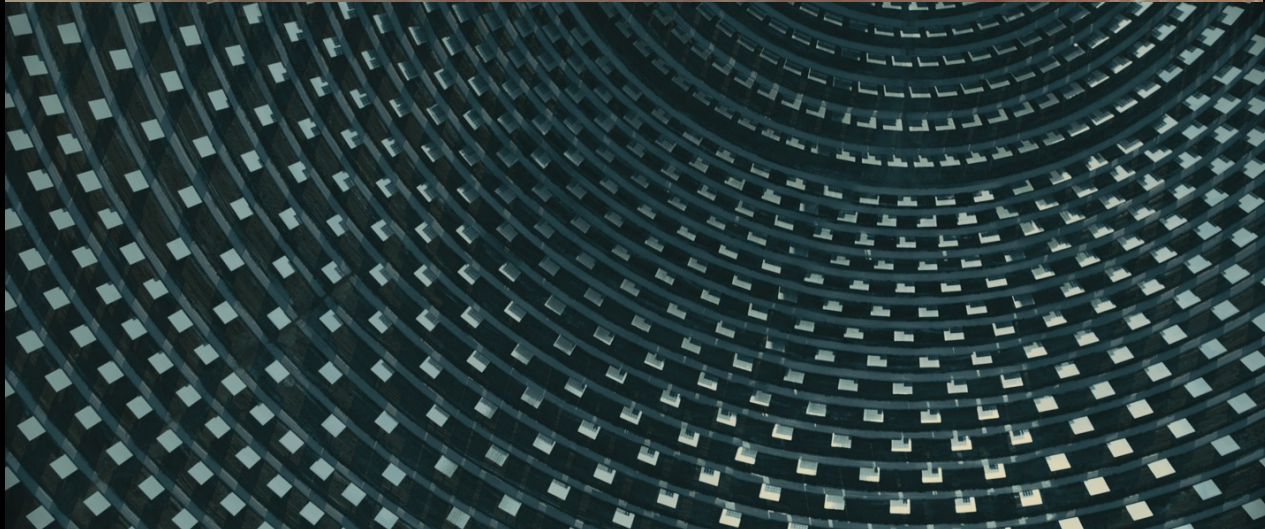


Short Statement on the Special Visual Effects for “BLADE RUNNER 2049”



The opening of the film combines a matte painting of an eye to get close, altered solar farms from Spain and landscape from Iceland with CG circular farms, smog and distant settlements (all Framestore VFX shots).

OVERVIEW

Making a sequel to everyone's favorite film carries some responsibilities. Everyone loved the original "Blade Runner" with many of the crew counting it as their favorite film. We knew we needed to be respectful to the original film but make a new film that was distinctive in its own right. We had a brilliant director, DP and crew who were committed to making something special. We tried to show restraint in the visual effects to make them seem more real. We were going for an analog look. There would be no cell phones or 16 x 9 screens. Even the of the DeNaBase graphics were more microfishe like instead of a backlit computer screen.

VFX RULES

Rules were important for the world we created to look consistent. We decided on these basic VFX rules.

- 1) Build enough set so close to camera and the actors things would be real. We knew that there would be an immense amount of CG on this film to show a world that does not exist, but we wanted that world to feel grounded to the audience and performers. Our sets were large but not immense. Every wide shot is a VFX extension or a total CGI shot.
- 2) Make the VFX to appear real and photographic as if everything could have photographed, not generated in a computer. If we could shoot a plate we would try to shoot a plate and then add VFX to it.
- 3) Try to keep the feel of the world real by not showing too much. There would be no traffic jams in the sky.
- 4) Create a world to be extremely atmospheric from pollution with rain or snow from climate change. Overcast light always with heavy atmosphere.
- 5) The CGI needed to feel as real, lived in and grimy.
- 6) Blend practical and visual effects whenever possible.

