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Level Design Pre-Production

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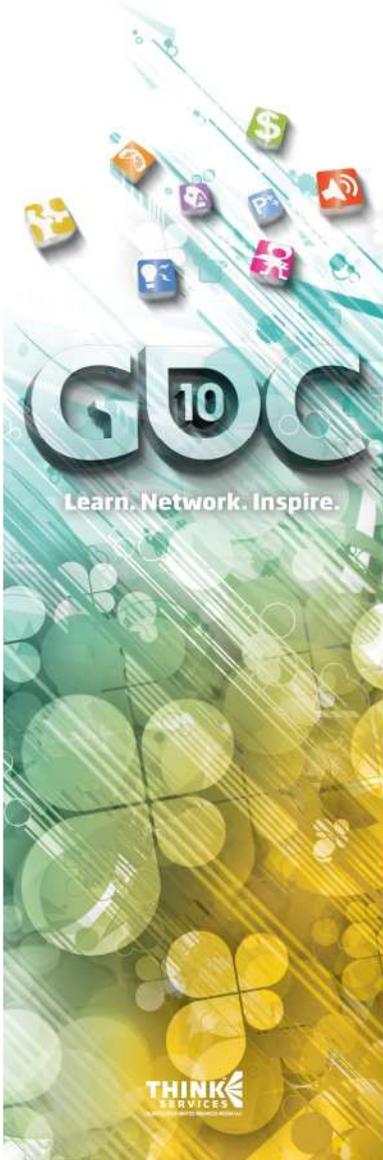
Who am I?

- Ed Byrne
- 12 Years as a game designer
- Splinter Cell, Harry Potter, SOCOM and MAG
- Wrote a book on level design
- ebyrne@zipperint.com

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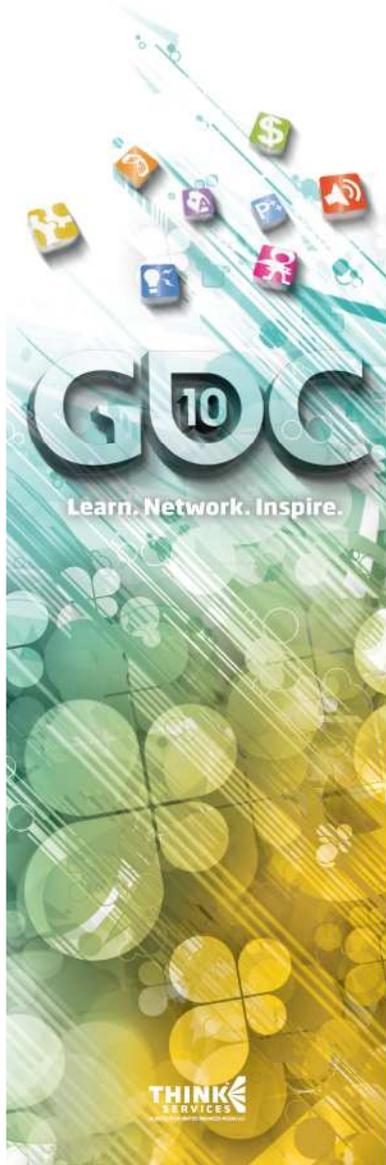
This Morning's Hypothesis

- You have been assigned the task of driving a level design team through several months of pre-production

- Triple AAA FPS as common ground
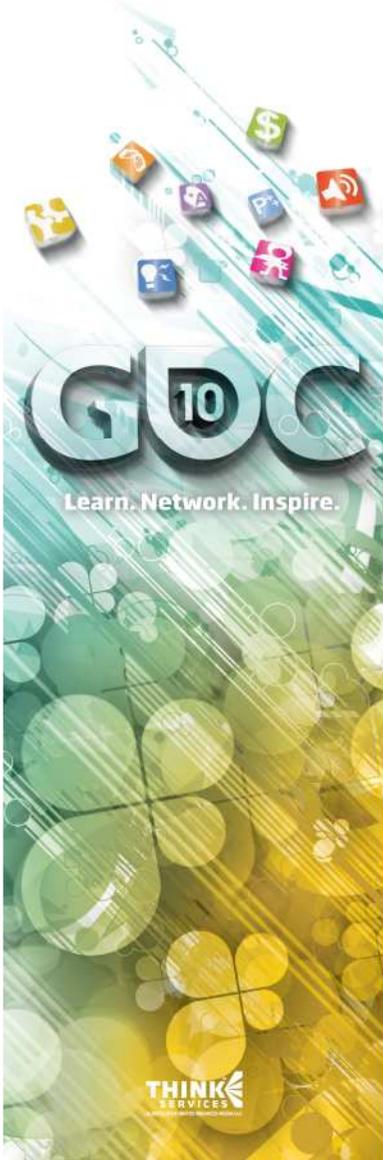
Pre-production is...

- The creative space between **concept** and **manufacture**
- **Goal**: create instructions for production

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The Design Process

Game Design Document

Level Design Preproduction

Design Production

Ship it!

