This document consists of excerpts from *Video Game Level Design: How to Create Video Games with Emotion, Interaction, and Engagement* by Michael Salmond

I recommend buying this book if you're interested in level design: LINK1, LINK2

PDF with original pages mentioned in this document.

Level Design Considerations in



The purpose of this document is to educate, inspire, and provide clarity on level design principles. Aphotic Descent is delicate in the aspect that it is so varied in visual direction – it is a double-edged sword that has the advantage of creating a unique and engaging experience while also being difficult to achieve. But that's okay because I believe in my team to create their best work to fulfill this vision we have created.

Research, Storyboards, & Figuring out the Feels of Our Game

What is it about Aphotic Descent that we want to achieve? What types of experiences do we want to create?

We're moving onto the stage where we can go into the engine and figure out what works and what doesn't. We're moving on from concepting to actually trying to make grounded design decisions. Although they're always subject to change, this is the time to know if it FEELS right in the game. Whiteboxing our levels and implementing some mechanics will be our proof of concept. Then, we do the looks and pretty it up. That's when we think about whether it will LOOK right within the context of the game.

Tips and Tricks from Mr. Salmond – VISUAL REFERENCES

"Games are an important part of popular culture and designers across all roles in pre production will be looking for references from all types of media. Building a reference library is as much for others as it is for you. If you are trying to describe a multi-layered skyscraper city in a dystopian future to someone it's a lot easier to show them a clip from the film The Fifth Element or Blade Runner than painstakingly drawing something out. Along with film and television, comic books are a useful reference when thinking about storyboards for an encounter or player movement through a level. Comics break down and focus on just the most important movement; each panel has a camera angle and there is succinct action across a few frames. They create their own optimal path in storytelling which is very useful for a level designer. Looking at how Batman enters Arkham Asylum in a comic book, the motion, angles, and points of view could easily translate into a player entering a tomb or foundry. Comic books show the line of sight in the third person as well as points of focus (important features) and scale.

Composition is a key skill for a level designer, you are designing unique spaces and you must be able to compose angles, buildings, and assets in such a way as to complement the aesthetic of the game and to be interesting for a player. The composition of a level's layout must make sense in the world from a mechanics point of view as well as from an environmental artist's point of view. Walls that are too high will obscure important architecture or story moments. Too narrow a space in a crowded area or too widely spaced buildings that a player has to walk between can all become barriers to an engaging game."

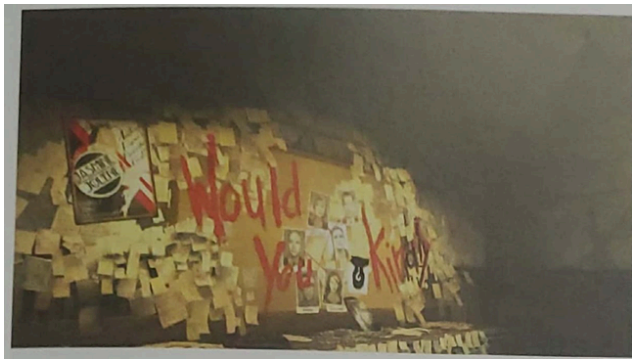
"Good level design does not rely on words to tell the story."

We're making an underwater horror game that includes coral reefs, a creepy laboratory, some caves, and the trenches of the ocean. We have a LOT of wiggle room for environmental storytelling through the setting and the encounters the player will have. Story and lore could be communicated through cutscenes and voice acting – but why not make the player FEEL like they're part of the game? Why not have the setting and creatures tell the story instead?

FOR NARRATIVE TEAM

Look at Implicit Narrative (telling a story using the physical environment and mise-en-scene AKA the BioShock way)





FOR DESIGN TEAM

If our main environments will be natural aquatic habitats and a deserted human laboratory, how would you portray both in an accurate, immersive, and appropriate way? For aquatic environments, research will have to be done – how does it look IRL? How can we improve upon it? (add a bit of spice?) For the laboratory environments, how do you portray that there were once people there? What sort of people were they? What type of work did they do?

This Game is Fair and Balanced – at least I hope so!

“Good level design tells what, but not how.”

There will be basic objectives throughout the levels in all 3 Zones. However, the real question is, how does the player get to that point where they reach the win condition of a level? The most important tools will be provided at the start of the game (unique mechanics) but how will the level guide, hint, and empower the player without holding their hand or outright saying what to do? Giving players some agency to approach monsters, to hide, and solve puzzles is something that should be considered when designing a map – let the player improvise and figure things out.

