

Autodesk Vision Series 2024

# Open Standards in Action: VFX Workflow Behind 'The Creator'

Fin Design + Effects | Session Transcript



## Open Standards in Action: VFX Workflow Behind 'The Creator'

The twists and turns of feature film VFX post-production can be a wild ride. Join VFX Supervisor of Fin Design + Effects, Stuart White, to learn how a free-thinking director, liberal use of open standards like OpenUSD, MaterialX, and OCIO, alongside Autodesk Flow Production Tracking and Maya put grease on the digital wheels of the recent major motion picture project, 'The Creator'.

[Watch the recording](#)

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**Stuart White, VFX Supervisor at  
Fin Design + Effects**

Stuart White is a Visual Effects Supervisor at Fin Design and Effects. One of Fin's original hires, he joined the company as Head of CG when the company opened its doors over 23 years ago. Supervising both on-set and in post-production he has worked on over 150 TV commercials and numerous feature films including 'Thor Love and Thunder', 'Thor Ragnarok' and 'The Creator'.

## Session Transcript

**Stuart White (00:15):**

Hi there. Welcome to this talk on open standards in action. I'm Stuart White. I'm a visual effects supervisor at Fin Design and Effects, and we were lucky enough to work on a great movie called 'The Creator', and we had a really good time doing it. I'd like to share a few stories about that with you and show you how we did the stuff that we did on the movie and also talk a little bit about open standards and how in the last 10 years or so they've really started to make things a lot easier for a company like us who needs to share our work with many other facilities. Along the way, we'll also touch up base on a couple of bits of Autodesk software because they're bringing this talk to you and Fin has been using Autodesk software since the get-go, so let's get started.

**Stuart White (00:58):**

So yeah, when I started at Fin, I was there to start the 3D department, and my first job was to buy the computers. It was a pretty lazy two weeks while we waited for the computers to arrive. There was not much work to do, but it's got busier since then as you can see from the pictures. I want you to remember the face of the guy on the left-hand photo in the beanie. That photo is taken on the streets of Wellington on a very cold night a long time ago, maybe 15 years back, maybe more. Yeah, that guy's name is Greg Fraser and he'll come up again in this story. Finn started off as just two Flame suites and a few 3D workstations running Maya. An all Autodesk type situation. And that's why I said it's pretty valid for us to be talking about Autodesk because it's just so strange to me that these two Flame suites that we started off with all those years ago, we still run two Flame suites today and do commercials in them back to back to back.

**Stuart White (02:01):**

But in the last sort of decade, Fin has put more and more energy into the long form market, and these days we do a lot more film work than we do TV commercials and episodic stuff for Netflix. We do keep our Flames around, but they're very much geared to the TV world and we have a much more centric pipeline for the feature film work. About a year ago, Fin joined forces with a company called Mavericks VFX out of Toronto and Zero VFX from Boston, and we're operating together under the banner of Dream Machine. And very recently we were very happy to see that Important Looking Pirates is also becoming part of the same operation. Yeah, got friends in lots of different places now and hopefully we can share a lot of good techniques and information, but we all like to operate under our own identities because we've all worked so hard to establish the reputations we have. Speaking of which, it's probably a pretty good time to play Fin's reel to show you the kind of work we do these days.

**VIDEO: Fin showreel (3:08)**

**Stuart White (05:59):**

Well back in 2023, Fin was lucky enough to work on the movie 'The Creator' as you know. And I say lucky because we had a fantastic time doing it. And I'm not just saying that every single person in the crew was just completely into this project, and I've heard other VFX companies say the same thing. And I think that good vibe is due in large part to Gareth Edwards, the director, and the kind of unique and lovely person that he is. His background is in visual effects. He knows what he's talking about. He can walk the walk and talk the talk, and he brings a tremendous, unique, free-spirited approach to making a movie. And it's infectious and his enthusiasm is infectious, and you just want to do the best work of your life for him because he's such a lovely guy to work for.