The Numbers

- 1) 1190 VFX shots in finished film.
- 2) Eight VFX Vendors

a. Double Negative (Vancouver)	291
b. Framestore (Montreal w/London art dept.)	281
c. In House Unit	192
d. UPP (Prague)	188
e. BUF (Montreal & Paris)	105
f. Rodeo (Montreal & Los Angeles)	064
g. Atomic Fiction (Montreal)	036
h. Motion Picture Company (MPC) Montreal	033
i. -----	-----
j. TOTAL VFX SHOTS	1190

THE CITIES – LOS ANGELES (using plates from Mexico City)



Using Google Earth we scouted of Mexico City and shot aerial plates there on overcast days (one helicopter following another). Dneg added tons of atmosphere, giant brutalist buildings, sunken canyon streets, spinners, ads and the Sepulvada Seawall.

THE CITIES - LOS ANGELES - MINIATURE LAPD BUILDING



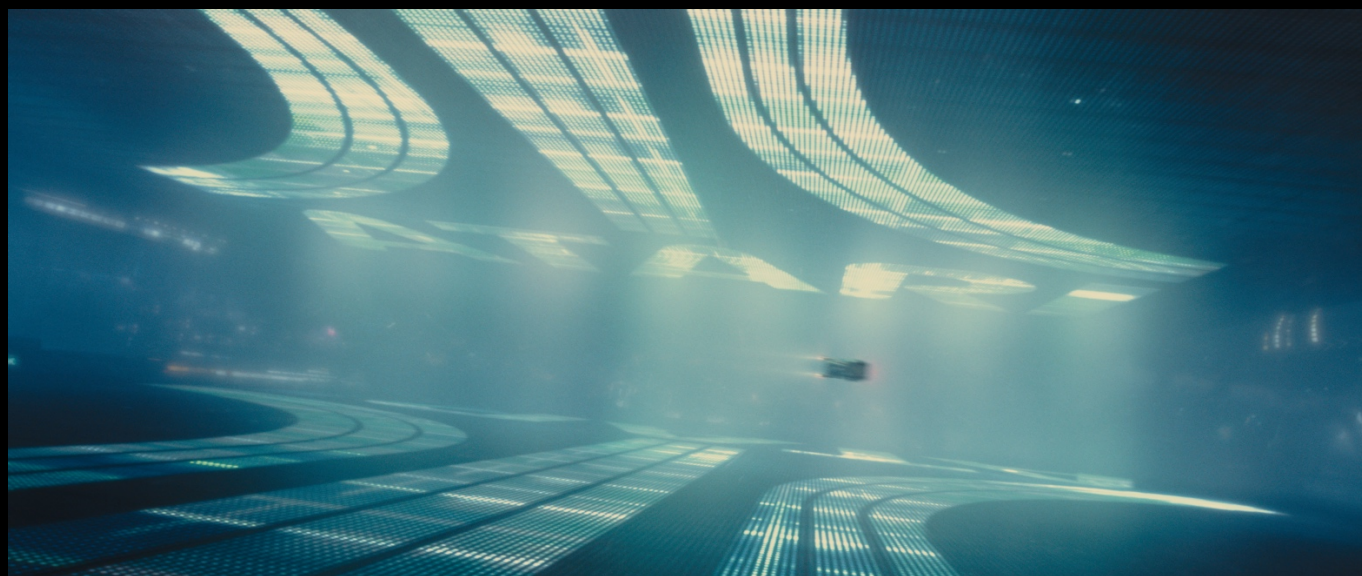
The LAPD building was done as a 1/35 scale miniature at WETA workshop in New Zealand. It was shot motion control in heavy fog with multiple passes exposing for different lights and details. Dneg added atmosphere, holographic signs, spinners, city details, lights from police spinners, snow and freezing rain.

THE CITIES – LOS ANGELES (Trip to K's apartment).



We shot in Budapest with SPFX snow and interactive spinner lights in the plate. Dneg added brutalist buildings, signs, snow, floating vehicles, BG city, steam and connected the practical lights that Roger Deakins had shot on set to CG spinners in the sky with spotlights.

THE CITIES – LOS ANGELES (The Coke / Atari shot – A total CGI shot).



Shot done by Rodeo FX Montreal combined two shots into one with complex details on city and signs.

