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VISUAL EFFECTS FOR FILM

DISTRICT 9

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"I want to sincerely thank and praise everyone at Image Engine for what you created. From a management and scheduling perspective Image Engine dealt with all the hurdles *"District 9"* threw at us brilliantly. In terms of the aliens in particular I think Image Engine has done absolutely top tier brilliant work that far exceeded my expectations! Please thank the artists and everyone involved for slaving over my film and coming through in such a huge way".

-Neill Blomkamp

Blomkamp Selects Image Engine as Lead Visual Effects Vendor on "District 9"

Image Engine has completed 311 visual effects shots for "District 9", the feature film debut from director Neill Blomkamp.

Image Engine's workload focused the studio's efforts on creating 100% digital aliens that populate an area of Soweto, South Africa known as "District 9". In addition, Image Engine developed the alien mother ship, digital helicopters and digital Casspir troop carriers, as well as delivering miscellaneous shots with computer-generated gore and compositing tasks.

Blomkamp approached Image Engine to take on the alien work based on the studio's strong film visual effects pipeline, highly regarded R&D department and reputation for handling complex creature work for such past projects as "Slither" and "Kingdom Hospital".

"We are simply ecstatic about helping Neill achieve his wildly creative vision on this project," says Shawn Walsh, Visual Effects Executive Producer. "Neill's truly original take on the alien myth is guaranteed to leave audiences astounded."

Image Engine's creatures were based on a conceptual design provided by Weta Workshop, who worked with Blomkamp during pre-production based in Wellington, New Zealand. Image Engine produced three main characters in the film, as well as a general population of aliens all with specific characteristics related to their back-story in keeping with the film's documentary shooting style.

Visual Effects Supervisor Dan Kaufman oversaw shots in-house during postproduction while Stefanie Boose produced the project at Image Engine. "Managing the crew at Image Engine to achieve Neill's vision was an immense challenge, but tremendously rewarding," said Boose. Supporting Visual Effects Sequence Supervisors were Jon Cowley, Gerard 'Ben' Pierre and Jesper Kjolsrud.

Location photography was shot in Kliptown, Soweto and Johannesburg, South Africa. Peter Muyzers, Image Engine's COO, served as on-set Visual Effects Supervisor and as Digital Production Supervisor during post-production. Previously, Peter Muyzers' computer graphics supervision at The Moving Picture Company delivered such well-known computer-generated characters as the Whomping Willow in the Harry Potter series of feature films.

Pre-production at Image Engine featured further advancements in Image Engine's feature film visual effects pipeline directed by Research and Development Lead John Haddon. In concert with Muyzers, Haddon developed an in-house HDRI pipeline driven by the 3D environment provided by The Foundry's NUKE compositing software.

Work began with the alien creature build at Image Engine's Vancouver facility in May 2008. Creature Supervisor James Stewart helmed creature development and Animation Supervisor Steve Nichols directed animation. Image Engine's crew size grew to 110 to facilitate the work.

"District 9," says Stewart "is a cumulative result of Image Engine's investment in a film pipeline and the efforts of the supervisors on the crew, many of whom are Canadians that have longstanding international experience, returning to work in Canada on a high-end feature." Ultimately, the creature build grew to feature some 50 or more discrete aliens.

Animation of the alien characters was accomplished using a combination of key-frame, motion capture and roto-mation techniques. Motion capture services were provided by Vancouver based Animatrik Film Design and Motion Capture Supervisor Brett Ineson.

"District 9 was an incredible experience for me as an animation supervisor," says Nichols. "I found the team at Image Engine to be an amazingly talented group of resourceful wizards. Under the manic, genius leadership of an understanding and passionate director, the team realized - both professionally and personally - the exceptional opportunity this film presented."

Hard surface computer-generated assets were developed by Asset Lead Nigel Denton-Howes. This included complex high-resolution builds for the alien mother ship and various other vehicles. Denton-Howes also wrote a sophisticated proprietary asset management system dubbed "Jabuka" to handle the entire scope of computer generated 3D elements created at Image Engine.

Rendering at Image Engine was accomplished using DNA Research's 3Delight.

Vancouver-based The Embassy Visual Effects also contributed visual effects shots to the film. "We had a close working relationship with The Embassy Visual Effects throughout production and post-production," said Muyzers. "They have done some stunning work of late!"

"This film has been essential to our growth and maturity as a high-end visual effects facility," says Walsh. "Neill deserves great accolades for his faith in us and we thank our tremendously talented crew who worked extremely hard and with such passion to achieve these results."

"I want to sincerely thank and praise everyone at Image Engine for what you created," said Blomkamp. "From a management and scheduling perspective Image Engine dealt with all the hurdles "District 9" threw at us brilliantly. In terms of the aliens in particular I think Image Engine has done absolutely top tier brilliant work that far exceeded my expectations! Please thank the artists and everyone involved for slaving over my film and coming through in such a huge way."

"District 9," produced under Peter Jackson's WingNut Films, is distributed by Sony Pictures Entertainment.

