

Phase 2: textile manipulation 5

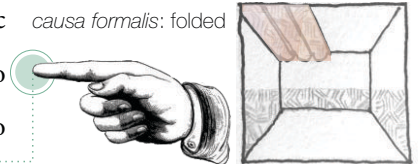
Knowing through folding

5.1 The art of fabric manipulation

Phase 1 led to the conclusion that another method of creating a shade-providing textile canopy needs to be considered. If creating textile from rope or yarn is inefficient in terms of the spatial effect achieved, perhaps the manipulation of existing textiles into unique artefacts that act as spatial elements should be considered.

Lise (2006:43) describes textile folding as a tool of fabric manipulation in garment construction: “A fold in the material sense is to give space (pleat, gather), give shape by folding away space (darting), or to make an edge (hemming). Fundamentally, the fold is a spatial entity...”

causa formalis: folded



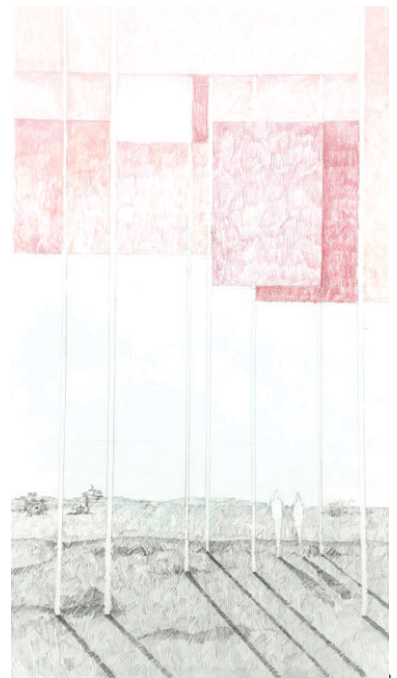
Folding thus transforms textiles from a flat surface into a spatial one. This method has potential in landscape architecture to elevate the use of textiles from functional membranes to ones that perform both functionally and spatially. Consequently, textile manipulation, as opposed to textile creation, was the focus of the next phase of investigations.

Folding of a large textile surface can be accomplished using a simple paper-based mould and pressure or heat. The moulds are folded by hand into the desired shape, after which a textile is placed in between two sheets of identical paper or cardboard layers. Pressure and/ or heat is then applied to transfer the shape onto the textile. This is a method used by fashion designers that manipulate textiles into folding and pleating, such as Issey Miyake.

5.2 Process of discovery: folding

Samples 1 to 4 were created to explore textile canopy folds. As sample 4 was made, an additional possibility of this method was discovered: the folds have inherent containment potential. Can these act as spaces where plants can be contained?

causa finalis: plant-containing canopy



Samples 5 to 14 were constructed based on which folding pattern would be best suited to creating folded textile plant pockets (see appendix B). As each sample was folded and analysed, the investigation became more focused on creating pockets with openings in the pattern in order for the plants to be viewed from below.



After exploring the possibilities of folding with paper, the patterns were transferred to textiles. The pattern used for sample 5 was successfully tested on geotextile, which is commonly used in the landscape. However, the author wondered whether the sample's aesthetic could be improved by using a different textile. Geotextiles are designed and manufactured to be mostly invisible when applied to a landscape such as eroded soil embankments, or to contain plants in a green wall. The purpose of this investigation was to explore the spatial- and aesthetic potential of textiles, along with their performance abilities. Thus other textiles, not often used in landscape applications, were tested for their abilities to be folded and to contain plants, while providing visual interest.