JOI IN THE RAIN



JOI is K's holographic companion. When we first see her she is projected from a moving console on the ceiling. K gives her an emanator which frees her to go anywhere. JOI is made by filming Ana De Armas and projecting her on to CG geometry and creating a "Back shell" in CG that gives her volume.

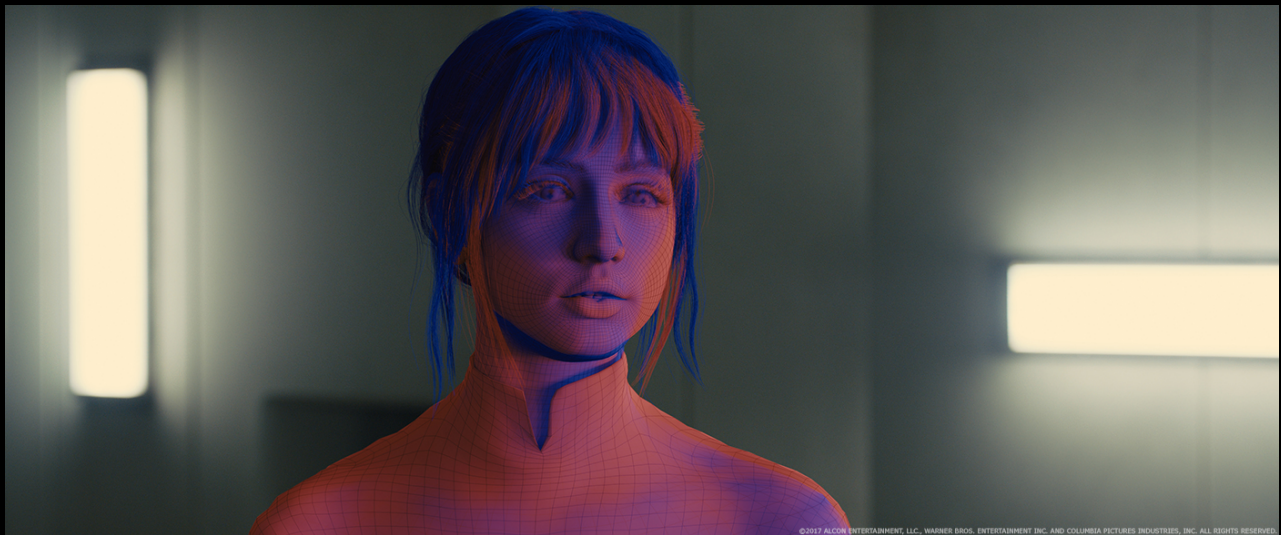


JOI AND MARIETTE MERGE

The menage a trois merge was one of our most difficult VFX sequences. We approached it by shooting both women separately with K (Ryan Gosling). First we'd shoot Mariette (Mackenzie Davis) and Denis would pick a take. Then we would break down Mariette's movements with a stop watch. Next we would line up JOI (Ana De Armas) till her eyes lined up with Mariette's, then shoot the shot while giving instructions to Ana as to when to lift her hand or touch K's face. We knew that we would not be able to exactly line up the women using only 2D techniques. We shot witness cameras to get multiple angles on the performers and we used those to roto match move the CG geometry of each actress. Then we would map the photography of each actress on that geometry (at Dneg). Once mapping was done the women could be moved to better line up with each other and merge. Some shots gave us both women's performances and also a third woman (made from parts of both of them) once they had merged.







BRINGING RACHAEL BACK FROM 1982.

We knew that we had to make the best digital human that been seen to date and make her act. Early on we decided that a CG head replacement was the best way to go. We cast a double for Rachael and put her in full makeup and hair with dots on her face. We replaced her from the neck up with a CGI double with full CGI hair (done at MPC). The lights were always moving in a circle above her head which made lighting the CGI double more difficult.





This show combined practical effects with 2D and 3D visual effects. Two important characters were VFX creations (JOI and Rachael). There are many sequences not listed here (Holofunhouse, Trash Mesa, Vegas, Ana's Memory Lab and Pink JOI hologram) that all required detailed VFX as well. In a 2:34 film, there are 1:48 of visual effects.