

Level Design in a Day

Jim Brown: Senior Designer - Epic Games

Joel Burgess: Senior Designer - Bethesda Softworks

Seth Marinello: Designer - Electronic Arts

Coray Seifert: Executive Producer - 2Dawn Games

Elisabetta Silli: Game Designer - Naughty Dog

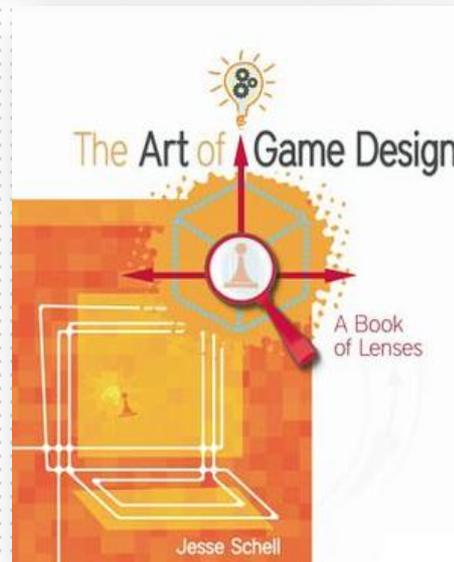
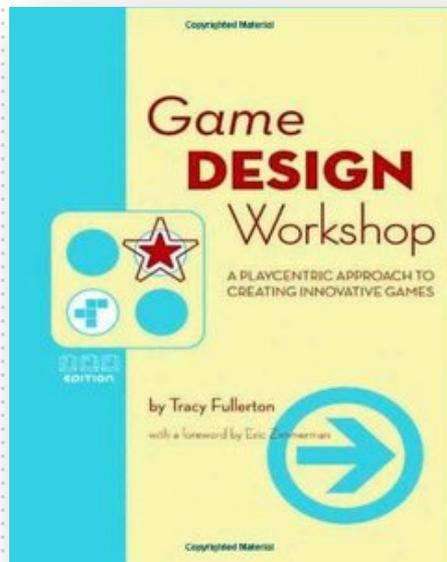
Matthias Worch: Lead Mission Designer - 2K Games





Focal Press
Taylor & Francis Group

GDC
14



GAME DEVELOPERS CONFERENCE

SAN FRANCISCO, CA
MARCH 17-21, 2014
EXPO DATES: MARCH 19-21

2014

Who is it, precious?

- Students?
- Teachers/Professors?
- Testers?
- Programmers?
- Producers?
- Writers?
- Game Designers?
- Level Designers?

WHO DO YOU WORK FOR?

- Big Scary Publishers?
- Big Scary Media Companies?
- Indies?
- Academia?
- Other?
- Unemployed?

Hang out here often?

- Just getting started?
- At least 1 year?
- At least 2 years?
- At least 5 years?
- At least 10 years?
- At least 15 years?
- At least 20 years? <-- Serious business

So, how was the commute?

- Under 2 hours travel to GDC?
- At least 4 hours travel to GDC?
- At least 6 hours travel to GDC?
- At least 10 hours travel to GDC?
- At least ?!?! hours travel to GDC?

Tweet at me bro

Questions, Comments, Random Musings:

#LDinaDay

or

www.facebook.com/groups/308354239212854

10:00

Introductions

INTRODUCTIONS

10:00 – 10:10

Coray Seifert

Executive Producer

2Dawn Games

10:00**Introductions****10:10****The Blank Page**

A SERIES OF FIRST STEPS – OVERCOMING THE DIGITAL BLANK PAGE

10:10 – 11:00

Seth Marinello

Technical Designer

Electronic Arts

10:00**Introductions****10:10****The Blank Page****11:00****Break****BREAK****11:00 – 10:15**

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim

HOW WE USED ITERATIVE LEVEL DESIGN TO SHIP SKYRIM AND FALLOUT 3

11:15 – 12:15

Joel Burgess

Senior Designer

Bethesda Softworks

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim
12:15	Lunch/Mock Interviews

LUNCH & MOCK INTERVIEWS

12:15 – 1:45

Coray Seifert

Executive Producer

2Dawn Games

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim
12:15	Lunch/Mock Interviews
1:45	LD Analytics

THE IMPORTANCE OF EVERYTHING: ANALYTICS OF MAP DESIGN

1:45 – 2:45

Jim Brown

Design Lead

Epic Games

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim
12:15	Lunch/Mock Interviews
1:45	LD Analytics
2:45	COFFEE

COFFEE

2:45 – 3:00

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim
12:15	Lunch/Mock Interviews
1:45	LD Analytics
2:45	COFFEE
3:00	Last of Us Shadows

THE LAST OF US: CASTING SHADOWS

3:00 – 4:00

Elisabetta Silli
Game Designer
Naughty Dog

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim
12:15	Lunch/Mock Interviews
1:45	LD Analytics
2:45	COFFEE
3:00	Last of Us Shadows
4:00	MOAR COFEE

MOAR COFFEE

4:00 – 4:30

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim
12:15	Lunch/Mock Interviews
1:45	LD Analytics
2:45	COFFEE
3:00	Last of Us Shadows
4:00	MOAR COFEE
4:30	Meaningful Choice

DECISIONS THAT MATTER – MEANINGFUL CHOICE IN GAME AND LEVEL DESIGN

4:30 – 5:30

Matthias Worch

Design Director

2K Games

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim
12:15	Lunch/Mock Interviews
1:45	LD Analytics
2:45	COFFEE
3:00	Last of Us Shadows
4:00	MOAR COFEE
4:30	Meaningful Choice
6:00	To the Bar!

**BEER BEER BEER
BEER...**

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim
12:15	Lunch/Mock Interviews
1:45	LD Analytics
2:45	COFFEE
3:00	Last of Us Shadows
4:00	MOAR COFEE
4:30	Meaningful Choice
6:00	To the Bar!

SILENCE THY PHONES

**FILL OUT YON
COMMENT CARDS**

**ASK YE QUESTIONS
INTO THE MIC**

10:00	Introductions
10:10	The Blank Page
11:00	Break
11:15	Iterative Skyrim
12:15	Lunch/Mock Interviews
1:45	LD Analytics
2:45	COFFEE
3:00	Last of Us Shadows
4:00	MOAR COFEE
4:30	Meaningful Choice
6:00	To the Bar!

