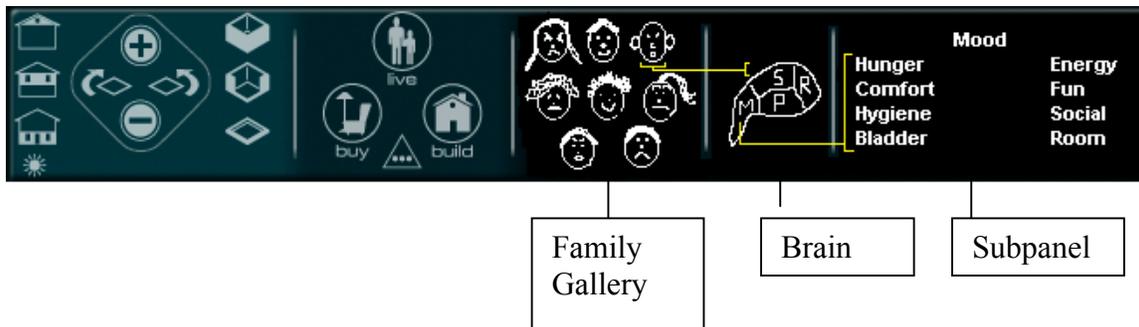
The Control Panel

The CP will show the following from left to right order:
View controls, mode buttons, family gallery, brain with four sections, and, when selected, the subpanels (motives, personality, skills and relationship).

The Family Gallery

The faces of the members of the family appear in this section of the CP. The maximum number of faces will be eight, therefore, this is the maximum number of family members appearing in the house in the World. The three facial states that reflect the Mood motive are happy, neutral, sad. The current implementation of facial states will remain as is. When selected, a family member's frame will highlight and

remain highlighted until another family member is selected. The name will display as Tooltips (as implemented).

Art note: though not reflected in the CP graphic example pictured here, somewhere in the Family gallery the family name needs to be squeezed in.

The Brain This is great! We'll need to put in hooks to do it, but it would be nice.

The brain has four clickable areas/buttons representing the four Live Mode subpanels: motives, personality, skills and relationships. The Motive brain button is the default. Each button has the letter corresponding to its name overdrawn on it. P for personality, etc. The title of the brain section will appear as tooltips upon rollover. Charles will try icons for the letters.

Stimulation: when the selected character has an interaction with an object or with another character, the section(s) of the brain that is stimulated will flicker with a rapid on and off. The flicker on brain will be displayed if the motive arrows are showing two or more arrows of movement on the motive bar (see Subpanel section below). This is meant to clearly connect the action in the game with the elements of the characters. For example, when a character is preparing a meal, the skills section of the brain would flicker, when the character is eating the meal, the motive section would flicker. It is possible to have multiple sections flickering at the same time as you would find when a character is having a conversation where the relationship, motive and possibly, skill areas are being stimulated.

Each brain button must have the following states:
  • **Stimulated**
  • **Unstimulated**
  • **Selected brain button will be shown with a frame around it**

Brain Subpanels
When you click on (select) a brain section, that subpanel (motive panel, personality panel, etc.) opens to the right. When a specific element in the subpanel is being stimulated, the red and green arrows will pulse on either side of the gauge.

NOTE: Personality will never flicker because it is not "stimulated" but it is selectable so the personality bars can be viewed. Also, interests are tracked, but are not displayed on CP. Should flicker personality whenever it effects something. Flicker on read as well as write. Would be a shame for one lobe to look dead! Lots of flicker!

Need a smooth throbbing brain effect that combines instantanious blinking flicker with smooth glowing decay over time.

Motive Subpanel

The Motive subpanel is the default subpanel and brain selection. The following motives appear in two columns with the Mood gauge centered above:

	Mood
Hunger	**Energy**
Comfort	**Fun**
Hygiene	**Social**
Bladder	**Room**

How about a mood ring? Mood in the middle (or the top, like the big mood ring stone) surrounded by the motives that contribute to it. Tie them together graphically with a ring with the mood stone at the top.

Motives Gauges and Arrows
The efficiency of objects is dependent on the quality of the object,(i.e. a small TV is less efficient at entertaining than a large TV), and on the personality of the character (flicker brain personality lobe) (i.e. a social person may find conversation to be more entertaining than TV). In order to maximize the efficiency of each person, it is necessary to find out how to make them happiest in the least amount of time. Therefore it is necessary to give the player feedback on the efficiency of any interaction with a person or object. To that end, the efficiency will be displayed by small (4 pixel) red and green triangles appearing either on the left or right of the motive gauge. To the left of the gauge will appear only red triangles facing left, to the right of the gauge, only green right-facing triangles. These triangles will be visible only during an object interaction and should clearly convey the value of that interaction. It is possible to have negative interactions.

Current implementation displays this idea, and should remain in game as is.

Skills Subpanel

The current list of skills and how characters can improve them is: Several of these skills you should be able to slowly learn by doing. You might have to do it a lot at first if you don't learn some other way faster (from a friend, or a tv show or book). Learn by doing: cooking, music (the only way), repair, cleaning, art (also the only way), and gardening. There should be funny failure conditions for somebody who doesn't know how to do something, but they should clearly learn

from their mistakes and improve in skill instead of repeating the funny failure animation (which would get tiresome if repeated too often).

Bad cooking: burnt or icky food, pisses other people off at chef. Bad music: drives people out of room with hands on ears. Bad cleaning: makes things dirtier, trigger "dust devil" disaster like a mini-tornado that goes around messing up the house. Bad art: people looking at it run to bathroom and vomit in toilet, have to pay people to take it away. Bad work: low sallary, get really dirty at work, worn out and stressed. Bad gardening: weed garden, steril earth disaster, insect swarms, icky vegetables that piss people off like bad cooking.

Cooking	watching cooking show on TV or reading cookbook
Music	practice on instrument
Repair	read Repair book
Cleaning	read How to Clean book or talk to maid
Art	practice on easel
Work	study at computer or read book
Gardening	watching garden show on TV or talk to gardener

Who ever heard of a "how to clean" book? ☺ Cleaning is one of those learn-by-doing things that goes faster as you gain experience.

This list may not be complete but it's quite close.

Gameplay notes: books come with (on) bookcase. Bookcase must be expensive. Bookcase must list multiple "read" interactions for all the books.

Telephone book offers. Book of the month club. Do people stock book shelves by carrying a book and placing them there, or is it magic? Each book shelf could hold 8 books, and the menu could fill up with the books that it held. When you buy a book, it goes into a free slot of a bookshelf (maybe somebody delivers it to the door and a person puts it there, maybe it just appears). Then you can click on the book shelves to select books for the person to read. That's all the bookshelves are good for (except maybe you want to clean them, that might be first item, and 7 others could be books.) You have to get more book shelves before buying more books.

I think we might want to do similar things for the bookshelves, the cd or record collection, as well as the phone book. So it might be more appropriate (as mentioned below) for the object to have a menu item that pops up the custom dialog for selecting (books/cds/records/phone numbers), and not put the dynamic things on the pie menu directly. This way the pie menus for those objects would not have to be any different than the other pie menu, and we avoid putting many dynamic items on the pie menu. So the pie menus have a normal item that pops up a custom dialog, with a scrolling alphabetical listing or whatever is appropriate.

Art notes: need gardening and cleaning icons for conversations. Need several more TV shows for the various TVs (and the sfx to go with) and need to show more art "practice" pictures.

Personality Subpanel

The final list of personality traits is:

Sloppy – Neat
Shy - Outgoing (replaces Introvert – Extrovert)
Lazy – Energetic
Playful – Serious
Calm – Emotional (replaces Mellow - Temper)
Altruistic – Selfish (any suggestions on another term for altruistic?)
Generous - Greedy

Note: Smart – Stupid (IQ) and Light – Heavy (Appetite), Age and Gender have been dropped from Personality.

Personality traits are displayed as close as possible in look to the motive gauges.

The personality is set and does not change during the game except when creating a new character.

Relationship Subpanel

The relationships that the selected character has had in the course of the game are displayed in the relationship subpanel. Four heads (in 800x600 or 8 heads in 1024x768) will display across the subpanel with their relationship scores and their first name as Tooltip.
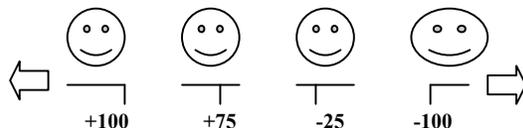
The next set of four will slide on (same slide on as the catalog objects) with arrow to left to return to first set of four. The characters' heads appear in the following order:
1. who's in the house sorted by how much you like them (onscreen characters)
2. everyone offscreen sorted by how much you like them

Testing note: the -100 to +100 scale needs to be tested to see whether it is clear or whether another scale might be better.

If there is a romance with any of the characters (and there can be more than one), a heart appears around (or behind) the head in the subpanel.

The relationship panel will also display the quality of any social interaction between characters by using green and red arrows under the head. The best interaction will create 5 green right-facing arrows, the worst, 5 red left-facing arrows. The arrows will remain onscreen for a delayed amount of time after the end of the interaction so that the player can go to the relationship panel to check the results. The relationship thought balloons (with hearts and hands) that are currently implemented in the world UI should be replaced by this CP implementation.

What happened to Interests?

Characters interests are still tracked in the game, but are not displayed on the CP. See Conversation section for discussion on Interests.

Subpanels and extended display

If game is played in 1024x768 resolution, only the Relationship subpanel might have the additional data necessary for the extra display. (i.e. character has more than 4 relationships established). The Motive, Personality, Skills subpanels have no additional information and would not use the extended display.The Slide Up Info Panel

Slide up info panel is brought up on player's mouse down on Live Mode subpanel word. It does not come up with a click-release-rest as it does in Buy and Build modes. Click to select subpanel word again will put Info panel away or slide mouse outside of Info panel into World and Info panel goes away. The subpanel word on rollover will bold (or display a different color) to indicate it's selectable, it stays bold while selected and the Info Panel is up. When mouse rolls off word or when mouse rolls up into world, the word unbolds.

