

Technology spine of the Bass Coast

A fantastical landscape featuring a large green dinosaur on the right, a volcano in the background, and a sunset over a body of water. Two people are standing on a rocky shore in the foreground, looking out at the scene. The sky is filled with colorful clouds and a large, glowing orb.

PRODUCED BY PHORIA

Transforming the Trail with Digital Innovation

The Bass Coast Dinosaur Trail will be enhanced with layers of digital experience that elevate the on site experience, expand its reach around the world, and lay the foundations for novel new attractions for years to come.

Visitors will use the digital field guide to activate augmented reality learning layers, discover points of interest, and track their progress through the Bass Coast dinosaur trail. It will act as the central hub for games, like the fossil hunt, and the trip map, that brings it all together.

The digital experience layer will be managed by a single content management system, where each site can create and manage immersive 3D content, as well as more familiar formats like image and audio.

An easy to use interface will let site managers upload content, anchor it to the site, and combine to make articles and interactive experiences.

The content will be delivered appropriately for users, device and context, able to be pre downloaded for high quality immersive experiences, streamed on site, or packaged and accessed remotely.

These digital layers and experiences will be supported by on site physical installations, from simple sensors to responsive displays, all interconnected with the overarching visitor experience.

What is possible with the technology spine?

The digital field guide, coastal content system and infrastructure are combined to make up a robust, future proof and cohesive experience. However each site is able to combine these elements to tell different stories, and capture the unique nature of that destination.

The pieces that combine to deliver the technology layer allow for this, with flexibility and usability for creators and visitors front of mind. Running through that will be a consistent experience enabled by the Digital Field guide, a dynamic map guiding to points of interest, a jumping off point to games, audio and a wide variety of mixed media experiences





Fossick for fossils

Unlock learning and collectibles through play in augmented reality.