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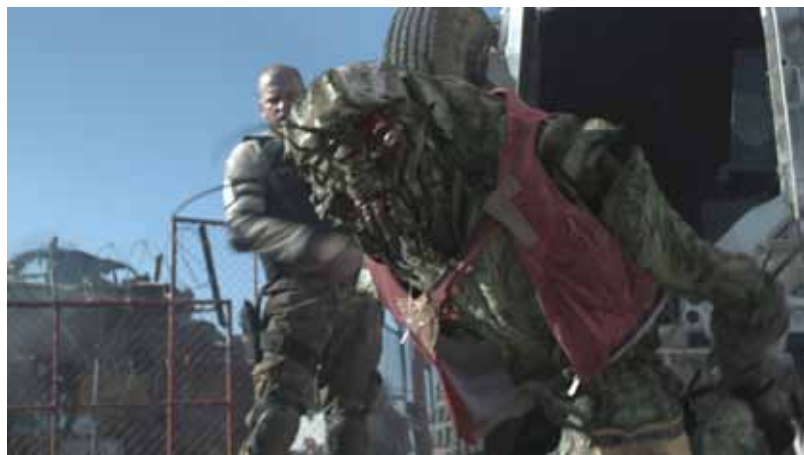
Neill Blomkamp Talks District 9

The hot new director of District 9 chats exclusively about his feature debut, VFX, sci-fi and Peter Jackson.

BY BILL DESOWITZ | VFXWORLD | AUGUST 14, 2009 |

The Alien influence is quite apparent in the creature design. Blomkamp was exceptionally pleased with Image Engine's CG work. All images courtesy of TriStar Pictures.

You've seen the District 9 trailers and posters and have been exposed to the brilliant viral marketing campaign. Finally, the potential sleeper hit of the summer arrives today (through TriStar Pictures). A thinking man's sci-fi that's both thrilling and humorous about a clash of races between wandering aliens (a cross between an insect exo-skeleton and a crustacean) and a government bureaucrat -- in Johannesburg, of all places! At the helm is Neill Blomkamp, the former vfx artist/3D animator (Smallville, Dark Angel) and director of commercials and shorts (Landfall: the Halo trilogy of shorts) as well as original founding partner of The Embassy Visual Effects in Vancouver. In fact, after his Halo feature with Peter Jackson fell apart, the South African native and Vancouver resident immediately turned to District 9 at the behest of Jackson, which is based on another of his shorts: Alive in Joburg. In this VFXWorld exclusive, Blomkamp tells us about all of this and more.

Bill Desowitz: So let's jump right into the visual effects. What's CG and who was responsible for them?

Neill Blomkamp: The visual effects were broken down into categories that we saw onscreen, like the aliens were done by Image Engine in Vancouver, the mother ship was predominantly done by Weta Digital, and the drop ship was Weta Digital and then the exo-suit and the little fighting creatures -- the little pets -- were all done by The Embassy. Zoic also did a few minor shots (overflow 2D work). So it was kind of cool for me because each company had its

very own thing that it was responsible for doing. But the bulk of the visual effects work went into the aliens. Image Engine worked on the film for quite a while and did really good work.

BD: How did you discover Image Engine?

NB: Well, originally, I thought Weta would do everything, but Avatar had taken over and absolutely crushed Weta. So Weta said no, we can't do the film. What I wanted to do then was take advantage of Vancouver: I live there for one and in the future I'm going to do more films there, and, two, the British Columbia tax credit thing for post-production. We would be able to get more shots for it. So I know a lot of the effects houses in Vancouver, and I had a bunch of meetings with Image Engine and they actually flew down to New Zealand. They hadn't done anything that was on this scale before, but based on the guys who were in charge of running the company and making District 9 happen, Shawn Walsh [visual effects exec producer] and Pete Muyzers [on-set visual effects plate supervisor & digital production manager], I felt like they were going to do whatever it took to make this work, so I had faith in them, as opposed to the reel of the company, and they totally stepped up to the plate and just hired all the right people, and I'm exceptionally happy with the way it turned out. I guess in a way, it was a bit of a gamble, but it won't be from now on because they have clearly established that they can do A-grade creature work. And it's going to be different for them from now on.

Blomkamp (l) flanked by Peter Jackson and lead actor Sharlto Copley at CCSD: Jackson has helped Blomkamp see the forest through the trees as a filmmaker.

BD: What was it like for you directing a feature after Halo collapsed, but with Peter Jackson still very much behind you?

NB: I mean, look, I had worked with Weta Workshop for five months doing Halo, so when that collapsed, Peter told me that he had been through this process before with a few projects that collapsed. I'll help you get another one going and Fran Walsh suggested the idea of taking the short and turning that into a feature, which sounded like a great idea, so I did that.

BD: So it hadn't occurred to you before to turn Alive in Joburg into a feature?