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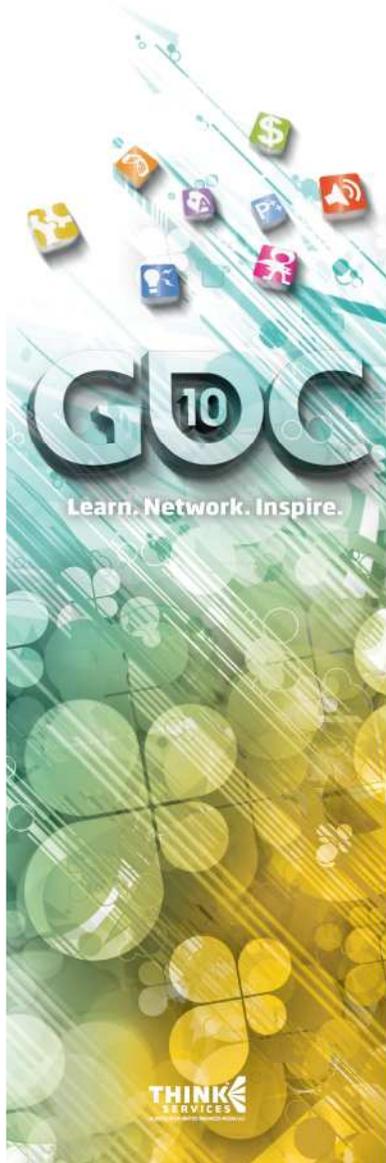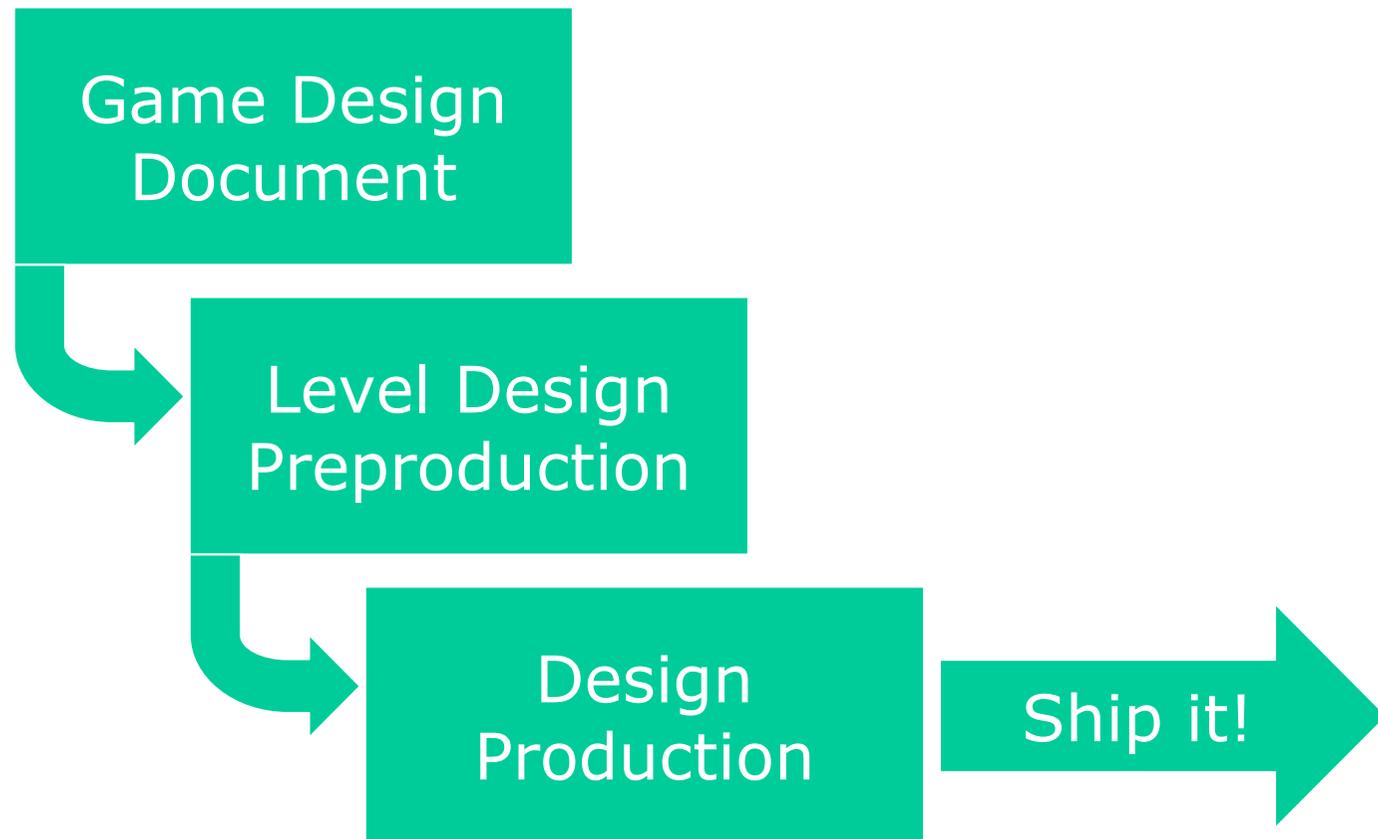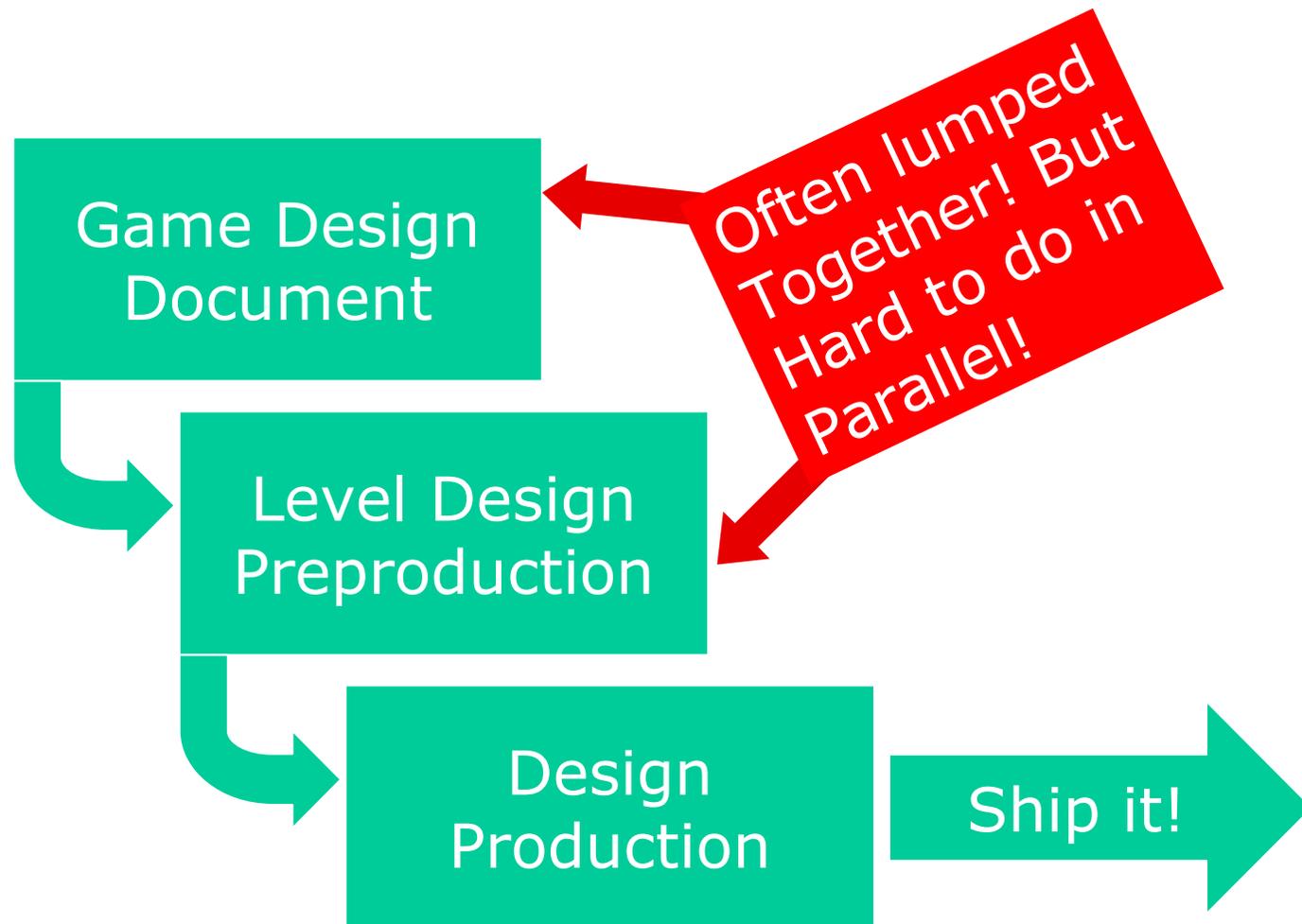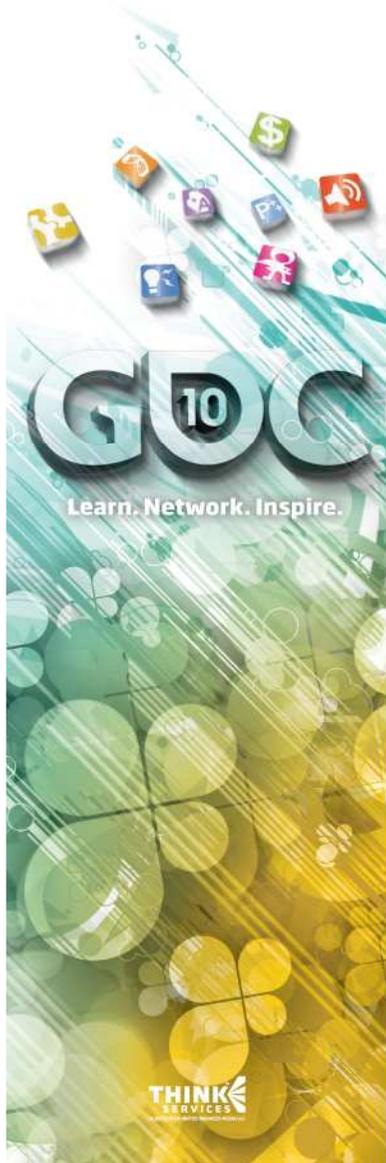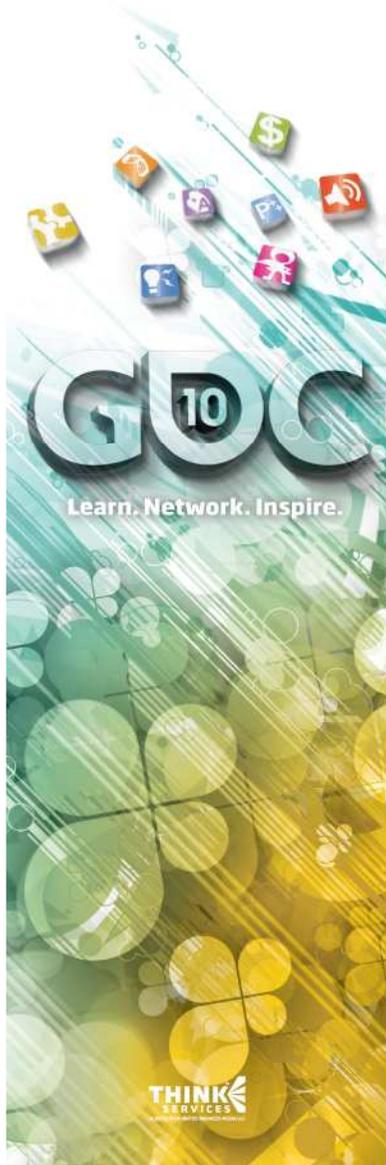
In Film...

- "During pre-production, the script is broken down into individual scenes and all the locations, props, cast members, costumes, special effects and visual effects are identified"
  -- Wikipedia

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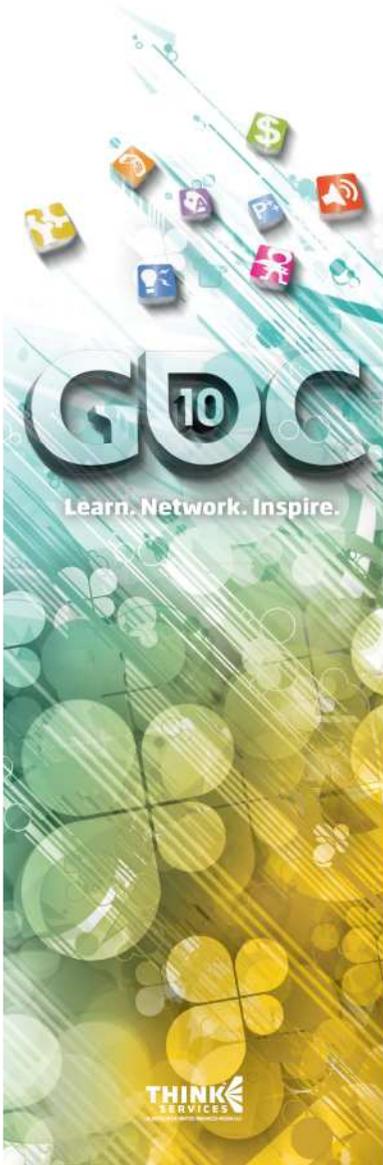
A Game Level is...

- A **container** for gameplay
- An **rollercoaster**
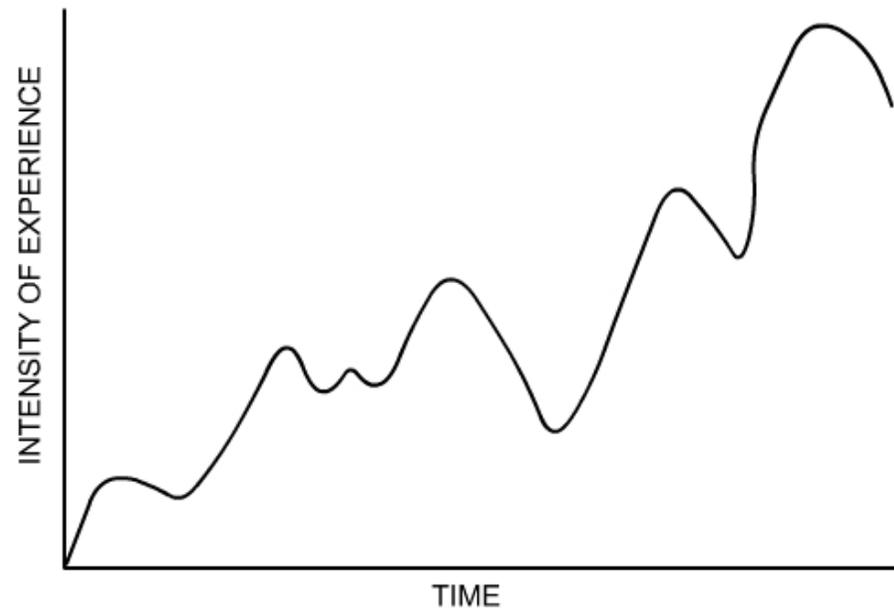
Gameplay Ingredients

Level Design Happens Here!

