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# DIEPSLOOT LANDFORM BRIDGE AND WATERWAY PROPOSAL

*November 2009*



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## SUMMARY

This proposal sits within the context of the work undertaken by The Global Studio in Diepsloot, Johannesburg between 2007-2009.

This work is a development of previous proposals for a transformation of the central marshland corridor of Diepsloot into a social and ecological spine for the township.

It also sits within the context of current pedestrian bridge proposals for Diepsloot from the City of Johannesburg (CJ) and the Johannesburg Development Agency (JDA).

## APPROACH TO CONNECTIVITY

It has been established that the key to physical development of Diepsloot lies in transforming the central marshland corridor from a physical barrier to a key social and ecological connector.

## CONNECTION AS CATALYST

The key to Diepsloot's physical development is in enabling each intervention to achieve several objectives simultaneously. In the case of pedestrian connections, we are proposing that rather than being just a pedestrian bridge, crossing points become part of a wider landform structure that controls hydrology and enables safe community use of land within the marshland corridor.





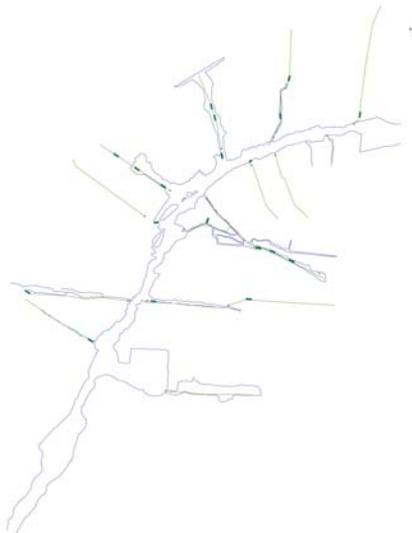
*Currently there are only two clear and safe street connections across the central marshland corridor.*



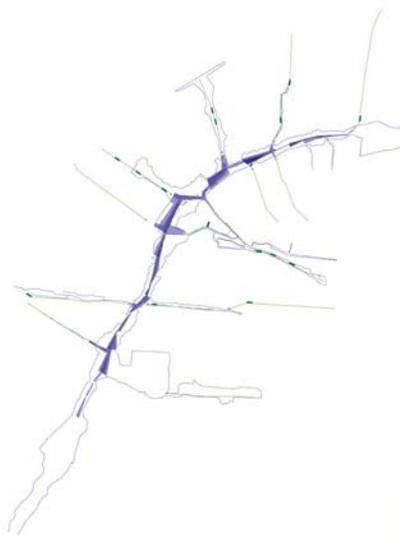
*Street network mapping has indicated potential positioning of further connections across the marshland corridor that generate a more legible and safer pedestrian network.*



*Identified crossing points overlaying indicative flood levels*



*Current overland flow and potential for raingardens throughout Diepsloot*



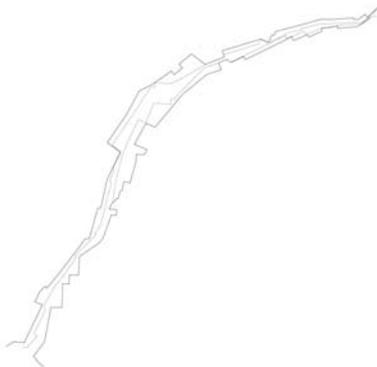
*Each bridge in this proposal is a part of a landform structure that controls flooding through a series of wetland lagoons whilst also improving the quality of the water*



