

DEEP SECRET B A B Y L O N

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INSPIRATION TEXT

Deep Secret by Diana Wynne Jones

EXCERPT:

“We called them the hanging gardens almost at once, and I think that is what they were, but they were not at all like you’d expect. The first we knew of them was that we were walking on spongy, tufty stuff that gave off a lemony smell and seemed to sway a little under our feet.”

“The tufty surface went up quite steeply, swaying more and more as we went, and after a bit our candles picked out a tower half buried in growing things. It looked like the rook from a chess set, only easily house-sized. After another bit, there was another tower on the other side, and this one looked like a pagoda made of china. The growing things draped everywhere. The candles lit up flowers and the smell was too sweet, worse than the Body Shop. Then there was a tower on the near side again, like a pyramid with too many steps - or maybe that was one of the later ones. Anyway, after the first three towers, the path was going up nearly vertically and the flowery, scented ground was not just swaying, it was swinging about. By then it was quite obvious somehow that all the towers were tall as lighthouses, with their bottom way, way down in an abyss, and that the gardens were hung from the towers high in the air.”

MOOD:

In the novel, Babylon has been discussed as a mysterious and mythical place, as such this segment is very dreamlike and surreal.

CORE VISUAL ELEMENTS:

- Hanging gardens
- A path that leads upwards that is very high in the sky
- Three towers: one like a rook, one like a pagoda and one like a pyramid
- Everything is covered in hanging greenery

ART STYLE

OVERVIEW:

The fantastical and dreamlike nature of the setting will be reflected in the stylisation of the piece. Drawing inspiration from surreal artists, subjects are to be broken down into simple forms then exaggerated and contorted in terms of scale and shape. The chosen hues and saturation of the colours will reflect a dreamlike environment. The final piece will be constructed in 3D and put together using the Unreal engine.

INSPIRATION:

Inspiration for this project comes from many sources however, the main sources of inspiration are: stylised 3D games; Roger Dean; and other surreal artists. These have been broken down and analysed below according to Anhut's (2016) art style atoms method:



- Forms have been stylised by being reduced to simple geometric shapes
- Repetition of simple shapes provides consistency with the piece
- Hand painted textures
- Textures have visible brush strokes
- Forms are exaggerated through shadows and highlights that have been painted into the textures (especially around the edges)
- Alpha maps have been applied to simple models to add extra detail

Image: *Besieged*



- Organic forms are exaggerated: curves are extra curvy and forms are squishy
- Analogous colour scheme give a natural feel
- Shadows are created in rich saturated colours (in this case bright purples)
- Highlights are created through duller, lighter colours
- Texture is created through lines that follow the shape of the rocks in a patterned manner which helps to further exaggerate the form
- Far-away objects depicted with light, desaturated colours which give the illusion of distance and mist

Image: *Mulan Development*



- Man-made structures blend with the environment which helps give the image a mystical feeling
- Shapes are repeated in both the organic and inorganic subjects which gives the image cohesion
- Organic shapes are curved but unrealistically distorted
- Saturated analogous colour scheme is used for both organic and inorganic

Image: *Pathways*

Additional inspiration comes from mountain climbs: the view obscured by mist; trees draped in lichen; and the feeling of grand distances and heights.



Own photographs used

COLOUR PALETTE:

Taking inspiration from the dreamlike images of Roger Dean, the colour palette will use an analogous scheme with soft, mildly desaturated colours. The colours are primarily cool, natural hues. Purple is also incorporated into the theme to add to the magical overtones. This will emphasise both the organic setting of the hanging gardens and the mystical, dreamlike quality of the scene.

Darker tones (such as shadows) are to be saturated whereas lighter tones (such as highlights) are to be desaturated as suggested by Jeremy Vickery (2010) and demonstrated in *Mulan Development*.

Shadows are to be hue shifted towards blue or purple while highlights are to be hue shifted towards a yellow-green.

Non-organic objects (such as the towers) will use blue-gray colours (as if constructed from stone) or sandy orange colours (as if constructed from lime-stone).