Questions, Comments,
Random Musings:

#LDinaDay
or

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A Series of First Steps

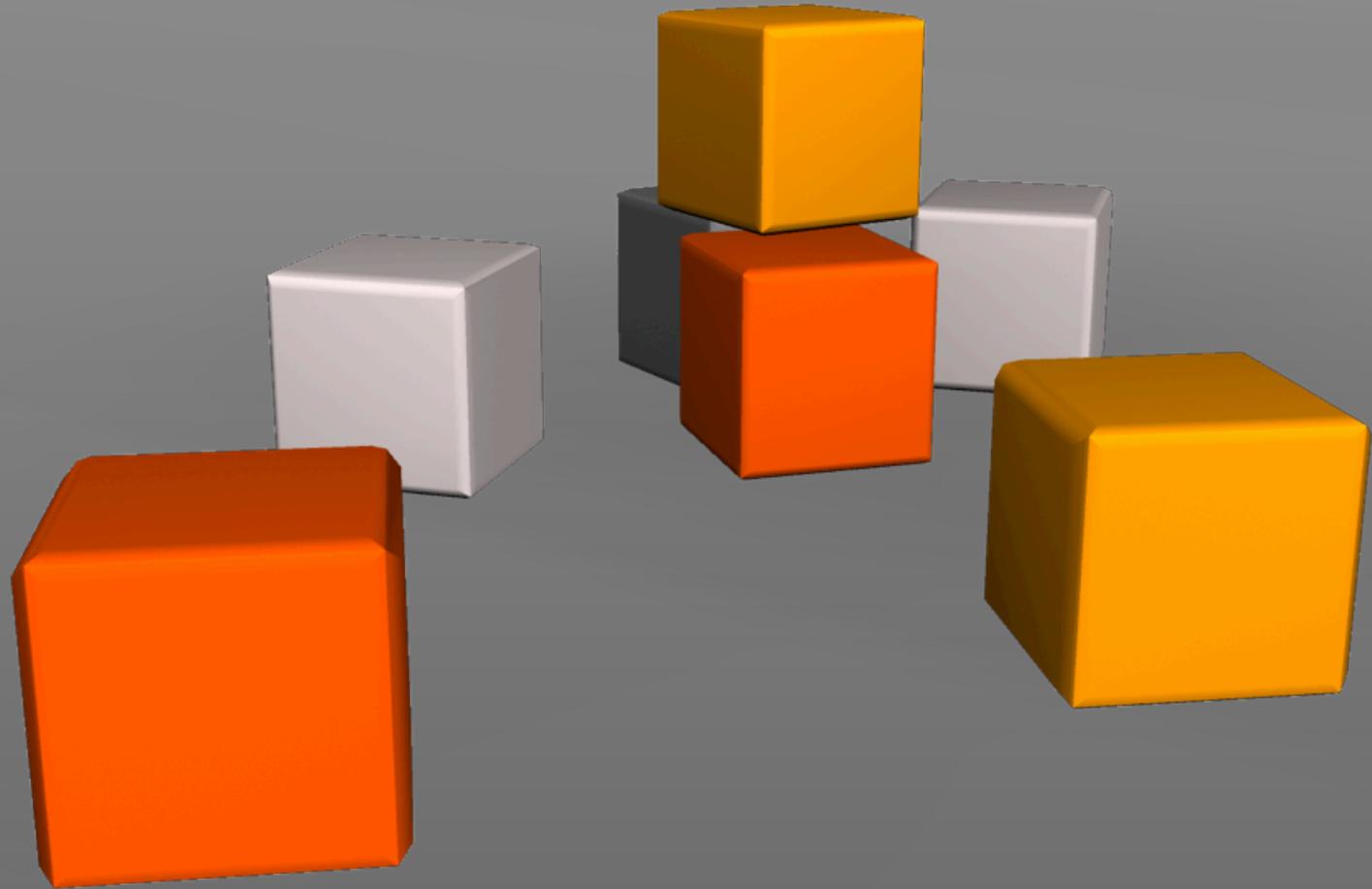
Seth Marinello

GDC 2014

Developing a Level Structure

1. Start with script, block out fixed story points.
2. Find your Dominant Feature
3. Create an objective flow around these 2 elements, adding in additional steps for major activities
4. Block out the level around these objective points and add streaming/combat space as required.

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STEP 1: DEFINE REQUIREMENTS

Determine Constraint

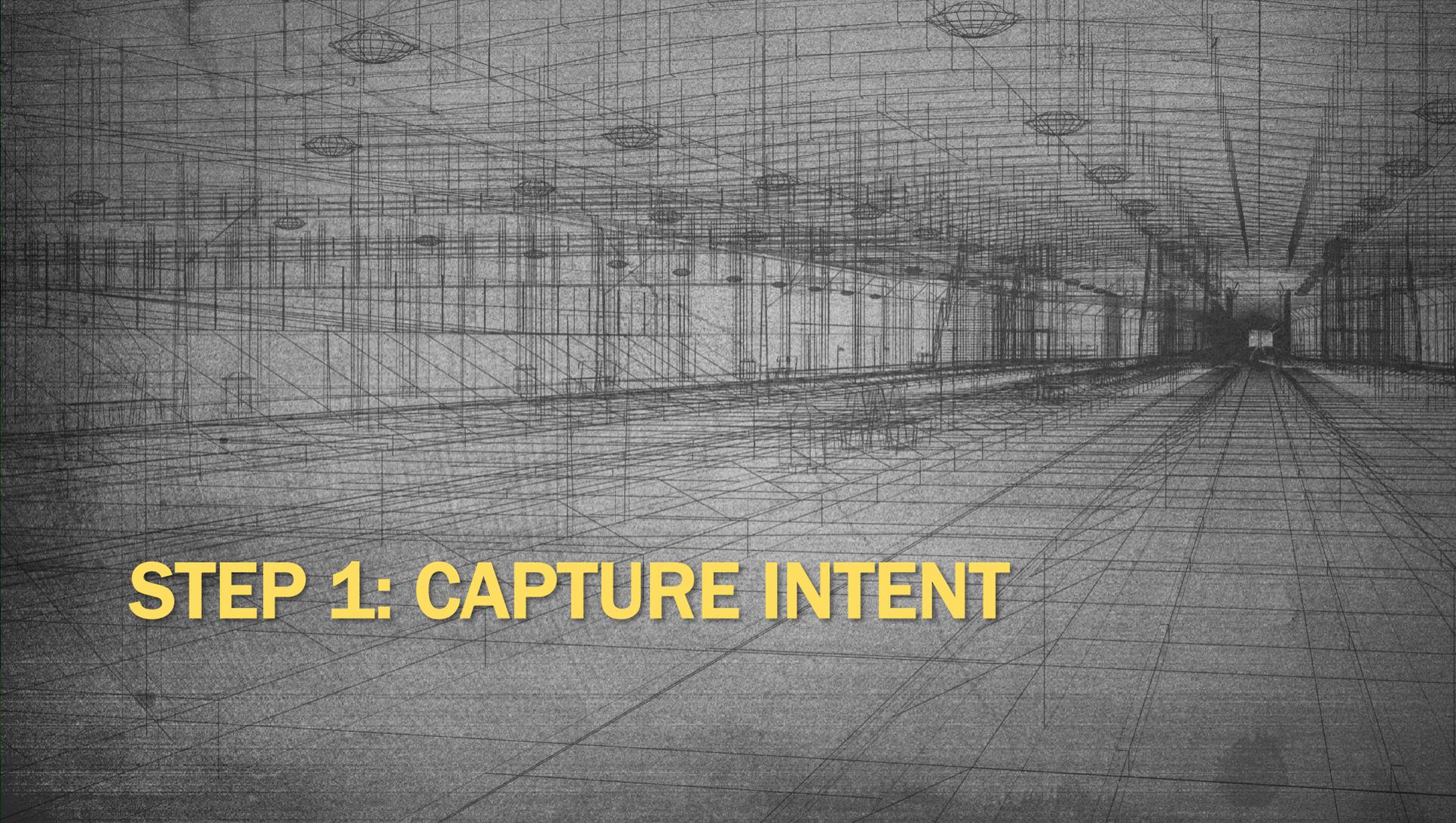
- What determines the scope of the content?
 - Target length
 - Narrative
 - Number of Players
 - Mechanic Concept

Requirements & Guidelines

- Make sure the required elements are clearly defined so you can create a complete design

Requirements

- Identify:
 - Vent locations
 - Guardians, landmines, corruption
 - Custom gameplay sequences in geo sensitive areas
 - Wall-walking areas
 - Store, Bench and Kiosk locations
- Place:
 - Containers, lockers in and working
 - Store in and working
 - Upgrade bench in and working
 - Save Kiosks placed
 - Stasis and air stations in and working
 - 4-6 lockboxes placed per level



STEP 1: CAPTURE INTENT

Capture Intent

- Capturing the Design of a Level
 - Concept
 - Walkthrough
 - Blockworld
- This is all one deliverable
 - THE DESIGN!

