PHD REVIEW 2023

PLACE-BASED STORYTELLING WITH

AUGMENTED REALITY

Files for troubleshooting

ART

A PRACTICE BASED STUDY IN LIMERICK CITY
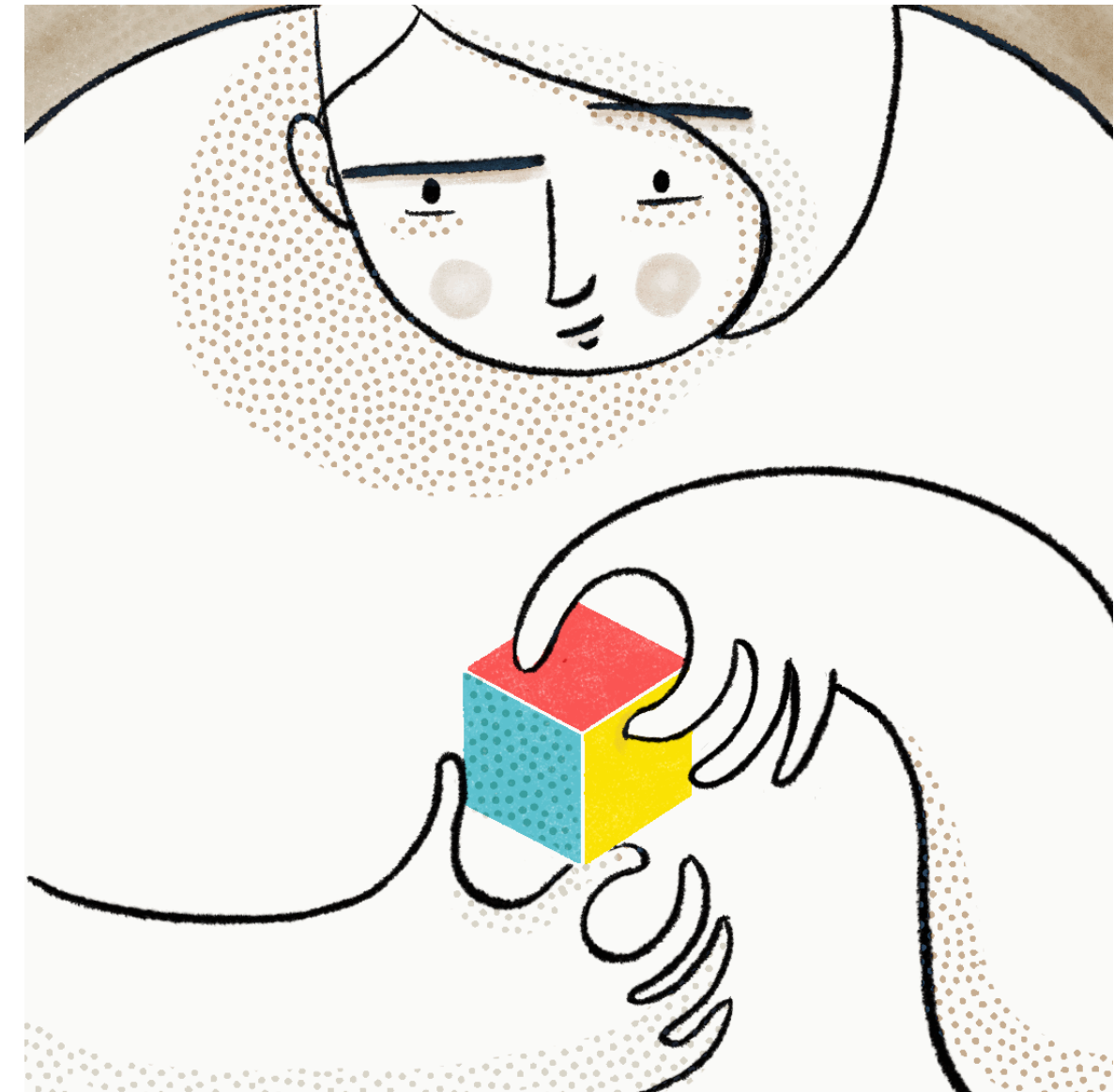
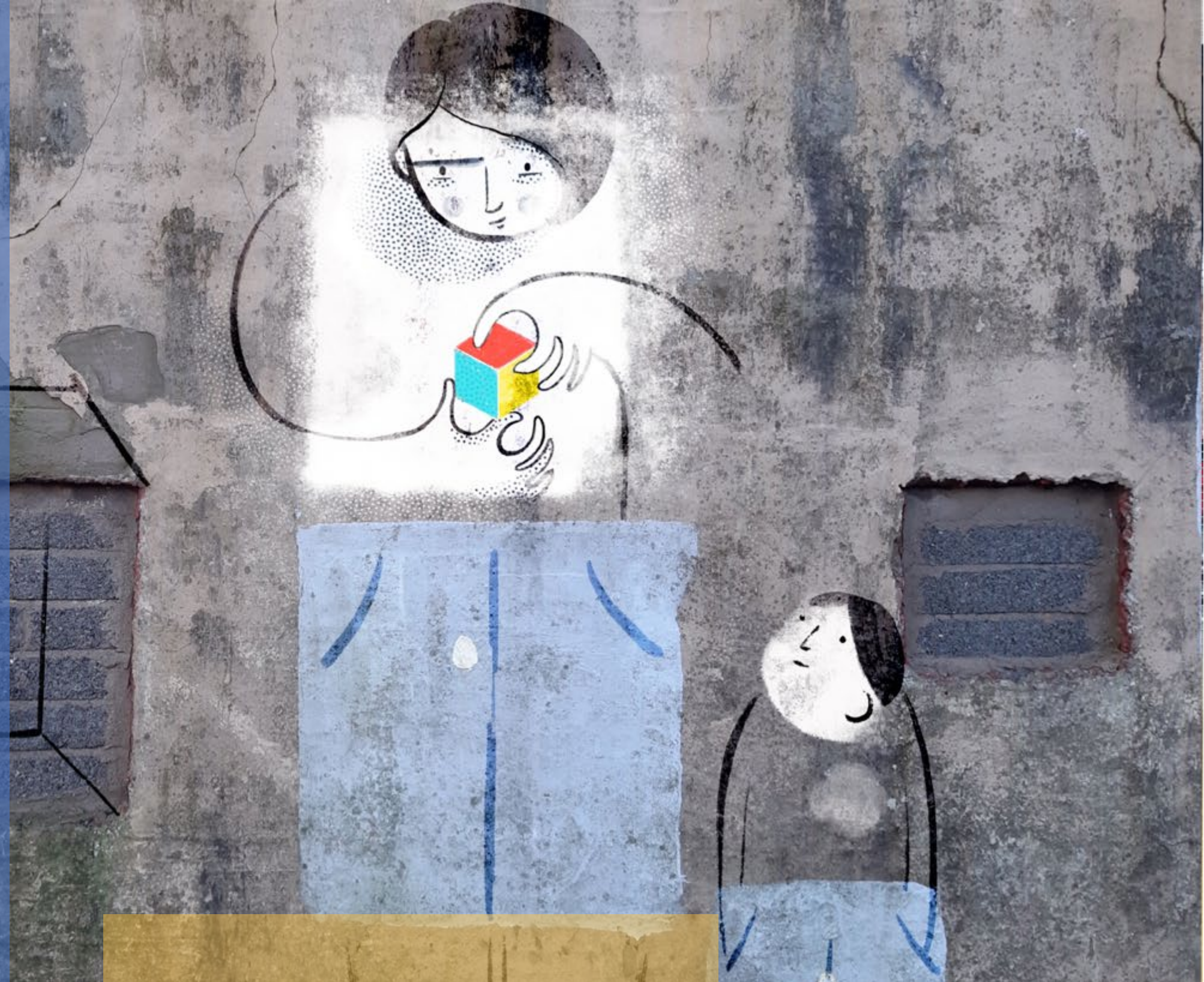Combining art with technology to enliven and reimagine the cultural landscape of the city.

Telling stories about a place in the place, invites viewers to engage with overlooked areas in new ways.

Spaces become Places

WHO WHAT WHY WHERE

CONTEXT_

WHO WHAT WHY WHERE

I approach this PhD from the perspective of an illustrator/visual artist with an interest in the intersection of arts and technology in image-making.

My practice explores the synergistic potentials of analogue and digital art to create an immersive narrative experience for the viewer.
It investigates the capacity of Augmented Reality urban art to transform how people perceive, interact and identify with a place.

It is motivated by an interest in:
> the capacity of AR to preserve stories that form a part of a city's cultural heritage.
> how artist oriented AR apps are being and can be used, to extend the practice of artists and designers.

"AN INVITATION TO EXPERIENCE URBAN SPACES IN A DIFFERENT WAY."

CONTEXT

WHO **WHAT** WHY WHERE

Research Into, Through and for Art & Design: create a roadmap for Artists & Designers with an interest in place-based storytelling as a means of enlivening derelict spaces and preserving a city's cultural heritage. How to design with AR for these experiences: how does one most efficiently navigate the design processes & workflows in order to effectively transmit place-based stories with AR and to encourage users to engage with the technology in an outdoor public setting.

>HOW CAN PLACE BASED STORYTELLIING WITH AR ART CONTRIBUTE TO CREATIVE PLACEMAKING & THE PRESERVATION OF CULTURAL HERITAGE ?

