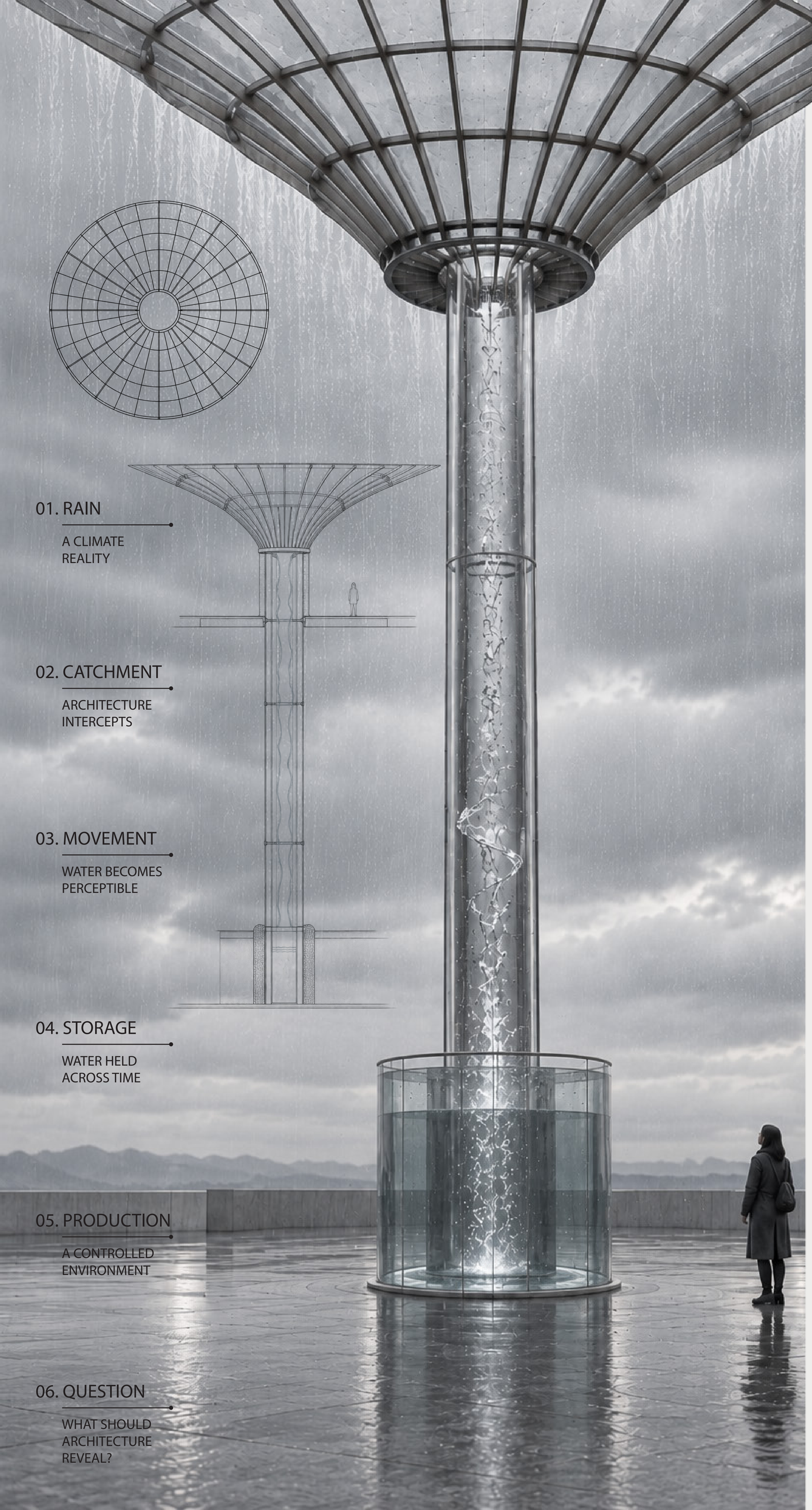


THE ARCHITECTURE OF WATER

INFRASTRUCTURE
ATMOSPHERE
LIFE

Biophilic design is often associated with planting and natural materials, but its relationship with nature can extend to water, weather and the changing processes of the environment. The 14 Patterns of Biophilic Design identifies both Presence of Water and Connection with Natural Systems as ways architecture can strengthen our experience of the natural world. Yet rain usually disappears from architecture. It falls onto a roof, enters a gutter and is directed through pipes, tanks and drainage systems that are rarely part of our experience of a building.