**Stuart White (06:49):**

Fin worked on 86 shots in the end across a very wide range of environments and locations, but my first encounter with the movie was walking past my executive producer's office one day and seeing some footage on his screen and he had some reels from five different projects that were putting out visual effects work for bidding, and I looked over his shoulder at a few of the things, but as soon as the images from 'The Creator' came up and I'm going to play some now, this is just the raw footage that I was looking at that day, and as soon as I saw all this stuff come up, I was like, I dunno what that is, but I want to work on it. Now we've got to get onto that show because the cinematography was outrageously cool. And as you can see from these scenes, it just had this Asian aesthetic, this Blade Runner thing going on maybe a bit Apocalypse now and just gorgeous pictures wall to wall and just you could see even from the raw footage without any visual effects on it that it was going to be a special movie, especially visually, and I wanted to be a part of it.

**Stuart White (08:04):**

So we put up our hands to do any shot that we could grab our hands on that involved a flying spaceship or vehicles of any kind, that sort of hard surface stuff that Fin has been specializing in for 23 years, ever since our early days working on car commercials, we've been nailing the hard surface vehicles. And yeah, luckily, they had a lot of that work to go around. So, in we went, so I've got to pay credit this moment to that man you saw earlier Greig Fraser, a very amazing cinematographer and his co-DP on the project was Oren Soffer who did equally amazing work and I think the final pictures speak for themselves. Those are two crazy talented guys and it was real pleasure to use their stuff as plates to do visual effects on top of. It was quite a unique project in terms of the phase that it was at when Fin became involved. Industrial Light & Magic had done the lion's share of the visual effects on the movie already, and I dunno what the real story was, but the sense was they'd pretty much wrapped up and almost moved on to other stuff by the time we ever got involved,

**Stuart White (09:13):**

There was obviously some extra effects that came out of the woodwork and it opened up to a few other companies to come and help do it, including Fin. And yeah, it took a little moment to just understand what we were getting into and the world that Gareth and Industrial Light & Magic had already built and the incredibly high standards that then established visual effects wise. Some of our shots had to cut back to back with ILMs' work that they'd been on for a fairly long while and that was quite intimidating, but we did our best to match up to those standards and Gareth's movie making style. You may or may not have seen him talk about the process that he went through to make the movie, but it was an interesting conglomeration of very planned moments, but a shoot that was a very small group, traveling light, moving fast and placing all their onset money into being small so they could get to many, many great locations and acquire great plates of a world that was already built on top of which Gareth and his production designer James Klein could just add the universe that the creator exists in.

**Stuart White (10:33):**

And this kind of unique, almost documentary approach really paid dividends, but it made it a very unusual show for us to work on.

**Stuart White (10:44):**

I'm a huge concept art fan. I could name you my 10 favorite concept artists and I collect folders and folders and folders of concept art to inspire me when I want to have a little bit of a dabble and just, yeah, just because I love looking at the pictures. When we jumped on this show, I was just in heaven because one of my favorite concept artists was the production designer James Klein, and I think he spent about three years on this show. And even though most of the ILM machine had rolled on, James Klein was very, very much involved daily in the work that we were doing, and to be rubbing shoulders with somebody, I picture as being such a legend and he's also another lovely guy, was just a dream come true. At the beginning of our involvement, they shared with us a PDF that was just mind blowing.

**Stuart White (11:41):**

It was over 280 pages, which I'm flipping through here. Just imagine this going on for 280 pages of the most outrageously amazing concept art you've ever seen and the coherence of the shape language. And it's just as a concept art nerd, I was in heaven when we jumped into the front of this project. And yeah, it was so great to be able to contribute just a few tiny little bits of extra world building to flesh out some of the corners of this universe that James Klein and Gareth had spent so long designing and establishing. Look at this stuff, it's just amazing to me.

