

Building Worlds

ASC member Karl-Walter Lindenlaub, production designer Sophie Becher and director Otto Bathurst team up to take on the Paramount Plus series *Halo*.

By Iain Marcks



Karl-Walter Lindenlaub, ASC, BVK admits he was “harboring old prejudices about video games” when he was approached to shoot the first two episodes of the Paramount Plus series *Halo* — a narrative adaptation of the sci-fi first-person-shooter video-game franchise of the same name. Yet, when Lindenlaub read the scripts, he discovered that the series “is a lot more about a character in conflict with his emotions,” he says, than it is like the video game, which is about “a faceless supersoldier fighting for the survival of mankind. If this had been a purely action-driven project, I probably wouldn’t have signed on. What I also really find attractive about these bigger projects like *Halo* are the world-building aspects, when all the departments are working together to create something unique to the story. You have to create almost everything from scratch.”

Tight Collaboration

One of Lindenlaub’s earliest contributions in preproduction was a document that laid out his vision for lighting and color, camera movement, format, and workflow. Looking back, he’s satisfied to see how many of his ideas were implemented, including contrasting monochromatic and complementary color palettes, shooting with Arri Signature Primes and Alexa LF cameras, and framing for 2:1 — an aspect ratio Lindenlaub felt “would feel more cinematic than [1.78:1] to capture the huge scope of the *Halo* world.”

Everything else evolved through the process of collaboration.

Two of Lindenlaub’s key visual collaborators on *Halo* were production designer Sophie Becher and director Otto Bathurst, who started their design work on the series a few months before the cinematographer was hired.

In the original *Halo* game trilogy, players can take on the role of a supersoldier “Spartan” named Master Chief, who serves on the front lines against an alien alliance called the “Covenant” that’s bent on total interstellar domination. The streaming series casts actor Pablo Schreiber as the genetically engineered champion, and sees him tearing off to various planets — worlds that are well-known to players of the video games — in his dual (and sometimes conflicting) missions to save the human race and the humanity within himself.

Previous spread: The laboratory of Dr. Catherine Halsey (Natascha McElhone, pictured). This page: Master Chief (Pablo Schreiber, right) and refugee Kwan Ha (Yerin Ha) receive a hostile welcome on Rubble, an interconnected network of inhabited asteroids. Opposite top: Master Chief takes on villainous Covenant forces on the planet Madrigal. Opposite bottom: Cinematographer Karl-Walter Lindenlaub, ASC, BVK at work.



PHOTOS AND FRAME CAPTURES COURTESY OF PARAMOUNT PLUS.

"Building a world on this scale is itself a huge undertaking," says Bathurst. "Everything from the game had to be redesigned for the camera, even Master Chief's iconic ['Mjolnir' powered assault armor]. It was a real tightrope walk honoring the core design while finessing it into something that exists within a believable, physical reality."

"A tight collaboration with the director of photography is essential," Becher adds. "My first question for them is usually, 'What aspect ratio are we shooting in?' The answer is dramatically important for a designer, because you need to know how wide or tall your sets are going to be." Likewise, the design of a set can have implications for cinematographers. "I'm only as good as the director of photography," she says. "Lighting can make or break a set."

Lindenlaub, Becher and Bathurst spent four months in and around Korda Studios — a state-of-the-art film-studio complex outside of Budapest, Hungary, where *Halo* occupied seven of the facility's largest stages — scouting, collecting references, refining their ideas with the costume and props departments, and running tests in the lead-up to principal photography.

"A lot of the conversations we had were about what we *didn't* want *Halo* to look like," says Bathurst. "We did a lot of picture research and mood-boarding — then, we worked with concept artists to put it all together."

The cinematographer, director and production designer found common interests in fine art, cinema and photography, but Lindenlaub says

that the art department's concept drawings were the three filmmakers' most important references. Lindenlaub gave feedback on color and lighting to Becher and papered the walls of his office at Korda with the latest ideas from her team. Beginning with concept art is "the only way you can do fantasy or science fiction," he notes. "Where else could you start?"

Lindenlaub served as cinematographer on Episodes 5, 6, 8 and 9, as well, with director Jonathan Liebesman. Additional episodes were shot by Eric Kress and Ed Wild, BSC (the latter of whom also shot portions of Episode 9).