Story Progression

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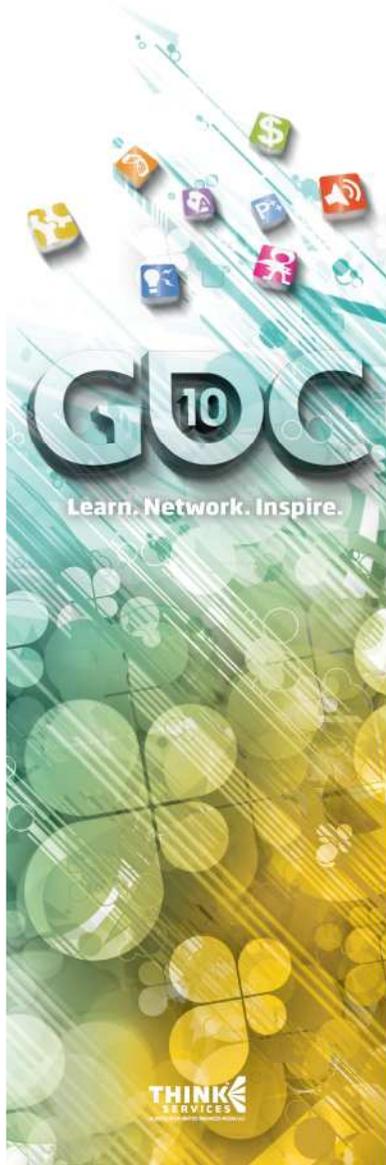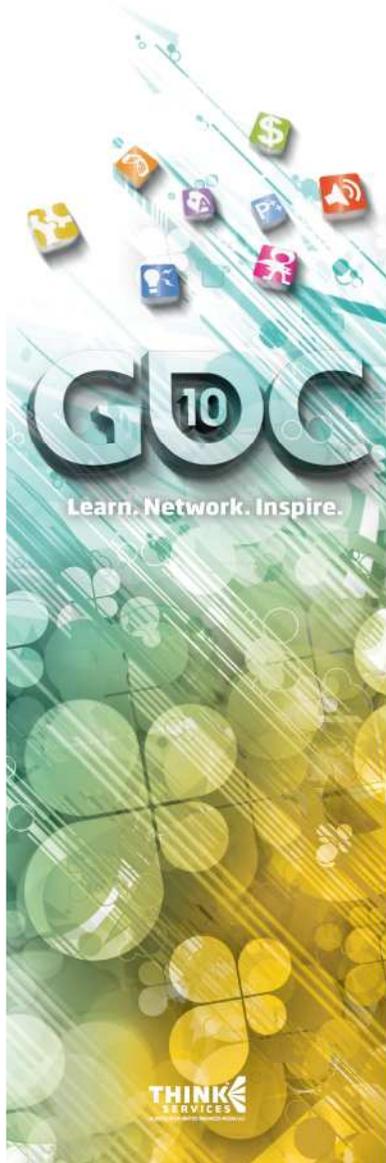
Benefits

⊕ **Explore ideas without restraint**
   brainstorming and prototyping

⊕ **Solidify intent**
   refining the macro-scale design

⊕ **Emulsification of design**
   mixing the ingredients before baking

⊕ **Harmonisation**
   getting the whole team on the same page

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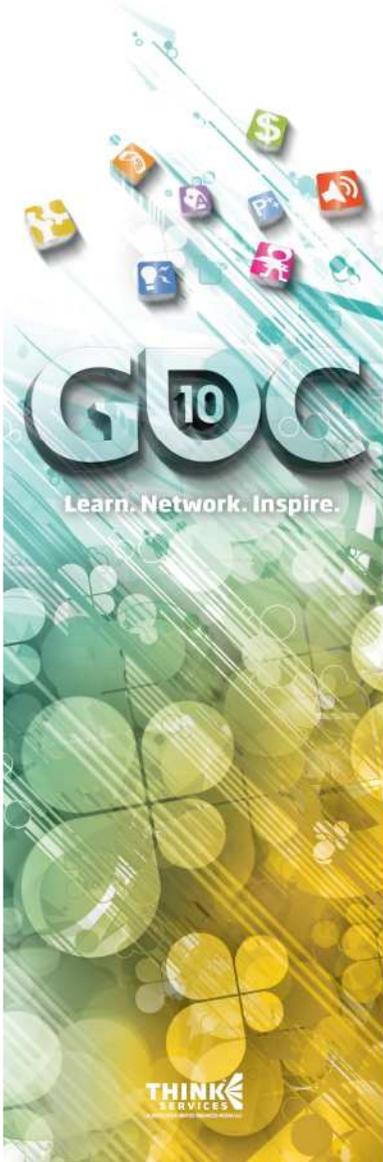
Unfortunately...

Often overlooked as unnecessary waste of resources and time.

Often not used well

- *Unfocused*
- *Focused on non-essentials*
- *Goes too deep too quickly*
- *Spawn prototypes/use up departmental resources without solid theory*

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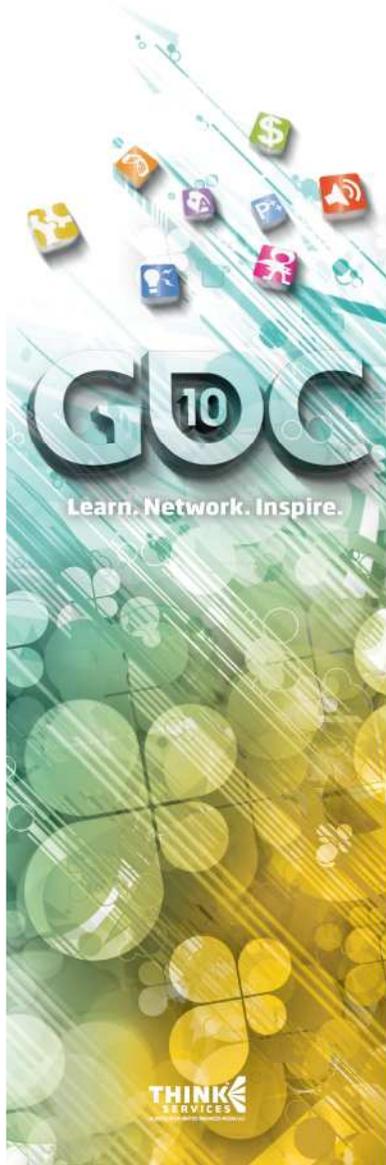
For Best Results…

- 3-6 months
- Dedicated space
- Cross-discipline representation
  At the very least, a writer!
- Defined output expectations
- Frequent reviews
  But no milestones!
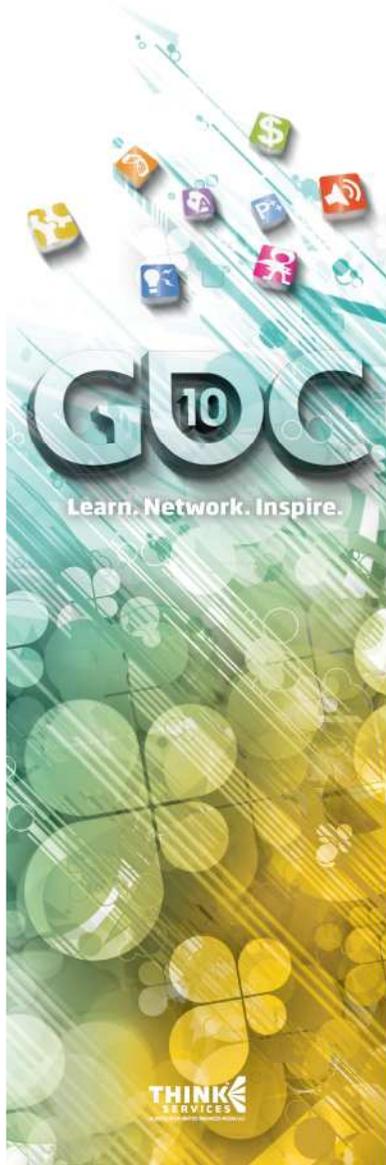
Diff'rent Strokes

Your studio, project, team is unique. Nothing here is standard and you'll need to find out what works for your specific needs.

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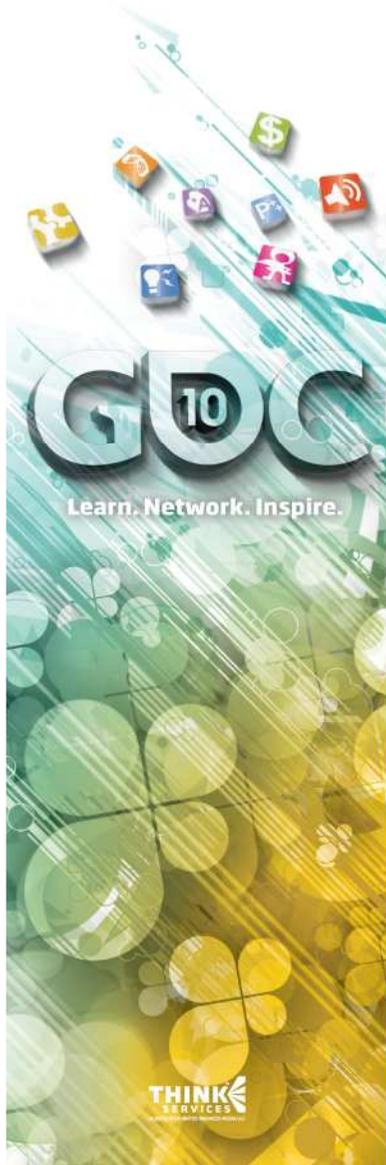
Tip: Universal Clarity

- Make sure all level designers understand the design, concept and requirements of the game
- People participate less when they feel uninformed or out of the loop

Concept
Initial Brainstorm
Abstracts
Encounters
Cell Diagrams
Pitching
Encounter Iteration
Walkthru
Buyoff
Paper Design

Your Raw Material

- Narrative
- Player metrics
- Core ingredients
- Concept art
- Flow Model

significantly easier for a sequel, BTW!