“Good level design constantly teaches.”

If you look at the puzzle outlines in the GDD, they’re all vastly different from each other while still using the same three main mechanics. This is to allow for a bit of variety with what you can do with the main mechanics. However, the player has to be aware of what these tools are capable of - otherwise, if they feel stuck on the Kill Enemies Level because we didn’t tell them that the Super Sledgehammer 500 also shoots laser beams to kill enemies then that’s 100% on us.

On top of that, the puzzles must be something that beginners (playtesters) and experts (us) can figure out. Maybe not at the same pace, but still clear and doable – we want Ah-ha! moments while the player is panicking or exploring in our game. The puzzles should build on both the mechanics, their complexity, and cleverness – while still feeling rewarding for getting there.

CASE STUDY: I’m going to use my final for Production as an example. There’s a random guy on YouTube who played it, and his video actually shows a good example of levels being easy and hard to figure out while still giving him that room TO figure them out: LINK



There are a few things to point out about the time-stamped level

1. The patrolling enemy is “invisible”. The unique mechanic called “Monster Cam” allows the player to see from the perspective of the enemy monster.
2. The only hint on what to do is provided at the start of the level with the player-character dialogue in the form of a diary entry.

Although the player in this video is aware of the Monster Cam as a tool to find where the enemy is patrolling, he still feels stuck because it’s an overpowered enemy (everyone begged the coder to nerf it a second time but alas LOL). When he feels stuck, he reads the hint again to himself -

Game Text: *It’s almost midnight, I need to get home.*

Player: “So, I need to get inside my house.” […] “Where is the door?”

There isn’t a point in the level where it tells you that the win condition is the front door, but the player has figured out that there must be *a door* to find. If there isn’t a backdoor, then it must be the front door, right? With that information, you can see the gears in his head slowly turning. The design of these levels aren’t masterpieces, but I hope the point gets across.

The enemy of this specific level provided a new challenge and regardless of how unfair or clever the design of it was, understanding the context of the scene based on the hint was key to succeeding here. This can be done a number of ways: through hints in the HUD or UI (easy to do), visually in the environment (we’re aiming for this), or through the narrative (hard to achieve because “reading is for nerds and I’m playing a video game”).

“Good level design is driven by mechanics.”

Mr. Salmond Says – MECHANICS TOP 1 BABY

“Level design is the playable realization of the game mechanic or rather the mechanic delivery system. The role of the level designer is to take the mechanics of the game and make them work for the player through the world they are in. The assumption is that the mechanics of the game are developed in advance of the environment art, character design, and the level design. In a perfect world, they would be, but sometimes even the best plans can come unstuck as testing and feedback lead to certain mechanics being dropped or added during the development process”

Our levels are built AROUND our unique mechanics. Looking back at the proposed puzzles in the GDD, they all mention the uses of our unique mechanics. Avoiding, defending the enemy, or defending the player-character all involve the unique mechanics regardless of place or context. The win condition HAS to involve the unique mechanics in some way! If we were to replace these level ideas or add more in, this detail cannot be ignored.

Sometimes in game development, new mechanics are added, or original mechanics are replaced because they aren’t servicing the game that is being created (RIP ECHO GUN). The unique mechanics will always have to cohesively fit into a situation that occurs in the game. EVERYTHING should be built around the mechanics.

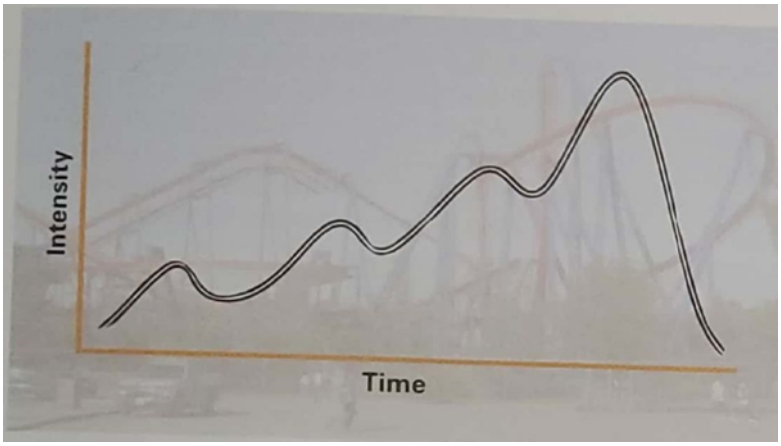
Preferred format for creating a level in Aphotic Descent as of 09/29/22: a situation the player has found themselves in, a place, and how the unique mechanics are involved.

