

“Digital Matte Painting”

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MD16MDES11001

Guided by

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A Thesis Submitted to

Indian Institute of Technology Hyderabad

In Partial Fulfilment of the Requirements for

The Degree of Master of Design



भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Department of Design

June, 2018

Declaration

I declare that this written submission represents my ideas in my own words, and where other's ideas and words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the institute and can also evoke penal action from the sources that have thus not been adequately cited, or from whom proper permission has not been taken when needed.

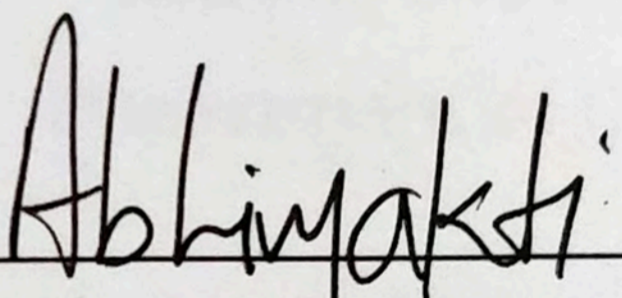
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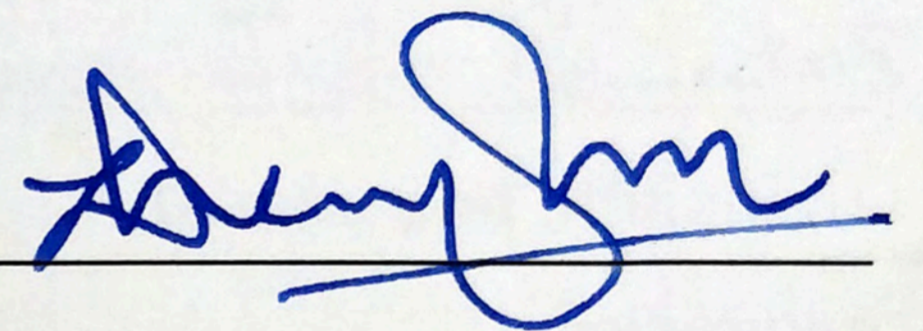
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Dr. Deepak John Mathew

Head of Department
Department of Design

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Dr. Deepak John Mathew

Head of Department
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Approval Sheet

This thesis entitled “**Digital Matte Painting**” by Abhivyakti is approved for the degree of Master of Design from IIT Hyderabad.

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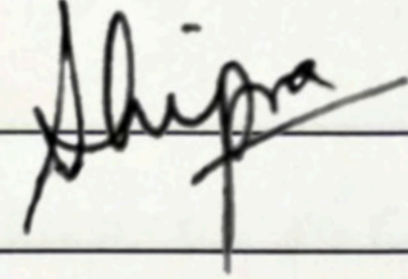
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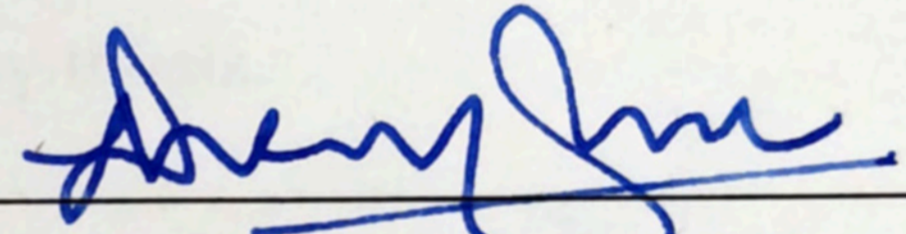
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At last I would like to thank everyone whoever have supported me for completing this project. Without their support this project would not have completed.

Abstract

Matte painting is painted representation of a set or location which is not present there. Which creates an environment which comes from the imagination or demand of some particular movie.

In the production of a movie where a particular environment is required which is not available so old masters used to make extension panel with the help of painting. Mostly oil colour they used to work with. They used to make matte painting with the collaboration of photograph and painting. Where painting used to be the expected extension of required scene.

Before the development of digital technology glass painting used to be main source of matte painting but after the development of digital technology making of innovative background have become easy. Photoshop skilfully combines both retouching and photomontage techniques, occupies an essential place in the field.

So in this project I have tried to use the modern techniques of matte painting and tried to explore them while applying on some concept arts.

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Introduction

Matte paintings are one of the original VFX techniques used in filmmaking. Originally used in photography, matte paintings have evolved from painted glass panels to entire 3D digital worlds. In this project I will show you a journey of painting from cave painting to digital art. Which have so many fascinating aspects

Cave paintings

Cave paintings are mostly made to decorate the wall, narrate a story or event, mostly caves are 40,000 years old. Some other theories say that it may be a means of communicating to each other but some says it can be a religious or ceremonial purpose to them also.

The paintings are remarkably similar around the world, with animals being common subjects that give the most impressive images. Humans mainly appear as images of hands, mostly hand stencils made by blowing pigment on a hand held to the wall.



Altamira Cave, Northern Spain

The paintings represent charcoal and ochre images of bison, horses, other wild mammals and handprints. Many mysterious signs were also discovered on the wall of Altamira cave. However, the paintings are the excellent evidence of Magdalenian culture (between 16,500 and 14,000 years ago).



Bhimbetka, Madhya Pradesh

It contains more than 600 rock shelters decorated with prehistoric cave paintings. Some of the rock paintings considered to be 30000 years old. The paintings are mostly in red and white colour with the occasional use of green and yellow.

The paintings depict the lives of the people who lived in the caves. Tigers, bison's, elephants, rhinos, lions and crocodiles have also illustrated in the caves.

Ajanta caves



The Ajanta caves are 29 rock cut Buddhist cave monuments which date from the 3rd century bc to about 480 ce in Aurangabad district of Maharashtra state of India.

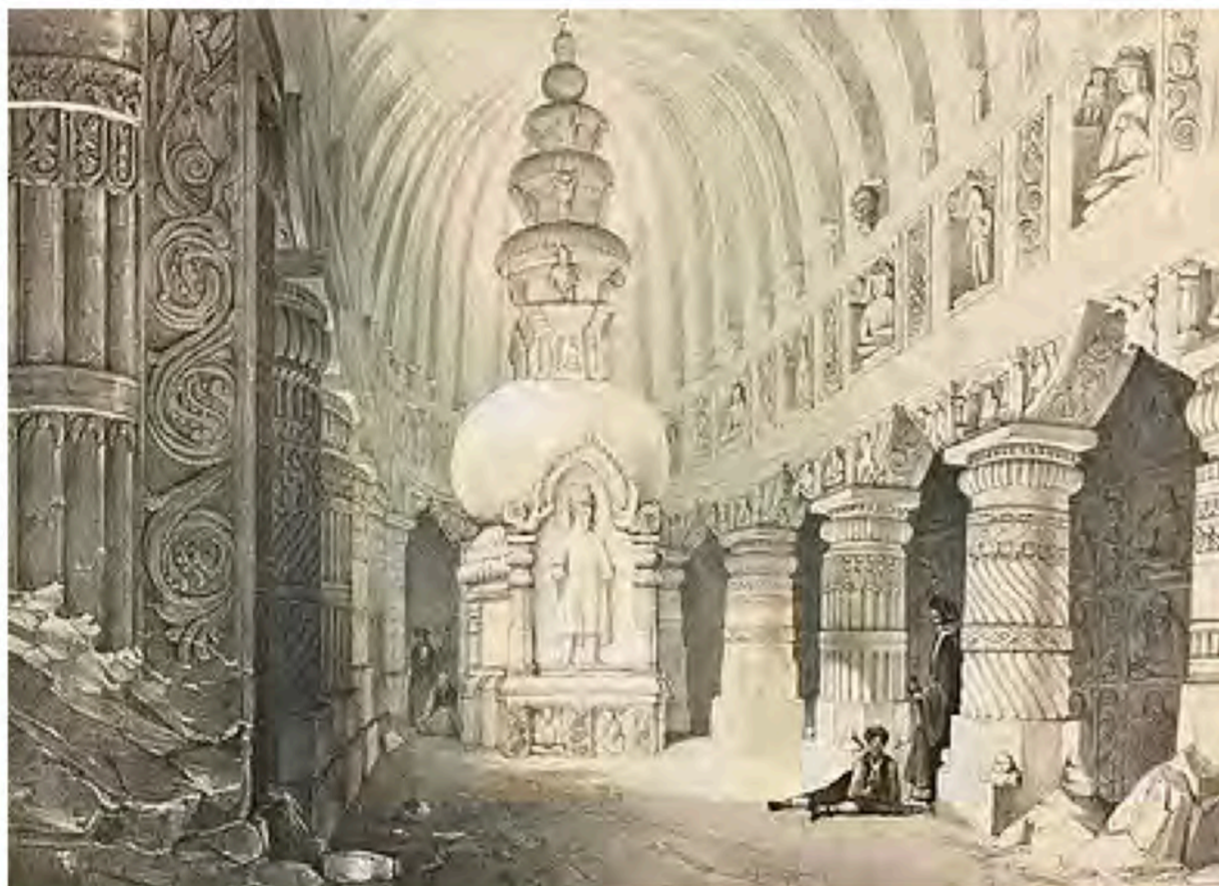
The cave include paintings and rock cut sculpture. Which have very expressive gesture, pose, and form. Ajanta caves presents a vivid scenario of Buddha's life. Where we can see the life events of Buddha. Form his birth to death.

Walls of cave is decorated with beautiful flora and fauna. We can see the beautiful carves on the flanks of pillar. Most surfaces embellished with

decorative carving. Front of cave have carving of Elephants, Horses, Bulls, Lions, Apsaras, and meditating monks.



Entrance facade and inside worship hall cave 19



Painting of cave 19 worship hall



Interior of Ajanta chaitya hall cave 26.

Ajanta frescos are classical paintings and the work of confident artists, without cliches, rich and full. They are luxurious, sensuous and celebrate physical beauty. The paintings are in "dry fresco", painted on top of a dry plaster surface rather than into wet plaster.



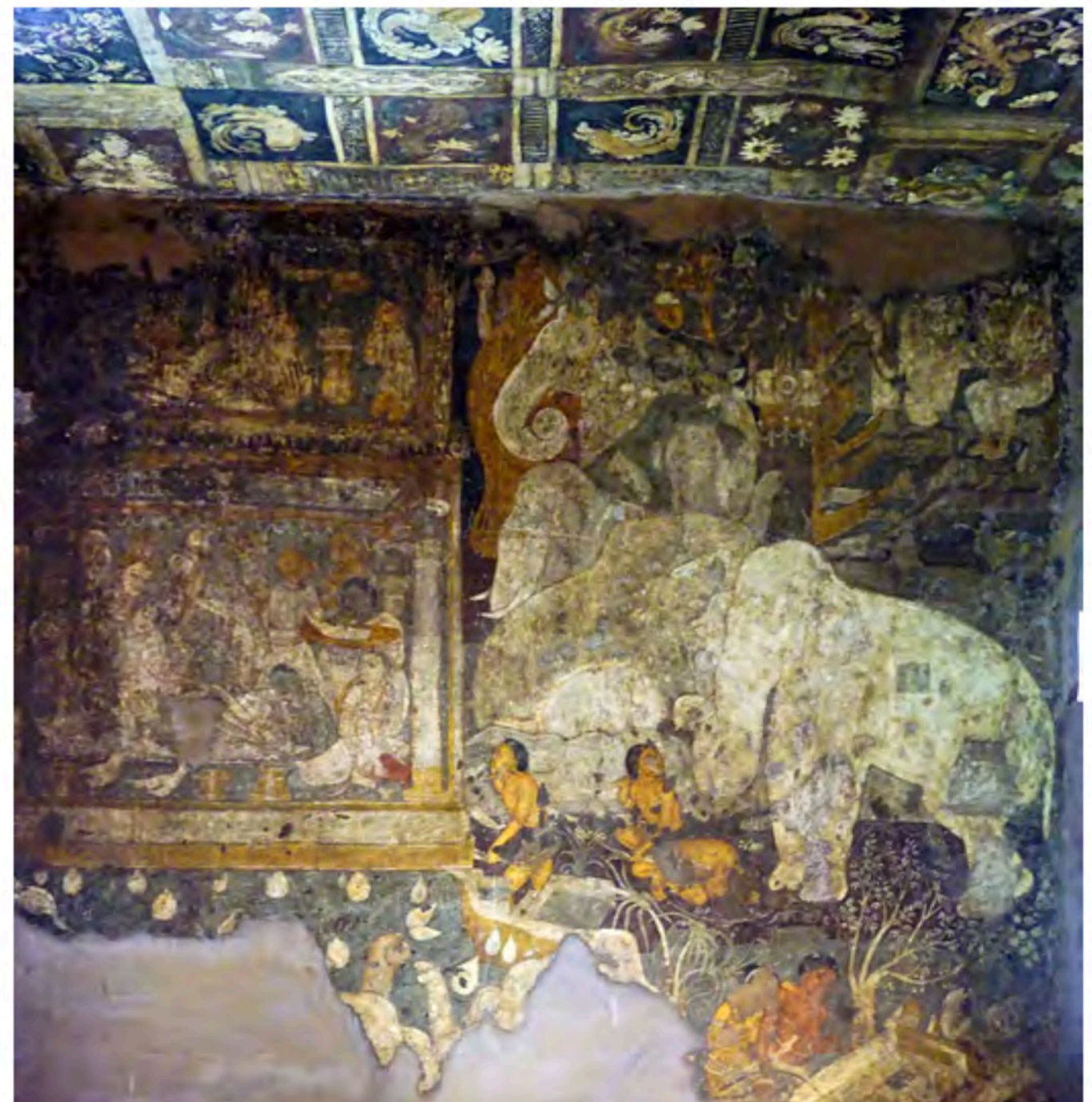
Bodhisatwa cave



Vajrapani



Painted ceiling depicting Life circle of Lord Buddha.

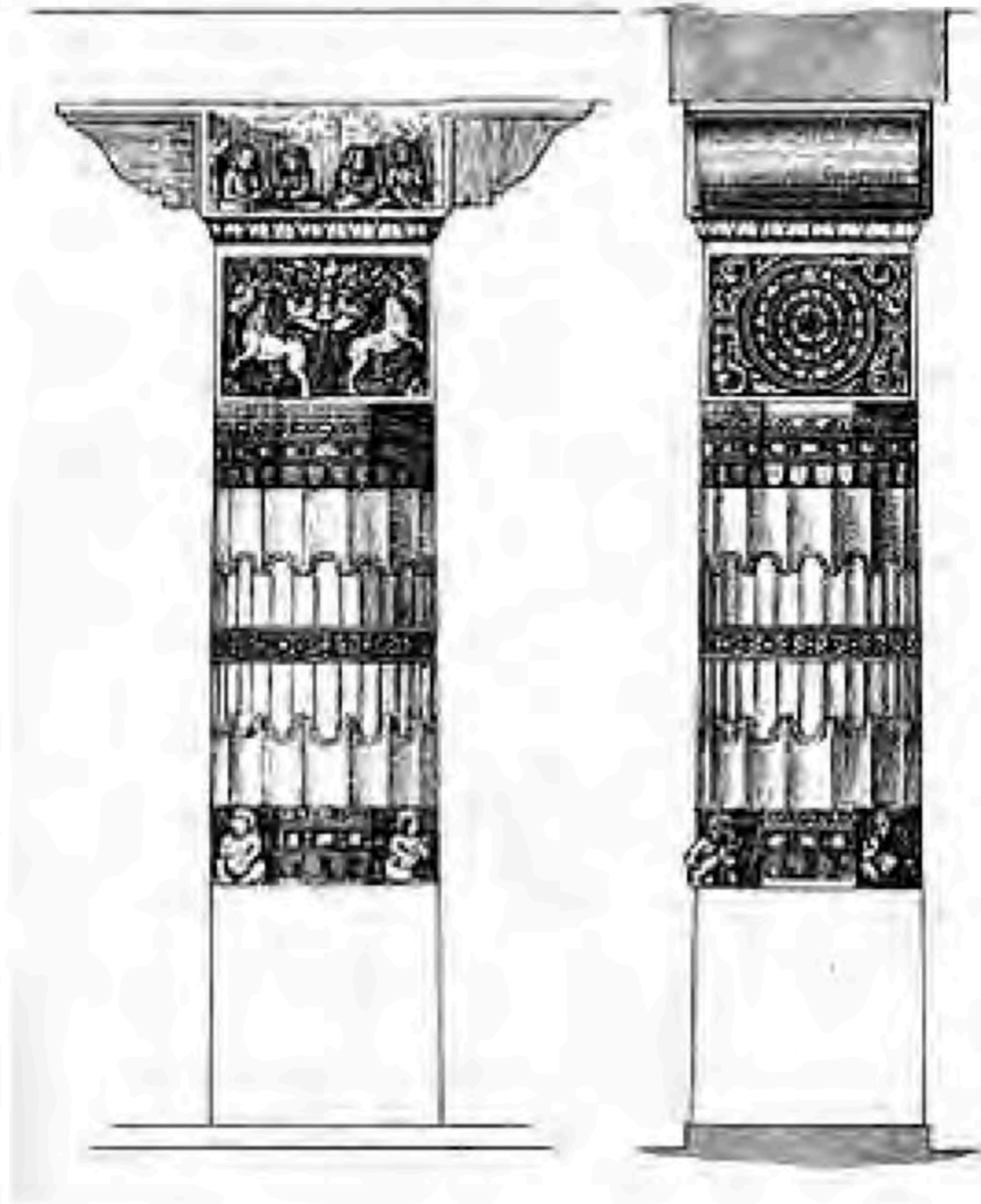


Painting depicting The King's White Elephant from Jataka tales, Cave 17.

AJANTA: CAVE IV.

1. LEFT CENTRE PILLAR IN BACK AISLE.

2. SIDE VIEW



AJANTA: CAVE IV.
HALL DOOR.



Ajanta hall door and pillar

Diorama

Diorama was 19th century mobile theatre device. It was a three dimensional full size or miniature model. The diorama was invented by Louis Daguerre and Charles Marie Bouton.

