

Rural Works



Vertical Studio, 2017

Credits

With thanks to:

Mr. J. Nicoll and family
Fallowfield Joinery
Blackhorse Workshop
Welsh School of Architecture

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Introduction

These pages set down a record of the work produced, over the course of two weeks, during the Rural Works programme. This workshop is run as part of the teaching year for undergraduate architecture students, held during the summer term of the academic year. The intensive workshop is open to first and second year students studying their BSc in architecture at the Welsh School of Architecture.

I established the first workshop in 2016 with my co-tutor Shamooin Patwari, inviting students to visit the village of Staveley in Cumbria to study this special landscape, and respond to the context through hand drawings and the making of small-scale, temporary installations.

Central to the concerns of the Rural Workshop is an interest in working hands on. Architecture is about creating things – responding to need through design, and improving a situation or making a provision, to improve, edit or add to what is already there. Yet, most architecture students have little or no contact with the messy business of realising ideas at a 1:1 scale.

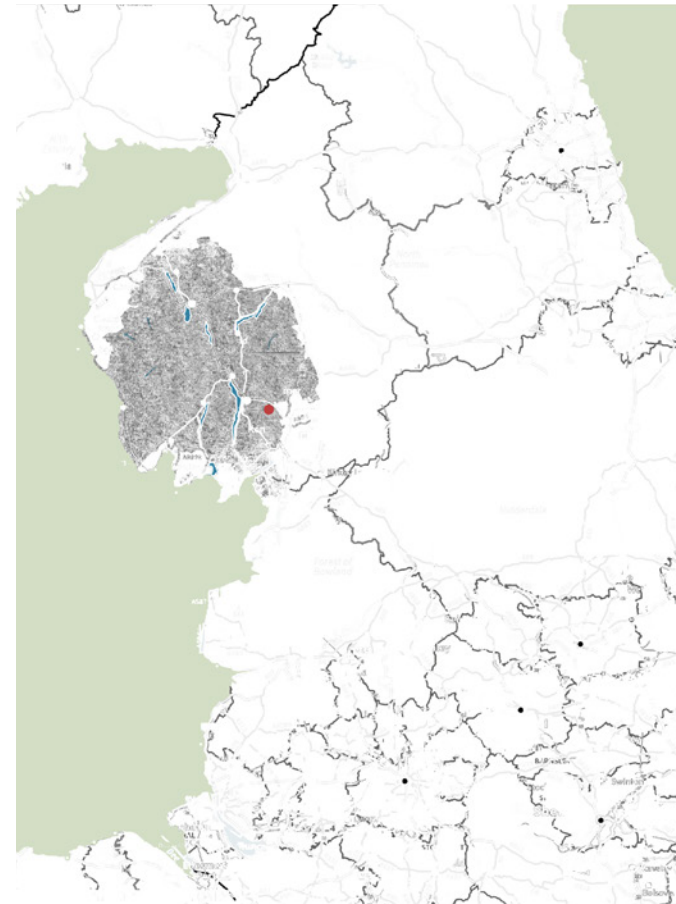
This year we focussed on a specific challenge; on a site where a pedestrian bridge has fallen away following severe flooding, leaving two sides of the river separate and disconnected. Students visited the site, and then developed small-scale ideas for an alternative river crossing. These ideas are playful, experimented, and creative. Engaging with a real issue, enables an applied and real-life kind of learning experience. It also makes the ideas relevant to the needs of the local area, rather than being purely theoretical.

Having created prototypical tests of their ideas, produced in real life scale, the students spent the second week chronicling what they had built and clarifying their ideas through drawings. This publication forms part of that process of recording and relating the work that was produced. The information that follows in this booklet is written by the student team, with a short conclusion included on the last pages.

Zoë Berman

Context

Staveley, The Lake District, April 2017





The craggy peaks beyond Staveley by Tatiana Light

The landscape in the Lake District is unique. Large expanses of water pool in the troughs of green valleys. The rivers and tributaries that feed the lakes can be traced up the contours of the hillsides and mountains. As you get higher, the sky feels bigger and closer, its changing weather reflected both in the lakes below and in the tarns resting in the remote hills.

It is evident why this setting attracts many walkers. The fell-walker, guidebook author and illustrator Alfred Wainwright spent years walking these hills and mapped the area with emotive clarity. This inspired our first day in the Lake District, which was dedicated to walking and mapping through drawing, just as Wainwright did.

Responding to the wider context of our site with such immediacy helped us understand the connections between the landscape and its users.

