NEWS POSTED Tue, June 20

Exploring the Game Design for Ion Fury - Part 2

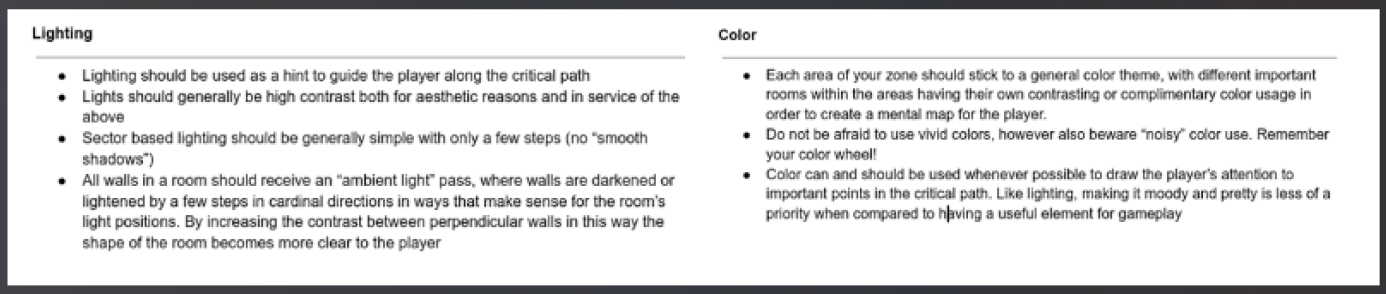
Hey everyone, it's Jonathan "Mblackwell" again and I am back with Part 2 of our Game Design dev diary. This time we are going to talk about Ion Fury's design rules, and as a special treat, we'll also be talking about the expansion Aftershock, including how our goals changed from the first campaign, and some of the new things you'll get to experience. If you haven't ready Part 1, you can do so here.

Closing the Loop

In Part 1 I talked about how different gameplay elements were made with rules for consistency, but no one wants to experience it without engaging environments that feel cohesive, learnable, and fun to explore. Designers also need some freedom in order to express their creativity. To make both ideas possible, levels had a framework for style, structure, scale and more.

Color and Lighting

Besides the overall theming, each area of a zone had to decide on a general color palette. The mapper could decide which color should be most prominent/a base, then use different contrasting and complimentary colors in important areas. The only exception to this was space around keycard doors being colored like the key they require. Keeping this basic color structure lets places be more distinct, and visually clear. Mappers were able to easily pick out colors in a scene that would subconsciously draw attention. These cues quickly create a mental map for players.