Images: *Yes Floating Jungle*
& *Floating Islands*



ENVIRONMENT PROPS

STYLE:

The environmental props for this piece will be stylised according to the above style guide. Specifications for the different props is outlined below.

TOWER PROPS:

Within the scene there are three man-made structures: a tower that looks “like the rook from a chess set”; “a pagoda” and “a pyramid with too many steps” (Jones, 1997). Reference for these structures is included to the left in **Figure 01**. They are to be “half buried in growing things” and draped in hanging plants. Additionally, they are to appear very tall as if they extend into the sky. This will give the scene a mythical feeling.

I want to exaggerate this by making the towers seem ancient and degraded. To do this, they will be designed and textured so they seem to be made from old blue-grey stone. My aim is to make it seem as though these ancient towers have been taken over by nature. This juxtaposition between the man-made towers and the organic flora which will help them to become focal points within the scene.

Finally, these three towers each have a very different and distinct shape to them. As demonstrated in *Besieged*, I aim to simplify them down to simple geometric shapes and style them in a way that makes each tower distinct while also keeping some cohesion between them.

Image: Figure 01





FLORA PROPS:

The flora makes up a majority of the props with the primary focus being the “tufty”, “swaying” path that connects the three towers together. The towers are to be “draped” in hanging plants, with the “gardens hung...high in the air” and flowers are to be abundant. (Jones, 1997).

The primary goal of the flora props is to create a very organic, ancient atmosphere and to give the illusion that scene is high in the air. To achieve this hanging mosses and lichens, and other such plants that are found high on mountains, will be featured heavily. Small trees with surreal shapes will grow precariously from the path and towers. Their gnarled, twisted roots will help to add to the ancient feeling and fit with the surreal atmosphere. The path will feature tufty grass and flowers. These flowers should similarly reflect the notion of the hanging gardens. References for such plants can be seen to the left.

To keep with the mystical, organic atmosphere the flora should use lime-green to blue-green hues. Tree bark can be grey-blue in colour and covered in moss. Additionally, flowers can deviate from the colour scheme by incorporating bright blues, purples or warm hues such as yellows and oranges.

Own photographs used

TEXTURES:

Textures will be hand painted in a 'painterly' fashion. These are to be stylistically realistic; that is, they are to be representative of the real object but simplified and heightened. Natural patterns, such as tree bark or rough stone, are to be exaggerated. Some highlights and shadows are to be painted into the texture to emphasise the form of the model. An example of this style and how it is adapted from a photograph is shown to the right.

To be efficient, tileable, reusable textures will be used where possible. Similarly one texture can be adjusted (in terms of hue, saturation etc.) to give variety to a model. This would be applicable for the flowers: a texture with orange petals could be quickly adjusted to have yellow petals. The same model can then be placed in multiple different areas and be given variety through the different textures.