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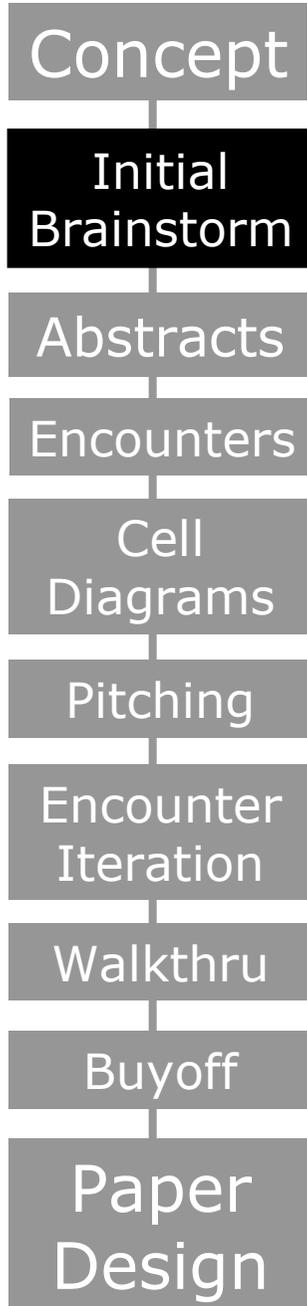
Step 1: Initial Brainstorming

- Groups of 4-10
- Moderator
- Internet-enabled computer and projector
- Whiteboard or Giant Post-Its
- Note taker
- Sessions of no more than two hours

Goal: Create abstracts!

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Tip: War Rooms

- War rooms are dedicated spaces for brainstorming and pre-production
- Take over a dedicated space like a conference room or large office
- Keep it as a living record of progress

Concept

**Initial
Brainstorm**

Abstracts

Encounters

Cell
Diagrams

Pitching

Encounter
Iteration

Walkthru

Buyoff

Paper
Design

Concept

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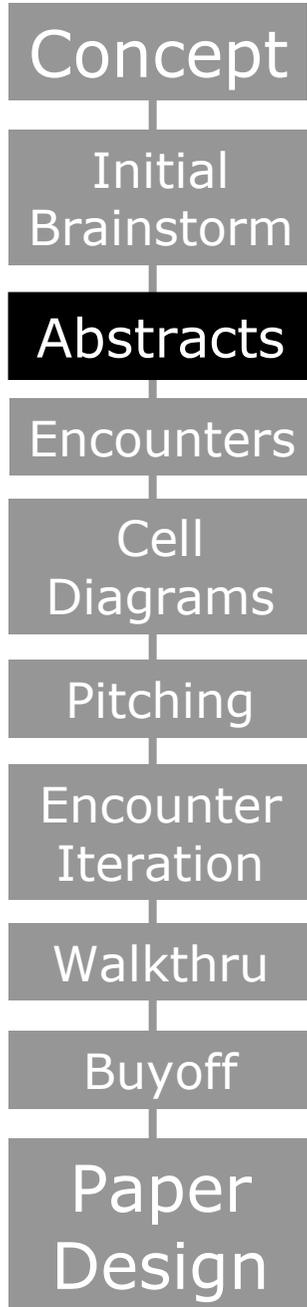
Step 2: Abstracts

- Concept
- Position in Narrative
- Environment to exist in
- Beginning
- Ending
- Goal(s)
- Challenge(s) to overcome between the player and the goal
- Reward
- A way of handling Failure

- **Goal**: enough detail to convey the fundamental intentions of the level

Concept

Initial Brainstorm

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This is the Easy Part…

- Conference of the Living Dead, Level 1

- **Concept**: Extract with Coray Seifert
- **Environment**: Moscone centre
- **Beginning**: Barricaded bathrooms
- **Ending**: Climactic rooftop escape via jetpack
- **Goal**: Get Coray to the roof uninfected
- **Challenge**: Zombified conference associates
- **Reward**: Coray is now an available member of your zombie survival team
- **Failure**: Coray is zombified and must be cured!

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Step 3: Encounters

Abstracts are recipes for fun

Encounters are created by combining game ingredients – *like a delicious cake*!

Encounter examples:

- Puzzles
- Battles
- Bosses
- Traps
- Races
- Gates

Mapping the Graph

- **Peaks** on the graph
- Encounters are usually spaced out with non-encounter space (empty rooms, downtime, etc.) the **low points** on the graph
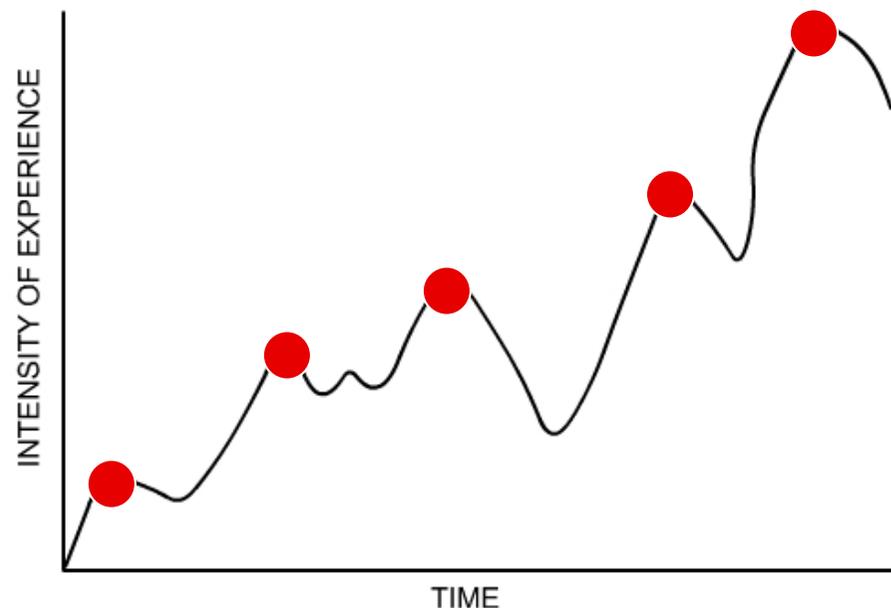
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Brainstorming Encounters

- Still valid as a group
- Strike teams or individually, per "type"
- Critique for possible cuts and out-of-scope ideas

Goal: Create as many fun encounters as you can.

Tip: Maintain Portability

- Keep encounter ideas portable so they can be transported and arranged easily

Tip: Leave No Idea Behind

- Sketchbooks and journals

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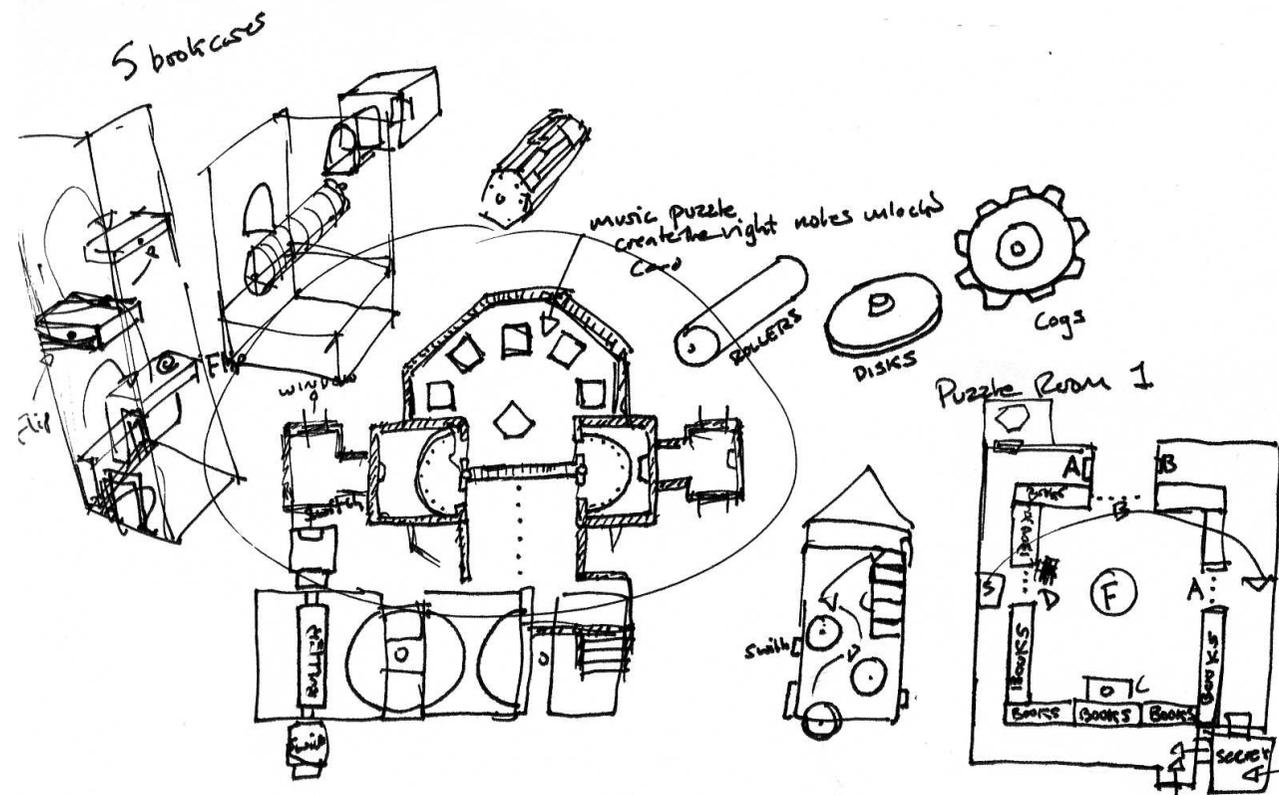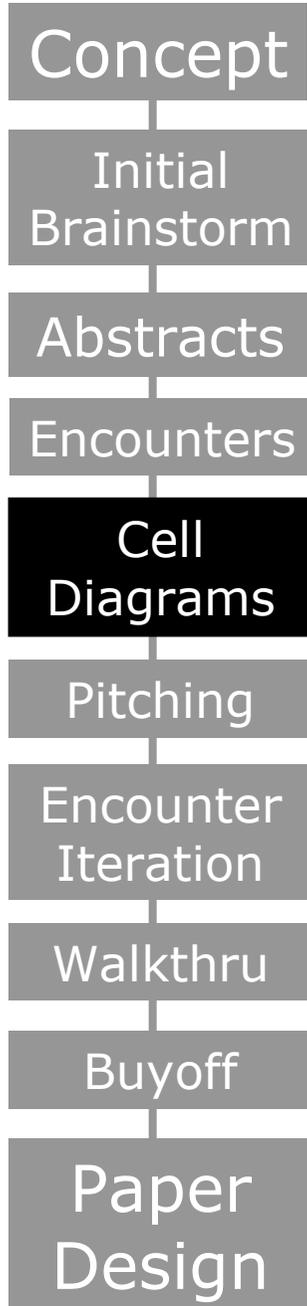
Step 4: Cell Diagrams