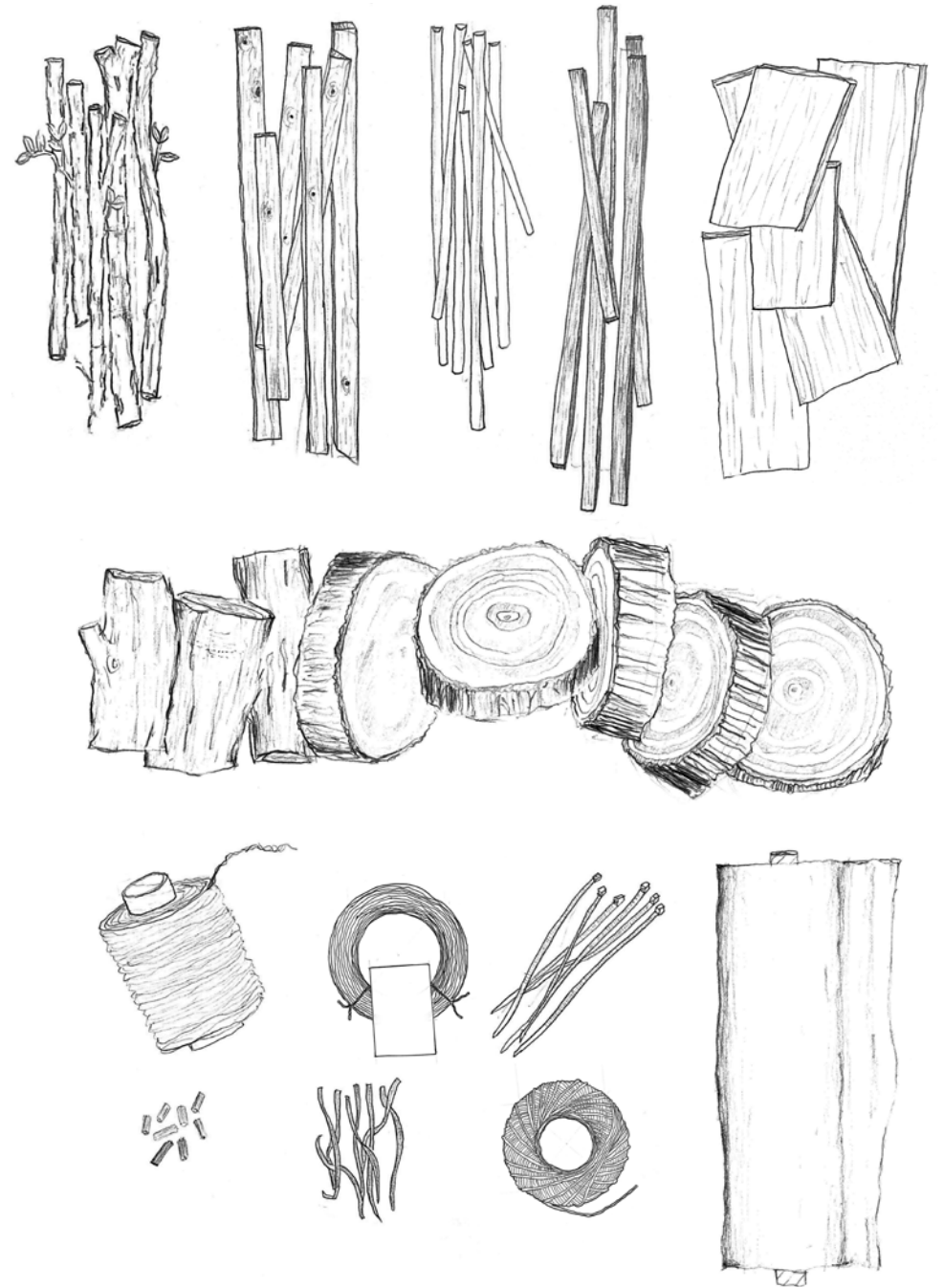




Map of the River Kent and footpaths surrounding Staveley by Lewis Evans



A particular focus for the 2017 Rural Works workshop was the fluvial aspects of the Lake District. This is closely related to our site on the edges of the village of Staveley, through which runs the River Kent. In 2015 the village was one of the many areas that was severely affected by flooding. Here, the River Kent burst its banks. Torrents of water carried timber, boulders and debris down from the fells causing significant damage to homes and infrastructure, including the Old Gowan Bridge in the centre of the village. The destruction of this centuries old bridge left the village with only one route for vehicles to cross the river. This has had a significant and difficult impact on the bustling village of Staveley. The local community have faced a long battle to get the bridge rebuilt - we saw the new bridge close to completion but still not usable some 2 years later - so the issue of connection and access was ever-present during our time spent in Staveley. Understanding the effect of the water on the land and on the people who live there was essential in forming our design ideas.



Making Materials by Lewis Evans



Overlooking Staveley, by Xuanru Peng



Field view by Margarita Dalton

Moments on a Journey

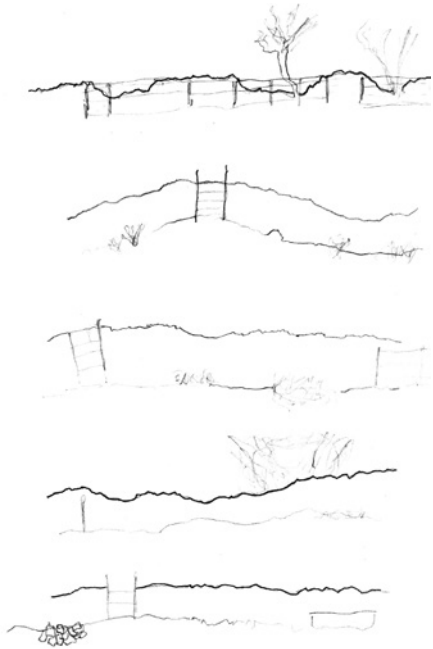
Inspired by the works of Alfred Wainwright

Taking inspiration from the Pictorial Guides to the Lakeland Fells by Alfred Wainwright, compiled between 1952 and 1966, we investigated ways of documenting a journey through drawing. Wainwright intricately hand drew the different routes he walked all across Lake District, depicting in detail particular moments he found interesting during his adventures.

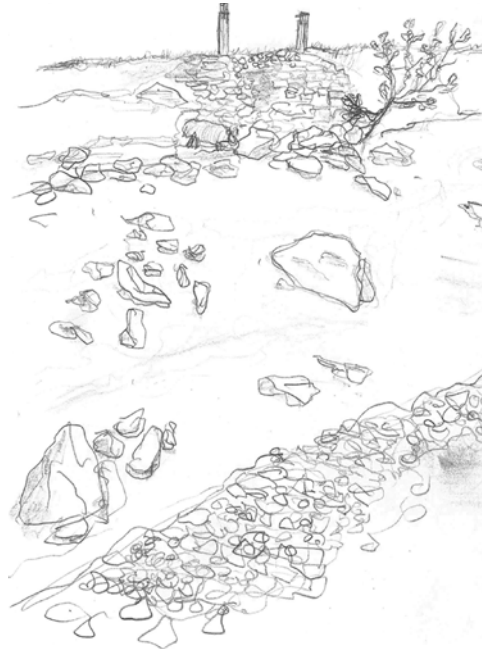
Our first task when we arrived in Staveley was to replicate Wainwright's spectacular visual language of drawing and documenting routes, sights, textures and sensations.

We embarked on a journey which took the group from the village up through the surrounding hills, and down through the valleys until we reached the fallen bridge adjacent to Hagg Foot.

Significant points from the journey were documented in sketches and photographs. We focused particularly on the stretch of land and river between Hagg Foot farm and Staveley Park farm where the public footbridge had washed away; this would be our focus for the coming week, to design and make ideas for an alternative kind of crossing.



