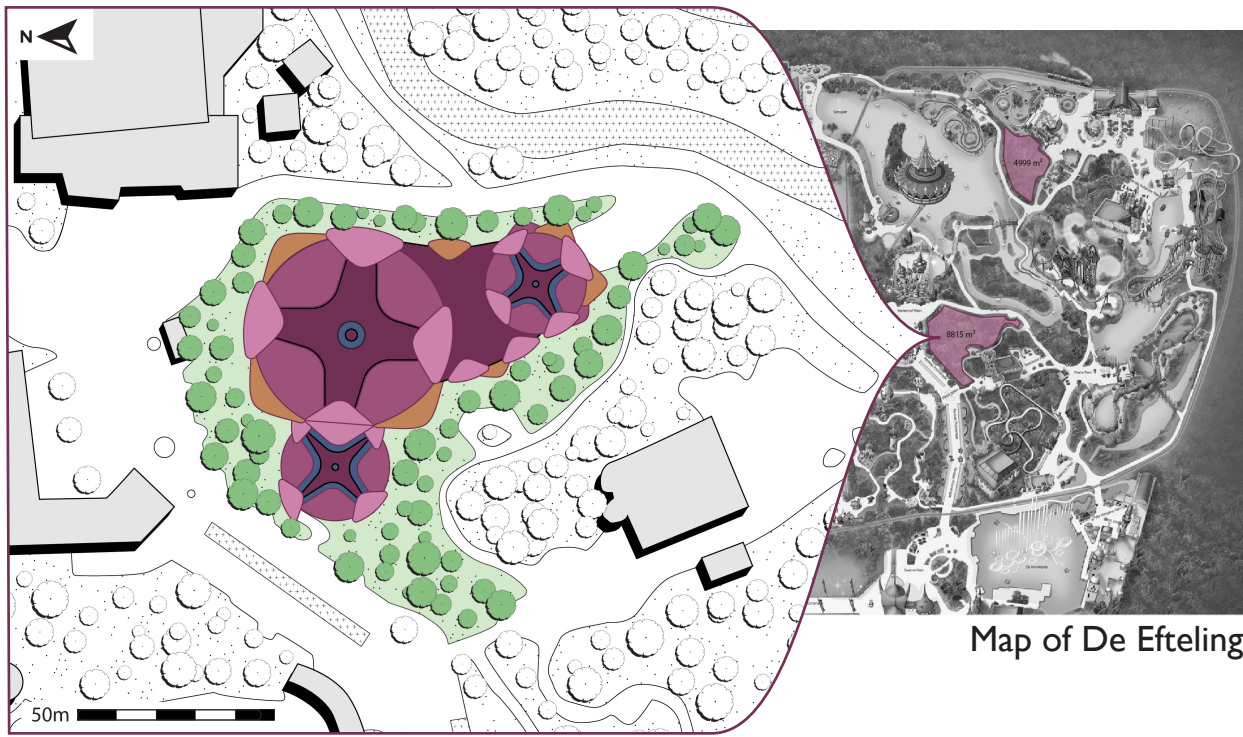


Location Choice

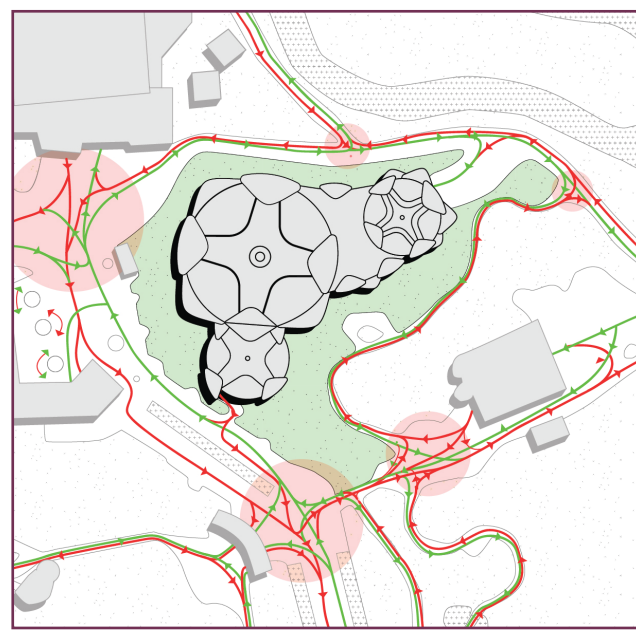
The location and orientation of the Thumbelina ride within De Efteling was chosen based on multiple factors. The top priority for the location was to have sufficient space to be able to fit the ride in the park. Based on the budget, the average footprint of a ride in De Efteling is about 5000 m². Extending the park is not possible due to the surroundings already being occupied. After analyzing and calculating two areas of forest space within

De Efteling were large enough for the Thumbelina ride. The second priority for location was the proximity to similar rides. The Thumbelina ride targeted users from the ages six and above. This eliminated one of the two areas, as it was located in the heart of the thrill rides, for older users. The second area was then selected based on the most available space and also being closer to similar rides.



Orientation & Flow

The orientation of the entrance and exit was decided based on modelling the flow of people in the surrounding areas along with the influence of other attractions, catering, and merchandise stores. The ride entrance is tucked away, so it is not conflicting with the main centrepiece castle and prevents areas of high congestion. Additionally, visitors will be able to see the ride entrance from across the park over the river. The exit is situated in the lower left corner, allowing riders to re-enter the flow of visitors in a less busy area. The main drawback of this exit is that it does not give the user the option to return quickly to the attraction entrance, however with the style of ride this was not considered an important factor.



Exterior

The exterior of the attraction is designed to mimic the bud of a flower. The colour palette and materials have taken inspiration from existing attractions at the Efteling to ensure it is coherent with their brand identity.



System Requirements

The Attraction must:

- Allow for easy crowd control and surveillance.
- Comply with safety standards.
- Tell clear and coherent story of Thumbelina.
- Be able to process a between 800-1200 people per hour.
- Be suitable for ages of 6 and above.
- Be immersive from queuing all the way to the exit.
- All (sub)systems of the Attraction must be able to be accessed, controlled, and monitored by employees.

N² Diagram

The N² Diagram shows the interfaces between the various subsystems with outputs horizontally and inputs vertically. A global approach has been taken so the exact part of the subsystem which deals with this interface is not considered. From the N² diagram it is clear that the Mechanics and Operating system contain the most interfaces and become the backbone of the whole ride.

Entrance	Ordered flow of people into groups	Riders are immersed in the optical illusion of being shrunk			
Informs the queue of the waiting time	Load platform		Monitor whether people have entered the ride, informs ride whether it is safe for the ride to start		
		Ride 1: Decor & Layout	Inform of position, and technical problems		
Informs outside visitors of ride status	Monitors location of ride. When aligned, inform platform to allow visitors to enter ride	Informs location of ride. When in position, inform objects to move, and initiate SFX	Ride 2: Mechanics & Operating system	Monitors location of ride. When aligned, inform platform to allow visitors to leave ride	Signals ride has ended to initiate story
			Monitor whether people have exited the ride, informs ride whether it is safe to leave	Unload Platform	Grouped flow of people dispersing out
			Inform Safety and status of visitors exiting the ride		Exit

Integration & Test (Plan)

The Integration & Test Plan considers the integration of the subsystems during the construction of the Thumbelina ride. Before construction, the subsystems will have conducted their own internal integration and test plan. First, the plan begins with the validation of the subsystems' components. The phases below have a separate goal within the plan, representing different steps of the integration process. Finally, the validation phase tests the fully constructed ride, approving the system as a whole.