- Encounter sequence or network
- Rough draft of player progression and flow
- Highlights major beats in gameplay and story
- Exposes initial concerns

Napkins are Your Friend

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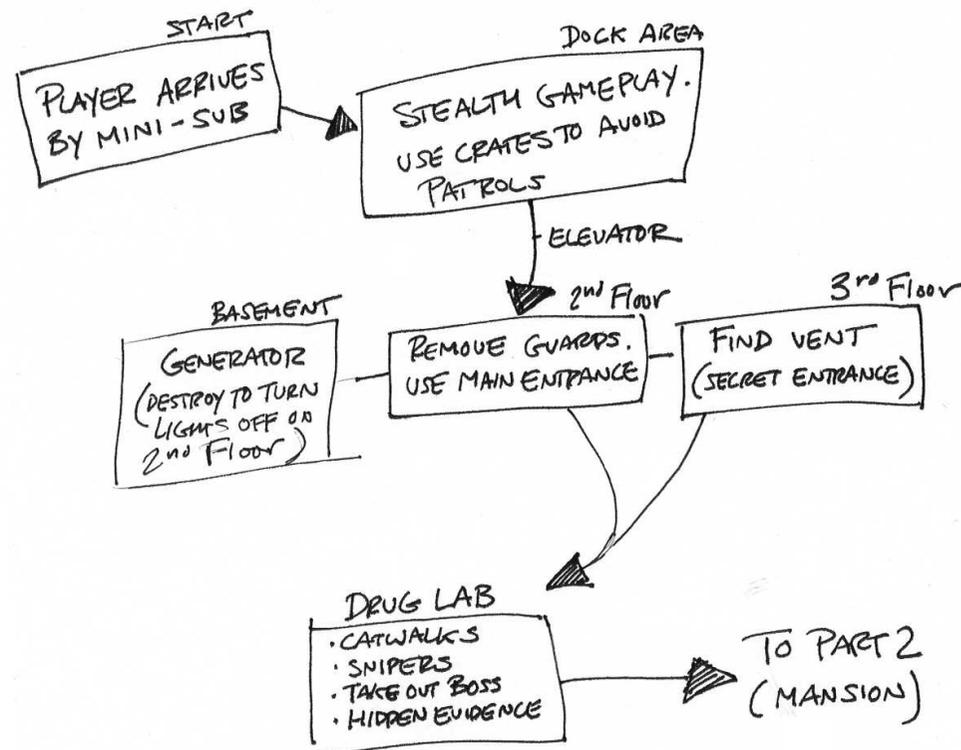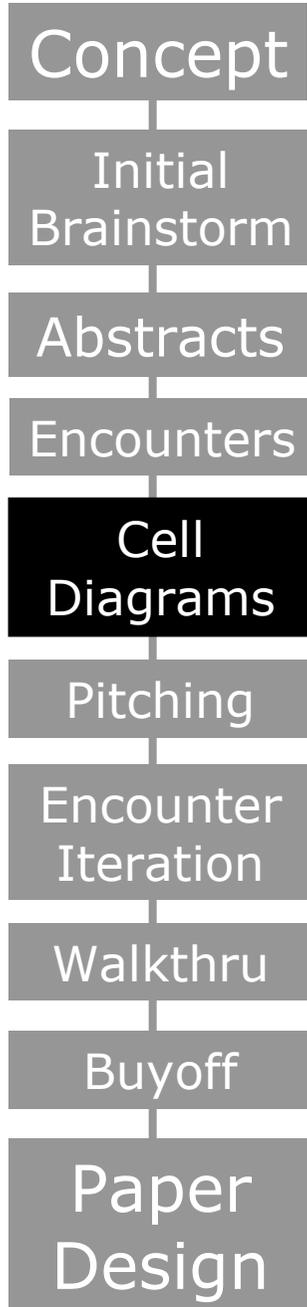
Putting It to the Wall

Review cells diagrams side by side:

- *Ensure **consistency** of experience*
- *Ensure certain levels aren't **overloaded** or **underloaded*** *
- *Evaluate **scope***

*Yeah, I just made that word up.

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Watercooler Moments

- **Unique** or **powerful encounters**
- **Identify** and **foster** these encounters **now**
- Ensure **sparing use** and **equal distribution** based on narrative and game's overall rhythm

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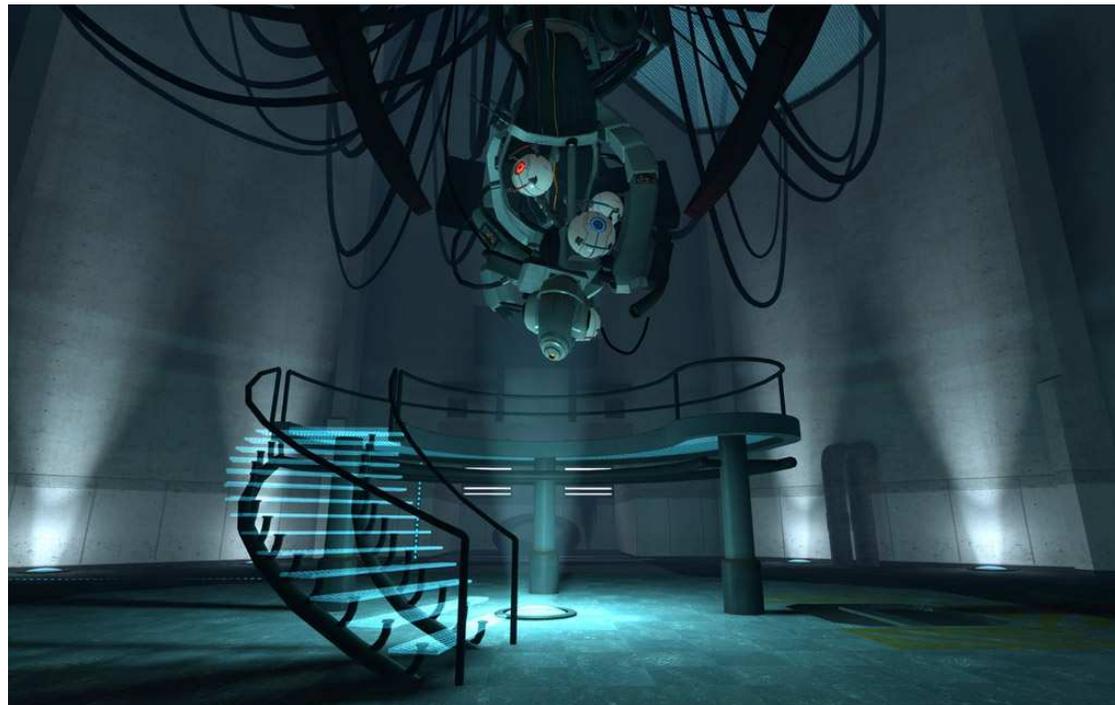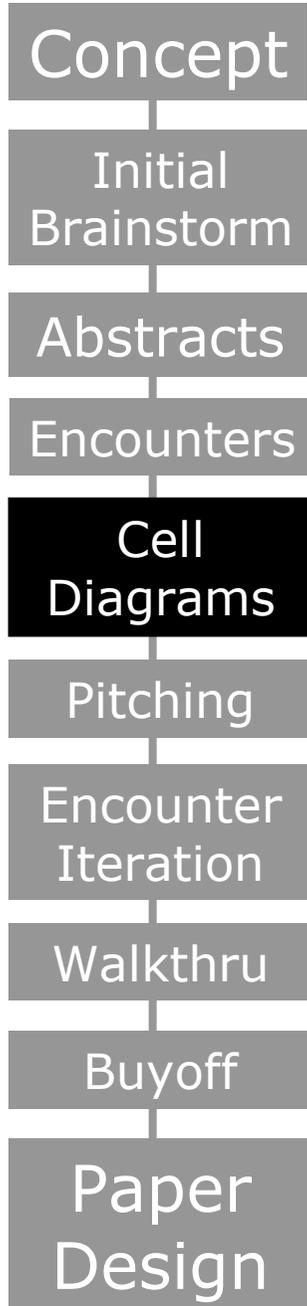
Start Acquiring Visuals

- Scour Google for reference images:
  - *Landmarks*
  - *Characters*
  - *Situations*
  - *Environments*
- One image per encounter
- Helps to visualise and identify the encounters at this stage

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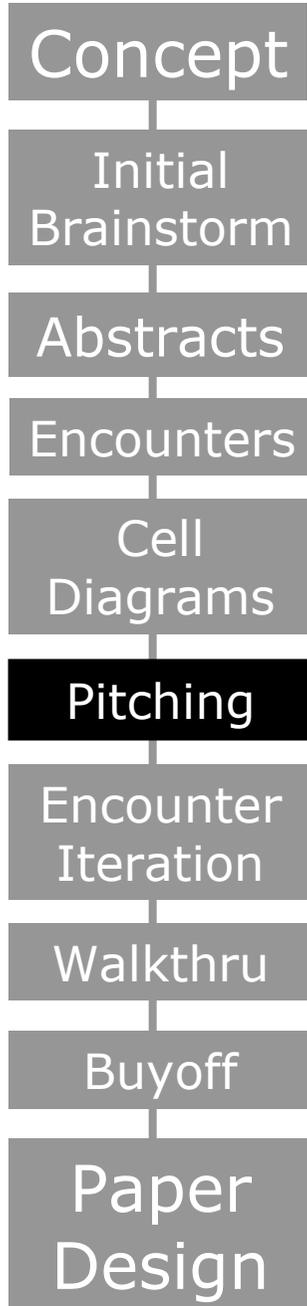
Step 5: Pitch & Collect Criticism