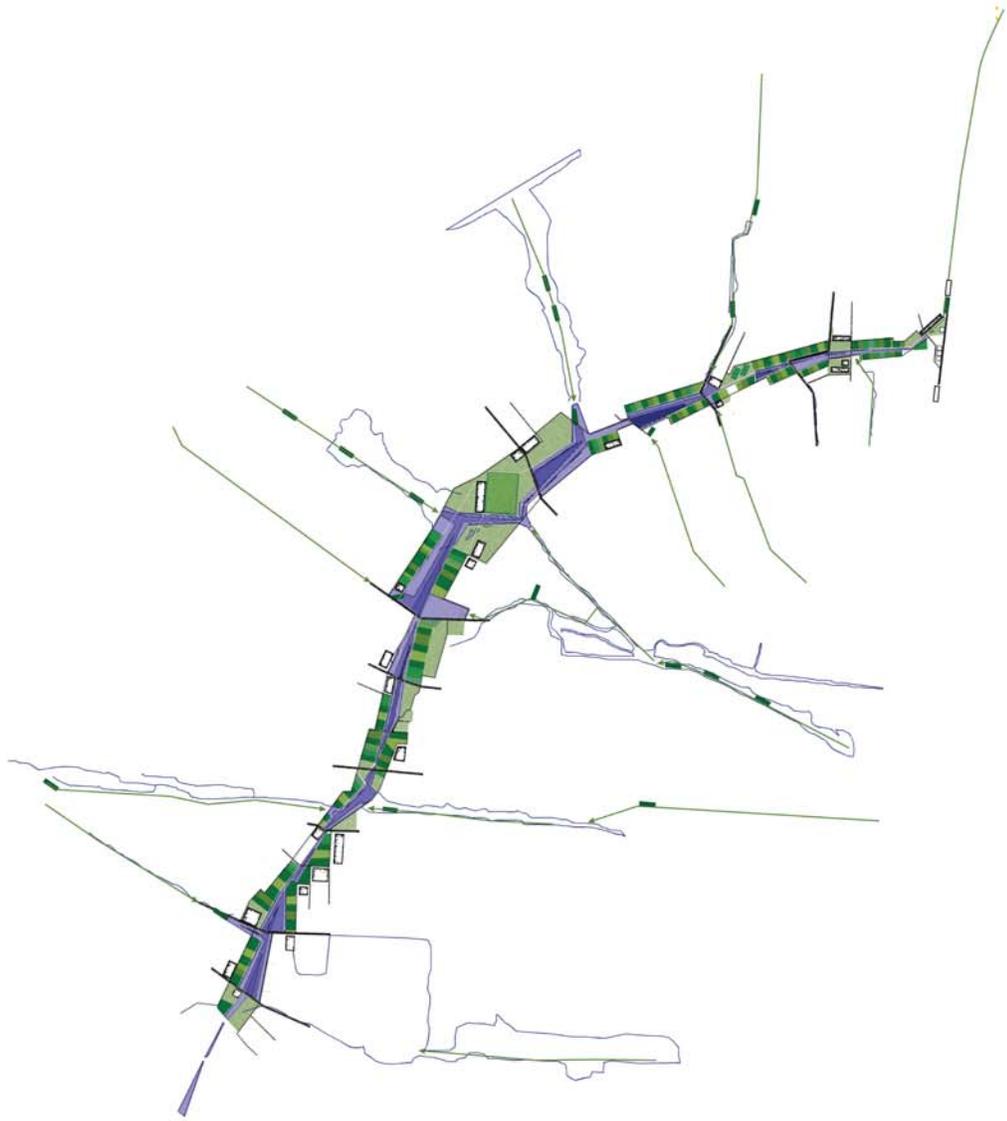
*Through landform manipulation, public space is created within the marshland corridor*



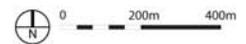
*Public buildings can also be built in this area. The central marshland is transformed from a physical barrier into the social and environmental spine of Dipsloot*