NB: Not then. Before Halo, it had occurred to me. For some reason, when he said, "Go and do another film and we'll set it up and you can just keep going," my mind started going in the direction of some other science fiction film. So I went straight into District 9 almost without thinking about Halo. And I've been directing that film for two-and-a-half years and now I'm at the end.

BD: What was the experience like?

NB: It's grueling: You've gotta have a lot of stamina, but it's rewarding: it's like climbing a mountain. Once you get to the top, you can see over it.

BD: Crew members say it's always nice to have a visual effects expert at the helm who not only speaks the same language but can also clearly convey story and character. Was this your experience?

NB: Yeah, it's probably easier to get the end result that you want because you speak the same language so you can get in there and provide a description of what you're looking for with greater accuracy.

BD: What were some of your movie influences that helped inform District 9?

NB: Well, there is no one film that I can say influenced District 9 on a conscious, surface level. It's a case of all of my favorite science fiction films blending together. You know, even videogames. And it was that nugget of science fiction that I placed in Johannesburg. I guess at the top of the list would be the first two Aliens, the Terminators, Predator and Robocop -- all the '80s hardcore, sci-fi/action films. And I don't know whether the film has that feeling or not for the audience, but I wanted it to have that harsh 1980s kind of vibe -- I didn't want it to feel glossy and slick.

BD: Cronenberg's The Fly must've been an influence too.

NB: I think subconsciously.

BD: What about Children of Men?

NB: I love Children of Men. It's the future presented realistically and that's what it gives it that cool, grounding sensation.

BD: Talk about the challenge of adapting the short into a feature.

NB: Well, I wanted to make sure it was constantly moving forward. And also at its core it's the story about two races colliding, so first we had to figure out the world of District 9, which was taken from Alive in Joburg and then fleshed out. Once you have that basis, then within that world you can start picking the characters that seem interesting: a pencil pushing bureaucrat inside MNU was interesting to me and someone to follow around. So Terry and I just picked all of those characters and moments and concepts that were interesting and just fleshed them out.

Weta Workshop helped with the alien design, but, with Weta Digital busy with Avatar, Image Engine was given the opportunity of a lifetime to step in.

BD: And fleshing out the alien culture?

NB: We did quite a lot. Unfortunately, we don't go much into it in the film because there wasn't time. A lot needed to be figured out and to me there's this kind of ant hive that's had a queen that's died and they're these directionless drones walking around, so it kind of explains how all this technology could've been built and manufactured and thought up. But they don't have it together enough to use that weaponry on humans and turn their situation on its head. So they just keep getting stomped on for 30 years.

BD: Not like Planet of the Apes, where they revolted.

NB: No, they're still just wallowing around in squalor.

BD: What have you learned from Peter Jackson?

NB: I think the biggest influence from him has been to help me just really free my thinking and think bigger. That's one thing I noticed sitting with him a lot: my process tends to be about parameters and about operating within these cubes and his whole approach is 180 degrees away from that: it's all about thinking big and forgetting every possible wall or reason why something can't be done and overcoming it.

BD: Is that partly because of your visual effects background and need to problem solve?

NB: It may be: I do tend to work on a logical, problem-solving basis. But his mind is very free so, out of everything, that's probably the biggest thing I'll walk away with the most -- just aim for whatever I want and then…

BD: …figuring out how to solve it. What do you think of the Avatar footage they showed at Comic-Con?

NB: It was awesome. You know, when you're at Weta as a client, they're not going to show you another client's work. I would speak to some of the artists and I know Joe Letteri [the visual effects supervisor] quite well, so I would always bug them because I'm such a Cameron fan. I mean half the time I was joking just to get them to show me stuff.

BD: What impressed and surprised you about the footage?

NB: It's definitely different from what I was expecting because, again, we didn't get to see a lot of the human stuff and the human military aspect, so I was expecting something more like Aliens. But I think all of that was there: it just isn't in the 25 minutes that we saw. What was cooler than I was expecting is the world of Pandora -- and I think that's the essence of the film, so it was pretty mind blowing.

BD: What about stereoscopic?

NB: I think it's generally intriguing. It's definitely the preferable way to go, for sure. It's a question of whether your budget can sustain it. I think if everything shifts that way, then your budget will automatically sustain it because that's how films will be made. I have an issue in an incorrectly set up theater with the luminosity of the projector sometimes. You've got to seriously jack a lot of light in there, so that annoys me. Under the right circumstances, it's great. Also, it's not going to happen anytime soon, but if we can raise the frame rate, it would be great motion because 24 is still kind of an issue for me.

BD: What are you working on next?

NB: I've got a new science fiction idea. It's really only come about in the last month or two.

Weta Digital was able to work on the alien mothership.

BD: Can you tell us about it?

NB: No, it's my secret.

BD: Not even what kind of sci-fi?

NB: It's a similar genre to this -- sci-fi/action/drama, but it's set on another planet and the emphasis is more on action than this one.

BD: And your approach?

