Unused and precious materials: Icelandic wool
Réyfið

Unused and precious materials: Icelandic wool

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# Table of contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>01 Background and experience as a textile designer</td>
</tr>
<tr>
<td>12</td>
<td>02 The Project</td>
</tr>
<tr>
<td>13</td>
<td>03 Diversity in Icelandic wool</td>
</tr>
<tr>
<td>17</td>
<td>04 Spinning sisters</td>
</tr>
<tr>
<td>18</td>
<td>05 Research process</td>
</tr>
<tr>
<td>19</td>
<td>06 The fate of the Icelandic wool</td>
</tr>
<tr>
<td>20</td>
<td>07 Possibilities in production</td>
</tr>
<tr>
<td>22</td>
<td>08 Midas the epitome of greed</td>
</tr>
<tr>
<td>23</td>
<td>09 Potential customers</td>
</tr>
<tr>
<td>23</td>
<td>10 Call for innovation</td>
</tr>
<tr>
<td>24</td>
<td>11 Dialogue between groups and research discovery</td>
</tr>
<tr>
<td>26</td>
<td>12 The Guiding light</td>
</tr>
</tbody>
</table>
Special thanks

I thank you all, sheep farmers and people from the wool world, for giving me your time and sharing your knowledge and experience with me. Special thanks to sheep farmers for giving me an understanding of what it means to be in the cycle of nature.

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Massimo Santanicchia your teaching, ideology and your wide perspective on the world had a strong impact and expanded my perspective on the concept of sustainability, thank you for that.

Thank you all fellow students for helping me in my project and being kind friends.
The goal in this research was to find pure material from the local environment and find out whether it would be possible to work on production in the aftermath. The material I decided to work with, the Icelandic wool, I found can have a positive economic impact on the society, does not leave an ecological footprint in nature because of the purity of the processing process and also has a good impact on the people who have it in their environment.

The story of the Icelandic sheep has always captivated me, a history of sheep that have undergone no changes since the settlement of Iceland and have kept all the unique qualities in the wool specific to the Icelandic sheep. Unchangeable, yet adaptable, based on genetic characteristics, to where in the country the sheep has been reared. In mountainous areas, by rivers or down by the sea, the dietary range in the environment can also affect the qualities of wool. My goal is to work with the wild and natural element of the Icelandic wool, which is mirrored in nature, and allow it to show its amazing qualities and to give it all the dignity it deserves in its diversity, but has been taken away from it by reducing its worth. Since Icelandic wool began to be processed in machines, an effort has been made to adapt the wool to the machines, but they are designed and produced abroad for other kinds of wool. This, along with the inadequacy of design and usage of wool in Iceland has caused the unique qualities of Icelandic wool, the fibre quality and the colours, to become almost worthless.

My aim is to draw attention to the value of the wool, its economical value and the lack of innovation in the Icelandic wool world, and to create the conversation. I think is needed between the public, innovation people and the groups within the woolen world. Such a conversation I believe can lead to action in the present and in the future.

I am a textile designer and I’ve been designing textile for the past 17 years. I have worked with wool in material blends with both natural materials and packed wool into Japanese materials made from shells for outdoor wear, and laminated. I’ve also worked with wool and knitting in combination with plastic to design rainproof fabrics.

The natural materials that were used in the blend were silk, cotton, linen, and drawn patterns with natural threads. I also used wool and silk knits to obtain different textures in the textiles. The tactile experience was always important to me, the effects of touching the fabrics on me and others. The natural textile was created with felting technology, where natural soap and water were the only binding agents. I also designed patterns using silk printing to get a visual texture in the textile.

In my BA studies in the Icelandic Art Academy emphasis was placed on teaching various techniques to offer opportunity for versatile design of textiles. I was from the very beginning interested in the felting technology because of how pure and natural it was, and because no chemicals were used in design with this technology and so it was not hazardous to my health as a designer or to those I was designing for.

The printing technology also intrigued me, with regard to the visual aspect, especially in rapport. There was something fascinating about seeing a small unit, that harmonised within me like a mantra, becoming a repeated sound in the textile. I believe that if patterns are created in this way, the person who owns it will always find a new life for the fabric and the owner will not throw it away without a thought when it no longer serves its original purpose.
My clients were both individuals and a certain target group. The individuals were interior designers and fashion designers, and individuals who wanted custom designed artefacts for their homes, such as a large panel that softens sound and light. I also designed bridal dresses and coats, where I designed the fabric and drew the clothing, and then got a dressmaker to make the cut and do the sowing. This sort of work nourished my artist's heart because I felt like I was creating a live sculpture. The design work was a pleasure because most women who are getting married are happy and ooze joy and anticipation. My goal as a designer was to create a context that made every bride beautiful.

The challenge in the design was that women have different body types and characters and with the right textile and form the outcome was a beautiful wonder.