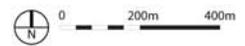
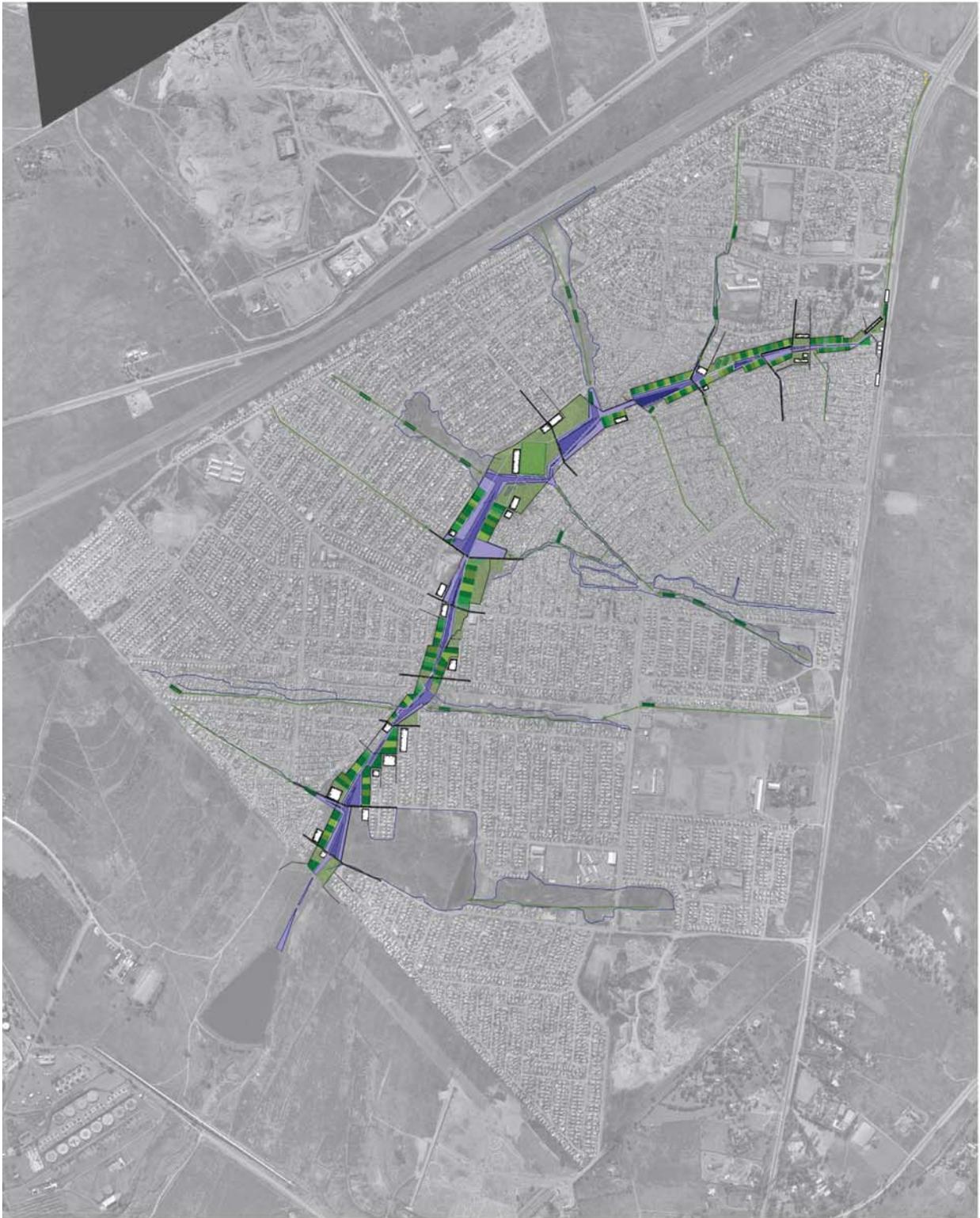


*Proposed roads run along each side of the corridor creating a contained edge to the central spine also becoming service roads for Pikitup vehicles*



Above: By taking a landform manipulation approach to the central marshland corridor, the area can be transformed into a social and ecological spine for Diepsloot.





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## APPROACH TO BRIDGE DESIGN

Each crossing point is constructed as part of each lagoon/wetland. The bridges are integrated landform structures.

The timber bridge structure itself is not an essential structural component of the wetland. Rather, it is elevated above the pipes and a flood overflow level. It remains a dry pedestrian link in times of flood.

The aim of this landform structure is to use the bridge as the control point for the wetland, regulating flow of water through to the next wetland.

The construction of this scheme would require small earthmoving machines to remodel the floodplain and compact the roads at its sides. Pipes could be brought in by a small truck. There would be potential for a great deal of community involvement in stabilising the lagoon sides using planting and other erosion control methods as well as the establishment of open space surrounding the watercourse. Construction of the timber (or other) decking over could be completed by trained community members.

## PROPOSED WAY FORWARD WITH THIS PROJECT

We have been through several design options for bridges with our engineers here in Sydney. We have settled on this landform approach to river crossing construction as it holds great potential as being the first step in a major community based ecological restoration project for Diepsloot.