I’m in my Feels, bro.

“Good level design is surprising.”

I think our game has bits of elements of surprise by having varied enough level designs and art direction for each Zone. However, it is still important to keep this in mind gameplay-wise. If navigating and avoiding enemies becomes routine or if it’s easy to expect that enemies will show up or if it’s easy to predict the narrative, then that’s not good for player engagement. We never want to create a BORING experience.

This diagram is a good example of what to aim for: rising intensity and build-up, then a short breather (safe points, transitions, breaks from the action so as to not overwhelm players so much), then a huge INSANE climax, then the end (“You win!”).



“Good level design will create emotion.”

Wise Words from Mr. Salmond – PULLING EMOTIONS OUT

“Most players will respond to virtual spaces in similar, if not identical, ways as real spaces. Most of us find open countryside pleasing and calming (unless it's full of zombies); round rooms and certain color palettes are also calming and soothing. The opposite is also true: harsh angles and loud or disturbing colors (moldy greens, blood reds) can be disturbing and evoke different emotions within us. In addition to the use of color, the space in the level will amplify emotions.

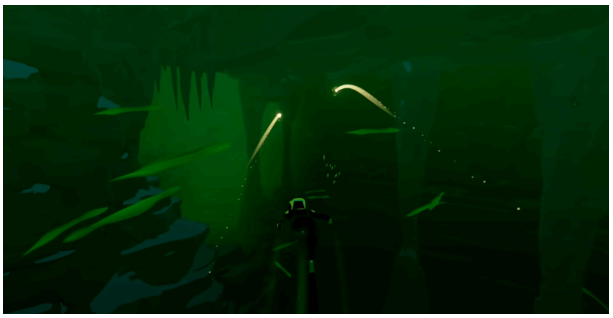
Architectural theories are useful in video game design because architects are trained in the use of space. For example, there is the theory of spatial empathy: because a player has experienced many different spaces in their lives (as well as in film and other media) they can empathize with their character as they react to different game spaces. Tight enclosed spaces have the same psychological effect (albeit muted) on players as they do in real life. Tight corners will make the player feel trapped, labyrinthine corridors will make the player confused and tense. Wide open spaces create a feeling of epic scale, loneliness, or wonder. Spaces create emotional internal moments too - when a player emerges from a series of tight narrow spaces into a larger open space the player may experience a sensation of wonder as if leaving a cave in the spring”

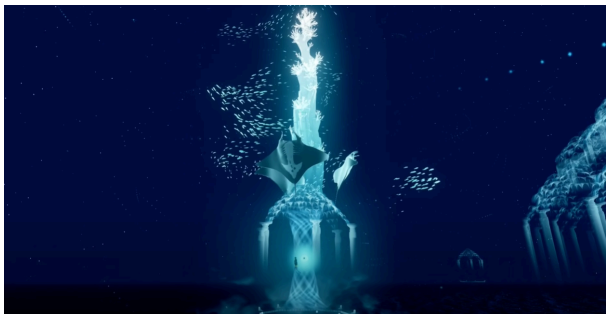
We have Ocean Zones as our ammo for this. The coral reefs will feel freeing and lively (not for long), our lab will feel unwelcome and gray, and the trenches will feel eerie and dreadful.

CASE STUDY: ABZU

These scenes are so vastly different from each other but… they occur seconds, then minutes apart. They all make you say, “….WOAH!” but in three different languages. What is it about these three scenes that communicate a sense of wonder, mystery, and awe so effectively? How can we do the same thing in our horror game?







What ABZU also does well is something called, “flow”. Flow consists of how the player navigates through a space in relation to the pacing of the game. Nothing occurs too quickly so that it's jarring and it’s also not drawn out for what feels like hours to simply get from one point to another. We have to think about how all of our scenes and settings fit together and transition seamlessly - the player must know where to go and how they get there.

Waypoints more like SLAYpoints

“Navigating without Maps”

As of writing this document, a discussion of a mini-map hasn’t been brought up, but I really doubt we’d include one except MAYBE for the lab sections for QoL purposes. A strong point for our game are the environments, both exploring and navigating them. Of course, we want the player to explore for a bit and look at whatever but we also have to be clear about where they need to be for objectives.