In Australia, this relationship with water is increasingly significant. The climate is warming, cool-season rainfall has declined across parts of southern Australia, while heavy short-duration rainfall events are becoming more intense. Periods of reduced rainfall can therefore coexist with intense rain events, making the way architecture responds to water increasingly relevant.

Some projects allow these processes to become more perceptible. At Benthemplein Water Square in Rotterdam, rainfall moves visibly through the public space before being temporarily stored. The square changes when it rains, allowing people to see and experience infrastructure that would normally remain underground.

At Agrotopia in Belgium, a rooftop greenhouse combines controlled food production with rainwater collection and reuse, while an educational route allows visitors to experience a highly managed growing environment.

Viewed through a biophilic lens, these projects suggest that connection with nature does not have to rely on vegetation alone. It can also come from experiencing water, weather and environmental change.

But biophilic design is not automatically sustainable. Neither are rainwater harvesting or controlled-environment agriculture. Water quality, treatment, storage and energy use still determine environmental performance.

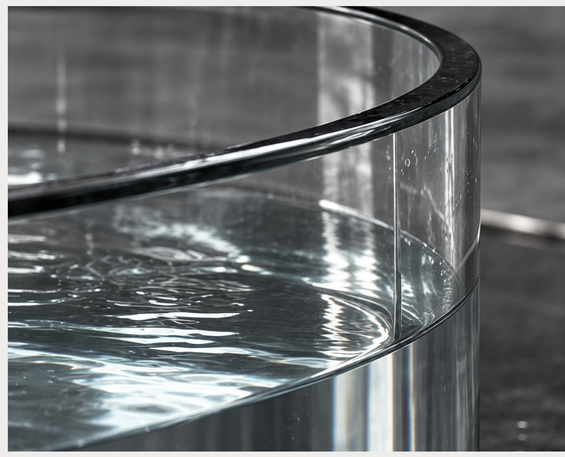
If architecture can make natural processes perceptible rather than concealing them, how might our experience of water change our relationship with the environments we inhabit?



RAIN CAPTURED



WATER IN MOTION



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REFERENCES

1. Browning, W.D., Ryan, C.O. & Clancy, J.O. (2014). 14 Patterns of Biophilic Design: Improving Health & Well-Being in the Built Environment. Terrapin Bright Green.

2. Bureau of Meteorology & CSIRO. State of the Climate

3. De Urbanisten. Water Square Benthemplein, Rotterdam. 2024.

4. van Bergen Kolpa architecten + META architectuurbureau. Agrotopia, Roeselare.

IMAGES NOTE

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ChatGPT
RESEARCH PROMPTS

I am completing Assignment 1 for an AI for Architects course. The assignment is called "Style & Substance", and the deliverable is approximately 300 words written for a client. I want to investigate the relationship between architecture, rainwater harvesting and food production. My emerging question is: How can rainwater harvesting become a visible, experimental, and productive part of architecture rather than hidden building infrastructure? I am interested in architecture where rainfall can be seen and heard as it is collected, and where harvested water can contribute to food production and community activity. I do not want you to write the 300 words yet. First, help me research this idea critically. I want credible sources and relevant built architecture precedents. Please distinguish between established evidence, architectural precedent, and speculative design ideas. I also want you to identify limitations or contradictions, not just argue that the idea is sustainable.

I also want to introduce an Australian conemporary climate context to this investigation. Please research the current 2026 El Nino conditions and outlook for Australia using authoritative Australian sources, prioritising the Australian Bureau of Meteorology and relevant government or peer-reviewed sources. I am particularly interested in whether Australian architecture may need to respond simultaneously to periods of reduced rainfall, higher temperatures and episodic high-intensity rainfall. Investigate how this climate context could affect the architectural argument for rainwater catchment, storage and reuse for food production. Please be careful not to overstate the current El Nino forecast or use informal terms such as Super El Nino unless an autoritative source supports that terminology. Distinguish current forecasts from loger-term climate evidence. I am not asking you to design the building or write the 300 word assignment yet. I want to understand whether the Australian climate context genuinely strenghtens the research question, and what credible evidence supports that postion.