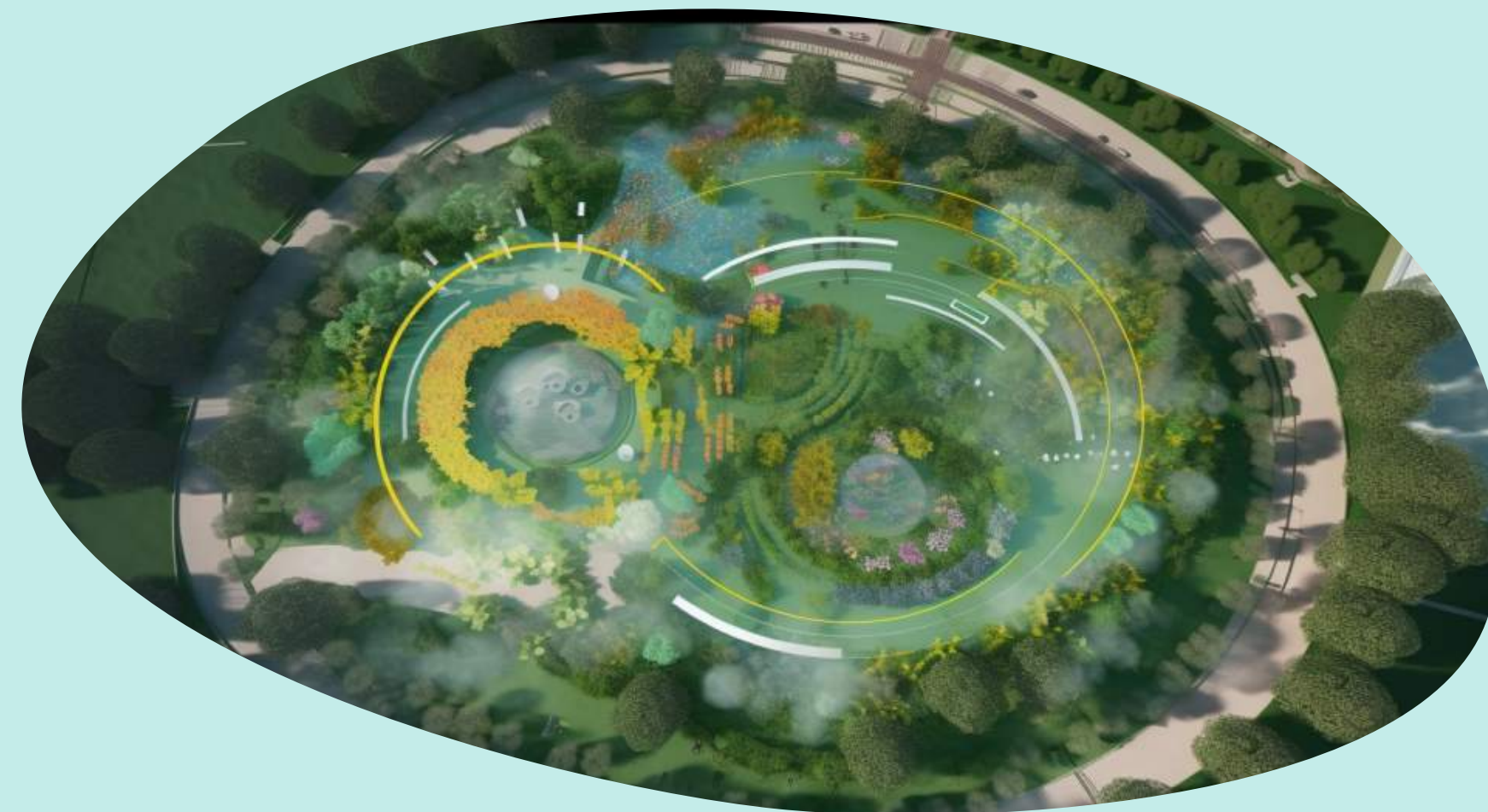
Immersive play

Tech enabled play spaces come to life with light and color



Walk through stories

Visitors can walk through digital art installations by local talent



World scale Augmented Reality

World aligned AR brings the Jurassic to every inch of the every day

What makes up the technology spine?

Every site is different, and tells a wide variety of stories in a wide variety of ways. The tech strategy enables this with a set of core capabilities that can be combined and chained to create unique but cohesive experiences at every site.



PART 1

The Digital Field Guide

The digital field guide is the experience hub for visitors, letting them learn and plan before their journey, navigate to the things they are most interested in, and activate games and augmented reality experiences.

Interactive map

As visitors travel through the trail, they will be able to see their progress, showing completion of activities, discovery of collectibles, special offers and events. This map can be used to trigger location specific content, like augmented reality or audio experiences.



Enabled by

Custom map back end

A back end map system will use the device GPS to track the users location, trigger updates when content is nearby or conditions are met. An example would be a trigger to listen to the audio podcast when leaving one area on the way to another.

[GPS navigation, web, application]

Fossil finder adventure

The digital field guide will lead users to key destinations, where the fossil finder experience will be triggered. When within the area, a visitor can switch to AR, and follow visual clues to discover the holotype fossil. When this is complete it will unlock an in world animation, showing the entire skeleton, and visual representations of its final form.



Enabled by

Augmented Reality

The users location will make the augmented reality function available, and this will be apparent on the interactive map. When activated, the phone camera will activate, showing visual clues to help the visitor discover the target area. Once they satisfy the condition, a rich 3D animation will be triggered.

[Augmented Reality, 3D content management, GPS navigation]



Collectibles and achievements, unlock-able content and experience

As visitors progress through different digital activities and activations, they will collect different souvenirs, tokens and digital artefacts to remember their progress. These artifacts may be used to replay animations, or possibly be tokens allowing access to future special events or offerings.