Technical question: Does Info panel up cause World to freeze? Will's desire is that World stays active with Info panel up.

As in Buy and Build, the slide up panel will be used to display additional information for the Live mode subpanel words. Graphics are not used on the Slide up panel for Personality or Relationships. Graphics <u>are</u> used for Motives and Skills subpanels (described below).

Motive Info Panel– Select any of the motive bars or motive words and slide up panel displays short text description of that motive. Also, two (or three if space allows. Layout test required) small zoom size objects that can satisfy that motive are displayed on the slide up panel. The following is a list of the icons that should display in the info panel for each motive.

Hunger	**Fridge, stove**
Comfort	**Chair, small sofa**
Hygiene	**Bath, shower**
Bladder	**Toilet**
Energy	**Bed, coffee maker**
Fun	**TV**
Social	**Telephone**
Room	**Plant, painting**

Right click on a motive, to scroll to the object that will satisfy the current person's motive the most. Click again to go to the next, etc, to cycle through all objects that would contribute to that motive. (i.e. social motive would cycle through people, phone, mirror, etc.)

Personality Info Panel – Select the personality word and/or bar (its all the same button) and one of three descriptions (personality extremes or middle ground) will come up. The description will be chosen based on the selected character's position in that personality trait. Perhaps the text might read well as a second person horoscope-like approach. No associated personality graphic in Info Panel.

In Skills Info Panel - Selecting the name of skill will bring up Info Panel with generic description of Skills and an associated graphic object. See list below.

Cook	Stove
Repair	**Broken TV**
Art	**Easel**
Work	**Computer**

Music	Piano
Garden	Flowers
Clean	Pile of trash

Relationship Info Panel – TBD

In the World UI

How to show the active character?

We are stuck on this one. In the past we have tried these methods to show active character in the World:

Blue ball
Arrow
Halo above head
Aura of color around body
Aura of desaturation around body. Colored glow from body.

And other have been suggested, but not tried:
Party hat
One pixel color border around character
Selected character special set of clothes (i.e. wears blue jacket when selected)

…but none have been the answer. We are open to any suggestions.

Marionette strings and crossed sticks over selected character.

Changing brightness of current character in a sawtooth wave. Start bright, smoothly darken, then flick back up to fully bright. Positive bright blinking effect. The other (non-current) person you're pointing at needs to be distinguished as well, so light them with the opposite sawtooth, starting dark, brightning up, and then blinking dark again. So when the selected person is passionetly kissing the person you're pointing at, they blink together with synchronized but opposite brightness, like energy transfering from one to the other.

Related to this feedback problem is how to select a character in the World.

It's been suggested to use three different cursors in Live mode:

1. **For selecting character interaction need to obviously distinguish pointing at selected person from pointing at other people, with the cursor.**
2. **For selecting object interactions We should still pop up a pie menu on otherwise useless objects, with just "go here", since the object is taking up a spot on the floor. It would just route the person near the object. Then we would no longer have these obnoxious inactive objects, and you could make people walk over to trees, shrubs, decorative objects, etc. Just being near some things might be enough to get an effect.**
3. **For routing or "go here" instructions**

Other suggestions to select character have been the right mouse button will select. After the best method of <u>showing an active character</u> is nailed down, we'll determine <u>how selecting active character</u> will be done.

Interruptibility - The Interaction queue

For each selected character, there will be an interaction queue that will display up to eight queued interactions and will be deletable only, not editable. This queue will be comprised of the catalog- sized graphic buttons that correspond to the queued object interactions; it can contain between one and eight buttons. If the interaction is person to person, the head graphic from the family gallery is used.

Interactions in the queue can be either autonomous or player-directed. The queue is built in the upper left corner of the screen. The leftmost position represents the first position in the queue, all others line up to the right. Autonomous interactions will only ever occupy the leftmost position.

Here's how it will work for player-directed interactions: the player selects an interaction from the pie menu. As the pie menu disappears, the catalog-sized object graphic appears at the cursor and moves in a 1/4 second animation (away from the cursor) in a diagonal line up to the queue row and takes its place in line.

This is designed to convey the following information:
1. **the action has been acknowledged,**
2. **the order in which it will be fulfilled**
3. **an association in the player's mind between the object and its icon. Once the interaction starts, a yellow outline will surround the object or person button. As soon as the interaction is complete, the first**

object/person button in queue disappears and all the other object/person buttons shift left.

If character is currently in an interaction loop, they will complete the interaction and go do the player-directed interaction. Long interactions (such as making food, taking a bath) will have break points identified in the animation where character can get out of interaction before it's complete, and go do the player-directed interaction. No object or person interaction should be uninterruptible for longer than five seconds.

For autonomous interactions, since there is never more than one autonomous action queued by the game, there will never be more than one graphic button for any autonomous action in the queue. The same button graphics are used for autonomous and user-directed interactions; in the queue they are indistinguishable. However, if an autonomous action is in the queue and a player directs another interaction, the player directed interaction flushes the queue and takes first place (as long as the autonomous interaction has not been started yet).

This interaction queue takes the place of the head shake yes or no. It also eliminates the thought balloon (of intended interaction) while routing.

Deleting an Interaction

Click on the object/person button in the queue to delete the action. Only that action deletes. All buttons to the right of that button should shift left. An action cannot be deleted if it has commenced, i.e. it is outlined in yellow. However it can be deleted if the character is routing to the object but has not reached it yet to begin the action.

What happens if an interaction cannot be completed?

If there is a routing failure or some other reason for an object interaction failing (e.g. object is broken), the selected character will get a thought bubble above their head showing the object button and a red line through it. This will display for 1/2 (?)second, at the same time the corresponding queued button will display the yellow highlight, and then the thought bubble as well as the queued object button will disappear.

Autonomy

The characters in the household are always autonomous, unless the player directs an interaction. This means that the user-switchable (manual mode in pie menu) is not a game option, nor is a 'contingent'

autonomous (autonomy kicks in at certain motive, skill, personality levels) mode a game option.

As stated in the Interaction Queue description above, the autonomous action of object/person button will also appear in the queue.

Dumb Characters

The autonomous character will not always choose the wisest (most efficient) interaction. This allows gameplay where the player is smarter than the autonomous character left to their own decisions. The autonomous character will follow their personality traits to the extreme. So, a lazy personality trait will be very obvious when character is in their autonomous state – character will be drawn to lay on couch, watch TV too much even at the expense of their other motives, such as hunger or hygiene. They'll value those less than the one that centers around their personality.

Conversation Overview

Conversations allow characters to modify their relationships with each other. In order for a conversation to happen, the initiator (sender) proposes a topic (via a topic balloon) to another character (the receiver). The receiver must have at least some interest in the topic in order for the conversation to proceed. If it proceeds, the receiver becomes the sender and responds (sends back) either the same topic or a different one. The table below outlines the results of various interest level matches between two characters. Only the receiver of a topic balloon gets a relationship change to the sender and this relationship change is dependent on the receiver's interest in the proposed topic. The value of a conversation is based on two variables: the degree of matched interest in a topic and the number of "volleys" that happen between the characters.

Conversation Specifics

- Characters can autonomously initiate conversations and players can direct particular characters to converse with others.
- A conversation can happen between two characters and no more.
- A character will only initiate a conversation with a high interest topic.
- There will be 10-20 conversation topics in the game. Each topic has at least five different icons that can appear in the topic balloons. Each character has a preset level of interest in each

topic. Depending on the receiver's interest level, the receiver may choose to end the conversation, continue the conversation with the same topic or continue with a new topic. The interest levels are:

- **No interest**
- **Low interest**
- **Medium interest**
- **High interest**

- While the receiver is "listening" to the sender, the receiver reacts in a way to indicate the level of interest/pleasure that he's getting from the conversation. Then the roles are reversed and the receiver becomes the sender.
- Each conversation topic will have a specific animation that acts out some aspect of the topic (i.e. talking about baseball might inspire the talker to pantomime swinging at a pitch). There will be a random chance that a character with a high interest in that topic will sometimes use that animation as part of the conversational animations.

The proposed topics and a sample of their icons are:

Baseball –bat, mitt, diamond

Religion- cross, Star of David

Politics – donkey, elephant

Family – grandma, baby

Food – hamburger, steak, veggies

Travel – airplane, Taj Mahal

Business - dollars, coins, stock graph

Gossip – faces other Char

Weather – rain, sun, clouds

Kids – teen, baby, twins

Gardening- shrub, flower, tree

Tennis –racquet, net

Plus a few more…

The response of the receiver is charted as follows:

Receiver's interest level to topic received	% chance to return same topic	% chance to return own high interest topic	% chance to end conversation	receiver's relationship point change
No interest	0	0	100	-2
Low interest	15	55	30	0
Medium interest	55	35	10	+1
High interest	100	0	0	+2

A conversation can go on for a maximum of five volleys (a volley = one sender icon to receiver) unless there is high interest in the topic on both sides. If this is the case, the conversation will continue until any of the other motive needs grow high enough get the attention of the character.
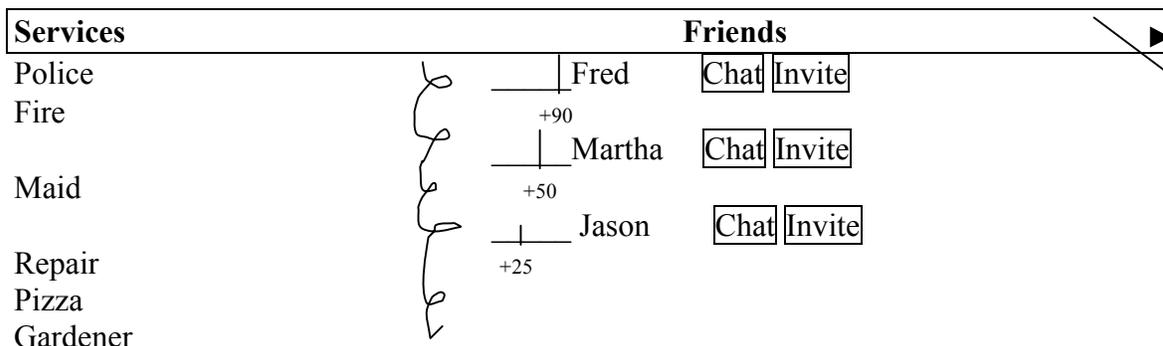
The relationship points gained by the receiver are based on the interest level of the receiver. So, as shown above, if a sender has high interest in baseball and offers a baseball conversation to receiver, whose baseball interest is also high, the receiver gains two points. The sender never gains any relationship points. However, in the next volley , when the roles are reversed, the relationship points can go the other way.