I want to clarify an important part of the programme before we continue with precedent research. The food production component I am interested in is primarily an Indoor Smart Farm/controlled environment agriculture facility, rather than conventional outdoor urban agriculture. My university project treated the smart farm predominantly as an industrial programme accessed by workers, For this investigation, I am interested in questioning whether this type of facility could also have a stronger community and educational role, allowing people to experience and understand some of the environmental systems that support food production. I would like to be innovative. At this stage I am not asking you to design the Smart Farm, and I do not want you to assume that making it public or integrating rainwater harvesting is automatically beneficial. I want the programme to inform the research. Please investigate whether harvested rainwater is realistically relevant to indoor farming/controlled environment agriculture including: typical water requirements and opportunities for water recirculation; whether rainwater can realistically contribute to the water supply; water-quality, filtration or treatment requirements; the relationship between intermittent rainfall and relatively continuous growing-system demand; storage implications; energy or environmental trade-offs; examples, if they exist, where controlled-environment agriculture has been combined with rainwater harvesting; whether there is credible evidence for educational or community access to otherwise technical food-production facilities. Please distinguish evidence relating specifically to controlled-environment agriculture from evidence relating onlhy to conventional outdoor farming. I also want you to consider whether introducing the indoor Smart Farm strengthens, weakens or changes the architectural research question we have developed so far. Do not simply validate the idea if the evidence suggests problems with it. Please use credible sources, prioritising peer-reviewed research, government sources and primary project documentation where possible. Do not write the 300-word assigment yet.

Show less

I think we now have enough technical and climate evidence. Before developing my 300-word position, I want to complete the architectural precedent research. Please investigate a small, carefully selected group of built precidents across theree complementary areas: 1. controlled-environment agriculture where technical food production is made visible or educational to the public; 2. architecture where rainwater collection, movement, storage or treatment is deliberately made perceptible as part of the architectural experience; 3. architecture where environmental systems such as water, energy or resource flows become legible rather than being concealed as building services. Please prioritise Agrotopia becasue it apprears particularly relevant, and include Australian precedents if genuinely strong examples exist. Do not include Australian projects so,[;u fpr gepgraphic relevance if the architectural connection is week. I do not need a long catalogue of projects. Select 3-5 strong precedents and explain what specific lesson each contributes to my research question. For each, distinguish documented facts from your architectural interpretation, and prioritise primary sources from architects, project organisations or government bodies, supported by academic sources where appropriate. I am particularly interested in whether any precedent combines the things I am investigating - water capture or reuse + controlled food production + public.educational legibility - or whether my proposition actually occupies a gap between existing precident types. Do not write the 300-word assignment yet. At the end, tell me what you think the precedent evidence allows me to credibly argue, what i should not claim, and where my proposition remains speculative.

Show less

I want to reassess the design-style framing of my Assignment 1 research. My research so far has focused on the relationship between architecture and water, particularly the way architecture can make rainfall, water movement, collection and storage perceptible rather than concealing these processes as infrastructure. I have also been considering controlled-environment food production as a contemporary context for this investigation.

I am wondering whether this sits within the broader field of **biophilic design**, particularly aspects of biophilic design concerned with water, weather, natural processes and people's sensory experience of environmental systems. Please research this rather than simply agreeing with the connection. I want you to:

1. establish how recognised biophilic design literature defines the approach
2. identify whether water, rainfall, weather, natural processes and changing environmental conditions are recognised components of biophilic design
3. distinguish biophilic design from simply adding vegetation or natural-looking materials to architecture
4. determine whether making environmental systems visible or perceptible can reasonably be understood as a biophilic design strategy
5. identify recognised frameworks, authors or researchers that support or challenge this interpretation
6. assess how well my existing precedents, particularly **Benthemplein Water Square and Agrotopia**, fit within this framing
7. identify any weaknesses or risks in describing my existing research as biophilic design

Use credible architectural, academic and primary sources where possible, and provide links to the sources so I can verify them myself.

Do not rewrite my 300-word statement yet. First give me a critical assessment of whether biophilic design is an appropriate design-style framework for the research I have already undertaken, or whether another recognised architectural approach would describe it more accurately.

Show less

Revise my existing approximately 300-word **Style & Substance context statement, "The Architecture of Water,"** now that we have established that the design approach I am researching can be situated within **biophilic design.** Do not rewrite it from scratch or turn it into a generic explanation of biophilic design. Preserve the existing argument, tone and strongest parts of the statement.

Introduce biophilic design early enough that it is clear I am researching a recognised design approach. Frame my particular investigation as **biophilic design through water, weather and natural systems**, rather than the more familiar interpretation centred primarily on vegetation.

Use the research we have established around the **14 Patterns of Biophilic Design**, particularly: **Presence of Water, ****Connection with Natural Systems, **where useful, sensory connection with nature.

Retain the idea that architecture usually conceals rainwater through gutters, pipes, tanks and drainage infrastructure, and contrast this with architecture that makes natural processes perceptible.