NB: Storytelling's a little different. It's something I've never seen before, and, actually, what I've seen in my mind I have to do some tests. But, hopefully, I can pull off what I have in my head and it's a very different style from District 9. But, of course, all of this is up on the air and it has to be greenlit and nailed down and tests need to happen.

BD: And you've potentially got Weta at your disposal.

NB: Yeah, totally, if they're available that would be awesome. But my primary guys for the next one will be Image Engine, just for how much they did for this film.


Bill Desowitz is senior editor of AWN and VFXWorld.

DISTRICT 9 - FXGUIDE

BY IAN FAILES | FX GUIDE | SEPTEMBER 10, 2009

For District 9, writer/director Neill Blomkamp turned to a host of Vancouver-based studios, along with Weta Workshop and Weta Digital in New Zealand, to provide alien creatures and other effects for the film. fxguide profiles the work of Image Engine, The Embassy Visual Effects, Zoic Studios and Goldtooth Creative in bringing Blomkamp's vision to life.
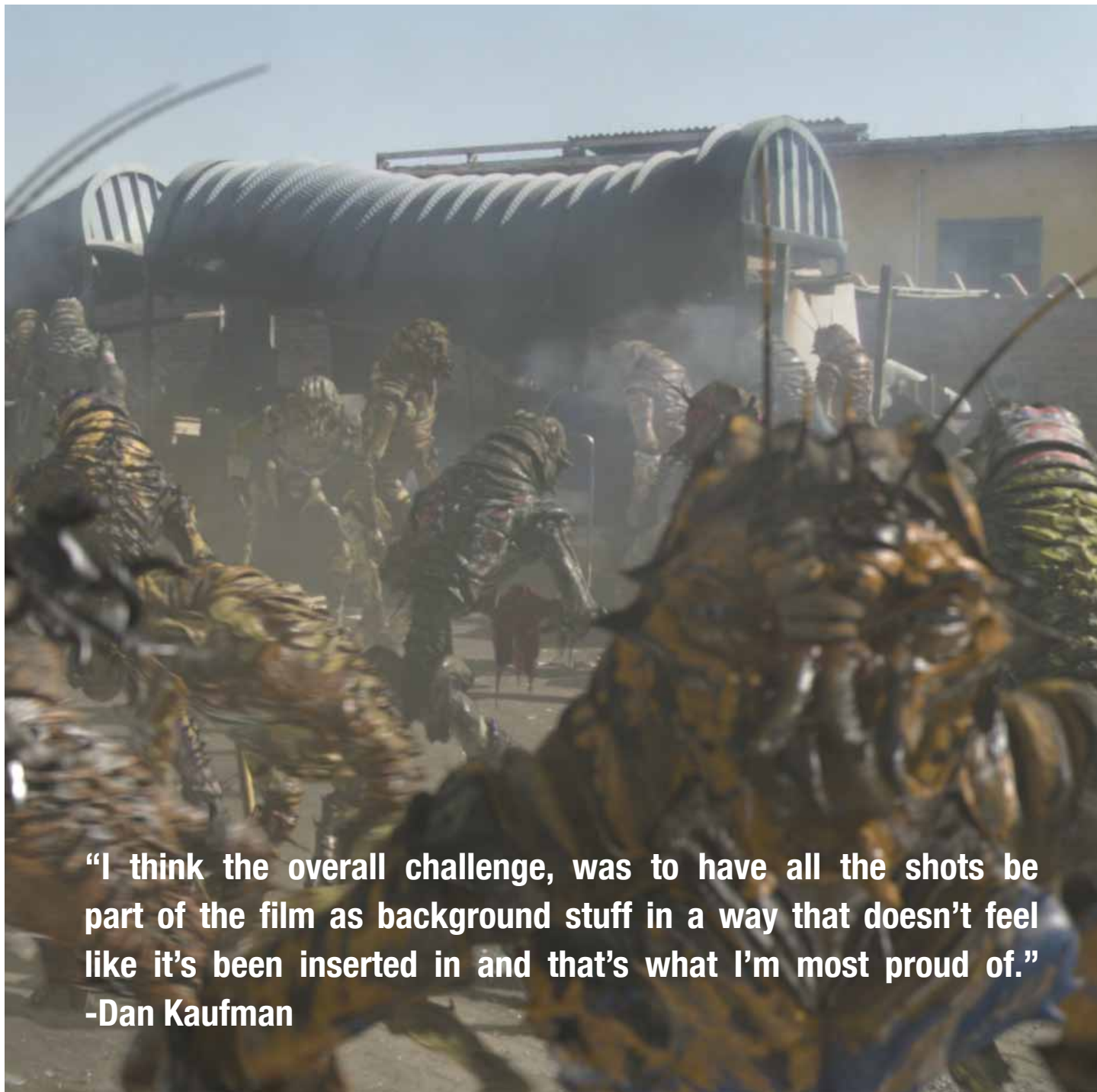
"I think the overall challenge, was to have all the shots be part of the film as background stuff in a way that doesn't feel like it's been inserted in and that's what I'm most proud of."
-Dan Kaufman

Image Engine was responsible for all of the refugee aliens, relegated to a makeshift camp in Soweto, South Africa, known as District 9. They are controlled by Multi-National United (MNU), a private company more concerned with the potential of alien weaponry than the welfare of the interstellar visitors. When MNU field agent Wikus van der Merwe (Sharlto Copley) contracts an alien virus and begins displaying alien characteristics, he becomes a wanted man for his ability to operate alien weapons. Wikus eventually befriends Christopher Johnson, an alien who has secretly been planning a return to his mother ship and, ultimately, his home planet.