Enabled by

Visitor journey management platform

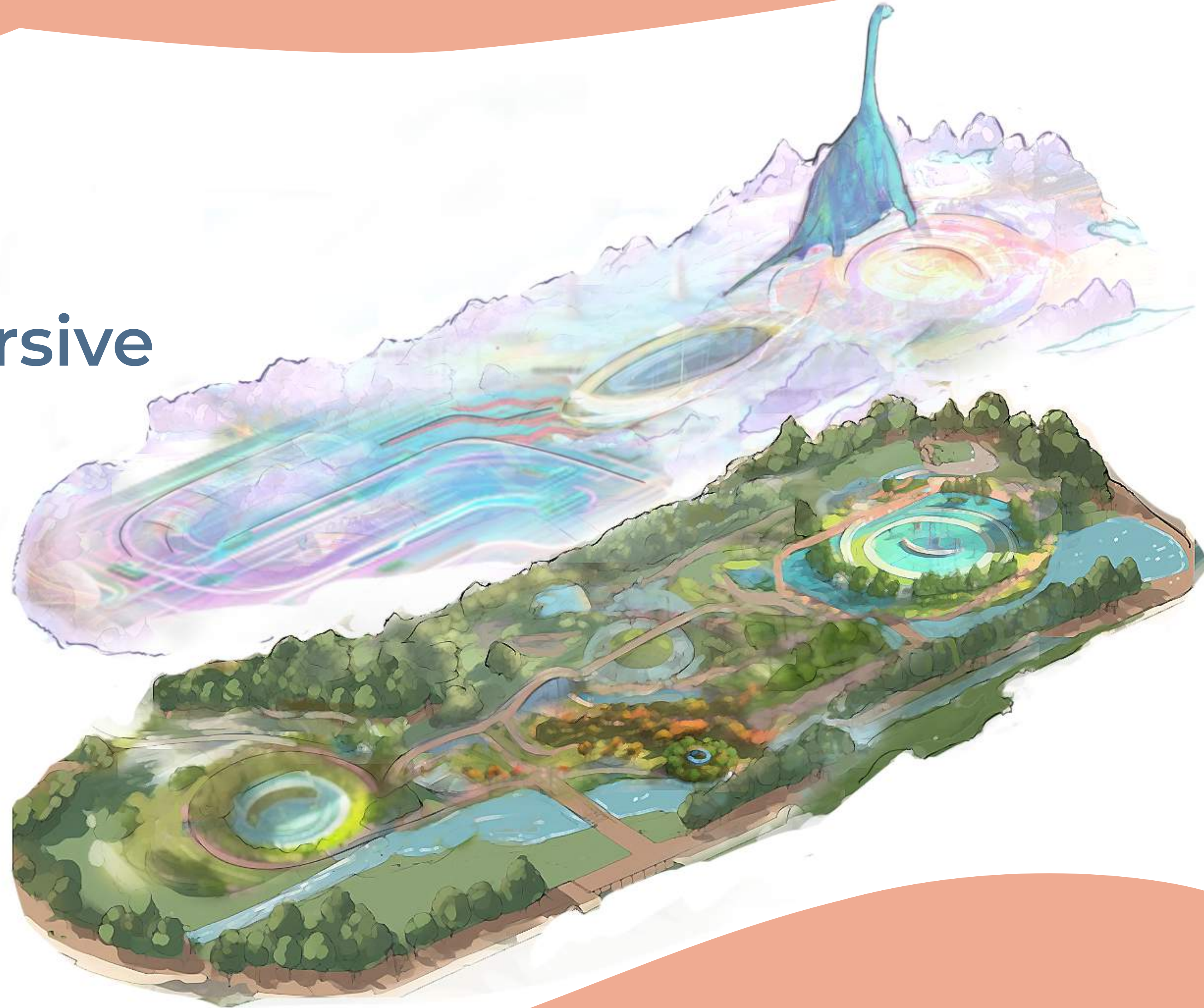
A back end that manages user data will allow for the planning and preservation of trip data, progress through activities, and discovery of new ones. By allowing user to create persona, their trip can be customised, visualised and augmented, binding a variety of experiences into a self managed guidebook.

[Database, server, client interface, analytics]

Coast wide immersive content

A future focused attraction trail needs a content system that can support the next generation of digital experiences. Easy to use content creation tools will let artists, scientists and storytellers embed their creativity into the coast itself.

This system will deliver spatial, AR, 3D and more traditional media to a wide range of devices both off site and remotely.



World aligned AR content

These experiences will all be couched in a site wide digital twin content management system.

Each layer will be anchored to a destination, with its own supporting content like articles, videos and a wide range of immersive material. Each destination will have points of interest that can trigger site specific AR layers, like artist offerings, informational walks or whatever creative

