

ADG AWARDS
PRESENTATION

FOR ONE HOUR
FANTASY SINGLE-CAMERA
SERIES

Fallout

prime | FYC





**“A monumental achievement
of sci-fi world-building”**

DAILY BEAST



“Immaculate,
game-accurate
production design...
every space bursts
with personality”

IGN





“Gorgeous and grimy practical sets make the Wasteland feel real and alive”

 Polygon



“An engrossing,
richly detailed world”

BBC







“Pitch-perfect Vault sets”

FILM



“This retro-futuristic style comes to life in vivid Technicolor in the series, which feels like the video game come to life”

USA TODAY



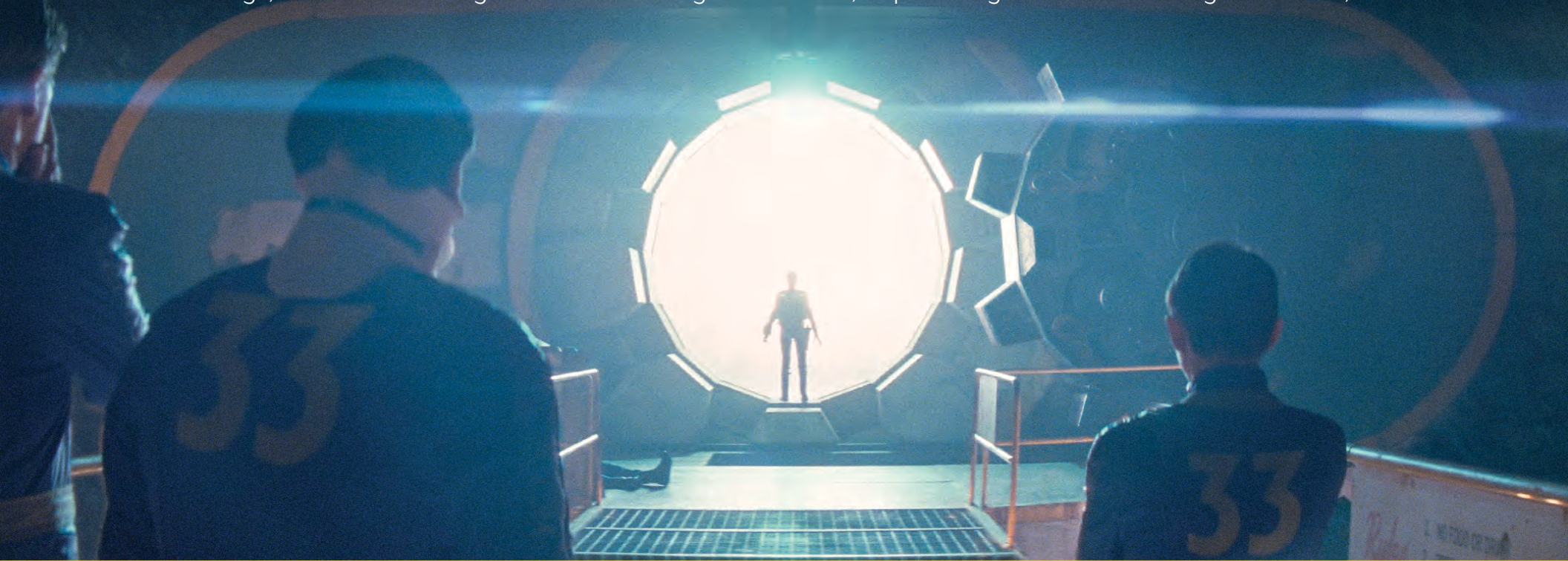


“The production design from Howard Cummings is **absolutely staggering**”

THE WRAP

OUTSTANDING PRODUCTION DESIGN FOR ONE HOUR FANTASY SINGLE-CAMERA SERIES

Howard Cummings, Production Designer • Laura Ballinger Gardener, Supervising Art Director • Regina Graves, Set Decorator



Game On

THE RETRO-FUTURE WORLD OF *FALLOUT*

BY HOWARD CUMMINGS, PRODUCTION DESIGNER



A

A. EXT. VAULT 33 DOOR, ILLUSTRATION BY THANG LE, BASED ON A LOCATION IN NAMIBIA AT AN ABANDONED MINING FACILITY. PROGRAMS USED MODO, OCTANE AND PHOTOSHOP.

