

COMPANY

Drishyam VFX

LOCATION

Mumbai, India

SOFTWARE

AUTODESK® MAYA®

RAISING MOHENJO DARO

Drishyam VFX brings the lost city to life using Autodesk Maya

"As an enterprise, which specializes in visual effects and where software is pivotal in the development of any CG scene or sequence, we have only one name in practice and that is Maya. The software takes into consideration the blend of various other software and is capable of rendering the best output in, what is usually, limited time,"

—**Rajeev Kumar**
COO
Drishyam VFX



Image courtesy: Drishyam VFX

Produced by UTV Motion Pictures, directed by Ashutosh Gowariker, and starring Hrithik Roshan and Pooja Hegde, the Bollywood film Mohenjo Daro resurrected for the big screen the ancient city of the same name. The grand city of Mohenjo Daro or the "Mound of the Dead" belonged to the Indus Valley Civilization and flourished between 2600 and 1900 BCE.

Though the entire film has been shot in Bhuj, its quaint old-world look and impressive sequences were created with the help of some slick VFX technology – Autodesk Maya being one of the key software. "As an enterprise, which specializes in visual effects and where software is pivotal in the development of any CG scene or sequence, we have only one name in practice and that is Maya. The software takes into consideration the blend of various other software and is capable of rendering the best output in, what is usually, limited time," informs Rajeev Kumar, COO of Drishyam VFX.

Drishyam VFX was set up by its parent company Drishyam Films with a vision of establishing a globally recognized post-production studio with Visual Effects (VFX) as its forte. Since its launch, besides Mohenjo Daro, the studio has successfully

provided end-to-end VFX services for a range of Bollywood films including Fitoor, Madaari, Te3n, Kahaani 2, Tum Bin 2, and Rangoon.

BACK IN TIME, ON TIME

In the fourth quarter of 2015, anticipating the large scale of visual effects required, Drishyam VFX was brought in to work on Mohenjo Daro by VFX Consultant Govardhan Vigram. The timeline was fixed as the release date of the film was inflexible. "There was always this challenge of 'time vs. needs'. We had to keep re-inventing methods, techniques and look at various ways to do things quicker without compromising on achieving the right look," recalls Govardhan.

The VFX work for Mohenjo Daro was a fairly elaborate process, closely monitored by the director, the art team and consultants, along with the team at Drishyam VFX. However, it was the studio's stage-by-stage development process that saved everyone a tremendous amount of time and energy, and also helped other departments, like sound and edit, do their work undisturbed while the shots were in development.

The whole final (climax) reel of the film is completely loaded with VFX!

THE CITY

One of the most important aspects of the film's VFX was the Mohenjo Daro city itself. Being the star in a period drama, the city needed to look the part. At the live location in Bhuj, there were minimal exteriors built on set. Almost the entire city was built as a combination of live set and VFX. Govardhan shares that there was also intense pre-viz work done for Mohenjo Daro, "Apart from the crocodile scene and the climax, we also had many city shots rendered in greyscale so that the edit could be finalized. We replaced these gray rendered cities with the textured look as and when they were done."

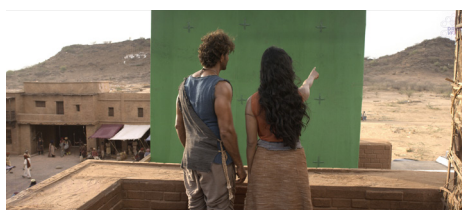


Image courtesy: Drishyam VFX

Before

Image courtesy: Drishyam VFX

After

To get the detailing right, the film set was first segmented into sections and varying levels of detail was added afterward. For instance, in the grand fight sequence at the arena, among other things, the crowds were added later in the post-production stage. Nighttime detailing was also done; to provide a finish to the torches lighting up the walls or the moonlight beaming down on the rooftops, for example. The VFX was a combination of CG and digital matte paint elements. Whatever was created as matte was also projected on CG geometry. This gave the camera more flexibility and allowed for dynamic camera angles.



Image courtesy: Drishyam VFX

Before

Image courtesy: Drishyam VFX

After

Maya's stability while working with huge

scenes made it the prime choice of software for the project. Even the massive amount of fluid simulation needed for the floods' sequence was created with the help of Maya, reveals Drishyam VFX COO Rajeev.

The software's interoperability with other applications made it further beneficial to the film's CG pipeline. Since no visual reference of the ancient city architecture was available, the only source of information was the director himself, who'd done tremendous research on every specific aspect. This is where Maya's file referencing came in handy. Every asset, developed as envisioned by the director, was referenced to one final layout of the city. Also, when several shots eventually required modifications, Maya made the task a lot easier. Without the software, applying changes and blending shapes manually on to hundreds of independent structures in each of the shots would have consumed a frightening number of hours. Fortunately, the studio's technical team was able to customize some tools using Maya's Mel and Python scripts that helped tremendously in saving crucial production time.



Image courtesy: Drishyam VFX

Before

Image courtesy: Drishyam VFX

After

"Maya made the whole process faster and easier as any improvisation on the city's design got updated immediately. Whenever an individual structure or section was redesigned or tweaked, it automatically got linked up with the final scene files," Rajeev informs and goes on to state, "Every project that we work on – be it VFX for films or commercials – has different needs and challenges and Autodesk Maya always fits in well! It's always an asset to work with such a software, which never lets you down, has so much to offer you, and keeps getting more and more advanced with time."

THE MIGHTY BUILDERS

There are many interesting sequences in the film that VFX is responsible for bringing to life. However, it was the climax of the film, which was the most challenging sequence, notes Govardhan, "It's a whole final reel of the film, loaded completely with VFX! And, the toughest thing to create was the water." The climax shows the city of Mohenjo Daro submerged in massive floods, as a result of a dam bursting. For this, the CG dynamics team at Drishyam did loads of experimental work to understand

the behavior of water. Various animatics were created at first that worked as an effective representation of the floods. The director was then able to judge the scale, timing, and impact based on these animatics. This helped lock-in the film cuts. Based on these cuts, the studio knew the number of shots and the scale that they had to work on.



Image courtesy: Drishyam VFX

Before

Image courtesy: Drishyam VFX

After

"There's this amazing scene, near the end of the film, where the protagonist runs over the boat bridge while the boats keep flying off rapidly one after the other as the wave crashes into them, until, in the nick of time he leaps off. We needed to see the boats in a curve, swaying with the force of the raging river, and then flying off as the wave strikes. You wouldn't know it when you see the film but for this shot, we had Hrithik running on a flat ground on set, while everything else – boats, bamboos, water, rain, etc. – was completed in CG," Govardhan shares.

The test, of course, was to achieve all this in photorealistic quality. And over 160 artists from Drishyam worked round the clock to meet this challenge. "Drishyam has once again responded fabulously and vindicated my trust in them," Govardhan adds.

In a very short duration, Drishyam VFX has earned its rightful place among the other visual effects giants. It now plans to broaden its strengths in designing motion graphics, title sequences, and concept arts. In the near future, the studio envisions becoming a one-stop-shop for the Indian film industry's VFX and animation needs.