Range of Looks

It was important to the filmmakers that each planet depicted in the series felt "strikingly different," Becher says, so the audience would know where they were at all times. She notes that the rocky water-mining planet of Madrigal (which was filmed at a basalt quarry and aluminum factory near Korda), for example, was "very red" and "saturated" — to which Lindenlaub added hues of yellow and brown.

"The yellow and red earth of our location was part of the inspiration," the cinematographer says. "In early camera tests, I created a LUT [with DIT Attila Tumbász]: higher contrast, desaturated blues, and exposure boosted almost a stop to compensate. For the final color grade, we let the sky be a little more blue than in the dailies."

Other far-out locations include Rubble, an interconnected network

TOP PHOTO BY ADRIENN SZABÓ, BOTTOM PHOTO BY ANNA VERA LENGVEL.



of inhabited asteroids, and High Charity, the Covenant's translucent, mushroom-shaped space station, where an artificial star is a source of "natural" sunlight for the inhabitants. Also depicted is Master Chief's home planet of Eridanus II — glimpsed in desaturated, overexposed flashbacks, which become "more saturated and clearer," Lindenlaub says, as they develop into more distinct memories.

The flashbacks were captured with Arri Rental DNA lenses, which were custom-tuned by Manfred Jahn at Arri Rental Munich. "These were the only scenes I shot with lenses other than the Arri Signature Primes," the cinematographer notes.

Becher adds that she "felt quite strongly that the light on another planet doesn't behave in the same way as it does on Earth. You might have two suns or two moons, so how does that affect the light? And how do aliens light their planets? It's not all light switches and fluorescent tubes."

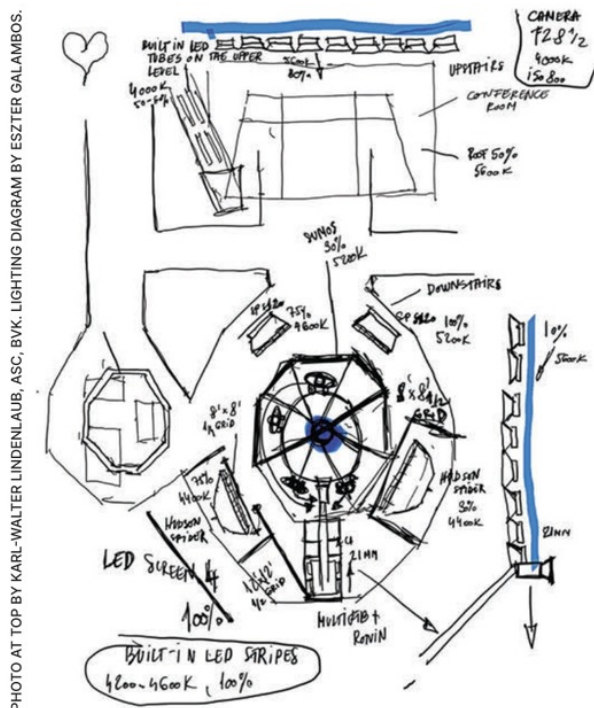
Lindenlaub considered this broad visual range to be an exciting challenge. "Something that got me really interested in this project was the contrast between the many worlds that demanded different looks," he says. "The most austere-looking of these was the 'UNSC' military complex" — whose extensive sets, and the collaborative efforts to bring them to life, AC has chosen to explore in detail for this report.