Enabled by

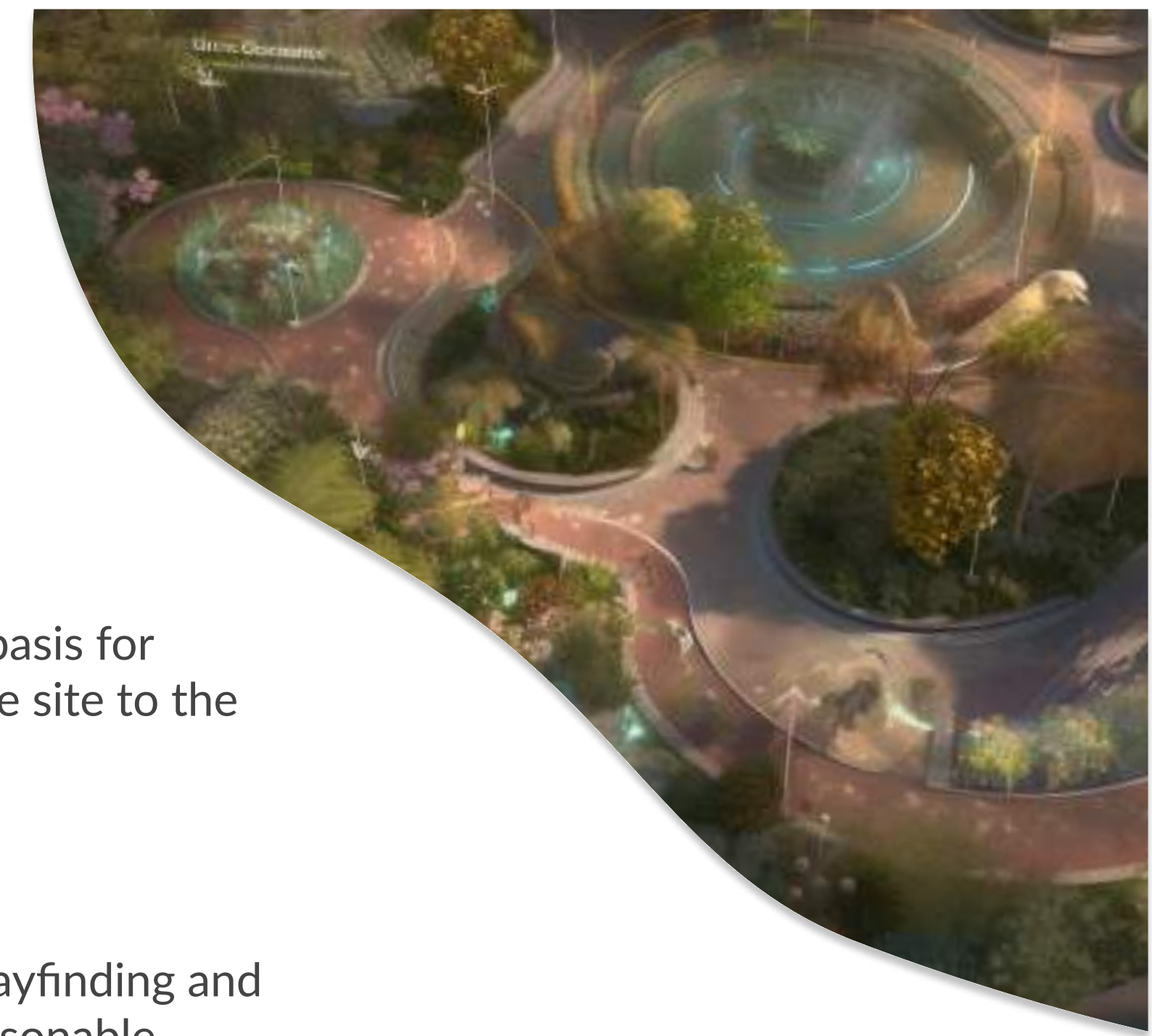
Digital twin

A 3D scan of the site, that will act as the basis for aligning content, as well as showcasing the site to the world.

AR content alignment

AR alignment at a top level can include wayfinding and navigating to points of interest, with a reasonable accuracy, or high accuracy after triggering a point of interest, allowing for content aligned to very specific parts of the site.

[Database, server, client interface, analytics]





Some early scans completed of the caves. This type of data would form the basis of the digital twin that enables the digital layer. It also acts as content in its own right, as a way to preview a site, learn about it, or just enjoy its beauty.

Content management

Immersive content can take many forms, and many traditional content types can be made immersive. The content system will allow creators to embed media in their site, from information digital signage, to rich 3D animations. This content can then be experienced on site, as an augmented reality experience, or remotely as a digital tour. The content will be handled flexibly, so can be repackaged and repurposed for different audiences. The system will allow for the addition of new content and capabilities incrementally over the years.