Special object for Conversation - Telephone

When a non-ringing telephone is selected to make a call, a 150x240 (approximately. The final width depends on the length of the friends' name) pixel window comes up to obscure telephone in World showing a spiral bound phone book with names of Services and Friends. Having Phone Book onscreen does not freeze World. The Phone Book takes the place of a pie menu for the phone only.

Instead of replacing the pie menu with a pop-up panel that is harder to dismiss (this will be obnoxious if the user accidentally clicks on the phone), just pop the phone book up from a pie menu item. So the pie menu can have "phone book" at the top, t hat pops up a phone book, and a few items for frequently called number (that the person has memorized so they don't have to use the phone book) like best friends and 911.

This treatment would also be appropriate for bookshelves, record or cd collections, radio dial, and maybe even tv set. So we can have a custom control panel that pops up from a pie menu item for each of those things, designed for the task, without making the pie menus inconsistent.

Services		Friends		▶
Police		Fred	Chat Invite	
Fire	+90			
		Martha	Chat Invite	
Maid	+50			
		Jason	Chat Invite	
Repair	+25			
Pizza				
Gardener				

Select the spiral of phone book or rolloff of book to cancel.
The bar next to the name is reused from the relationship bar on the CP personality subpanel.

To call a friend

How do you cancel the phone book? If it's not easy, it will be obnoxious (very obnoxious if it replaces the pie menu).

Friends names show rollover highlight, but do not show a selected state. Select chat to talk on phone or Invite button to invite friend over. If there are more friends on list, go to next page by selecting arrow in right hand upper corner. As soon as Chat or Invite is selected, the Phone book window goes away, the character on the phone in house is shown.

Or: click on person to pop up pie menu of possible options: chat, invite, etc… Allows dynamic interactions. Eliminates clutter of buttons in phone book. (Phone books don't have buttons, just names and numbers).

Friends are organized by relationship points. People in game who selected character has not yet met do not appear on the Phone book Friends list.

The Phone book is not editable.

If a friend is already present in selected characters' house, their name, and relationship points will still appear on list; chat or invite buttons disappear. The name rollover highlight is not used.

Shift - Invite on several friends names will select all and invite over. Releasing Shift key [?? Weird] will close Phone book window and friends will begin to come over. Shift – Chat will ignore shift and do nothing (since there are no party lines on phone, character must chat to one person at a time.) This seems kind of tricky. How does it interact with how the dialog is dismissed? How does it interact with the action queue? How is it easy to make a mistake, hard to recover from it? How hard is it to pop the phone book up again in order to invite multiple

people one by one? How does the feedback indicate that you're going to call multiple people? Does it have any parallel in the real world? Isn't it just simpler and more natural to look each person's name up one by one? If a friend is worth inviting, they're worth popping up a panel to invite each one, hopefully. Parties should take a proportional amount of effort to arrange, is it really necessary to complicate the ui to support that?

Phone conversations follow the same rules as face-to-face conversations. There may be five volleys of conversation. The character in World on phone (the visible part of the of conversation) will use the same conversational thought balloons in their one-sided conversation. If the caller calls a friend who has a –50 relationship toward to caller, the callee will answer, then hang up on the caller (even if the caller likes the callee). Any relationship score the callee has toward the caller above –50 will result in the callee taking the call and conversing.

The result of a phone conversation is X # of relationship points and social points, which will always be fewer than in a face-to-face interaction.

During a conversation , there will be a head shot of the person with whom the character is speaking near the phone. 3d head, or an icon? Where is it positioned? Might this be a bit corney? How about hearing the other person's voice, through a phone frequency band pass filter. (It's easy to filter the sounds to pass only the frequencies you hear through the phone, so it sounds tinny. We'd want the sound people to do that offline, not filtering in real time while the game is running.)

To call a service person

One call only to service people - no multiple requests of service people. So, select Maid from phone book and the book disappears and maid is seen soon coming to house. Once Maid is in the house, her name is grayed out in the Phone Book.

Service people names show rollover highlight, but do not show selected state.

If call Fire and nothing is on fire, player will get a False Alarm charge. After selecting Fire, a modal dialog displays to say "you've been charged $100 for a false alarm". Will we really have fires? They could be very hard to do realistically. Maybe a smoking stove, but it would be hard to make fire spread realistically across objects and across the room, and would lead people to expect effects we definitly won't be able to produce. (Think of what a house looks like after it burns down. Pretty dramatic. Hard to do with tile component graphics…)

If call police, the police person will come if a burglar is there first. More police specifics TBD.

Maid is a more complex service person and more info TBD, but until then, here's what we know:

Maid will either finish her work (cleans all dirty objects she can find) and leave or be dismissed for the day ("you may go"), but not fired.
Maid is not on a regular schedule. Player must call her every time her service is desired.
If character does not have enough money in bank account to pay her, the maid will not come the next time you call her. A modal dialog appears saying, "you did not pay the maid." Modal dialog can be closed with OK button or on a 10 second (approx.) time-out. Should be a limit on how long she will stay.

We need a general purpose time out dialog mechanism that does not pause the game. Several of them could be initiated at once, and the user needs to be able to respond to whichever ones they decide, in any order, without being interrupted in the middle of responding to one by another popping up. In other words, a new popup should not cover the current popup, but rather pop up underneath or beside. No buttons should ever be yanked away from under the cursor. No dialogs should ever be thrown up inbetween the cursor and a button the user was about to press. Bullfrog's products solve these problems in various ways -- look at Theme Hospital and Dungeon Keeper for ideas.

The maid can react by slapping character in the face as she leaves (assuming there is a slap in the face animation

created) or she will refuse to return next time character calls for her service. After five calls, she will come back to clean. Five calls is too much. How about a "beg maid for forgiverance" menu item? How about instead of the maid slapping you for not paying, she just shakes her fists in the air. You could call the police on the maid for assulting you, if she slapped. Let's keep the violence realistically consequential. No gay bashing, for example. It's not reasonable to punch somebody in the mouth for making a gay pass at you, or not paying you for services rendered.

Motives

Here are the final list of motives and a description of fulfillment interactions.

Hunger

The hunger motive is fulfilled by preparing food or snack or calling for pizza and eating. Or by eating food prepared by another character. Apple tree? Garden?

Comfort

The comfort motive is fulfilled by sitting, sleeping or taking a bath.

Hygiene

The hygiene motive is fulfilled by washing either in the shower or the tub or by changing clothes.

Bladder

The bladder motive is fulfilled by using the toilet.

Energy

The energy motive is fulfilled by sleeping and by drinking coffee.

Fun

The Fun motive is fulfilled when a character is entertained by something: TV, stereo, fishtank, etc.

Social

The Social motive is fulfilled by interacting with people either in person or on the phone.

Romance in Social Motive

Romance occupies the high end of the social motive scale, from +70 to +100. In the social motive, regular and romantic interactions accrue social points ONLY to +69. To go to +70 and beyond, it takes romantic interactions. The social motive bar should reflect the "romantic territory" by appearing a different color. It is not possible for a character to move above +70 with another character unless they are "in romance".

Note that the social motive will often be well below +70 and all interactions (social and romantic) will boost it up. However it is only romantic ones that can boost it up over +70.

Romance in Relationships

Romance between characters can occur if the relationship between them is > +50. It is at this point that the menu items begin to include romantic interactions. Relationships can be romantic one-way and two-way (of course). One character may reach a >+50 relationship and may initiate a romantic interaction without the other character up to the same level. In fact, it is this difference in relationship values that will make it interesting to watch because a romantic interaction may be reciprocated OR may be flatly refused. If a refusal or rejection drives the initiating character's relationship with the refuser to plummet, there will be no more opportunity for romance until the relationship value is boosted up again to >+50.

Relationship scores can go to the max (+100) with or without a romance between characters, thereby reflecting the difference between best friends and lovers. The relationship panel reflects the state of the relationship.

Same Sex and Opposite Sex relationships

To be outlined in 10/30 Live Mode deliverable.

Currently the game only allows heterosexual romance. This will not be the only type available – it just reflects the early stages of implementation. Will is reviewing the code and will make recommendations for how to implement homosexual romance as well.

The Romantic Benefit

There is a strong benefit to having romantic interactions because every point above +70 is added to the mood score. Since the mood score is an average of all the motive scores, the addition of the straight romance points is a BIG WIN.

The same color that indicates "romantic territory" in the social motive bar should indicate the mood points attributed from romance. (We'll try this and see if it works. It may be too hard to tell the effect of an individual interaction on the motives since they are simultaneously being controlled by other effects too).