To move forward with a more detailed design for the floodplain we will require a flooding survey, peak flow data, catchment data and other soil quality data. Some or all of this may currently exist. We have connections with ARUP Johannesburg and would consider approaching them to be part of a team to undertake further work on this scheme.

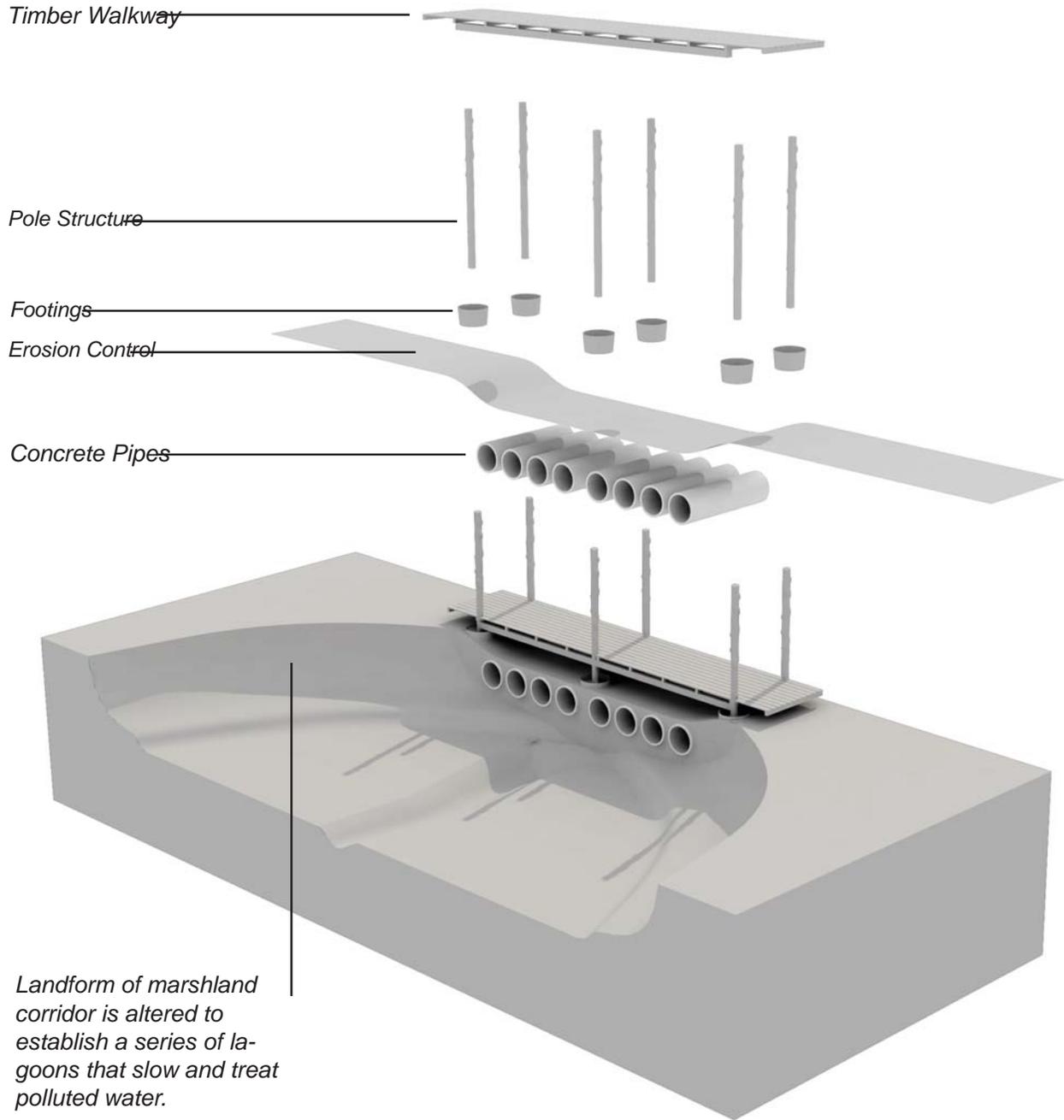
We see great potential in the construction of two of these connections and associated wetlands in a pilot phase of this marshland development project for Diepsloot. We would only be able to undertake this in partnership with the JDA and the CJ.