B. EXT. VAULT 33 DOOR, PRODUCTION STILL, THE SOUTH AFRICAN AND NAMIBIAN TEAMS CREATED AND DRESSED THE SET WITH A PARTIAL VAULT ENTRANCE AND ELEMENTS OF AN LONG AGO DESTROYED SANTA MONICA PIER, INCLUDING MUMMIFIED BODIES A LA POMPEII.

In adapting anything from a strong source material into a film one is faced with a basic question of how faithful to be to the original work. When Jonathan Nolan approached me about designing a series based on the video game *Fallout*, it was the first thing I asked. He generously said something to the effect of “see what you think.” I vaguely knew that the game had an exaggerated and somewhat comic retro-futuristic look. This is a far cry from the clean monochromatic futurism that we used for *Westworld*, so my first inclination was leaning toward making a cleaner, more stripped-down version of the look in the game. But I had to get to really know the material before I made that call.

I was in New York and already had a great team of people going as we had been in development on another Amazon project also for Jonathan Nolan. I turned to researcher Nara DeMuro for help to get me into the world of *Fallout*. I quickly came to understand that the game had a very dense and epic visual history with a worldwide fan base. Nara turned me onto the many fan-generated YouTube posts that were a wealth of information. Many of these posts were well produced and obviously took a good deal of time to put together. I could see how much the game story and design meant to these fans. I also realized that a good percentage of the audience would scrutinize every design choice.



B

A. EXT T-60 POWER ARMOR, PRODUCTION STILL, FILMED AT THE WENDOVER AIR FORCE BASE IN UTAH. THE SUITS IN THIS SHOT ARE ALL PRACTICAL AND WERE A MIX OF HERO AND MODIFIED COS PLAY SUITS.

B. LUCY'S VAULT APARTMENT, ILLUSTRATION BY ALI KASHFI, SET DECORATOR REGINA GRAVES WORKED CLOSELY WITH ALI SO ALL THE FURNISHING AND LIGHTING WERE VERY CLOSE TO THE FINAL LOOK. ALI USED UNREAL ENGINE AND TWINMOTION, RHINO, SKETCHUP PRO FOR 3D MODELS AND PHOTOSHOP FOR TOUCHUPS.

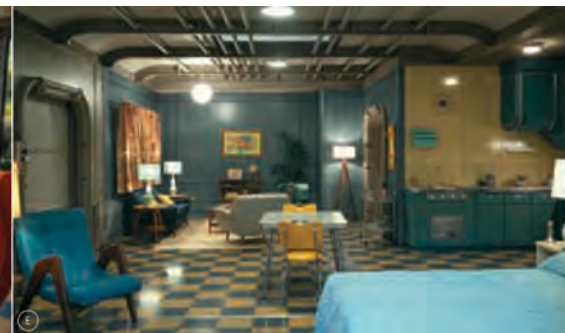
C. CHET'S VAULT APARTMENT, PRODUCTION STILL, FORMERLY LUCY'S APARTMENT WHICH WAS DESIGNED TO ACCOMMODATE NUMEROUS CHANGEOVERS.

D. VAULT APARTMENT USED IN THE VAULT TECH SALES COMMERCIAL, SET PHOTO BY JOJO WHILDEN.

E. LUCY'S APARTMENT, SET PHOTO BY JOJO WHILDEN.

The more I learned about the history of the game and the different factions and environments, the more I began to like it. I realized the challenge was to really try to make the game with all its scope and detail come alive. Nara and I placed an array of game images that related to the story on the conference room wall and held a meeting with the production to say, "This is what it's going to look like." It looked great but it also was totally intimidating, we all now had to figure out how to actually make it happen.

In more conversations with Jonathan, he said he wanted to give the show a retro technicolor feel. To achieve that, the production shot on film with an anamorphic frame ratio. Jonathan also wanted to push the epic elements in the game by finding ways to increase scale and scope. We discussed using a few distant wasteland location ideas and using a Volume digital stage as well. Nolan has been involved in developing Volume technologies and this would be the first time we could use it fully in series work. A first for me as well, as I only had some small experimental experience in working with Volume technology.



With the task now laid out, I was fortunate to have a good amount of prep time, which I used every minute of as there was a lot to accomplish. One of the very first things the Art Department worked on was the T-60 power armor suit. It was like a character, and Nolan really wanted a working suit and not just pieces or full CG. To make that happen, I enlisted the two prop masters, Michael Jortner and Peter Gelfman, to supervise its manufacture.