When a romantic interaction causes an increase in the social motive, the amount of that increase is added to the mood score, but only when the social motive exceeds 70.0, and only to the extent that the increase increased the score over 70.0. For example, an increase of 10 points from 62 to 72 would only add 2 points to mood, but an increase from 73 to 83 would add 10 points to mood).

Room

The Room motive is fulfilled by having large, non-rectangular rooms with many windows. Room motive goes up if there are paintings on the walls and goes down if there are piles of trash, dirty dishes, or dirty clothes in the room.

Issue of privacy is TBD.

Mood

The mood motive is an average of all the other motives. Romance points get added directly to mood points without falling into the average. The mood of a player changes their appearance in the Family gallery. They can appear sad, happy or neutral.

Personality as seen through Object Interactions

There will be a thorough pass through the object list which will enumerate all the personality trait and skill effects on every object interaction. However, for illustrative purposes, the following short list has been done. It seems that the extremes of both personality and skills will be the best to animate as the middle

ground is just more "normal" behavior. Also, by focusing on extremes, a sharper image of the character will be drawn in the player's mind.

The objects will advertise differently for different personalities and combinations of personality/skills.

Object	Personality or Skill	Effect
Computer	Playful + shy, higher playful plays longer	PLAYS on computer
	Playful + outgoing	Plays with pool table, pinball game
	Serious + energetic, higher serious works	WORKS on computer longer
	Calm	Shrugs or sighs at computer crash or error message
	Emotional	Temper tantrum at computer crash or error message
	Repair skill - high	Can fix computer after error quickly and happily
	Repair skill - low + emotional	Fixes computer for long time and finally punches in screen
TV	Energetic	Doesn't turn on TV - no ent. Value from it
	Lazy	Watches TV all the time
	playful	Prefers comedy show
	Serious	Prefers news
	Emotional	Respond angrily to channel change or TV turned off
	Cooking and gardening skill	Can improve by watching cooking or gardening show that comes on TV occasionally.
Fishtank	Playful	Watches tank animatedly, sometimes tapping on glass
	Serious	Watches tank with arms folded
	Sloppy - neat	Determines frequency of tank cleanings
	emotional	Sobs uncontrollably when fish dies
	Altruistic - selfish	Determines frequency of feedings
	Cleaning skill	Determines success and speed of tank cleaning
Bed	Lazy	Go to bed earlier and more often, wake is long and slow
	Energetic	Wake up quickly
	Sloppy	Never make bed

	Neat	Always make bed when getting up
	Playful - serious, energetic	Sex in bed, details tbd

Live mode Art Notes

3D Animation

- There will be one skeleton model for all adult characters
- Child-sized skeletons are under discussion as a result of meetings with Pet Fly Productions and Ron Cobb
- There will be 3 types of skins; character w/clothes, naked, underwear/bathing suit. Need pants pulled down to ankles on toilet. Naked suits might be kind of abstract (body should be good enough for swimming and sticking out of bathtub and hottub), missing geometric representations of naughty bits, but maybe include wee pubic hair triangles in the texture maps that "barely" show through blurring effect.
- Naked skins are required – each character will have one set of clothing, one naked set. Each character has only one set of clothing and hair style to maintain consistency and make it easier for the player to recognize individual characters.
- Bathing suits/underwear under discussion

- Upper and lower body scheme?
  The current art plan calls for two complete sets of animations where we will need sitting and standing versions.

Sprites

- Some animated (duck).

Design-a-Family Feature

Design

- **Will be included in game**, particulars of interface and if applicable to story are TBD.

Simulation

- Designer family members can act as neighbors, but will not be used in level play.

People at Work

- **Newspaper/job will be included in game.**
- Carpool with vehicle outside to pick up character is TBD

People Voice-over

In September, a test of Ukrainian script spoken by a non-native speaker was recorded. Also, this same voice over actor re-recorded the Charlie Brown speak. We determined that native speech, spoken by a native speaker is the approach we'd like to take. Currently we are getting auditions from several native speaker union VO actors. An Estonian speaking male is our front runner as of the first week of October.

We will still use four voices: adult male and female and child male and female.

Since it is highly unlikely that we'll find a matching set of male and female Estonian native speaking union talent, we will experiment with processing the male voice to get the other three character types from it.

Game Play

Game Scrolling
There are a few different ways to scroll in the game. They are listed here:

1. **In windowed mode: cursor hits edge of window, pointing hand appears, hold mouse button down, screen scrolls in direction of pointing hand.**
2. **In full screen mode: cursor hits edge (the boundary of the screen), game automatically scrolls. Acceleration is still being decided by Will - it is possible that acceleration will be at a fixed rate or, possibly, there may be a small pixel border defined at the edge where the scrolling will happen more slowly than right at the edge.**
   Important note for first two scroll descriptions: scrolling needs to be clock dependent so that the cpu processor does not influence the speed.
3. **Arrow keys scroll one tile per click**
4. **Selecting a character with the space bar or double clicking on their picture in the CP centers the screen on the selected character**
5. **Using the right mouse button to zoom will center the screen on the cursor.**
6. **Easy scrolling: Alt+drag mouse to drag screen around. This is currently implemented as TAB+drag mouse but TAB will be used to change house level view.**
7. **When any subtool is selected, the screen will scroll when the cursor hits the edge.**

The Open Hand

The open hand is the default cursor in BUY mode. The open hand cursor is a tool in BUILD mode. The open hand works identically in these modes. The open hand can grab any architectural objects e.g. stairs, fireplaces, pool filter, etc. or any object bought from the catalog. It can then move, rotate or sell/delete that object. When any object is put down or gotten rid of, the cursor returns to the open hand (except in the case where the player is using the Shift key to get multiple objects).

Note: doors, windows, wallpaper, terrain or any other architectural elements cannot be selected by the open hand.

Control Panel –

The Control Panel consists of 4 main sections: the View Controls, The Game Controls and the general and specific mode tools. The game controls and view controls are common to all modes. The mode tools change by mode.
Dimensions of CP are: 100 pixels high by 800 pixels in 800 x 600 resolution and 100 x 1024 pixels in 1024 x 768 resolution.

Mouse activation

In all the Control Panel buttons, the action is always taken on mouse down. With mouse down and rolloff, the action is still taken. In all confirmation dialogs, action will be taken on mouse up.

Up and down are switched in the game, which makes more sense. Plus should be on the bottom, minus on the top. For both pop-up and view panel.

View Controls

- **zoom in**
- **zoom out**
- **rotate world 90 degrees right**
- **rotate 90 degrees left.**
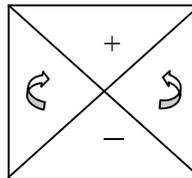
The View controls need to indicate states: selected, unselected, rollover. An additional state, temporarily unselectable for zoom in and zoom out. Zoom in is temporarily unselectable when game is in largest zoom; conversely, zoom out is temporarily unselectable when game is in farthest zoom.
Note: no zoom means no centering on cursor will happen in farthest or largest zoom.

Game Controls

- **Time**
- **Budget**
- **Wall Level**
- **House level**
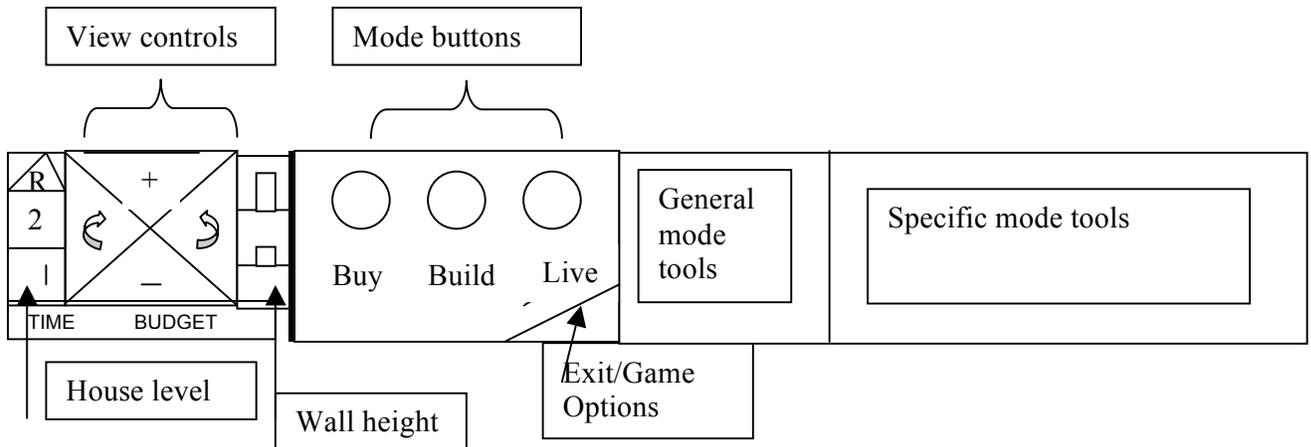- **Mode buttons: Buy, Build, Live, Game Options (this mode is smaller and less important visually than the others but it does include EXIT)**

Button states discussed in each section below.

Time

Time is a readout of the game time. It is also a button that accesses the Speed Control in the game. A rollover highlight on Time indicates something else is there and that is Speed Control (so sorry for the awkward language!). When the Time button is pressed, SFX plays, the text "Time" changes to selected state and takes over the Budget space next to it. In the Budget space the speed control is displayed with a slider. Slider has 5 positions to set game speed from slow to fast. 3 would be real time, 4-5 is fast. 1-2 is slow time. The game cannot be paused here. The slider can be clicked and dragged across the five positions but it will also move along the scale if the player clicks inside, at either end of the slider box. It moves in the direction of the clicked cursor by one click at a time. Time changes immediately after a slider change.

NOTE: current implementation has 32 slider positions that smoothly move across the speed range.

Click on speed control or in the World to dismiss the Speed Control. necessary).