The following pages contain some vision images of how the central marshland corridor could evolve. From a polluted and dangerous barrier within Diepsloot, to a social and ecological spine that binds the township together. Our proposal is concerned with using the potentials of connectivity to change the quality of the marshland corridor, transforming its degraded environmental quality rather than simply bridging over the problem.



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LANDFORM AND BRIDGE STRUCTURE



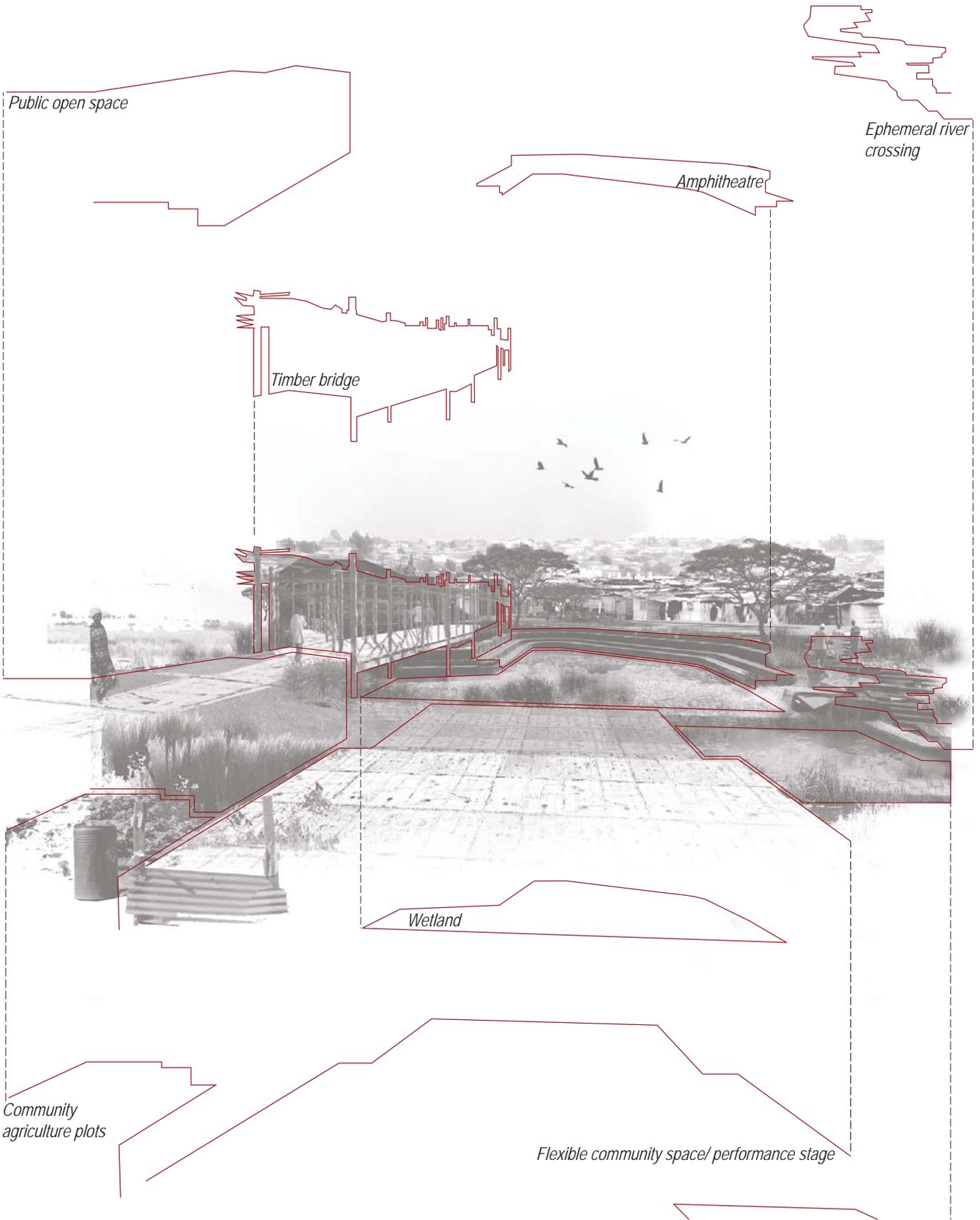
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VISIONS OF THE TRANSFORMED MARSHLAND CORRIDOR