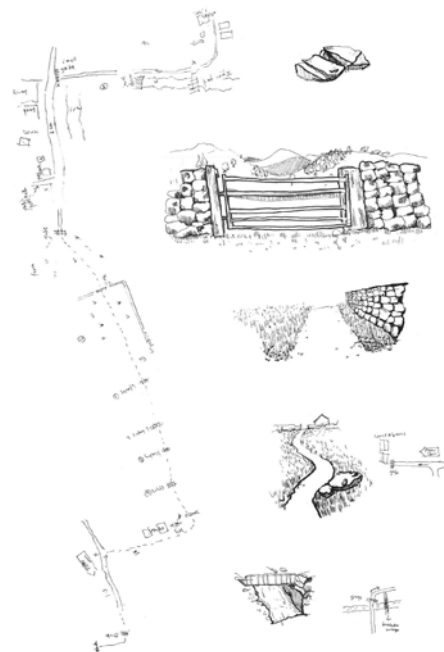
Wall study by Lewis Evans



River detail by Cian Ushioda



Pathway detail by Margarita Dalton



Journey sketch by Lina Muhammad





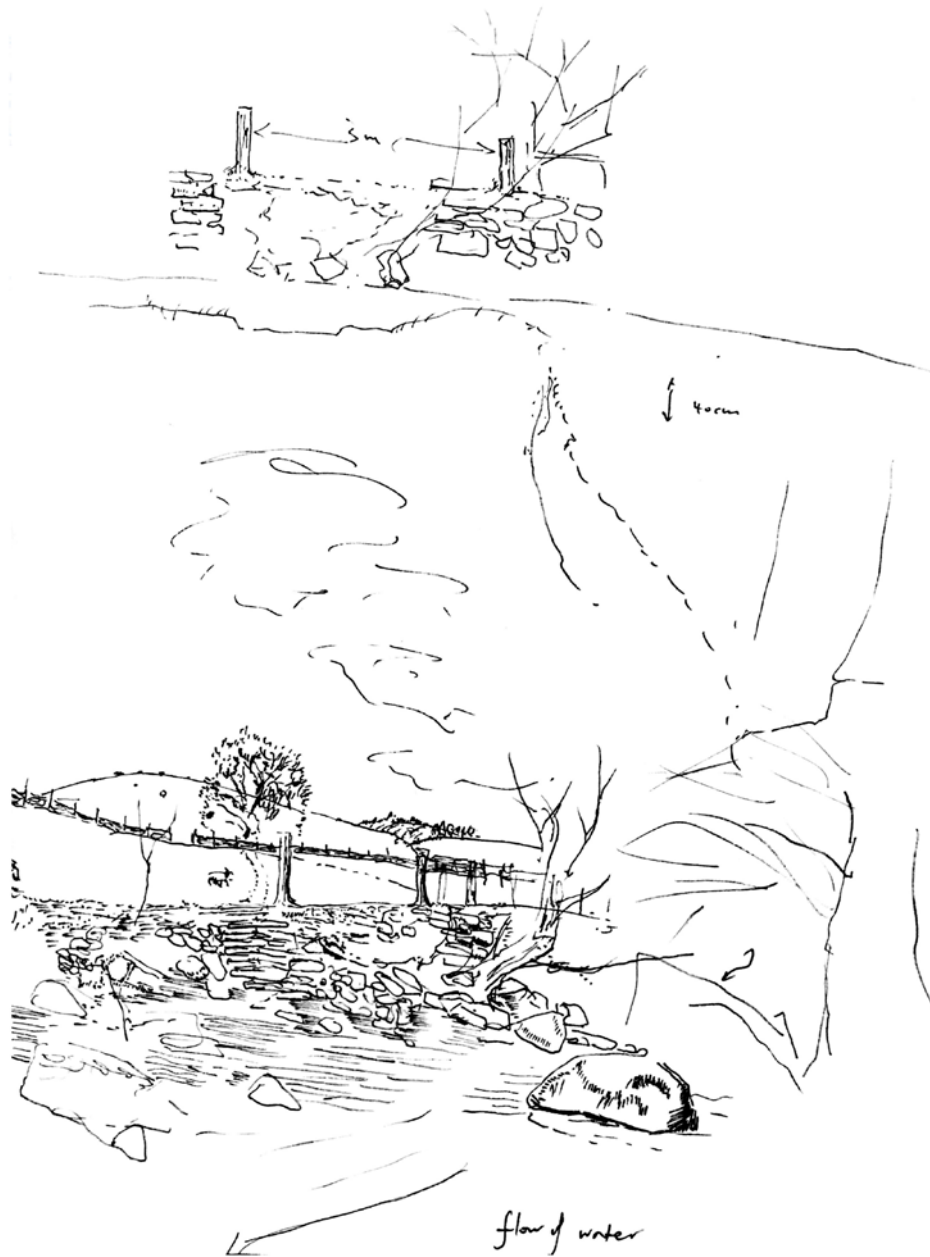
Fallen Footbridge

Responding to the devastation of the flood

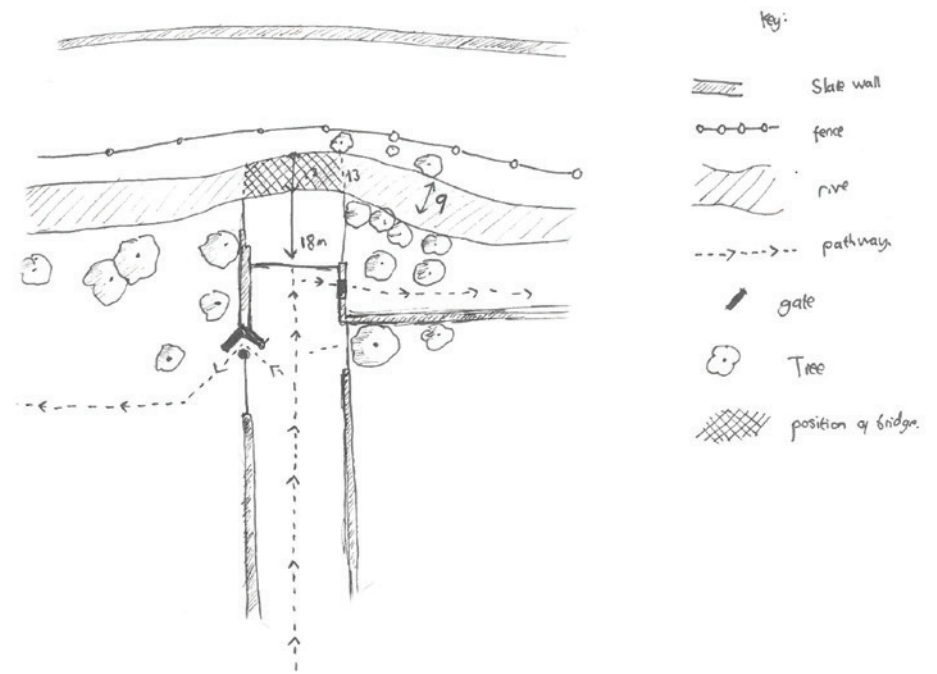
Our site in Staveley sits on the edge of Hagg Foot Farm to the east of the village. It is the site of a now-fallen footbridge which connected Hagg Foot Farm and the Staveley Park Farm. In the past it's use was not only lent to allowing walkers and cyclists through but it was also wide enough for farmers to cross with their tractors. As a result of the Cumbrian Floods in 2015 the footbridge was destroyed by the waters and the sediment it carried. Since then the bridge has not been repaired. The two sides of the river are now completely disconnected and the route is interrupted for all.

Our task for the week involved responding to this site and considering the pressing need for a new place of crossing. We took this, as well as other concepts and ideas formed during our walking study, forward into the following days of designing and making.

The following pages set out sketches of the existing site, with sketch survey measurements and studies of the crossing point – to help us understand the scale and positioning of the site.



Fallen footbridge perspectives by Xuanru Peng



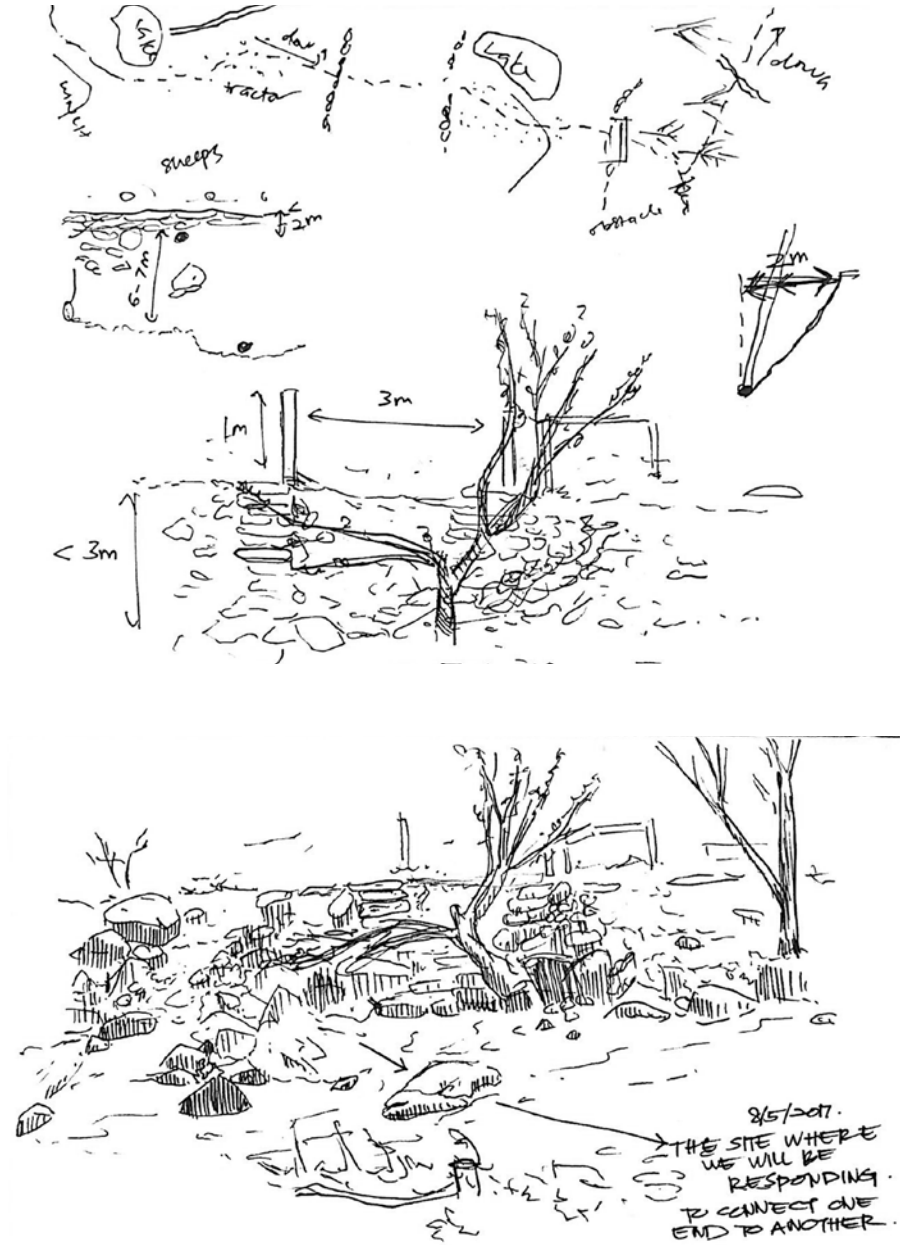
Site plan of the fallen footbridge by Nick Cooper