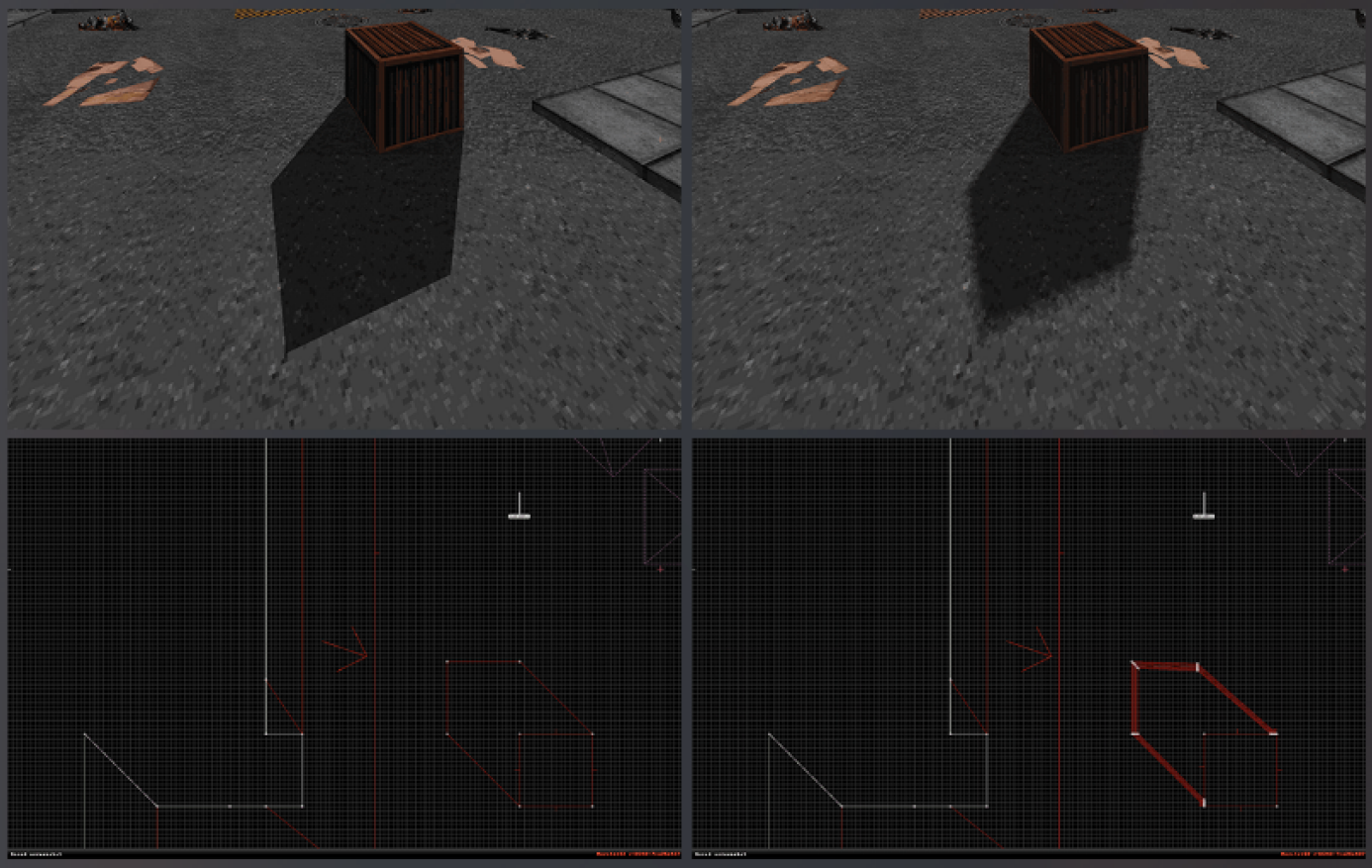
Lighting

- Lighting should be used as a hint to guide the player along the critical path
- Lights should generally be high contrast both for aesthetic reasons and in service of the above
- Sector based lighting should be generally simple with only a few steps (no "smooth shadows")
- All walls in a room should receive an "ambient light" pass, where walls are darkened or lightened by a few steps in cardinal directions in ways that make sense for the room's light positions. By increasing the contrast between perpendicular walls in this way the shape of the room becomes more clear to the player

Color

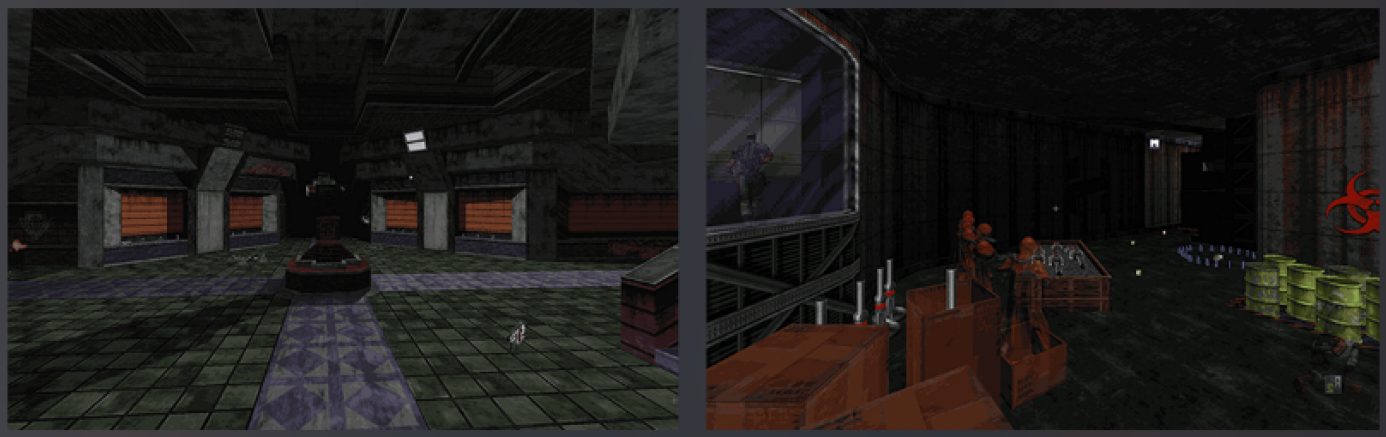
- Each area of your zone should stick to a general color theme, with different important rooms within the areas having their own contrasting or complimentary color usage in order to create a mental map for the player.
- Do not be afraid to use vivid colors, however also beware "noisy" color use. Remember your color wheel!
- Color can and should be used whenever possible to draw the player's attention to important points in the critical path. Like lighting, making it moody and pretty is less of a priority when compared to having a useful element for gameplay

Lighting a scene requires some forethought: in BUILD it's all done by splitting up sectors into the right shapes with more and more walls, shading each surface by hand! We kept it high contrast, which meant it was easier to make out the "critical path" and also kept down the number of wall splits the level designers would have to create.



(Left: Regular high contrast. Right: Smooth shadows that take up lots of walls and time.)

Bright lights draw the eye's attention and players will move toward them, so bright points of light and highlights were used to signal where to go next. Background objects and details were kept dim by comparison.