Image: *Dirt and Foliage*



ENVIRONMENT LAYOUT

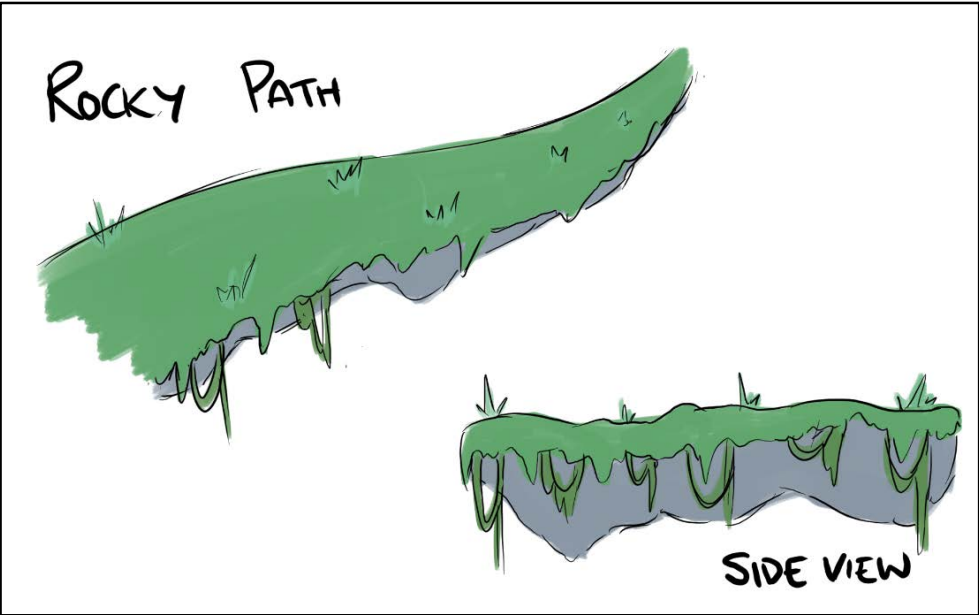