>>WHAT ARE THE PERCEIVED AFFORDANCES & LIMITATIONS OF CURRENT ARTIST-ORIENTED AUGMENTED REALITY BUILDING APPS?

>>>HOW ARE ARTISTS ENGAGING WITH AR TECHNOLOGY AS AN OUTPUT & EXTENSION TO THEIR WORK?

CONTEXT

WHO WHAT WHY WHERE

Artist-oriented AR apps democratise the production of AR content, formerly only accessible to programmers.

While AR art has grown in popularity, there remains a paucity of academic work on how AR can be incorporated into artistic practice.

Urban/Public art has long been used to turn spaces into places. Adding AR allows for an additional layer of engagement and storytelling that can reveal the (hi)stories and memories connected to these sites.

"As augmented reality (AR) quickly evolves with new technological practice, there is a growing need to question and re-evaluate its potential as a medium for creative expression." [1]

CONTEXT

"**AUGMENTED REALITY** graffiti has the potential to build on the **visual languages of street art**, and the urban infrastructures of a modern-day city environment, as part of the ongoing fusion between **analogue and digital** content" _Gwilt,I [2]

WHO WHAT WHY **WHERE**

THE RESEARCH TRAJECTORY THUS FAR...

2021-2022_The first phase of the research gauged public response to AR activated public art and the affordances and limitations of viewing it using current artist oriented AR Apps.

Data was collected through an exhibition of 10 Prototypes and an online survey. Collaborative projects & Workshops were conducted with artists and designers to gauge their interest and perceived challenges in engaging with AR in a creative capacity.

" We have to consider how the AR art can be designed in order to "occasion a dialogue" with the place and the physical artwork in that place" [3]

CONTEXT

"The AR experience must be designed around the story, centred on the message rather than on the medium. It must be underpinned with a compelling narrative. Otherwise it is only a gimmick that won't get a second look." [3]

November 2022: *CSIS Building, UL*

RE:IMAGINED_ 10 Augmented reality prints installed as prototypes in the reception area of the CSIS building, University of Limerick. Visitors were asked to complete a survey.

RE: IMAGINED

TRANSFORMING ABANDONED SPACES INTO STORIED PLACES WITH AUGMENTED REALITY STREET ART

PLACE-BASED STORYTELLING WITH AUGMENTED REALITY

AN EXHIBITION OF ILLUSTRATIONS

27.10-07.11

CONTEXT

"TO SEE THE WORK COMING TO LIFE IS INTERESTING. THE EXPERIENCE IS NEVERTHELESS (MADE) CUMBERSOME BY THE HANDLING OF THE PHONE"

Survey respondent

CONTEXT

Recordings of the Augmented Reality experience using the Artivive application.

WHO WHAT WHY **WHERE**

THE RESEARCH TRAJECTORY THUS FAR...

2022-2023_The second phase of the research was developed based on survey responses and feedback received during the '21-'22 PhD review.

Viewers respond best to AR experiences that last 30 to 45 seconds [4]. Thus, to optimise viewer engagement with the AR application: Instead of focussing on a number of scattered sites and short fragmented AR experiences focus on developing one , more substantial story that is situated at a single site of significance to the city.

This set in motion the challenge: find a socially significant, culturally embedded story that 'wanted to be told' at a site that is geographically relevant and of historical importance to the city of Limerick.

WHAT STORY WANTS TO BE TOLD?

CONTEXT

Use AR art to retell the origin story of the River Shannon.

Featured in the metrical *Dindsenchas* 'the lore of place', the story is a valuable cultural artefact, connected to the founding and flourishing of Limerick city.

It is also a cautionary tale that, by prioritising commerce over ecology we are disrupting the natural balance of this once sacred body of water.

" SINANN IS THE MYTHOLOGICAL SOURCE OF THE RIVER SHANNON, THE LONGEST RIVER IN IRELAND. BUT WHO IS SHE, AND HOW FAR BACK DOES HER STORY GO?" [7]

STORY OF SINNAN

CONCEPT_

The story is possibly 2000 years old.

Myriad versions have been transmitted through the ages, first orally then in written form, each version reflecting the cultural values and using the technology available to it's time.

THE PRESERVATION OF THE STORY DEPENDS ON IT BEING TRANSMITTED IN A MODALITY THAT IS RELEVANT AND ENGAGING TO CURRENT GENERATIONS

This version will be told through the medium of augmented reality illustration: digital storytelling technology that allows stories to be told about the place, in the place.

CONCEPT

In the city of Limerick, steeped in stories old and new, lies the sacred River Shannon, a vital lifeline for trade and growth. But how did this magical river come to be?

Long ago, in ancient Ireland, lived Sinnan, a poet who loved nature and sought to reflect it's wisdom through her words. Her poems could weave colourful worlds but she was not interested in fame or power. Sinnan was Intrigued by tales of a sacred well with magical waters but was warned that the wisdom and insights it contained were only for the privileged and powerful, not for her, not for her community. Still, she embarked on a forbidden journey to find it , to liberate and share its wisdom and insight for the good of everybody.

After a long and difficult quest, Sinnan discovered the well hidden amidst hazelnut trees. Pink fish swam in it's bubbling waters and magical plants grew around it. Filled with reverence and curiousity, she touched its waters and drank from them. Because she had come to the well with a pure heart the waters rose to meet her. As she danced with joy the well's powers overflowed, creating a stream that grew into the mighty River Shannon.

CONCEPT

WHY THIS STORY, WHY NOW?

The city of Limerick, like so many Irish cities, is dependent upon the Shannon river for it's existence and its economy. However the river and its ecology is increasingly subsumed by urban development.

"Relationships between cities and their waters have always been evolving. In a context of transition towards sustainability, finding a balance between the urban & river spaces may contribute to the development of new resilient neighborhoods" [5]

Once a sacred site, the embodiment of Goddess Sinnan, the River Shannon has been rerouted, polluted and manipulated for commercial gain. The story encourages young readers to respect nature and to value truth and wisdom over power and popularity.

CONCEPT

WHO IS IT FOR? The artworks will target a young audience: Children and teens, who through the medium of AR, will be encouraged to immerse themselves in the multimedia retelling of an ancient folktale close to where the city was first founded.

The selected site is a thoroughfare for students on their way to school/college and for children walking to the nearby O'Brien's park.

Research revealed that younger audiences are more likely to pause and interact with the AR component of the artwork .

The younger generation are the guardians of the folktale whose prerogative it is to transmit it through future generations..

" AR technology can support urban renewal by advocating for the 'playful' citizen"

CONCEPT

HOW WILL IT WORK? 7 panels will be installed along a derelict section of a public walking path.

Each illustrated panel will have an AR component. Viewers will be invited to walk though the story scanning each panel with their phones to reveal an immersive, interactive AR experience.

AR allows the process to be gamified: viewers can discover hidden plants and symbols related to their current physical surroundings. This helps to ground the audience in their physical environment.

The River Shannon's tale reminds us of the importance of the river and its ecology.

With the aid of augmented reality, viewers can interactively immerse themselves into Sinnan's journey, exploring the magic of the well and the Shannon's flow through Ireland, making this a captivating and educational experience.

CONCEPT

Built in the late 18th Century to transport goods to and from Limerick City. It connects two arms of the Shannon River near the site where Limerick city's first settlement was founded. The canal has been closed since the 1930's

PARK CANAL, LIMERICK

LOCATION_
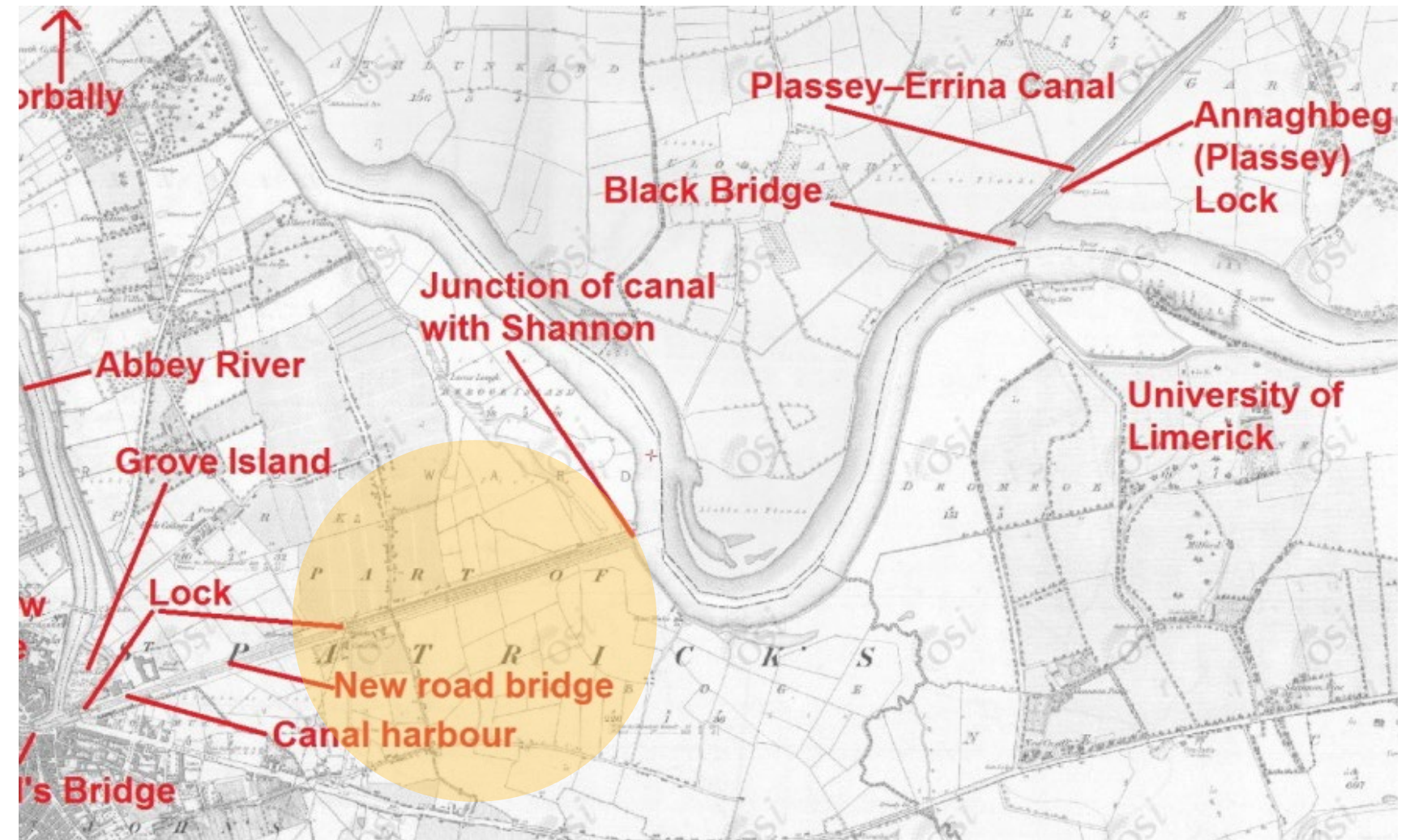
The proposed installation site is located near the entrance to the Canal Walk. The wall is currently owned by a private developer