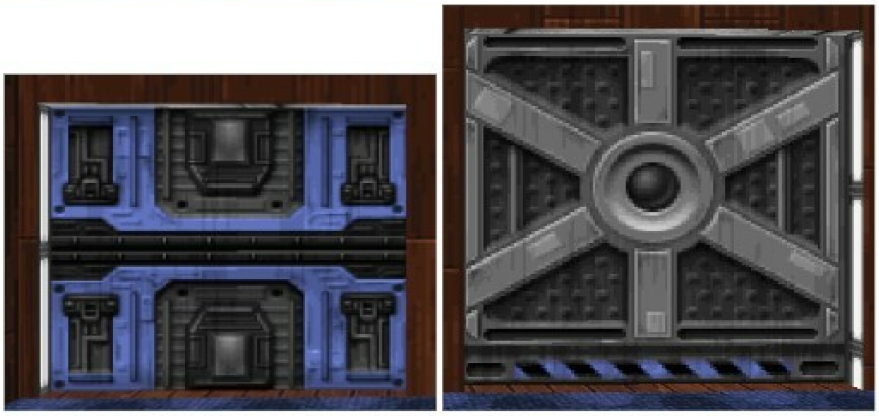
Doors and Windows

Presenting the Ion Fury Door Bible! Yes, it's true - they've got their own guide courtesy of Max. Doors were an important early decision, as they cause changes to the environment when opening and closing. Things might get stuck on them or between them. Inconsistent door designs create confusion and frustration for the player, and frequently in the Build Engine also cause death!

To paraphrase a bit, doors need to be lit if they're usable, including lighting up important doors as they unlock. No fake/false doors except if absolutely necessary for a convincing environment. Those doors must be dimly shaded and have a "perma-locked sound effect" trigger added. A sound effect when moving is a must - the sound tells you when something has happened, including an enemy coming in the room!

GENERIC MEASUREMENTS

Typical rule: 16pg high - prefer 576 or 640 depending on texture.

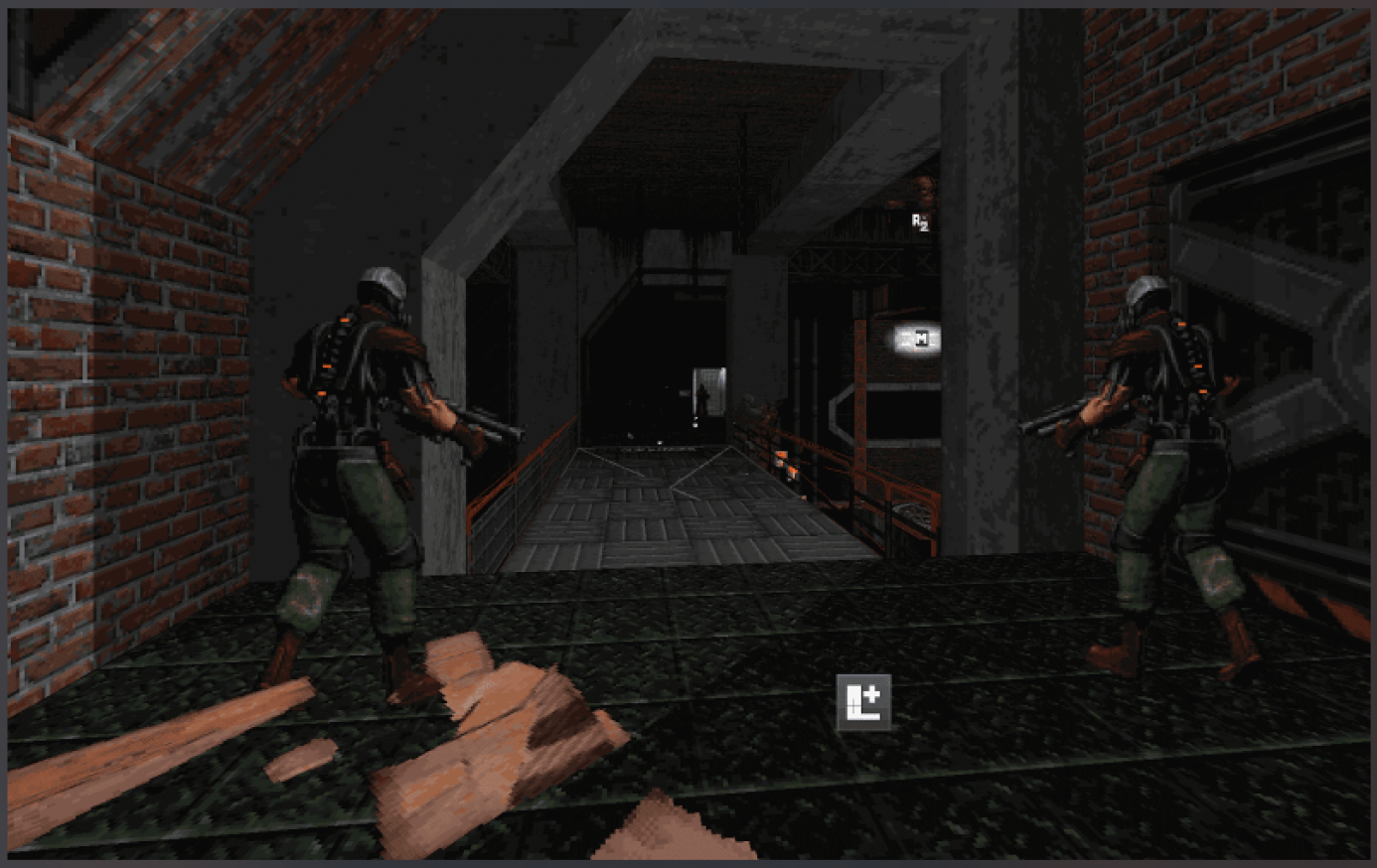


1280 wide doors, "double wide", left one is 16pg / right one is 18pg
Experiment per situation, try not to stray too far away from these.