First exhibited in Paris in July 1822 and in London on September 29 1823, It consisted of a piece of material painted on both sides. When illuminated from the front, the scene would be shown in one state and by switching to illumination from behind another phase or aspect would be seen.

Types of dioramas

Full size Dioramas



A diorama in the Museum of Natural History in Milan (Italy)

The Modern Diorama

The current, popular understanding of the term "diorama" denotes a partially three-dimensional, full-size replica or scale model of a landscape typically showing historical events, nature scenes or cityscapes, for purposes of education or entertainment.



Cooling tower construction diorama

Miniature diorama

Miniature dioramas are typically much smaller, and use scale models and landscaping to create historical or fictional scenes



Natural Dioramas

Natural dioramas were supposed to imitate the nature. They have also been described as a means to visually preserve nature as different environments change due to human involvement.



Construction of a diorama

Natural history dioramas consist of 3 parts:

1. The painted background
2. The foreground
3. Taxidermy specimens

The painted background

Preparations for the background begin on the field, where an artist takes photographs and sketches reference pieces. Once back at the museum, the artist has to depict the scenery with as much realism as possible.

The challenge lies in the fact that the wall used is curved, this allows the background to surround the display without seams joining different panels. At times the wall also curves upward to meet the light above and form a sky. By having a curved wall, whatever the artist paints will be distorted by perspective.

The foreground

The foreground is created to mimic the ground, plants and other accessories to scenery. The ground, hills, rocks, and large trees are created with wood, wire mesh, and plaster. Smaller trees are either used in their entirety or replicated using casts.

Grasses and shrubs can be preserved in solution or dried to then be added to the diorama. Ground debris, such as leaf litter, is collected on site and soaked in wallpaper paste for preservation and presentation in the diorama. Water is simulated using glass or Plexiglas with ripples carved on the surface.

Taxidermy specimens

Taxidermy specimens are usually the centrepiece of dioramas. Since they must entertain, as well as educate, specimens are set in lifelike poses, so as to convey a narrative of an animal's life.

Smaller animals are usually made with rubber moulds and painted. Larger animals are prepared by first making a clay sculpture of the animal. This sculpture is made over the actual, posed skeleton of the animal, with reference to moulds and measurements taken on the field.

A papier-Mache mannequin is prepared from the clay sculpture and the animal's tanned skin is sewn onto the mannequin. Glass eyes substitute the real ones.

If an animal is large enough, the scaffolding that holds the specimen needs to be incorporated into the foreground design and construction.

Louis-Jacques-Mande Daguerre (Diorama Artist)

Louis-Jacques-Mande Daguerre, better known as Louis Daguerre, was a French artist and photographer, recognized for his invention of the Daguerreotype process of photography.

The first diorama theatre was built in Paris, adjacent to Daguerre's studio. The first exhibit opened 11 July 1822 showing two tableaux, one by Daguerre and one by Bouton. This would become a pattern.

Each exhibition would typically have two tableaux, one each by Daguerre and Bouton. Also, one would be an interior depiction, and the other would be a landscape. Daguerre hoped to create a realistic illusion for an audience, and wanted audiences to not only be entertained, but also awe-struck.

The diorama theatres were magnificent in size. A large translucent canvas, measuring around 70 ft. wide and 45 ft. tall, was painted on both sides. These paintings were vivid and detailed pictures, and were lit from different angles. As the lights changed, the scene would transform.



The audience would begin to see the painting on the other side of the screen. The effect was awe-inspiring. "Transforming impressions, mood changes, and movements were produced by a system of shutters and screens that allowed light to be projected- from behind- on alternately separate sections of an image painted on a semi-transparent backdrop" (Szalczar).



"Boulevard du Temple", taken by Daguerre in 1838 in Paris, includes the earliest known candid photograph of a person. The image shows a busy street, but because the exposure had to continue for several minutes the moving traffic is not visible. At the lower left, however, a man apparently having his boots polished, and the bootblack polishing them, were motionless enough for their images to be captured.



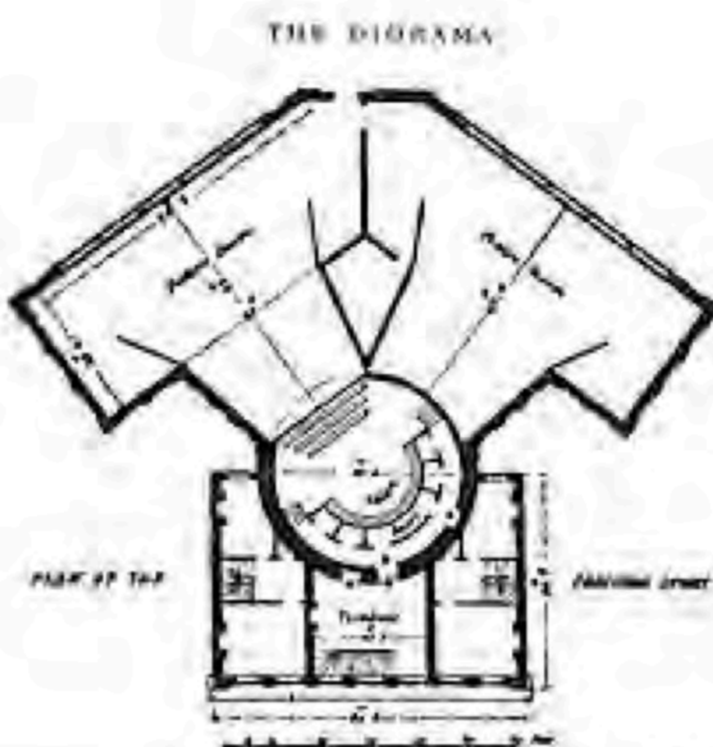
The Ruins of Holyrood Chapel is an oil on canvas painting of the Holyrood Abbey completed around 1824 by the French artist Louis Daguerre.

The painting measures 211 × 256.3 cm (83.1 × 100.9 in), and is exhibited at the Walker Art Gallery in Liverpool, England. The painting depicts the ruins of Holyrood Abbey during a moonlit scene, which was a popular attraction (in real life) for visitors to the abbey at the time.

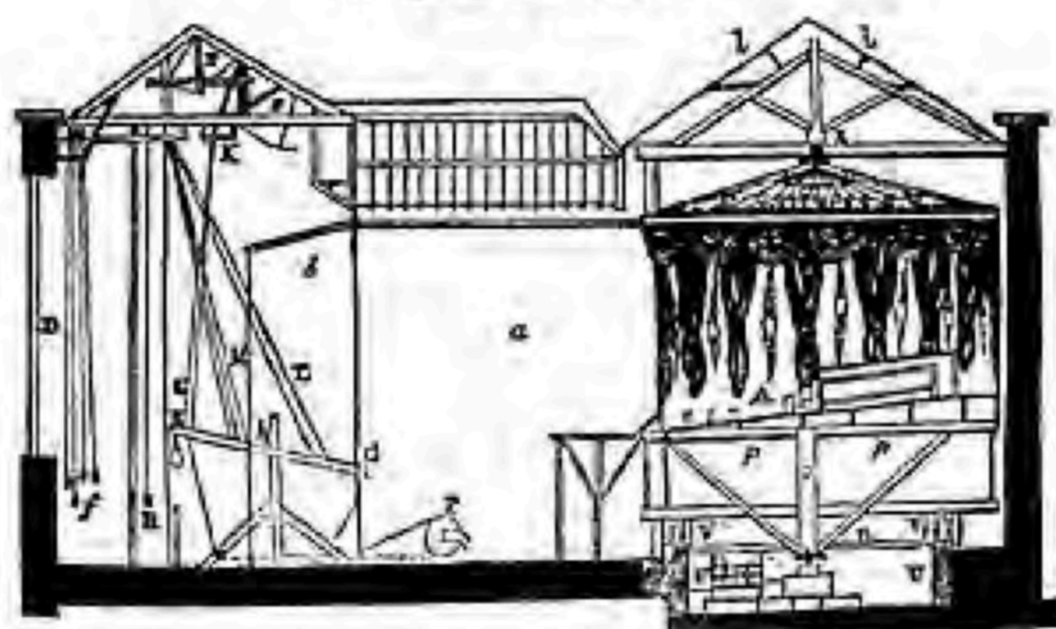
Diorama theatres

Daguerre was also known for creating Dioramas which were large theatres which photographs and painting all around a cylindrical room.

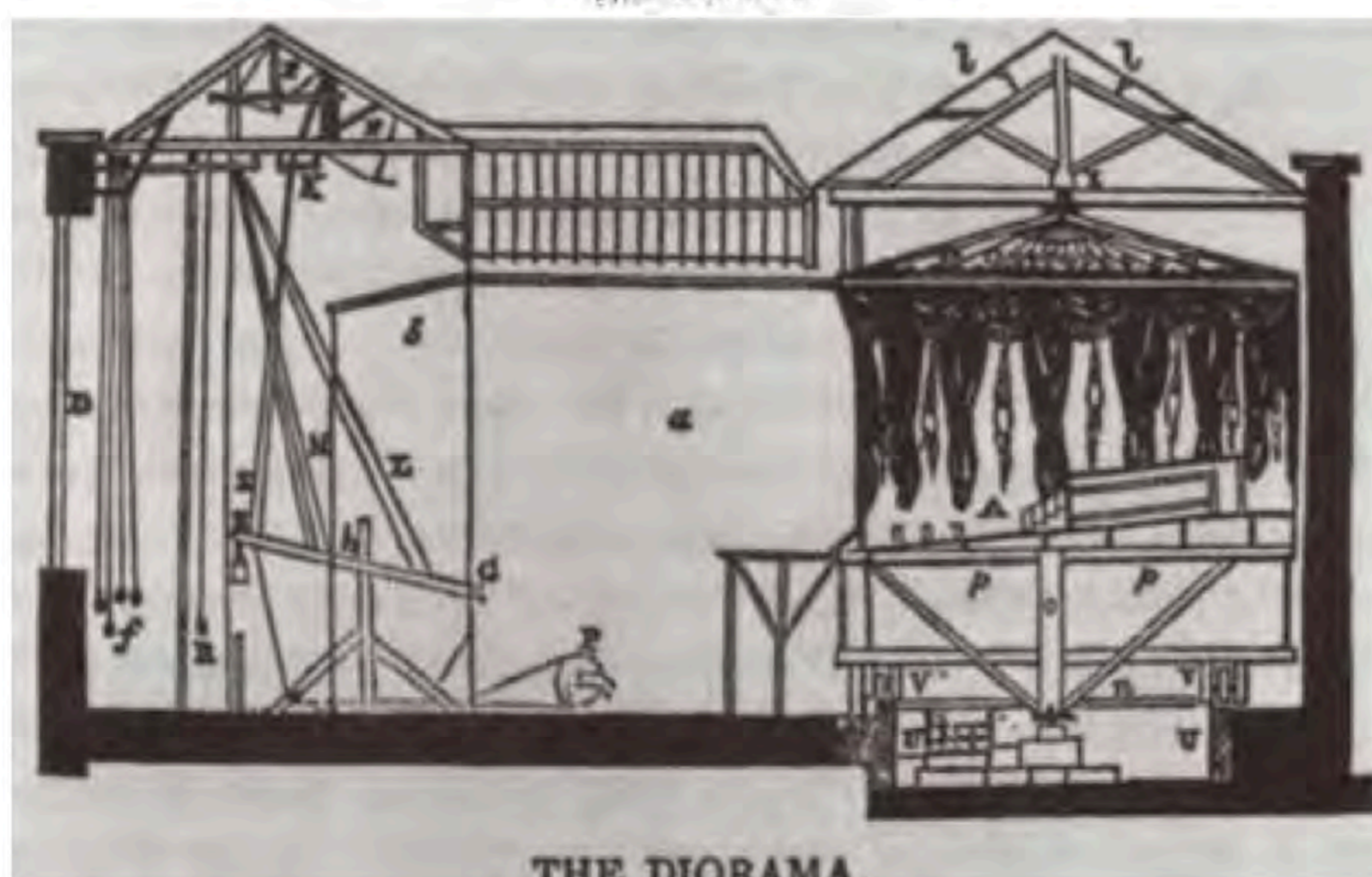
In the spring of 1821, Daguerre partnered with Charles Bouton with the common goal of creating a diorama theatre. Daguerre had expertise in lighting and scenic effects, and Bouton was the more experienced painter.



(a) Ground plan of the Diorama building, London, by A. Pugin and J. Morgan, 1823



THE DIORAMA.



THE DIORAMA.

Purpose of matte painting

Matte painting is a piece of artwork which is used to fill in part of scene that can't otherwise be photographed. If we assume we want shoot a beautiful interior of a mile-high cathedral and it is not available nearby.

So here matte painting comes in handy where you can paint a cathedral as you want and patch it with your rest of piece of scene. it can save from many problems which a cinematographer will face if he goes to shoot a real scene like mob, budget, journey etc. For some location it can be dangerous also. If he wants to shoot a very deep forest or deep sea.

Matte painting makes it easy to have any kind of location as his or her heart desire. The original mattes were nothing more than pieces of black material, cut to shape and positioned in front of a camera in order to blank out part of a frame for later enhancement –the top half of a cathedral interior, for example. Thus the use of the term “matte painting” to describe the artwork created to fill in the blank.

As for combining the painting with the live-action, a common solution was to double-expose the artwork into the blank space left in the original footage, while masking the already-exposed portion of the frame with a counter-matte to protect it from further exposure.



Peter ellenshaws work for fleischer's fantasy adventure 20,000 leagues under the sea.

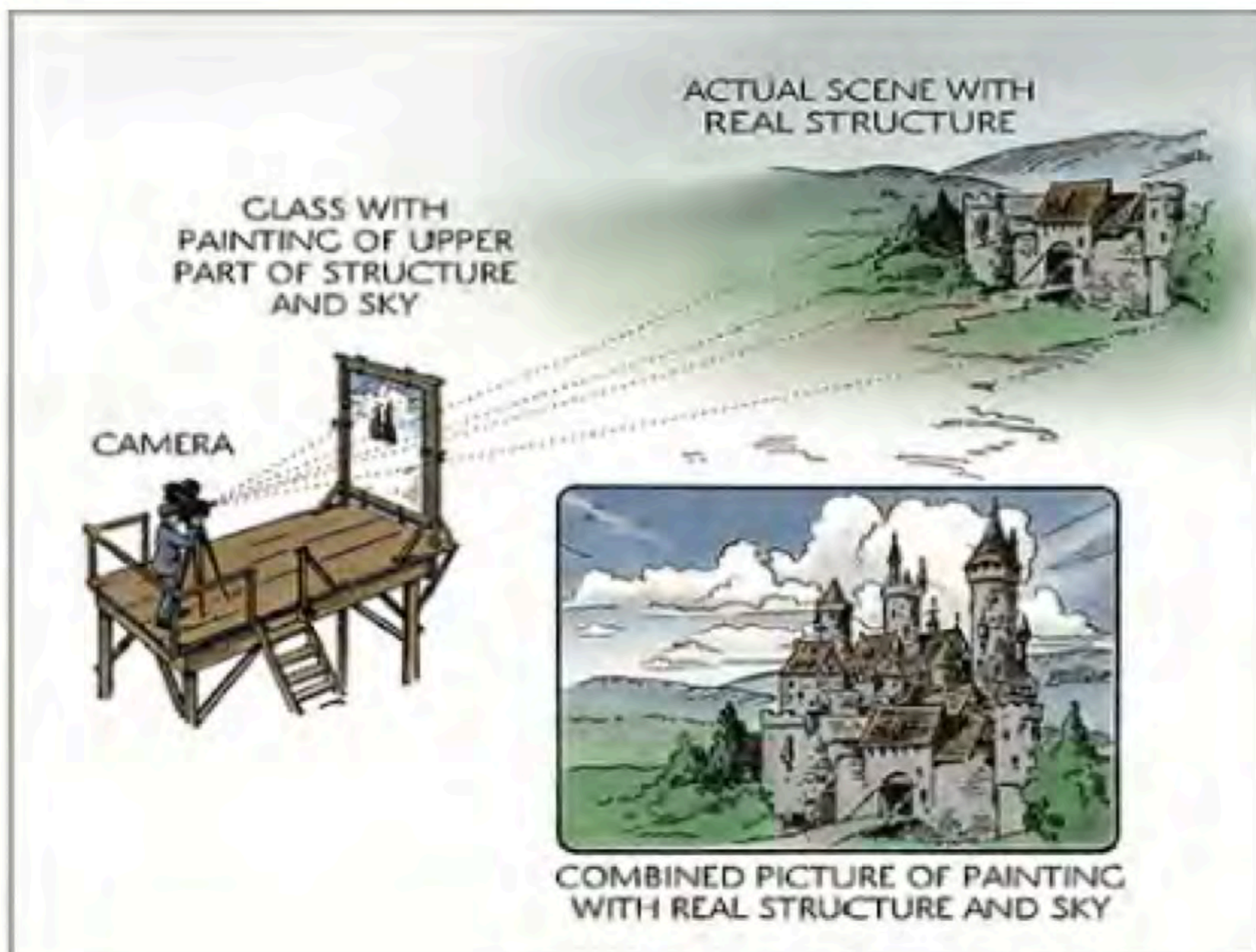
Another option was the “glass shot”, in which the vaulted ceiling of our notional cathedral would be painted in situ on a piece of glass positioned between the camera and the partial set.

Evolution of matte painting

Matte painting is evolved from the hand painted plates to the VFX and special effects. Throughout the history it is being modified and updated but the reason for using matte remained the same. That is to create a virtual environment, an unreal environment which is not present in the real location. Below I will be defining the various evolution stages of matte paintings which have taken place in the course of history.