Inside the Complex

In the *Halo* universe, the nations of Earth and their off-world colonies

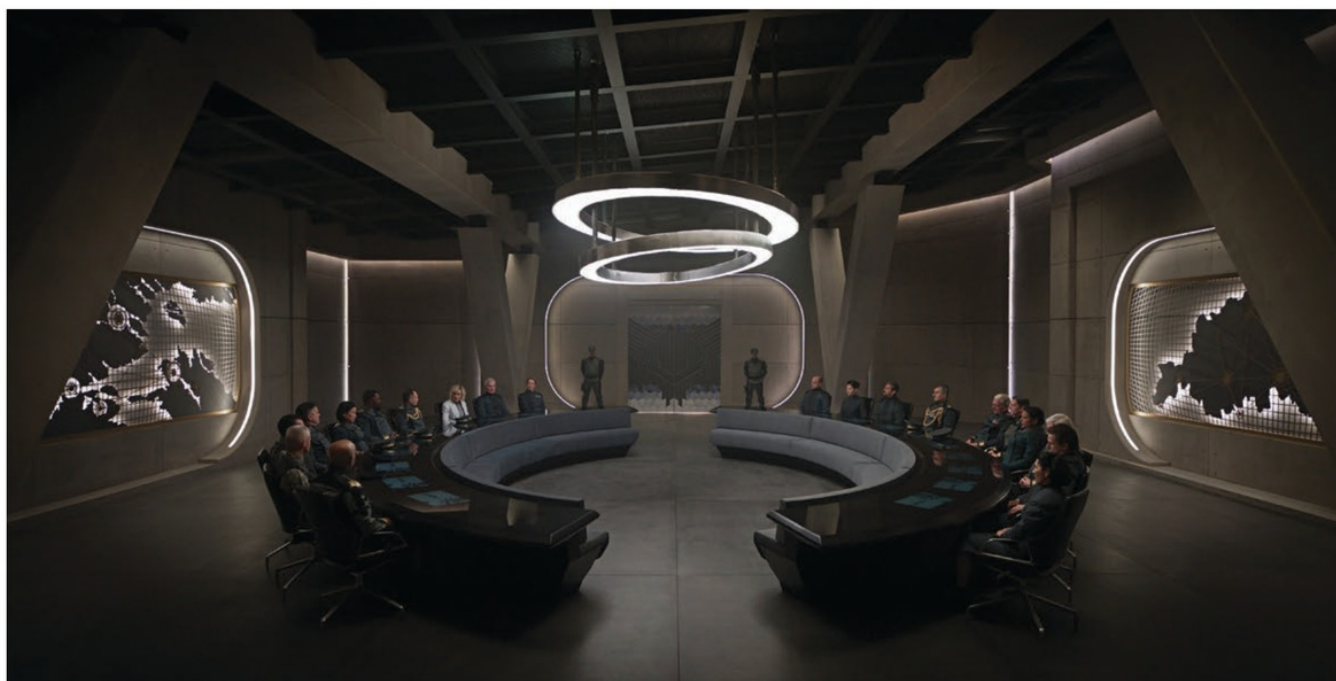
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The collaborators designed each level in the Fleetcom tower to have its own look. “The higher up you are in that hierarchy, the cleaner the light is, and as you get down into the bowels where the Spartans live, it should be more dirty and rough,” Lindenlaub notes. “We used older fluorescent tubes in the underbelly, and added some green or amber to our LEDs.”

UNSC's upper-command sets include an observation lounge, a conference room, a control — or “ops” — room, and the laboratory of Dr.



CONCEPT ART BY ALEKSANDR DOCHKIN.



Previous page, top: Chain-mounted lighting units in the ops room could be raised and lowered.
Previous page, bottom: Lighting diagram of the ops room. This page: The conference-room set (top) and the concept art it was based upon.

Catherine Halsey (Natascha McElhone), a UNSC scientist and creator of the Spartan program. These sets used “slick lighting, elegant surfaces and a minimalist approach,” Becher says. She adds that the filmmakers were aiming for “a lot of clean and shiny surfaces and concrete. It has to feel like this is a vast world of dominance.”

The observation lounge features a floor-to-ceiling window with a bluescreen view that was later replaced with a digital matte of the surrounding city and distant mountains, overseen by VFX supervisors Tom Turnbull and Dominic Remane. When a holographic communication comes in, the window dims and the room darkens. This was an idea Lindenlaub took from the Boeing 787 Dreamliner’s electrochromic dimmable cabin windows, which the production simulated through a series of preprogrammed lighting cues.

Elsewhere in the series, this set is converted into a conference room with a ring-shaped table and a practical dual-ring ceiling light — custom made with built-in DMX-controlled LiteGear LiteRibbon Chroma RGBA, designed by set decorator Guy Potgieter. Lindenlaub notes that the size and placement of the ceiling fixture were designed to create a favorable light angle for the actors’ faces, and to avoid toplight. (See image and concept art, above.)