Whatever you do, keep them at least consistent in your map, don't do 800 wide rotating doors with 22pgup and you will be fine.

Keycard doors should be seen before the matching key (otherwise - did you really need a key instead of a puzzle/switch?), and as mentioned above are required to have a nearby color match to the key that unlocked them.

If a door is activated by a switch or puzzle, the switch should be next to the door or connected to it visually; whether by cables, pipes, lights, or otherwise. This connects them logically and mentally for the player as well, helping them feel less lost. In the few exceptions distant doors could be opened by an unconnected switch when there is a security monitor nearby to see what changed.



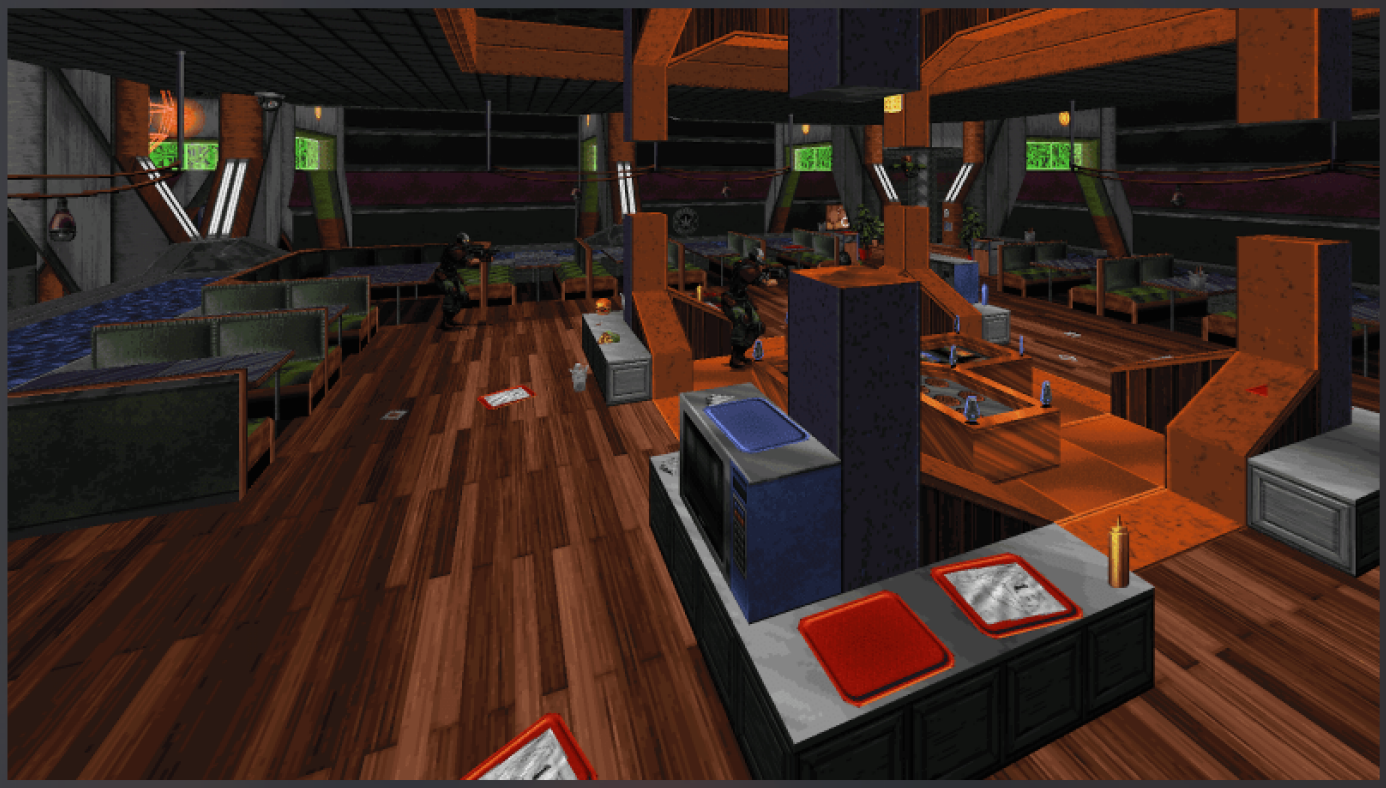
We were less strict with consistent window appearances, but because we had both breakable and unbreakable glass, plus some glass that enemies couldn't see through, we still had to establish a few rules. Darker or more opaque glass blocks enemy line-of-sight and doesn't break when hit, while clear/thin looking glass is something flimsy that could be smashed to pieces.