The glass shot

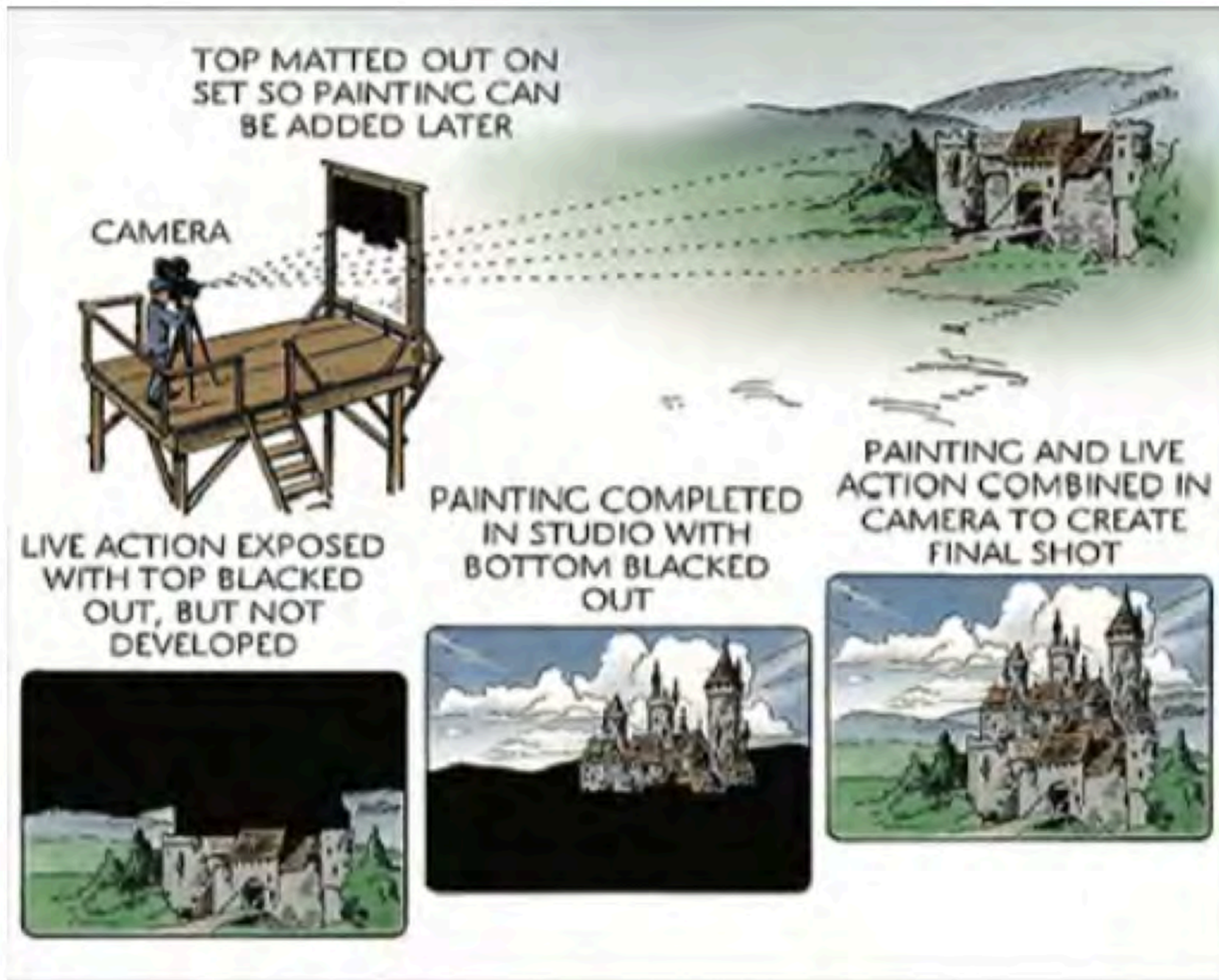
The earliest way of producing a matte painting was to place a sheet of glass between the camera and the scene to be filmed. An artist would then paint an image on the glass that blocked and replaced that part of the scene. Instead of building a set or creating in a mountain range, the needed elements were painted on the glass on location.



camera>glass sheet>actual scene

The original negative matte

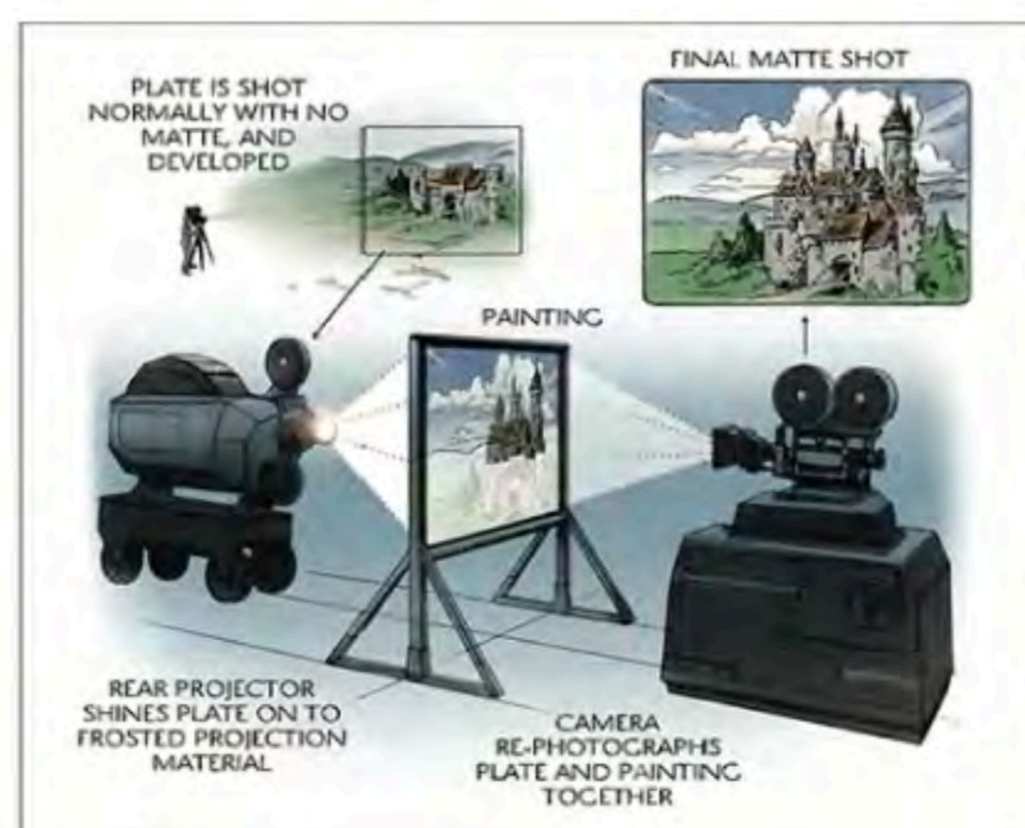
This painting requires cutting a black mask or matte and suspending it in front of the camera. And after that with the help of lighting equipment and projector film were developed in studio



camera > suspended mask > actual scene

The rear projection matte

In this technique film were shoot normally without worrying about the matte and add the matte and the painting later.



still shot > rear projection of film > glass > matte painting

Cut Out Painted Foreground Miniatures



camera> painted thin wood or aluminium > real scene

Note: *Few Traditional Famous Matte Painters:*

Harrison Ellenshaw

Peter Ellenshaw

Albert Whitlock

Matthew Yuricich

Mathieu Raynault

Modern Matte painting techniques

During 90's

During the 1990s, traditional matte paintings were still in use, but more often in conjunction with digital compositing. *Die Hard 2* (1990) was the first film to use digitally composited live-action footage with a traditional glass matte painting that had been photographed and scanned into a computer. It was for the last scene, which took place on an airport

Runway By the end of the decade, the time of hand-painted matte paintings was drawing to a close, although as late as 1997 some traditional paintings were still being made, notably Chris Evans' painting of the *Carpathia* rescue ship in James Cameron's *Titanic*.

Paint has now been superseded by digital images created using photo references, 3-D models, and drawing tablets. Matte painters combine their digitally matte painted textures within computer-generated 3-D environments, allowing for 3-D camera movement.

Lighting algorithms used to simulate lighting sources expanded in scope in 1995, when *Grandiosity* rendering was applied to film for the first time in Martin Scorsese's *Casino*. Matte painting technologies and techniques.

As advancements we made technologically, matte paintings became digital renderings. One of the last hand painted mattes used in a major motion picture was in the 1997 epic, *Titanic*. While most motion picture productions have moved to blue and green screens, the techniques used by matte painters are still applied to modern filmmaking. Background plates are often still hand drawn or painted. They are used as reference material for the digital artwork.

During 20th century

Matte paintings are also no longer trapped into two dimensional images. Entire 3D sets and backgrounds are created digitally. Even digital cameras are used to add movement. There are still films that will use matte paintings as backdrops. In *Harry Potter and the Prisoner of Azkaban*, six 100-foot canvases were stitched together and placed behind the set.

Throughout the 20th century, matte painting continued to thrive, enhancing the look of Biblical epics, Westerns, thrillers and period dramas. As they developed

their craft, matte painters were constantly trying out new techniques to stop their paintings looking like, well, paintings.

They used layered artwork to create a greater illusion of depth. They devised cunning animated gags to simulate movement in the waves of a painted sea, or used backlighting to create convincing flares around a setting sun.

At the same time artists were exploring combining the straight matte painting with other visual effects techniques.

When the artist of Indiana Jones movie failed they prepared a cut out silhouette of the building which they photographed on a convenient hilltop at sunset. Matte painting techniques were then used to enhance the resulting image with highlights and other architectural details.



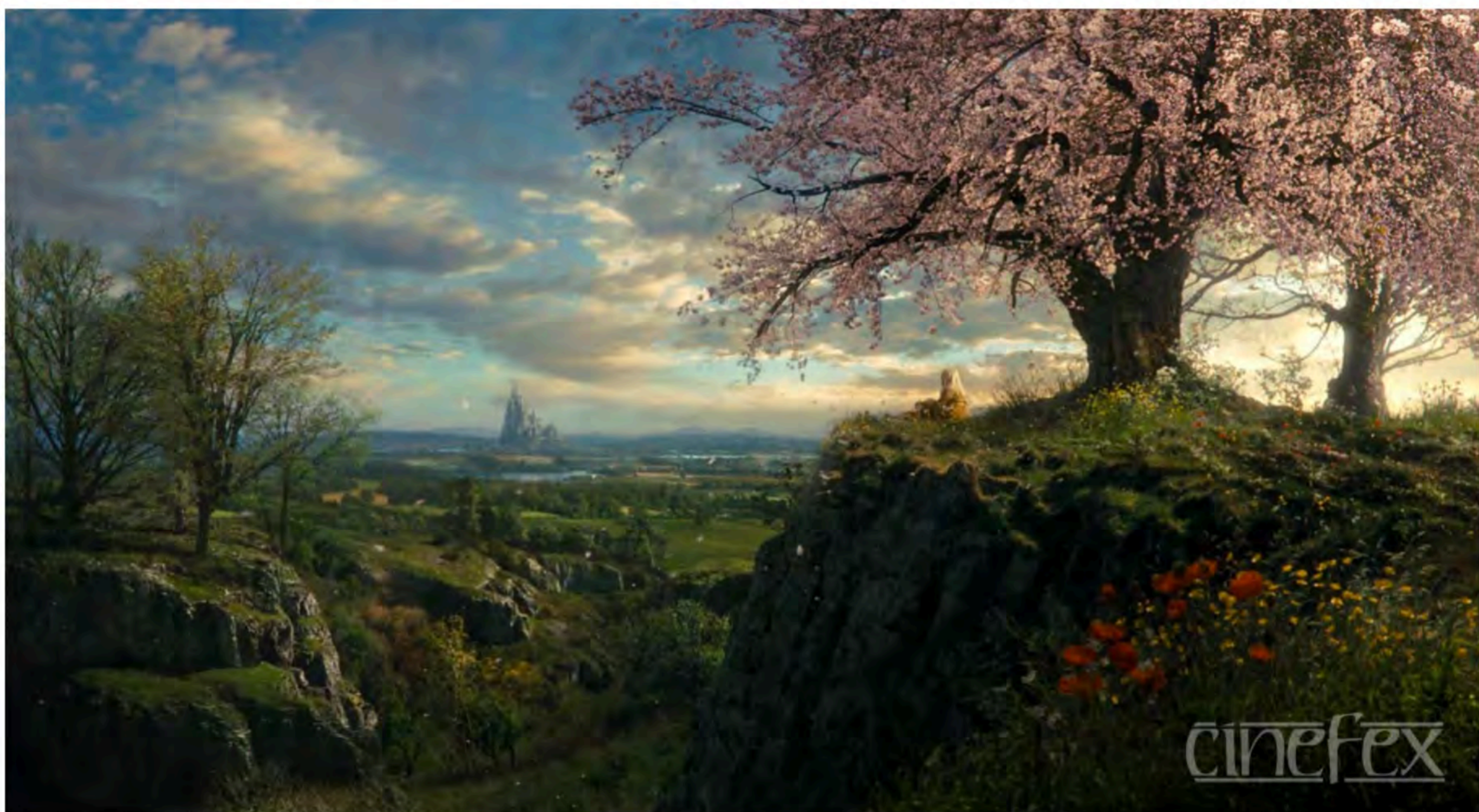
A matte painting of Pankot Palace by Mike Pangrazio and Christopher Evans for a scene in "Indiana Jones and the Temple of Doom". The painting was ultimately rejected by the artists. Bottom: The final shot was created using photography of a cut-out silhouette positioned on a hilltop, enhanced by matte painted highlights and additional architectural details.

Present technique

Modern technique of matte painting is called **Digital matte painting**. In a world where technology is populating the world of art and creativity, and a high ranged camera can go anywhere and visual artists have all kind of flexibility.

Modern digital matte painting is not created by painting on glass but by mapping artwork on to CG geometry. For modelling mostly flat planes or geometry shapes were layered up in virtual space.

And texturing is done by collages from the assembled reference photography, which is taken from on location or on the set or art work created from scratch. And later on after completing the final scene main digital matte artist refine it in Photoshop or other high end software.



A composite shot from "Maleficent" integrating a physical cliff top set with a digital environment by MPC. The latter included matte paintings, terrain projections and a digital model of the distant castle.

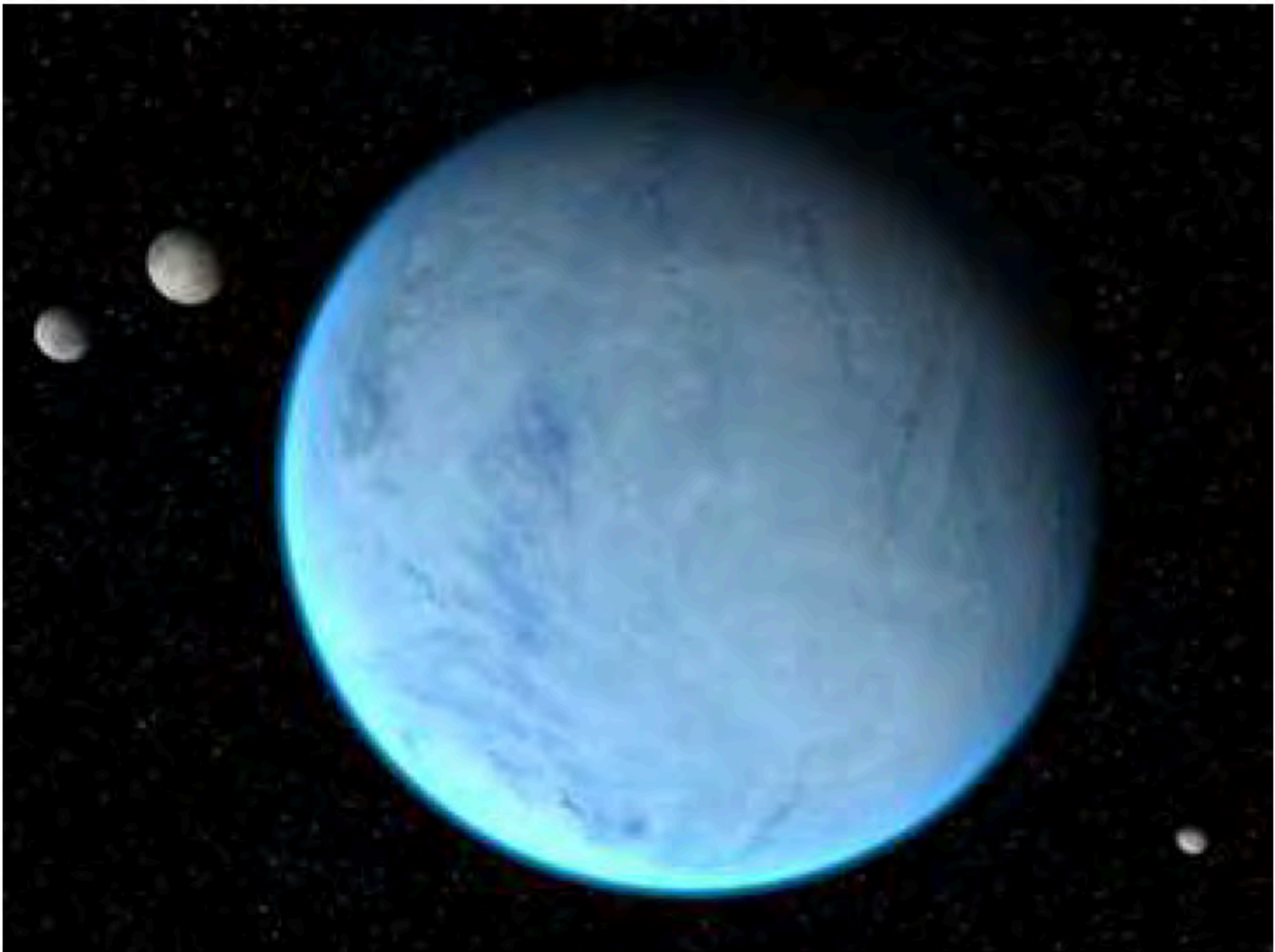
Digital Matte Painting

After the invention of software matte painting have changed. with the camera stationary throughout the entire sequence and painting on the top of it we can create different type of scenes, this is called a locked-off shot.