Wall of former Guinness Depository

LOCATION

Along the wall are 7 bricked up windows. It is proposed that each of the 7 scenes of the story of Sinnan will be installed within these window frames. Viewers can become immersed in the folktale by activating the additional layer of storytelling through the AR app.

Wall of former Guinness Depository

LOCATION

The physical artwork must stand alone as an artefact. But there must exist the incentive for the viewer to engage with the AR experience.

How does one design for this and what additional user information is required?
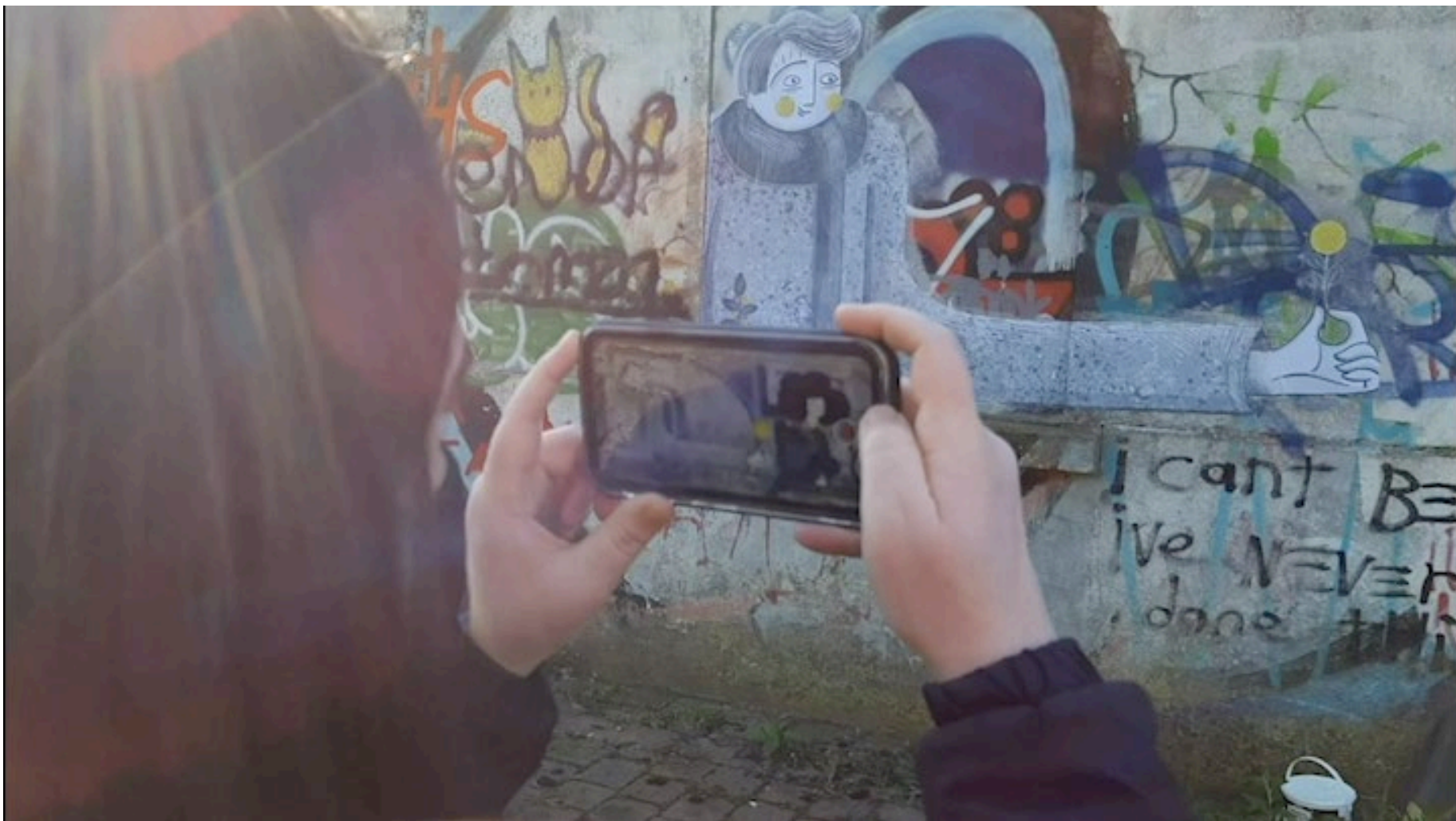
"THIS WAS ALL FOREST, THEN VIKINGS CAME ALONG AND DUG THIS CANAL"

_Passer-by

Old Guinness Depository, Canal Bank, Limerick

PLAN>DEVELOP>TEST

PRACTICE_

STEP_1. Plan

The story was **deconstructed into 7 scenes using Freytag's Pyramid**: a framework that analyzes and outlines the dramatic structure of stories, mapping the rise and fall of tension and emotion

Each scene will be sketched out for context

STEP_2. Develop

One scene was selected to be developed into a finalised AR experience.

Assets from the selected scene will be **built in 3 of the leading artist-oriented AR apps:** *Artivive, Aero and Spark AR*, to compare the affordances and limitations of these apps in the context of place-based storytelling.

STEP_3. Test

Each of these builds will be **tested at the location to assess the most effective iteration**
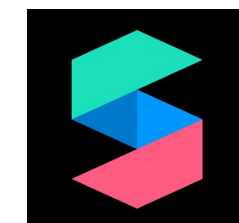
PRACTICE