Pitch meetings:

- Cross disciplinary, key 'players'
- Have visuals but walk through verbally
- **Don't brainstorm**, but record all feedback
- Go back to the drawing board if necessary -- **cuts made now are easy**

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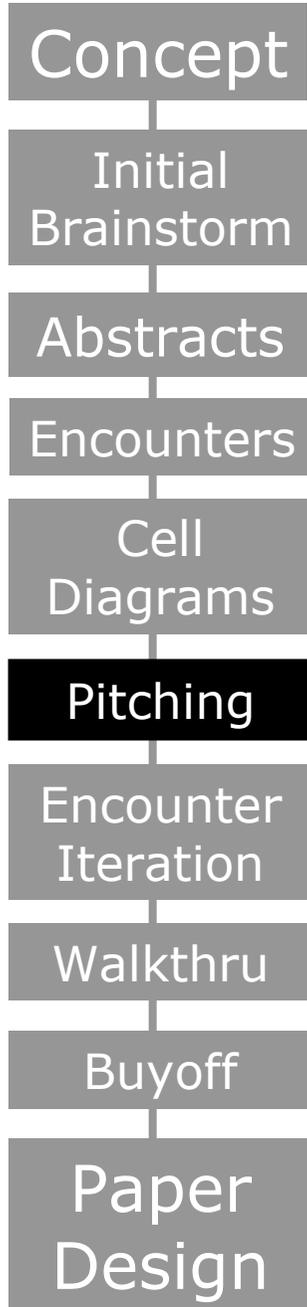
Rework *IS* Inevitable

- Level designers need to understand and absorb criticism
- By definition design is **iterative**
- Need **external critique** to ensure you aren't too close to the product to see problems
- Consider art classes, reviews, critique training for junior level designers.

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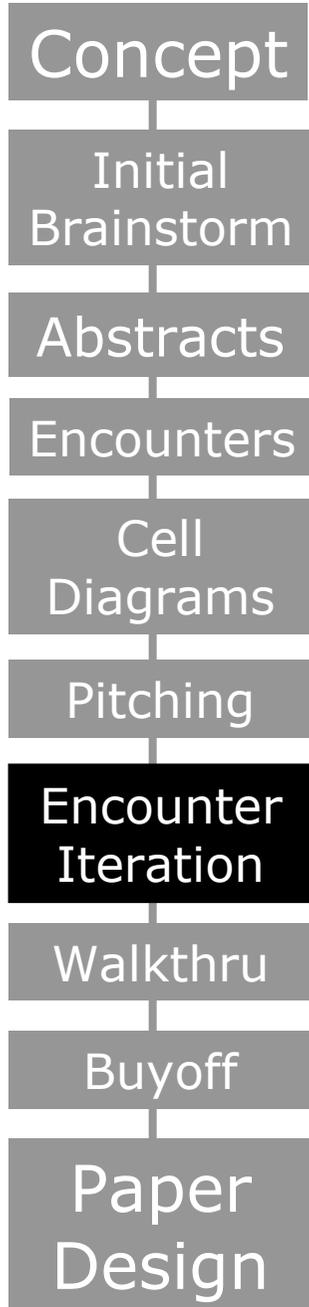
Step 6: Encounter Models

Iterating your encounters

- ⊛ Manipulative
- ⊛ Technical
- ⊛ Illustrative
- ⊛ Interactive

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Manipulative

- LEGO
- Table-top props
- Playdough

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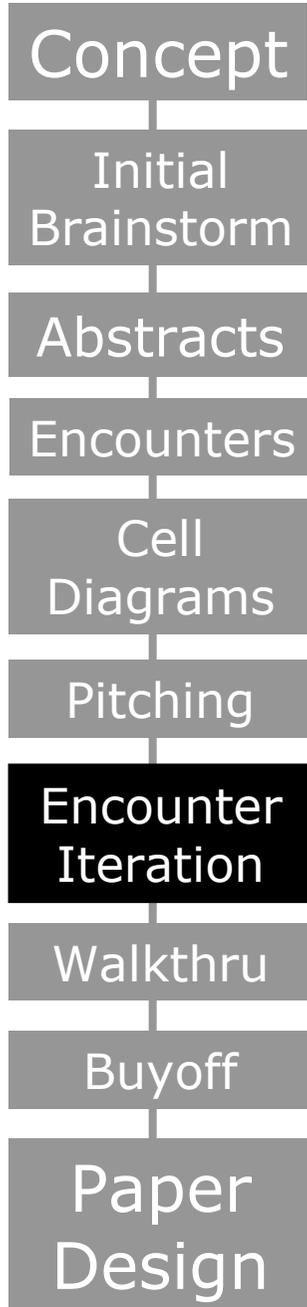
Manipulative

Benefits:

- Tactile
- Encourages play
- Dynamic for co-operative design
- Quickly rearranged
- Can potentially see vertical scale and proportions better

Cons:

- Not very portable or easily reproducible
- Forces visualization to be simplified
- Not archival
- Not as easy to read/interpret for others on the team

Keyword: **Spatial**

Technical

- Pen and paper
- Illustrator program
- Geographic maps

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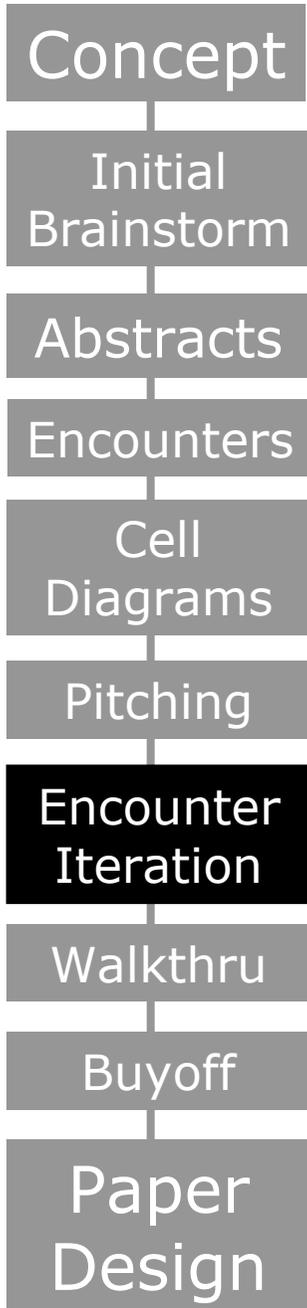
Technical

Benefits:

- Scalable
- High level of detail
- Archival and reproducible
- Easier to read/interpret for others on the team

Cons:

- Not tactile or co-operative
- Not as good for showing vertical scale
- Easy to over complicate

Keyword: **Detail**

Illustrative

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- Photo collage
- Storyboard
- Video montage
- Pre-vis video

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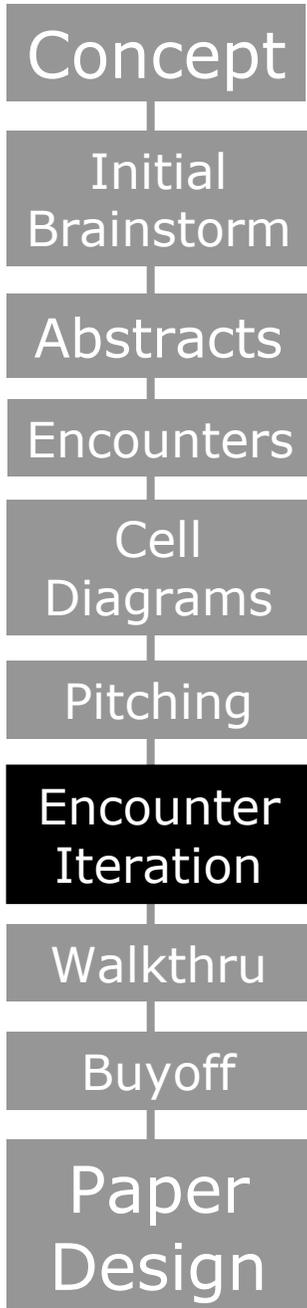
Illustrative

Benefits:

- Better sense of the visual/immersive target
- Better to show final "look and feel"
- Promotes excitement and acceptance

Cons:

- Not abstract – hard to hand off to Art
- Some experiences may be taken too literally
- Subject to quality of acquired footage
- Can't show exact gameplay

Keyword: **Feel**

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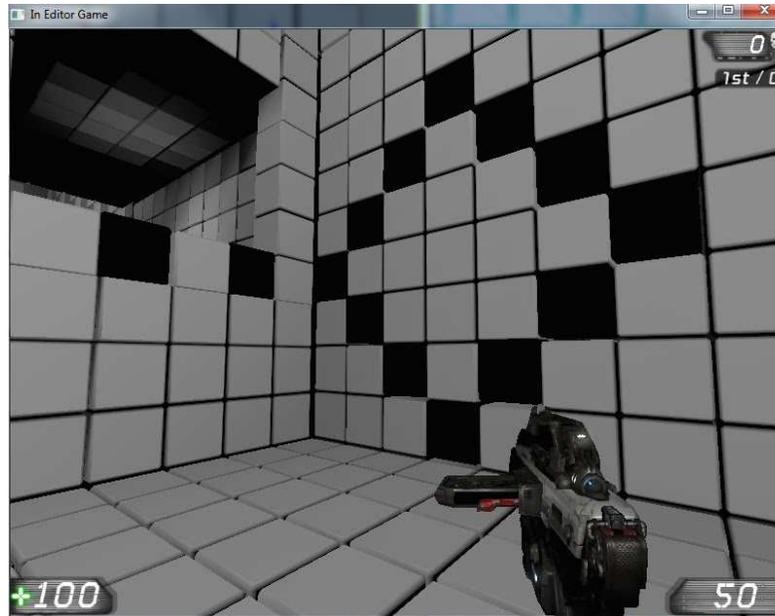
Interactive