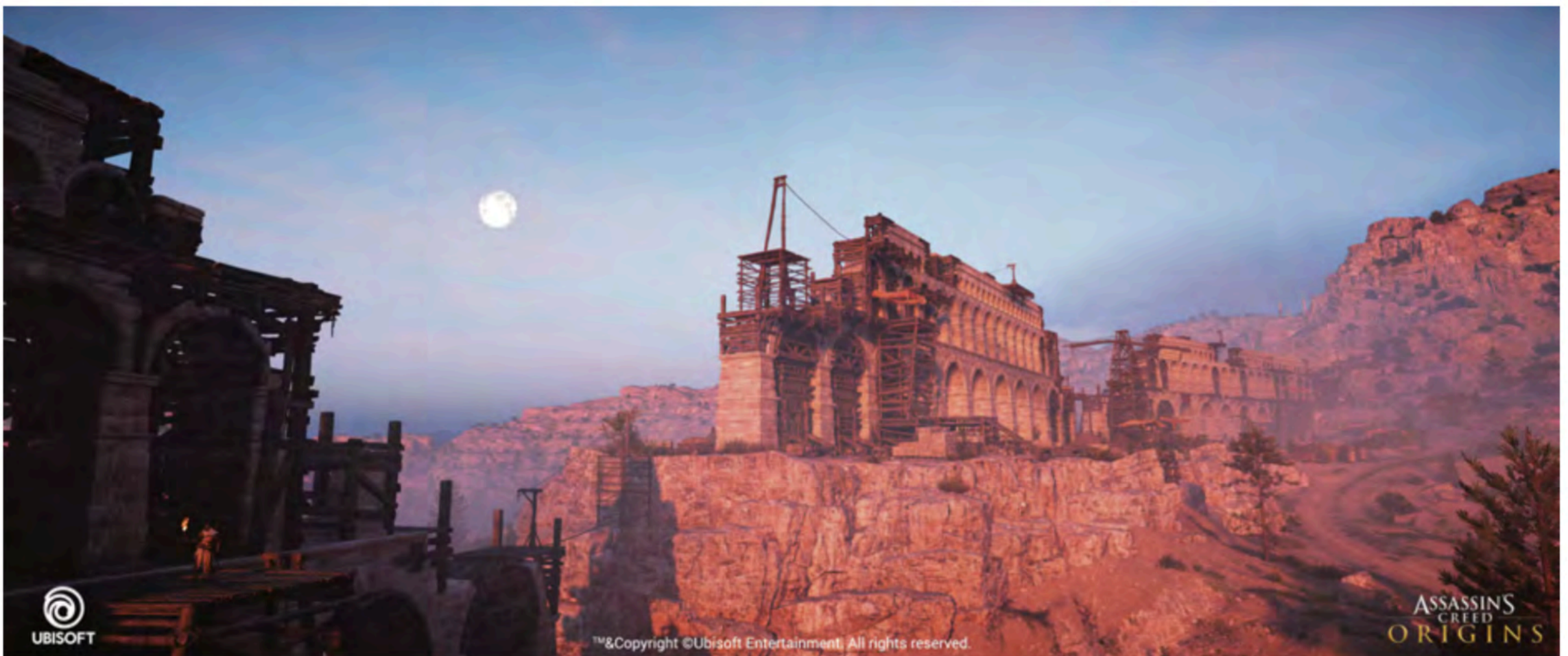
Digital matte painting artist

Michael Pangrazio

Michael Pangrazio is an American art director in the feature film industry best known for his matte painting work on Raiders of the Lost Ark and The Empire Strikes Back. As traditional and digital matte artist, he created some of the most famous matte paintings in movie history. His best known painting is the Raiders of the Lost Ark warehouse interior set-extension at the end of the movie.



Hoth and its three natural satellites in The Empire Strikes Back



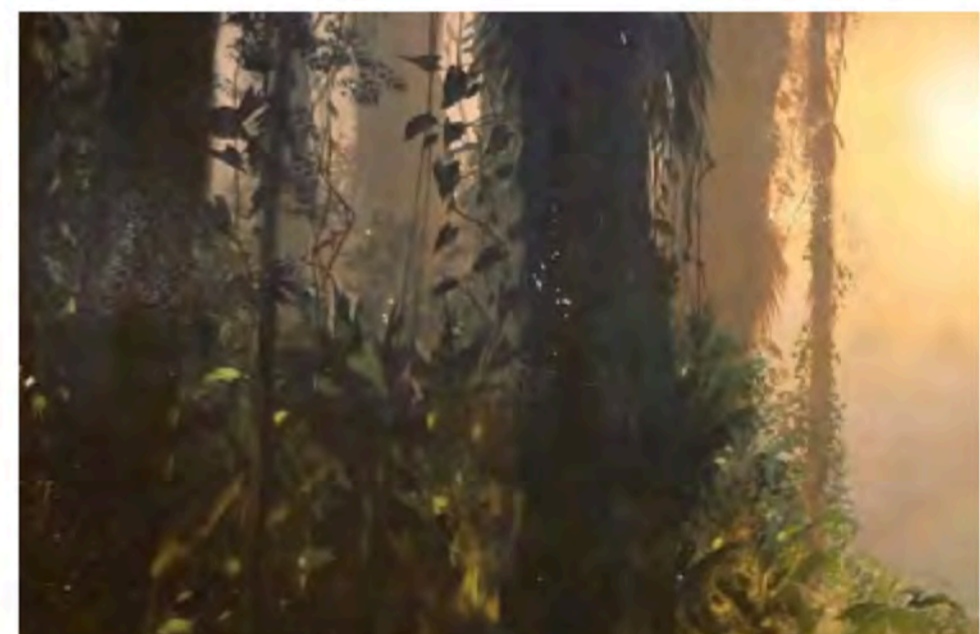
Matte painting background

This is one the most common VFX shots in film making. You shoot your actors in front of green or blue screen, then apply a single painting to the background. With this technique, you can make your film look like it was filmed anywhere around the world, even if the world doesn't exist.



Literature review

Earlier works



Some earlier works done in the field of matte painting. These paintings are example of glass matte painting .these are very old scene from the various movies like green mansions by Lee LeBlanc and son of Kong by other artist.

Surrealism

Surrealism's goal was to liberate thought, language, and human experience from the oppressive boundaries of rationalism. According to some surrealism artists, unconscious mind which produced dreams was the source of creativity. Serialism and photomontage helped me better understanding of matte art witch is a surreal process witch help to create the scenario as your work demands.

These were some of the famous surrealism era artists:



Salvador Dali



Frida Kahlo



Andre Breton

Rene Magritte



Salvador Dalí

Salvador Dalí was a leading proponent of Surrealism, the 20-century avant-garde movement that sought to release the creative potential of the unconscious through strange, dream-like imagery.

According to Dalí,

“Surrealism is destructive, but it destroys only what it considers to be shackles limiting our vision,”



Surrealist Flower Girl, 1971



Frida Kahlo

Frida Kahlo's life has become as iconic as her work, in no small part because she was her own most popular subject: roughly one third of her entire oeuvre is self-portraits. Her works were intensely personal and political, often reflecting her turbulent personal life, her illness, and her relationship with the revolutionary muralist Diego Rivera. Kahlo dedicated her life and her art to the Mexican Revolution and the simultaneous artistic renaissance it engendered.



Paint the Revolution: Mexican Modernism, 1910–1950



Andre Breton

Andre Breton was an original member of the Dada group who went on to start and lead the Surrealist movement in 1924. He worked in various creative media, focusing on collage and printmaking as well as authoring several books. Breton innovated ways in which text and image could be united through chance association to create new, poetic word-image combinations.



The African Mask, 1947-1948
Ink and wax on paper

Rene Magritte

Magritte was one of the most celebrated Belgian artists of the 20th century. He achieved great popular acclaim for his idiosyncratic approach to Surrealism. To support himself he spent many years working as a commercial artist, producing advertising and book designs, and this most likely shaped his fine art, which often has the abbreviated impact of an advertisement.

Magritte preferred the quiet anonymity of a middle-class existence, a life symbolized by the bowler-hatted men that often populate his pictures.

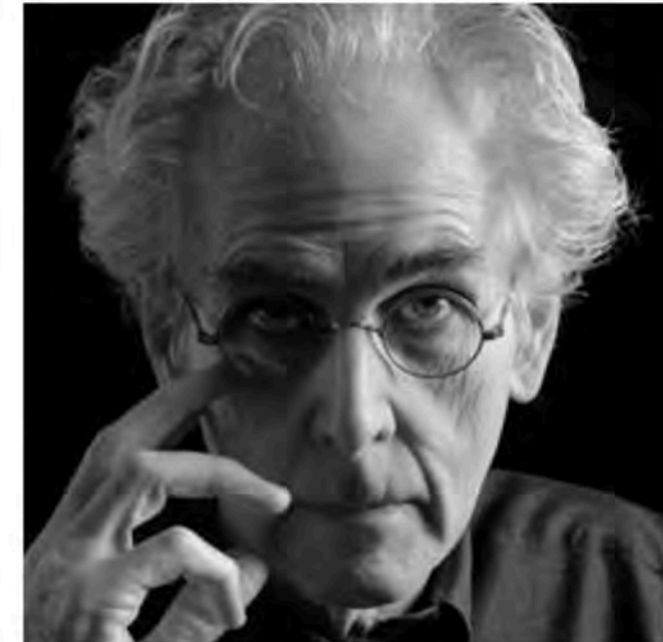
The illustrative quality of Magritte's pictures often results in a powerful paradox: images that are beautiful in their clarity and simplicity, but which also provoke unsettling thoughts.

Magritte combined the words and image in such a fashion that he forces us to question the importance of the sentence and the word. "Pipe," for instance, is no more an actual pipe than a picture of a pipe can be smoked.



*The Treachery of Images also known as
This Is Not a Pipe and The Wind and the Song*

Some other notable people in photography are:



Jerry N. Uelsmann

Jerry Uelsmann is an American photographer best known for his innovative work with the photomontage technique in the 20th century in America. His images are surreal, spiritual and thought provoking. Throughout his practice, Uelsmann creates allegorical and surreal compositions through painstaking handmade collage. His photographs are made using only analogue tools.

He relies on multiple exposures and uses many enlargers to achieve his dream-like imagery. Notable examples include,

Apocalypse II: which features a Tree resembling a bomb exploding in the distance.

Journey into Self: which depicts an individual engaged in meditation.



Apocalypse II



Journey into Self



Man Ray

Man Ray played a major role in Dada and Surrealist movements in America as well as in Europe. His process-oriented art making and versatility have influenced a number of modern and contemporary artists.

He made a virtually complete photographic record of the celebrities of Parisian cultural life during the 1920s and '30s. Many of his photographs were published in magazines such as *Harper's Bazaar*, *Vu*, and *Vogue*.

He continued his experiments with photography through the genre of portraiture; for example, he gave one sitter three pairs of eyes, and in *Le Violon d'ingères* (1924) he photographically superimposed sound holes, or f holes, onto the photograph of the back of a female nude, making the woman's body resemble that of a violin.



Le Violon d'ingères

Famous Matte painters

(Who created iconic matte paintings for the famous movies)

Chris Evans

Born in 1954 in Bremerton, Washington, Chris Evans has created matte paintings for many iconic movies. Among them *The Empire Strikes Back*, *Return of the Jedi*, *Indiana Jones and the Temple of Doom*, *Titanic*, *Willow*, *The Curious Case of Benjamin Button*, and *The Green Mile*.



In Star Wars movie there were so many great and iconic uses of matte painting in that time.

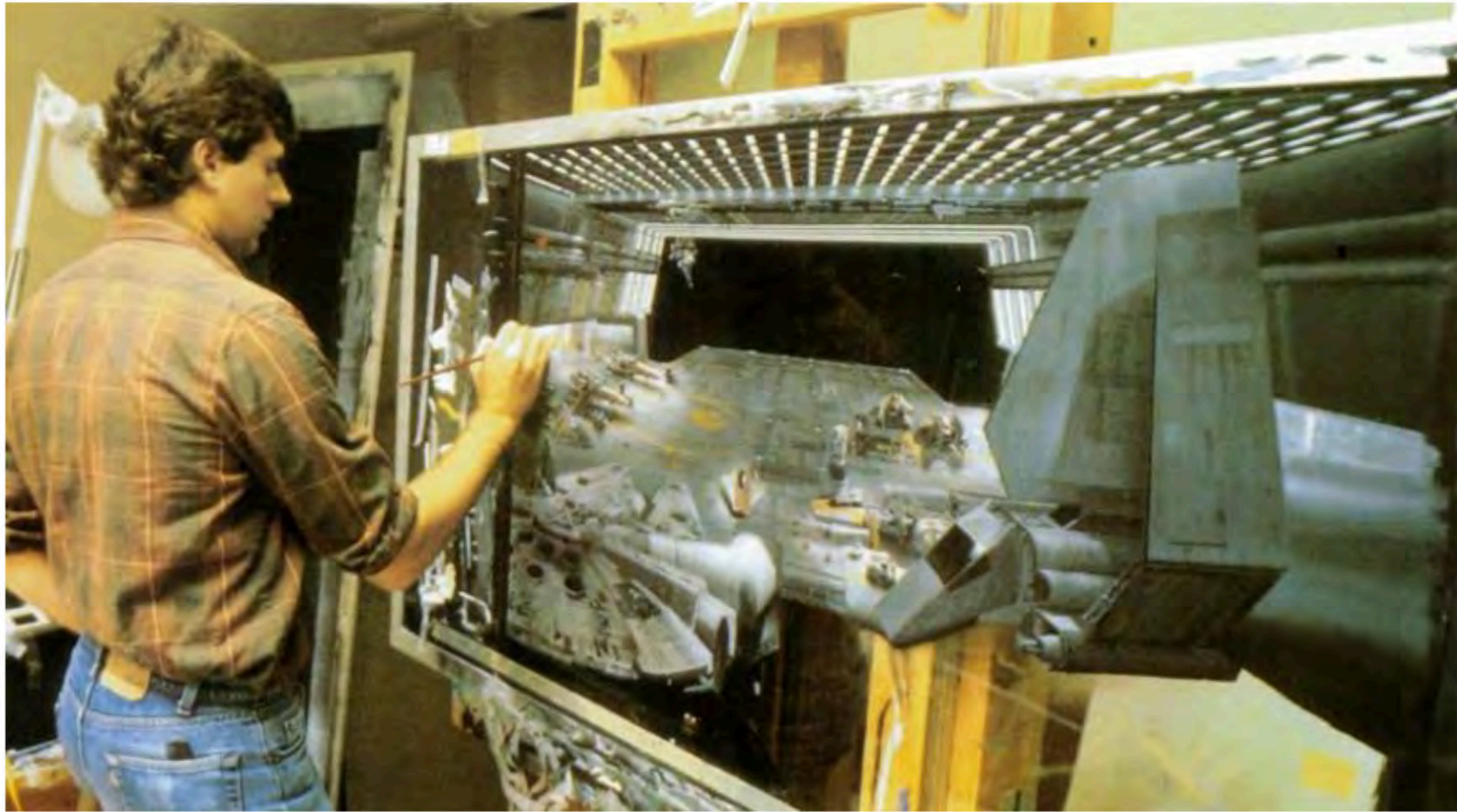
Mike Pangrazio

Mike Pangrazio didn't have experience before joining ILM, so Ralph McQuarrie—the master himself—taught him how to do it over three years. One of his first jobs was the tractor beam matte in the first *Star Wars*.

He was responsible for setting up many key scenes in the history of cinema, most significantly the iconic final scene of *Raiders of the Lost Ark*, where a government official pushes the Ark down an aisle surrounded by thousands of crates.

He now works for Weta Digital as art director. He also designed the current Walt Disney logo opening sequence.





Hieronymus Bosch (Artist)

One of the most notable apocalyptic painters of the world and one of art's first visionary geniuses. Hieronymus Bosch is most celebrated for his detail-drenched and symbolic narrative renditions of the dance between heaven and hell through biblical-themed landscapes upon which play a revolving cast of fantastical, and often macabre humans, animals, monsters, and make-believe creatures.

His paintings demonstrate our age-old tales of morality and the eventual fate of all sinners who succumb to the pleasures and perversity of the ego.



The garden of earthly delights.

Peter paul brugel

Bruegel adapted and made more natural the world landscape style, which shows small figures in an imaginary panoramic landscape seen from an elevated viewpoint that includes mountains and lowlands, water, and buildings.



Landscape with the flight into Egypt



Landscape with the fall of Icarus

Flora and Fauna of Hyderabad

Green spaces around the living surrounding, consider a cultural and ecological tradition. Green spaces make open spaces less harsh in hot weather and it makes the environment aesthetically pleasing also.

Hyderabad have tropical climate with very hot summer (March–June) and pleasant winter from late October-February. Average annual rainfall is about 772 mm that spreads between 2nd week of June and early October. Hyderabad have a very diverse range of flora and fauna species which are unique in the local environment. Some trees are so vibrant with colour.

We can see the floristic richness all over the Hyderabad. Hyderabad is going through rapid urbanization but the biodiversity is well preserved in some places of city. We can see the array of trees on either side and along the road median. These trees have both flowery plant and tree.

1. Uduga-Flowers

They appear from February-March, in fascicles on leaves branches, fragrant, white with reeked petals and long anthers. Fruits (Berries) appear from April-May, ovoid- globose, with persistent calyx, red when ripe, single seeded.



2. Mori chettu ,sara pappu

Semi evergreen tree; bark dark grey-black, rough with regular and rectangular scales, reddish inside. Leaves simple, oblong, with distinct midvein. Flowers

appear from November-December, in terminal and axillary panicles, greenish yellow, sessile. Fruits (Drupes) appear from March- May, ovoid to globose, purplish black, single seeded.



3. *Syzygium cumini*, jamun tree

A slow growing species, it can reach heights of up to 30 m. *Syzygium cumini* trees start flowering from March to April. The flowers are fragrant and small, about 5 mm in diameter. The fruits develop by May or June and resemble large berries.