**Stuart White (12:27):**

So yeah, open standards are the way that we got into this project. And yeah, that's because ILM had already built a hell of a lot of really amazing assets and I really want to call out the fact that ILM did the lion's share of the work on this show and they did an amazing job and we inherited from them incredible models and amazing textures and yeah, we had to interpret them into our own pipeline, which was a challenge because ILM does stuff in a very unique way still to this day, but open standards is a great interchange, a way of handing material between visual effects companies and in the last decade or so that's become an increasingly common thing to do. Yeah, just to name a few of the open standards that were central to us getting our work done, we're talking about the USD file format, OCIO, Alembic, OpenVDB, MaterialX, its just an endless list of what is becoming the glue of visual effects production these days.

**Stuart White (13:34):**

And without these standards to hand stuff around between our departments internally and share work with companies like ILM externally, it would be a horrifically inefficient process. And I've been around visual effects for long enough to have seen it in the bad old days, and it was almost impossible to think of working with another particularly large company like ILM in the bad old days because there's just not that much common ground between us. But as we both assume new technology like universal scene description and a few other pieces of technology, the ACES color workflow will get into it a little bit. It's just really greased the wheels of people flowing in and out of their contributions to a big show like 'The Creator'.

**Stuart White (14:24):**

Within Fin, the open standards are really helping to free the boundaries between the work of the different departments. We are increasingly every day adopting more and more a USD centric approach. We built our whole pipeline around the alembic file format years ago, and that served us really well because it was a very robust and quite simple file format. And USD is anything, but. But we are adopting it wholeheartedly because it does allow everybody in every department to access the same data. If somebody in animation wants to see the layout of a show, layout of a shot, I should say, they can access it because it's stored in USD and whatever package they're in, whether it's Maya or Houdini or whatever else, they can unpack a USD file and you can access as much data as you want or need, or as little. Yeah, we are on a journey to fully embrace USD and a very long way along that pathway.

**Stuart White (15:32):**

And that's also driven by the fact that we've adopted Houdini and Karma as the rendering destination of our pipeline, and that is very, very USD centric environment. Speaking of things at the heart of the visual effects process for us, it's Flow Production Tracking software made by Autodesk. Thousands of official effects artists would know and love it

under the name ShotGrid and be very familiar with the benefits of it, but for those of you who are not, it's absolutely something you should get into your facility if you don't have it already because it just makes sense of all the chaos. As soon as anything comes into Fin that is to do with a show, it is ingested into Flow Production Tracking so that it kind of exists. Then you can make notes on it, you can iterate on it, you can deliver it to a client and know what they said about it.

**Stuart White (16:24):**

It just brings so much order to the chaos of production and we're huge fans. All of our reviews are run out of Flow Production Tracking via the playlists. All our notes are taken and put back into Flow, and it just keeps our heads on straight as you go through 28 versions of doing a shot. It's called Flow for a reason, I guess. And yeah, it's been really a real godsent to Fin. We took our own time to get onto Flow Production Tracking because we had made our own system that did the same thing a different way a decade ago. And so, there was a little reluctance initially to move across to Flow Production Tracking. But my goodness, are we all glad that we did?

**Stuart White (17:13):**

I am going to start talking about RV, which is an image viewing platform that Flow Production Tracking can pipe pictures directly into. But before I do, it's just worth noting just how amazingly helpful open standards are when it comes to handling color. And so I'm talking about the ACES color handling system, and alongside that operates OCIO, which is a sort of a color management color transform system, but it's hard to overstate how much easier life is now that we work under an ACES system of handling color because as you can see on this slide here on the left hand side, image data comes into our pipeline for a hundred different sources, ARI cameras, Sony cameras, red cameras, pictures somebody found on the internet, who knows where that came from, and all of those things have their own color handling and their own color space that they were living in and trying to work directly with that can be a nightmare as we jump between the different sources.