NARRATIVE ARC & SEQUENCE: FREYTAG'S PYRAMID

1_EXPOSITION: INTRO. CHARACTER

2_INCITING INCIDENT: BEGINS JOURNEY

3_RISING ACTION: ARRIVES AT WELL

4_CLIMAX: WATERS RISE UP
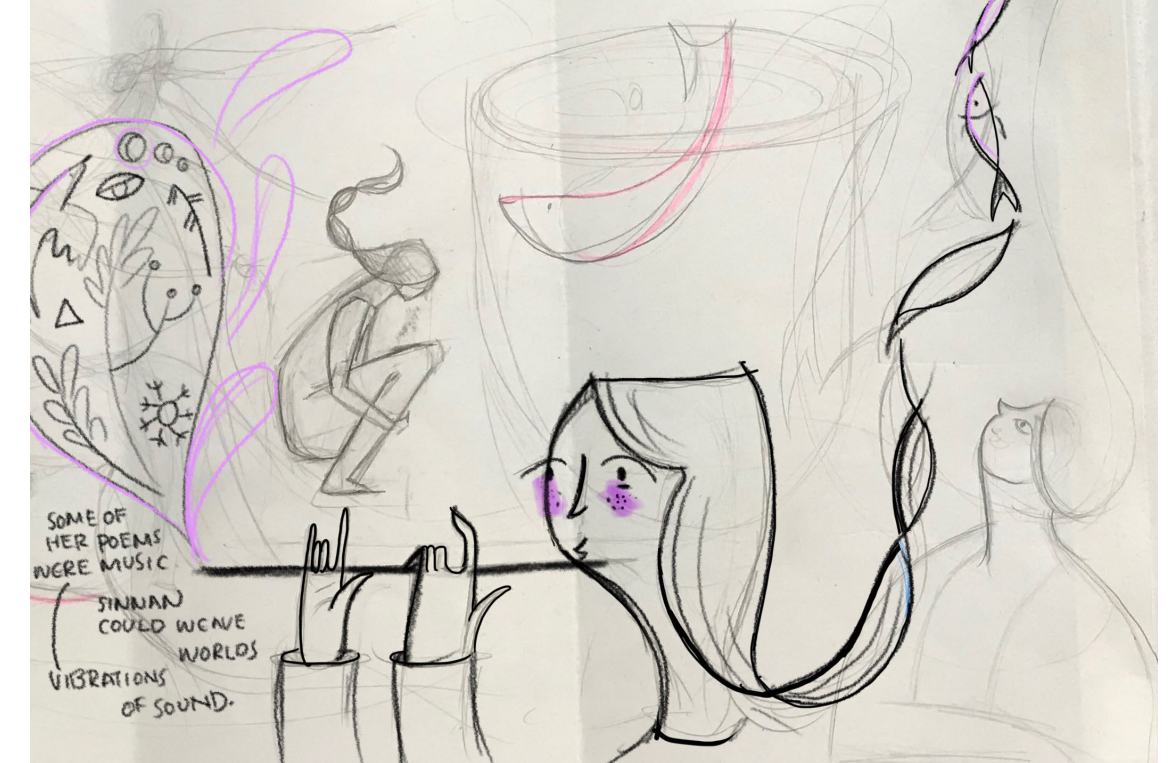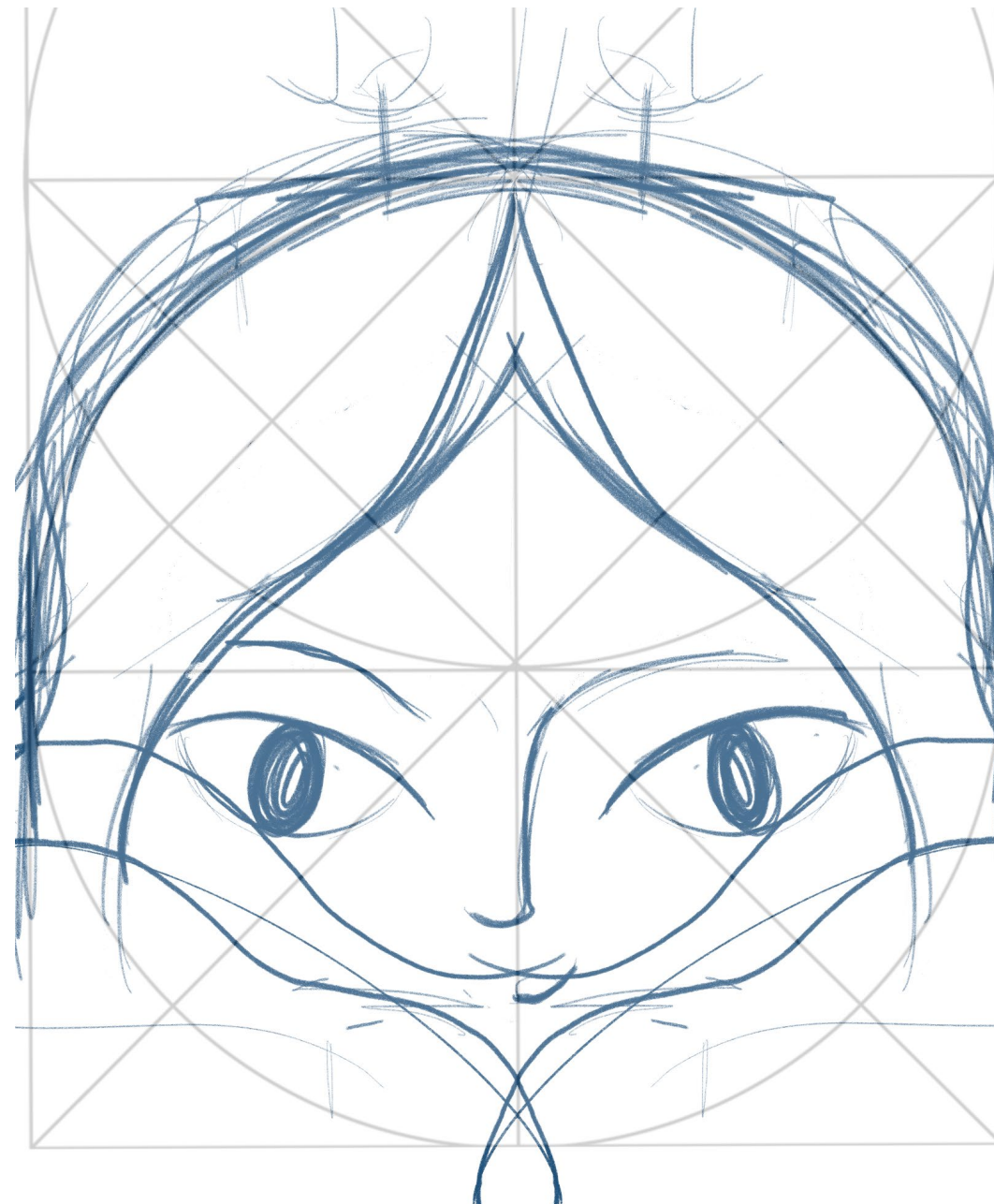
5_FALLING ACTION: RIVER IS FORMED

6_RESOLUTION: RIVER IS SACRED

7_CONCLUSION: GIVES LIFE TO CITIES FULL OF NEW IDEAS AND INVENTIONS.

PRACTICE

PLAN>DEVELOP>TEST

"AT THAT TIME THE HIGHEST FORM OF ART WAS POETRY: THE ABILITY TO CONJURE COLOR & FORM, WEAVE WORLDS WITH WORDS." [7]

SOME OF HER POEMS WERE MUSIC

SINNAN COULD WEAVE WORLDS

VIBRATIONS OF SOUND.

Sinnan is a poet: curious, brave, playful, creative, connected to nature and its cycles. She is not motivated by the desire for popularity or fame, but by search for truth and meaning, and to impart this through her work.

NARRATIVE ARC & SEQUENCE: FREYTAG'S PYRAMID

1_EXPOSITION: INTRO. CHARACTER

2_INCITING INCIDENT: BEGINS JOURNEY

3_RISING ACTION: ARRIVES AT WELL

4_CLIMAX: WATERS RISE UP
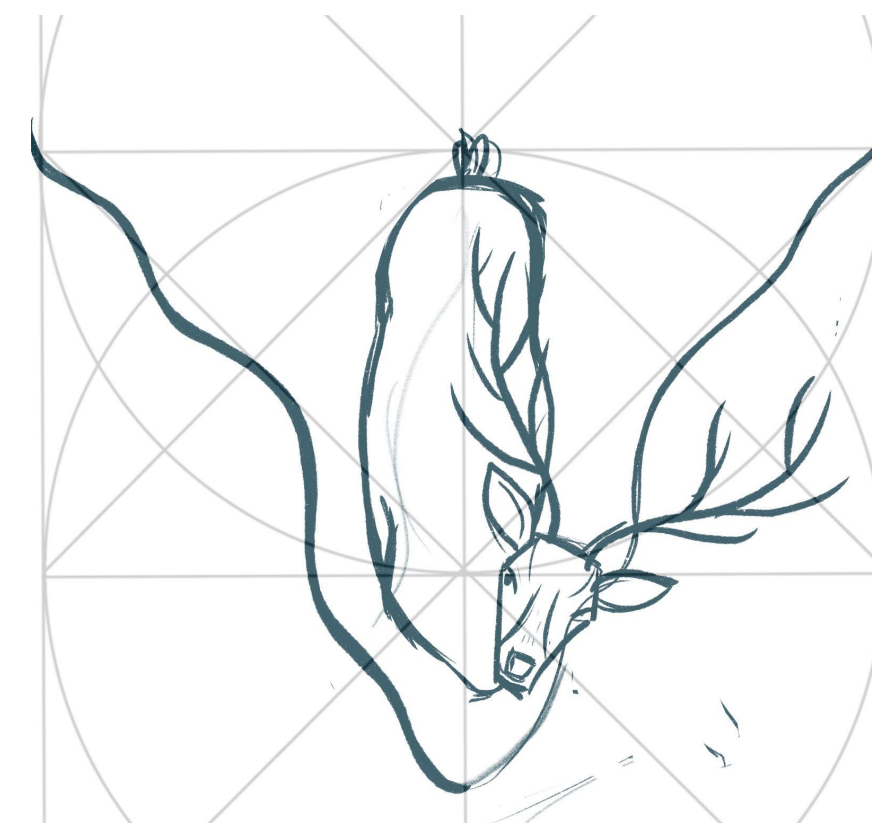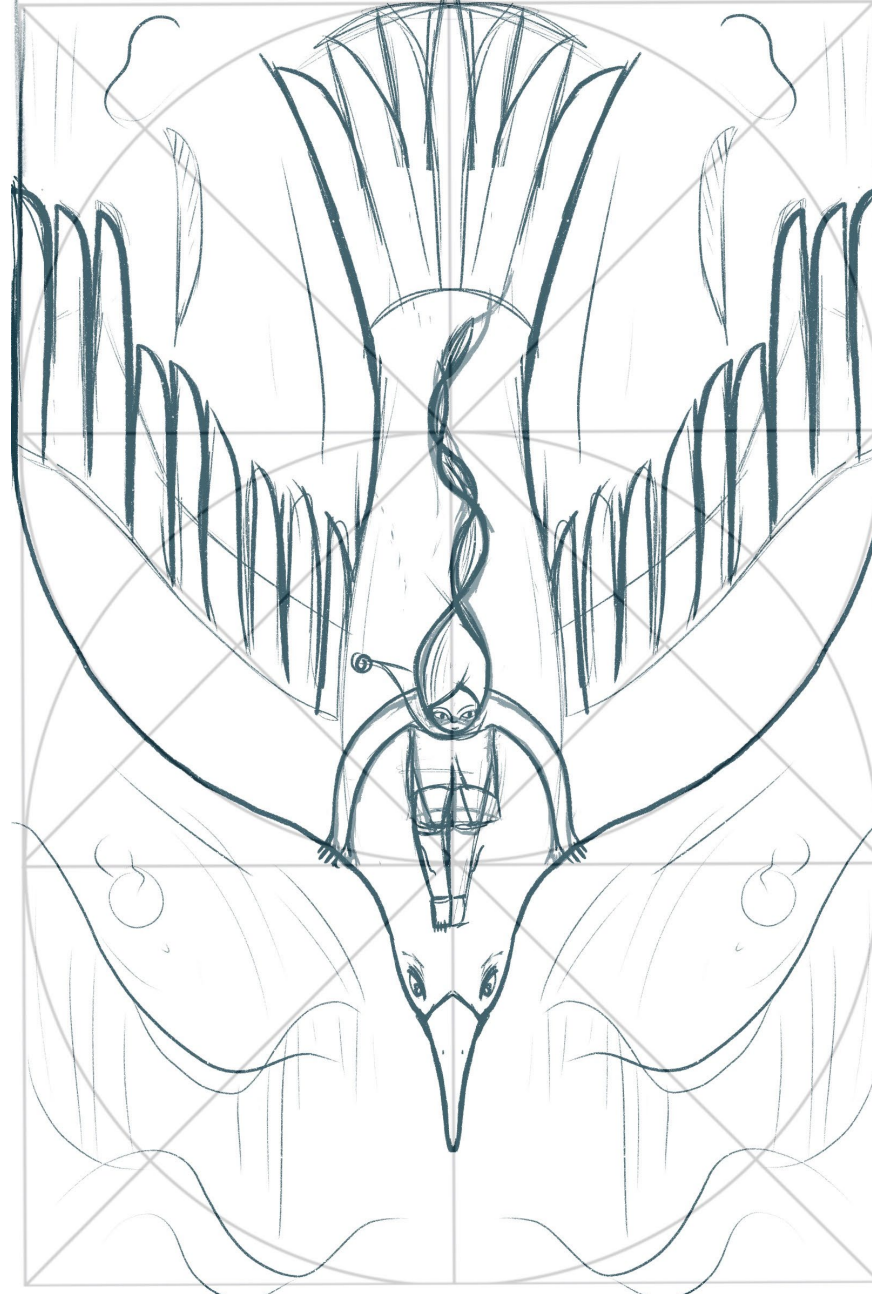
5_FALLING ACTION: RIVER IS FORMED