4. Ashoka tree

Spreading branches; bark smooth, greyish-brown. Leaves simple, glossy, lanceolate, wavy on margins. Flowers appear from March, greenish-pale yellow in pendant umbels on the stem and branches hiding in foliage.



5. Scholers tree

Large evergreen tree with whorled branches and milky latex; bark brownish to black, corky. Leaves simple, whorled at end of the branchlets, 5-7 at each node, oblong, leathery, dark green above, pale beneath. Flowers appear from November- December, in umbellate, racemose cymes, white, strongly odorous in compact. Fruits (Follicles) appear from February-May, pendulous; seeds numerous, papery with deciduous of white silky hairs.



6. Hard alstonia tree

Evergreen tree; bark smooth, greyish. Leaves simple, whorled at apex of the branchlets, ovate-oblong, milky latex present. Flowers appear from March-April, in terminal umbels white, fragrant. Fruits (Follicles) appear from June-November, linear, many seeded; after dehiscing, the pericarps of the follicles persist for longer time on the tree.



7. Tella deva ganneeru

Small evergreen tree with dense crown and milky latex; bark brownish yellow, smooth with circular rings. Leaves simple, spirally clustered at the ends of the branchlets, oblong, thick, dark green above, pale beneath. Flowers appear round the year, in terminal, corymbs, white with spoon shaped petals and yellow throat, fragrant. Fruits (Follicles) appear in March- May, in pairs or solitary, oblong, greyish black, with numerous, winged seeds.



8. fiddle leaf plumeria

Small evergreen tree with dense foliage; bark greyish, smooth. Leaves simple, spiral, appears whorled at apex of branchlets, shining, spoon shaped with tapering apex, dark green above, pale beneath. Flowers appear round the year, in terminal umbels, fragrant, snow white with yellow throat.



9. umbrella tree

Evergreen tree with dense foliage; bark smooth, greyish black; stem multiple branched from above the base; aerial roots present in old trees. Leaves palmately compound; leaflets oblong, drooping on long petiole. Flowers appear from March-May in clusters on terminally large radiating umbrella shaped racemes, brick red, sessile. Fruits (Drupes) appear from May-September, ovoid, with persistent cup shaped calyx.



10. cassia fistula

This native of India, commonly known as *Amaltaas*, is one of the most beautiful of all tropical trees when it sheds its leaves and bursts into a mass of long, grape-

bunches like yellow gold flowers. A tropical ornamental tree with a trunk consisting of hard reddish wood, growing up to 40 feet tall. The wood is hard and heavy; it is used for cabinet, inlay work, etc. It has showy racemes, up to 2' long, with bright, yellow, fragrant flowers. These flowers are attractive to bees and butterflies. The fruits are dark-brown cylindrical pods, also 2' long, which also hold the flattish, brown seeds (up to 100 in one pod) These seeds are in cells, each containing a single seed.



11. neem

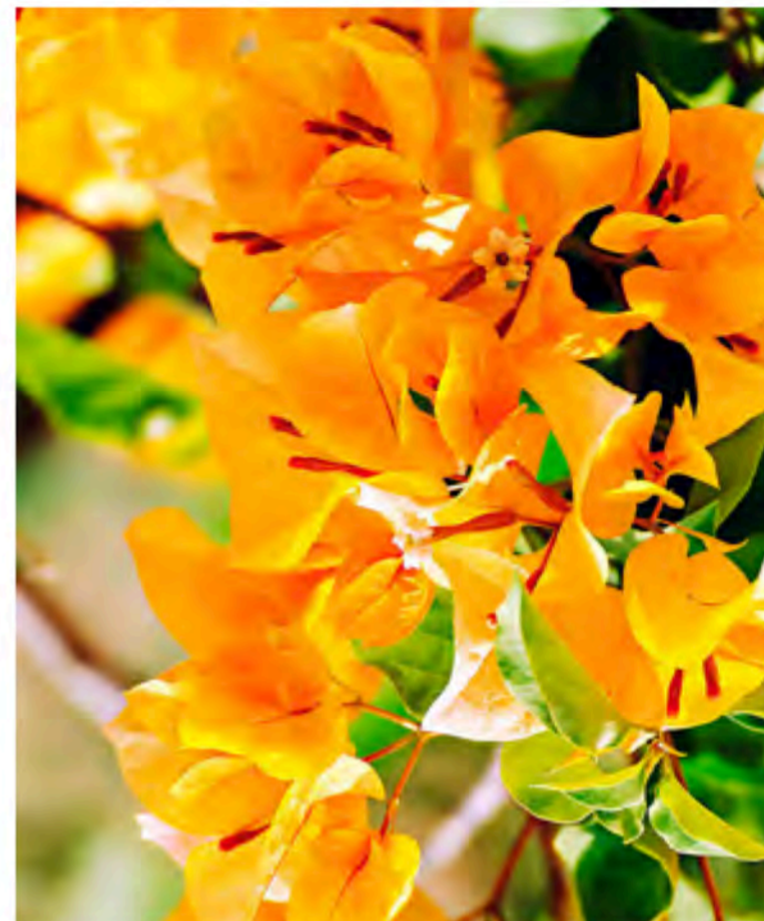
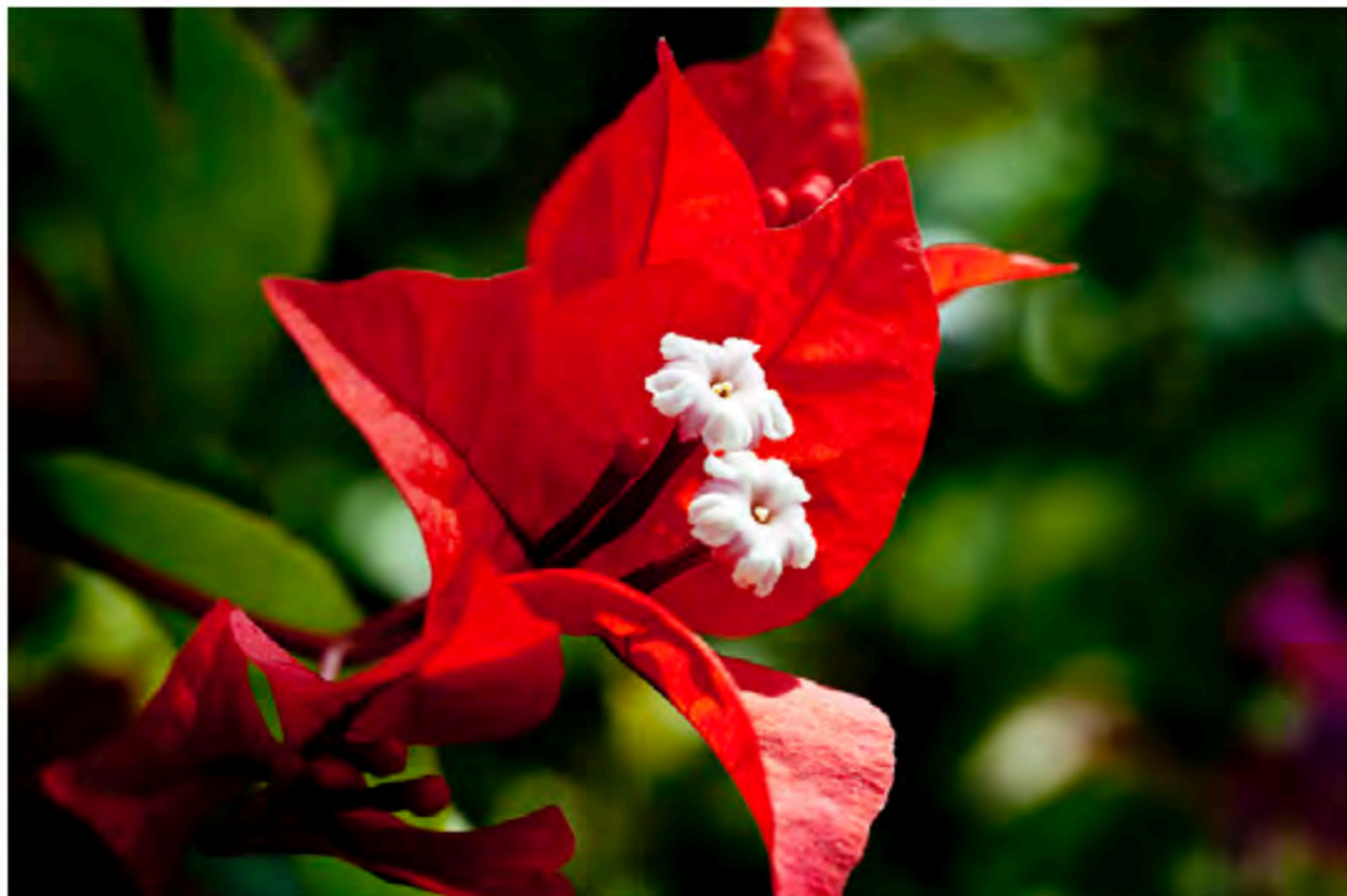
Neem is a fast-growing tree that can reach a height of 15–20 metres (49–66 ft), and rarely 35–40 metres (115–131 ft). It is evergreen,

The branches are wide and spreading. The (white and fragrant) flowers are arranged in more-or-less drooping axillary panicles which are up to 25 centimetres (9.8 in) long.



12. Bougainvillea

Bougainvillea is a genus of thorny ornamental vines, bushes, and trees with flower-like spring leaves near its flowers. The vine species grow anywhere from 1 to 12 m (3 to 40 ft.) tall, scrambling over other plants with their spiky thorns. The thorns are tipped with a black, waxy substance. They are evergreen where rainfall occurs all year, or deciduous if there is a dry season. The leaves are alternate, simple ovate-acuminate, 4–13 cm long and 2–6 cm broad.



13-shami tree

P. cineraria is a small tree, ranging in height from 3–5 m (9.8–16.4 ft). Leaves are bipinnate, with seven to fourteen leaflets on each of one to three pinnae. Branches are thorned along the internodes.



14. Tradescantia pallida

Tradescantia pallida is an evergreen perennial plant of scrambling stature. It is distinguished by elongated, pointed leaves - themselves glaucous green, fringed with red or purple - and bearing small. Widely used as an ornamental plant in gardens and borders, as a ground cover, hanging plant.



15-Dianthus

Dianthus is a genus of about 300 species of flowering plants in the family Caryophyllaceae. The leaves are opposite, simple, mostly linear and often strongly glaucous grey-green to blue-green. The flowers have five petals, typically with a frilled or pinked margin, and are (in almost all species) pale to dark pink.



16. canna lilly plant

The plants are large tropical and subtropical perennial herbs with a rhizomatous rootstock. The broad, flat, alternate leaves that are such a feature of this plant, grow out of a stem in a long, narrow roll and then unfurl. The leaves are typically solid green, but some cultivars have glucose, brownish, maroon, or even variegated leaves.

The flowers are typically red, orange, or yellow or any combination of those colours, and are aggregated in inflorescences that are spikes or panicles (thyrsus).



17- Ficus pumila creeper

As the common name, "creeping fig" indicates, the plant has a creeping/vining habit and is often used in gardens and landscapes where it covers the ground and climbs up trees and walls.



Medium Exploration

For the understanding of flora and fauna I started with the sketches of flowers in dry pastel colors. And I made some easily available flowers in the site of iith and near Hyderabad.



Chinese honeysuckles



Grass



Bougainvillea flowers



Colvillea racemosa



Oleander apple blossom



Caribbean trumpet tree



Ornamental lantana



Chethy flowers

Experimenting the flora fauna on IITH buildings



This is the inside part of academic building which is empty but very nice light and airy place where creeper like ficus pumila can grow nicely it is a tall slick part where this plant can get to creep easily with its small roots



IITH new building with Greenery





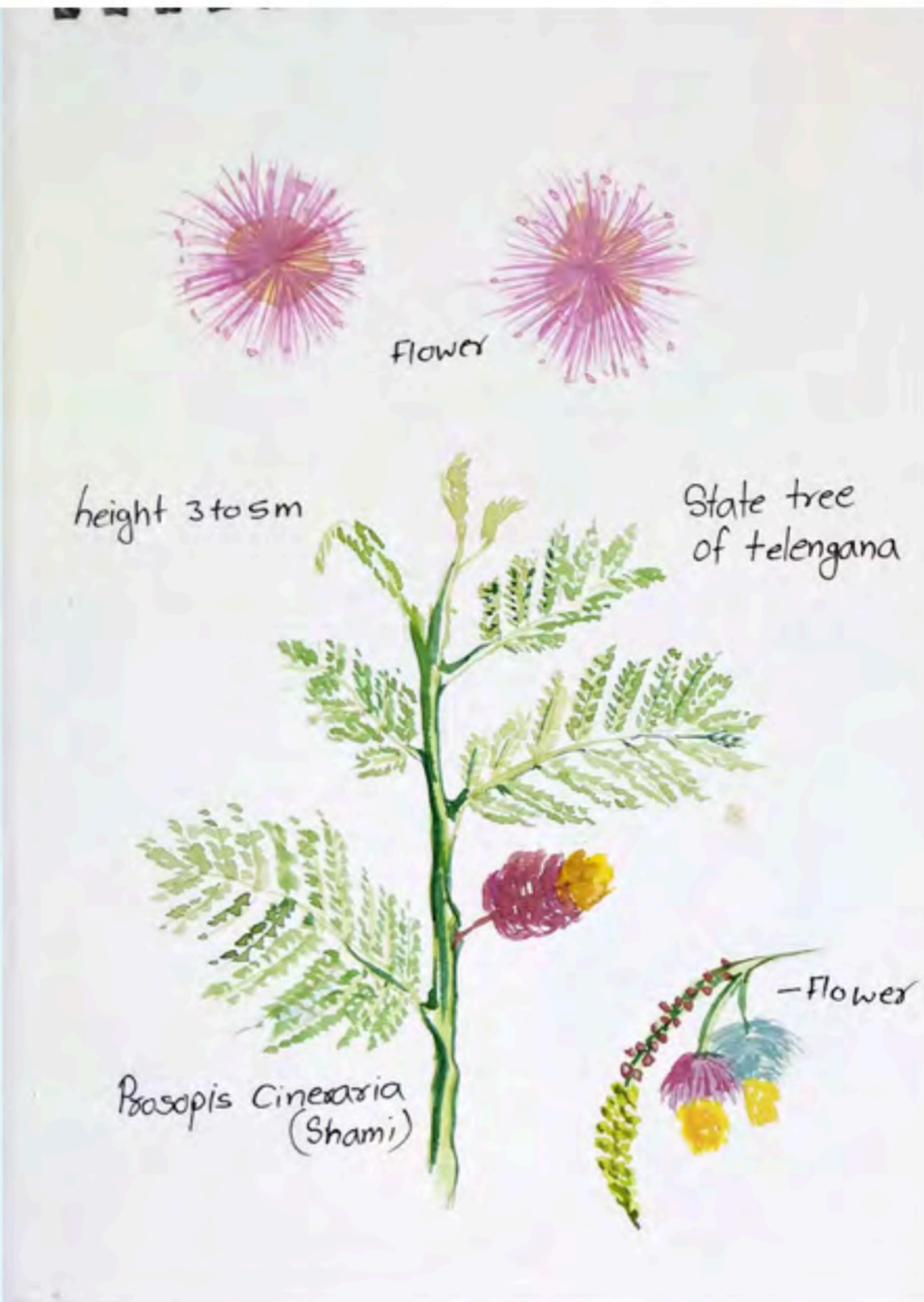
This is the part of hostel at iith ground floor. Where I have used Chinese honey suckle. It have done to see how it can look in future with that plant. This is a creeper which require some place to creep on because it starts to become heavy down its roots when it start blooming and spreads.

Flower Explorations













About IITH and its surroundings.

IITH is a new academics institution which is in its developing stage. Which needs a lot of green space. For that a lot of photos have been taken of existing building and terrain and imagined that place with the flora and fauna of Hyderabad. Hyderabad offers a beautiful range of flora and fauna.



Concept Development stages

Concept 1

Theme: Apocalypse

Apocalypse shows the end of time or world, a complete destruction. We can say end of life on planet where nothing survives environment is complete against the any kind of life we can see the ruins and debris everywhere except life. Apocalypse is an event involving destruction or damage on a catastrophic scale. Post apocalypse is a time where destruction is already happened and nature has over taken the scenario for example growing plants on the ruins of building .

I choose iith site for this topic because this space is empty and construction is going on everywhere .it almost looks like it is destroyed and seen a bad phase of time .so I wanted to see the result how it will look like if I use this theme to show the changes

And when I started this project iith was celebrating its annual student fest Alan and envision and fortunately they had chosen apocalypse theme for this fest. they put fire, and bomb replica to present the topic and they have designed t-shirts with the tag line like, war is coming, the end, start over and from there I got inspiration to work on this topic

But this topic didn't work because it was leaving a negative impact on audience. I got some negative feedback from some people that IITH is growing so I should not do it and I didn't not want that so I changed the topic.