Illustrator Thang Le worked up the model of the suit. He is particularly good at motion models and was a good choice to starting to figure out how to make the suit function. We teamed up with Legacy, an LA-based company that has a lot of experience in making these types of suits, but the amount of functionality we were looking for was very difficult. The prop department worked directly with them. There was an 18-week projected turnaround to get the first prototype, which is why we had to develop it right off the bat.

We ended up with a few types of suits for different functions. It required a small team of people to tend to it during shooting, who were provided by Legacy. But the effort was worth the result, with the big benefit of having a real suit in the majority of the shots.

Meanwhile, Supervising Art Director Laura Ballinger, whom I had also worked with on *The Knick*, got a very

talented group of Set Designers to start on the vault sets. Part of the game included building a vault (fallout shelter) and they provided a kit of parts that the player could use. The basic building element was a cube had a footprint of twelve-square-feet. To be authentic to the game, I wanted to keep to that basic model. This required a lot of coordination between the Set Designers and the Illustrators because the build "rules" had to be applied to all the sets. Laura insisted we use the team communication platform Slack for interdepartmental communication. Thank God she did because we could share in real-time what everyone was doing. As things evolved and we added in the Virtual Art Department and distant location teams, it was a great tool to handle communications on a project of this scale and complexity. There were still, however, times that my phone would basically be exploding with continuous alerts.

Laura also started working with construction manager Joe Alfieri and Scenic Artist Elizabeth Linn to figure out how to pull off the very dense level of detail the vault sets required. A lot of repetitive parts with complex compound curves and an abundance of texture. They employed an extraordinary amount of C&C, along with vacuform and molded materials from the plaster department. In the design office, we ran a couple of 3D printers to make the originals for casting the various bolts, rivets, and

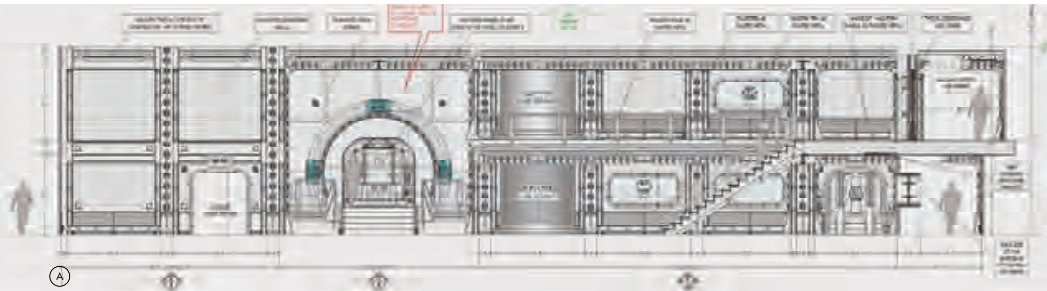
control device elements to give to the plasterers. There were some complicated floor details that we ended up addressing by having Graphic Artist Holly Watson make as 2D print trompe-l'oeil stickers.

Matt Sama took on the illustration for the vault farm. This very large room is not in any of the games and had a unique technology that also was not in the game. To emphasize scale, we decided the room would hold one square acre of corn. It became the first set we planned on using in the Volume, as it was too big to even think to build on stage. Matt analyzed how it would be built using parts in the game from other larger spaces. The entrance to the room was built on the stage and

F. VIEW OF THE VAULT FARM CORNFIELD, ILLUSTRATION BY MATT SAMA, THIS WAS THE DAYTIME LOOK FOR THE PROJECTED MIDWESTERN IDEALIZED FARM IMAGE. THE IMAGE WAS MEANT TO HAVE AN ARTIFICIAL 2-1/2 D LOOK.

G. VIEW FROM THE FARM CLEARING TOWARD THE VAULT, ILLUSTRATION BY MATT SAMA, THIS CONCEPT IS FOR BOTH THE DIGITAL ASSET USED IN THE VOLUME AND THE PRACTICAL SET FOR THE ENTRANCE FROM THE VAULT. MODELED IN SKETCH UP AND MOVED INTO 3D MAX.





A



B

A. FARM ENTRANCE, CONSTRUCTION ELEVATION BY SET DESIGNER AIMEE DUMBO, THE SETS WERE DRAWN IN A MODULE SYSTEM, LIKE THEY ARE IN THE GAME, SO EACH COMPONENT COULD BE UPDATED AS WE CONTINUED TO DEVELOP THE SETS.