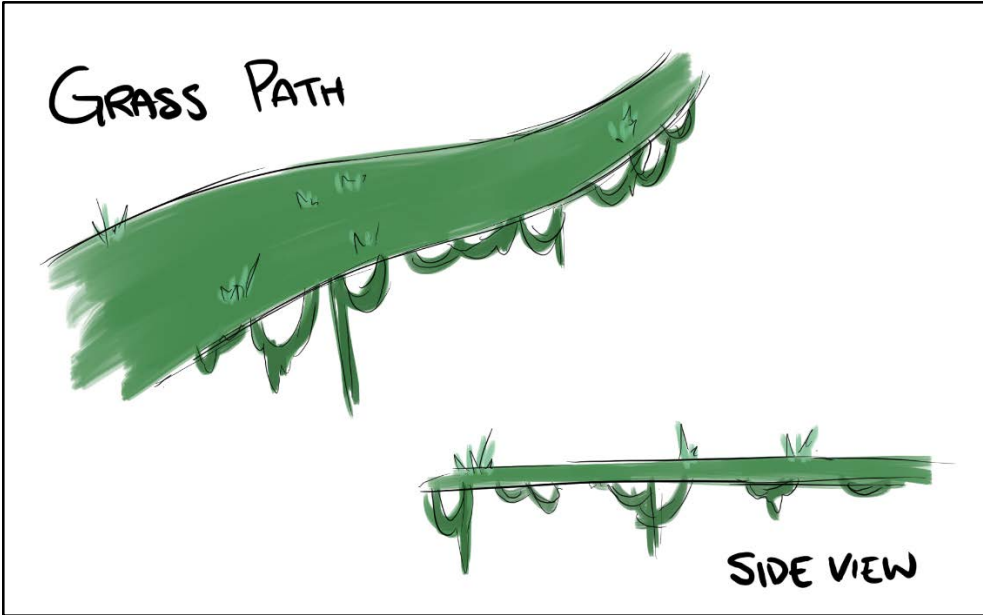
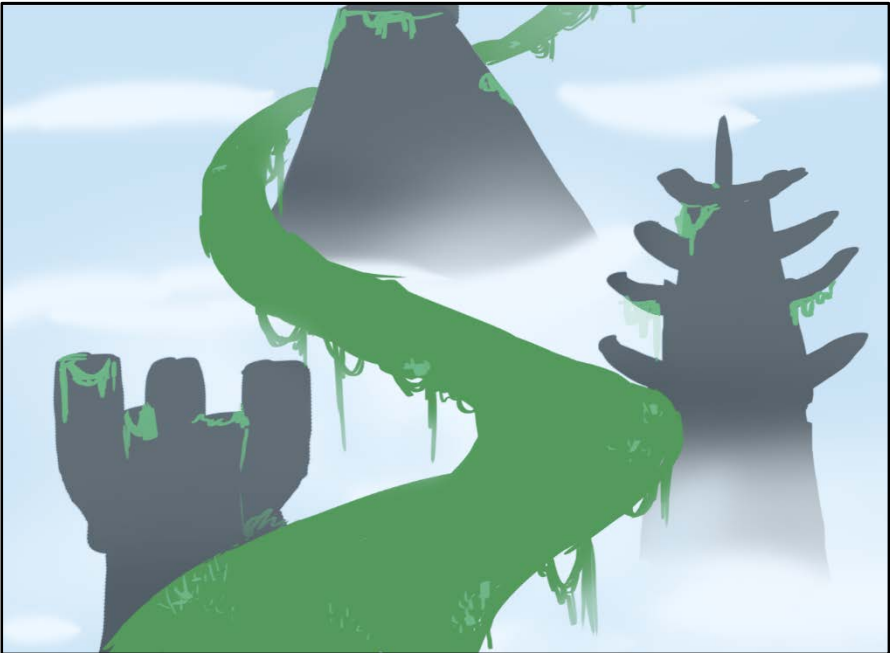
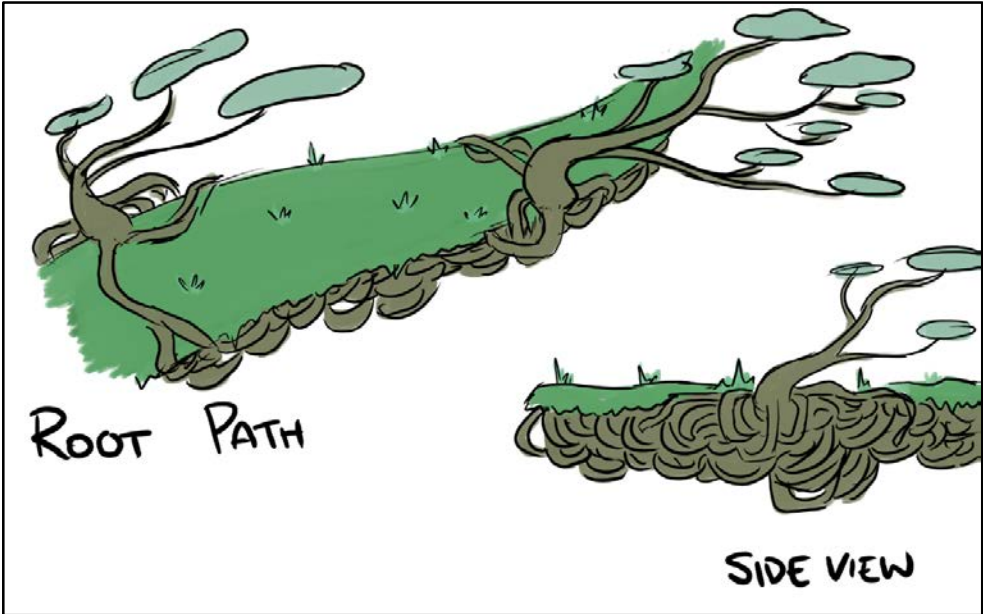