Concept

- “this is the level”
- What is the central element of the level?
- What does it say about the world?

“Awaken the sleeping ship”



Brainstorm

- Throw ideas on a wall, bring some friends
- Gather a big pile of reference

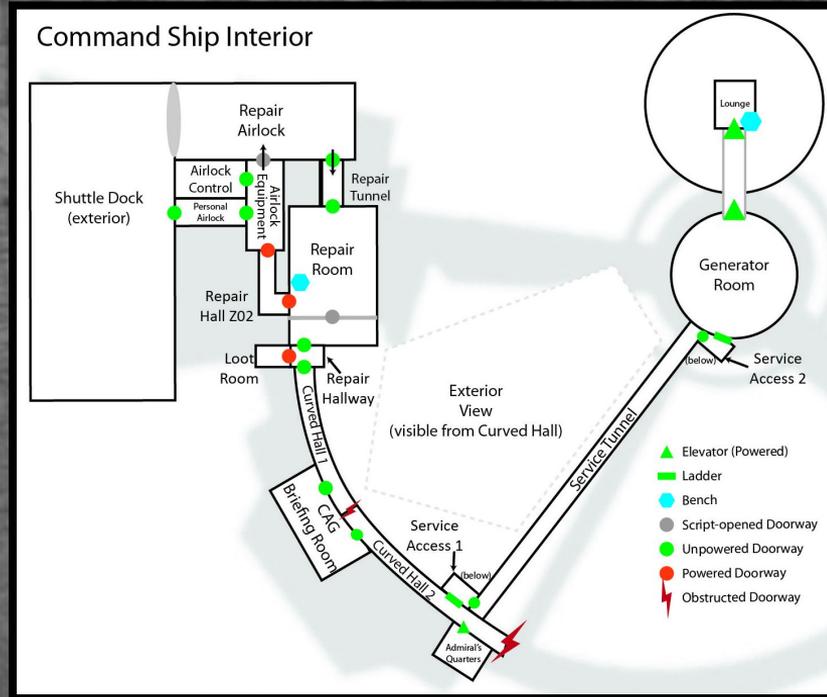


Walkthrough

- **Scope**
 - (what mechanics, how much content, unique features etc)
- **Major Objectives**
 - (How does the game fit into the overall arc of the game?)
- **Major Beats**
 - (What key moments do you want to highlight in this level?)

Top Down Map

- Capture the flow of the level



Story Summary

Color Script

chapter



Key Image



the flotilla ships



eudora ship



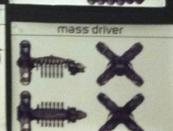
research ship



re-entry ship



military ship



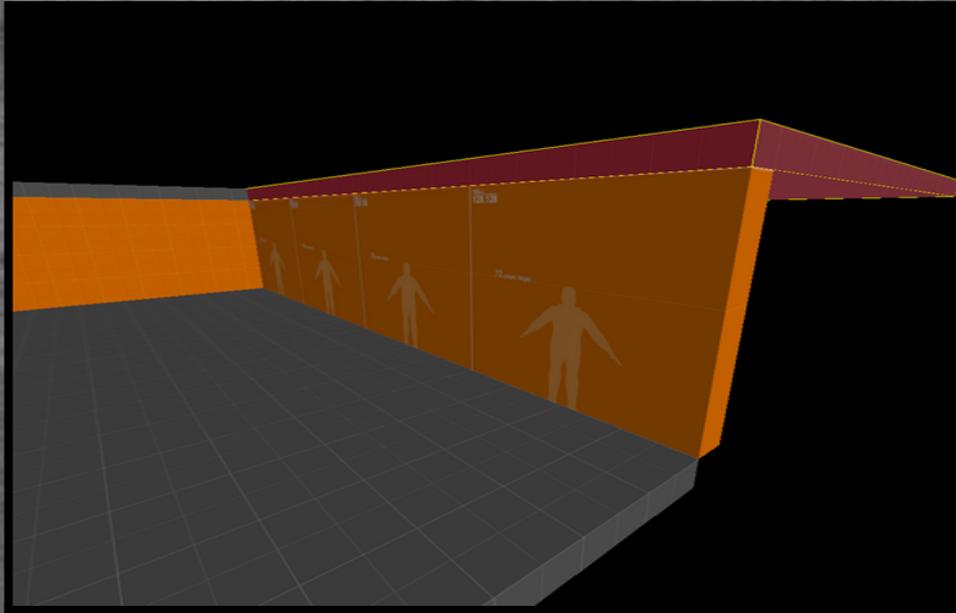
mass driver

Top Down Map

- *“Almost every time I've given a concept to a designer I've been amazed at how different the blockworld ends up from what I had in my head... Typically that sort of surprise is a delight, but after that stages the surprises almost completely go away... my image of the level aligns almost perfectly with what the designer's is once the blockworld is complete.”*