*View looking north over wetland, community space and crossing point*

*Components of the vision*



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VISIONS OF THE TRANSFORMED MARSHLAND CORRIDOR



*View looking south over rain garden and bridge*

*Components of the vision*

*Boardwalk over raingarden  
(not part of bridge)*

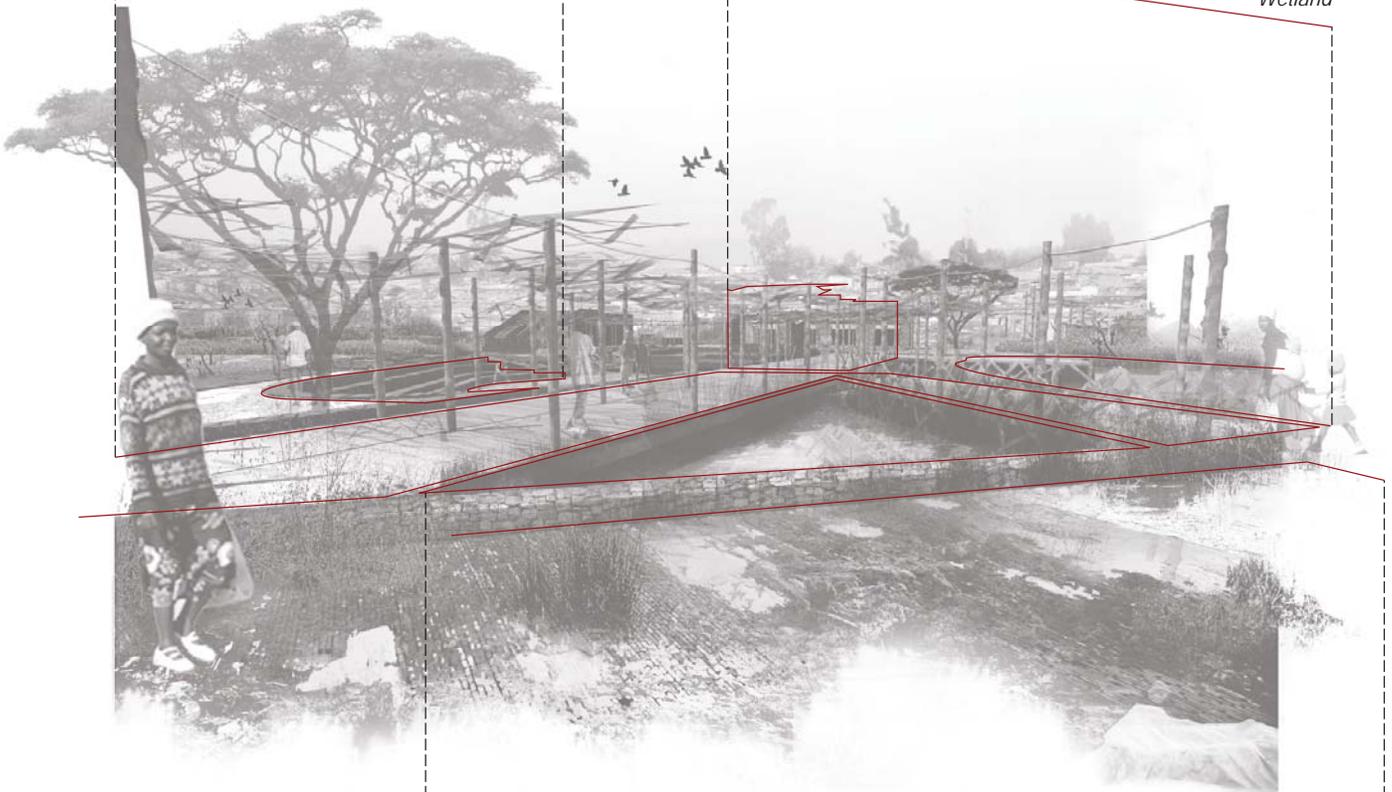
*Timber bridge*

*Amphitheatre*

*Wetland*

*Raingarden*

*Public open space*



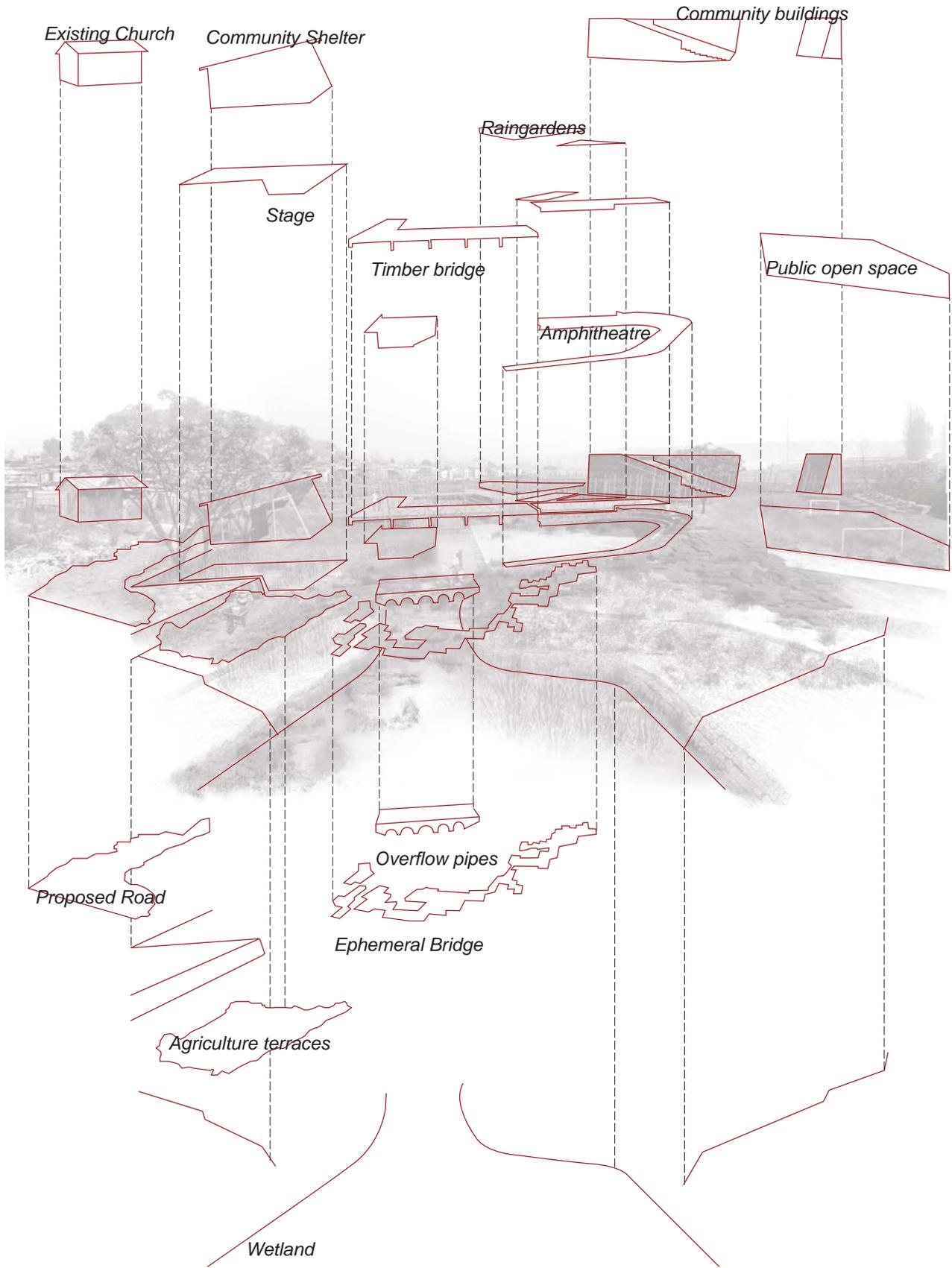
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VISIONS OF THE TRANSFORMED MARSHLAND CORRIDOR



*View looking west*

Components of the vision



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