My iterations for this concepts:

Iteration 1 Steps:



Other Iterations





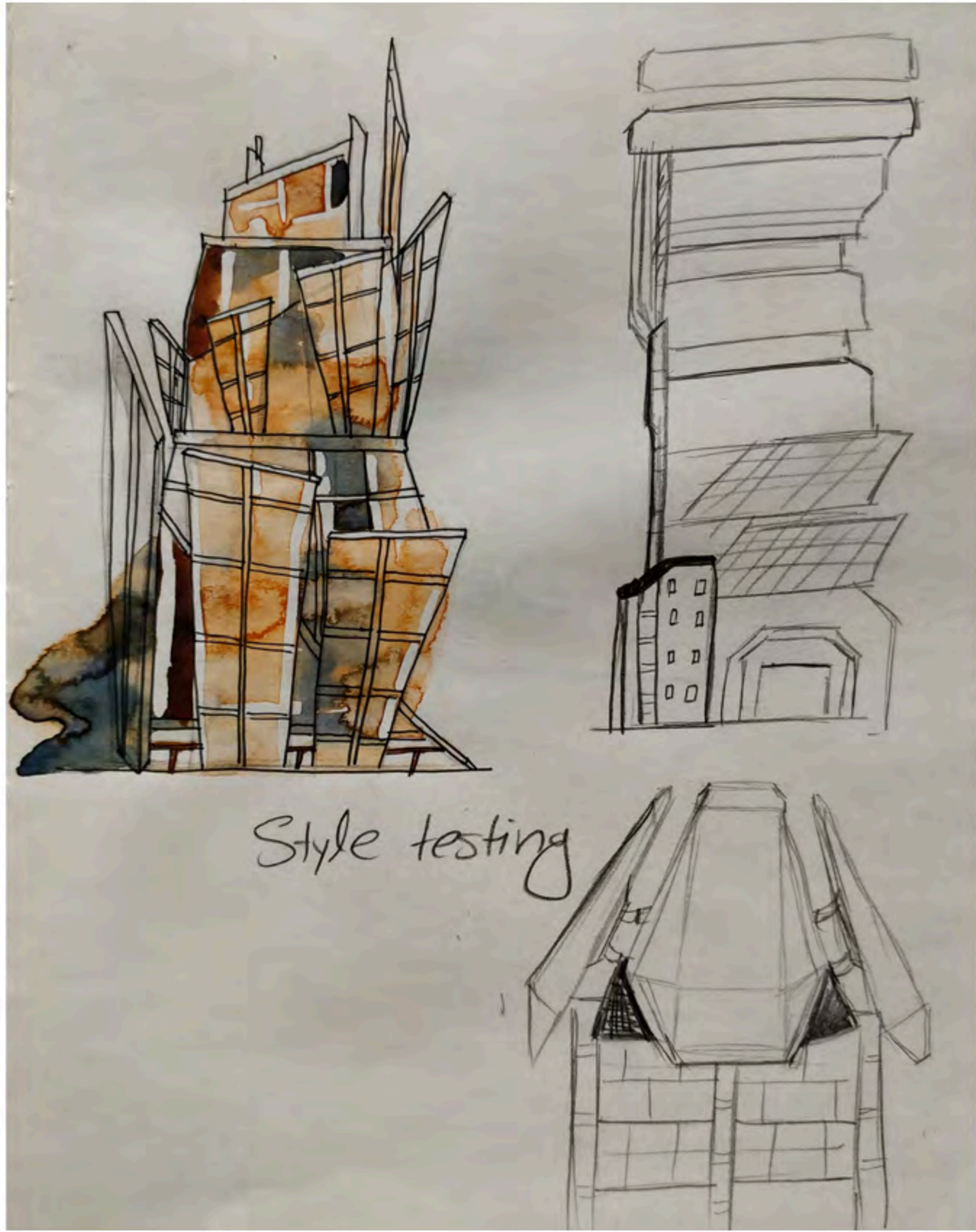
Concept 2

Theme: Futuristic environment for iith buildings

After that I chose to make a futuristic virtual modal of iith .for that I took help of already existing modal of iith where I used the model of iith with some extra futuristic element.

I chose to work with this topic because this is a ongoing construction site and here everyday something new is building which make me to visualize that what next what tomorrow.so with the inspiration of existing modal where total 14 building is there and only three is completed I started to sketch about this idea to see a complete modal of iith along with full of life and every required elements.

Sketches





Concept 3 (Final concept)

Theme: IITH with Full of life/ with Greenery.

This is my final concept for the matte painting, which I liked and also got the positive feedback for it.

Utopia:

A utopia is an imagined place that possesses nearly perfect qualities for its citizens. The opposite of a utopia is a dystopia. We can also say that utopia is a perfect "place" that has been designed so there are no problems.

Reason behind this concept

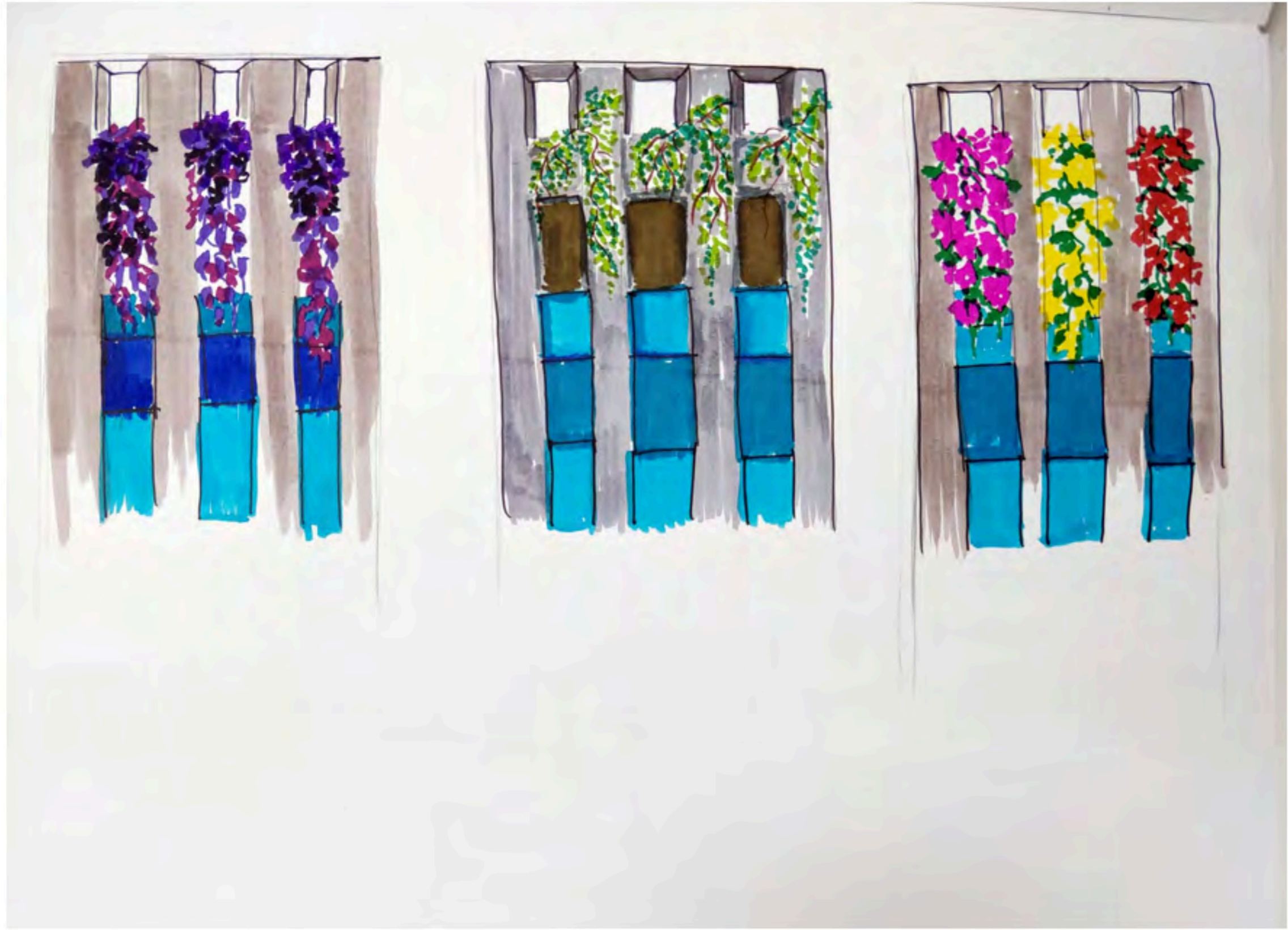
I chose that topic because the most important part which is missed here by student's greenery. I have heard many time whining of student that how hot this place is, that they don't want to take their lunch and some time they don't and whenever I go to city just after leaving the campus I can see the array of tree besides of road.

In the city at some places I can see the beautiful flowers tree and it used to make me think that why it can be here in iith.so I started study about the flora and fauna of Hyderabad Telangana.

And this place has a very high range of flora and fauna. all season have something beautiful and vibrant to offer.

Rough layouts





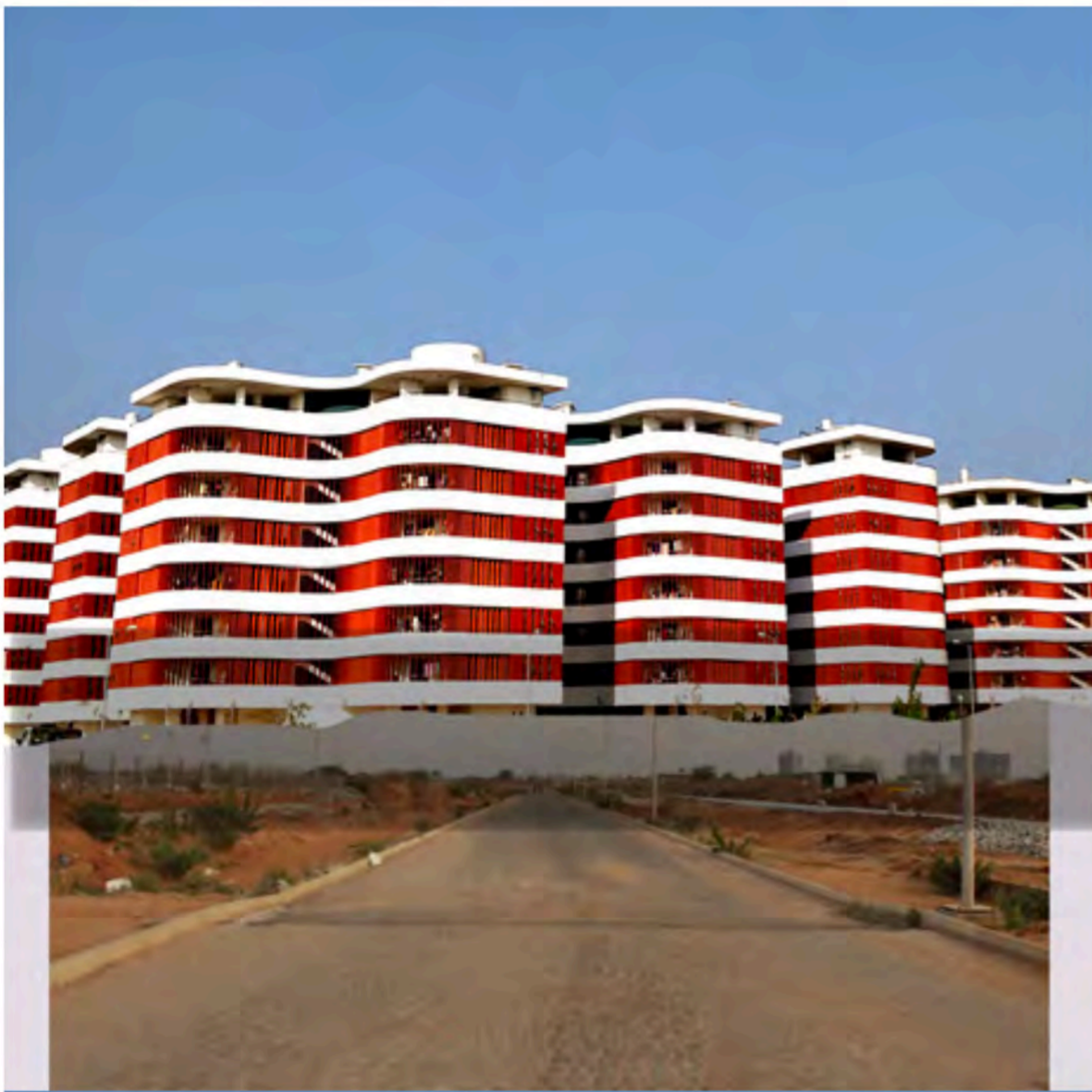
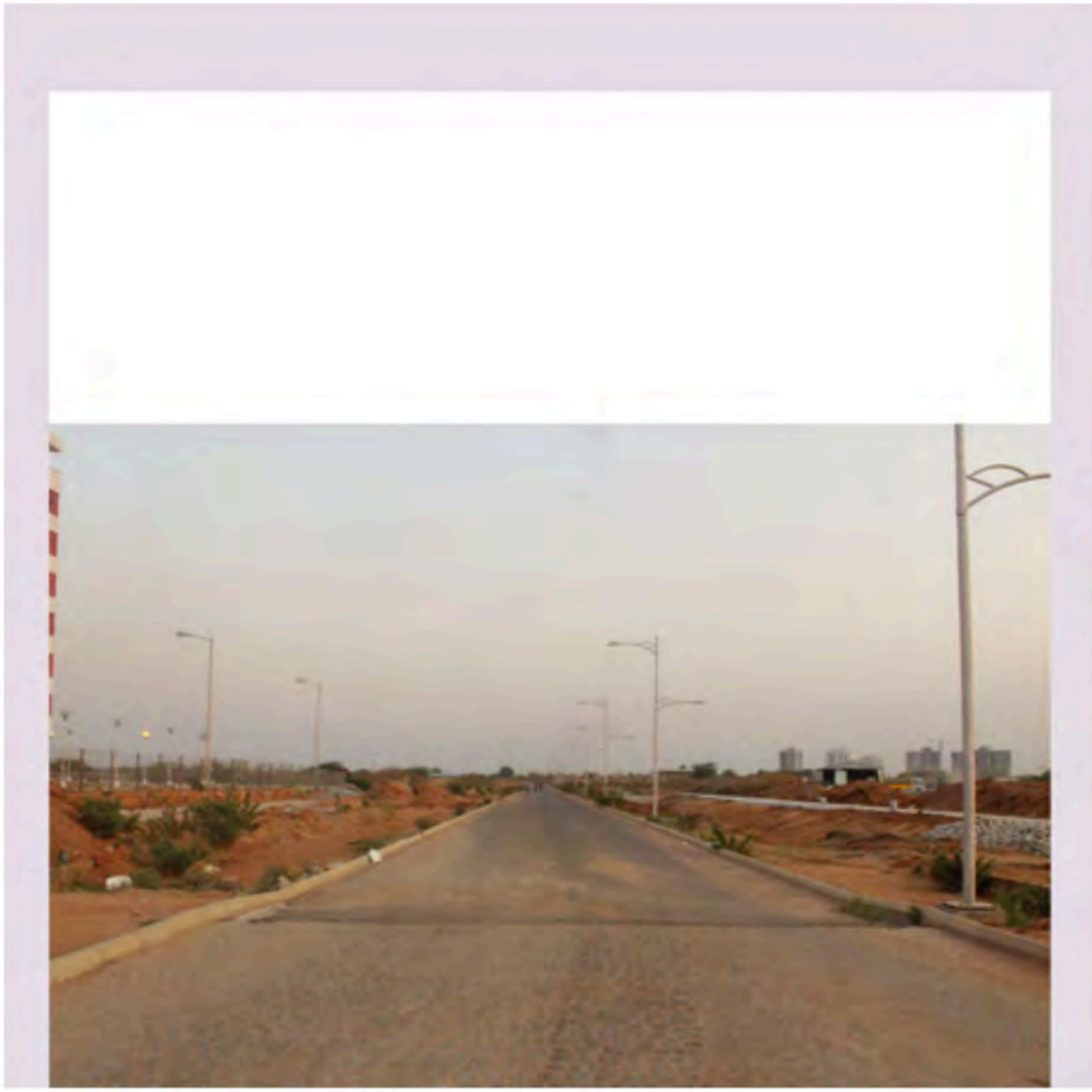


Breakdown Stages for Concept 3 Rendered works.

While developing the concept I have made several iterations. And tried different approaches to achieve what I visualized for the output.

Iteration 1:

Here I have explained my process of Digital Matte Painting which I have done in Adobe Photoshop.