OVERVIEW:

In the book excerpt, the towers are positioned far apart from each other with the path strung between them. I have tried to replicate this through the layout of the environment.

The concept to the right represents the positioning of the path and the towers. However, the final scene should contain much more foliage and the towers should be overgrown with vines and other plants. There should also be more trees along the path with their roots clinging to the towers.

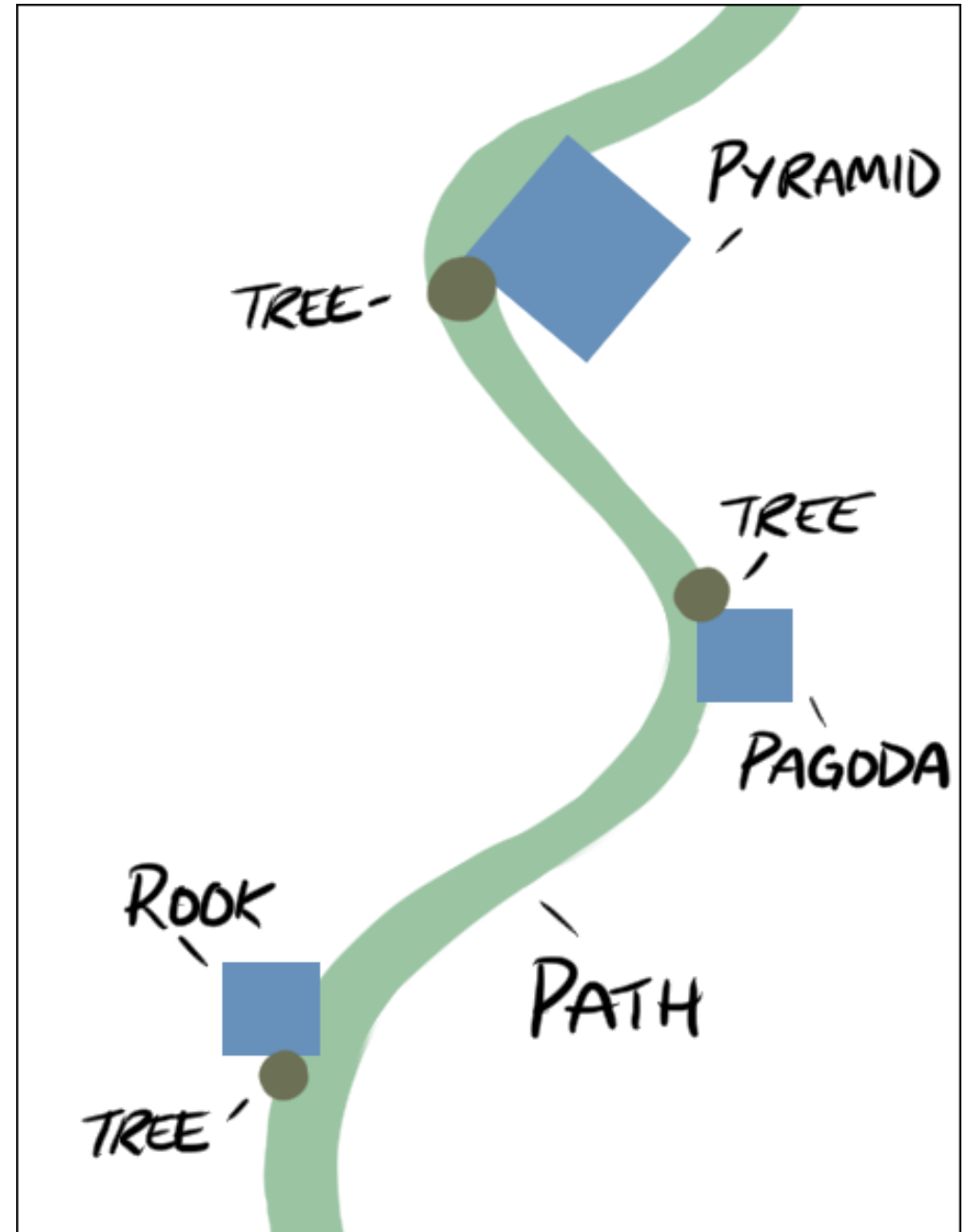
DEVELOPMENT AND CONCEPT SKETCHES:



SCHEMATIC MAP:

As this scene will be put together in the Unreal engine, this schematic map is based on a 3D mock-up.

The towers will be spread apart with the path winding between them. There will be a tree next to each of the three towers with more spread out along the path (although this is not pictured).



LIGHTING



STYLE:

No specific time of day or lighting is mentioned in the book passage. So, to fit with the dreamlike and magical tone early morning, dawn lighting will be used. The ambient lighting should be soft with a golden tone while the directional lighting should be angled to resemble a sun at dawn. Additionally, the shadows should have a purple hue to them. Two examples of this style of lighting are shown to the left.

TECHNICAL SPECIFICATIONS:

Two types of lights will be used in the Unreal scene to achieve this look: a sky light and a directional light (Epic Games, 2015). The key components to change in order to achieve the correct look are:

- Intensity
- Colour
- Angle
- Light Shaft Occlusion
- Shadows



Images: *Foggy Morning*
& *Huangshan*

ATMOSPHERIC EFFECTS

STYLE:

In the book it is stated that “all the towers were tall as lighthouses, with their bottom way, way down in an abyss”. In order to emphasise this great height a mist will be added to obscure the bottoms of the towers and give the illusion that the path is in the sky. The mist will have a faint blue tint in order to keep with the mystical tone of the scene and to mimic the light scattering that occurs when we view distant objects (Vanderborght, 2005).

Clouds should be non-realistic but rather stylised in a way that mimics pre-existing shapes in the environment such as a particular plant. Additionally, clouds should appear thick and voluminous, so that they have distinct curved forms within them, as seen on the right.