**Stuart White (18:18):**

But the sort of foundational concept of the ACES workflow is to take all these disparate color spaces and translate those pictures into a working color space that's common to all of them. At Fin, we've adopted ACEScg, which is a very common thing to do. It's a huge wide gamut color space, so it sort of can contain all the colors that have been supplied by all of those other formats. There are a very few edge case scenarios where it can't, but they don't really have a practical impact on us. We can render our pictures out of CG directly into ACEScg. The compositors can work in ACEScg. Everybody's just dealing with that one container and one color space for the images while they're within the walls of Fin. And then on the right hand side of the picture is the other benefit of the ACES workflow, which is that it knows how to translate reliably those pictures out into whatever you need them to be.

**Stuart White (19:19):**

Are you looking on a Rec709 monitor? There's a transform for that. Are you on an sRGB monitor because you're in the CG department? No problem. Just flick transform down and you're in sRGB now. Does the client want you to output the Arri Log C back to them because they gave you Arri Log C, they want Arri Log C back? They don't care what happens in the middle as long as the pictures match coming in and going out. It's just so easy with the ACES system and take my word for it it didn't used to always be that way. Color used to drive us nuts. If I had to call out one open standard that's really made life better for visual effects artists, I would call out the ACES system. Within Fin, that most often is encountered for us when we're viewing our images in RV, which is another Autodesk product, it's an image viewer, it's a playback system.

**Stuart White (20:15):**

And Fin has, as you can see from these pictures here, extended the functionality of the stock RV with a great many tools that sort of help us get through our daily grind a little bit easier. The file menu that is being pulled down right there is us applying ACED color transforms to these pictures, LUTs and CDLs using the OCIO config file. And so it's very easy for artists during a review. If you're in the theater, you can go and pull down this. If you're down on your workstation, you can pull down that preset. Yeah, it's where you apply these color transforms in a viewing kind of a way. And the RV viewer knows as it's loading up pictures, what color space they're probably in for the same reason that's being handled by that system. Yeah. Other things that we've added to RV over the years is I think the second row of icons down there might not quite be visible, but it's just some very handy buttons for us to spin back a version, spin up a version, go across to the animation of the same shots you're looking at, just find things a little easier, trim off the handles.

**Stuart White (21:25):**

And all of this panel on the right hand side is some extension that one of our artists Phil wrote for RV a few years ago, which is just a very direct way of going and finding a thing. It's about the fastest way. If you want to see what you rendered last night, you can just use Phil's system there in RV to say, show me all the things called render that turned up in the last 24 hours with such and such shot number. And you'll get you straight there. Even though it's a legacy system, it's still really popular around Fin because it's sometimes the quickest way between those two points. Now let's start breaking down some actual shots on the movie, the fun stuff.

**Stuart White (22:07):**

This is the dropship shot, which is probably, if I had to pick my favorite shot that we worked on, it might be this one actually, because just, I don't know, there's something really satisfying about it, but it's a good taster for the kind of environment we were working in. There was absolutely no onset data available for this shot to us. Maybe it was collected



once upon a time, but the production had moved on and evolved in such a way that we were just handed the plates. There was no pre-viz, so it was just jump in, get some kind of Matchmove going and do something cool that matches Gareth's, just verbal description of what he wanted to see. And that kind of creative freedom was a hallmark of working for Gareth. And one of the great pleasures, because he had an open mind if he had to mention the ship coming to the foreground and you've made it go to the background, it wasn't an instant no from Gareth, it was like a, oh, maybe that makes this shot better.

**Stuart White (23:05):**

Maybe I could get used to this maybe a yes. And that was just fantastic for all the artists to touch the shots to know that there was a little bit of room to maneuver. Yeah, you can see open standards in this shot, left, right, and center. The whole scene would be existing as a layout in USD, so the animator can see where the rice pout is just as easy as the effects artist can. If the animator wanted to see the grass moving around because he wanted to get some contact points, right or something, it's a doable thing, even though those two people are working in different packages. All the smoke sims you see there are being stored in OpenVDB, another open standard. Yeah, it's a real smorgasbord. This really great dropship model was handed to us via the Alembic file format courtesy of ILM. And yeah, it's open standards all the way. And yeah, a good intro to the work we did on the movie. You did see a shot that was very loosely briefed and came out really deeply satisfying as a completed shot.

