

Level Design 101



Screenshot from Alice: Madness Returns

What is a level?

- The implementation of the rules and structure of a game, that allows for progression in space, time and/or difficulty.
- An environment or container for game play.
- Manifestations of Leveling:
 - Increased difficulty or challenge.
 - New virtual spaces.
 - New narrative or story progression.
 - PC and/or NPC skill, resources increase etc.



Why levels?



- Limitations of the system: breaking up a game allows for shorter loading times.
- A sense of progression and/or achievement.
- A more manageable portion of the game to design, develop and balance.



Level design a culmination of arts

- Good level design requires the knowledge and application of all the skill sets in game development.
- It also requires clear and specific design parameters and goals.

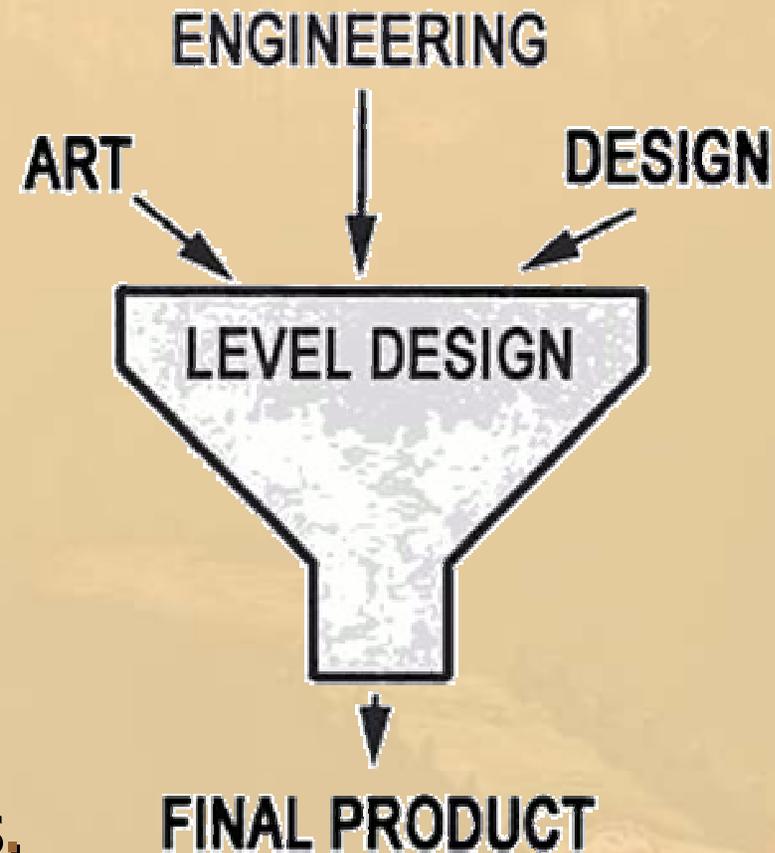
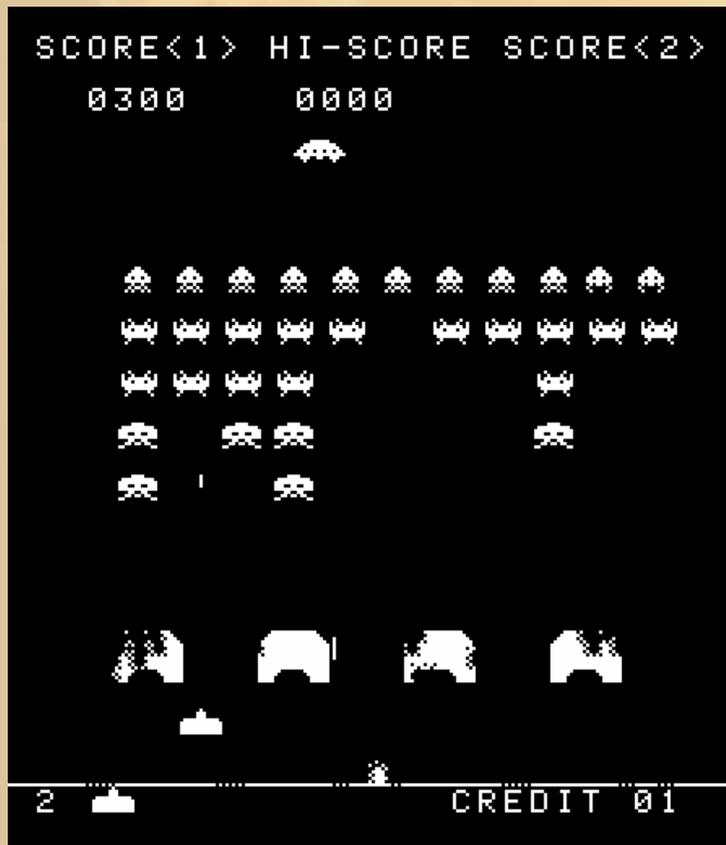


Image from *Game level design*, Edward Byrne

Increased difficulty or challenge



- In some way all leveling systems contain some element of increasing difficulty.
- In the early arcade style games levels or stages were focused purely on difficulty, though the increasing the enemies speed, increase of obstacles or other factors.
- As the level space never really changed the development of difficulty stages were vital for player engagement.