Keyboard shortcuts – work in all modes.
P = pause
1 - 5 = game speed settings. These are spread evenly across the 32 speed positions: speed 1 = keyboard 1, speed 32 = keyboard 5 and keyboard 2-4 are in between speed 2 and speed 31.

Pause
Game is paused automatically in Build and Buy mode. Game can also be paused
by hitting the P key. Hitting it again unpauses the game. When the game is
paused for any reason, there will be a red box outline with a diagonal line drawn
through it that will sit over the Time button. The button will still be active and
will bring up the Speed slider. The speed can be modified in any mode, except
that the results will only be visible in Live mode when the people are moving.

Pause will also be indicated with the text "Paused" displaying over the World (in
Live Mode only).

> **ART**
> The Time button needs a regular, selected and a rollover state. It also
> needs a "pause" state with the red box and diagonal over it. It also needs
> a rollover-highlight and a selected state with the red diagonal.

Budget
Budget is readout only and displays the amount of money in the household
account. Budget can never be negative. It is displayed with commas and 8 digits
for a total of 10 characters.
Internationalization issue: Different countries use different delimiters.
Programmers need to evaluate the Windows internationalization library to see if
this might provide a simple solution.
Windows does not, but the framework does.

In the section, Selling an object, the Budget amount displays a highlight. But for
the purpose of CP functionality only, Budget is readout only.

Note: In this "highlight" case as well as others, the programmers need to use
their discretion to find the simplest type of "highlighted" state to implement.

Walls, Mode and House level
The following controls need to display three states: Wall level, Mode buttons
(BUY, BUILD, LIVE) and house level. Their states can be unselected, selected,
or rollover-highlight.
In addition, Walls (no wall and cutaway) and House level (2nd floor) also each
require a temporarily unselectable state. They will be unselectable in the
following conditions: roof view in any mode allows no walls other than high
walls and house level 2nd floor cannot be available in Live or Buy mode if there is
only one level.

For example, in Build mode when roof mode is selected, high walls only are
displayed. Cutaway and no walls are temporarily unselectable.
Does it remember and restore the wall state while you're in roof mode, and once
you leave it? When you leave it, it goes back to whatever you had before, but
what if you pressed the only enabled button "walls", and meant for it to stay

that way when you left roof mode. It would be ambiguous if it should restore the previous state, or keep the current (same) state. Instead, I suggest we disable all three wall buttons when in roof mode, and the code will automatically draw all the walls no matter what the wall mode when the roof is shown.

In another example, if no 2nd floor has been built, go to Live mode, people live on 1st floor, so 2nd floor icon on CP is temporarily unselectable. If player then goes to Build mode, 2nd floor icon is now selectable, and 2nd floor is ready to be built.

Walls display three states available for selection: no wall, cutaway walls, high walls. Default position is cutaway walls. Only the walls of the current level are effected by the wall selection. Walls on the lower level are drawn at full height.

House Level also has three states available: first floor, second floor, roof. Default is first floor level. Keyboard shortcut is TAB key.

The Look

The overall style will be in accordance with Charles's international iconic style.

The common non-mode specific items in the control panel will all be placed in two blocks, of approximately equal size, starting at the left end of the control panel. Mode specific items will be placed in two blocks in the center and right sides of the control panel.

Lighting - needs to be discussed***

General - In the World UI

The view controls can be displayed in the World by clicking the right mouse button when cursor is in the World. One exception to this rule is when the mouse is held down for rotating an object (see Rotating an Object), it is not possible to also click right mouse for in the World view controls.

The view controls purposely look very similar to the CP so that the player does not have to learn yet another interface element. But, they operate slightly differently than in the CP. In the world, they first center on the cursor point. This is okay as implemented. But there needs to be a change to the way the view controls are currently implemented, specifically, the zoom in and zoom out should have a state of temporarily unselectable, discussed in View Controls section. The rotate navigation should rotate around the center of the screen. Zoom in and zoom out should zoom to cursor location.
Pop-up view control pie menu now does dynamic rotation and zooming as you're in the menu. Pull out to zoom one or two levels, or rotate one two or three (or four i.e. 0) notches at a time. Might need better graphical feedback.

Tooltips and Hot Labels

Tooltips and hot labels are already implemented in the game. They should (and do!) appear as text on a light background located slightly above and to the right of the object. Tooltips displays the name of the CP element when the mouse rests on it for a 1/2 second or more. Hot labels give the price of objects in the catalog and have same slight pause before display.

Memory in Modes

Each mode (Buy, Build and Live) will remember the tool/room/function subtool the player was using prior to switching modes. For example, if a player has been using the wall tool and then switches to Buy Mode, when he returns to Build mode, the wall tool and its submenu is selected. The memory will not go so far as to remember the slide-up info panel that could have been up for any particular tool. It also does not remember global view controls like zoom, rotation and level.

Mode-Specific Tool Info
Each mode has tool info. For a description of this feature, see the section Object Info Panel in Buy Mode.

Buy Mode - Objects

Vocabulary:
Control Panel (CP) is all buttons, text, etc. below the Control Panel top line.
The World is the entire simulation area above the Control panel.
Catalog Subtools are the specific objects to buy (i.e. Green Chair, Red Chair).
General Mode Tools are Functions (Seating, etc.) or Room (Kitchen, etc.)

Please refer to the Object List (Word and Excel files) on Elmo for specifics on each object.

Control panel UI

Buy Mode is the section of the game where the player purchases and places objects into the house/environment. The player is limited by the money in his household budget. During Buy Mode, the simulator pauses and time does not pass. There is no penalty for staying in Buy Mode for any period of time. It is possible to simply move objects around and not buy anything in BUY mode. All objects are sorted in two ways: by Room and by Function. Moving between Room and Function Sort is described in the next section.

The Open hand cursor is the default cursor in the world. It does NOT change when pointing to anything in the world. It only changes when it selects/grabs

something. The hotspot in the open hand cursor is the middle of the palm. The pointer arrow is the default cursor over the CP.

ART NOTES

The size of the Control panel objects are assumed to fit in a 45 x 45 pixel square. This assumes a fit within the trimmed down 100 pixel Control Panel that runs on the bottom of screen. These numbers are estimates and will be altered during Charles' layout of CP.

The Objects should appear with no shadows in CP.

The objects displayed in the UI will be a separate set of graphics tailored to fit the size of the UI CP space. (45 x 45 is estimate.)

Selecting Buy Mode and the BUY sort

Click on the BUY button. The Function sort is the default sort. Function icons display to the right of the mode buttons. The function default will be the upper left function icon. There will be no object catalog default selection.

Clicking on the BUY button again while in Buy mode switches the sort to the Room sort. The upper left room icon will be the default and again, there is no catalog object default.

NOTE: the Room sort is supposed to be hidden. It is not necessary for game playability and therefore does not deserve extra room on the interface. It is a surprise that the player can find on their own.

The room icons and function icons act as buttons to call up that room's specific objects. The original idea of using text for room and function sort has now been dropped and the icons Charles has designed are accepted. (Particularly since Tooltips are now implemented, the text label on the permanent UI is not needed.)

Room categories are Bedroom, Dining, Bathroom, Study, Kitchen, Miscellaneous, Family Room, Outdoor.

Functional categories are Seating, Surfaces, Appliances, Electronics, Plumbing, Decorative, Lighting, Miscellaneous.

Since Miscellaneous appears in both Room and Function, but have different objects in their catalog, a visual treatment has been devised. The … ellipsis with closed dots will be used for the Room sort. Open dot ellipsis will be used for Function sort.

When player leaves Buy Mode to visit Build or Live Mode, then returns to Buy Mode the last sort is displayed, and the last selected general mode button is highlighted (i.e. Seating would be highlighted, but not Green Chair from catalog.) Since the Info Panel closes with the selection of another mode, that Panel will never be displayed on return to Buy Mode.

Selecting a Room or Function

Rolling over the room icon (substitute "function" for "room" throughout – for the function description) will highlight the icon. Mouse down on the room icon will select the room and the icon will assume the "selected" color. A double row of objects appears to the right of the room icons with as many objects as will fit given the screen width. At the rightmost end of the row, there will be an arrow displayed only if there are more objects to be viewed. Mouse down on the arrow will bring up another two-row set of objects in the same layout or as much of a row as is needed. Objects do not scroll one at a time. Object sets are motored into catalog space (scroll left quickly) to help players remember on which "page" a particular object is found.

There will be an arrow on the left side to allow the player to get back to the previous set. The price of the object will appear as a hot label when the cursor rolls over the object; no object name (i.e. "Antique Mahogany Table") is displayed, only price. The price hot label may not obscure its object, but can obscure any other neighboring objects.

Selecting an Object to Buy

Let's please agree on some consistent terminology for mouse tracking.

Move: move the cursor without any buttons held down.

Click: Press and release the mouse button without moving, quickly. Click does NOT mean press and hold the button down, or press and move and release.

Press: Press the button down without releasing it. Can be followed by Release or Drag then Release.

Hold: Press and hold the button without moving. This is a poor user interface technique because it absolutely requires a certain time to pass, which is hard to judge and annoying to have to wait for, interrupting game flow.

Drag: move the cursor while holding down a button. Happens only between press and release. Not during a click, because a click that has movement is a press, drag, and release, not a click.

Release: Let go of the button, at the end of a drag (Press Move Release) or a click (Press Release).

Drag and Drop: A generic term referring to the direct manipulation user interface technique of picking an object up, moving it, and dropping it somewhere. It does not specify the actual mouse click sequence, or whether the button is held down while moving the object, so it can be implemented by either Click-Move-Click, or Press-Drag-Release, or both. It's unfortunately confusing that it overloads the meaning of the word "Drag", which has a specific meaning for mouse tracking.