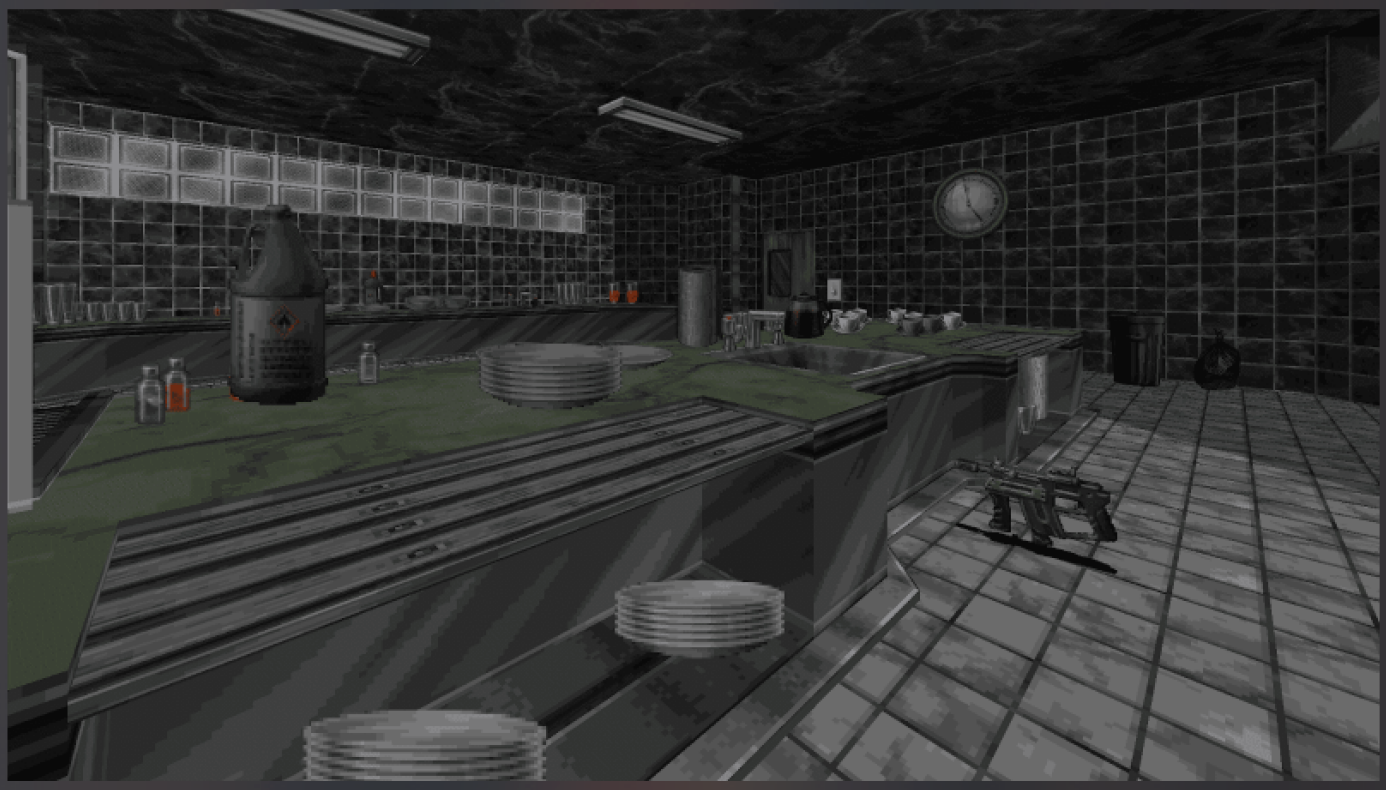
Objects

It was important to maintain consistency in all of the levels. I worked closely with Max and others to decide on things as mundane as general door size (576-1536 Build units), average hallway width (1024-2048), and the size and placement of objects. Sometimes as simple as "all electrical sockets should be 2048 above the floor or counter", or as complicated as "fire extinguisher explosions should always leave wall damage". These kinds of decisions not only make the levels feel more coherent and connected, they also affect the believability of the game environments and the gameplay itself.

An example of this is that switches and buttons for normal progression were placed at "eye level", the height of a centered view, so they could be easily pressed without having to do small up and down micro-actions. While already frustrating with mouse input, it's even more awkward when you're using a gamepad or keyboard-only controls (which the game also technically supports).

Rooms couldn't be random collections of objects. A bar should have bottles and glasses, an office should have desks and chairs, and so on. This gives a sense of place, and the impression that it's truly lived in and not just an empty shell. And even though they look cool as extra detailing decals, since we had breakable walls the designers had to be careful not to use large Wall Crack sprites and suggest to players that a wall can be destroyed.





And since this game featured movable props we encouraged their use in little easter eggs and secrets, particularly our old friend The Chair:

Chairs were an early physics test object and became a running gag. Eventually it was decided that level designers should have at least one “Chair Secret” in their zone, sometimes more than one!