Section from bank to bank by Lina Muhammad



Site analysis by Isabel Hopper



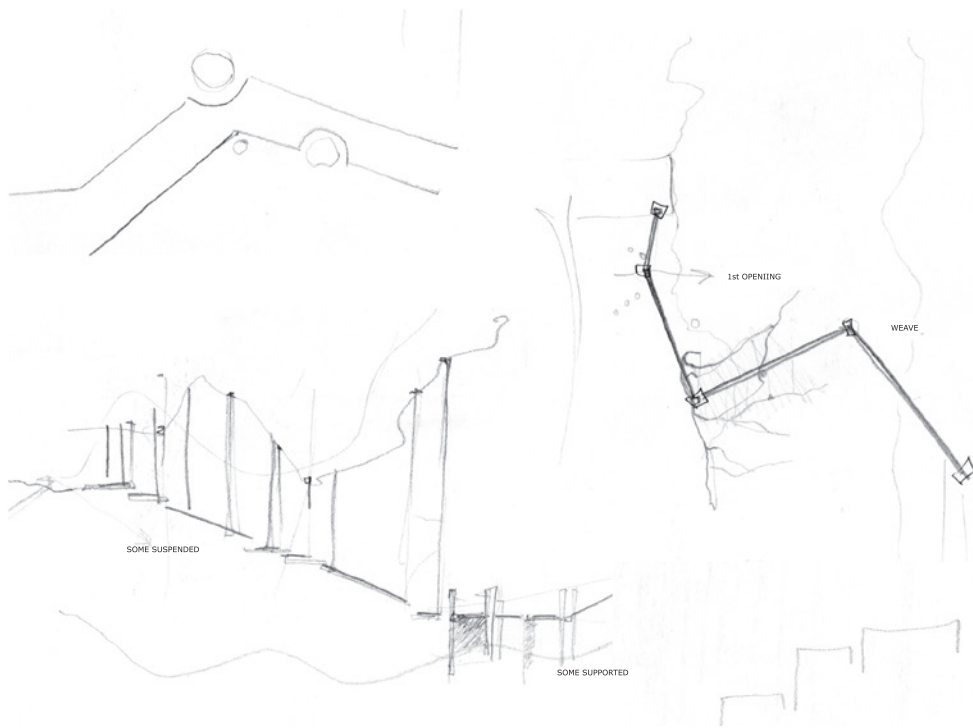
Site analysis by Faqihah Mohd Radi



Path to Nowhere

Density · Verticality · Moment





Developing design ideas by Isabel Hopper



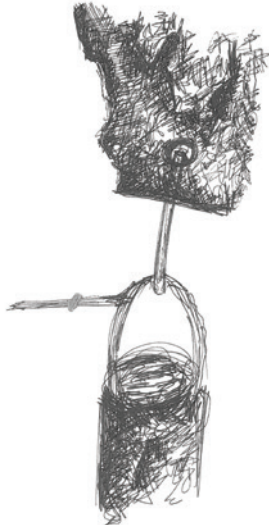
Ideas of suspension, density and view were key concepts that shaped our group design. These evolved through a process of collaborative drawing and making; from our initial responses to the surrounding site, to the way we chose to work with the materials we had gathered.

During our walks in the surrounding landscape, we were particularly inspired by the dry-stone walls and trees - that offer moments of enclosure within an otherwise open space. We hoped to echo this experience, choosing to explore a 'bridge' that was not a functional means of crossing, but instead marked a place to connect a person to their view of the river, to create a moment to view out, and to pause.

The path of our installation was dictated by the path of an existing winding tree whose branches stretch out over the water. This tree hosted our installation; from the branches we suspended lengths of timber to form a vertical screen.

Methods of joining developed based on materials we had readily to hand. We developed a series of fixings for the timber screen, which we iteratively evolved according to the weight and thickness of timbers. Having tested the strength of our suspended structure, we created a small section of walkway on which people could stand.

Design Development at 1:1 - Making and Testing



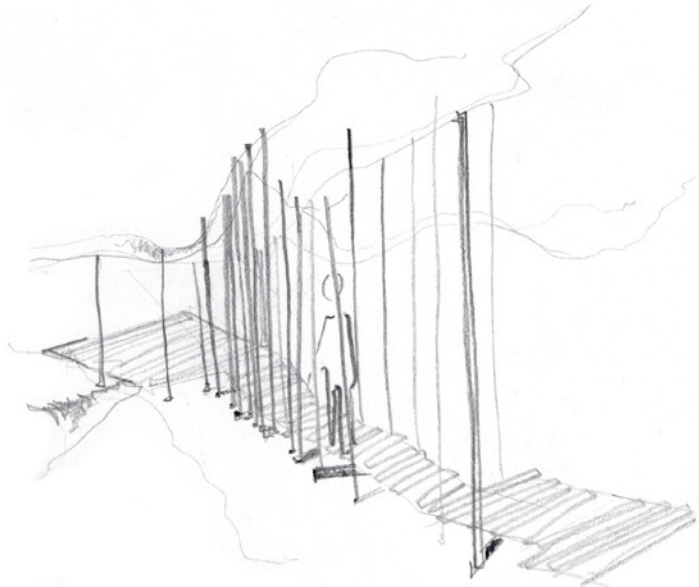
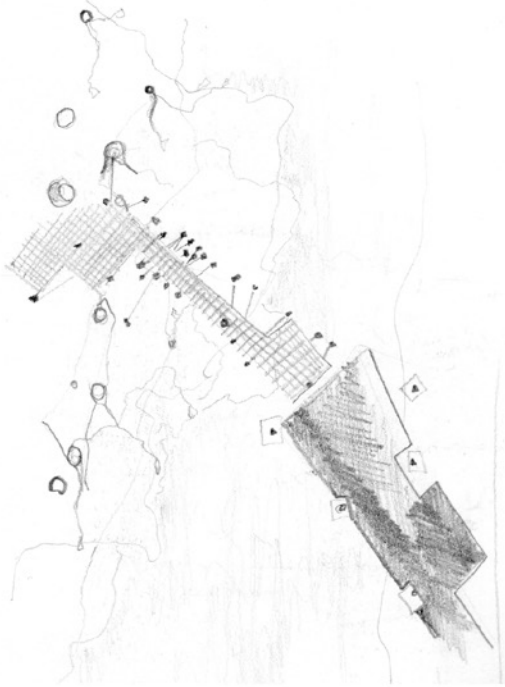
Testing joining methods with sketch by Grace Taylor