B. VAULT FARM WEDDING CEREMONY, ILLUSTRATION BY MATT SAMA, USED IN THE VOLUME THIS WAS THE "SUNSET" LOOK FOR THE VOLUME FARM SET. PRODUCTION STILL.

C. VAULT 33 EXIT CHAMBER AND DOOR, VOLUME STUDY WITH PLAN AND SECTION BY ART DIRECTOR ANN BARTEK, THIS SHOWS THE BESPOKE, ELONGATED HORSESHOE DESIGN FOR THE VOLUME CREATED THE SHOW.

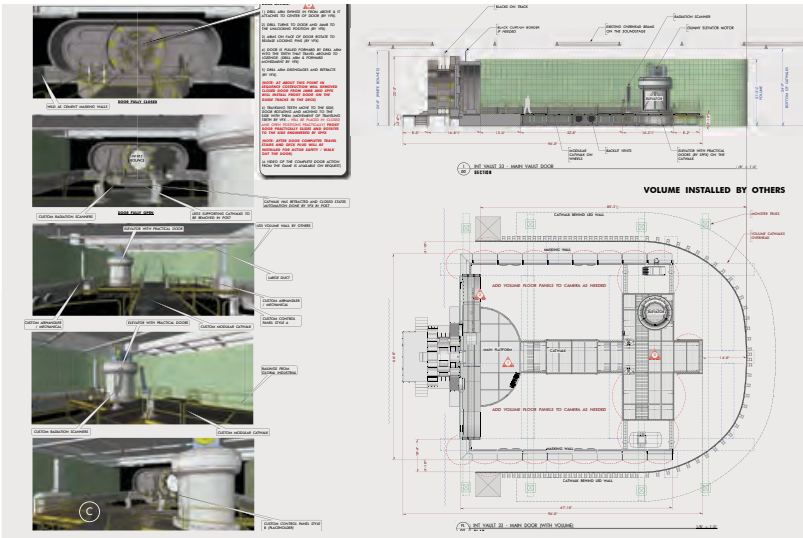
he devised the way it overlapped and transitioned to the Volume stage. He worked with Set Designer Aimee Desmond and they developed a lot of the set language used in the show. The script called for the farm to have painted wall murals of an idealized farm. The showrunners Graham Wagner and Geneva Robertson-Dworet said they wanted it to look like the production of the musical *Oklahoma!* I proposed that the vista be a projection rather than a painting, and that way we could change the time of day at will. Jonathan Nolan then took it further and added that the system would be damaged during a raid on the Vault and the film image would burn up in the projector during a big fight sequence. Great idea and also really challenging to pull off as it was all happening in the Volume digital asset that we had to create. Trying to illustrate how this would look also became challenging as well and stylistically tough to figure out.

To get the Volume to work, I was lucky enough to work with a VAD team provided by Magnopus, a virtual production company. I had gotten to work with them previously on some smaller digital "experiments" and was very fortunate they took this on as I had a lot to learn quickly to understand how to design with the technology. Virtual production director AJ Sciutto pulled together

an amazing team and I tasked Art Director Ann Bartek to be the coordinating Art Director from the physical side. I knew Ann again from *The Knick* and she was detail-oriented and a good communicator. New York didn't have a base for virtual production, so we were forging new territory here. In fact, part of the work included building the Volume itself as a complete one did not at that time exist in New York. This undertaking involved a lot of partners, including MBS and FUSE. I could write another whole article just about that experience.

It did give the series a chance to design our stage, and Jonathan felt a horseshoe-shaped surround would be better than the more common circular design. This also meant I had to design to that shape, which dictated how it functioned as well. A good example of this would be the vault chamber to outside. Developed from concept art by Thang Le and based on a similar barrel-shaped room from the *Fallout '76* game. It might seem counterintuitive but we actually built the very large door but the room itself was the asset on the Volume walls. I think actually building the massive door gave the room a reality that it might not have had if it was a digital image. The whole scene was about the door.

I was really fortunate that I got to Regina Graves to take on the daunting set decoration challenges of this show. She had done incredible work on *The Knick* so I knew she could handle the scale, detail, unique style and manufacturing needs. Regina really defined the quirky retro-futuristic look that the game had through her choices. She did it using a mix of vintage and retro-style new pieces. There is an exaggerated sense of scale in the game so, she had custom made carpeting and fabrics with over-scale patterns. Regina would find patterns



and then work with the graphics department to manufacture custom wallpapers as well.