Enabled by

XR Content database

All immersive content stored in structured way, agnostic to final output. This means it can be delivered via AR on site, in 2D on device remotely, via web or native app. Storing the content this way makes it easier to update and deliver adapted to use case.

WebXR - 3D deployed on the web

3D Digital Twin plus aligned content deliverable off site via browser, can also work on site where user has no application. This device agnostic approach makes content more accessible and reusable.

Native application development

A native application is recommended, that will be able to download this content at its highest resolution and deliver at the best performance. This will allow users to get the best experience regardless of connection. As the content is stored remotely updates to content will not require updates to the application.

[WebXR, native application, computer vision, GPS]



Physical site augmentations

Across the destinations, things like sensors, and haptics will bring physical spaces to life. More advanced experiences could include LED displays integrated into sculpture, full body tracking creating truly reactive experiences.



Amplify play with multi- sensory stimulation

Sites can be augmented with things as simple as a sensor that triggers lighting changes and sound effects as children enter particular areas. A more complex experience might involve an LED screen and body tracker, where a user walking past, will see themselves stepping into a jurassic world.

These systems would be built to appropriate specifications for long term durability, but also software and upgrade flexibility, meaning that content could be adapted over the years, or new components could be added to extend the experience.



Enabled by

Simpler sensors

Infrared, sound, pressure, all small simple inputs that can feed into a physical experience

Distributed speakers

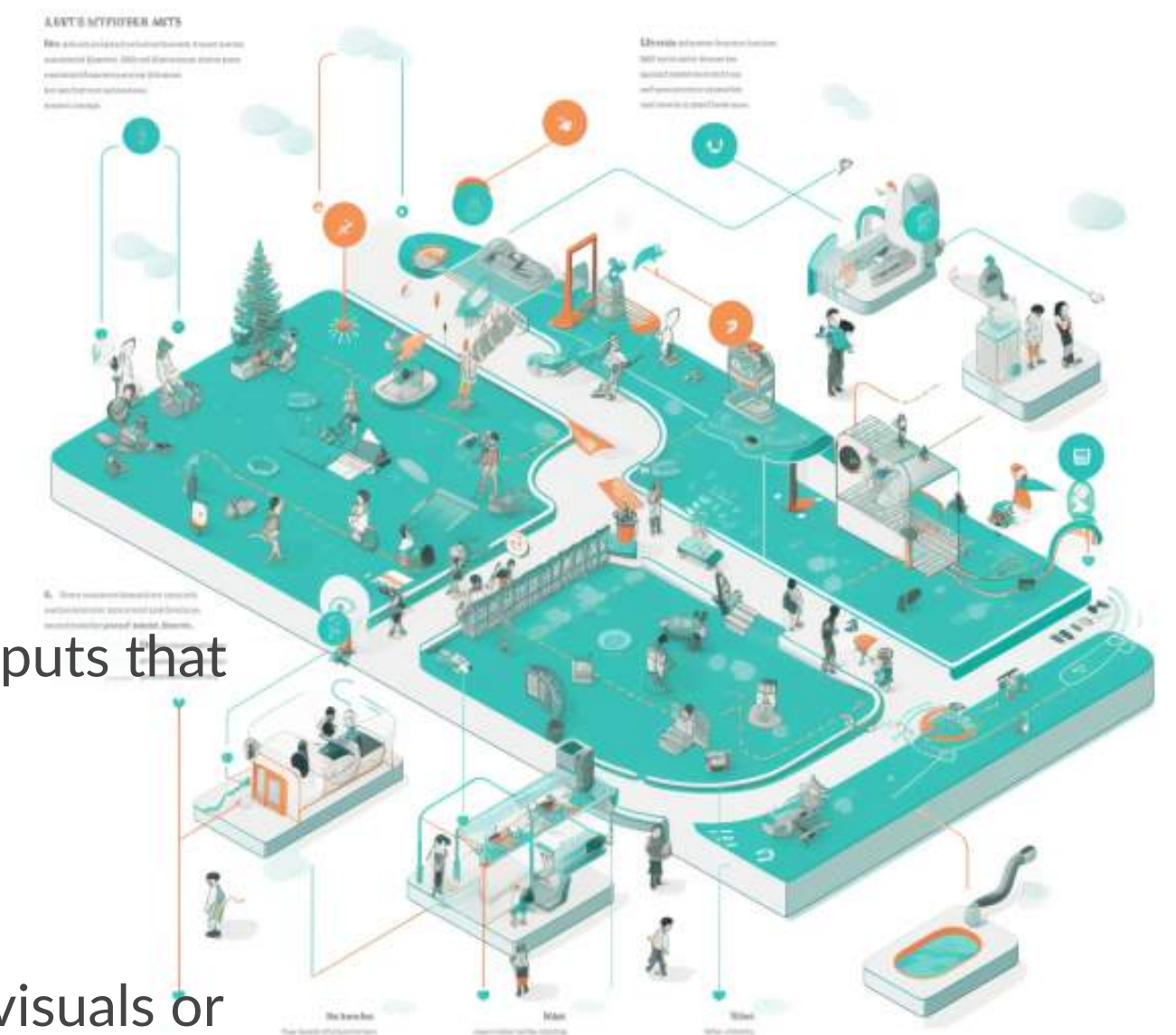
Integrated speakers either connected with visuals or not, playing loops or as part of interactive experience