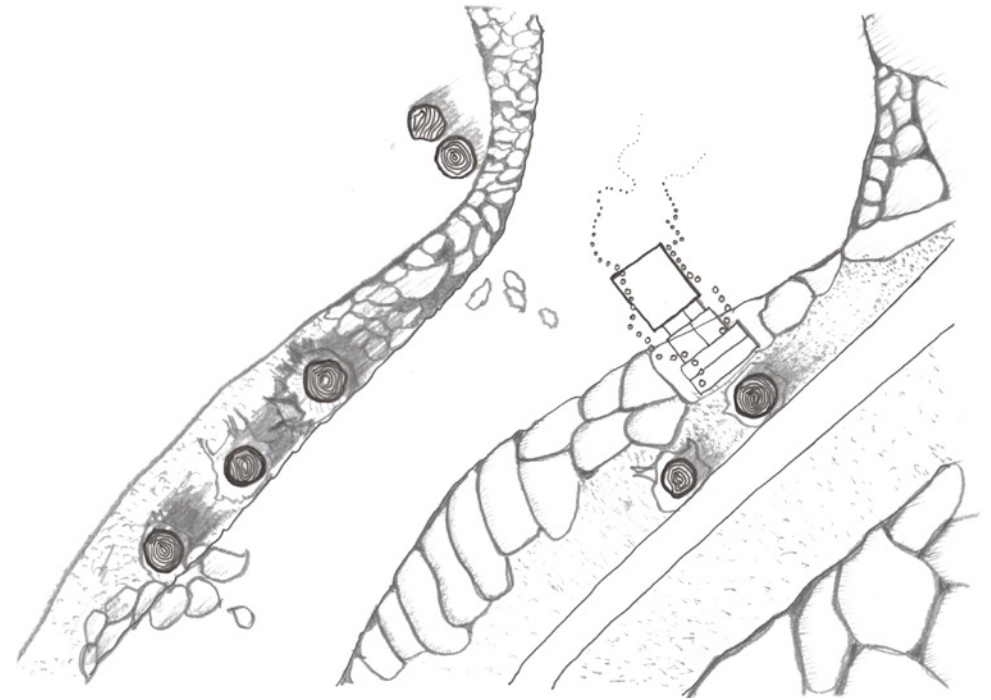
Looking upstream - Installation from the riverbank by Grace Taylor



Future Development



Final Idea Exploration by Isabel Hopper



Plan suggesting the final envisaged design proposal by Janet Wong

Our imagined future developments for the proposal include bringing the walkway down close to the water and turning the path of the vertical screen so that it runs parallel with the river bank. Both ideas would aim to bring to the forefront of a users experience the river and the water around them. These elements would be revealed as they moved forward along the suspended jetty, transitioning through enclosure towards openness.



Moments

Exchange · Contemplation · Experience





Our group aimed to harness the beauty of our scenic surroundings and enable a range of experiences, that would be dependant upon a persons position on the river crossing. Our initial sketches expressed ideas for a change in level, an auditory aspect and social spaces where you could meet and pause along a crossing.

Collectively we developed a concept design with multiple walkways that meet and cross, with the moments of crossing creating triangular spaces where steps and seating could be positioned. These areas range in size from one person spaces to three or four person social areas.

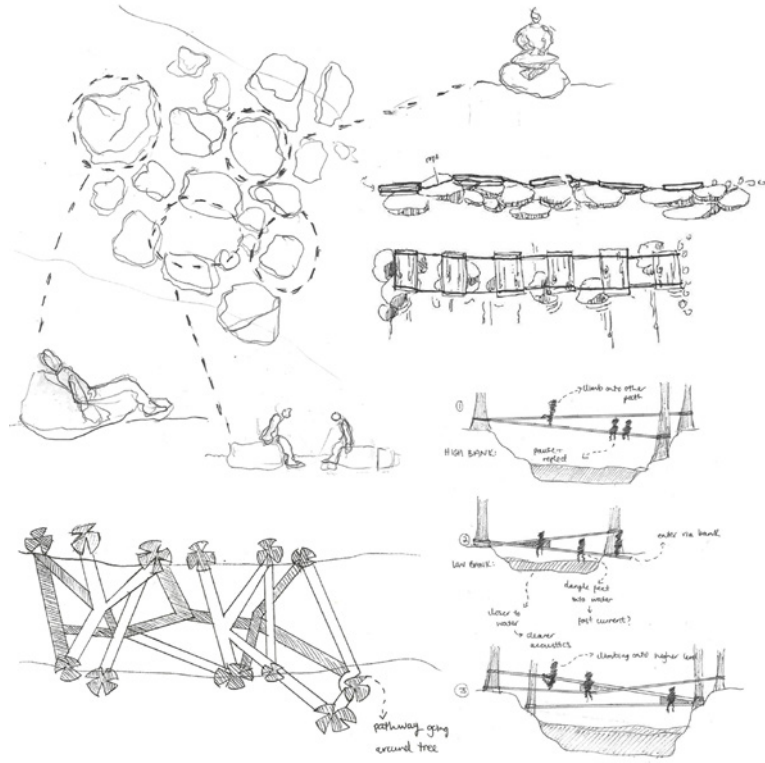
To test our options for fixings we made a small frame from found timber, lashed at the corners with string and wove slender hazel twigs in between to create a basket weave mesh that could act as a seat.



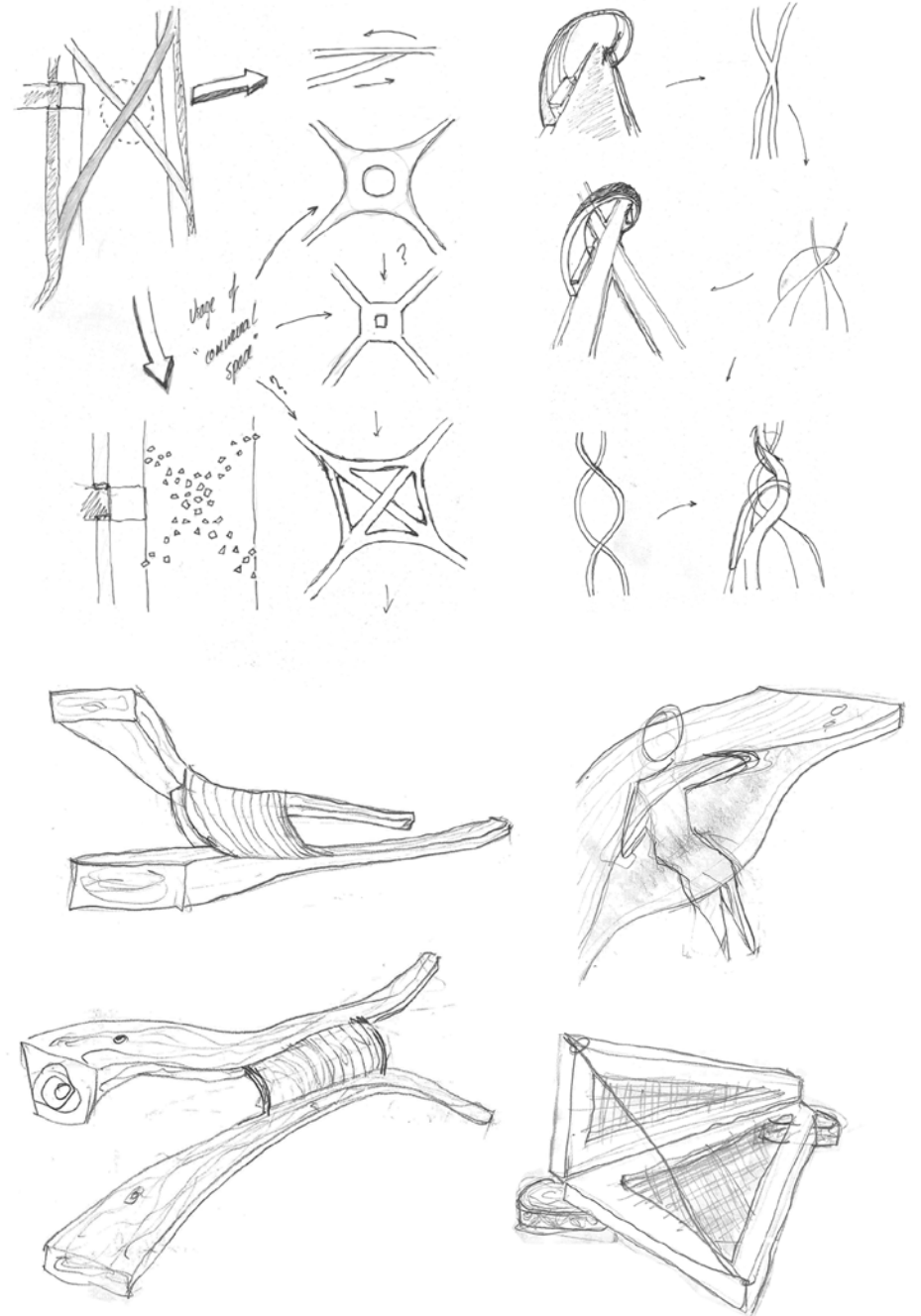
Moving from prototype to 1:1 making, we constructed four triangular frames. These were made of planed timber lengths joined together with wooden dowels. We placed larger sticks between the triangular frames, securing them with lashings. Smaller twigs and branches were then woven through the joists to create a dense weave that withstood the load of several people.