Increased difficulty or challenge

- Modern games still use this technique utilising:
 - Increased enemy statistics: intelligence, dexterity, health, damage etc.
 - New enemy types.
 - Boss battles.
 - More complex and difficult terrain.
 - More complex tools.
 - Changing modes of play.



New spaces

- One of the most common incarnations of levels in today's games are new spaces or environments.
- These spaces are often tied in with increased difficulty, new enemies or terrain challenges.
- Discussed further later...



Narrative or story progression

- In RPG or story based games, stages are often set by area but also by the progression of the game's main storyline.
- New discoveries in the story line give experience and open up new areas.



PC and/or NPC skill or resources increase

- This is most common in RPG and RTS games, however FPS often use it in terms of the availability of new equipment and weapon.



- These increases also most often come in tandem with enemy skill increases or other difficulty increases.

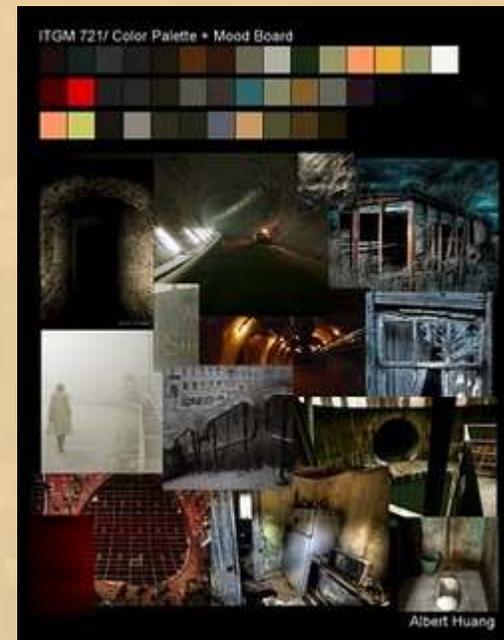
Creating Game Spaces: Maps



Screenshot from Alice: Madness Returns

Planning

- Idea.
- Mood board: graphic style, colour palette, lighting, building styles and architecture etc.
- Map sketches and plan: Top down and side on.
- Map goal.
- Remember: Maps are in 3D, top down in great but good Maps generally aren't on a single plane, you need a number of different perspective views to get a good idea of the shape of the level.



Map Creation Guidelines

■ GAMETYPE:

- Single Player or Multiplayer? Game Type: DM, Capture the Flag, Assassination, Warfare, Hostage Rescue etc? What game is this map for?

■ STORY:

- Story behind your map. Why are the players there? Why is the place/environment there? Write the history of your environment. What happened to the place before the player entered the environment? What is this map about? Every player at every map/level has a goal/desire/object and it is either fulfilled or denied/blocked/obstacle. Do you have this? Does it rise? This is especially important in Single Player maps.

■ GAMEPLAY:

- What is the objective of your map? Do you have a top down game play sketch? Will there be any puzzles? If so, what are they? How would the level play out? Gameplay wise? How would you want the player to play through your map? Visualize this. What experiences do you want the player to walk away with from your map? How big is the map? Who is your audience? Who is your player? What is your Demographic? How will you make the map memorable? Do you have basic top down view and few location concept sketches?

■ VISUALS:

- Is the map original? What is everyone else doing? Don't make another "everyone" map. Be original and different. How will you achieve this? Reference. Have you collected all the inspiration and research? What is this going to look like (proof of visual development). What is the time of day of the map? Season? Color? Reference. Feel and Atmosphere. Describe what you want to portray in terms of the feel of the map and atmosphere. Will exploration be rewarded? If so what will it be and in what way? How will you direct the player? What methods will you use? Color? Noise and Sound? Guide the player without telling them where to go. Smart design. What are you going to concentrate on? What do you want to learn when you are finished? What aspect of design, gameplay, fun, crazy, atmosphere? What is the visual trademark of your level? How will the players remember your map? Are the environments/locations too generic? How does their design strengthen the story? Custom content? Textures, Models etc. If so, what are they.