Multipoint lighting

Multiple sources of light that can be turned on and off, change colour, and change the feel of an area or support a specific moment.

Projection display

Requires low light, less dependable for continuous play, but creates magical effect



In the concepts for Inverloch, a proposed area of play integrates basic sensors that trigger lighting and sound changes as children move through the space.



LED display

Durable proven outdoor display system, can be interactive, or play video/ stills, and be updated, may include touch or tracking.

Body tracking

vice that tracks multiple people, and can be used to influence digital experience, eg body movements affect visuals on screen



Larger scale immersive experiences could include LED screens, full body tracking sensors, and interactive gameplay that will leave lasting memories and generate significant interest.

Digital field guide imagined

Pre Trip

- Parent or decision maker sees interactive preview of site via social media,
- After consideration follows prompts to 'plan their trip' by downloading the field guide
- The field guide presents the map of the site, and possible attractions
- Parent selects 'must see' sites which become highlighted

During Trip

- On arriving in the region the field guide notifies them of the closest attraction, suggests pathway through must see sites
- Field guide will suggest content based on location, for example an audio podcast between sites, or a target location in the vicinity
- Visitor can set a target destination, which the field guide will navigate to, but will also trigger a map call to their map
- When a visitor arrives within a certain distance of the site, they will be notified of AR features
- When they raise their phone they will see any points of interest to navigate to, or they can navigate in 2D
- Each point of interest could reveal a content layer, a digital game, or give access to more information



Post trip

- Visitors could explore the map, following their previous route, each area would have connected content that had been unlocked, like 3D animations, and extra content
- New areas and content sections would appear on the map, allowing visitors to preview this new content, and encourage them to return and complete it

A trip to wonthagi

Choose your adventure

- User arrives at site and opens their field guide
- It shows the available points of interest, highlighting the botany walk the user had favoured
- The user selects the experience, which switches the map to wayfinding mode, where they can navigate in 2D, or bring the phone up to use AR

Walk to learn

- They arrive at the digital start point, which loads in the Botany AR layer, a digital trail lays out in front of them, with names and descriptions hovering over the different gardens
- In AR mode, as they follow along the trail, each section triggers a corresponding audio and supporting visuals
- A user may bring their phone down, switching to 2D, where the same content will be delivered linearly as text and image blocks, or put their phone away but still listen to the audio guide