- Game editors
- Game creators applications

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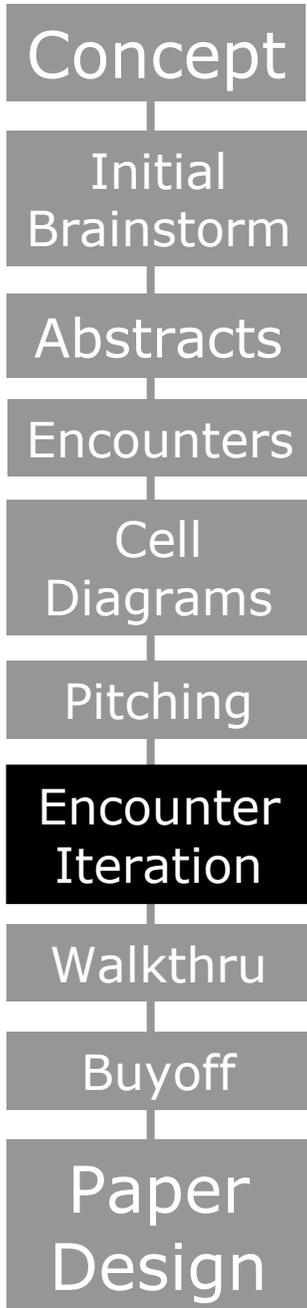
Interactive

Benefits:

- Cuts to the gameplay
- Shows exact intentions and results
- Possible to use as a platform for final development
- Modular – break down and reuse

Cons:

- Not abstract – danger of "target fixation"
- Subject to technical skill, existing tech
- Not easily transportable
- Visuals may be considered off-putting

Keyword: **Play**

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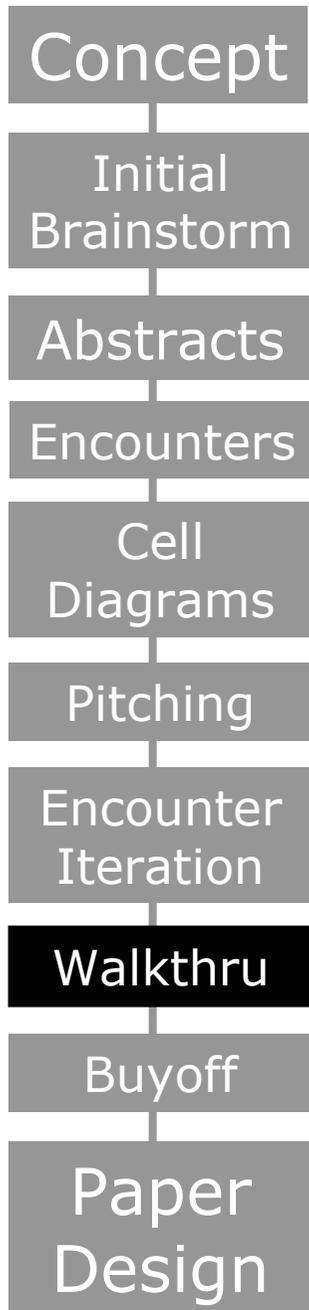
Step 7: Walkthroughs

- Written narrative of player's experience
- Encompasses most (maybe not all – GTA) level elements in fine detail
- Quickly solidifies intent and scope
- Starts to fill in empty spaces
- Cheap to make!

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| Paper Design |

Step 8: Costing and Buyoff

- Last chance to bring up **risk factors**
- **Clarity** of presentation is key
- Gather constructive feedback

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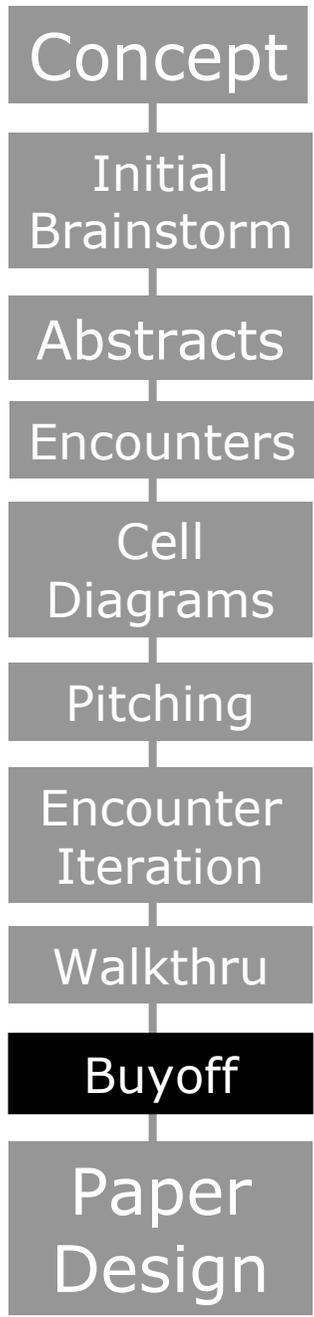
Key Deliverables

- **Paper Design**: for the people who will be working in the level
- **Asset lists**: for those indirectly supporting the level

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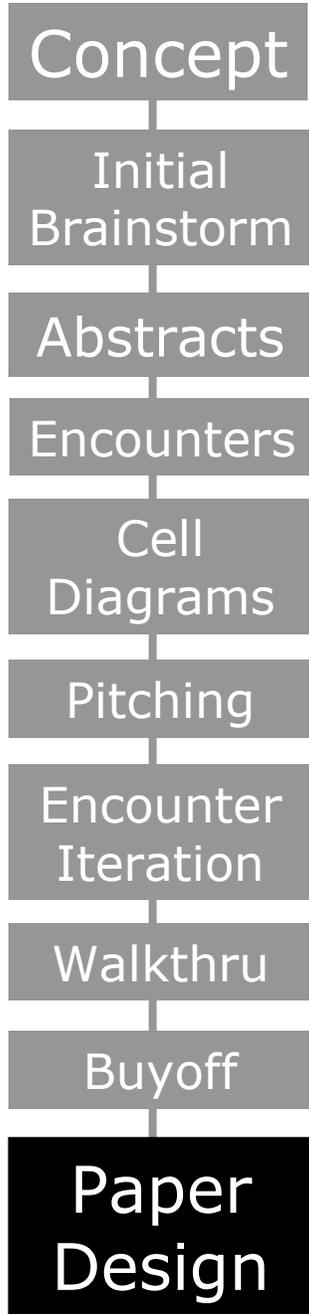
Step 10: Paper Design

This is the most important product of your process – the **instructions for manufacture!**

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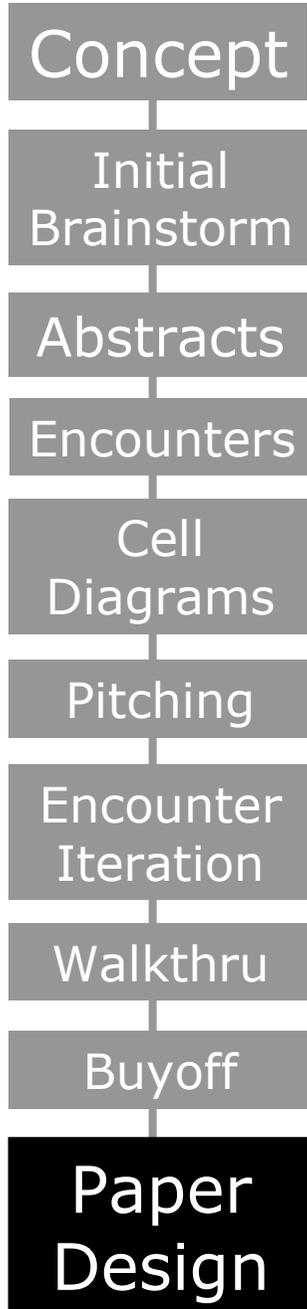
"Paper" Design

Doesn't need to be the same technique for every level designer:

- Pen and paper*
- Visio
- Illustrator

Don't do it in 3D now – this is 'whiteboxing' and comes later.

* Paper always saves!

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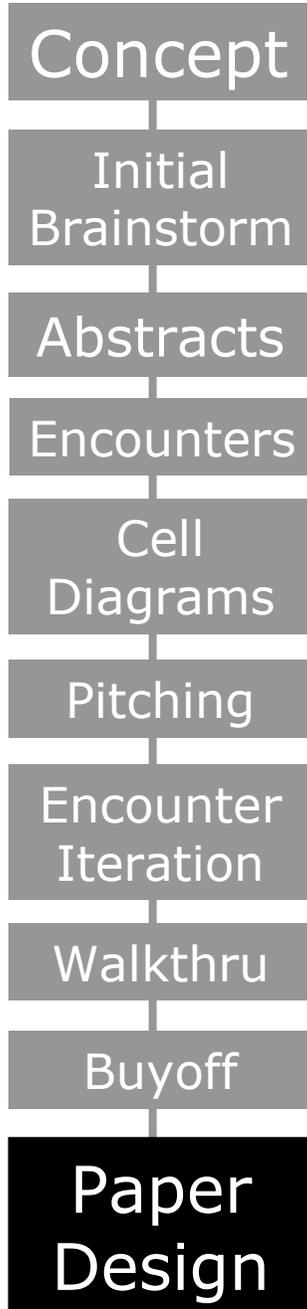
Something for Everyone

- The Producer and Leads
- The Programming team
- The Art and Audio teams
- The Cinematic team

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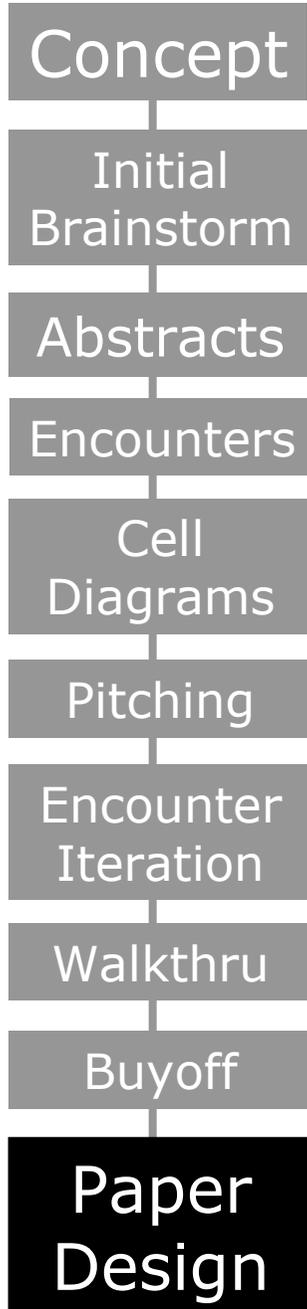
Global Standards

- ⚙ Use a master key (iconography)
- ⚙ Use a standard scale
- ⚙ Define special requirements
- ⚙ Naming convention!