Retain the Australian climate context, but keep it concise. Use **Benthemplein Water Square** as evidence of rainfall and water infrastructure becoming visible and experiential, and **Agrotopia** where useful to connect water with controlled food production and productive systems. Do not claim either project was explicitly designed as "biophilic" unless the evidence supports that. Instead, analyse how they demonstrate principles that can be understood through a biophilic lens.

Maintain the critical position that **biophilic design is not automatically sustainable**, just as rainwater harvesting and controlled-environment agriculture are not automatically sustainable. Environmental performance still depends on factors such as water treatment, storage, energy and system design.

Most importantly, do **not** describe or prescribe the design of my future Smart Farm or water-catchment system. This is a researched context statement, not my design proposition.

Structure the argument as: **recognised design approach - particular architectural condition - contemporary relevance - evidence/precedents - critical position - unresolved architectural question**

Keep the title **"The Architecture of Water."**

Write approximately **300 words**, for a client rather than an academic audience, using accessible architectural language. Avoid em dashes, overly academic language, generic sustainability claims and wording that sounds recognisably AI-generated.

Before finalising it, check that a reader who has been asked to assess a **design-style research assignment** would clearly understand that the statement is investigating **biophilic design**, with water and natural systems as its specific focus.

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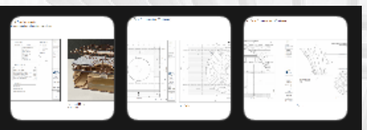


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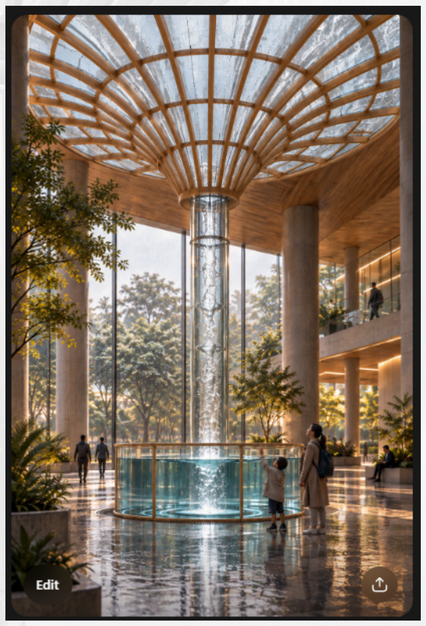
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ChatGPT
IMAGE PROMPTS

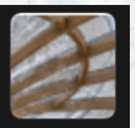


I want you to use these drawings as a reference for generating images to go with the 300-word statement we have produced. I will give you further prompts, but these are your starting point.

Generate an image of a rainwater collection structure using the reference images as a guide. The image should embody infrastructure, atmosphere, and life. The sky should be cloudy, and rain should be falling, captured in the large funnel-like structure and guided through the downpipe into the tank below. The idea is to show rain being captured, then water in motion, before it is stored for future use.



Try removing the building and only keeping the water catchment including the funnel and its elements, water tank and people.



Change ONLY the circular elements in the funnel from steel to timber. You already have done this in one part of the funnel (see attached). This should be consistent.

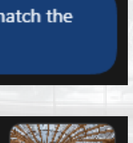
The red areas need to be made to look the same as the area I have circled in green. I have also indicated where one is out of alignment with an arrow.



It is the height of the timber that is inconsistent. Study the individual elements of the funnel and don't generate an image yet. First tell me what you can see in the individual elements of the funnel.



Fix the concentric circular/ring members that run across the radial ribs so that they are smaller secondary timber sections that span between the primary ribs. Ensure they all have a believable rectangular timber section with a consistent visible depth.



Study the attached image. The area circled should be changed to match the circular ring indicated by an arrow.



Use this as the base image. Change only the timber concentric rings to make them all the same height. Change nothing else and leave the water and glass exactly as it currently is



This is the base image. Change ONLY the colour of the water making it lighter and more subdued.

Change ONLY the width of the water tank making its circumference only a little wider than the pipe

Change ONLY the timber elements of the water tank and make them steel

Adjust only the lighting to make the image less bright. Less daylight. Soften the warmth in the timber so that it appears cooler.



This is the base image. DO NOT change anything about the water catchment, including the tank width. ONLY remove the larger trees keeping only the smaller shrubs along the edge of the concrete.

Remove the warmer light parts of the sky. Make these whiter.

Make the circumference of the tank closer to that of the downpipe



WATER IN MOTION

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