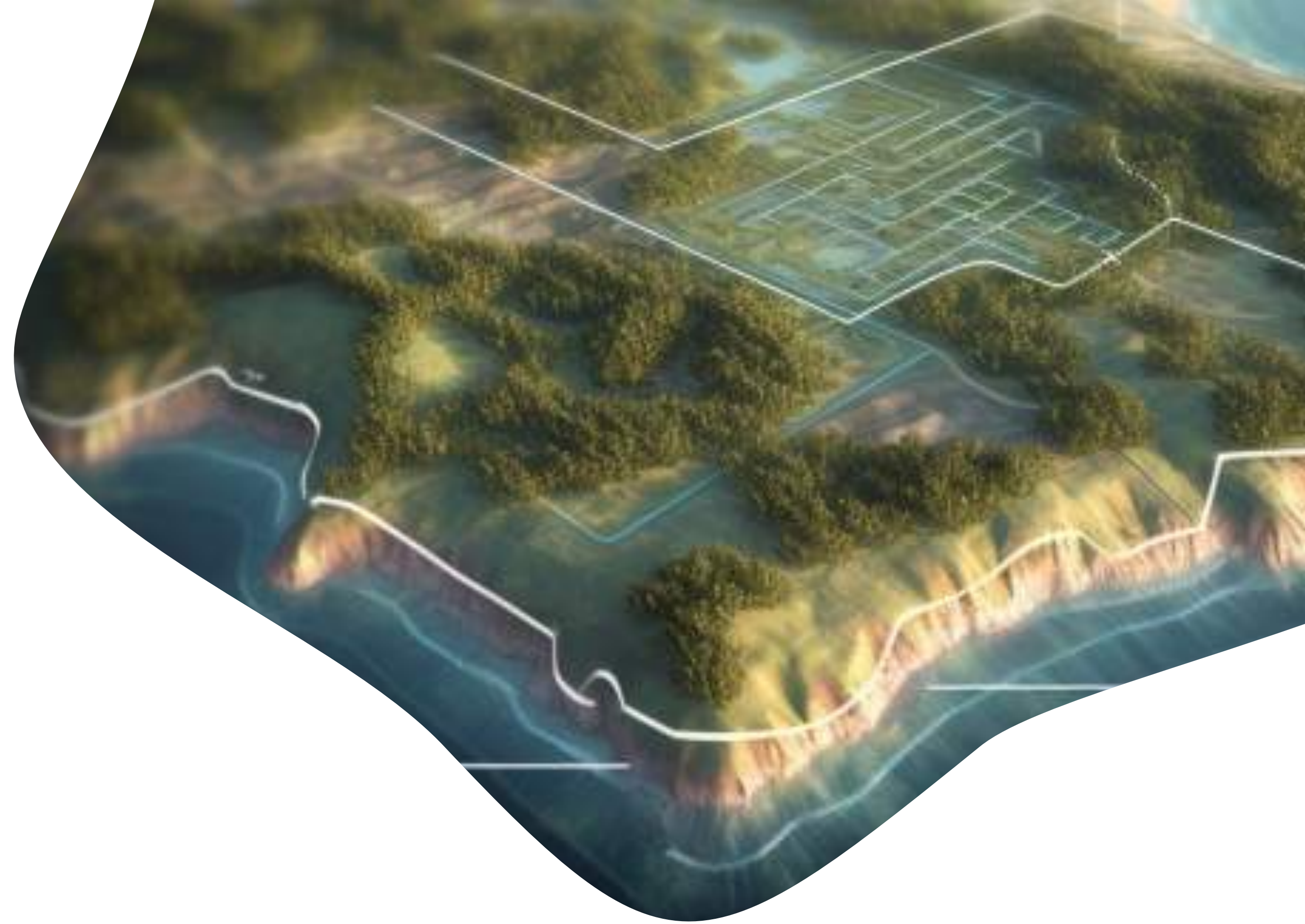
Discover more

- The Botany tour complete, the user then returns to the main site map, and sees that the 'walk through time' tour starts near them,
- They lift their phone and look around and see its start banner just around the hedge, they make their way and step into it, triggering the park to dissolve into the primordial soup where life began



Delivery and costings

The current recommendation proposes the entire vision, designs to be rolled out across all sites. It would be developed as a complete vertical slice for the initial site, feature complete, and would allow for the creation of digital content, mile markers and experience augmentation for sites that have not been completed.



Deliverables

Immersive media content system

Content back end supporting 2D and 3D media types, as well as support for interactive elements like find the fossil game

Hero dinosaur fossil hunt

Interactive game play spanning all sites collecting fossils and unlocking hero dinosaur animations and collectibles

User Profile Management

Comprehensive tracking of user journey, task completion, and content triggering for a personalized experience.

Interactive map

An intuitive navigation tool with basic positioning capabilities to guide visitors through the Bass Coast Dinosaur Trail

Native Application

A feature-rich mobile app offering enhanced performance and the ability to pre-download content for the best possible user experience.