For a few years, I managed a design store with five other designers, alongside my design studio, where we offered a range of clothing and accessories for women. Our target group was women of all ages and their partners who wanted to give them designer goods. My contribution to the store was the textiles that I designed for clothing that was created in collaboration with a dressmaker.
When I started out as a designer I didn’t give much thought to the effects of my design on nature or whether it left any footprints, but somewhere inside me there was an awareness that still didn’t directly reach my consciousness. When I think back I see that the reason for my interest in felting technology was that I was working with purity and finding a way to get handmade materials to the production stage. This tells me that there was an environmental awareness there somewhere; I was also always looking for pure colours that could be used in production. The Japanese shell materials were fifty-eight percent natural but the other forty-two percent were chemical binding agents, and no information existed about what happened to them in nature and they were not designed with a second life in mind, so I never took those experiments past the prototype-stage. It was the same with the laminated materials, where wool was packed into plastic that then became prototypes for raincoats but nothing more.

The reason I always had this environmental sentiment within me is probably that I was raised by a generation that came out of a farming society with inherited self-sufficiency and an effortless awareness of being a part of the natural cycle. I remember growing up, mum would imprint in us respect and care towards nature, not to squander as she called it, natural products such as electricity and water, and also be careful of chemicals that could have harmful effects on nature and the environment.

My interest in society and people has always been strong, perhaps because I grew up with a strong sense of community as my parents were a part of a building collective that built a large apartment building. The members would actively take part in the build to lower costs, and they also exchanged skills and expertise. These people had different backgrounds and educations, and so it was a community rich in human resources. The basis of the design of the building was a certain ideology that everyone is equal. During my childhood, the traditions of the farming society were still strong. Most of my family on my mother’s side lived in the countryside and when they came to Reykjavik, there was always room for them in our home, and so it was often full of family and friends, and it was normal and natural to share food, space, and belongings with others.

The building was twelve stories, and one of the three tallest buildings in Reykjavik with panorama views of the city, up to the mountains and down to the sea where the sky meets the ocean. I never tired of looking at the horizon, imagining what was on that line. I was intrigued by everything that I didn’t know and tired the adults with endless questions, but my grandfather always supported me, claiming that curiosity was a precious gift that was good to have from birth, and he encouraged me to nurture my imagination.

I also learned at an early age the value of being able to create an atmosphere. When my high-spirited mother would finish cleaning our home she would say to me: “Now go around the rooms and give the things a touch, everything is so much nicer when you’ve handled things and moved them about.”

Despite having all this at my disposal I have not managed to put everything in perfect context as a designer. When we move out from our childhood home life happens, and we take several winding roads as we learn to live and we’re always learning.
02 The Project

My project is about Icelandic Wool, where I achieved my goal of finding a material that was perfectly pure and sustainable, a material from my immediate environment. It affects society and does not leave harmful footprints in nature. Wool also has a positive effect on the people who have it in their environment.

The research process started with reading about wool and talking with sheep farmers, the head of the Sheep Farmers’ Association, and the CEO of the only production company in Iceland that uses wool in their products and buys most of the wool that is produced in Iceland. I also talked to those I call the wool people, women and men who have a great interest in Icelandic wool and working with it.

03 Diversity in Icelandic wool

While reading up on wool, I found some facts that I knew and didn’t know. I knew about fleece and that it is dual-coated. The outer coat, þel, is delicate and airy and therefore has little density, it is soft, warm, and delicate. þel is also absorbent but always locks the heat in, and it maintains the shape it has been moulded into.

The inner coat, tog, has long, variedly course fibres that usually curl, it is wild and has a mind of its own. The fleece also contains the third hair-type – illahærur, which really surprised me as I had not realised that it existed. The illahærur are long, smooth, and very coarse hairs, similar to horse hair, and they are rarer and are not found in all wool. I also knew beforehand that there were four natural “sheep-colours” but I did not know all the different tones or how many colour patterns there were, they are six, or that the two-toned fleece had thirty-two different colour combinations. I also didn’t know that the Icelandic wool has been the same since settlement because sheep farmers have not done much systematic breeding, so it has unique Icelandic qualities that are not found in other sheep breeds in other countries where farmers have bred sheep with different types for a long time.

Wisdom from visits around the country

During my travels around the country, meeting with sheep farmers and talking to them about their wool, I learned that wool has different qualities in different parts of the country, the reasons being variations in climate, grazing and genetics.

One of my many visits was to a couple farming in the north of Strandasýsla county in the Westfjords. The landscape there is rich and well suited for sheep farming, as the grazing grounds are wide and varied. The diversity is due to the fact that the sheep graze up in the mountains, along the rivers, and down by the shore. It followed to ask therefore if this affected the wool, and they said that they strongly believed so but that there was no available research to back that up.

I was introduced to the farm’s leader sheep, a unique Icelandic phenomenon. The leader sheep have special abilities to sense danger in the environment, changes in nature, and imminent bad weather. The farmer also told me that in earlier times sheep were never rounded up and kept indoors so this quality was precious as the leader sheep would guide the herd to safety. It is not without reason that I mention the leader sheep and their special gifts, that are as valuable today as they were in the past of the farming society. These sheep almost always have a multi-coloured coat that is dismissed as wool of almost no value.
During another trip to Strandir at the end of February, that I took to fetch some lambs’ wool, I got to be present at a shearing.