Image: *The Witness*

TECHNICAL SPECIFICATIONS:

Clouds will be painted and exported on a black background as PNG files so they can be used as a material. This material will be applied to planes and placed around the scene. This will allow the scene to have detailed clouds without being too resource heavy. The mist will be created using an Exponential Height Fog actor (Epic Games, 2015). The following need to be adjusted to achieve the correct look:

- Density (this will need to be quite high in order to obscure the bases of the towers)
- Colour
- Falloff
- Opacity

ASSET LIST

TOWER ASSETS:

Rook Tower:

- Model
 - o Diffuse Texture
 - o AO Map

Pagoda Tower:

- Model
 - o Diffuse Texture
 - o AO Map

Pyramid Tower:

- Base model
 - o Diffuse Texture
 - o AO Map
- Modular stair model
 - o Diffuse Texture
 - o AO Map

FLORA ASSETS:

Tree:

- Model
 - o Diffuse Texture
 - o AO Map

Flowers:

- Model
 - o Diffuse Texture
 - o AO Map
 - o Opacity Map

Hanging Vine:

- Model
 - o Diffuse Texture
 - o AO Map

Hanging Moss:

- Model
 - o Diffuse Texture
 - o Opacity Map
 - o AO Map

PATH ASSETS:

Full path top:

- Model
 - o Diffuse Texture
 - o AO Map

Modular root path piece:

- Model
 - o Normal Map
 - o Diffuse Texture
 - o AO Map

Rocks:

- Model
 - o Diffuse Texture
 - o AO Map

OTHER ASSETS:

Painted Cloud Variation 1

Painted Cloud Variation 2

TECHNICAL GUIDELINES

FILE NAMING CONVENTIONS:

Files will be named according to the following convention:

NameSubname_Type_##

Name refers to what the asset is (e.g. TowerRook), Type refers to the kind of asset it is (e.g. Mesh, AO, Normal) and ## refers to the version number. Example:

TreeLarge_Mesh_04

This will allow all files for a particular asset to be grouped but distinguishable and will also help with version control.

TEXTURE FILES:

Textures are to be baked and created as follows:

- PNG file type
- 2048 x 2048 pixels
- RGB 48 bit colour
- Alpha channel enabled
- 72 ppi

UNIT SETUP:

In 3DsMax the System Unit Setup is to be set to centimetres. The display unit scale is to be set to Metric: Centimetres. This is done so as to match the units in the Unreal Engine.






RENDER SETUP:

Final scene will be rendered at 1920 x 1080 pixels using the Matinee system in Unreal. Render can be taken into After Effects and edited.

Final export must be at 1920 x 1080 pixels using the H.264 compression codec.

TOOLS AND PROCESSES:

For this project I will be using the following tools and processes:

	<ul style="list-style-type: none">• Modelling• Unwrapping• Baking normal maps• Baking AO maps
	<ul style="list-style-type: none">• Sculpting hi-poly version
	<ul style="list-style-type: none">• Digital painting of concept images• Creating model sheets• Creating the diffuse texture
	<ul style="list-style-type: none">• Putting together the 3D scene• Setting up lighting• Setting up atmospheric effects• Rendering final scene
	<ul style="list-style-type: none">• Compositing titles and credits• Final render using H.264 codec

PROP CREATION PROCESS:

1. Design asset
2. Determine scale
3. Create model sheet
4. Model base model (low-poly version) in 3DsMax
5. Bring low-poly version into ZBrush
6. Sculpt the high-poly version
7. Generate a normal map of the high-poly version to test
8. Test normal map with low-poly version
9. Adjust low-poly version to fit normal map
10. Unwrap low-poly model
11. Bake AO, normal, specular maps from high-poly
12. Paint diffuse texture
13. Implement final game model in Unreal

IMPLEMENTATION IN UNREAL:

1. Export game model as FBX
 - a. Smoothing groups enables
 - b. Turbosmooth disabled
 - c. Animation not baked
2. Import into Unreal scene
 - a. As static mesh
 - b. With materials and textures

REFERENCE LIST

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FIGURE 01:

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