One thing to have are LANDMARKS as a tool for navigation. The official funnyman word for this concept is “Weenie/s”, named after the hotdog stands being used as landmarks at Disney World. We generally want our landmarks to always be visible, as it tells the player, “Hey! I’m the objective! Go here!”. Some

strong examples are found in Breath of the Wild. You can generally ALWAYS see Ganon's Castle from wherever you're standing. On top of that, the player's first objectives are to visit the Sheikah Towers and visit the Divine Beasts. These two types of landmarks can be seen from great distances and are used as waypoints for the player.







These types of landmarks are used as attention grabbers for the player - they plant a seed of curiosity.

Landmarks can be physical places (like the research lab) or geographical (a toothy cavern). Indoor landmarks can also be a giant containment capsule or a room overtaken by corals - the possibilities are endless. Important landmarks should have a strong silhouette or outline that the player can connect to and remember easily with a glance.

Sometimes, it is necessary to tease an important location but the path to the said destination is not straightforward (e.g. Having the laboratory in the distance but going through the coral reef and kelp maze first to get to it).

Although it has been unsaid, one thing our game does use foreshadowing. Through the title and the Ocean Zones visual direction it is already implied that the player is descending and the environment will change. How do we take this a step further?

"Lighting the Path"

Mr. Salmond Says - LIGHTS, CAMERA, ACTION

"*Lighting is important not only to add ambiance or tension to a level but also as a navigational aid. Lights can be employed to indicate a goal, a path towards an exit, or a point of interest. Lighting cues can be used in obvious or subtle ways depending on how much the designer wants to trust the player to figure out the connection between the lighting and their objectives.*

Different uses include…

1. *Exit lighting: highlighting the exit door/area for the player. This could be a consistent color or obvious to the player by having no other lit door.*
2. *Path highlighting: a path of torches could light the optimal path for a player, or direct their gaze towards a feature.* (We could use bioluminescence instead)
3. *Hinting: a glinting light has become a video game vernacular for a pick-up or object of interest that the player should investigate.* (A sparking item)
4. *Revealing: a player could be in a dark level and find a torch and upon lighting it a precipice is revealed before them as well as a safe route to another part of the level.*

These examples, if done well, should feel instinctive to the player. When testing the level its designer will take the time to examine how the lighting is guiding them in the level as well as how it is being used to manipulate player emotions(tension, relief, excitement, disgust). Level designers can rely on real-world analogs as a shortcut for the player whenever possible. A red light over a door denotes a barrier to entry, a green light means the door is open. Lights can be used as a signifier that an object is interactive too."

The contrast of light and darkness will be heavy for our games. In the brightest parts, the darkness will stand out. In the darkest parts, the light will stand out. In the Sunlight Zone, having a slightly darker palette or even slightly dimmer lighting in the main encounter(s) and puzzle(s) will stand out to the player immediately because the immediate portions of that zone involved a vibrant coral reef - it will immediately set off an alarm for them that the situation is different, it's serious.

The fun part about lighting in our game is that the meaning of lighting will be versatile. At the start, it is welcoming and embracing. In some gameplay portions, it will be for pathfinding and hints. During later encounters, it will indicate danger and what to avoid.

All this being said (and in regards to the section before this), progression should not be a straight hallway. The player needs to feel curious to investigate their environment, but we guide them the right way using light and landmarks. They could *feel* lost in the depths of the ocean (this is immersion), but never actually lost (this is frustration).

Research, Data, & Figuring out the Depth of our Game
"Level Beats"