Ramping up to a crew of 110, Image Engine completed 311 visual effects shots for District 9. While these shots were predominantly of digital aliens, the studio also developed the mother ship - which looms ominously above the city - digital helicopters, Casspir troop carriers, weapons and various explosions and gore effects. Image Engine and the other effects vendors shared assets where necessary, generally finalling a shot if their main asset was the foreground element.

For Image Engine, the stark and dusty South African setting brought with it a gritty handheld aesthetic within which the studio had to fit an array of digital aliens. "Neill said the whole film should read like a BBC camera crew went to Johannesburg and they just so happen to catch the events of the film," said Image Engine executive producer Shawn Walsh. "It wasn't going to be handheld for effect. It was going to be handheld because it was. Everything had to fit into an overall vision of the movie that was a really a gritty documentary style."

Alien conceptual designs began at Weta Workshop, with Blomkamp contributing his own photographic collection of bugs and insects. The designs were later refined by Image Engine based on the demands of the alien movement and performance. "Neill wanted the aliens to be very alien," said Dan Kaufman, the in-house visual effects   supervisor for

Image Engine. "They were inspired by insects but there's always that fine line between having something too alien and not human and not being able to relate to it all." Part of Image Engine's re-design involved refinement of the alien faces to add shells and tentacles which could be moved to allow for more human-like expressions.

Although the aliens have human-esque characteristics, they were also envisaged as taller than humans and with a very unforgiving waist-line and dog-leg lower limbs to avoid the 'man-in-suit' look. The aliens were also designed to be quite distinctive. "People would suggest all kinds of different textures or trinkets to add to the aliens," recalled Walsh, "and by the end they'd say: 'How about skate board stickers? How about tribal war paint? How about one guy walks through and door and knocks over a bucket of paint and it just stays there on his head.'"

"We ended up creating really diverse creatures," explained creature supervisor James Stewart. "Each alien had different body markings, clothing, faces, trinkets - we had the ability to mix and match those things more than you could a Toyota." Asset lead Nigel Denton-Howes developed a proprietary asset management system called 'Jabuka' that allowed the mixing and matching of alien body parts and props.

Production shot location photography in Kliptown, Soweto and Johannesburg. Image Engine COO Peter Muzyers acted as on-set visual effects supervisor and as the digital production supervisor in post-production. "We had grand ideas about running witness cameras and doing on-set mocap for the aliens," said Muzyers. "Neill's concern was that that would inhibit him from shooting fast. He wanted to do a lot of improvisation and ad-libbing with the characters. Often he was making up stuff on the shoot, so that limited us in terms of preparation time on set. It was definitely not a traditional studio shoot."

"He also didn't want to have a typical video village on set with the sound guy and script supervisor," continued Muzyers. "They had to be remotely located so he could shoot 360 degrees without having to ask the crew to get out of the way. For a film of that nature and size, the shooting schedule was actually quite short because of the budget constraints on the movie. So he went fast and hard and the pace was relentless."

Blomkamp ultimately chose a range of digital cameras, including the RED Camera and Sony EX1. The RED Camera was used for about 60% of the film - mostly visual effects intense shots - and the other 40% was a mixture of the Sony EX1 and various other cameras such as a HS100 for security footage and a Sony F950 mounted in a helicopter for aerial shots.

Although the digital cameras clearly made for a more handheld, documentary feel, the result was of course substantial match moving work for each of the visual effects vendors. Image Engine producer Stefanie Boose noted: "There was a huge amount of camera tracking involved. Actually, there almost wasn't a single locked off shot for us, which really added to the grittiness of the film."

The studio utilised PFTrack, Equalizer and boujou for tracking and Silouhette for paint and roto work.

On set, actor Jason Cope donned a 50% grey suit with markers and worked as a stand-in for the aliens. "Neill was fairly specific about wanting to have someone on set who the actors could interact with," noted Kaufman. "It helped the other actors, particularly Sharlto Copley in the emotional scenes with Christopher Johnson, but of course it meant we had to paint it out later and restore pieces of the background."

"The grey suit also gave us a good lighting reference," observed Muzyers. "It wasn't as neat as the grey ball you often see, but it gave a fairly good reference as to where light was coming from and how the shadows played on his body."

Muzyers supervised the shooting of clean plates where possible, although again this proved difficult with the very active camera movement. "Luckily, Neill's background in visual effects meant that he knew the importance of capturing HDRI data.