Her choices told the backstory of the characters and anchored the sets in a reality that kept them from feeling absurdly artificial. She worked with Set Designer Jon Collins, who drew the residential areas in the vault, to figure out the various control units, lighting and hardware needed. In conceiving the vault residential wings she worked closely with Illustrator Ali Kashfi to make sure the furnishings and lighting she sourced or was making was accurately represented, so the concepts could be used by all the departments as a guideline.

All the lighting in the vault sets had to be augmented or manufactured as it was actually functioning as film lighting. In the game, there were light fixtures that you could use in building a vault. Regina worked with the Set Designers to come up with designs that looked like the games, then interfaced with the gaffer and found manufacturers to produce the housings that electricians would then wire. This was made more difficult as there were a large number of these fixtures that need to be produced. The largest set of the show was a town that the miserable surface dwellers had made from scrap

D. VAULT 33 EXIT CHAMBER AND DOOR, PRODUCTION STILL, BECAUSE OF THE UNIQUE U-SHAPE DESIGN OF THE VOLUME, THE LARGE ROUND DOOR WAS ACTUALLY PRACTICAL AS WERE THE CATWALKS AND ELEVATOR. THE VAST BARREL-SHAPED ROOM WAS THE DIGITAL ASSET

E. VAULT RESIDENTIAL CORRIDOR, ILLUSTRATION BY ALI KASHFI, WORKING WITH SET DESIGNER JON COLLINS, THIS SET A GOOD DEAL OF THE LANGUAGE OF THE VAULT ARCHITECTURE...

F. VAULT TUNNEL SET PHOTO BY JOJO WHILDEN.



D



E



F



A. FILLI AT NIGHT, ILLUSTRATION BY MATT SAMA, BUILT AND SHOT IN A CONTAINER YARD AT STEINER STUDIOS. MATT FULLY MODELED THIS SET AND WE USED VR TO SCOUT IT AND BLOCK OUT THE ELABORATE STUNT WORK.

B. FILLI, SET PHOTO BY JOJO WHILDEN.

C. MA JONES SUPPLY, CONSTRUCTION DRAWING BY MICHAEL AUSZURA, AS MUCH OF WHAT WAS BEING USED TO BUILD THE TOWN BUILDINGS WAS SOURCED THROUGH SET DECORATION, MICHAEL DEVELOPED THE SCHEDULES OF ASSETS AND WORKED WITH THE SET DESIGNERS ON THEIR USE.

and salvage called “Filly.” There were similar settlements like this in the game so the Art Department did a kind of mash-up of several of them. Jonathan Nolan wanted it to feel like it was at the bottom of a big hole. Illustrator Matt Sama developed a full virtual model of the settlement based on my scribbles and research pulls, and later fully illustrated each structure. We actually virtually scouted and blocked the action sequences using the VR setup we already were using for the Volume work. This was incredibly useful, especially as Matt could place the sun in exactly the right place for the days in the shooting schedule.

Set Designer Michael Auszura headed up this ambitious undertaking working with Matt Sama and a small team of Set Designers. Michael continued on through the build process, which needed a lot of supervision because of the handmade quality. He also worked closely with Regina Graves, who found the bulk of the finished

building materials for the set. Besides literally tons of junk and scrap she sourced all the windows, doors, siding, weathered wood and metal supports. She also sourced jet plane parts that were shipped from Lancaster, California, including the nose of a 747 that was placed on top of one of the buildings. Michael developed material schedules for all of this and assigned elements

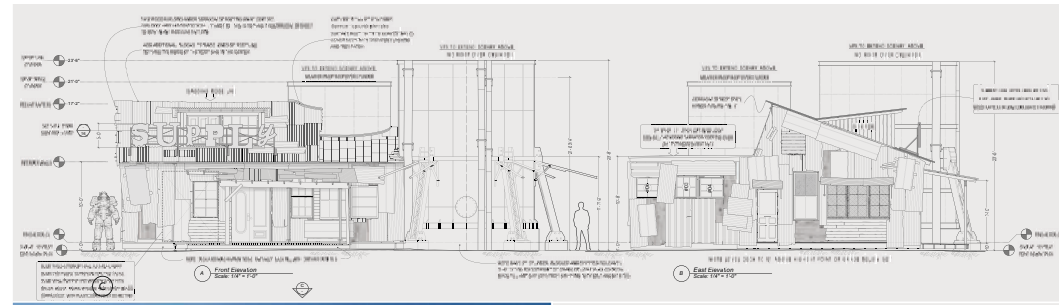
to the different buildings. One thing that helped visually ground this set was that early on in research we came upon a really amazing junkyard in New Jersey, Wade’s Salvage. This yard was frozen in time from about the ’60s and was near an airfield, so it was also a source for airplane parts. There was literally a forest of cars from the late ’40s and streets of vintage school buses with jet fuselages stacked on top. This place could have come directly from the game. This place was the Grand Canyon of junk. It also set the bar pretty high for the set we had to build.