– Patrick Lipo

Blockworld



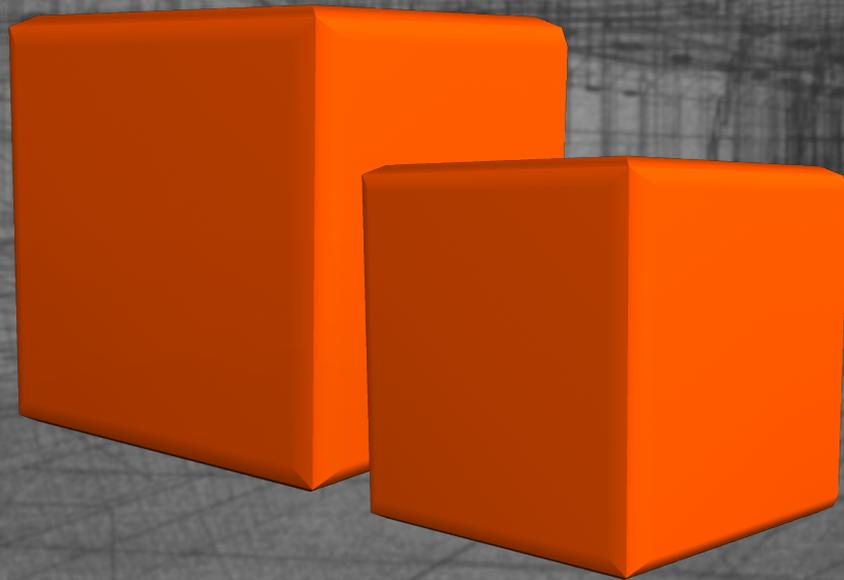
Blockworld

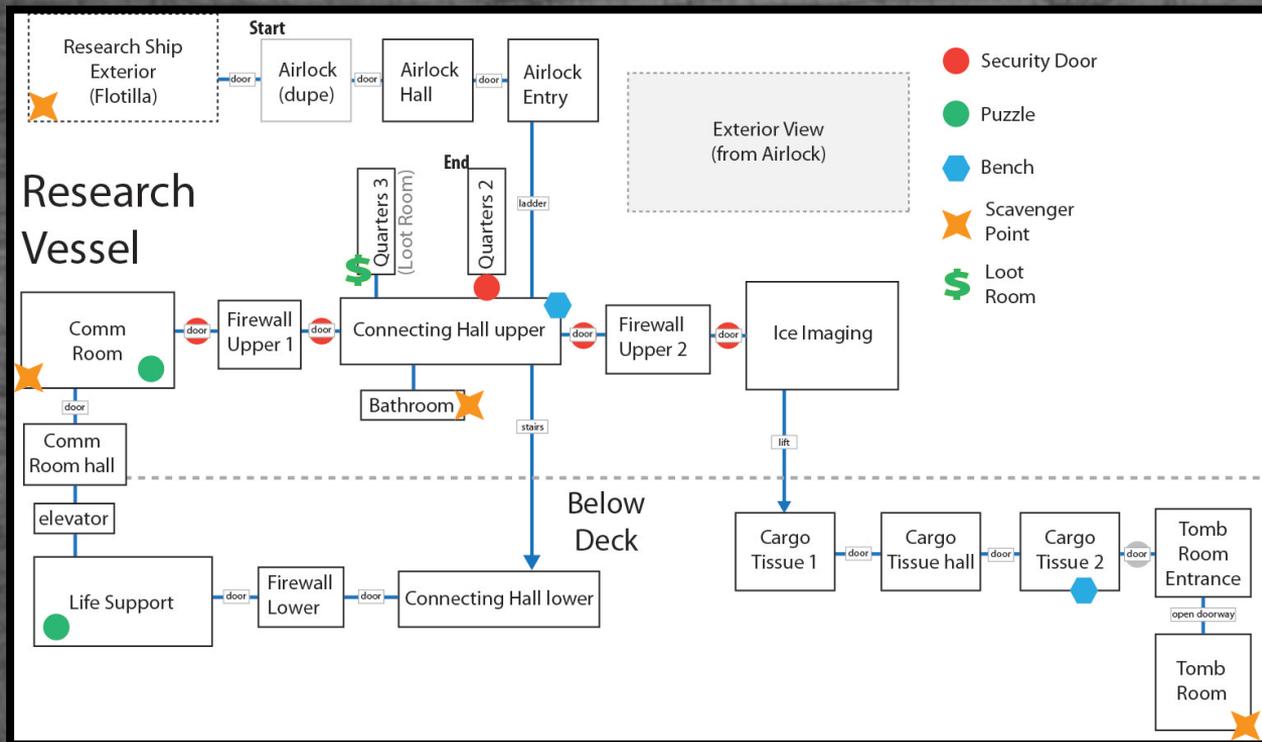
- Capture the look and feel of the space
- How do the beats connect?
 - This is almost as important as identifying the beats themselves.



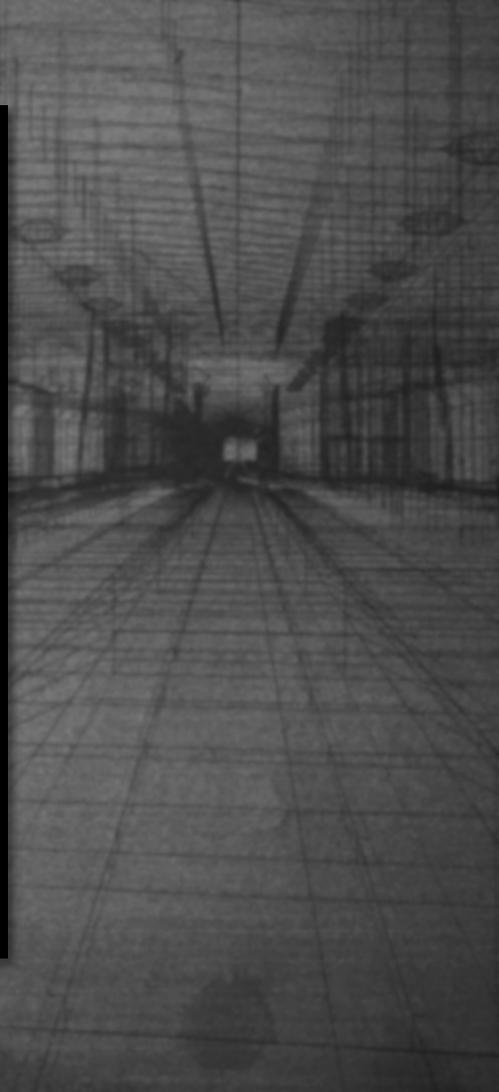
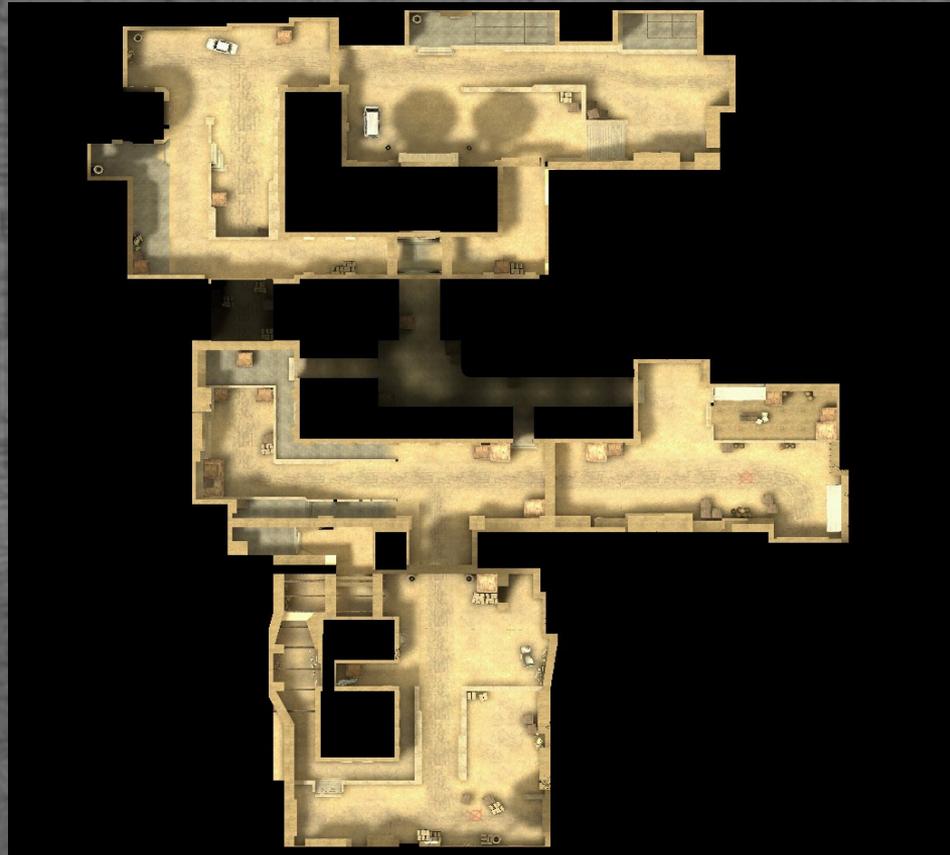
STEP 1: MAKE SOME BOXES