We placed large logs in the shallow water to support the frames. We joined the seats to the footings using discarded rubber from a bicycle inner tube, plaited for additional strength. This was looped around the frame and the supports underneath, held in tension through a hand chiselled notch in the base of the logs.

Concept Development



Designing through Drawing and Making



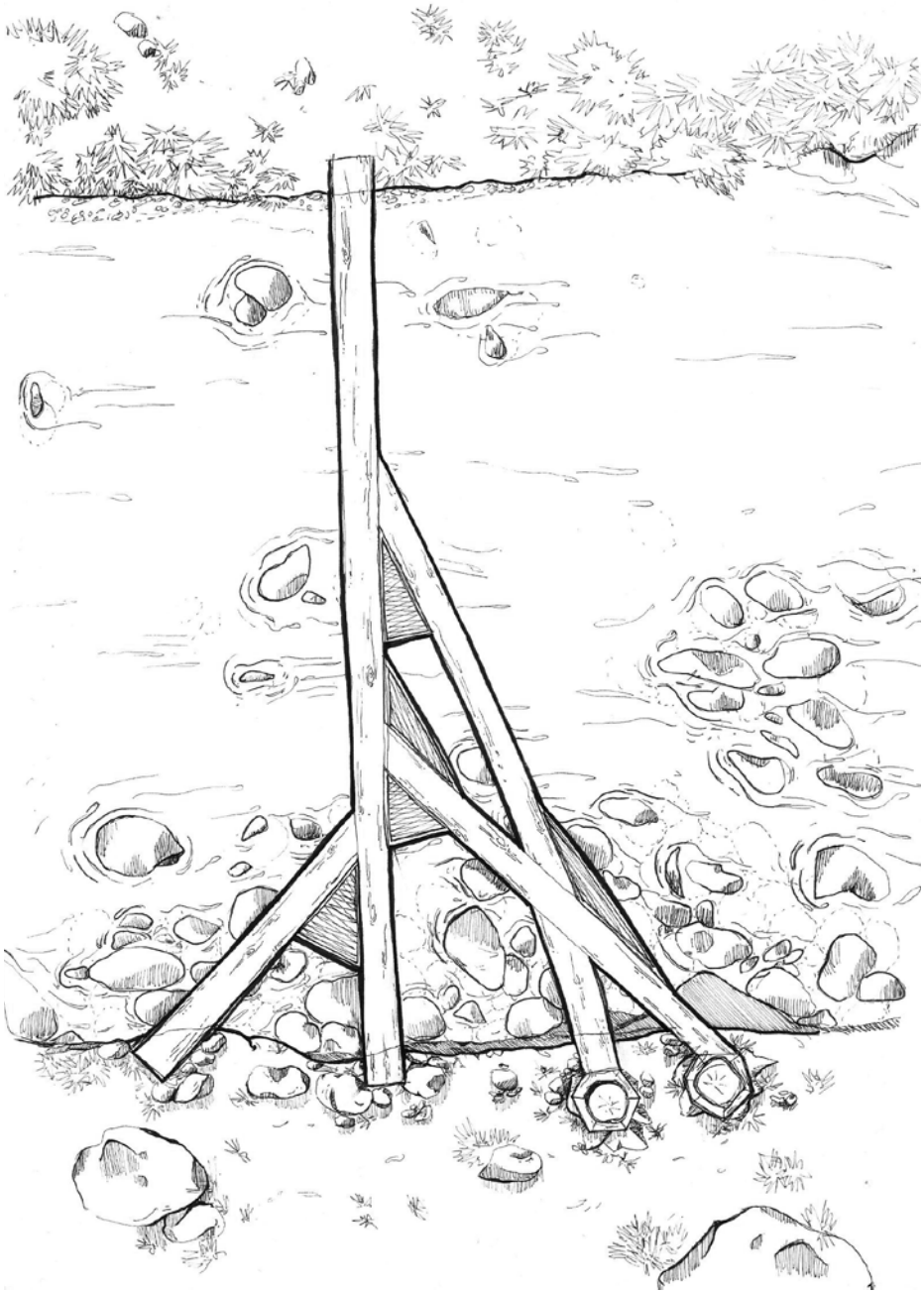


Investigating relationship between seat and river - Locating seats and securing seat to logs

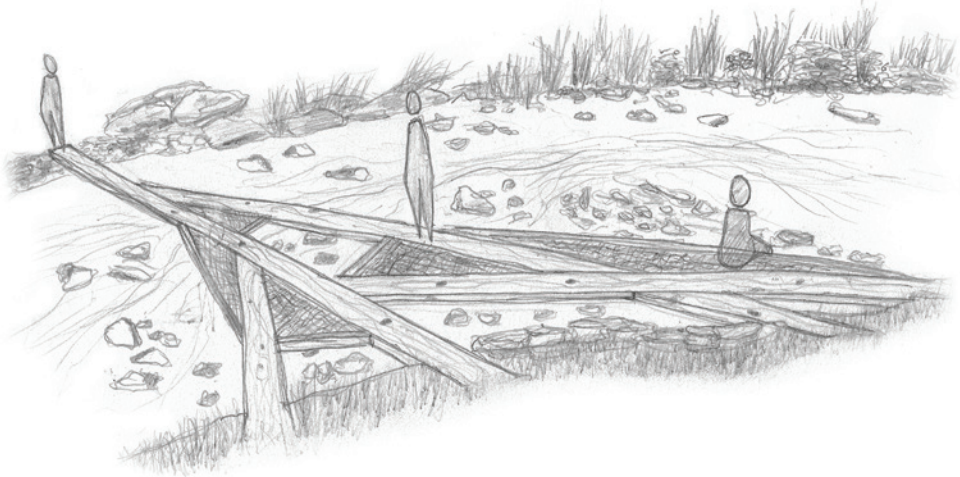


Establishing connections between seats and playing with functionality (top: seat used as backrest)





Plan of Bridge Proposal



Future development of our design would investigate ways in which pathways could connect the triangular seats to create special moments of exchange and contemplation along an extended bridge, connecting both sides of the river.

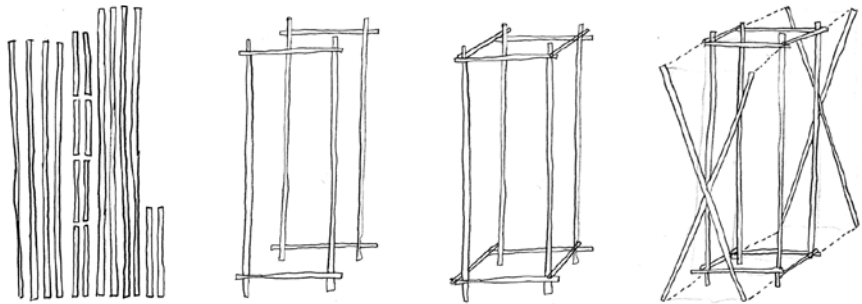
Key to our concept is the flexibility it offers, given that the possibilities for integrating moments of contemplation into a crossing are limitless.