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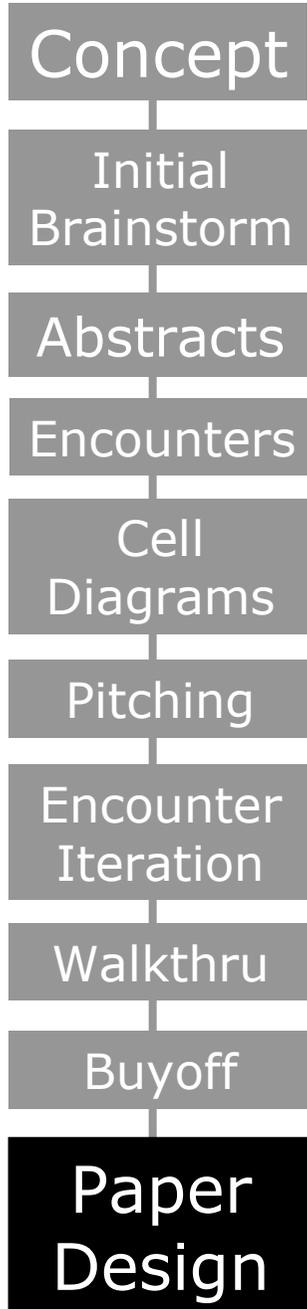
High-to-Low

Multiple passes for safety

- Work from the encounters first then fill in the spaces
- Don't be afraid to iterate – this is the place!

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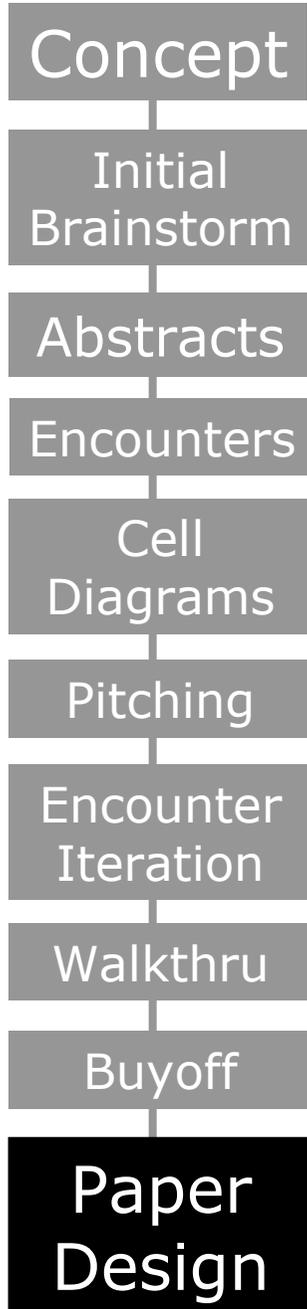
Hazards and Items

- Player Items
- Hazards
- Cover and Interactive Props
- Checkpoints

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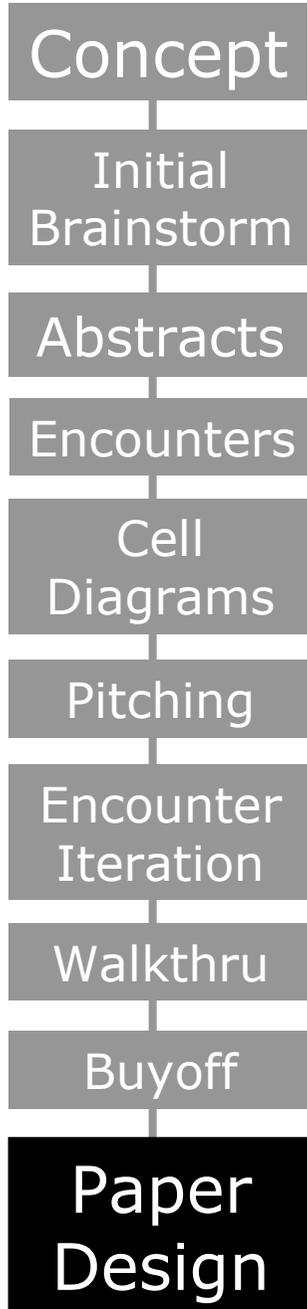
AI Considerations

- Start Points
- Movement and stimuli
- Detection Range
- Initial behavior
- Special properties
- Trigger conditions

Triggers and Events

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Paper Design
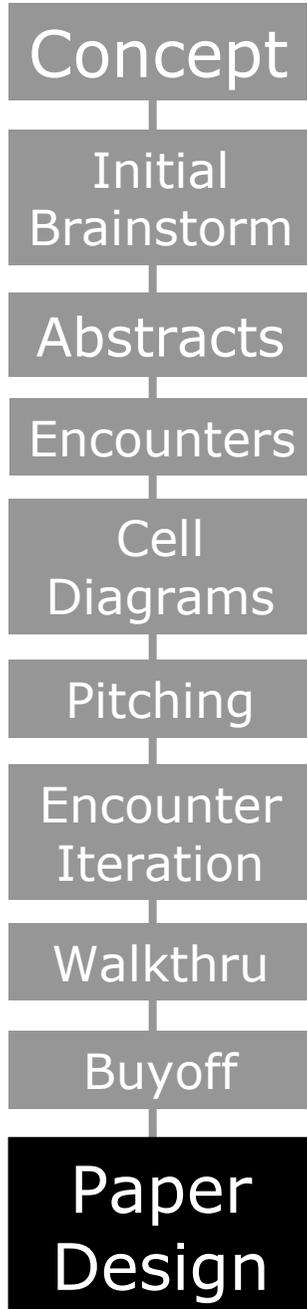
- Highlight trigger areas and consequences of entering them
- Give people a feel for the level, types of interactivity
- Cinematics and scripted sequences.

Concept

Initial Brainstorm

Abstracts

Encounters

Cell Diagrams

Pitching

Encounter Iteration

Walkthru

Buyoff

Paper Design

Interior Details

- Static and dynamic obstacles
- Stairs
- Elevators
- Corridors and passageways
- Doorways and openings

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Paper
Design

Game Specifics

- **Racing**: Banks and racing lines
- **Stealth**: Shadow and sanctuary
- **FPS**: Power-ups and Ammo
- **Tactical Shooter**: Cover and high ground
- **RTS**: Buildable ground, resources

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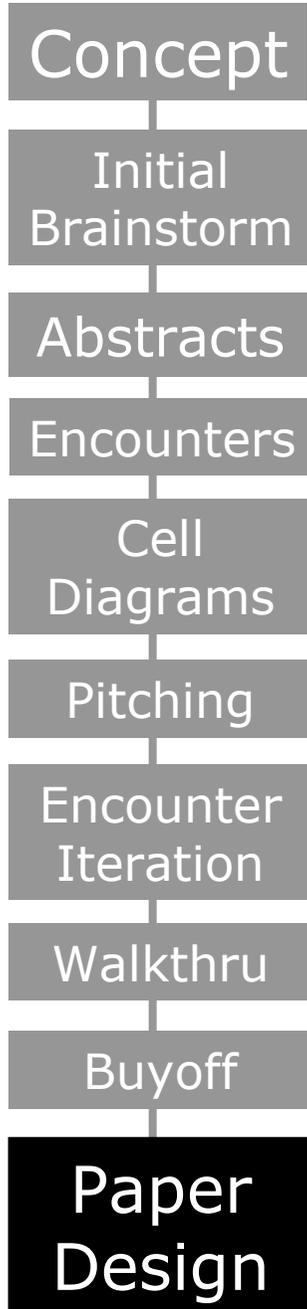
Callouts and Sub-maps

- Keep the paper map uncluttered
- Use callouts to "zoom in" to smaller areas and expand them
- Use sub-maps or divide into multiples maps logically (floors on a building, etc.)

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Bonus: Asset Manifests

Feed your support teams:

- Objects and characters
- VO
- Music and ambient audio
- SFX and environmental needs
- Special interactions

Game Developers
Conference®
March 9-13, 2010
Moscone Center
San Francisco, CA
www.GDConf.com
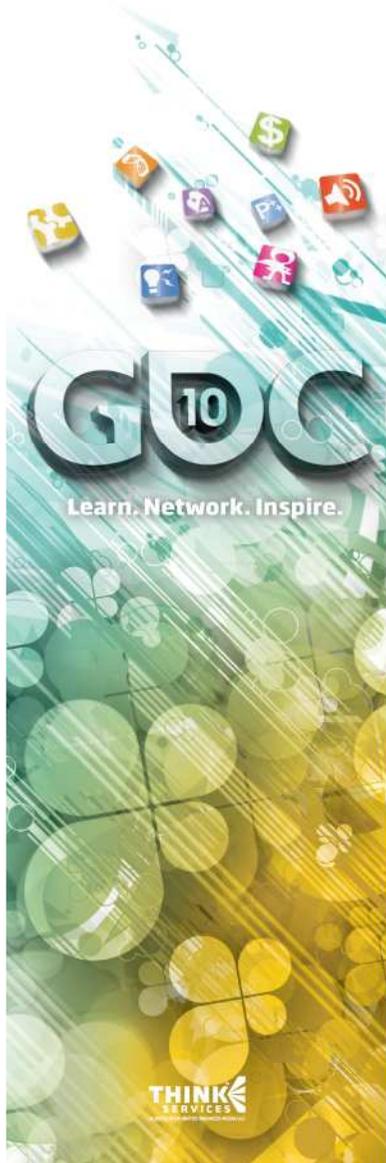
That's Preproduction Folks!

- You've won! Now onto the next level ☺

ENGINEERING

ART   DESIGN

LEVEL DESIGN

FINAL PRODUCT