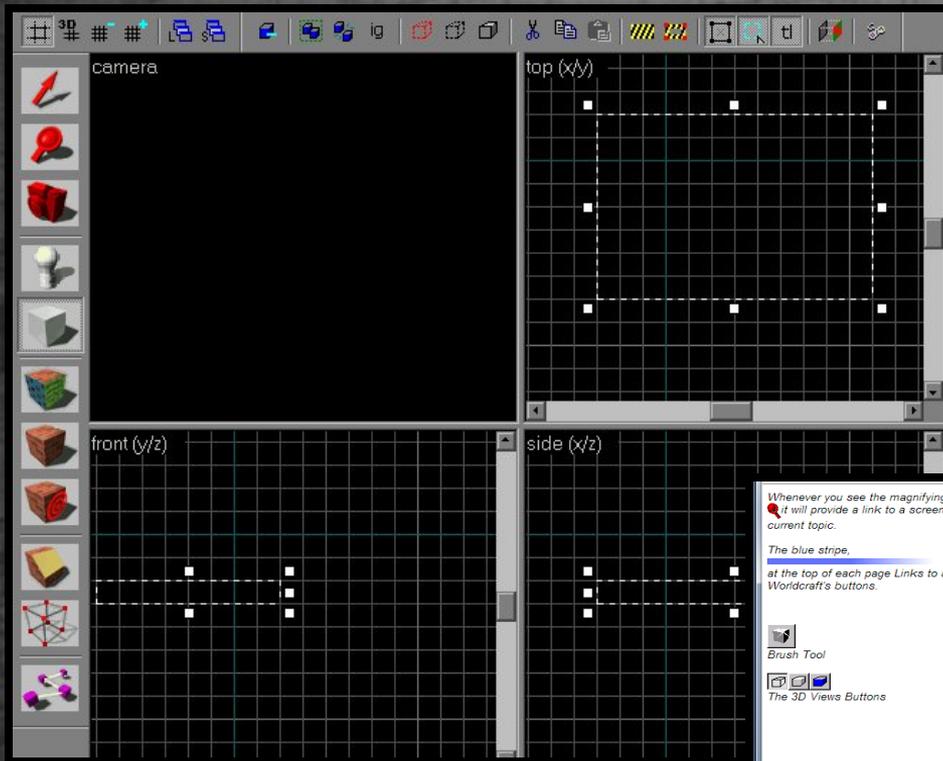
Boxes











Whenever you see the magnifying glass symbol  it will provide a link to a screen shot of the current topic.

[The blue stripe](#),
at the top of each page Links to a tour of Worldcraft's buttons.



Brush Tool



The 3D Views Buttons



The Select Tool



The Zoom Tool

Many of the actions or operations in Worldcraft can be accomplished with Quick Keys .



The Grid Control

Getting Started

Okay, let's start building our own first map. First, load up Worldcraft and pick [File => New] from the menus or hit [CTRL]+[N]. You will then get the standard 4 views used by most commercial 3D design programs. Clockwise from top-left are: 3D, Top, Side and Front . Along the top and side of the screen you'll see rows of buttons. Don't worry about understanding all the buttons just now. We'll go over most of them later in the tutorial, but if you forget as you go, the [blue stripe](#) near the top of every page of the tutorial is a link to a description of the Interface. You'll also notice the grids in the 2D views. Each square is, by default, 64 X 64 units. By comparison the player is 64 X 24 units.

Creating a Brush

This is where we start actually making a room. Some people either figure this out right away or else this is one of the most confusing things they'll ever do. I'm going to go about this slowly, step by step. Select the *brush tool* from the tool bar. Click and drag to make a box in the TOP window about 10 squares X 10 squares . When you make the brush in the top view it will automatically make it 1 square thick in the front and side views. Drag the box in either the front or side view along six squares or so . Once the brush is the size you want hit [ENTER] to create it. A block will appear in the 3D view. This is what will eventually become the new room. Click in the 3D view then hold down [CTRL] and one of the arrow keys. The block will spin so you can see what it looks like. Also, try using different 3D views, the polygon and textured 3D preview other than the default wire frame .

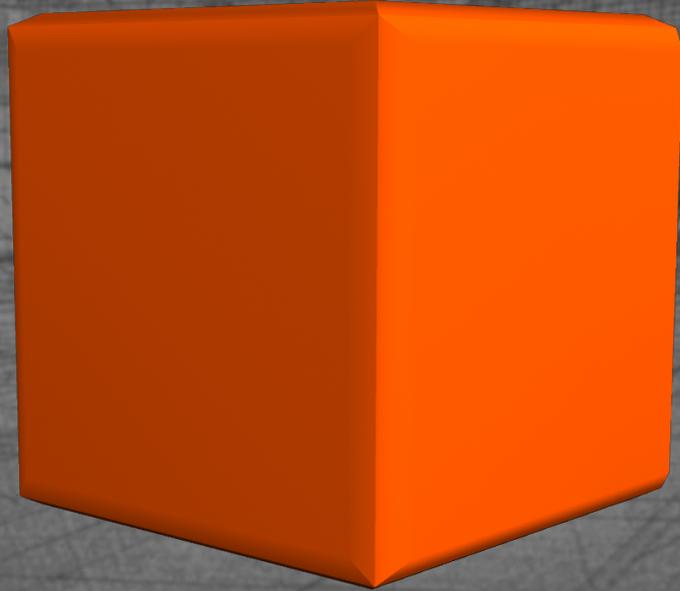
Making a room

To make the brush we've created into a room you'll need to hollow it out. To do that, switch to 3D polygonal, or 3D textured view, click on the *selection tool* and then click on the cube in the 3D view. The cube should turn red in the 3D view, and a selection box will appear around the cube in the 2D views. Then select the menu [Tools => Make Hollow] or type [CTRL]+[H]. Pick the default thickness of 32 . The result will be that the cube is divided into 6 new brushes. One for each wall, then the roof and the floor. You now have a room you can start adding things too.