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7_CONCLUSION: GIVES LIFE TO CITIES FULL OF NEW IDEAS AND INVENTIONS.

PRACTICE

PLAN>DEVELOP>TEST

SINNAN DISAGREES THAT INSIGHT & KNOWLEDGE ARE THE PRIVILEGE OF THE POWERFUL, SO SHE SETS OFF ON A FORBIDDEN JOURNEY TO FIND THE WELL.

She is not in search of power and knowledge but, to bring forth *imbas** for the benefit of all, rather than for the benefit of some. Her intention : to liberate the creative powers of the well so that it's insights are available to all. * divine inspiration

NARRATIVE ARC & SEQUENCE: FREYTAG'S PYRAMID

"IT WAS A DEEP PLACE OF WONDER, OF ENCHANTMENT, OF UNDERSTANDING, BUT ABOVE ALL A SECRET PLACE." [7]

1_EXPOSITION: INTRO. CHARACTER

2_INCITING INCIDENT: BEGINS JOURNEY

**3_RISING ACTION: ARRIVES AT WELL**

4_CLIMAX: WATERS RISE UP

5_FALLING ACTION: RIVER IS FORMED

6_RESOLUTION: RIVER IS SACRED

7_CONCLUSION: GIVES LIFE TO CITIES FULL OF NEW IDEAS AND INVENTIONS.

"After a long journey Sinnan arrived at the well. It was a deep hidden pool, fringed by nine strong hazel trees... and as the year turned red nuts would drop softly into the deep reflecting mirror of the well. Within its depth the wise ones, the old ones, the salmon, consumed each kernel of wisdom, each nut of inspiration" [7]

PRACTICE

PLAN>DEVELOP>TEST

NARRATIVE ARC & SEQUENCE: FREYTAG'S PYRAMID

1_EXPOSITION: INTRO. CHARACTER

2_INCITING INCIDENT: BEGINS JOURNEY

3_RISING ACTION: ARRIVES AT WELL

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FULL OF NEW IDEAS AND INVENTIONS.
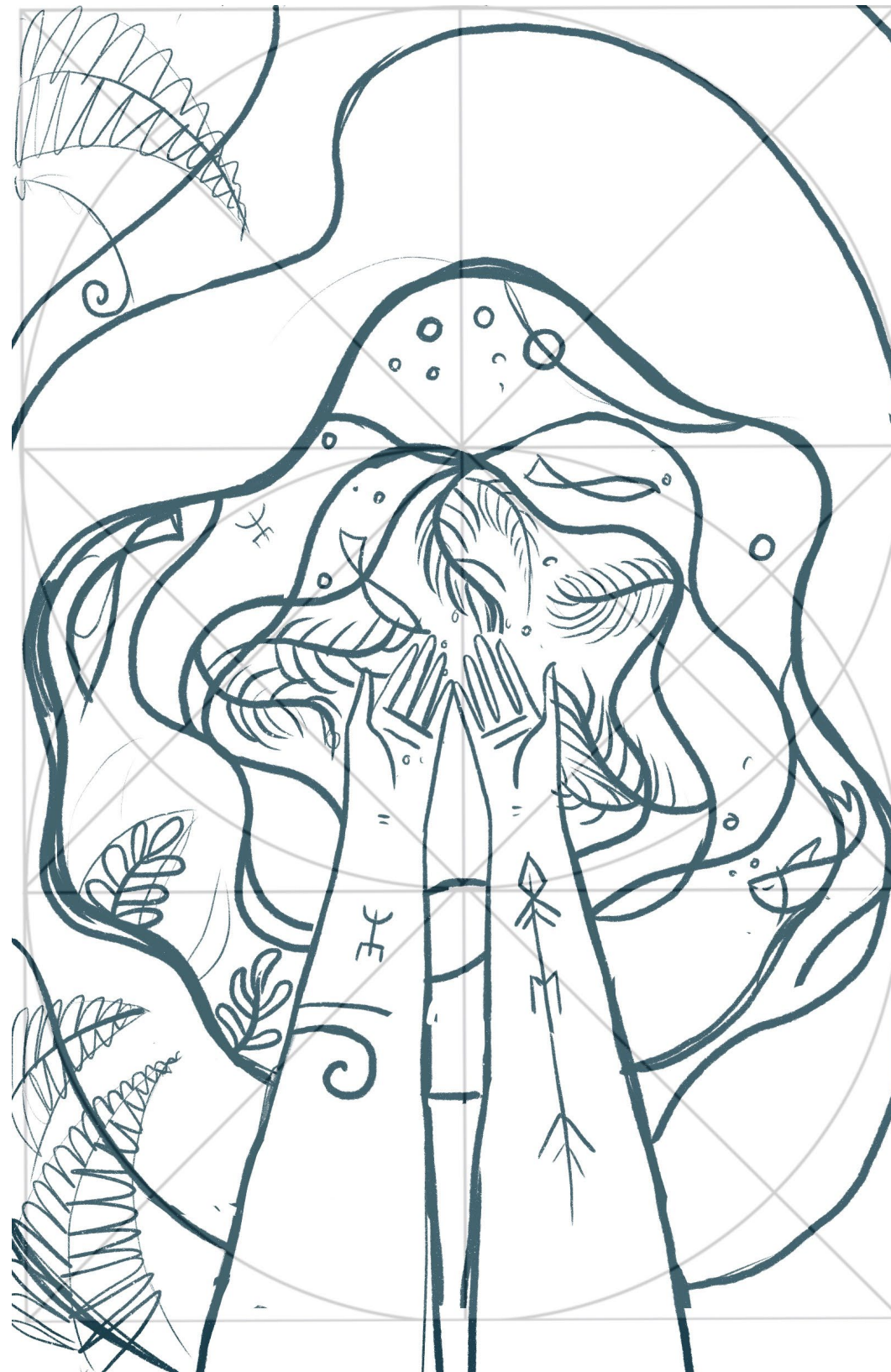
"The salmon stirred in their bonds of knowledge and began to turn in great spirals rising to meet their freedom.