Collective Connection

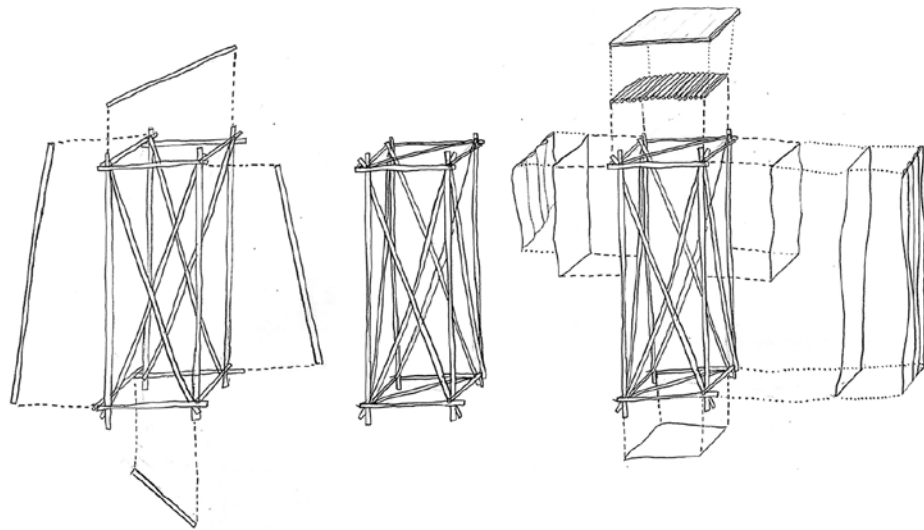
Composition · Integration · Inhabitation





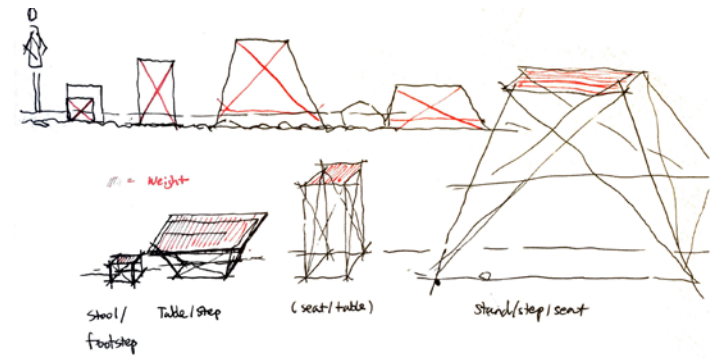
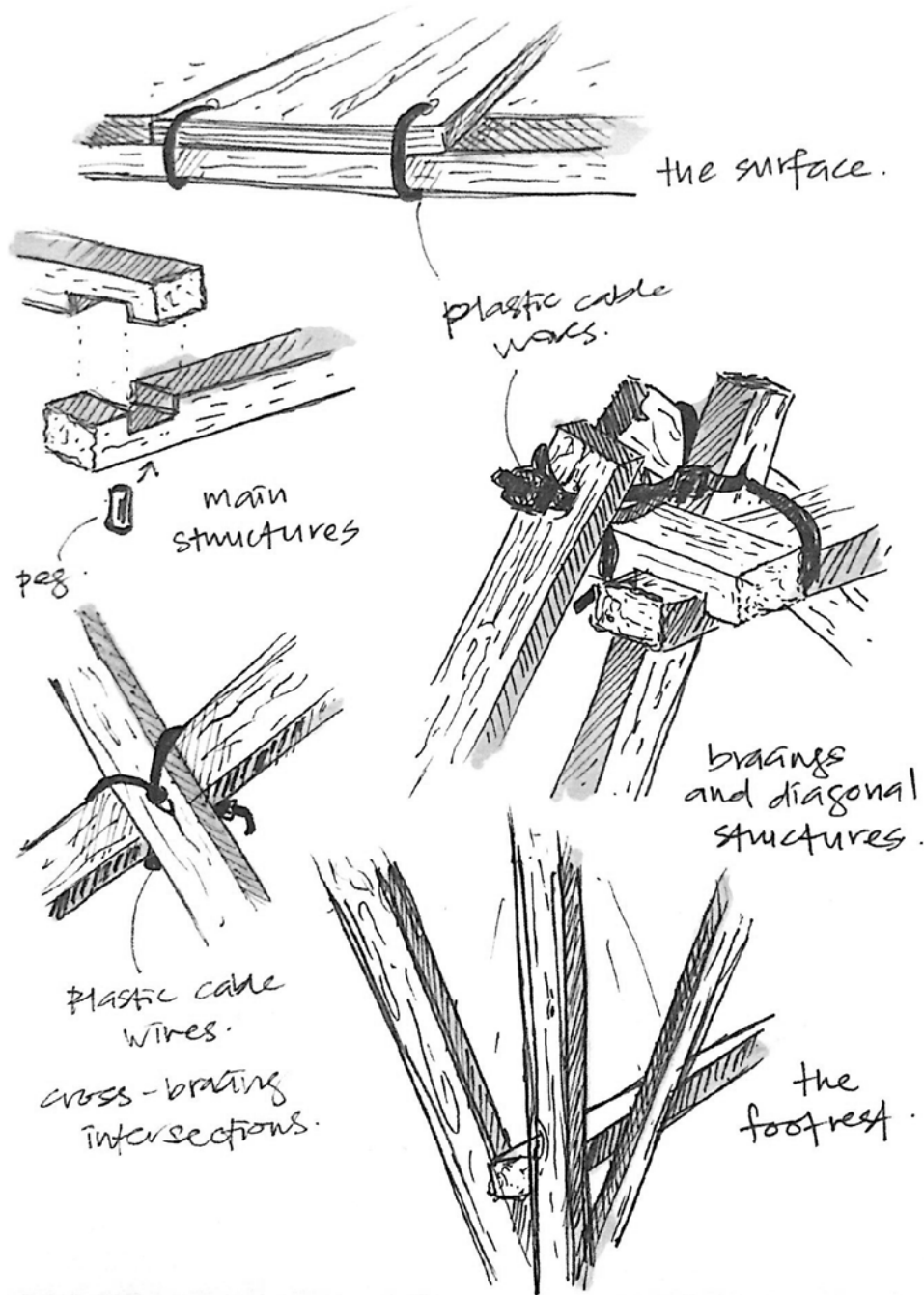
Some of the existing rocks on the riverside site, south of Hagg Foot Farm, are large enough for people to step on, sit on, and meditate. We were sitting on these while sketching and could feel the hardness, wetness and coldness of stone. It is interesting how each rock quietly lies in place, yet its existence is not quiet; the flow of the river hits its surface and this lapping of water shapes it over time.

Our group decided to design a crossing that can be used as a bridge but also as a public gathering and resting space by recreating a series of usable stepping stones.