**Stuart White (24:12):**

Here's another example of the kind of plates that were given to us to work on and the kind of world building that Gareth and James Klein were doing. This is a plate, I think it's at Bangkok, but again, a lot of these images came with no even indication what country they came from. We would just have to extract our own data, get our own lens, well work out our own lens and get stuck into the task at hand. The task at hand here was to add a hell of a lot of city extension as you're about to see and get a couple of police carriers troop carriers rendered into the shot. Yeah, initially we explored the layout of the city extension buildings in Unreal because it's a very fast and fluid place to just try some visual ideas. When we are handing files in and out of Unreal, we actually use FBX, which is another very long lived and very useful open standard for model and camera and animation information.

**Stuart White (25:17):**

And still sometimes it's the simplest, easiest way to connect two packages together. Yeah, we might've initially laid out some of these buildings in Unreal and then passed them as FBX models into Maya. Maya is where most of the layout of this shot was done. And then that would be handed off to Houdini. You can see a few elements in there coming in courtesy of the comp team laying in a lot of holographic billboard type effects through the city. And this is all going on in tandem with us referring back to James Klein's concept art

to establish those triangular signatures shape forms. And he might've even passed us a model or two because he's no slouch with the modeling program to use directly in the shot. A couple of these buildings here might be direct lifts of stuff that James Klein was almost modeling overnight for us to put and scatter here and there.

**Stuart White (26:16):**

All the shaders that we've been authoring on these models are MaterialX, which is another open standard. I hope it has a long future because it's been quite a while since it's been a long time coming. But somebody tried to bring some kind of standard to the way shaders are made. It might be a fool's errand because every company extends their shaders and does funky things for funky purposes in unique shots. But for all the simple hard surface stuff like this, it seems very sensible that there is a standard. If you develop a model in Unreal and you're liking the way it looks, you can lift that out into Maya and see it rendered in Arnold or take it across to Houdini and render it in Karma and not have to reinvent the wheel every time. Take a look at these police carriers, show up in another shot later in the, they have a slightly impractical design.

**Stuart White (27:06):**

If you were a policeman trying to drop troops down into the streets of a city like that, you might want to design a vehicle with shorter tail fins is all I'll saying. This shot is one of our favorite ones. It's near and dear to our hearts for a few reasons, as you'll find out, as Gareth was saying to me, I believe this was almost a crime of opportunity, this plate, I think he said he was sitting on a boat going up a river and saw another boat coming at him said like, quick, get me my camera and just banged off this footage. Maybe he was on the location scout, I don't know. I know he took a camera on that one. Yeah, there is no sense of spinning back and getting an HDRI or anything like that or a LiDAR scan of that cliff.

**Stuart White (27:55):**

It was just a plate that might've sparked and reminded him of a moment in the script. You'd have to ask him, but for whatever reason, he filmed it and it became the plate we were working on to put a hover boat into. Yeah, once again, data was a little bit hard to come by and yet you've got to do your job and make everything look real. Another fantastic model coming across from Industrial Light & Magic, all credit to them. But the catch is that there was no elements shot for this shot. That includes people on the deck. There is no crew on this boat, even though it's meant to be a pack of characters from the movie traveling up the river. We were told to go hunt through the other takes of other shots and try and cut some people out, which got us at halfway there with characters from the movie filmed in certain moments, but not all the way there. So in the best visual effects tradition, we had to take matters into our own hands. I introduced to you Pirate Mick, and yeah, up on the roof of Fin with a high-quality piece of green screen as you can see, and a massive props budget.