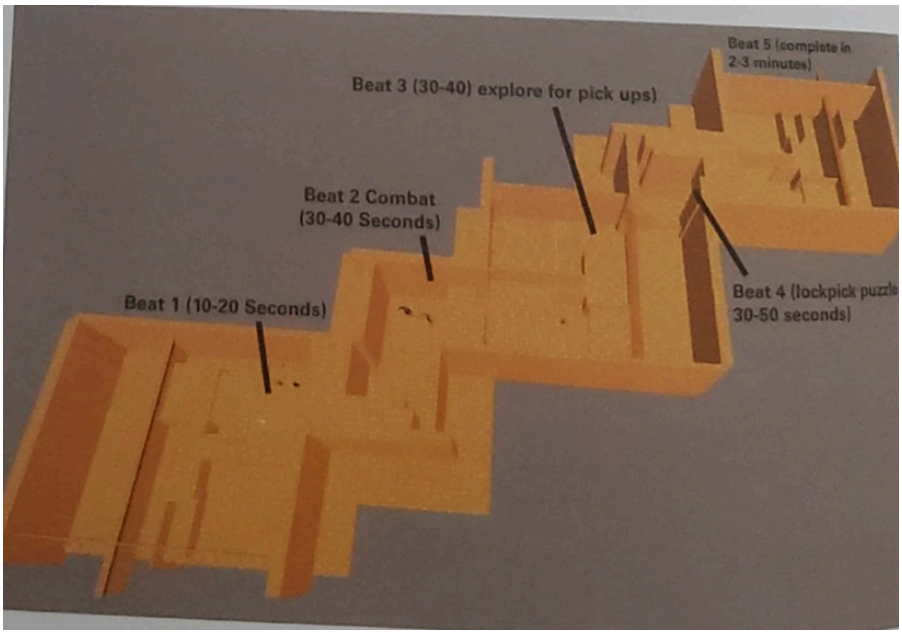
Things that happen in a level whether they are encounters, objectives, or even scripted moments are different types of "beats". Beats can be categorized in a number of ways; you could have gameplay beats, story beats, emotional beats, and so on. This isn't to just fill up your level with cool or interesting

moments but it's also to pace the level or game in a way you like or in a way that works best for what you're trying to deliver.

"A beat in a level could be that first opening scene where the player walks out of a forest and finds a castle directly in their line of sight, which will become their main objective"

Our equivalent would be the opening with the submarine crash - it starts out intense and puts the player in a position to act but then it settles down a bit until the following encounter (unless they go straight to it which is another conversation about optimal paths and exploration).

Example of some level beats.



For our game, the format will be a tad different but hopefully this diagram clarifies some things about beats in a game.

"Analyzing the Anatomy of a Game"

When we begin to have our beats, our critical times, and rough gameplay for our levels, we should take measures to analyze the anatomy of our game (omg title drop). The contents in the game, how often they occur, when they happen, and how long it takes for it to happen matter to player experience. We cannot accidently have 20 minutes worth of navigation and exploration and 10 minutes worth of action and scares - but we can avoid this problem!

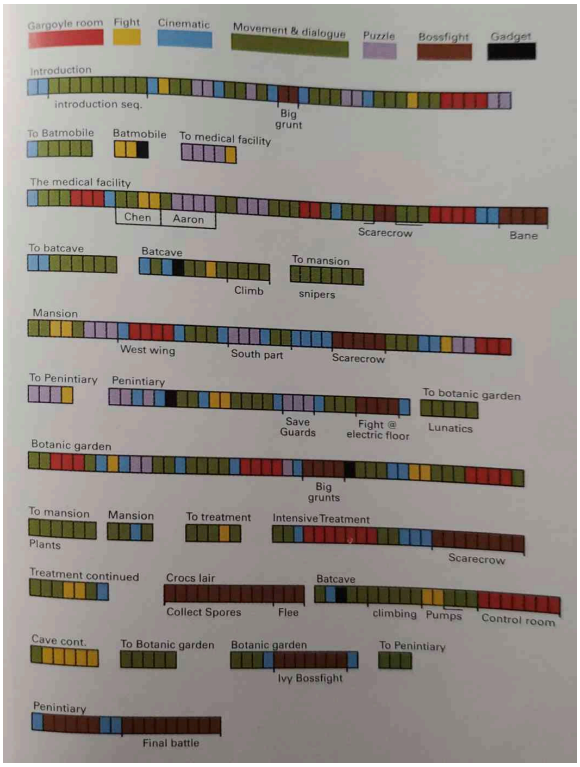
Take a look at the diagrams below.

These are for the games *Batman: Arkham Asylum* (left) and *X-Men Origins: Wolverine* (right). These diagrams basically measure pacing by categorizing specific parts of these games. When LD Filip Coulinaos

at Starbreze Studios compiled this data, it easily revealed what aspects of the games were prioritized and given importance. In the Batman game, the levels are more varied and “mixes up” gameplay mechanics while the Wolverine game has many sections dedicated to combat.

These types of analyzes can be useful for figuring out what contributions and portions of the game are considered enjoyable while also seeing if there is anything unnecessarily drawn out or repetitive. We aren’t aiming to replicate the structure of Batman, but the point is more to understand what we want for Aphotic Descent and what we should prioritize. How do we fulfill the 30 minute critical path while having different types of scares, thrills and a good time?

Batman: Arkham Asylum



X-Men Origins: Wolverine