As she reached the well the water rose to greet her. Wild waves reached out for her, overstepping the bounds of knowledge... the waters danced around her." [7]
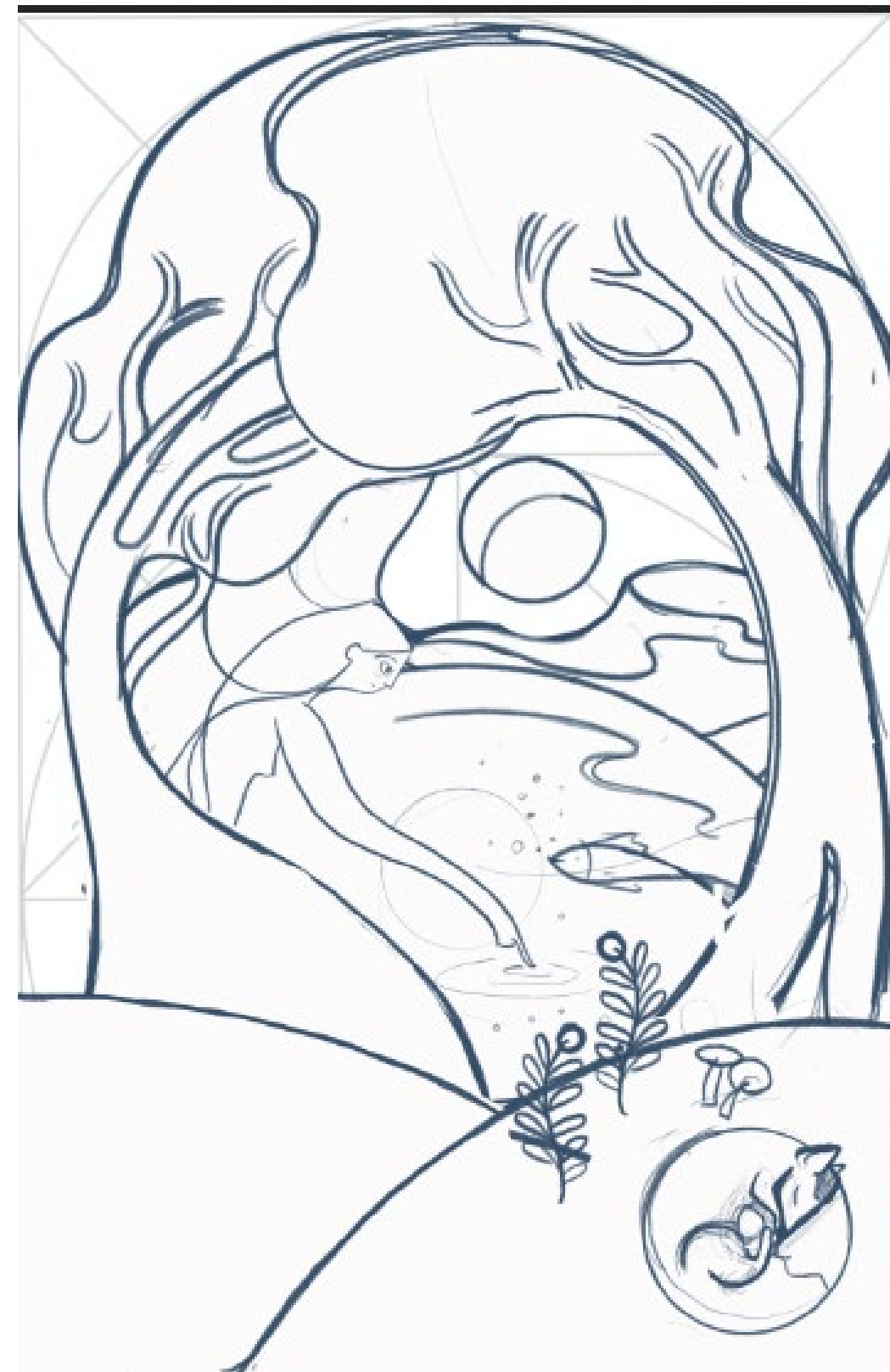
PRACTICE

PLAN>DEVELOP>TEST

SELECTED SCENE:

3_Sinnan arrives at the well

Scene 3 was selected for building and testing in AR Apps.

The scene aims to create a specific user experience:

THE VIEWER SHOULD HAVE THE SENSE THAT THEY ARE ARRIVING AT THE WELL, WALKING THROUGH LAYERS OF FOLIAGE AND VEGETATION, THAT RESPOND AND REACT TO THEIR PRESENCE.
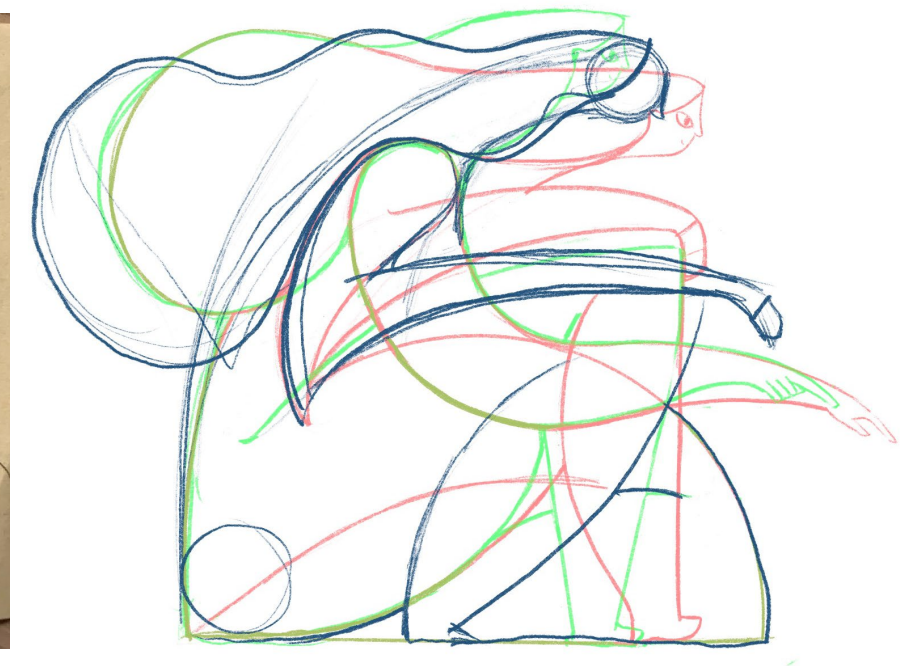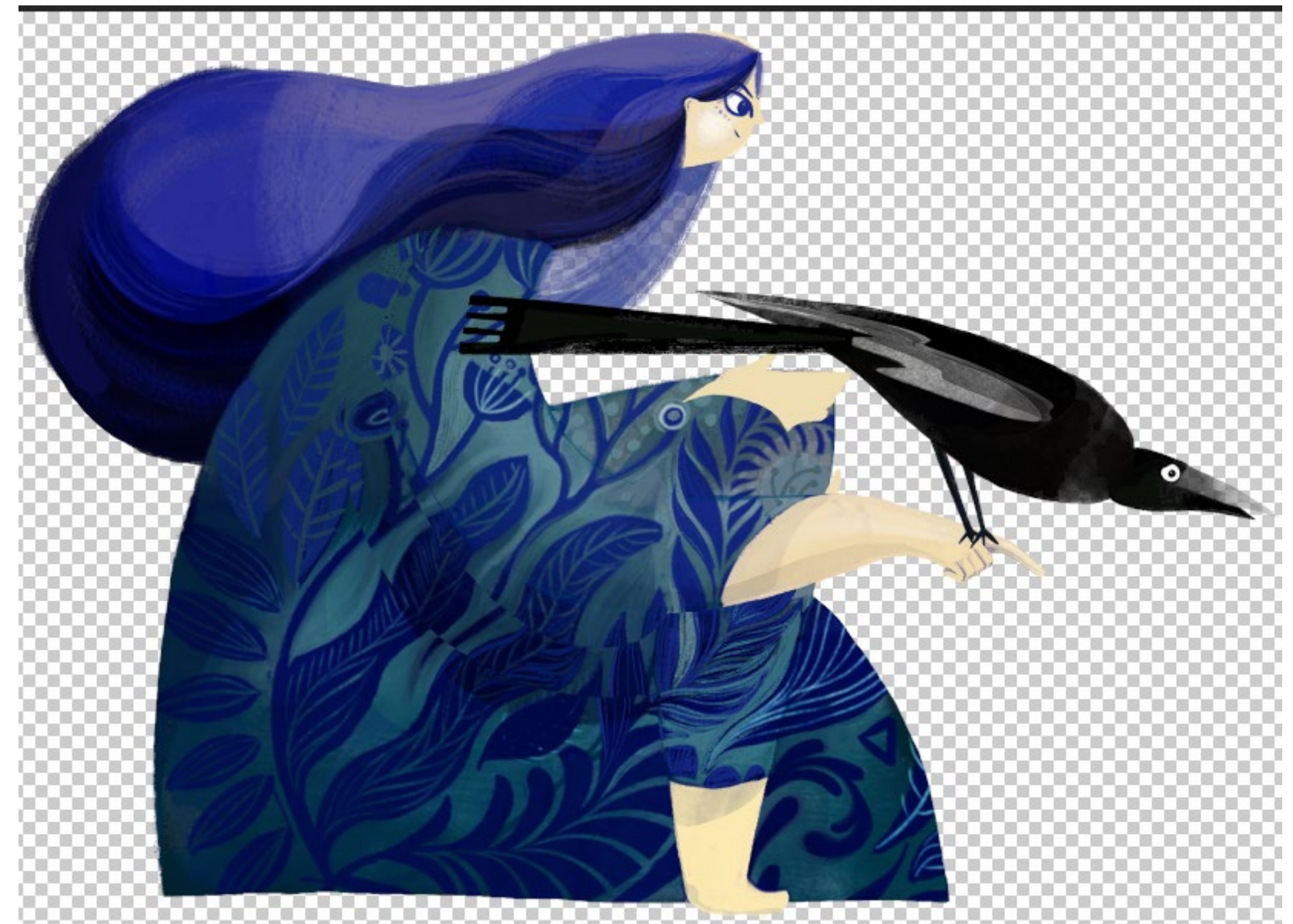

PRACTICE

PLAN>**DEVELOP**>TEST

SELECTED SCENE:

3_Sinnan arrives at the well

FINALLY , THEY ENCOUNTER
SINNAN, ABOUT TO REACH INTO
THE WATER...