“For ambience, we hid [Arri] SkyPanel S60s, [paired with] Light Grid

Tech Specs:

2:1

Cameras | Arri Alexa LF, Blackmagic Design Pocket Cinema Camera 6K (for helmet cam)

Lenses | Arri Signature Prime, Arri Rental DNA (detuned), Venus Optics Laowa Zero-D prime (for helmet cam)

diffusion, above a specially designed metal-grid ceiling,” Lindenlaub says. “The metal grid also served as a [light-control device] that kept the light from spilling.”

Miles of Light

Lindenlaub used LED lighting on all of the Fleetcom sets, working with gaffers Jonathan Spencer and Gromek Molnár Jr. to integrate close to five miles of LiteRibbon into the floors, walls and ceilings, and to route everything through four ChamSys MQ80 lighting desks.

Lindenlaub notes that the LiteRibbon “was mostly used for architectural lighting,” which was a primary element in the UNSC set designs — helping to “create the mood, tone and color in the room,” while providing depth and contrast to the image.

“This was supplemented with a generous package of film lights,” he continues. “Our SkyPanel package had over 400 S60, 30 S120 and 20 S360 units. We also carried more than 200 [Sumolight] Sumospace units in our stage package — and carried a floor package that included LiteGear LiteMats, Kino Flo Celebs, Hudson Spiders and Digital Sputniks, plus a healthy selection of traditional tungsten lights.”

Lighting-console operator Andy Waddington would often be found standing next to Lindenlaub with a Microsoft Surface tablet running the ChamSys remote-control application, which allowed them to change the architectural and film lighting in an instant.

Customizing the Ops Room

The observation lounge and conference room are linked to the ops room as part of an enormous two-level set. Becher laid out the ops room like a decagon, surrounded by glowing, wall-to-wall tactical displays; concrete struts; and vented gray walls that lean toward the center of the room to meet at a ceiling of soft, diffuse light provided by 27 low-profile Sumospace fixtures.

In order to maintain the integrity of this design, light quickly, and provide Bathurst with the freedom to shoot in any direction, Lindenlaub suggested drilling holes into the ceiling’s crossbeams, through which a chain motor could raise and lower rigging and power for additional lighting units, which could then encircle the command console in the center of the room. (See photo and diagram, page 48.) By securing multiple pipes horizontally — each one from the end of a respective pair of chains — “it took about five minutes for the crew to hang three or four SkyPanel 120s with Chimeras,” the cinematographer says. With this system in place, the production was able to provide “crosslight or half-light, from above the frame, for closer shots.”

“We had a lot of LED screens in the control room, which was a big challenge because shooting LED screens can be quite hard for a DoP,” says Becher. “But the advantage of shooting it live is that you get light from the screens, and Karl-Walter used that to help light the sets.”

Adds Lindenlaub, “We actually selected a lower pixel count for the screens. It made the ops center feel a bit grittier, and it helped us to avoid issues with moiré patterns.”

Top: Cinematographer Eszter Galambos, who served as Lindenlaub’s assistant and C-camera operator, assists stunt double Justin Howell with a helmet-cam scene. Bottom: Backlighting for the aquarium-like screen in Dr. Halsey’s laboratory (as seen on pages 44 and 45).



TOP PHOTO BY KARL-WALTER LINDENLAUB, ASC, BVK.

“It was a real tightrope walk honoring the core design [of the video game] while finessing it into something that exists within a believable, physical reality.”

Controlling the LED screens' color temperature during filming "was incredibly difficult," he continues. "When you dim the brightness on most LED screens, the color temperature shifts. We were recalibrating these screens all the time. I also had to adjust the camera color temperature to above 4,000 Kelvin — otherwise, the screens would have gotten far too blue."

Lab Work

In Dr. Halsey's cavernous laboratory, where secret cloning and AI experiments are conducted, much of the soft built-in lighting came from recesses in the ceiling. Providing additional illumination were ceiling panels with a honeycomb-style pattern of hexagons that allowed soft toplight — from SkyPanel S60s mounted above — to come through. "Based on the concept art, we incorporated a lot of different colors into the LED ribbon that was mounted into the walls," Lindenlaub says.

Bathurst wanted Halsey's laboratory to be huge and impressive. However, Becher notes, "Spaces like that are a challenge to make functional yet attractive so that the scale of it isn't so overwhelming." She came up with the idea of lighting zones for different areas of the set. The lab entrance is lit with the honeycomb-style ceiling panels, flanked by two wall-mounted practical LED screens, which served as the dominant light sources. The big aquarium-like screen was inspired by an underwater restaurant in Norway — from architecture and design company Snøhetta — called "Under."