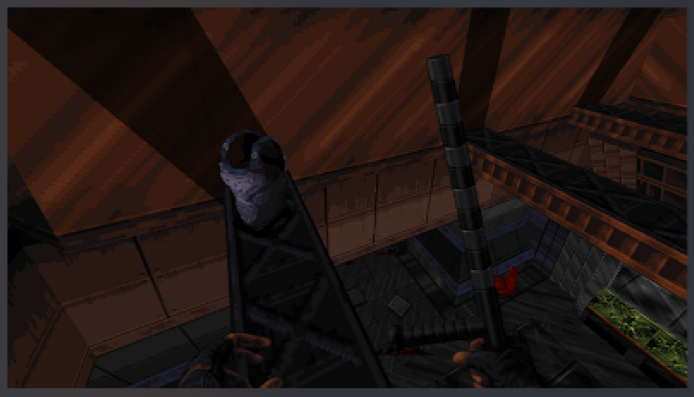
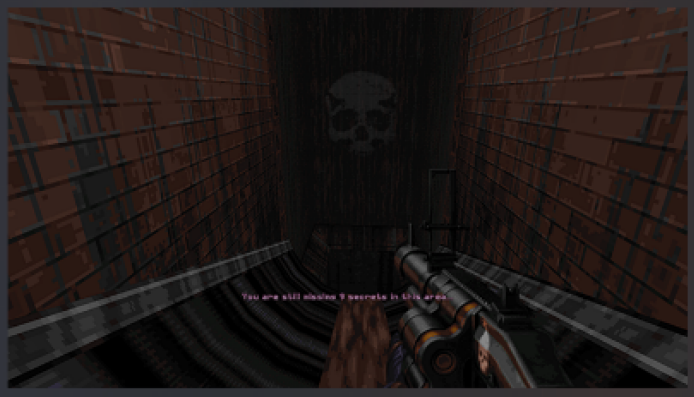
Secrets

Speaking of secrets! The usual rule of thumb was 5 per area, with some simple/obvious and a few more difficult. Though since secrets allowed a large element of freedom, the level designers had lots of fun and went nuts with them!

Ion Fury has 3 kinds of secrets:

- Unmarked/Easter Eggs. Sometimes these are things just off the beaten path, but they can also include fun extra hidden easter eggs that are hard to find or difficult to execute and don’t count toward your total percentage.
- Regular secrets. A Secret Stash! These are the five expected secrets, and can be of any style as long as enough normal experimentation would find it. Not everyone likes every type of secret, but every secret was tested with and without a hint guide to double check that it could be reasonably completed by someone really going for it! These are the only secrets that count toward your secret percentage.
- Mega Secrets. Extremely challenging secrets that every player might not find - only one allowed per zone!

By breaking things down this way we could give lots of freedom to the level design team, while also making sure players could find enough secrets during normal play to feel fun.

(Left: A secret item! Right: A Point Of No Return!)

It was also important to us not to have you locked out of backtracking to get 100%. Each area was marked with Points of No Return to warn you when you were about to pass the threshold to an area you can't get back from, and to tell you how much progress you've made. As an extra visual cue a graffiti skull (the logo painted on GDF weapons) was always placed near the exits.

What's in an Aftershock?

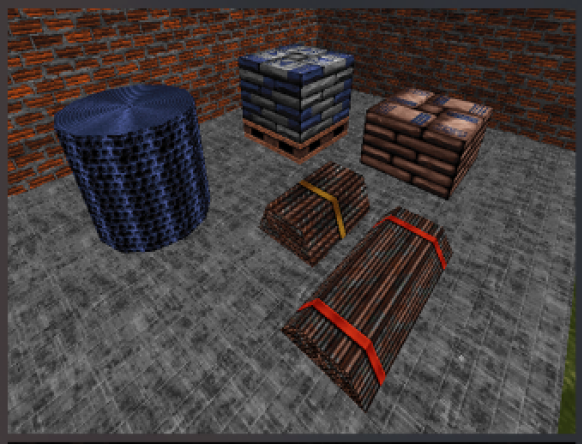
We had such a solid and balanced base from Ion Fury that for Aftershock we could be more playful. Players are expected to have already played the main campaign and so--

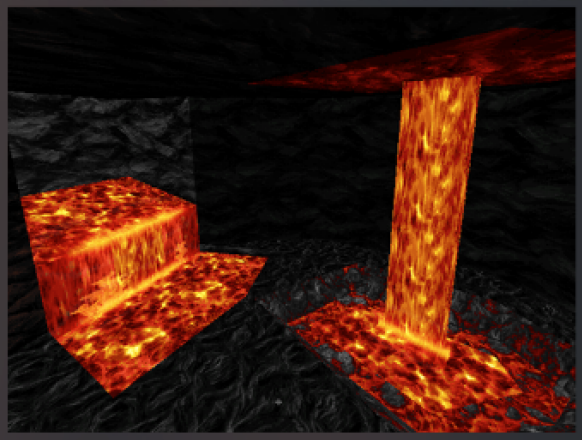
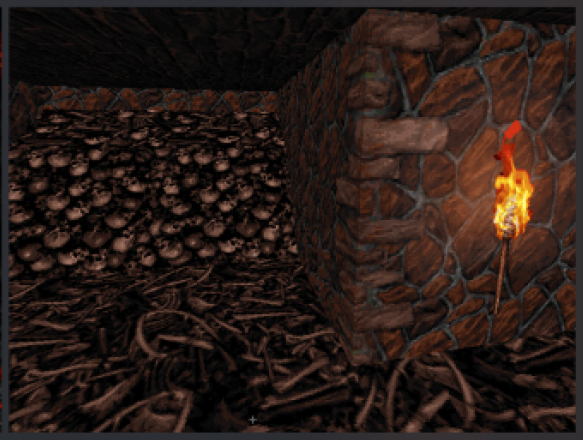
We thought c'mon, let's get nuts.