PRACTICE

PLAN>**DEVELOP**>TEST
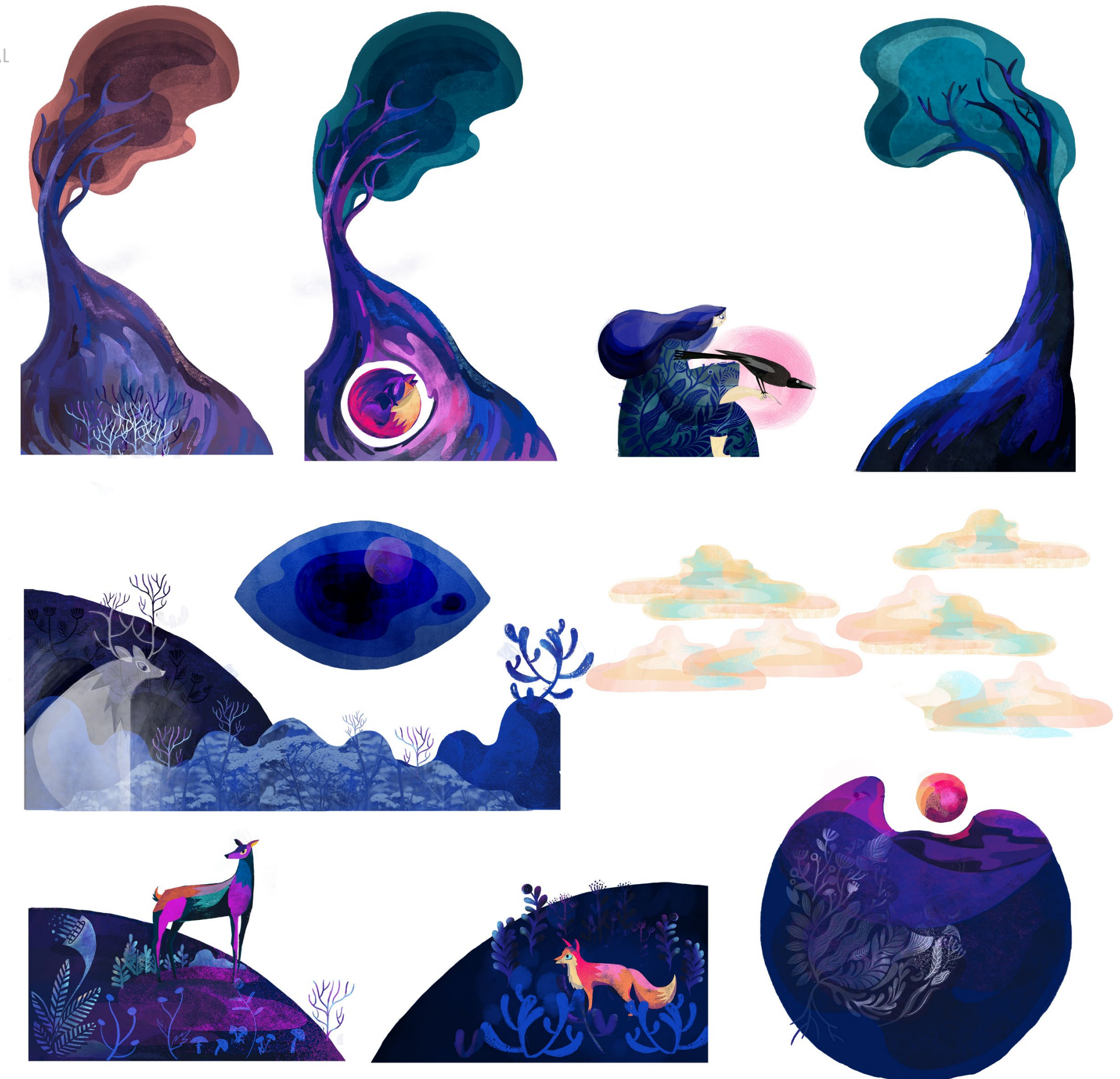
_3 RISING ACTION

Sinnan arrives at the well

Each layer is animated to reveal various elements related to the ecology of the river.

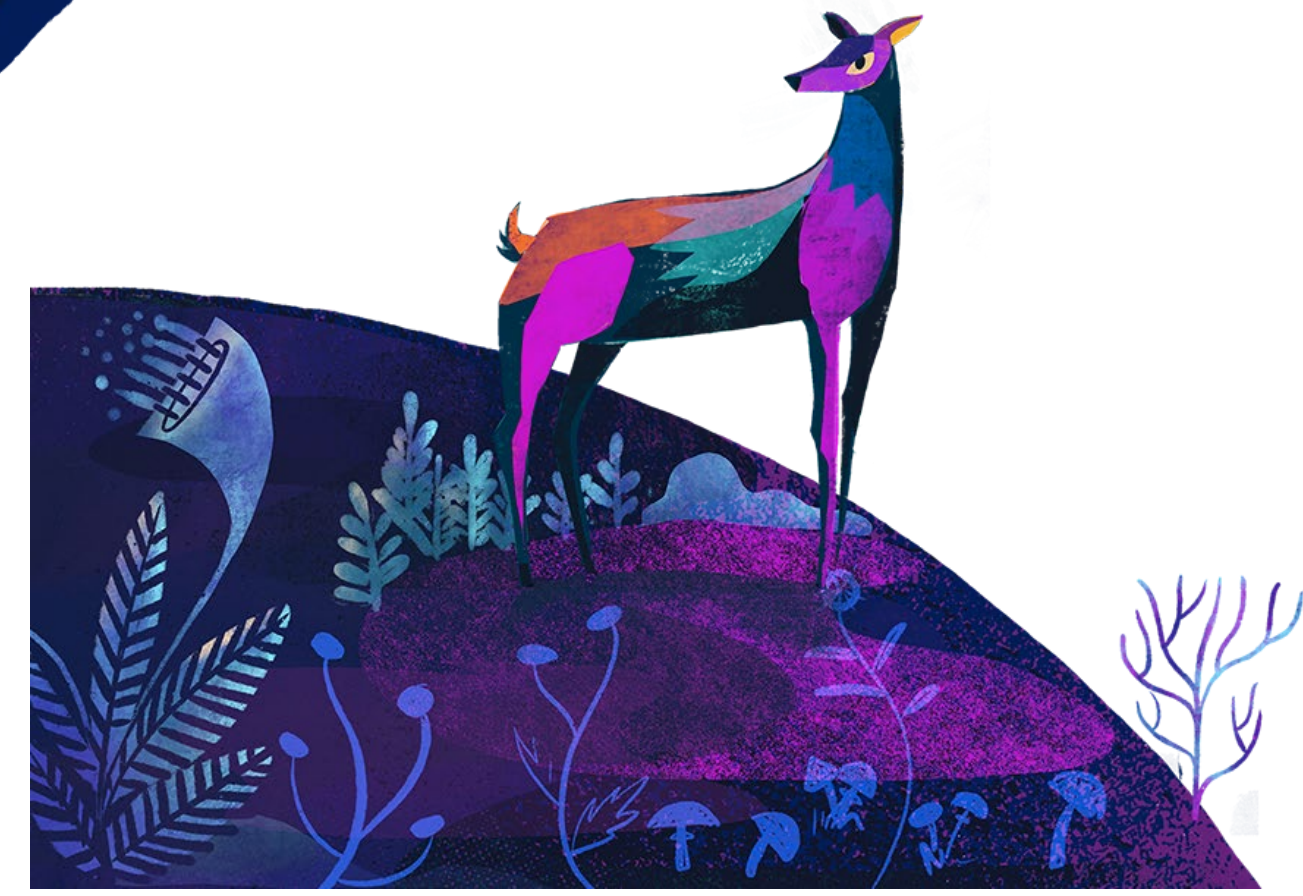Use the AR app to navigate through each layer of the scene. Proximity triggers will activate audio and animation.