Thankfully, the construction department was willing to work with the materials Graves gathered, which meant using extra care. It also required a substantial steel super structure as the main entrance into the town was forty-eight feet off the ground. Parts of these buildings included cars, buses and trailers that need support as well. Laura Ballinger Gardner understood that all this needed engineering time and really pressed me to get this set out in enough time to get the engineering accomplished.

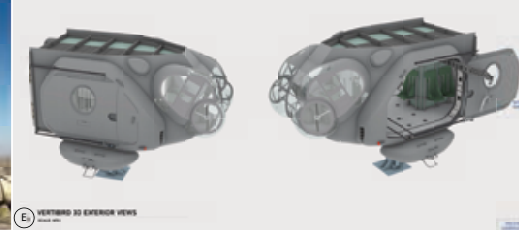
The steel needs in the show were probably more than all the shows I have designed combined. At a certain point, we were using close to thirty-five daily calls for the welding team. This was not only for the “Filly” set but also making the fuselage of the “Vertibird” which was a sort of like an Osprey helicopter and a bugged-eyed goldfish. Turns out our welding coordinator, Daniel



E.



D. REFERENCE RENDERINGS



E. VERTIBIRD 3D EXTERIOR VIEWS



F.



G.



H.

“Sharpie” McNabb, first learned welding for airplane construction, so he suggested we actually make the whole thing in aluminum like a real plane. This worked well as we were going to put it on a pivoting gimbal in the Volume for the process shots. Aluminum would be lightweight and sturdy. The outer sheeting was all riveted in place and had an authentic handmade look. Thang Lee modeled the ship and Set Designer Peter Dorsey took it on and brought it to life. He worked with Regina to source vintage control panels, hardware and seats based on the game.

D. VERTIBIRD, ILLUSTRATION BY THANG LEE.

E. VERTIBIRD, MODEL VIEWS BY SET DESIGNER PETER DORSEY. WORKING FROM THE CONCEPT MODEL AND GAME REFERENCES, PETER DREW UP THE FUSELAGE OF THE BIRD, WORKING WITH SET DECORATION TO FIND VINTAGE HARDWARE AND CONTROLS.

F. VERTIBIRD, SET PHOTO BY JOJO WHILDEN, THIS IMAGE IS OF THE REALIZED FUSELAGE IN THE VOLUME STAGE.

G. THE RED ROCKET POWER STATION, ILLUSTRATION BY ALI KASHFI.

H. THE RED ROCKET POWER STATION, PRODUCTION STILL, SET DESIGNER REID THOMPSON TOOK ON THE CHALLENGE OF FIGURING OUT HOW TO MAKE THIS TRANSFORMATION HAPPEN IN A TWO-DAY PREP AND A ONE-DAY WRAP BY USING EASY TO APPLY LIGHT WEIGHT MATERIALS, VACUFORM PIECES AND PREFIT COVERUPS.

Processing all the locations and figuring out how to “Fallout” them was really fun. Besides lots of sand and dirt, we used a lot of vintage ’50s rusted vehicles. Because we were doing post-apocalyptic LA in New York, we did have to look at places a bit out of the city. One of my favorite finds by location manager Paul Kramer was a ’60s era gas station which was the perfect base for a Red Rocket power station (no gas stations in the game as cars are atomic-powered). This is an icon in the

game which I was dying to do. I begged the showrunners to write a scene for it, which they did, but the challenge was that it was a working gas station. We had to prep, shoot and wrap in five days. Illustrator Ali Kashfi lead the way with figuring out the key elements to use and Set Designer Reid Thompson really figured out the materials and fastest applications for construction and set dress. It was a really good time watching it come together.