**Stuart White (29:12):**

We managed to, or Mick managed to, essentially film himself to become a deckhand on the hover boat going up the river and had the pleasure of comping himself into his own shot. Yeah, thanks to the magic of 3D projections in Nuke and cameras, no doubt coming in as USD files or probably Alembics back in these days. In the days of the creator, our pipeline was straddling that well between Alembic and USD and it's since become almost a hundred percent USD these days. But yeah, there goes, Mick comping himself into his own shot, a lot of really lovely water cleanup work and sims from our Houdini crew, a little bit of guesstimation lighting and we had ourselves a shot. But yeah, I think there's the fun of doing a shot like this that made this show quite unique. It's not ideal circumstances, but there's a director who's willing to have a little bit of give and take with what he expects and how he asks you to get to the destination is quite flexible. And you bring a little bit of creativity to the table and have fun getting there together.

**Stuart White (30:33):**

We were happy that we had at least one juicy asset that we could make ourselves. We made quite a few city buildings for set extensions, but for this shot on the beach, we needed an insurgent ship, which is effectively like a fighter jet for the insurgents to use. And it was not an asset that had been modeled so far in the show. Our artists were allowed to get stuck in and fire up Maya, which is our modeling package of choice and make our own version of an asset for this great sci-fi project and go to town on the texturing. Yeah, it was really good to be able to contribute something more than just flying somebody else's spaceships around the scenes. These scenes needed a fair amount of volumetric lighting and yeah, we ended up with a good few shots in which we could punk our insurgent ship.

**Stuart White (31:35):**

This is the final comp of that particular shot, a nice hero moment for it, but also it had its time in a few neighboring shots and some wide, some tights. Good fun stuff. And again, just a grab bag of drone footage, who knows where it came from and what it was originally shot for. Some of those wide shots I think were just generic stuff. I think Gareth said he crashed three Maverick drones during the making of the show. He left him parked on the top of various very spectacular clips I heard him say. But yeah, it was good to find a few opportunities to use our insurgent ship and contribute a little bit of asset building, all guided in real time, by the way, by James Klein, the productions designer, who is, like I said, still very much involved in the production and would do nightly draw overs of our model as we would send it.

**Stuart White (32:29):**

That would get folded back into the modeling mission. Here is a really cool shot that is the brief for the shot is that the nomad space station, which is like the baddies space station,

scans the ground looking for goodies to shoot up with this giant blue laser beam, and it really tracks over the folds of the terrain. Another example of a drone plate that just sort of came without even a country identified that the stuff was shot in or we believe us, we asked because maybe Google Earth could have come to the rescue and given us some terrain to map that laser over. But yeah, we had to improvise, adapt, and overcome. One of our artists, PK, created a new tool which we ended up using on many shots in the show for similar reasons. And it was called Quick Mesh. And the concept behind it is, hey, if you are match moving or camera tracking these shots in 3DEqualizer, 3DEqualizer has got very sophisticated lens distortion algorithms and very good 2D points tracking.

**Stuart White (33:36):**

So you end up with a cluster of points whose locations in three dimensions you know very well, and you have a camera that matches that. Yeah, PK fed that data across into Metashape, which is a photogrammetry piece of software and round tripped, its back as a mesh. You would end up with a poor man's LiDAR scan of whatever was in the plate photography driven only by the plate photography because there was no other supporting photography turned over to us. And like I say, that got us out of a lot of holes. He's one of those insurgent ship shots you would recognize maybe from the stuff we just saw on the beach there. And those are the lights of the insurgent ship coming, flying through the shot. And PK is using his Quick Mesh software there to extract enough guide geometry for us to do some interactive lighting and a lot of great help for layout to help us get that insurgent ship flying very closely around the beach house there.