[http://www.worldofleveldesign.com/categories/level design tutorials/map creation guidelines.php](http://www.worldofleveldesign.com/categories/level%20design%20tutorials/map%20creation%20guidelines.php)

Map Creation Guidelines

- There is another category that I would add, Design specifications, these need to be defined early particularly if you are working with multiple designers on multiple maps it defines things like:
 - Map scale: standard corridor, doorway, ledge and crawlspace height, standard walkway width and narrow walkway width etc.
 - Map optimisation: does the game require low poly versions of objects or does the engine deal with render distance reducing visible polys automatically, or will you use distance fog.
 - Static mesh poly count.
 - Map poly count.

Blocking out

- Building the map's simple form.
- Lots of play/run through tests.
 - Is the map fun?
 - Is the map dynamic enough?
 - Does the map have varied heights?
 - Does the map for fill the necessary goal(s)?
- This is the time to test and polish a maps form before too much work has been done on the aesthetics.



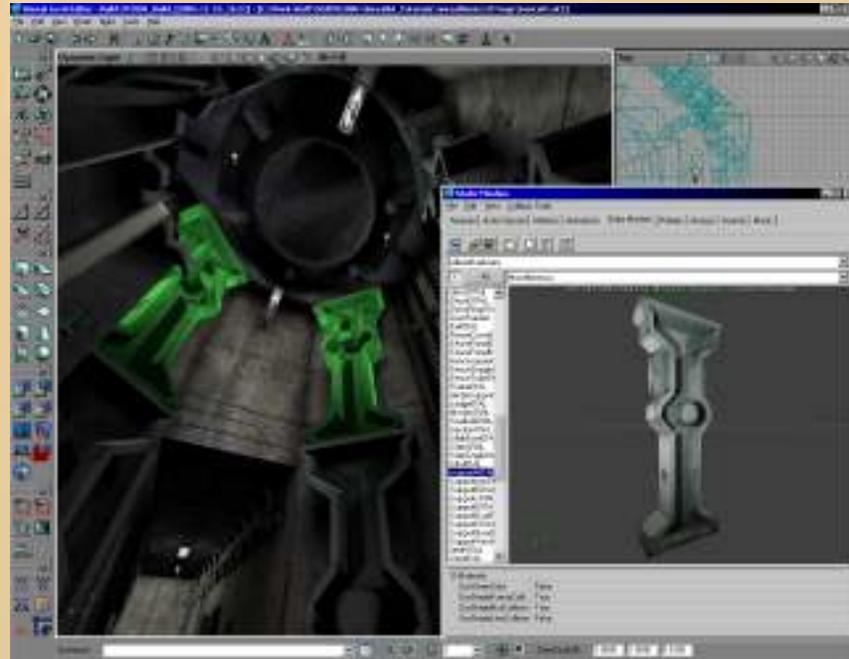
Texturing

- Apply textures.
- Do the textures fit and develop the mood and themes of the map?
- Do they require bump mapping? Or other shaders?



Static meshes

- Static meshes are more complex forms of game geometry usually the decoration.
- Things like, crates, pillars, rails, windows, bridges, stairways any fancy or decorative architecture.
- They are usually modeled in a 3D modeling package like Maya then imported into the game environment, subsequently there must be a clear design guide so that the textures, style and scale all match with that of the map.



Interactive elements

- Usually made from static meshes, these include doors, lifts, gates, crates, barrels, chests etc. anything that the player can interact with.
- If they are animated all animations must be mapped or keyed.
- If they have switches or triggers these must be put in place and tested.

Lighting

- Good lighting is vital to developing mood.
- Start with exterior light, if necessary, then interior.
- Make sure lighting fits the scene not only in placement but also in animation and colour, if you need flicking torch light, make sure you make the light warm and flickering.



Sound

- Sound effects for interactive elements, weapons, running, walking, picking up items etc.
- Ambient/Environmental Sounds.
- Voice acting.
- Music.



Particle effects

- Mist, fire, rain etc.
- Too many animated particle effects can often be a drag on the processor, however some like distance fog can help with reducing the number of visible polys rendered (optimisation).
- In map particle effects need to be stylistically consistent with any weapon or character particle effects.