A. BROTHERHOOD OF STEEL TRAINING CAMP, ILLUSTRATION BY THANG LE.

B. BROTHERHOOD OF STEEL TRAINING CAMP, PRODUCTION STILL, THIS WAS A WONDERFULLY BLEAK LOCATION THAT THE UTAH CREW JUST DRESSED. EVERYTHING BUT THE VERTIBIRDS IS REAL.

C. WASTELAND FARM, ILLUSTRATION BY THANG LE, THIS DERELICT HOUSE IN KOLMONSKOP NAMIBIA WAS AUGMENTED WITH DETAILS REFERENCED FROM OTHER FARMS FROM THE GAME.

D. BROTHERHOOD OF STEEL TRAINING CAMP, CEREMONIAL ALTAR, SET PHOTO BY JOJO WHILDEN.

E. WASTELAND FARM, PRODUCTION STILL, THIS IS THE REALIZED NAMIBIAN LOCATION WITH BOTH BUILT CONSTRUCTION PIECES, VINTAGE DRESSING.

The production used a couple of really special distant locations to really give the

post-apocalyptic world scale. For the Brotherhood of Steel Base, we traveled to the historic Wendover Air Base near the Bonneville Salt Flats. This base was frozen in time just after WWII and was just right for this military camp. Partly functioning and partly wonderfully decayed and totally bleak. Utah Art Director Rico Olsen, whom I had worked with for a Soderbergh project, ran the show and I was glad Regina Graves came out to do her magic there.

The big adventure for me was going to Kolmanskop in Namibia for the post-apocalyptic outside of the Vault 33 door. This defunct diamond mining town was abandoned after WWII and was then taken over by sand dunes. Jonathan Nolan had been talking about this place for a year and we

finally got to go as was perfect for the project. Rows of houses half buried in sand and large buildings used to process the diamonds that were blown up to prevent them from being used again all made for what was essentially a practical town that looked as if was decimated by an atomic blast. We could have sent a crew to scan this and then recreate it in the Volume with a pile of sand and some rubble, but Nolan felt the practical location really grounds the VFX work, so it was important to go. VFX supervisor Jay Worth and I worked on *Westworld* and he is super collaborative and actually wants me to do initial concepts and get my input on the look of the VFX work and I am really happy to be a part of that. In fact, he hired Thang Le to also work in post as he set up some of these initial concepts.



No one had shot this remote location before except for a documentary about the local hyenas who were blind because of the intense sand storms. It was a very restricted area as well, because part of the place was a high-security diamond operation or a national park. If the wind wasn't blowing, it could be densely fogged. Vehicles were restricted and it meant carrying a lot of the equipment and dressing in by hand. To get this all done, I had a really hardworking and talented crew from South Africa and Namibia headed up by Art Director Chris Bass and Set Decorator Maria Labuschagne. But going there really elevated the look in a way that would have been the same in CG. And certainly, performance-wise it, made a huge difference for the actors. I am super grateful to the producers for making it happen.

There is a lot to cover with a show of this scale but I wanted to at least hit on the types of tools we used to bring the game into a film experience. And there were certainly many more people who helped to make that happen I couldn't get to in this article. In fact, we shot the series in two parts breaking after episode three and several key crew in my staff did change. Yet somehow they met and exceeded the challenges of keeping the level of work up.

Word had gotten out, the show was a tough one, yet they stepped up to the challenge. I am fortunate to have been able to work with such brave and talented people who completed the work. **ADG**

Howard Cummings,
Production Designer
Laura Ballinger (Eps 1-3),
Chris Shriver (Eps 3-8),
Supervising Art Directors
Ann Bartek,
Michael Simmons,
Angelica Borrero Fortier,
Christopher Bass,
Richard T. (Rico) Olson,
Art Directors
Peter Dorsey,
Aimee Dombro Desmond,
Lisa Merik,
Michael L. Auszura,
Jonathan Collins,
Reid Thompson,
Jeremy W. Foil,
Set Designers
Thang Le,
Senior Illustrator
Matthew J. Sama, Ali Kashfi,
Wes Louie,
Reginald Polynice,
Illustrators
Holly Watson (Lead),
Kalani Akona (Lead),
Jeremy Wang, Dan-ah Kim,
Juli Sasaki, Louisa Savage,
Graphic Artists
Dan Caplan,
Storyboard Artist
Regina Graves,
Maria Labuschagne
(Namibia),
Set Decorators