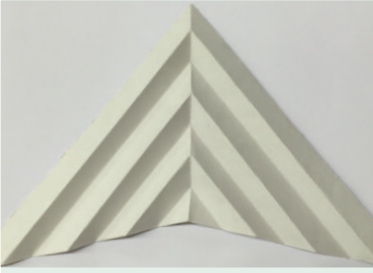


Synthetic fibre-based textiles were qualitatively assessed, and the samples proved to be too supple. It was also noted that their appearance was not contextual. Consequently, a quintessentially South African textile, the *shweshwe* fabric, was tested to determine whether it will be more suitable for this application. It is printed on calico, a plain-woven textile made from unbleached and often not fully processed cotton. *Shweshwe* is stiff and printed with brightly-coloured patterns, and is well-recognised in the highveld region as worn by traditional Sotho women (see figure 8a). It responded well to being folded and heat-pressed due to its stiff nature (see figure 18b). On a qualitative assessment level this textile is able to perform the function of containing plants in folded pockets, as well as creating visual interest, grounded in regional materials.



Figure 18a: Sotho woman wearing *shweshwe* (HelenOnline 2014)

Figure 18b: Folded *shweshwe* (Author 2016)



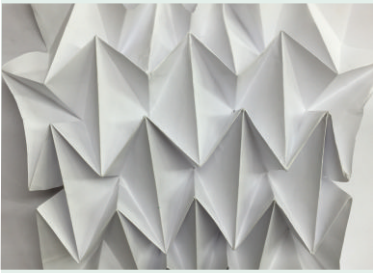
sample 5



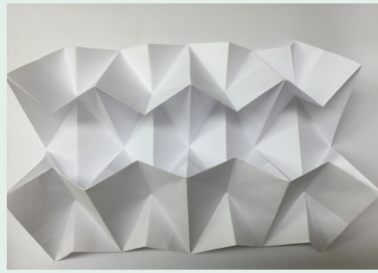
sample 6



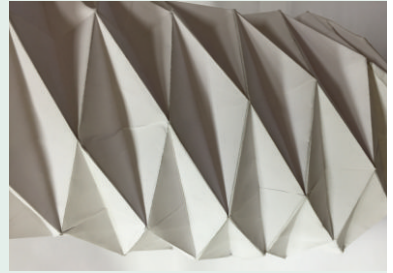
sample 7



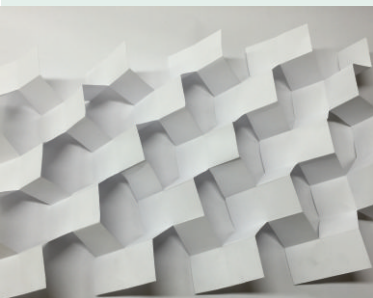
sample 8



sample 10



sample 11



sample 12



sample 13



sample 14

Figure 19: Selected folding samples
(Author 2016)



5.3 Reflection and revised plan of action

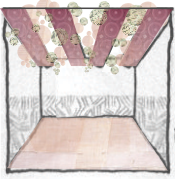
Folding not only creates opportunity to contain plants, but also to incorporate irrigation pipes as reinforcing for the mountain folds.

immersive experience



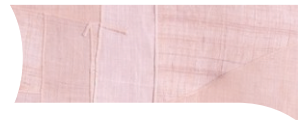
A canopy of textile-based plant pockets has the potential to create shade and an immersive experience in an environment where these functions are required immediately, or where plants are unable to grow on the ground plane. Examples of this include exhibition-like applications, or instant urban upliftment and street ‘parklets’.

causa finalis: instant landscape



However, in this preliminary stage of investigation, the answer to the exact pattern of folding was still lacking, as a folded sheet that can contain plants whilst having openings in order for the plants to be viewed from below hadn't yet been established. Cutting away pieces of textile to form gaps would affect the inherent structural integrity of the overall sheet. At the risk of dwelling on the problem too long given the limited time frame for each phase of investigations, Phase 3 will explore the application of this textile-based artefact in the landscape. If this is successful, the technicalities of the folding pattern will be investigated in another phase.

What form do you want to have, textile?
What programme do you want to be?



As *shweshwe*, I want to be folded.
These folds can be plant pockets.





Figure 20: Conceptual vision of a planted canopy as an immersive experience (Author 2016)



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