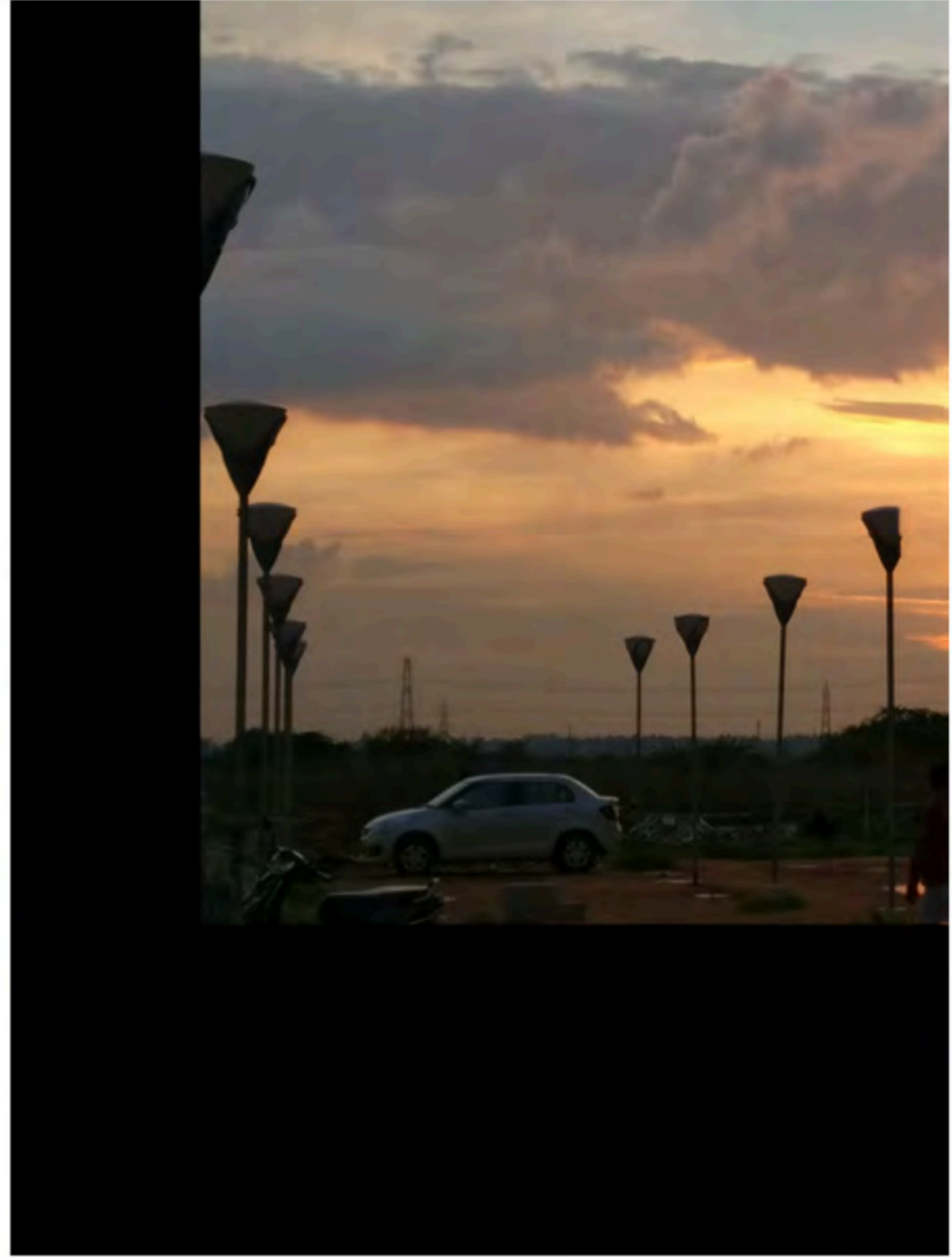
Iteration 2

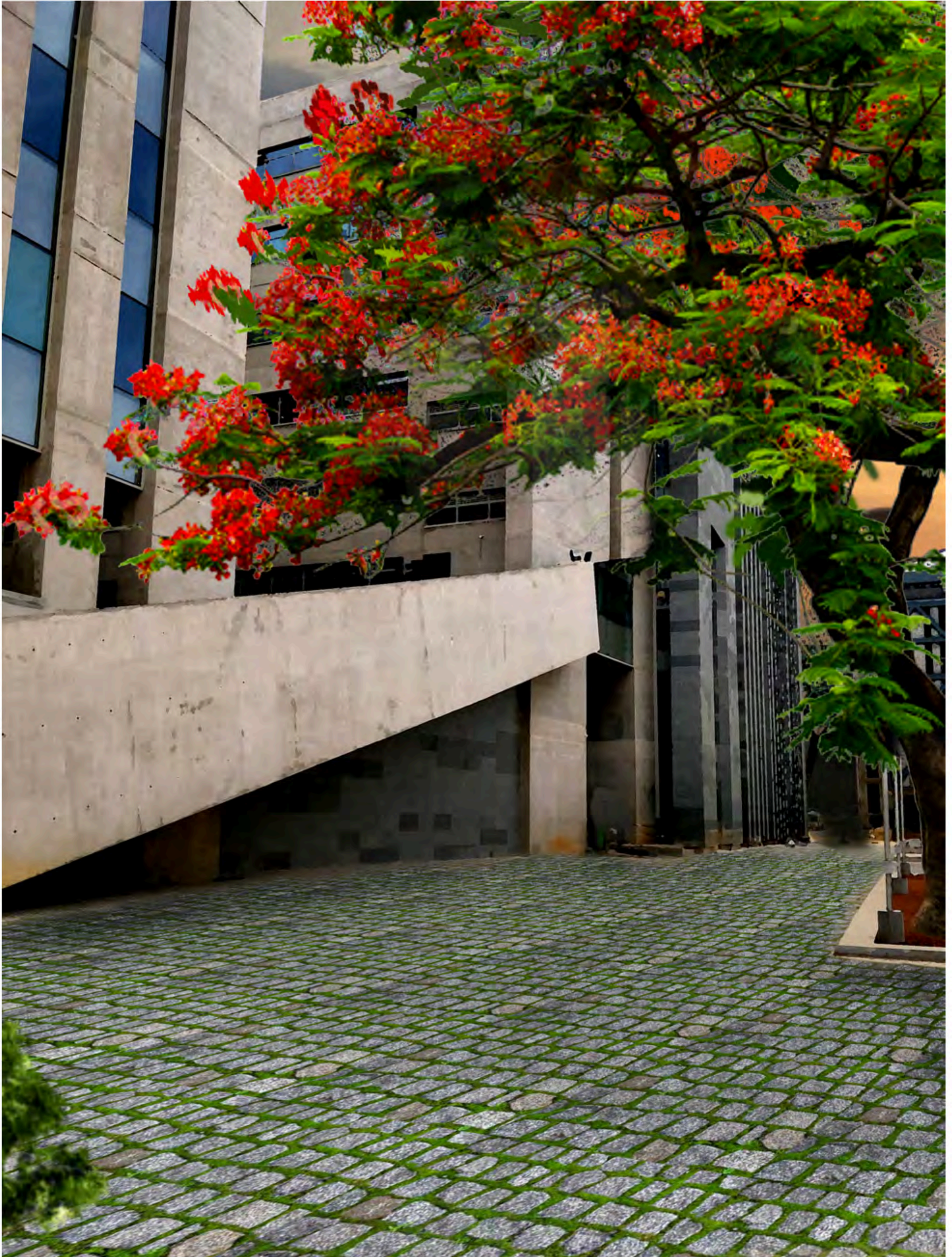






Iteration-3 :

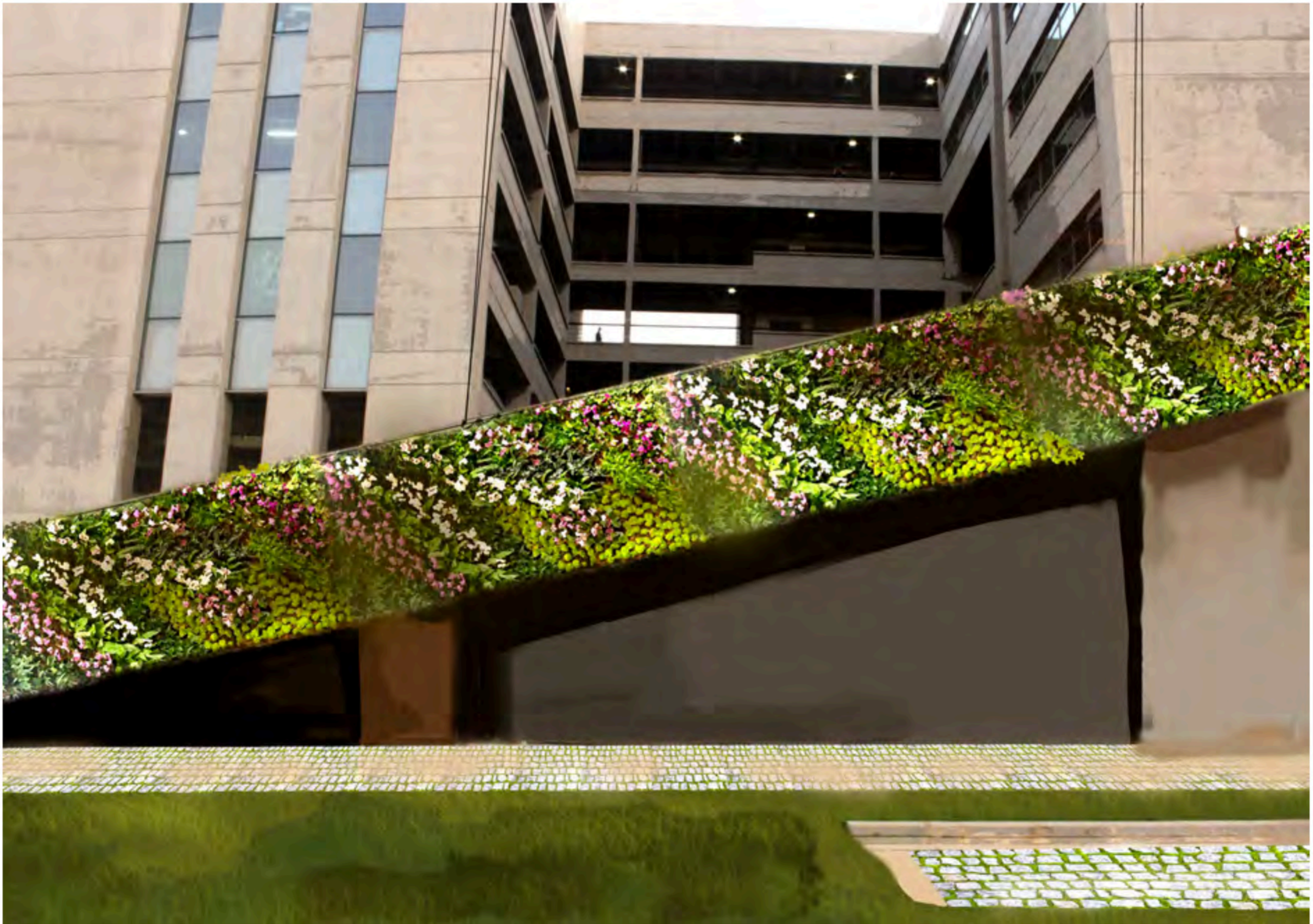




Some other Iterations





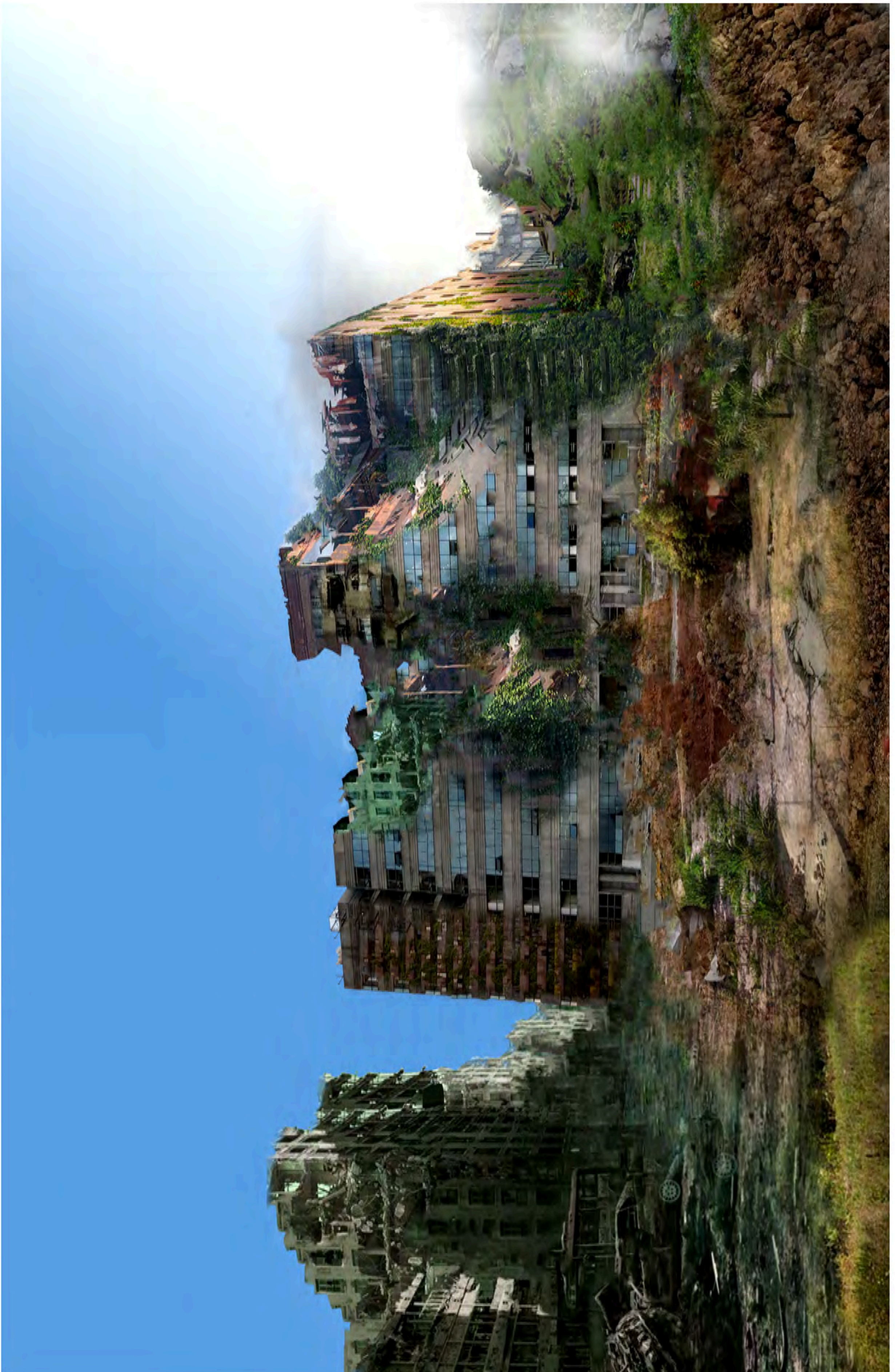


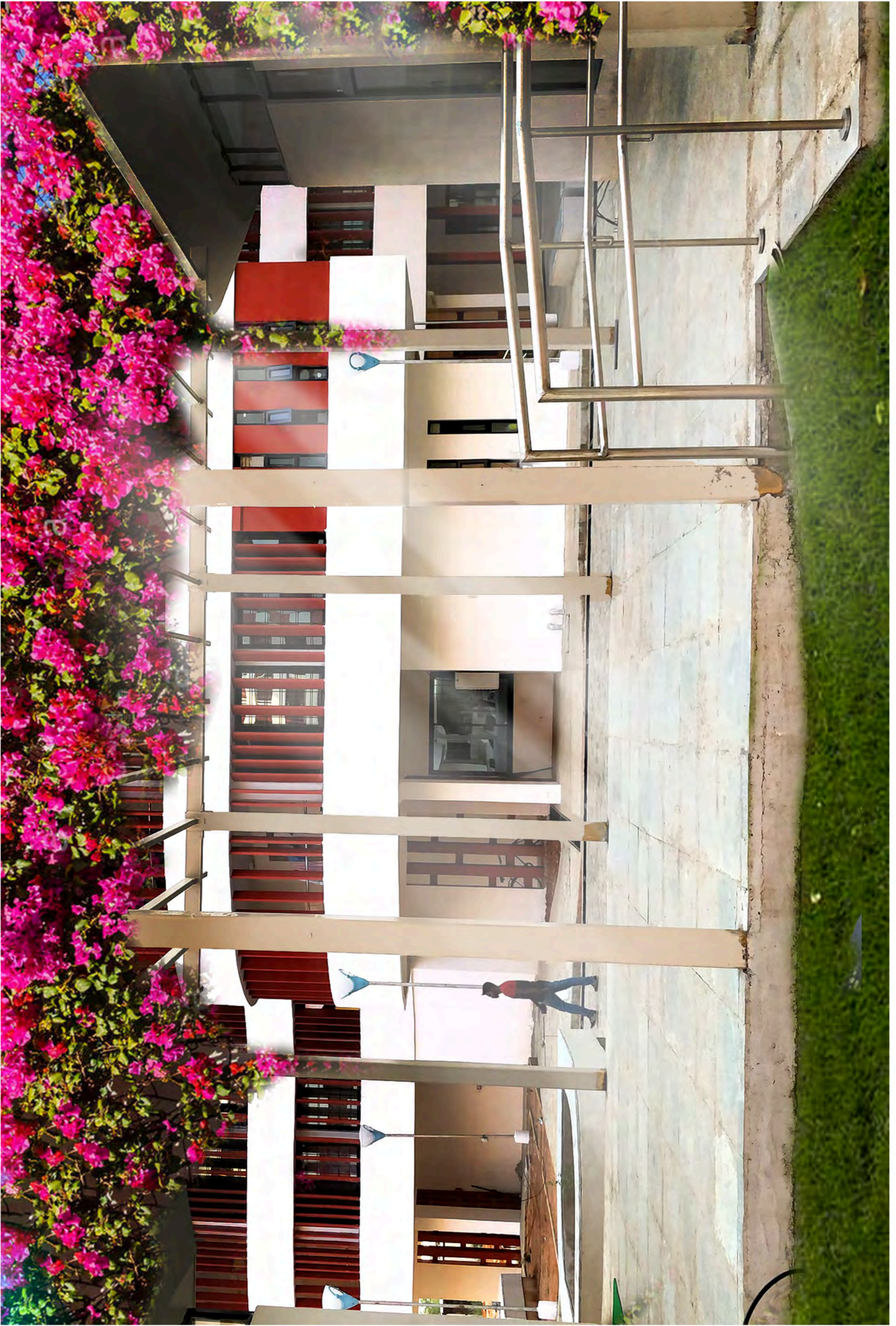
Final output

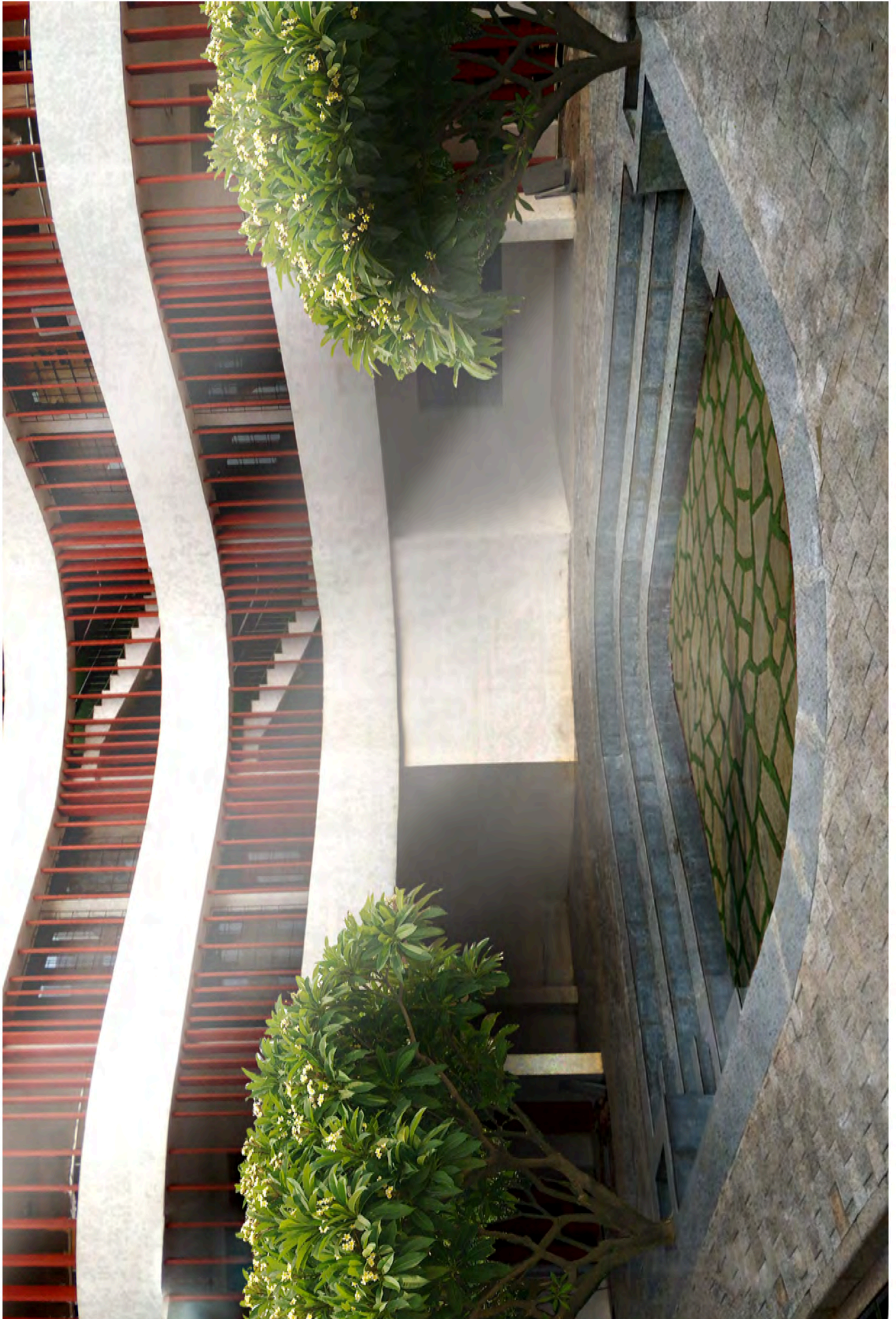
These are the final outputs which I got after my various explorations and approaches which doing this Thesis project.