Level Up

The long story arc in Ion Fury's main campaign often left the player stuck in underground areas. This time we wanted to focus on more varied environments with lots of outdoor locations. One important early decision to help with this was to go with a more theme heavy approach that makes each map something you can describe in a few words.

Here are some of the thematic elements from our "art gallery map".

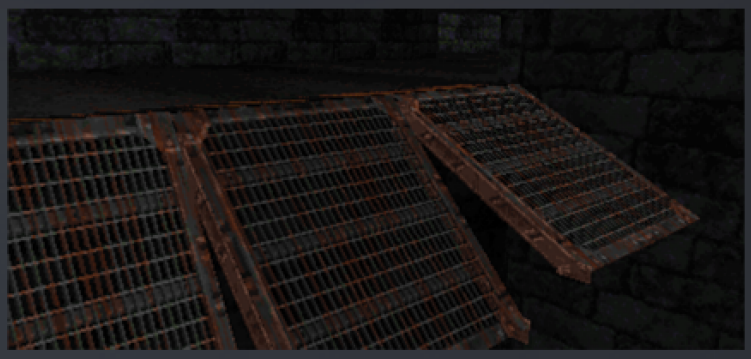


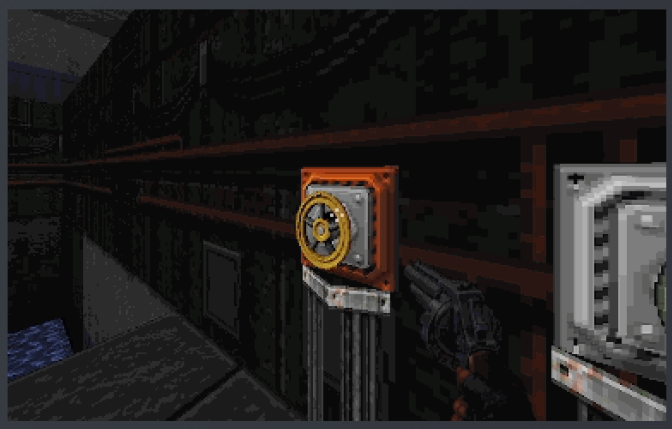



One longtime dream of Build mapping was to have sloped sprites in the engine.

This is now a reality.

It does this by clever re-use of existing sloping code in the engine to pull this off and in a way that does it very faithfully as per Build standards (quirks, jank and limitations but it looks cool!)
Level designers are now using that to build unique areas and objects, even custom physics props. Even simple visuals like lasers and bullet trails benefit from this technology.
They've also got a suite of new effects like being able to flood areas by setting the water level, bunch of new palettes to work with and loads of tweaks to the existing roster of effects.





Get Messy

The pacing of combat difficulty in Ion Fury helped ease you into encounters with each enemy, but for Aftershock, players know what's up! So the pacing was sped up, with more challenging enemies from Ion Fury appearing much sooner. New and alternate enemies have their own attacks and movements for players to learn, and most of them have quicker reaction times than the original ones.