I can never take enough HDRI, so I kind of keep going until they usher me off the set!" LIDAR scans of some of the indoor environments were also undertaken in South Africa.

Back at Image Engine, Steve Nichols supervised the alien animation effort with a total team of 16 animators working with a bi-pedal rig in Maya. The aliens were realised through a combination of roto-mating Cope's on-set performance, motion capture and keyframe animation.

"I think that grey suit was probably the most embarrassing costume ever," joked Nichols, "especially as Jason was in the slums of Soweto at the time. They'd just bust in and start shooting stuff with a handheld camera. Some of it's improvised and he's running around in a silver jumpsuit which was really tight."

"Sometimes Jason actually wore stilts to get his eyeline right, but we found we couldn't copy his motion when he was wearing stilts because he always looked like he was...an alien wearing stilts! There was just something inherent in your motion that's different when you're wearing stilts. It made him look a bit like an old man." Still, Cope's grey-suited performance proved to be an excellent, and often followed, reference. "For Christopher Johnson, Neill was very happy sometimes to absolutely copy Jason's performance," said Muyzers. "Just the way he squinted at the sun or moved around - Neill wanted that exactly. And then other times we changed the performance to make him more aggravated or to tone it down."

Added Nichols: "Having Jason there - he was a really good actor - meant there were little ticks and nuances that the animators would beat up and go with. Neill was always about: 'Don't do the cliche acting' - it had to be very much understated. I think it saved us a lot of time as animators not guessing that. It was already there for us."

Motion capture services were provided by Vancouver based Animatrik Film Design and motion capture supervisor Brett Ineson. "We used motion capture for some of the more crowd based shots," said Nichols. "One of the things with motion capture was that as animators we went back into the motion and added the buggy ticks and razor sharp movements that a human couldn't do - you just couldn't move that fast. It was kind of a guerilla way of working - we'd shoot a lot of mocap but then throw out half of it and decide to keyframe it if that worked better for the shot."

Mocap came in especially handy as reference for Christopher Johnson's son. "We motion captured my son Sam for some of little CJ," said Muzyers. "That worked out well for certain shots. You get a typical child response to when an adult interacts with him. It's not something an adult animator can typically come up with if they don't necessarily have kids themselves."

Animators also had to explore a range of emotions for the varying alien personalities. "It was interesting because we actually started with the random different aliens at first for the eviction sequence," recalled Nichols. "So if an alien was meant to be a big aggressive alien we'd add something more to him. We did a battery of motions that were based on research of slums and the shanty town feeling. They weren't all perfect superheroes. They had limps and some of them even had gout! Sometimes we'd be working on emotional scenes with Christopher Johnson where his son might be taken away and it's very subtle and then another time we'd have two aliens roaring at each other tearing apart a fridge."

Animators completed facial animation in Maya using muscle shapes similar to those of humans. "It was a very simple set up for the animators to create these different expressions," said Nichols, "which we based on humans by setting up controllers for the face." The distinctive tentacles, however, were driven by dynamics, based on a system developed in-house by effects TDs at Image Engine originally for rigid body dynamic simulation.

"I always enjoy when people tap into existing software and use it for something it wasn't designed for," said Muzyers. "It would usually be used for exploding buildings but was adapted for the dangling tentacles. It saved a lot of time - traditionally you would have to do a lot of simulation."

The tentacle rig allowed for autonomous motion and gave the aliens even more personality. Noted Nichols: "If the alien needed to be more angry, for example, the rig could control how much the tentacles wiggled and we could also animate them distinctly by flipping them around. They also had a soft body feel to them that could give a bit more weight to the character."

Similar character traits could be portrayed by animating various body parts on the aliens. "They have claws on their chests that we called 'chestacles'," said Nichols. "There was always a level of ambient noise that these characters needed to have that helped them feel more real. So when another character got close to an alien, we'd make the chestacles reach out and pull back in a sort of defensive way. It made them more of a creature and not a guy in a suit."

"One thing we also found was that we put so many nuances in there - like when they blink their eyes dilate - but once you get it in a scene their eyes are dark and in shadow and you don't see the nuances. But I think you still feel them - it's important that they're there and you'd miss them if they were gone. You wouldn't believe what's actually moving on those characters if you turned the lights on!"

To integrate the aliens into the scenes, Image Engine research and development lead John Haddon and Muyzers developed an HDRI pipeline and lighting rig that worked for both the stark exterior lighting and the internal environments. The aliens were rendered in DNA Research's 3Delight, with Nuke used for compositing. "Nuke has very good 3D functionality," noted Kaufman, "so you can bring things in directly to the program and tweak them in 3D. This was very helpful to get that last little bit of verisimilitude into the alien scenes. We also had tools in Nuke that matched the look of the different media on which the film was shot in terms of grain and noise."

For Image Engine, working with Blomkamp on District 9 turned out to be a successful and artistically satisfying visual effects adventure in a film that didn't necessarily push its visual effects wares. "I think the single most successful factor in this was Neill," said Muyzers. "His ability to drive the team and push us was great. He was always fair but still relentless."