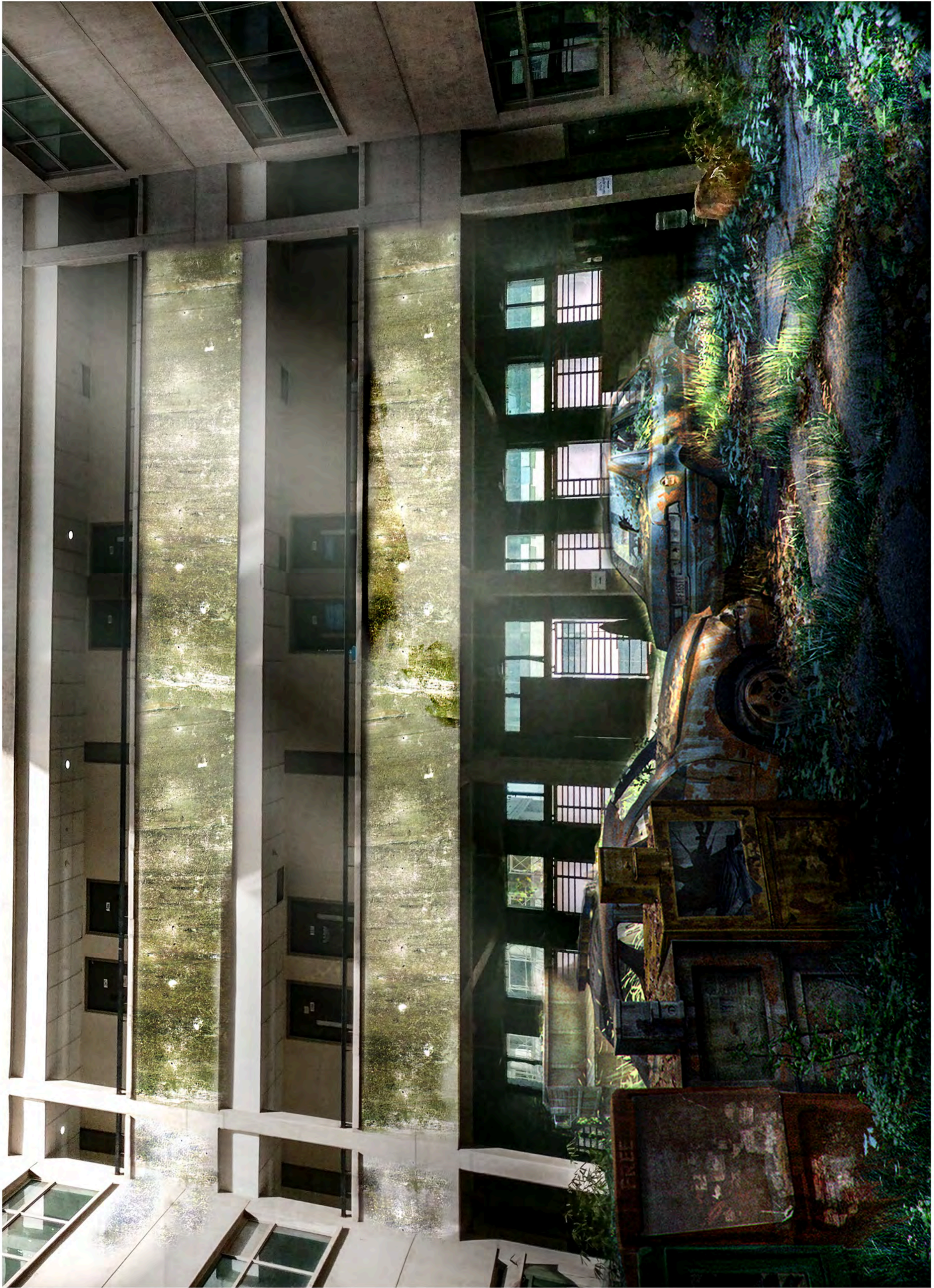


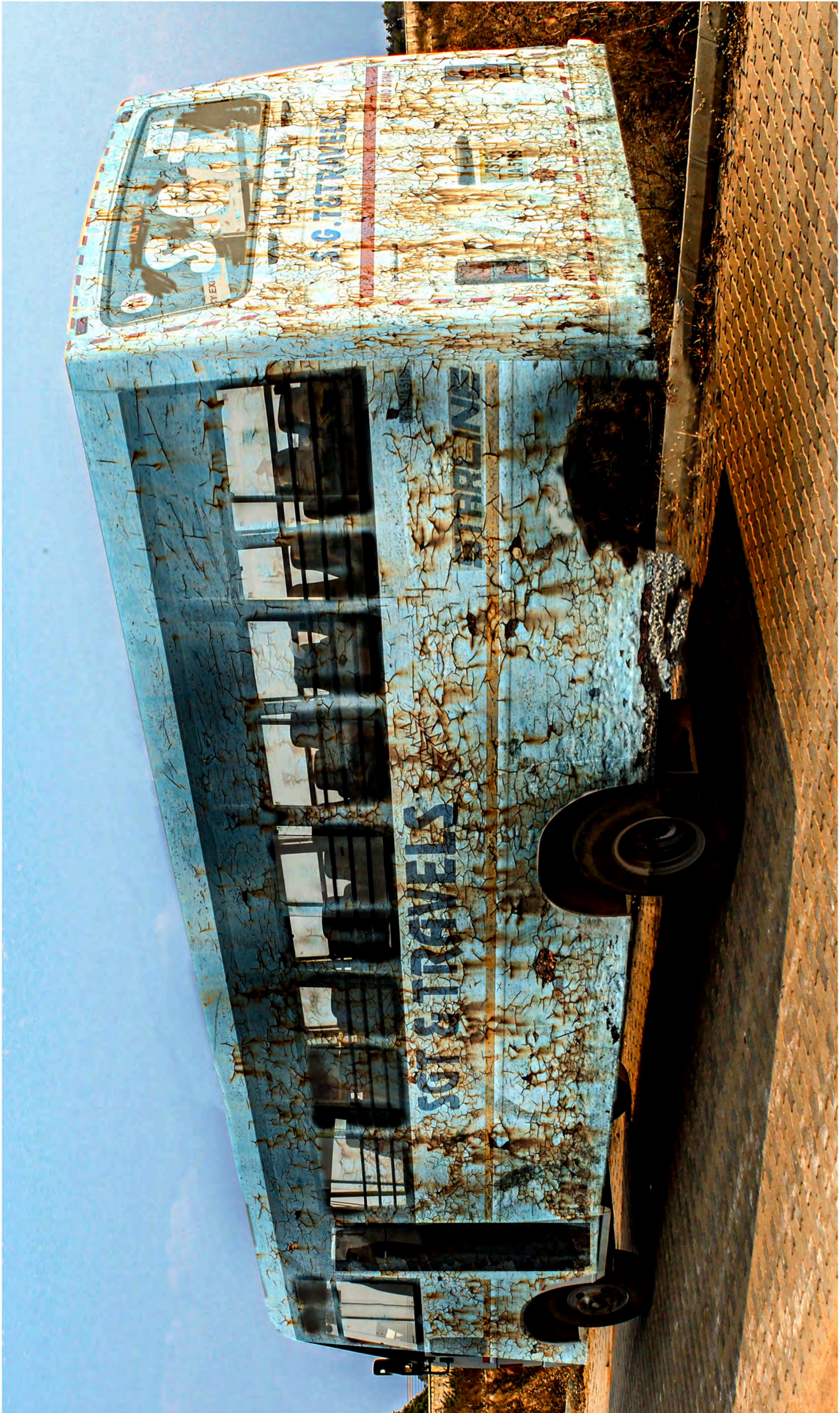




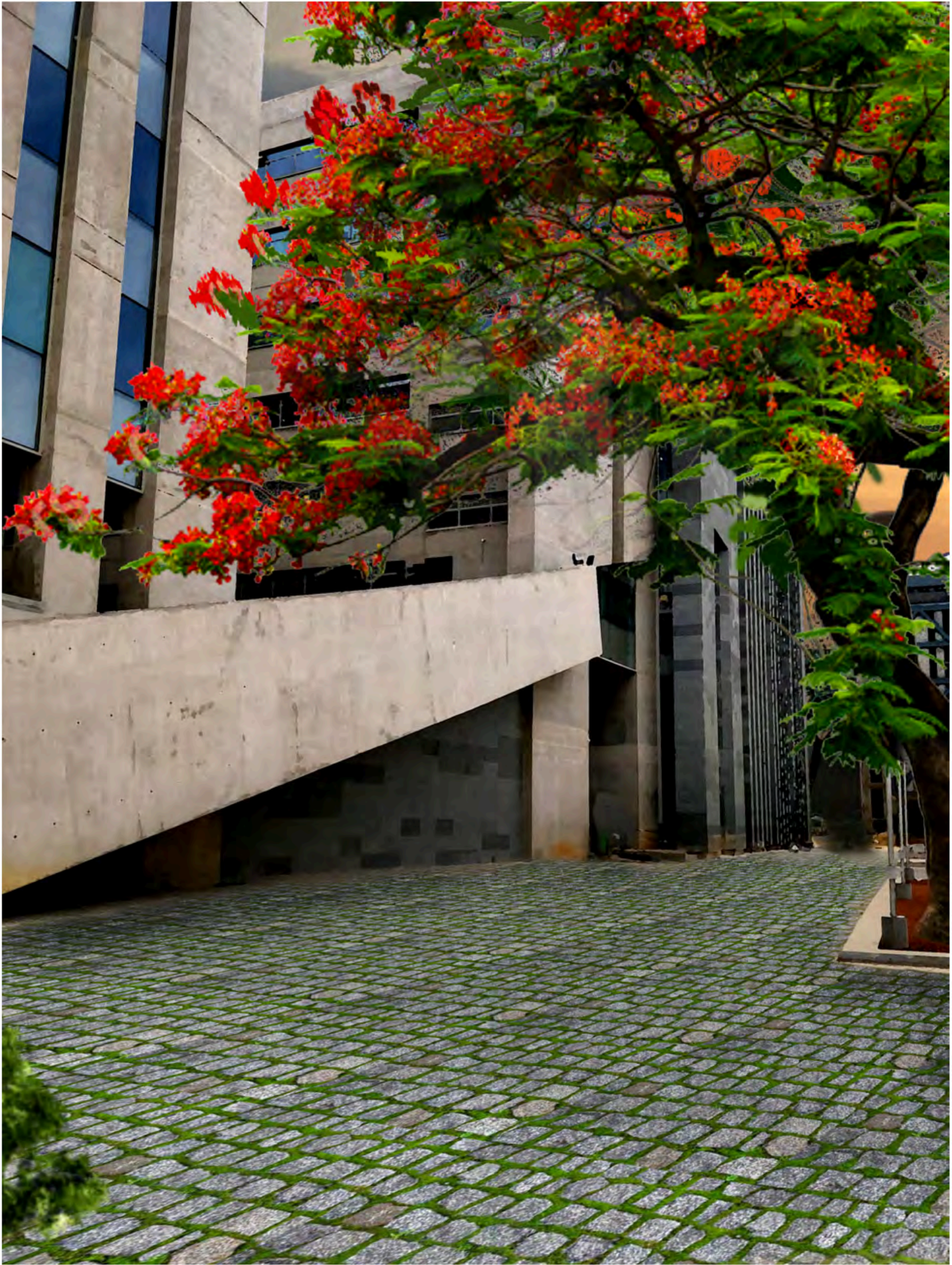








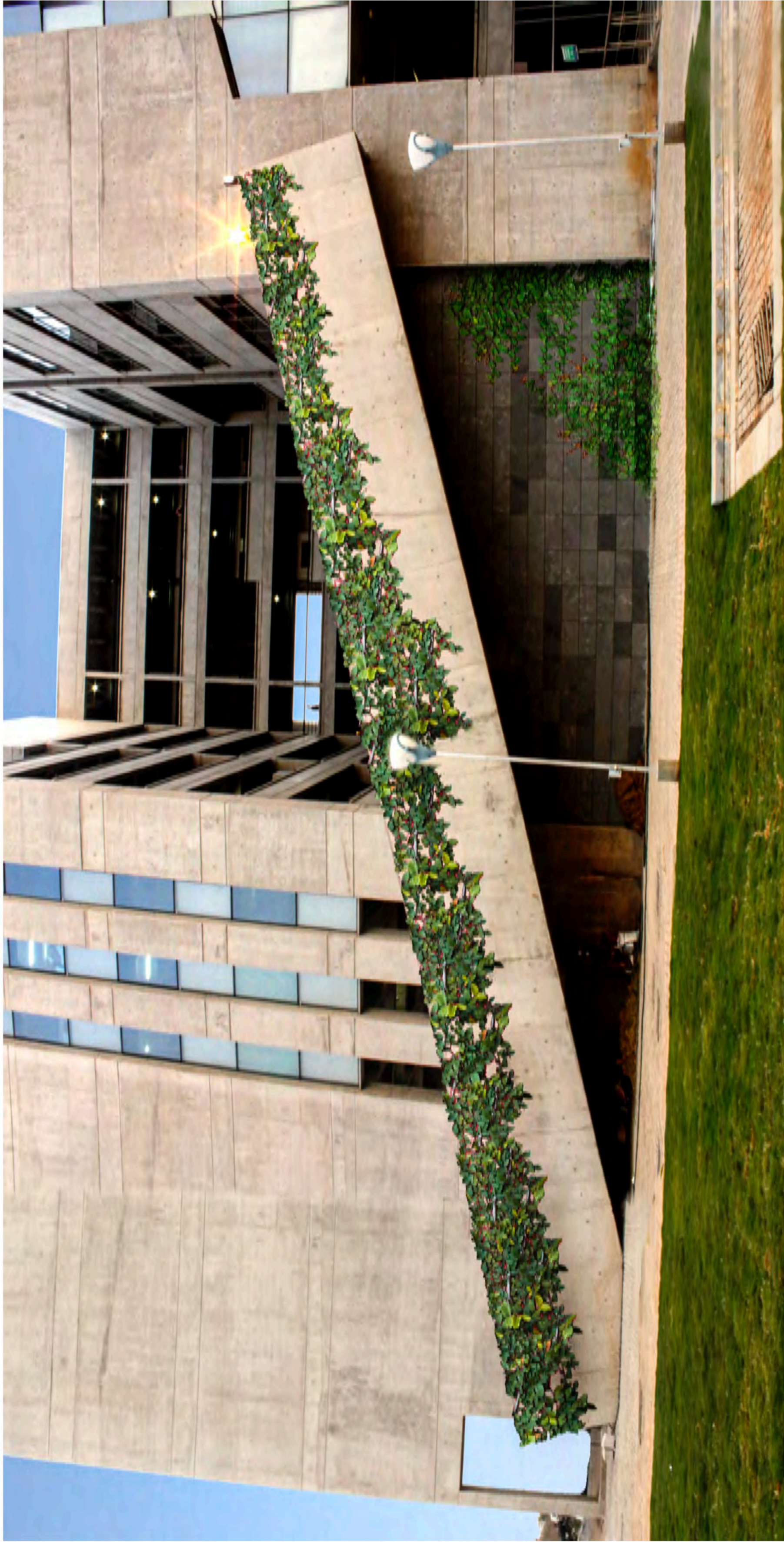












Conclusion and My Learning

This project was a small initiative from my side to make a evolved scenario of IIT Hyderabad. This project helped me to understand the different kind of composition. And while writing the thesis I had a good time reading about flora and fauna Of Hyderabad. I learnt some architectural aspects also.

I love background designing and this project gave a big opportunity to peruse my interest in matte painting which I wanted to from a very long time. While watching movies background of movie always mesmerise me so this project helped me to understand the magic of digital matte art.

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