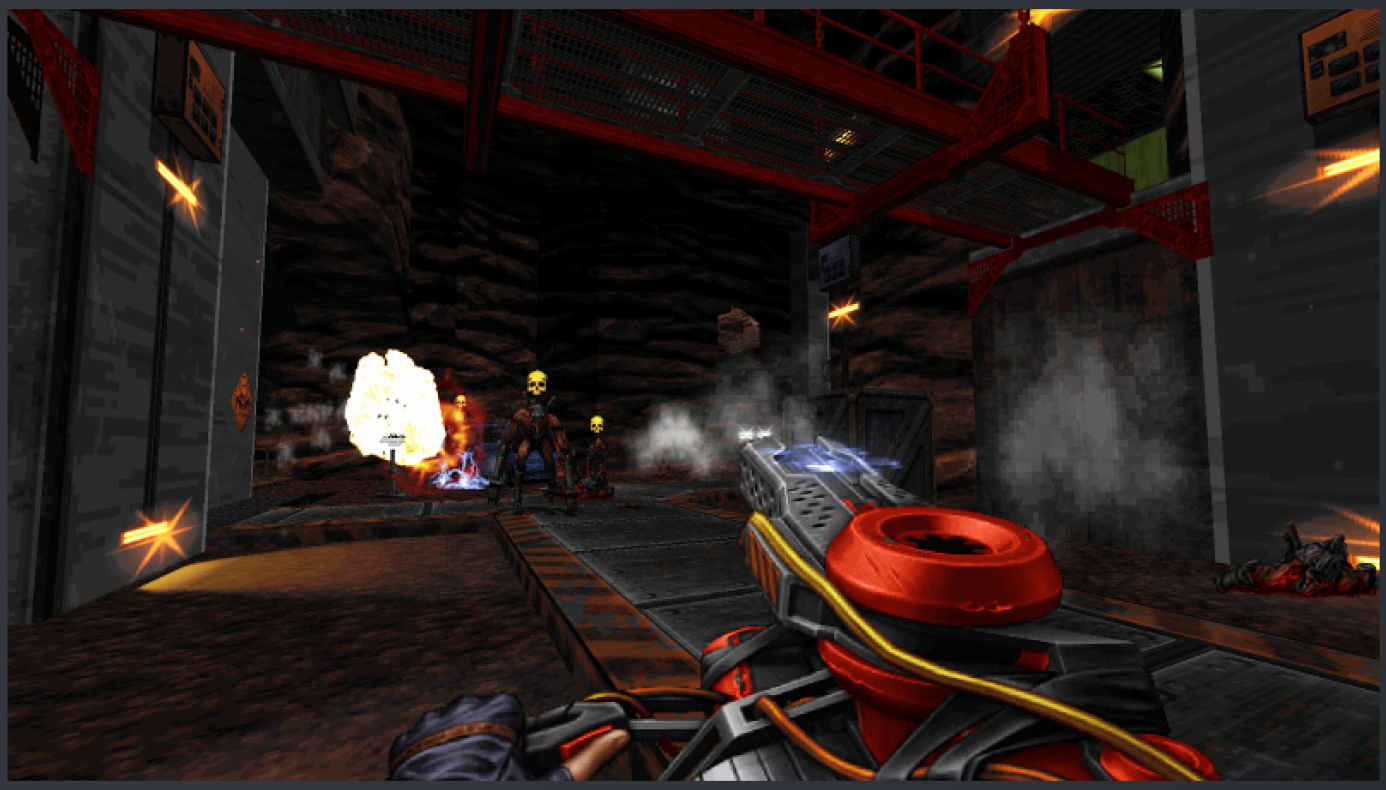
We also added a new, and harder, fifth difficulty mode. This mode makes encounters even more intense, and creates a new layer of strategy as undestroyed enemy corpses will come back to life! Using the right moves and making enemies gib into pieces from your attacks becomes even more critical. Skill 5 is something we will also be including in the vanilla game as a bonus!

New boss encounters were a must, with distinct and interesting battles. In Ion Fury “bosses” could be hordes or puzzle-like, in addition to the occasional “boss fight”. We weren’t able to have as many of those boss fights as we, or players, wanted so for Aftershock we made it a must. Expanding the game gave us the time to create memorable encounters so bosses took a big step up with some cool surprises.

Maximum Power

Shelly has some really powerful attacks in Ion Fury, but most are balanced in some way to not be completely overpowering. However, since the bad guys up the ante in Aftershock, Shelly gets to respond in kind.

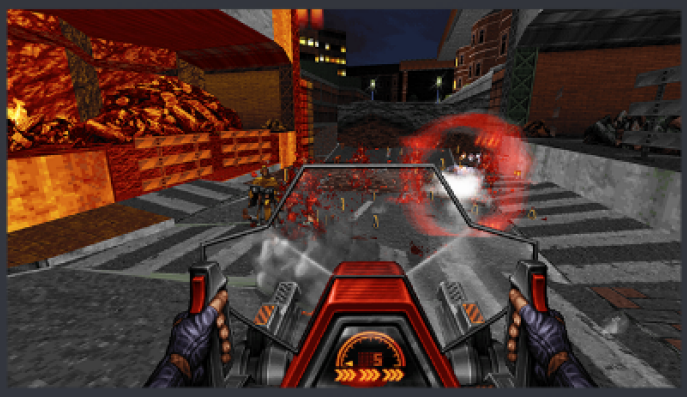
There are a few new instant Items, but we used the new pocket we introduced in Ion Fury 2.0 to introduce more PowerUps. Now Shelly can incinerate her enemies with flame traps, give every gun a spectacular boost with new attack modes, and slow things down to look cool while doing it. We also upgraded the regular arsenal! There's some new ammo types for the Disperser, and also a new much fan-requested weapon that will really wreck Heskel's day.



Highway Star

A key feature for Aftershock has been the bike. It's something we've wanted since the early days of Ion Fury itself, and here we finally got to do it! It was one of the earliest things prototyped and done as a proof-of-concept for an expansion. It had to be fast, agile, weighty, and easy to handle with different inputs. It had to feel good to actually use, not the clunky mess people know from some other Build Engine games.

So we settled on a quad-copter hover bike with beefy armor and infinite rockets to pummel enemies with. Even some of the toughest dudes are no match for Shelly's blistering power when she revs up that motor.



Keep Watching the Skiiiis.... Skies.

Of course this is just a taste of what you can expect from Aftershock. — What started as a simple map pack ended up adding a ton of new things to the game. Parts of Aftershock were already started soon after the release of 1.0, and parts of its development have already seen their way into the base game. Improved performance, minor game play tweaks such as the pocket inventory, and even some undocumented effects ;)

It's been a long road and we're really excited we can show everyone more of the expansion! There's more reveals coming soon, so remember to follow us on social media to get the latest, and if you haven't done already, add Ion Fury: Aftershock to you Steam Wishlist! Thanks for reading and stay tuned!

I'll see ya next time,
Jonathan "Mblackwell" Strander

MORE ABOUT THIS GAME