To select an object to buy, click its graphic on the catalog area of the Control Panel. Object is selected on mouse down. There are two ways to move it into the world that will be supported:

Click to select and pick up, move-into-world, click to drop. An alternative to "click to drop" is "press to drop, drag around to rotate, then release." An alternative to pick up is "press and drag around to rotate, then release". Press, drag, release.

Press, drag, release is supported in Buy Mode <u>only</u> to move objects out of the CP. It does not work to move objects once they are in the world. Rotating an object in the World requires the use of press, drag, release therefore it cannot be used to move an object already in the world.

Once an object is selected, the cursor changes to a grabbed hand holding a smallest zoom size version of the object. As soon as the cursor+object moves into the world, the object in the cursor changes to match the zoom level of the world and becomes monochromatic (gray scale). There will be two versions of gray-scale to indicate whether an object is over a valid location and can be placed. Red monochrome indicates an invalid location while brighter gray-scale indicates a valid location. As soon as an object is placed, it becomes full color.

The interaction of dragging an object out of the buy panel, into the world, has a discontinuity at the edge of the control panel. Inside the control panel, the spec says that a small icon of the object follows the cursor, the small zoom sized object. This will be drawn into the 2d control panel clipped to the panel rectangle. When the cursor is in the world, the real object will be attached to the cursor, and it will move around across the surface of the floor in 3d. The problem is that when the 3d object in the world gets near the control panel (like it is when you first see it dragging out) it is clipped to underneath the control panel. When the cursor goes over the edge, first the top of the iconic object will be clipped to the control panel edge, then the bottom of the 3d object will be clipped to the other side of that edge, resulting in an ugly graphical discontinuity as we go between the 2d and the 3d worlds.

The current implementation does not attach the object to the cursor, so it does not have this problem – the object just appears in the world when the cursor enters it, and the control panel seems to be on top of the world view, and the object slides out from behind it, which makes more sense than the object kind of being on top of the control panel, and then the illusion being spoiled every time the cursor goes over the edge. The sell object interaction looks ok without

attaching an object icon to the cursor in the control panel, because a larger sized image of the object is popped into the panel in a static location, so it looks kind of like dragging it behind a magnifying glass that snaps into position. I think it will look really weird having an object attached to the cursor while it's in the control panel, even if we were able to eliminate the discontinuity at the edge.

If selected object is moved over View and Navigation controls, object disappears and turns to arrow cursor. As soon as arrow slides back to Mode or catalog area, selected object reappears.

Buying

To buy an object, place it in the world. This is the only way to buy an object -- selecting the object from Control Panel does NOT purchase the object. THE OBJECT IS BOUGHT WHEN IT IS SET DOWN. The budget is decreased by the price of the object when the object is placed. The object becomes full color when it is bought /placed in the world.

When an object is placed, ka-ching SFX plays, budget amount readout highlights displaying first the current budget amount in bold, then the new decreased amount in bold, then goes back to unhighlighted, unbolded state.

Spending Beyond your Means

You cannot place an object that you cannot afford. If the object costs more than is in the budget, the price in the hot label will appear in red and the object picture in the info panel will have a red border to indicate that the object can't be bought. In fact, player cannot select an object to place if funds are too low. The cursor will not change to a grab hand with object if funds are too low and "can't-do" sfx plays.

Buying Multiples of the Same Object

To buy more of the same object without having to go back to the CP and choose it, hold down the Shift key while placing the object. Another identical object will be attached to the cursor. New object appears on mouse up if shift key is held. (this operation does not interfere with Rotate because the new object comes with the mouse up!)

If bank account is too low to buy the additional object, player will be prevented from getting another object on cursor, and can't-do-that SFX plays. Open hand cursor displays (empty-handed!)

Returning Before Buying

The player can return an object before buying it. Here is the sequence of actions:

Select object from UI CP by clicking once, grab hand cursor displays on object. Move up into the World, and without placing object in World,

user can move the selected object back to any position over the CP to return (except over Navigation and View control where the arrow cursor is displayed). Click once and on mouse down object will be replaced (no dollar amount in bank account needs to change, since object is not bought until it is placed in World). It not necessary to put back exactly in it's "home' spot on the CP UI.

While the object is being moved around in World, its catalog CP equivalent retains its highlight until the object is placed, or the object is returned to the CP.

Slide up Info Panel

When player selects (with a mouse down and up) an object in the CP catalog, an info panel will slide up if the mouse remains over the catalog object for 1/2 second without moving (timing to be playtested.) This panel will display the price, and medium zoom level size of the object with a short (less than 50 words, two sentences or less) text string with hints on the motive or other benefits of this object. This text string will reveal only some of the benefits the object provides – it is not meant to give total object information, nor should it be too specific (will not say "this aquarium will give +5 environment points.") Some medium zoom objects may be too large to display on Object Info Panel. For these, the small zoom graphic will be used. The database will list which size object graphic to use in Info Panel.

The width of the Object Info Panel slides up above the catalog area of the CP objects.

Sliding over to adjacent object in catalog and clicking once on that object will replace the first batch of info on the Slide Up Info Panel with that second object's medium zoom size graphic and text.

As soon as cursor crosses over from the Control Panel into World, or over the Object Info Panel, the info panel will slide down. It will slide down it leaves the catalog subtools area.

Objects in the World UI - (for objects obtained in Buy and Build modes)

Note above: The following discussion does not take into account the fact that the object highlights immediately when you point at it, not when you pick it up. It repeatedly states that the object highlights when you pick it up, and unhighlights when you drop it, but makes no mention of the highlighting that presently goes on when you point at it. Does it get even brighter when you pick it up? That will be a problem because we're already making it as bright as possible and we don't have any more dynamic range, without darkening it for contrast, which would look horrible. So does the spec imply that we will

no longer highlight objects that you point at? I think that will be a real problem, since then you won't have any feedback about which object you're pointing at. This following section should be rewritten with the fact in mind that objects highlight and dehighlight as the cursor points at them, and we should figure out how they change graphically when the cursor points at them, when they're picked up, when they're moved to an invalid location, when they're dropped in a valid location, and when the cursor is no longer pointing at them.

Selecting

To select an object in the World, click on it with the open hand cursor. The selected object displays its bright lit selected state. The cursor becomes a grab hand holding the ??? See note above.. Now the object can be moved or rotated.

Note: there will be no Red X and no yellow grid as is currently implemented.

Is the rule that an object is gray when you're carrying it but have not bought it yet, and colored when you're carrying something that you already own? And red in either case when you're trying to place it somewhere you're not allowed.

What can be selected in Buy mode?

Objects that are bought in BUY mode can be selected.
The open hand cursor can also select BUILD mode objects. BUY mode objects can be sold. BUILD mode objects can be deleted, not sold. The hand tool works identically in both modes. The only difference is that in BUY mode the hand is the default cursor in the world and in BUILD mode it must be selected from the CP.

Can't select architectural windows and doors. Just trees, stairs, fireplaces, and columns.

Moving

An object can be moved as described:

In open hand mode, click on the object to select it, it ??? see note above to its bright lit selected state, the cursor changes from open hand to grab hand, then move it to the desired location and click to set down. The grab hand cursor now changes back to an open hand cursor and the object returns to ??? See note above.. If you move over an invalid location or try to set an object down in an invalid location, the object turns to its red tone state, you get the "boop" sound and it is not dropped, instead it keeps following the cursor as if you had not put it down. You can still rotate it with the usual gesture around in an invalid location.

There will be three versions of color for an object. Moving a selected object that you own around will cause the object on the cursor to change

its color state depending on whether it is over a valid location or not. Red tone state indicates an invalid location while bright lit selected state indicates a valid location. As soon as an object is placed in a valid location, and the grab hand cursor moves of the tile [good, see note above], it becomes the unselected color.

If the object is clicked to set down in an invalid location, a text string displayed next to the object appears with brief explanation of why object cannot be placed in that particular spot. SFX will play and this text string will display on mouse down. There will be a set of six (or so) (more) generic explanations for invalid placement. No: as you move the cursor, while holding down the mouse button, you rotate the object, and it may rotate through invalid locations. If you remove the error message as soon as the cursor moves, it will disappear before the user has a chance to read it. Just keep the error message up, following the cursor, for as long as the button is held down and the location is invalid. As the object rotates around from valid to invalid rotations, the text string will appear when it's invalid, follow the cursor until it's valid, and disappear. . This is the same type of text string that is used in Build mode that indicates why a particular architectural element cannot be placed.

Note: the CanPlace function used to determine whether an object is in a valid location has been beefed up to be able to return the most probable reason for an invalid location.

Rotating

Thanks to Don, we have a rotating scheme that should work more easily than previous designs.

Select object in the World, on mouse down the gripping hand cursor is displayed with four arrows around it pointing in the different grid directions an object could face [note: four arrows will always display, it's not smart enough to suppress arrows for invalid rotations], and the object is in bright lit selected state. While still holding mouse button down, move away from selected object and slide cursor around. The selected object will be pinned in its original location and rotate, following the cursor. Just the arrow in the direction you're facing the object displays next to the gripping hand cursor. On mouse up the rotated object is set down and moved off tile, as long as you are still pointing to it, it will still be highlighted and open hand cursor displays.

If the object does not fit into the rotation place, it will turn red tone state to display an invalid location.

Double clicking on an object does not rotate the object.

An object can be rotated using the < > keys. This also works while the object is being moved from the CP into the world before being bought.

Selling an Object

To get rid of any object that has been bought, the player must sell it. The longer the time between when the object is bought and sold, the higher the depreciation on it and the less the player can recoup of the original value. The depreciation schedule only takes place in Live Mode, and is calculated monthly, so it is possible for a player to buy an object, go to Live mode for less than a month, return to Buy mode, sell the object and get full value for it since its depreciation hadn't kicked in yet.