"I backlit this screen with 12 soft, cyan-dialed SkyPanel S60s, and 10 Sumos [set to 6,000K]," Lindenlaub says. The display across from it leaned bluer to create a color contrast and to help orient the audience. Both served as the dominant light sources for each zone. "Some zones we kept more white and neutral, like the operating tables and Spartan examination area, and others, like the clone incubator, we lit with a cold and steely blue."

Lower Levels

Some of the lower sections, including parts of the Spartan barracks, were shot on location at ETO Park, a soccer stadium in Győr, Hungary. The stadium's cold concrete architecture and harsh existing lighting were an ideal fit for the austere, utilitarian life of a Spartan.

Here, Lindenlaub mixed green, amber and magenta colors into his LED lighting. He adds that "sometimes, at ETO, we used uncorrected fluorescent tubes to make the hallways, living quarters and airfield hangar feel more real and practical. Older cool-white tubes have a strong green bias that I embraced on those sets. We mixed the built-in fixtures with big HMIs for daytime exteriors, and augmented these with a package of SkyPanels and LiteMats."

"The closer one gets to ground level, the fewer windows there are, so you need more artificial lighting," says Becher. "And the lower you go, the more basic the light gets. Spartans aren't really into home comfort and stuff like that."

From left: Lindenlaub, production designer Sophie Becher and director Otto Bathurst on an early *Halo* scout.



PHOTO BY KIYA GERVIS-BENNETT.

Combining Strengths

Much of the thoughtful detail work that went into the season was done with fans of the franchise in mind, while also opening *Halo* up to a newer, wider audience. "Sophie inherited a video-game world that fundamentally doesn't look 'real' in any way, shape or form, and she made it real while delivering the spectacle of a big science-fiction show," says Bathurst. "Given the scale of our production, we could do whatever we wanted, but Karl-Walter helped us focus on what we needed."

The three filmmakers maintained their close creative relationship throughout *Halo*'s two-year production, though consensus was not always reached without debate. This friction was considered a necessary component of the creative process, Becher notes. "If someone pushed back on an idea and we came to a proper impasse," she says, "we'd have to explain our reasons, then work together to find a solution that was better than the ones we started with."

"Each person brought their own strengths to the project," Lindenlaub adds. "Filmmaking isn't about just one person — it's a collaborative effort. Creatively, this was one of the most satisfying experiences of my career. It seems everything I did before led to this." O



A Movie Under Siege

Salvatore Totino, ASC, AIC re-creates '70s Hollywood and New York for *The Offer*, which dramatizes the making of *The Godfather*.

By Mark Dillon

PHOTOS BY NICOLE WILDER, COURTESY OF PARAMOUNT PLUS.



Much has been written about the impact director Francis Ford Coppola's 1972 feature *The Godfather* has had on popular culture, and how the work of Gordon Willis, ASC has inspired many cinematographers who followed. So, when Salvatore Totino, ASC, AIC was approached to shoot the Paramount Plus miniseries *The Offer*, which delves into the drama surrounding the movie's contentious production, he simply couldn't refuse.

"*The Godfather* is probably one of the top-five best-directed, best-shot and best-acted movies of the last century," says Totino, whose feature credits include *Spider-Man: Homecoming*, *Everest* (AC Oct. '15), *The Da Vinci Code* (AC June '06) and *Cinderella Man* (AC June '05). "I saw it when I was 10, and it's been influential on my life as a filmmaker. It's not only about the cinematography — it's the whole experience. There are so many nuances in the film; you can watch it over and over again and still see more."

Prior to starting *The Offer*, director Dexter Fletcher, who helmed the first two of the show's 10 episodes, contacted Totino's agent, who recommended the cinematographer for the gig. "I read the scripts for the first few episodes, and I was really interested in the behind-the-scenes



Opposite: Al Ruddy (Miles Teller), producer of *The Godfather*, confers on set with his assistant, Bettye McCartt (Juno Temple), and director Francis Ford Coppola (Dan Fogler). This page: At a rally for the Italian-American Civil Rights League, New York mobster Joe Colombo (Giovanni Ribisi) rails against the ethnic stereotyping the community has perceived in Mario Puzo's bestselling novel.