On-Site Sensory Enhancements

An integration of sensors, lighting, and experience management systems to augment the physical environment and amplify user engagement.

Enabled by

Unified and Scalable System

A strategically designed approach that consolidates development resources and costs to deliver a cohesive and continuous experience across all sites, while enhancing individuality.

Flexibility in Implementation

The ability to adjust the scope of the project by focusing on specific features or a smaller scale, offering streamlined solutions without compromising efficiency.

Layered Capability Adaptation

The option to remove or modify specific layers of functionality across sites, ensuring a tailored experience that best fits the needs of each location.

Recommended Comprehensive Rollout Plan

An intuitive navigation tool with basic positioning capabilities to guide visitors through the Bass Coast Dinosaur Trail

Provision for Future Expansion

A flexible framework that enables the seamless integration of digital content, mile markers, and experiential enhancements for sites pending completion, ensuring continuous improvements and growth.

Technical Infrastructure

Content Management System (CMS)

Technical Design and Development
 Capable of hosting and sharing various media types with spatial alignment compatibility and device-agnostic delivery

Required

Nice-to-have

\$175,000

User Profile Management System (UPMS)

Account creation, user journey tracking, content trigger and completion, and extended group system functionalities, ticketing, events and calendars

\$125,000

\$190,000

WebXR Experience Centre

Integration with CMS and UPMS
 On site augmented reality and other content delivery
 Digital Twin preview, and wayfinding technologies

\$350,000

\$275,000

Mobile Application Experience

Integration with CMS and UPMS
 On site augmented reality and other content delivery
 Digital Twin preview, and wayfinding technologies
 iOS and Android App Design and Development

\$350,000

\$275,000

Interactive Map Experience

MapBox Design and Development
 Advanced integration and wayfinding solutions: \$175,000

\$125,000

\$175,000

Ongoing Annual Costs

Server Maintenance, Hosting, and Support

\$27,125

\$44,275

Site Activations

Find the Fossil Game (Across all sites)

Game Design and Development
 3D Art, Animation, AR Integration, and connection to UPMS

Required

Nice-to-have

\$125,000

Site 1 - Wonthaggi

Experiences Creation and Integration 5x Experiences to be created (3D Art, Animation, Sound & Experience Design)
 Onsite Digital Display, Human Body Tracking, Analytics, and Hardware components

\$225,000

\$250,000

Site 2 - Inverloch

Experience Creation: 1x Experiences layer to be created (3D Art, Animation, Sound & Experience Design)
 Onsite control System for physical activation (Lighting & Audio)
 Hardware (Solar Panels, Network Cabling, Site Server, Infrared Sensors)

\$45,000

\$50,000

\$135,000

Site 3 - San Remo

1x Experience to be created (3D Art, Animation, Sound & Experience Design)

\$45,000

Site 5 - Eagles Nest

1x Experience to be created (3D Art, Animation, Sound & Experience Design)

\$45,000

Site 6 - The Caves

1x Experience to be created (3D Art, Animation, Sound & Experience Design)

\$45,000

Costing summary

Costing has been developed to differentiate between core requirements that deliver entire vision at a minimum, and additional elements, that will extend the capabilities, but aren't integral to delivery.

[See costing appendix attached here.](#)

Technical Infrastructure

Core elements of the system that would support content creation, access across devices, web based delivery, interactive map and ongoing support.

Nice to have features that would extend the functionality like extended group experience features, ticketing, native application development and navigation

Site activations

Multi-layer content development for Wonthagi pilot site, game creation, and technical design and development for Inverloch physical install

Additional content layers created for all sites by PHORIA, and higher complexity physical installation experiences proposed at Wonthagi.

	Required	Nice-to-have
Technical Infrastructure	\$802,125	
Nice to have features that would extend the functionality like extended group experience features, ticketing, native application development and navigation		\$1,309,275
Site activations	\$400,000	
Additional content layers created for all sites by PHORIA, and higher complexity physical installation experiences proposed at Wonthagi.		\$610,000
Total	\$1,202,125	\$1,919,275

Outcomes

- A digital companion that threads the many stories of the Bass Coast Dinosaur history, present and future together
- An easy to use content system that sets stakeholders, storytellers and artists up for success in creating these place based digital stories
- A world class mix of cutting edge immersive experience and off site content that will draw visitors from all around the world.