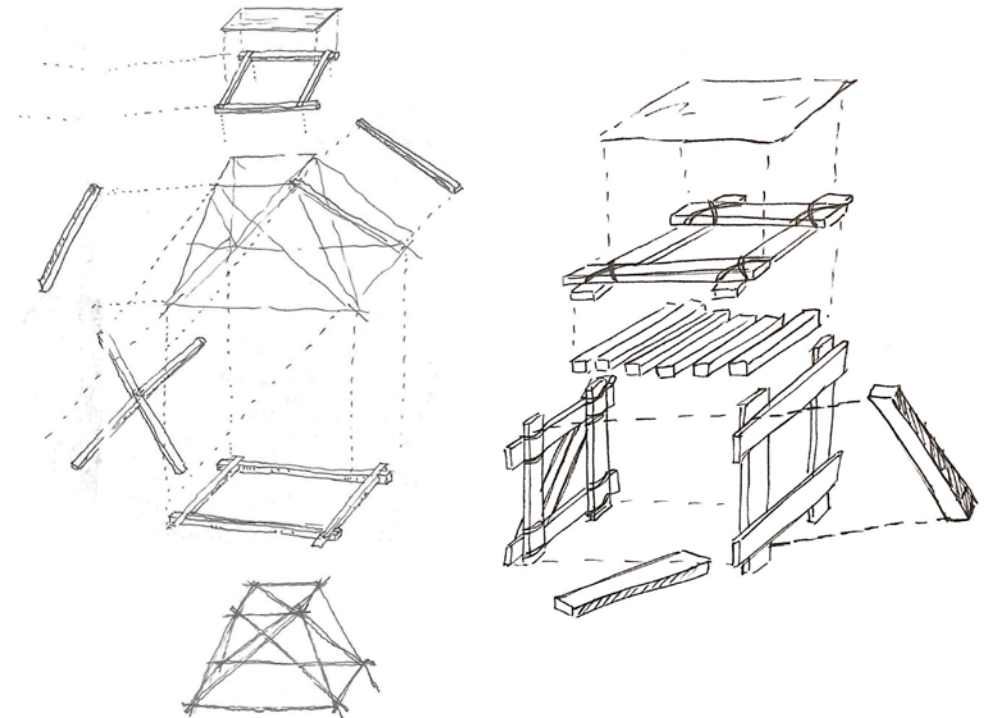


We decided to make our proposal light-weight, easy to adjust, but also sturdy enough for use. We wanted the bridge to become part of its natural surroundings. We wanted the intervention to be light touch and ephemeral. That led to us to construct a system using timber frames, that would allow water to flow through it. Existing materials on site such as the rocks on the riverbed would have an impact on the shape of our bridge but are also used to stabilise it - and preventing parts from being washed away.

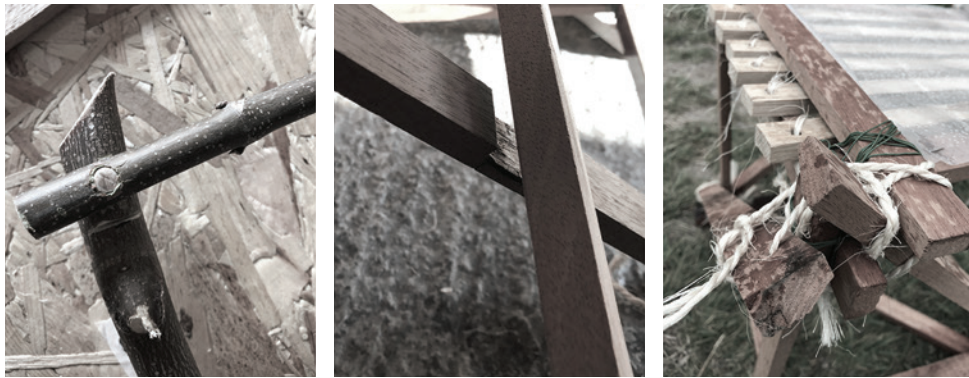
We made four prototypes, from small to large, with three different types of wood with various joints and structural bracing. Each of the prototypes were given different functions; one a footstep, one for sitting and dangling ones feet just above or in the water, one as a picnic table and the last one a raised plinth that acts as both a seat and a step. The prototypes share the same principles of frame construction, utilising cross bracing to distribute weight. We explored different options for fixings – firstly using string, then wire and finally cable ties, which all successfully accepted the weight of a person, but with varying degrees of rigidity.



Sketches of each component by Xuanru Peng



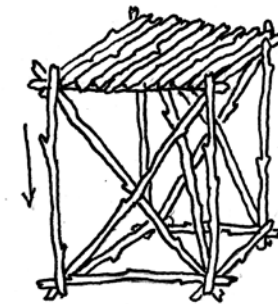
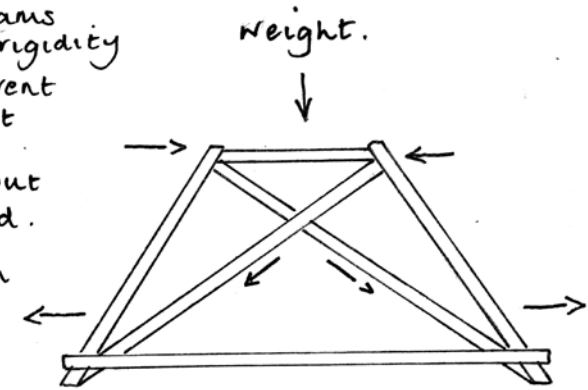
Testing Prototype Components



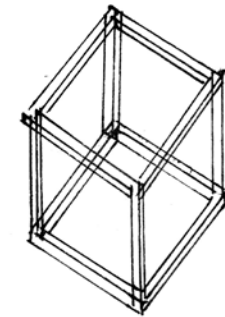
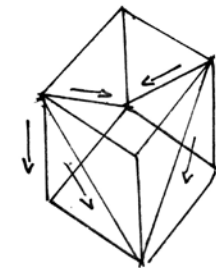
Distribution of Loads

Cross beams provide rigidity and prevent movement
 ↳ Help spread out the load.

The bottom beam prevents the bottom of the structure from moving outwards.



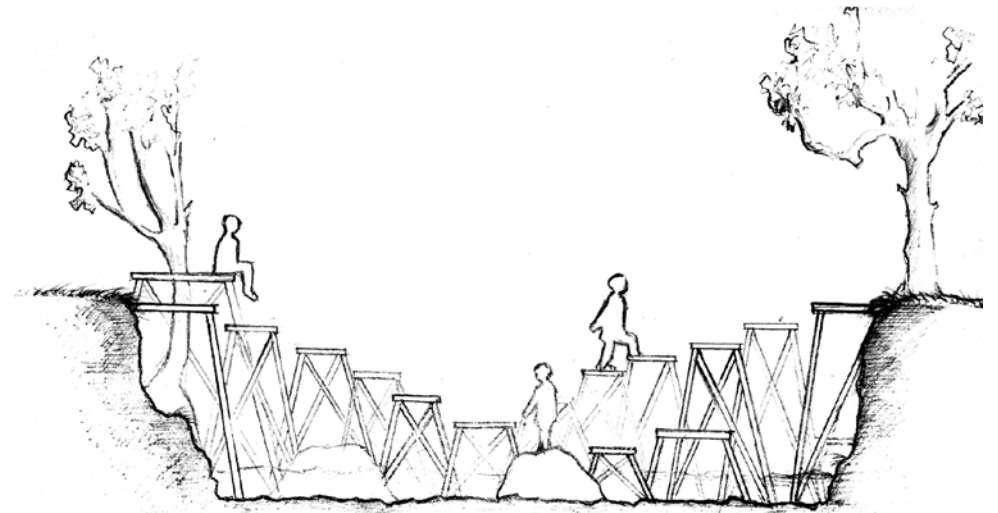
Structure made of sticks requires more bracing as they bend more than timber.



Alternating directions of beams also reduces movement.



A Future Bridge



A fully realised scheme would be formed of more than 50 components of different sizes, to create a series of routes between the riverbanks, connecting with the existing rocks in the river.

By creating these interventions we want to enable people to embrace the elements of nature, not just visually, but through sound, and sense of touch.

In order to understand the sensory qualities of the river, we walked in it, feeling the rush of freezing cold water against our feet and then a warm glow on our skin as we lifted them out of the water. By creating a series of steps and seats to dangle feet into the stream we want others to be able to experience that same sensation whilst crossing the bridge, and enabling people to sit, pause and rest along the crossing.



Rural Works:
Vertical Studio 2017

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