**Stuart White (34:41):**

We had to do a set extension on top of that beach house too. Poor man's LiDAR was better than no LiDAR at all. And this is the way that quick mesh helped out in the specific shot. We were just looking up the valley. It's a pretty decent mesh that it got because of all the texture detail on the trees with a pretty useful terrain mesh that allowed our effects artists to get stuck into the doing of the shot. Initially we were hoping that we might've got away with tricks to fake our way through that effect of a laser traveling through the canopy of a forest. And we certainly gave it a red hot go, but it wasn't quite satisfying enough to us. We went to the trouble of actually planting CG trees all through the valleys as you can see in one of these elements here. And being able to intersect the laser light with that in Houdini and with no shortage of great comp tricks to integrate it. And that made a much more satisfying result to the end shot, as you can see here.

**Stuart White (35:46):**

And yeah, one of those shots where you're going into it not quite knowing how you're going to get at doing the thing that you've been asked to do, but after pulling a few rabbits out of hats a really enjoyable final result. And there's something about the animation of the ship in this shot that I really enjoyed. And when this came up in the movie, I think one of my favorite Radiohead songs was playing too, and it's pretty cool moment to see it on the

big screen. This is the alleyway shot. And right from the beginning of the show, it was obvious that this would probably have the most work required to get done because it's a very large city set extension that contacts the geometry foreground plate in a very specific way. There's no shortage of characters running through the shot who all need CG heads and then vehicle replacements as well.

**Stuart White (36:37):**

So, lots to do on this shot right from the start. And yeah, a good feeling for you of the kind of footage that was arriving to us and the degree to which Gareth loves to bed all the shots in a gritty, grimy foreground reality, and then paint a big sci-fi picture in the background. Speaking of which is the set extension elements that one of our artists modeled up. Very talented generalist based on no shortage of James Klein reference, but also just in making his own interpretations and worth watching the final comp a few times because there's a lot going on here and a lot of it speaks to Gareth's approach to doing visual effects. Really, these drop sheets, as I think I said, were too big to fit in the streets with the fins that they had on them. And we landed one in the best place we could and just pointed that out to Gareth.

**Stuart White (37:39):**

He's like, well just drop the fins off then. Just totally not precious about them at all. And then you got cool touches like these police motorcycles that are cruising through the foreground are just motorcycles with the tires painted off because he needed a bit of a speedy bike kind of vibe. It's an incidental moment that comes and goes before you can really sort of clock too much about what's going on. There they are, which I thought was pretty fantastic. And the vehicle that drives in from the side there is a key part of the plot carrying some major players. But again, it is just a normal van driving around the city and it's been wrapped with CG body extensions to adapted into looking like a part of the universe that Gareth is building. All those policemen are running out of the back of, could come back here and show you the plate, but there is an armored personnel carrier sitting on the middle of the road there somewhere in the darkness and regular police looking dudes are running out of it.

**Stuart White (38:40):**

And we replaced their arms and their heads with robot arms and heads and they became a robot police force going off to raid the neighboring apartment building. It's just a really a big shot that looks fantastic on the big screen. It's probably my equal favorite of all the stuff we did on the movie, fantastic compositing work and all departments firing, but at the same time, it's got this crazy scrappy gorilla kind of attitude behind the making of it, which was just the reason the movie as a whole was just so fun to work on.

**Stuart White** (39:21):

That brings me to a great moment to say the thank yous. Thank you to Autodesk for providing an opportunity to show you guys what we did on 'The Creator' and the fun that we had doing. Thank you to Gareth and all the people around him and the cinematographers for shooting such great pictures. But Gareth, for just really having a wonderful collaborative spirit and a sense of fun and a sense of humor, which gets you through some long nights of post-production of course. And then a big, huge thank you to everybody who worked with me to do the show because these are the guys who put the pixels on the screen and they're talented too, every last one of them, and they made it a real joy to work on this movie. So thank you crew. You did an absolutely amazing job and kicked it out of the park. I hope you've enjoyed that talk and a little look into Fin Design's work on 'The Creator'.



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