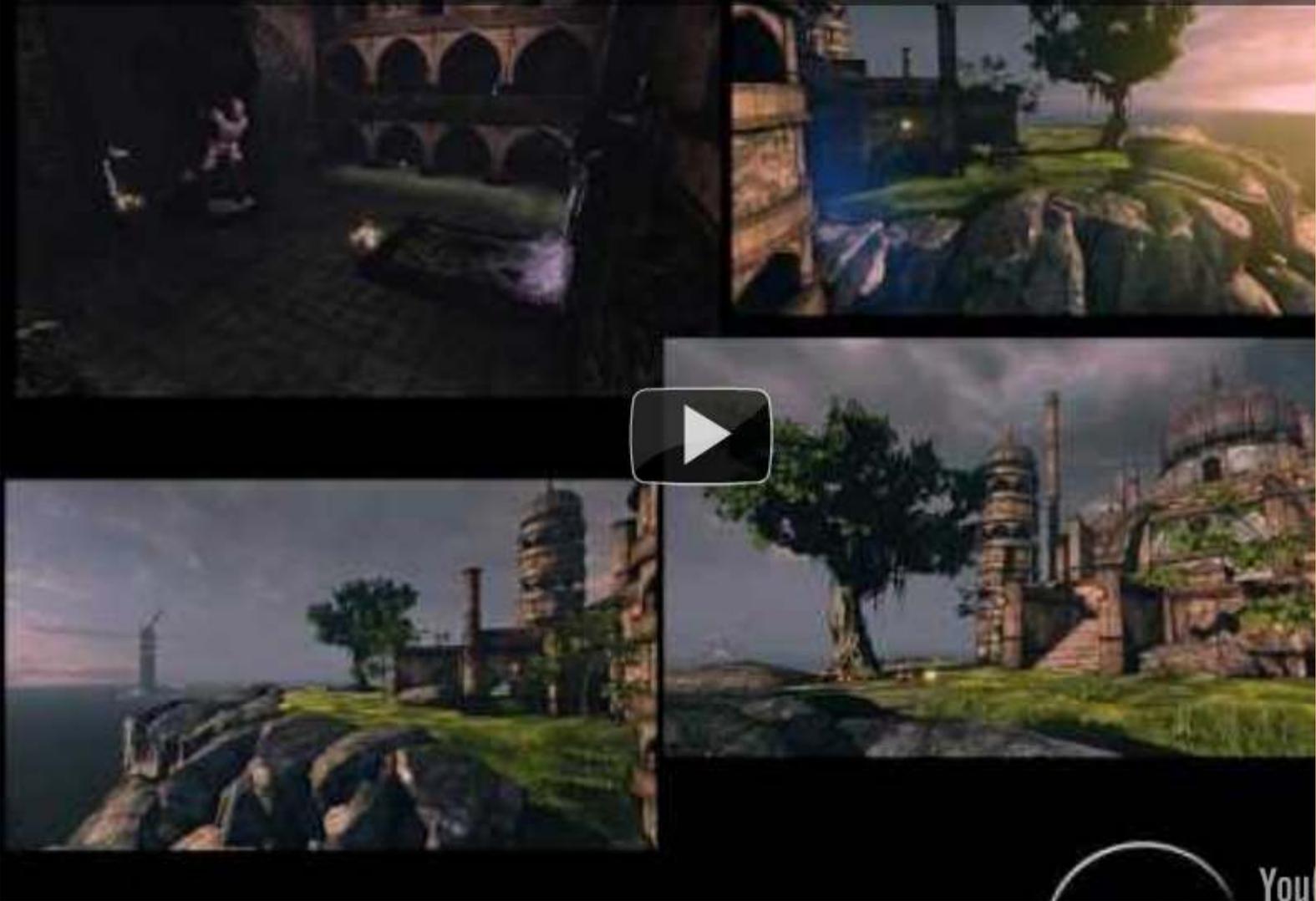
NPCs, pick-ups & paths

- If you are creating a game with lots of NPCs you will need place them into the game, unless they are generated on game load, you will also often need to define appropriate behaviours.
- If you are creating a shooter style game you will have to define the 'paths' that the bots or NPCs can traverse.
- You will also often need to place in game pickups for health, weapons, quest or plot relevant and other items.

Polish & level optimisation

- This is the final stage when you polish the map, bring all the areas to the same over level of polish and detail.
- Optimisation is about the number of rendered polygons at any one time, for instance if the Player is facing one way there is no need to render the polygons behind them or if the polygons are behind a large structure in the middle of the game world you don't need to render them.
- Many engines have some inbuilt level of optimisation, however they often need tweaking or altering on play test.

11 Day Level Design Process Overview



<http://www.youtube.com/watch?v=pj8cbC2YnwU>

Balancing



Screenshot from Alice: Madness Returns

Game Balancing

- Level progression and flow.
- Difficulty increments manageable.
- Not frustrating, but still challenging.
- Enough pick-ups.
- Correct weapons for the correct areas.
- The levels are completely finished the only elements that are altered at this point are game play bugs and balance issues.