"Neill's also quite a talented artist," said Stewart. "He would see something and ask why you're doing it. Once you explained it to him he would just get it and then he'd give you the room you needed to create good art, which was a real benefit for the film."

"I think the overall challenge," added Kaufman, "was to have all the shots be part of the film as background stuff in a way that doesn't feel like it's been inserted in and that's what I'm most proud of."

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DISTRICT 9

Peter Muyzers - Digital Production Supervisor

When we met with Neill Blomkamp in New Zealand in early 2008, it quickly became apparent that District 9 was going to be a different kind of movie. Neill had a vision, wanting to achieve something that some called "impossible". He wanted to create a story about a lead alien character living among other oppressed aliens in the slums of South Africa about to be relocated by government-led operations to 'clean up' Johannesburg. The aliens were to be totally believable digital characters, in close-ups, having conversations, fighting and interacting with their environment and their live-action counter-parts in over 300 shots and all that on a modest budget. Throw in a hovering mother ship, helicopters and troop carriers and everyone at Image Engine in Vancouver knew we were in for a challenge, particularly since the goal was to make the audience forget that they were watching digital characters and perhaps even make them feel empathy towards the aliens.

Image Engine not only got the opportunity to create all the digital bipedal aliens that inhabit the world of District 9, we also got to model and texture the mother ship (based on design work courtesy of Weta Workshop), digital helicopters and troop carriers that we used in a variety of shots and which were also shared with Weta Digital for their shots. Image Engine completed about a dozen shots featuring the mother ship.

Neill's background in visual effects helped us work together closely to achieve what we needed to do. Throughout principal photography in Soweto, South Africa, we worked closely with the cinematog-rapher to determine how we were going to deal with the various camera formats used on the show. Production used 3 of Peter Jackson's own RED One cameras, a few Sony PMW-EX1 cameras, some JVC MS100 compact HD cameras for security camera footage and a Sony HDC-F950 mounted inside a stabilized Cineflex system for aerial shots.

To deal with the various formats at Image Engine, we created a pipe line that could handle the RED 4K and HD footage to make the different formats as transparent as possible to the artists without sacrificing the dynamic range in the plates. However, to conserve on storage space and to make it easier to work with plates, we decided not to run a full 4K pipeline. Instead, production decided which shots they required at 4K for any post-zooms or pans at the DI stage and the rest of the plates were extracted at 2K.

Even though this was going to be a visual effects intensive movie, Neill didn't want to get slowed down by all kinds of requirements and needs from the VFX crew. His desire for a run-and-gun approach meant that video village was often located in a remote area and keeping track of recording all the necessary VFX data was not an easy task. In addition to that, finding South African LiDAR scanning services proved to be a challenge and the budget didn't allow for a more experienced service bureau to be flown in. Much of the set surveying was done manually which was time-intensive, given the detailed environment of Soweto in which the aliens were living.

To get the best performance out of Sharlto Copley, who plays agent Wikus Van De Merwe, we used the actor Jason Cope dressed up in a grey-suit with attached tracking markers to play all of the aliens that Sharlto interacts with, except for Little CJ. The grey suit was made out of a material that represented an 18% grey value that would be helpful in balancing the plates and in providing the lighting teams with a grey reference in the shot. Because of Neill's shooting style, we weren't able to use witness cameras on set, but the tracking markers on the suit aided the animators nonetheless in rotoscoping the performance of Jason Cope through keyframing.

Clean plates were shot for nearly every take, even though they were hand-held, to assist in the removal of the grey suit actor in nearly every alien shot. The Background Prep and Roto teams at Image Engine are truly the unsung heroes of their resulting work on District 9.

Neill preferred to keep the lighting of his movie as real as possible. Often, no additional lighting was used on set to keep the mood of the film to that of a documentary. To sit the aliens into their environments, a library of exposure-bracketed images were taken throughout principal photography to later create High Dynamic Range Images at Image Engine. Using our own custom pipeline, these were converted to set up the scenes for rendering and compositing. During the conversion process, the Lighting TD working on a particular scene could use a lighting setup that was a balance between Image Based Lighting and automatically creating lights for accurate rendering of the aliens in their environment.

Special Effects created a range of effects like gunshots, smoke, debris, dust, sparks and meat-bag explosions which were dramati-cally enhanced and added to extensively for Image Engine's shots by a combination of CG created elements and a range of live-action elements shot during post.

Neill's vision and passion for his sci-fi story took us on a journey with amazing crews in South Africa, New Zealand and finally, Vancouver. When we started District 9, we could all feel that this was going to be something special. A wonderful thanks to the whole crew at Image Engine, every single one of them contributed to what is District 9.

About Image Engine

WORLD-CLASS VISUAL EFFECTS FOR FEATURE FILMS

Whatever the scope or size of the production, from pre-visualization through to handling complete feature films, we provide scalable resources, and a wealth of experience and talent. Our skilled teams are integral to our success - find out more & meet the crew.