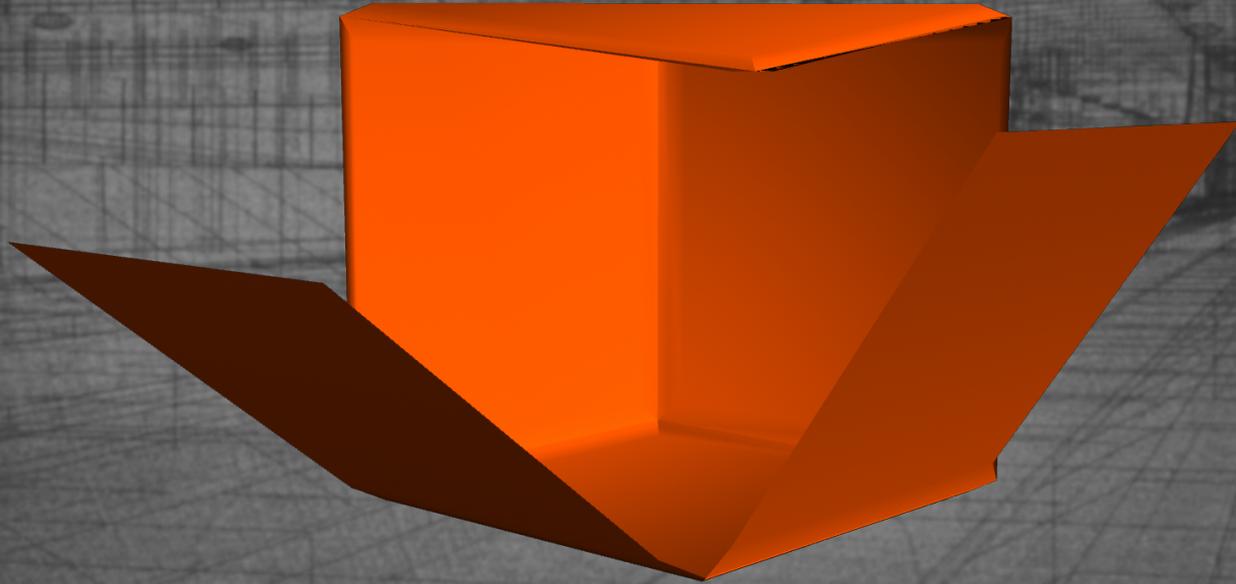
Moving in the different views

Getting around in the different 2D views is pretty easy. Anytime you press the [space-bar] while the cursor is over a 2D window, the cursor will turn into a hand. When you see the hand, left-clicking and dragging the mouse will move the contents of the 2D window you are over. If you have "nudge" turned off in the 2D options, you can use the arrow keys to move whichever 2D window the cursor is over. Zoom is pretty simple too, select the *zoom tool* and hold the cursor over any of the 2D windows, then left click the mouse to zoom in, and right click to zoom out. Also, you can use [D] and [C], and the numeric keypad's [+] and [-] keys to zoom whichever 2D window the cursor is over, without having to switch to zoom mode. [D] and [C] will also zoom the 3D view. All of the normal number keys will also zoom any 2D window the mouse is over to preset amounts, making it quick to zoom in and then back. Grid size is important, for best results, work with a grid size which is the same as most of the textures, such as 32, or 64. This will make aligning textures a little easier, because you won't have to scale everything to fit your brushes. Of course, not every texture will be these sizes, so you will have to turn the grid size from 32 to 64, or vice versa, if that's what you

Limits



Limits





DEBUG MONITOR:

Zombies Killed: 14
Headshots: 12
Murders: 0
Bandits Killed: 0
Blood: 10050
Zombies: 500
Unsaved: true (42s)
Humanity: -174
FreeTarget: false
Name: elakti



1-4-D-1 (Sam): "how do i fill water bottle?"
1-4-C-1 (Dmit): "is a well or lake?"
1-4-D-1 (Sam): "no more ocean?"
1-2-B-1 (Boss Bossman): "or see"

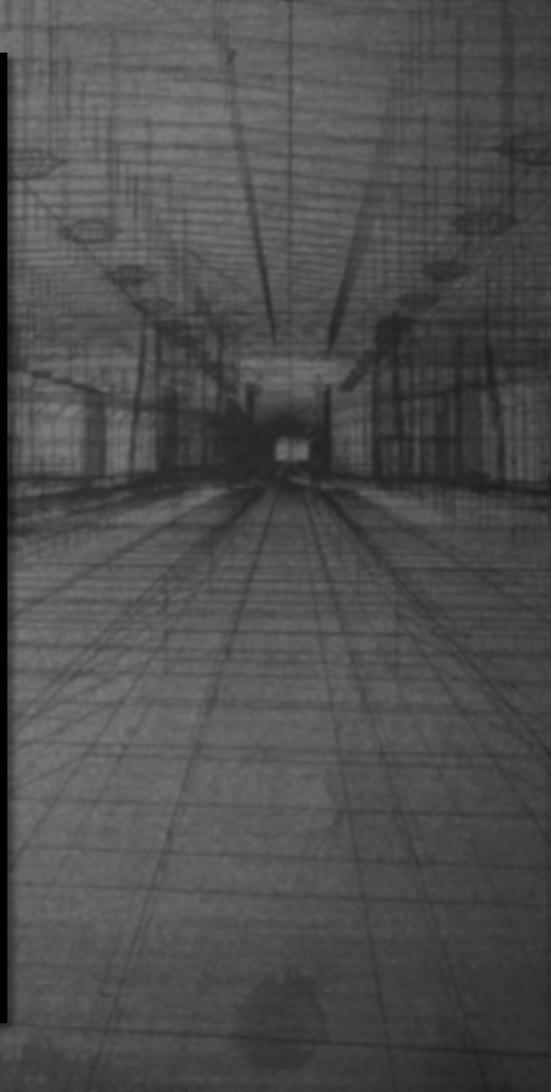
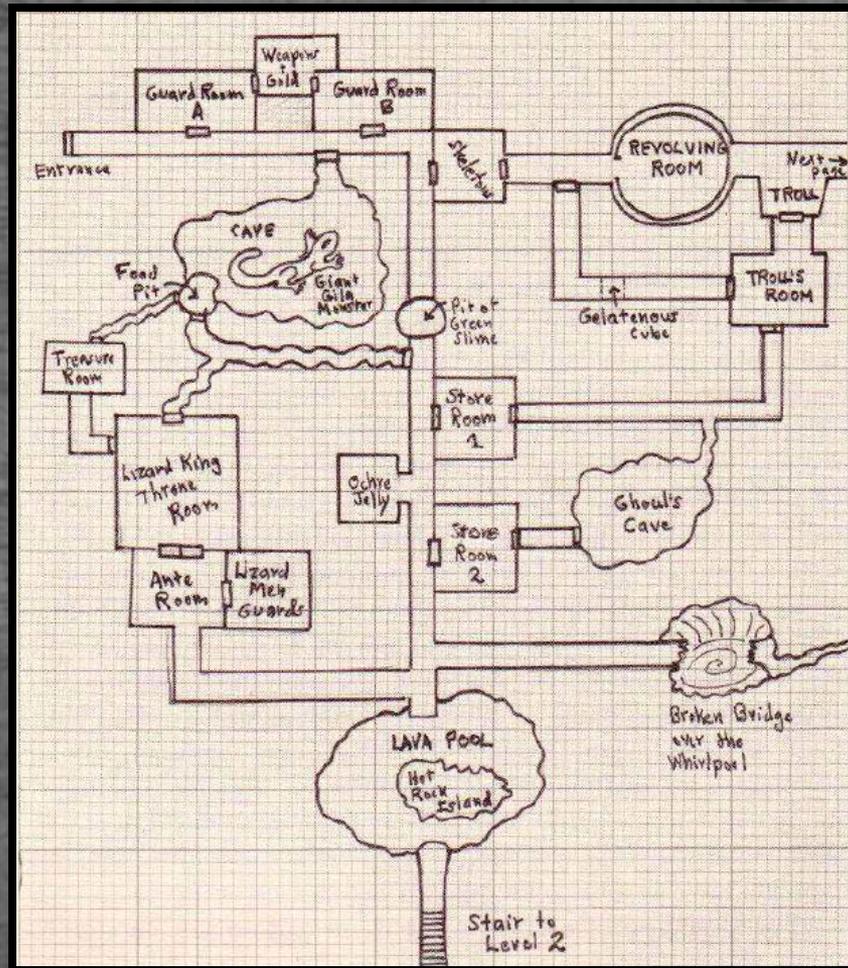