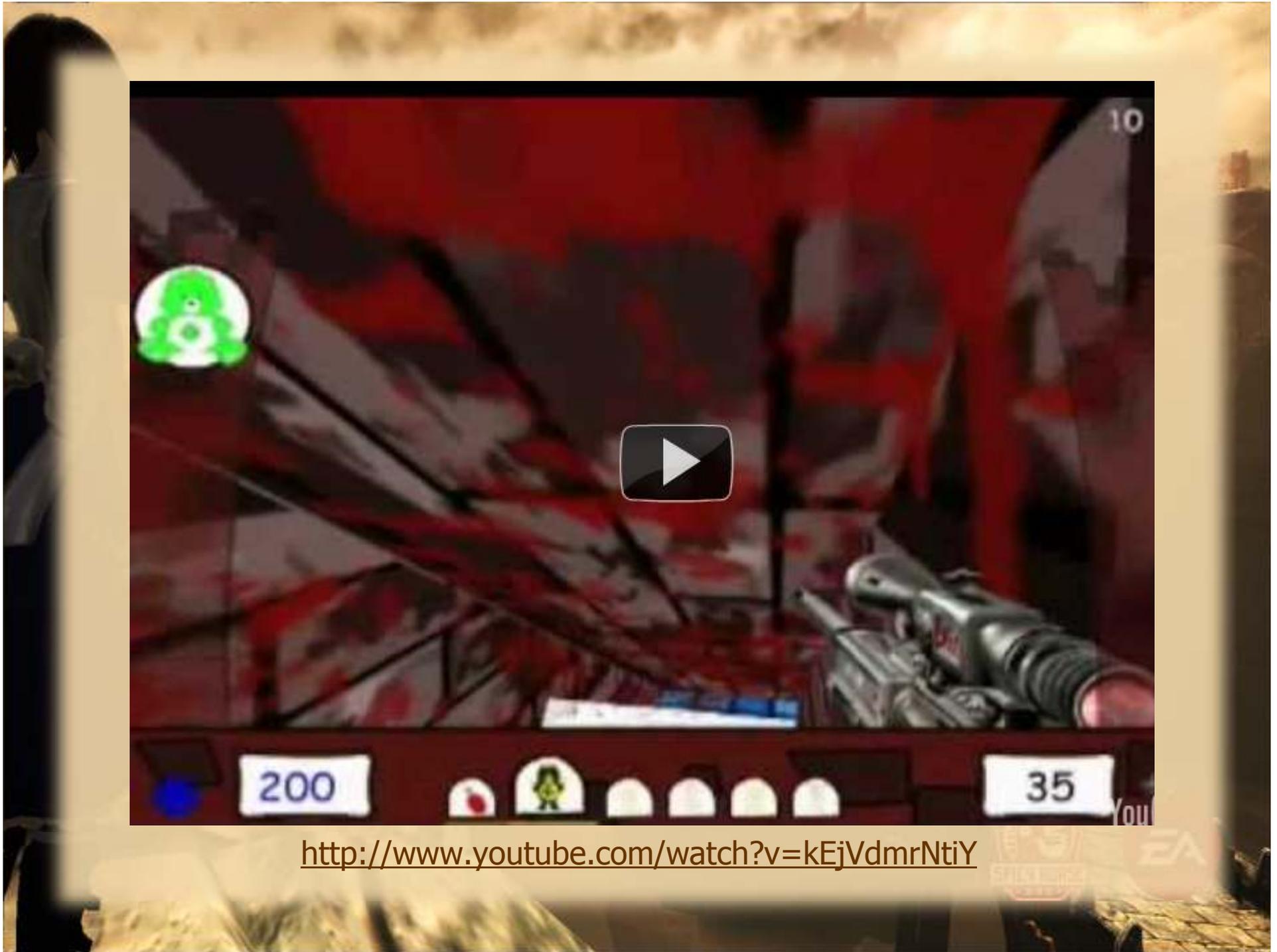
Welcome to H.E.L.L.



Screenshot from Alice: Madness Returns

The Healing Emporium for Lost Loveables

- What happens when good toys go bad?
- Care Bears... anything that happy has to have a dark side.
- Psychiatric institution for criminally insane toys.
- Cartoon look, bright happy colours and textures.
- Childhood music with a twist.



<http://www.youtube.com/watch?v=kEjVdmrNtiY>

Bioshock 2



Screenshot from Alice: Madness Returns

BioShock 2: Level Designer (Art Of The Game Par...

PART 5

ART OF THE GAME



BIOSHOCK
PART 2

You

http://www.youtube.com/watch?v=AT9IWrYg_qM