There are two ways to sell an object:

1. Select the object that has been placed in the World by clicking once. The object turns into its bright lit(selected) state. The grab hand appears over object. A new temporary panel appears over the room/function buttons in the CP that says "Sell this sofa for $380?" (maybe with additional info such as name and age?) Move the selected object to this temporary panel and click to release. On mouse up the object is sold. No confirmation dialog is displayed. Dollar amount is added to bank account display. Budget highlights momentarily with new amount.

2. Select the object that has been placed in the World by clicking once. The object turns into its bright lit (selected) state when you pointed to it, not when you clicked. The grab hand appears over object. A new temporary panel appears over the room/function buttons in the CP that says "Sell this sofa for $380?" Hit the Delete key on keyboard. No confirmation dialog is displayed. Dollar amount is added to bank account display. Budget highlights momentarily with new amount.

This will look very weird with the discontinuity at the edge. See discussion above. If the selected object is not moved to the temporary Sell button, but crosses over into the Navigation and View Controls area of the CP, the cursor changes to an arrow. When it crosses back into Sell button area or catalog area, cursor changes to selected item.

Build mode objects and elements are deleted, not sold, but they work exactly the same way with just a different message string (Delete this pool ladder?) in the panel.

MISC NOTES

This design eliminates the following permanent interface buttons: Function, Move, Sell and Info. Move, Sell and Info interface replacements are discussed in above section.

The player in 1024x768 mode will be able to see more columns of objects without having to use arrow buttons. If there are still more objects to be displayed, the right arrow will appear on the extended CP.

SFX - Buy Mode Control Panel

Sfx of "ka-ching" is played every time an object is bought. When selling object back by Delete key or by moving it back to CP, the addition of dollars back into account will play a different, money-related SFX. **Budget highlights momentarily with new amount. Font size could momentarily expand when you were refunded money, and momentarily shrink when you spent money! What does ka-ching sound like backwards?** ☺

Build mode - Architecture

Vocabulary:
<u>Architectural Elements</u> are all the structural building tools that cannot be moved, i.e. walls, floors, windows, doors, etc.   <u>Architectural Objects</u> are all the objects that can be picked up and moved (Fireplace, Staircase, Pool ladder, etc.)   <u>Architectural Tools</u> are the CP icons for all the Architectural Elements and Objects

Control Panel UI

The Build CP will include the common View Controls and Game Controls shared by all modes. The Architectural Tools listed in the table below will be icons. They will appear in a block containing two rows of six tools. When the player clicks on any of them (except Hand), the specific tool choices in that category will appear in the catalog area. For each tool selected, the cursor will change. The Arch Tools will have names displayed in Tooltips.

Architectural Tools on the Control Panel

Tool	Subtools	Cursor in world	Function	Shift + Cursor (Extended Function)
Terrain*	1. Hill with up arrow 2. Hill with down arrow 3. Hill w/ horizontal arrow	1. Hill with up arrow 2. Hill with down arrow 3. Hill with horizontal arrow	1. terrain up 2. dig 3. level terrain	Changes radius to smooth out or raise larger area
Water*	1. Water drop with up arrow 2. Water drop	1. Drop with up arrow 2. Drop with	1. raises water level (only works on	1. None 2. None 3. None

	with down arrow 3. Pool 4. Diving board 5. Pool ladder 6. Pool filter	down arrow 3. Pool tile in hand 4-6. Floating object in grab hand	water) 2. lowers water level 3. Drag out a pool 4-6. Place each object	4-6. Place multiple pool objects
Plants	5 trees 5 shrubs 4 flowers Lots more plants, flowers, shrubs, garden veggies. Lush greenery and colorful vegetation. Silly Seeds (giant carrots and radishes the size of a whole tile, that feed the family for a week, and imply the people are very small, dollhouse sized).	Floating selected plant in grab hand	Place plant	Place multiple plant objects
Floor*	X flooring styles	Arrow and floor tile	Place floor	Fill entire room with selected floor. (Constrained by fences, stops at door.)
Wall*	1. Wall - 1 2. Fence & - 7 Balustrade – 3 3. Columns - 4	1. Pole (hammer removed) with pointer arrow 2. Small pole for fence/balstrd. 3. Floating column in grab hand	1. Drag out a wall 2. Drag out fence/balstrd. 3. Place column Place multiple columns automatically? Implicit shift key multi object placement like doors and windows? Or not?	1. Drag out a room 2. None 3. None
Door	X door styles	Floating selected	Place door in a	None

			door	wall.	Ctrl deletes.
Need to show walls up where pointing, not cut away.					
Window Need to show walls up where pointing, not cut away.	8 window styles 3 shutters 3 curtains 1 window box	Floating selected window or object	Place window in a wall. All other window accessories tbd	None Ctrl deletes.	
Wallpaper*	wallpaper styles (8 inside, 8 outside)	Looks like door frame until hits wall – then displays pattern (Charles to tweak to be less confusing)	Place wallpaper on a wall.	Place wallpaper on all walls in the room.	
Stairs	8 stair styles	Floating selected stair in a grab hand	Place stair	Place multiple stair objects whatever	
Fireplace	X fireplace styles	Floating selected fireplace in a grab hand	Place fireplace	Place multiple fireplace objects whatever	
Roof	4 roof styles: gable, hipped, mansard, flat with 2 shingles styles each for 8 total.	None	Roof style applied automatically then pops house into outside view (roof).	None	
Hand (Move Objects)	None	Cursor changes to open hand.	To move objects in the world.	None	

*Have a running total. See Rollover Cost section below.

Please refer to the Object List on server for the latest numbers on object type. (i.e. " what is current decision on number of stair types?")

NOTE: the order of architectural tools in this table is not necessarily the order in which to display their graphic in the CP. Will will consult with Charles to finalize the order.

Note: French doors need special animation. Windows and doors need to work on diagonals walls.

Cursor Changes in Build Mode

The following tools/subtools DO NOT change to open hand cursor after use. They continue to have the subtool cursor until another subtool is selected.

Terrain
Water (except pool objects)
Floor
Wall (except for columns)
Door
Window (except for curtains, windowboxes, etc.)
Wallpaper
Column?

All other architectural objects including the exceptions noted above, plants, stairs, and fireplace allow player to place only one object at a time unless the shift key is used to place multiple.

Windows and Doors cannot be moved. They can be deleted using the Ctrl+Window or Door subtools or by placing another wall, door or window on top of the existing one or by deleting the entire wall or by replacing the wall.

Slide up Info Panel

In Build mode, the info text displayed on the slide up panel is on a tool-by-tool basis. Some of the Arch tool info will include how to use the tool, any CTL and Shift key functionality, or motive effects a tool or object might provide. Like the Object description, this Arch Info panel will be brief, 50 words or less.

Also, as in Buy mode, the Info panel will slide up if the mouse rests in the subtool area for 1 second. The mouse can rest on any subtool, not just the selected one. The Info panel will not slide up if the player has chosen a build object and immediately moved it into the World.

Rollover Cost and Running Totals

Each tool will immediately display a unit cost (but not the name of that catalog object) when rolled over in the catalog area of the control panel. Unit costs are expressed as single unit price ("$25 ea", not "$25 per square foot"). Additionally, some tools will display a running total as part of the cursor when they are being stretched out in the World. These are marked with an * in the Architectural Tools table above.

Undo and Redo

These two buttons need to be added to the left of the general Build tools. They will look similar to the undo/redo buttons in Word.
Charles needs to design when working on the entire layout.

Rotating Architectural Objects

As in Buy mode, Architectural Objects can be selected and rotated. There are a few exceptions:

- Pool ladder, diving board and filter (up to 3 tiles away)can only be placed on a pool edge tile, so won't be rotated. Pool objects will snap to their legal pool edge place.
- Plants and trees will be symmetrical, so rotate is not necessary.
  TBD on symmetrical plants - depends on RAM and time
  Boo! Ugly! Lots of lush vegetation that does not look symetrical. Symetrical orchards and tree groves will look horrible. Also, the apple tree is multi tile and as such can't go on a slope, since the trunk is split 4 ways on the middle of 4 tiles. If we offset the trunk so it was completely on one tile, the apple tree could be on a slope, since the trunk would not be split, but the folliage would be offset , but would not look bad because it's light and leafy anyway. We can't split the trunk but we can move it to get it out of the way, but I think we can split the folliage and have it drawn at 4 slightly different levels.

Deleting Architectural Objects

To delete some types of architectural object in the game, select the Hand tool from Arch tools CP, click on the object in the World you wish to delete to select it, then hit the Delete key or move the object down into the Sell/delete button on the CP. In Build Mode you can delete architectural objects as well as all objects bought in Buy mode. This works the same way as in Buy mode with the panel and message prompting player to delete an item. Architectural objects cannot be sold (there's a very tiny market in used building supplies!). They can only be deleted. A disaster could be that thieves rip the aluminum siding off of your house to recycle it!