Suction-cup
Action!



MENU





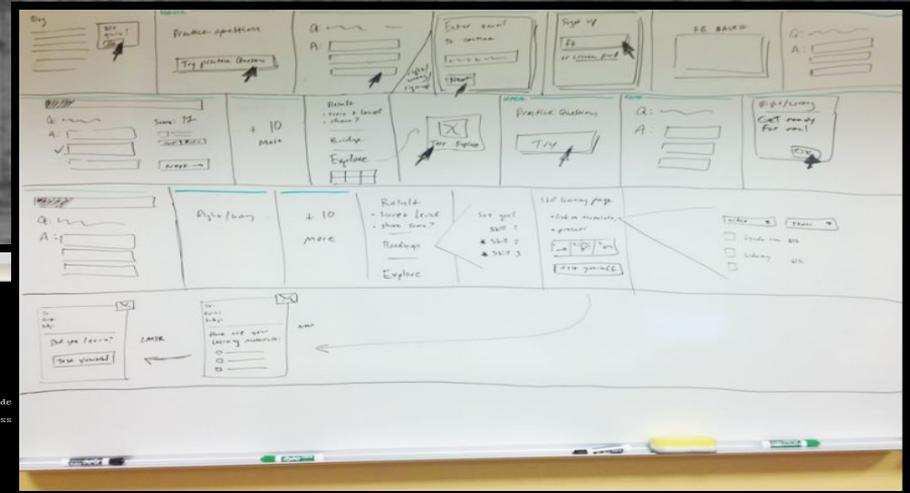
- *“Whiteboxing is a technique that has arisen from the popularity of games that require 3D worlds...we need to establish that we're talking about a very, very specific type of game.”*