Developing robust production pipelines and pioneering in the area of proprietary software development, Image Engine is fast becoming a leader of innovation in development for visual effects.

Image Engine is based in Vancouver, BC, North America's third largest film production centre - and is in the same time zone as Los Angeles.

The studio is ideally placed close to the city centre, and is only a short distance from Vancouver International Airport.

HISTORY

Image Engine was formed in 1995 in anticipation of the growing strength of the postproduction market in Vancouver.

The founding partners (Greg Holmes, Robin Hackl and Christopher Mossman) began with a simple vision to produce stunning work for the demanding producers and directors who were increasingly flocking to Vancouver as a location for high-end visual effects.

With numerous Emmy, Gemini and Visual Effects Society nominations under its belt, Image Engine went on to seize the growing opportunities in feature film visual effects work.

The success of the film division led to its architects Peter Muyzers and Shawn Walsh being made partners in the business. They remain a driving force building Image Engine into an industry leading feature film visual effects facility, culminating in 2010 with the Academy Award® nomination for District 9.

From its first production Slither through to the recent high profile productions including The Twilight Saga: Eclipse, District 9, 2012, Watchmen, Law Abiding Citizen, Orphan and The Losers, Image Engine have built up a notable roster of credits.

INTERNATIONAL TALENT

Our skilled teams are integral to our success.

The first-rate supervisors, programmers and artists at Image Engine bring their global expertise, boundless creativity and a shared passion for producing spectacular visual effects to every production – whilst our teams of highly experienced production staff run a seamless operation to ensure that every production is delivered on time and on budget.

Image Engine currently employs individuals who hail from Canada, The United States, England, Australia, New Zealand, Belgium, Austria, Sweden, Israel, Mexico, Brasil, India, Japan, China, Korea, Norway, Poland, Slovakia, Hungary, Spain and Italy. The diversity of our crew's backgrounds is paramount in the success of our film projects as we constantly try to see with new eyes. The studio is truly a place where creatively gifted and technically skillful people from all over the world have collected to achieve great results together.

INSPIRED PROJECTS NEED PASSIONATE PARTNERS

Image Engine has delivered visual effects for an incredibly diverse range of feature films and offers scalable resources to tackle projects of any size and scope.

Creative merit and technical challenge is what it's all about! Whether it is a major digital environment build for The Incredible Hulk, hundreds of digital aliens populating District 9, or building a sophisticated fur pipeline from scratch for the wolves of The Twilight Saga: Eclipse, Image Engine can embrace the creative motivations and tackle the technical challenges of truly high-end projects for the big screen.

SERVICES

On-Set Visual Effects Supervision, Post-Production Visual Effects Supervision, Pre-Visualization and Post-Visualization, Look Development and Concept Artwork, Character/Creature Design, Digital Matte Painting, 3D Animation, R&D Services and Compositing.

VES AWARDS WINNERS

OUTSTANDING COMPOSITING
in a Feature Motion Picture

VES AWARDS NOMINATIONS

OUTSTANDING VISUAL EFFECTS
in a Visual Effects Driven
Feature Motion Picture

OUTSTANDING ANIMATED CHARACTER
in a Live Action Feature Motion Picture

4 ACADEMY AWARDS® NOMINATIONS

VISUAL EFFECTS
FILM EDITING
BEST PICTURE
WRITING
(ADAPTED SCREENPLAY)

7 BAFTA AWARDS NOMINATIONS

SPECIAL VISUAL EFFECTS
DIRECTOR
ADAPTED SCREENPLAY
CINEMATOGRAPHY
EDITING
PRODUCTION DESIGN
SOUND

The Twilight Saga: Eclipse
Summit Entertainment Inc.
389 Shots – Creature Animation, Effects Animation,
Matte Painting & Compositing

The Losers
Dark Castle Entertainment & Warner Bros. Pictures
147 Shots – Hard Surface Animation, Effects Animation,
Matte Painting & Compositing

The Factory
Dark Castle Entertainment & Warner Bros. Pictures
217 Shots – Matte Painting, Effects Animation & Compositing

Law Abiding Citizen
The Film Department & Overture Films
85 Shots – Effects Animation, Matte Painting & Compositing

District 9
WingNut Films & Sony Pictures Entertainment
311 Shots – Character Animation, Effects Animation & Compositing

Orphan
Dark Castle Entertainment & Warner Bros. Pictures
124 Shots – Effects Animation, Matte Painting & Compositing

Watchmen
Warner Bros. Pictures
26 Shots – 3D Animation, Matte Painting & Compositing

The Incredible Hulk
Marvel Entertainment & Universal Pictures
75 Shots – 3D Animation, Matte Painting & Compositing

Mr. Magorium's Wonder Emporium
Mandate Pictures & Walden Media
14 Shots – Compositing, 3D Set Extension & 3D Character Animation

Fantastic Four: Rise of the Silver Surfer
20th Century Fox & Marvel Enterprises
6 Shots – All-CG Animation & Compositing