PRACTICE

PLAN>**DEVELOP**>TEST
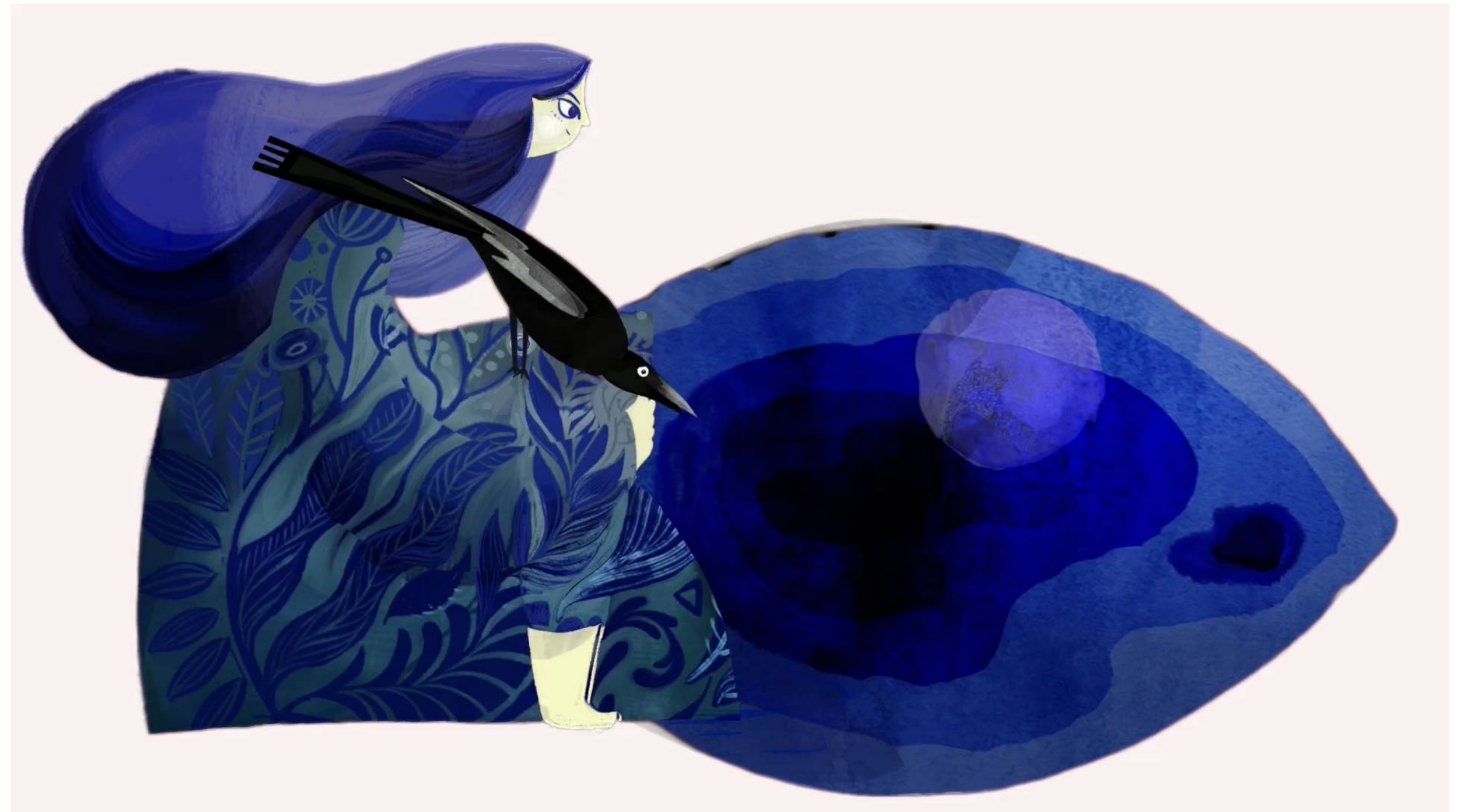
Base layers for Scene 3

PRACTICE

PLAN>**DEVELOP**>TEST

_3 RISING ACTION

Sinnan arrives at the well

Each layer will be animated to reveal various elements related to the ecology of the river.

. Proximity triggers will activate audio and animation as the user navigates through each layer to reach Sinnan at the well
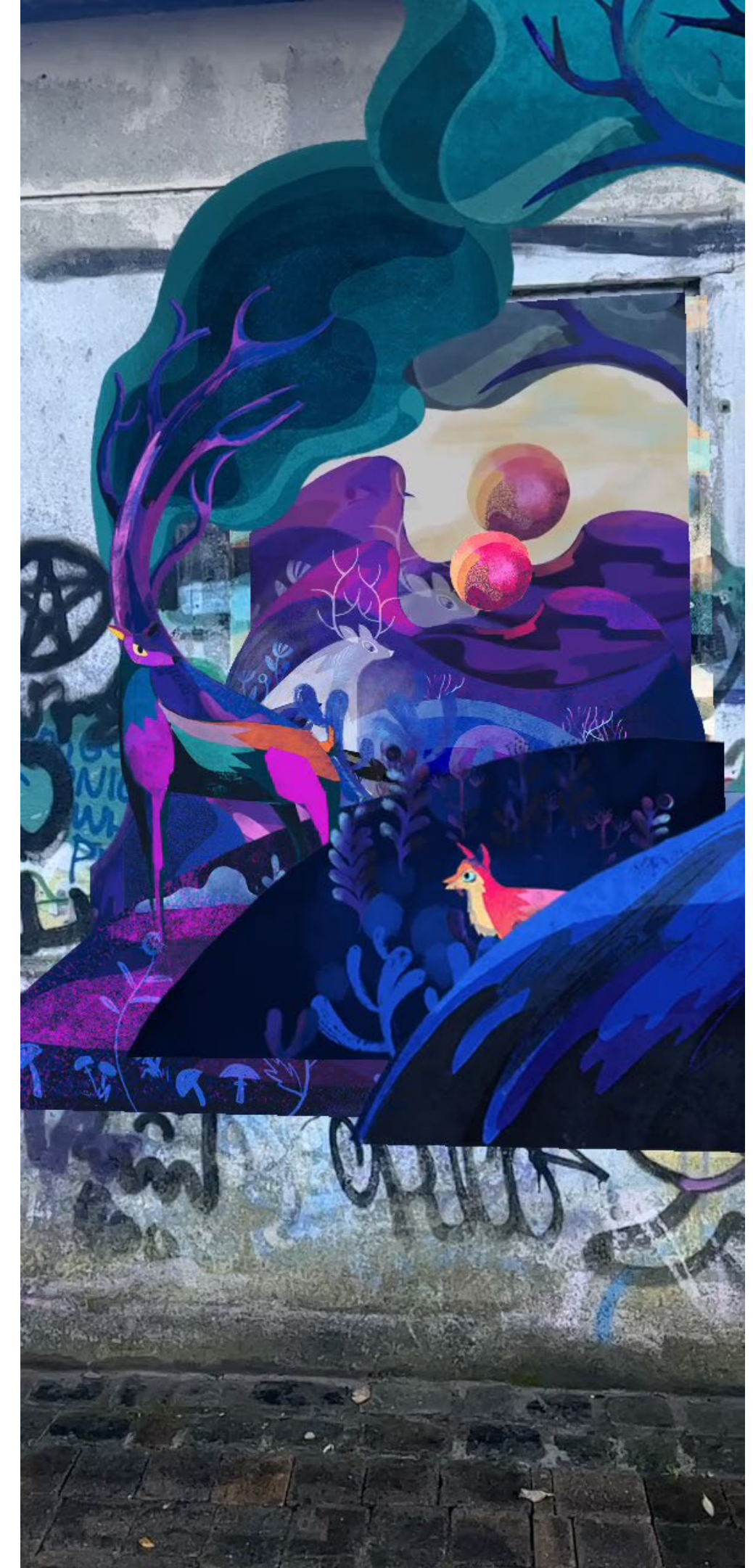

PRACTICE

PLAN>**DEVELOP**>TEST

Tested on-site at location

Using existing graffiti as AR marker

PRACTICE

PLAN>DEVELOP>**TEST**

WHAT'S NEXT?

MOVING FORWARD_

STEP_1.

January >April 2024 Develop the selected AR Scene in Artivive, Adobe Aero & AR Spark.

Leverage the affordances of each app. to design the intended User experience

Document process and workflow of each build. Record Demos

STEP_2.

June 2024

Apply insights obtained in Step 1 to **develop focus groups with artist/designers** interested in Place-based storytelling with AR. Workshop, informal interviews and a survey will aim to gauge: learnability, efficiency, errors & satisfaction. The **System Usability Scale (SUS)** will be employed to this end [9] [10]

STEP_3.

Sept. 2024-2025

Collate data & write thesis.

MOVING FORWARD

Criteria for comparison between selected Apps

TECHNICAL	USABILITY (ARTISTS)	USABILITY (END USERS)	EXPRESSION	SUPPORT
iOS/Android compatibility	Ease of Use	Ease of access	Responsive Interactive features	Newsletter
Access to user stats.	Learnability	Perceived reward	Sound	Community forum
File types accepted	Efficiency	Ability to record and share experience	3D Capability	Artist calls/ residencies
Max. Asset Upload Capacity	Native creative capabilities	Access to additional artwork info	Object Obscuration	Mentorship
Interface Stability	Subscription Cost	Overall quality of viewing experience (satisfaction)	Artwork info	Tutorials
	Platform: Browser vs Desktop		Triggers: Marker/Geo location	Summits
	Satisfaction			

MOVING FORWARD

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Leonardo 2020, 53, 263–267.

>2. Geroimenko, V. (2018) Augmented Reality Art : From an Emerging Technology to a Novel Creative Medium. Cham, SWITZERLAND: Springer International Publishing AG. Available at: http://ebookcentral.proquest.com/lib/limerickit/detail.action?docID=5311243.

>3 Young, T.; Marshall, M. An Investigation of the Use of Augmented Reality in Public Art. Multimodal Technol. Interact. 2023, 7(9), 89; https://doi.org/10.3390/mti7090089.
https://www.mdpi.com/2414-4088/7/9/89

>4 Artivive Frequently Asked Questions (2023) Online. Available at: File Types - Artivive

>5 Sara F. Martine L. & Emmanuel R. (2023). Promoting a city-river balance within neighbourhoods in transition along the Rhone 100093–100093-.
https://doi.org/10.1016/j.cacint.2022.100093>Ariel, G. (2018)

>6 Innocent, T. (2016) 'Play & placemaking in urban art environments', in ACM International Conference Proceeding Series. Association for Computing Machinery. Available at:
https://doi.org/10.1145/2946803.2946805.

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>8 Magan, M. (2022). Listen to the land speak a journey into the wisdom of what lies beneath us. GILL BOOKS. Retrieved December 10 2023 from https://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=3391686.

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>10 System Usability Scale (SUS). Online. Available at: System Usability Scale (SUS) | Usability.gov

REFERENCES

QUESTIONS?

THANK YOU!