Deleting Architectural Elements

To delete an architectural element, the tool used to create it must be used kind of (door and window interchangeable, wall deletes doors and windows, stairs deletes and adds floor tiles). These elements cannot be sold. The following list describes the tools and their deletion dependencies:

Deleting Walls

Ctrl+wall tool	**deletes a wall or fence section and any doors or windows in them**

- **Dependencies: Walls cannot be deleted if they have anything hanging on them or a toilet attached. Help message will display "cannot delete wall because there is an object attached to it." Uses same UI as invalid location.**

Deleting Doors

Ctrl+door tool	**deletes a door**

- **No dependencies. Can also delete by placing another door, window or wall on top of old one.**

Deleting Windows

Ctrl+window	**deletes a window**

- **No dependencies. Can also delete by placing another style door, another style window or wall on top of old one.**

Deleting Wallpaper

Ctrl+Wallpaper	**deletes a wallpaper section**
Ctrl+Shift+Wallpaper	**deletes a whole room of wallpaper**

- **No dependencies**

Note: Removes down to the drywall

Deleting Floor

Ctrl+Floor	**deletes a floor tile**
Ctrl+Shift+Floor	**deletes the floor in a room**

- **Dependencies: on first floor a floor tile can always be deleted down to the grass. On second floor a floor tile cannot be deleted if there is any object or architectural element on it. This does allow for hovering objects if all second floor tiles around the object-occupied floor are removed. When the second story floor is deleted, the second story grid is exposed.**

Deleting Water

Ctrl+Water tool	**inverts the selected water tool**

- **No dependencies**

Ctrl+Pool	**deletes entire pool**

- **No dependancies**

Deleting Terrain	
Ctrl+Terrain tool	inverts the selected terrain tool - has no effect on Level Terrain tool
Ctrl+Shift+Terrain	effects a larger area

- Dependencies: the terrain cannot be raised or lowered if there is anything built on it or if any object rests on it that requires a flat surface, i.e. not flamingo and single tile trees, with a very few exceptions. The acceptable terrain type for objects will be specified as an object attribute in the object database. (ex: Architectural Trees can live on raised terrain tiles.) can't modify terrain if there are floor tiles on it or any level above.

There will be locked tiles, e.g. roads, sidewalks, stop sign, mailbox. Also the player cannot mess with terrain outside of property.

Deleting staircase and fireplace	
Hand tool	deletes like all objects

All dependencies will have an error message that pops up to describe the error.

Roofing the House

After the player selects a roof type and shingle set, the program will automatically roof any areas of the house that have a supporting structure. The roof does not have to be over a "room" but can appear over a single wall. It is possible to have multi-level roofs. If a supporting wall is removed, the roof disappears. Roofs have no impact on game play and they are free. They are visible in only two ways:
- when the player selects Roof view on the CP
- In Live mode, when the player views the house from the outside because a selected character has gone outside. (Player must use dynamic cutaway to see/click anything inside the house to send character back inside)

Note: if a selected character has gone outside and behind the house so that he is obscured from the player, the cutaway wall function should cut away all walls in the house to reveal the character.

There is a differentiation between an indoor and an outdoor room. Only indoor rooms will be roofed and outdoor balconies will be able to remain unroofed.

The algorithm which calculates the roof will run
- when a player chooses the Roof view in the View controls or

- the player leaves either Buy or Build mode.

 In the second case, the values will be stored for later use.

If a player selects roof view and has not selected a roof and shingle type, the default will be the first choice in row one.

In roof view, the cutaway and no-wall views are inactive. Only full walls are seen. When player returns to other house level view, game reverts walls to previous selection.

Second Stories

It is possible to build a second story on a house but a house can have no more than two levels plus a roof. In order to build a second story, a first story is necessary.

To build a second story over a first, click on the Level 2 icon in the view control. A grid will be drawn over the first floor over all areas that can support a second level. The grid will extend out one tile over the existing supporting structures although it is possible to build out up to two tiles from an existing support if the first tile out is floored. A supporting structure is a wall or column.

Any architectural elements that currently "cannot be placed outside" is the distinction we're making, cannot be placed on the second floor, i.e. trees, plants, pool, etc. We might want a separate bit that means "cannot be placed above ground" as well as the "cannot be placed outside" bit we currently have. Stairways cannot be placed on the second floor either. You should be able to move them around from upstairs, though, and switch up and down stairs while you're moving them, and they should (unlike other objects) stay on the same levels but let you move them from a different handle.

Deleting walls and columns on the first floor after building a second floor is allowed. If the supporting structure is removed, the second story will float. This will definitely create some very strange structures floating in air but it is felt that the alternative would require too much logic and animation.

Special Architectural Element/Object Rules

Pool

The pool must be placed on flat terrain. The pool placement tool allows it to be stretched just like a floor. The pool can have a ladder and diving board. These pool elements must be placed on a pool edge tile. The pool filter can be placed up to three tiles away from the edge of the pool. The pool is only one water depth and it cannot be changed with the water tool.

Art note: The pool will be constructed of x number of edge tiles and 4 kinds of center tiles that can display up to four levels of scumminess.

People get into the pool via the diving board and get out via the ladder. Without the right pool accessories, it is possible not to be able to get in the pool or not be able to get out.

The pool filter cleans pool scum. Scum is randomly distributed over the center pool tiles and the edge tiles may need a scum version in order to blend in.

Stairs

There are 8 types of stairs. They require 4 - 7 tiles (depending on stair type) on the first floor + one for the first floor clear spot in front of the staircase, and 1 floor tile on the second floor for a landing. The stairs are open style-not a closed area beneath the stairs-but it is not possible to place anything below the stairs even though the area looks free. Also, the stairs erase the floor tiles above them (to leave room for the ascending heads of characters). If there are objects on the floor that would be "erased", the stairs will not be able to be placed. The Floor Fill function will have to recognize that the area above the stairs is illegal and not fill it in. Stairs cannot be placed on the second floor. Stairs delete tiles for the person to poke through when they walk up, and add a tile on the landing if it's not present (in the currently selected tile style, unless there is a bug, which there might be).

Fireplace

Needs more detail***

Water

Water will have a simple hydrological model that will allow it to flow downhill, Will to design. Terra-forming tools will affect water. The running water model will reflect modifications of the adjacent terrain.

Miscellaneous Architecture Issues

- Will advocates supporting the intellimouse input device in this way for Architecture Floor selection mode: each " turn" of the intellimouse wheel will put up an Arch level. Starting on the first floor, click one will put up walls on the first floor, next click will put on floor of second floor, then second floor walls, then roof. Reversing the wheel will take off each of those layers.

- **Jim advocates using the Intellimouse in this way: click the wheel to switch among function. Choices would be multistory select, zoom level, rotate view, rotate object. You can also press and release the wheel as well as turning it. Pressing the wheel could pop up a pie menu of several functions to bind turning the wheel to, including zoom, view rotation, speed, level, object rotation, selected person, etc., etc. (to make 8). All this is still TBD.**

- **No shearing of terrain, i.e. the edge vertices of adjacent terrain tiles are always the same altitude and there is a maximum grade of 45 degrees using the terrain tool.**

- There will be 255 levels of terrain and water.

Options Mode

Saving the Game

It will be necessary to carefully design the save routine so that there is a safe return from any mid-air aborted action. For example: if an object has been selected and is being moved around on the cursor, it needs to be returned from whence it came before the game can be saved. All actions need to be canceled in the safest, most logical way before saving the game. It should be much more convenient that it currently is to save the game. Also, save is EXTREMELY slow, even in the optimized build, and this could prove to be a very bad problem, since saving is so crucial. If the save is interrupted (more likely the longer it takes) the whole file could be trashed. We really need to clean up our horrid mac resource code, and make sure it's not byte swapping everything to hell and back, writing it out in tiny spoonfulls, frantically randomly accessing all over the disk, etc.

Quit

Need a choice to go to Windows or to neighborhood.

Note: Need to be able to quit even if a modal dialog or pie menu is up (by using the "x" or Alt-F4). So the quit dialog may have to cancel whatever other modal dialog is up, or properly unwind the stack.

Options

Sfx on/off
Sound level
Music on/off
Graphics detail
      Turn off highlight grid on terrain (now possible by hitting "O" while in terrain tool)
Tutorial mode

The Storyline

A unifying story for The Sims is being sought on several fronts;
- Will and Jim story
- Pet Fly productions as game design and story collaborators
- Ron Cobb as occasional, drop-in consultant

Neighborhood

Art

- **Houses will be actual representation of player-built house; the artist will create thumbnail-sized set of architectural objects for programmatically built neighborhood scene.**

Design

- **Success/failure of game is reflected graphically in nbhd screen**, but not yet designed. Also not yet designed, but will be included in game are: saved games display differently than unplayed houses, how to evict families, or to place a homeless family, explore/preview modes.

Other game elements

Disasters

- Fire – do objects have a combustible score? Do objects need a burnt, charred graphic state?

- Other disasters: Blackout, others to be designed

Events

Events such as parties, etc. will be included in game, not yet designed.

Sound design

SFX

- Objects and their animations in World will use .wav files.
- People, Architecture and Objects Control Panels will have some shared SFX for unified UI, and some specific SFX.

Some gonzo sounds exist. We should be using our own sound resource scheme, instead of the gonzo stuff. Pie menu clicks and other ui sounds are

using the limited gonzo sound scheme that has the file names hard wired (not from those weird resource files). Get rid of them and use file names in code instead, it's so much simpler!

Ideas from Don:
Need to work out a good set of sound effects for pie menus, including the view control pie menu. Different sound effects for selecting different items would be really great. Pitch could indicate up and down, pan could indicate left and right. Rotation sounds could pan from left to right or right to left. Zooming in sound could get louder and/or lower, zooming out sound could get softer and/or higher. Speed control slider could play a sound indicating the speed, so you could hear the notches.

Music
- Freshness will be considered for music track.
- Sample rate 22 Khz, stereo, 16bit

Voice
- 22Khz, 16 bit, mono

  See People Voice-over section in Live Mode

Open technical Questions

Will game run in both windowed mode and full screen? Or one mode exclusively? Both I hope! Remember multiple screens in windows 98. Test on multiple screen configurations. What happens? Is there a way to choose? Is debugging easy?

Localization

When localized version are produced, the Buy Build Live CP icons text labels will not be translated; the icons will be read without text on the CP.

All CP Live Mode subpanels, and associated Info panels have text that will need translation.

All Tooltips will be translated.

The Basket of Ideas

Here are some features that have been discussed and if there is time in development of version 1.0 of the Sims, we will revisit them. If not, this list can be considered for version 2.0.

1. Add 3rd floor to design. Pretty straightforward. Keep the "door" open for this in the code.
2. Use real speech (English) for character.
3. More Roof types.