– Wright Bagwell



STEP 1: GET A NEW STRATEGY

Looking to other disciplines



```
2006-03-31T09:37:50.145+0200: Initializing JMS Listener adapter.
2006-03-31T09:37:50.149+0200: Setting up JMS: local.transaction=true ackMode=1
2006-03-31T09:37:50.154+0200: Setting up JMS: user=guest password=secret length=5>>
2006-03-31T09:37:50.160+0200: Setting up JMS: destinationType=QUEUE comFactoryName=myselFactory de
saugSelector=null
2006-03-31T09:37:50.210+0200: Connection factory JNDI lookup returned an object of type com.sun.mesa
2006-03-31T09:37:50.375+0200: JMS connection and consumer successfully created.
2006-03-31T09:37:50.376+0200: Connection JMS Info
PROVIDER NAME = Sun Java(TM) System Message Queue
PROVIDER VERSION = 3.0
PROVIDER MAJOR = 3
PROVIDER MINOR = 6
JMS VERSION = 1.1
JMS NAME = 1
JMS NUMBR = 1
CLIENT ID = null
2006-03-31T09:37:50.377+0200: Done initializing JMS Listener adapter.
2006-03-31T09:37:50.378+0200: Solומר: loop 0
2006-03-31T09:37:50.402+0200: Started, paused until Fri Mar 31 09:37:50 CEST 2006
2006-03-31T09:37:50.406+0200: Received new JMS Message into JMS Listener resource adapter.
2006-03-31T09:37:50.420+0200:
Begin Message details
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Msg REPLY_TO = null
JMSMessageID = ID:B-192.168.1.4(ba:ab:b6:3d:d3:23)-32B00-114379669210
JMSType = null
JMSTimestamp = 114379669210
JMSCorrelationID = null
JMSDestinationName = 2
JMSRedelivered = false
JMSExpiration = 0
JMSPriority = 4
JMSGroupID = null
JMSCorrelation = null
End Message details
2006-03-31T09:37:50.454+0200: Message mapping failed : com.sun.messaging.jmx.util.MessageException: Error with incoming message data, resou
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2006-03-31T09:37:50.429+0200: Polling
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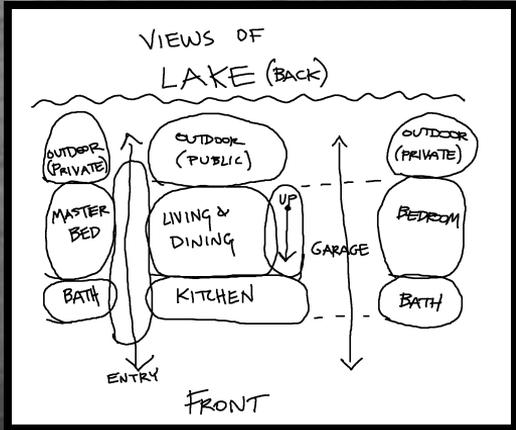
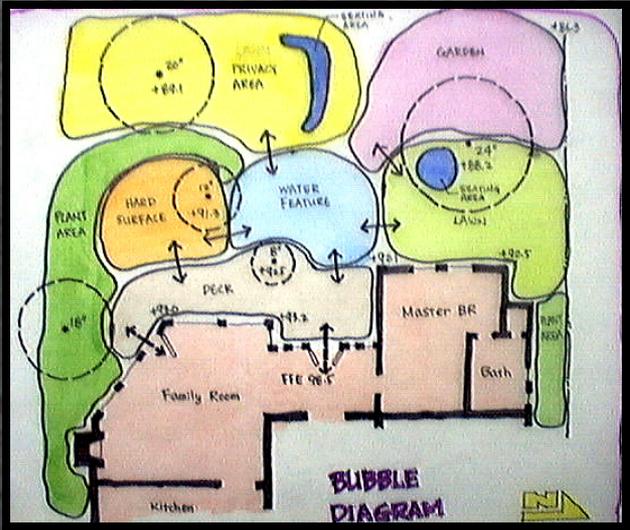
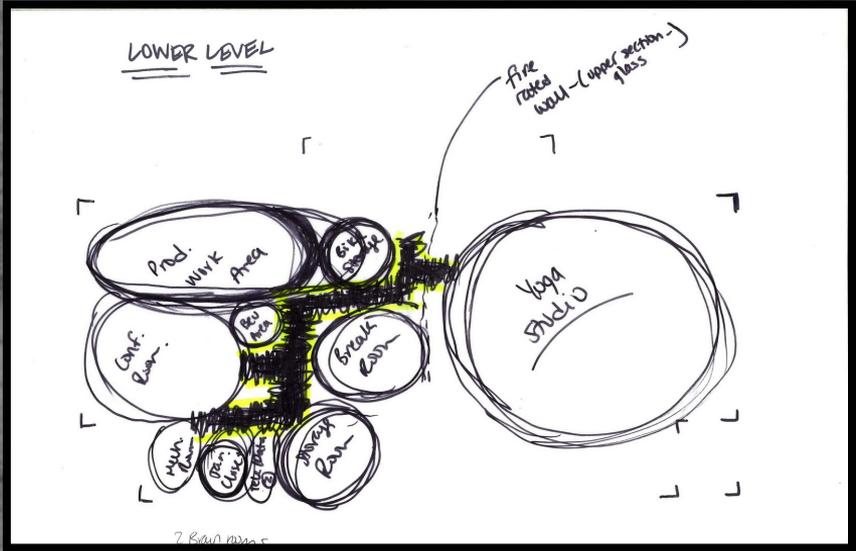
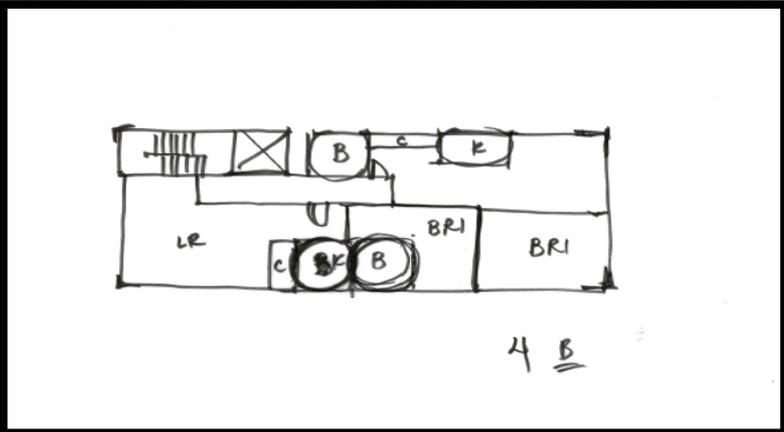
Architecture



Bubble Diagrams

- *“I usually make a few different bubble diagrams, considering different options on where to put different spaces in relation to each other, like what if the kitchen was a square shape instead of a long rectangle? Would this make more room for a long table and party space when the person moves in?”*

– Robin Liu

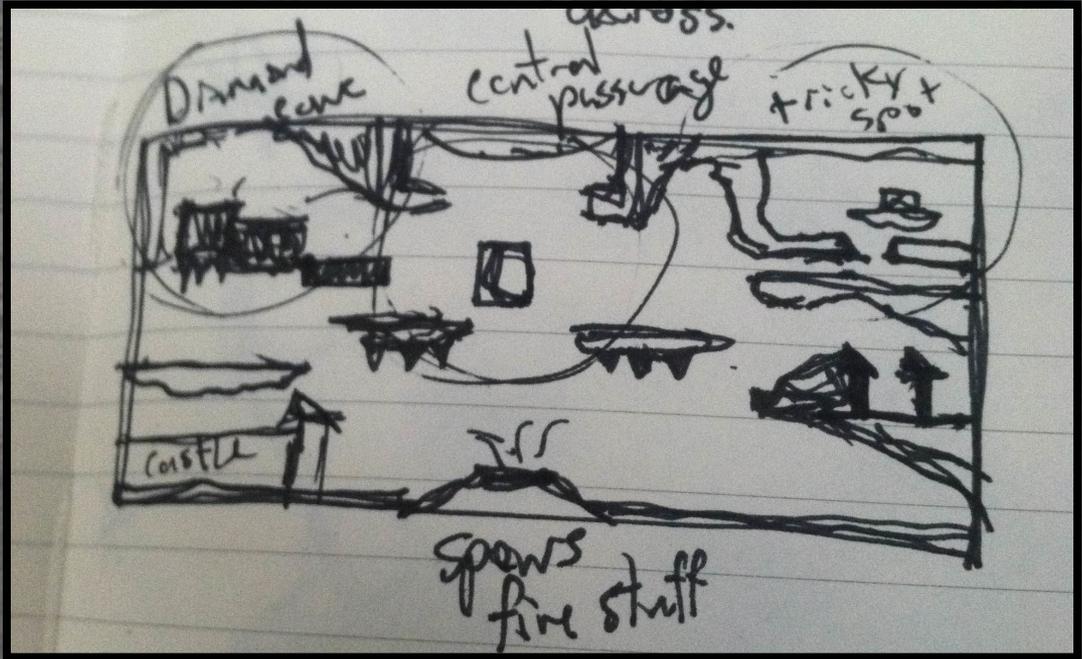




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Balance Complexity

- Make sure each area has a purpose
- The player should have options, but not too many
- Complex MP maps make them hard to learn
- SP maps confusing.

- Always design a thing by considering it in its next larger context - a chair in a room, a room in a house, a house in an environment, an environment in a city plan.”

Eero Saarinen (1910-1961)

Design

- Concept
- Walkthrough
- Blockworld

- This is all one deliverable
 - THE DESIGN!



STEP 1: THROW EVERYTHING AWAY

Sprue





Default	deadspace_r.xex	kverts	dcalls	ms	00:00	7.50	15.00
Depth	290	169	2.21				3.23
Lights/Shadows	200	121	4.03				5.30
VFX	11	82	1.13				13.98
APT	0	0	0.01				0.01
Opaque Static	98	53	1.32				3.07
Opaque Dynamic	190	113	0.56				1.86
Overlay	0	2	0.11				3.94
Alpha	0	0	0.00				1.89
Frame	810	625	10.24				20.28
Render Setup	CPU		9.48				19.42
VFX Sim	CPU		0.77				4.05
APT Sim	CPU		0.02				0.08
Havok World	CPU		0.99				4.24
Characters	CPU		4.15				12.62
Occluder test	CPU		0.23				0.29
Total Sim	CPU		10.92				36.48



Default	deadspace_r.xex	kverts	dcalls	ms	00.00	2.50	15.00
Depth		179	122	1.88			2.05
Lights/Shadows		4	26	3.55			4.35
VFX		0	52	0.49			0.52
APT		0	0	0.01			0.01
Opaque Static		3	31	1.18			1.22
Opaque Dynamic		176	91	0.78			1.34
Overlay		0	14	0.02			0.02
Alpha		0	0	0.00			0.00
Frame		400	416	8.77			11.21
Render Setup		CPU		7.65			
VFX Sim		CPU		0.70			3.10
APT Sim		CPU		0.02			0.03
Havok World		CPU		0.93			24.11
Characters		CPU		3.06			6.79
Occluder test		CPU		0.11			0.13
Total Sim		CPU		9.10			29.77

Transroom02 Retreat Off
ch11 transition room02 checkpoint game set



Foothold



Foothold





STEP 2: ITERATE



Contact

SETH@ALTEREDDREAMS.NET

@SETHMARINELLO