Sheep shearing is done three times a year. The first one is in autumn when the sheep are rounded up from the grazing grounds. When this shearing is done the lambs that were born in spring are shorn before going into the sheep sheds, and so the wool is perfectly clean. I will be using this wool in my project.

The next round of shearing is in November when the sheep return home to the farmstead for the winter. I visited a farm in Hvalfjörður where I got to take part in this procedure. In this trip, I got my first wool acquisition – a whole fleece and also wool that is usually cast away.

The third shearing takes place in early spring and is called snus, this wool is almost exclusively pel that is shorn off the sheep while they are still indoors and before they are let out at springtime. This is the shearing I took part in at the farm in Strandir, and the snus will be in my project.

After the shearing trip in November my goal was to examine whether it would be possible to utilise all the wool in the sheep shed at this time, and avoid all waste.
When I returned home with my first acquisition, I experimented with felting a whole fleece, both by hand and in a machine. First, by washing the wool with a natural soap and then by felting the whole fleece by hand without treating it further.

Traditional treatment involves combing the wool after washing it twice with soda and soap, but I wanted to avoid that procedure because the whole point was to work with as undocorred a product as possible. I also worked with the whole untreated fleece using latch hook technique, where a special hooked needle is used to push the wool through a natural canvas. This was to see what would happen if I shaped the wool on one side but left it wild on the other side. I used the same technique with wool that is usually cast away because it is very shaggy after the chafing in the sheep sheds, it was treated with combing before it was pushed through the canvas.

Thirdly, I continued to comb all the fleece and spun a thread that I knitted with, and it turned out to be a very strong material. I would like to put that strength to the test some day.

The next step was to work with the fleece in a felting machine in a traditional way, comb it in the machine and use the natural binding agents soap and water. To begin with the fleece was white with black dots and it developed into an exciting texture that looked like marble. I also experimented with slightly rinsing the fleece with warm water and then felting it in the machine without using soap, but relying instead on the wool’s natural oil as a binding agent.

This experiment lead to searching for clean and sustainable materials, that no chemicals were added to and that would not leave footprints in the environment. I continued visiting sheep farmers and the wool people, further researching wool, and as I was sure that I could design a pure material with the felting technique, I was very interested in looking into the possibility of spinning yarn and knitting and getting it to the production stage.

04 Spinning sisters

The quest for yarn led me to a group of like-minded sisters who call themselves Spunasystur [Spinning Sisters], this is a group of women who have different backgrounds and education, and are of all ages, but who have found each other based on common interest in experimenting with spinning Icelandic wool. It was a stroke of luck for me to find them because they were working with unwashed lamb's wool by hand, a clean product. One of the sisters decided to take it one step further by producing wool yarn, and she is opening a small spinning factory that will start production next summer, producing yarn from clean wool.
05 Research process

To ensure that it was possible to knit from the yarn I visited the production company Varma and talked to a knitting machine specialist who told me that it would be possible to process the yarn so that it could be used in the knitting machines.

At this stage of my research I realised that the original goal of the project had been achieved – to respond to the insistent call of society to assume responsibility as a designer and protect the environment by not leaving footprints in nature. To think the design procedure through, realise how the design procedure is; whether natural resources are being over exploited, if the materials being used for the design product are degradable without damaging effects on the environment, what the life expectancy of the product is, or as it has been said: examine the end at the outset, and deduce whether the community will benefit from the project.

When I set off on this path of research I found out certain facts; such as that there is only one manufacturer in Iceland that uses Icelandic wool in their products.

The company purchases over 90% of all the wool that is produced in Iceland. The producers, the sheep farmers, sort the wool into first and second class, and the wool that doesn’t qualify for either class is thrown away. A large part of the wool that does not qualify for first class is sold and exported unprocessed abroad. In order to prevent environmental pollution due to transportation between countries and the fact that we lose all control over the wool and the components that might be added to it to process it into a product, which might have damaging effects on the environment, we must find new design possibilities for our wool, start innovation to improve the processing where soda and soap is used to wash the wool, and a lot of it is also dyed. All these products are imported to Iceland and there is little data on what the long-term impact soap, dyes, and binding agents can have on the environment.

It is also vital for the community of sheep farmers that there is innovation in wool processing in Iceland, because their product is not lucrative as it is, because the wool prices are low and that goes for both first class wool and second class, even though the former gets a better price. There are not many sheep farmers that exclusively farm sheep, most have another job and so the work load is heavy. This has affected their ambitions regarding producing and sorting the wool. This is not the only explanation, attitudes have also played a part in carving out this fate of the wool.

06 The fate of the Icelandic wool

When Icelandic wool was first processed by machines the equipment was imported from other countries and was made for a different type of wool. Instead of adapting the machines to the Icelandic wool, the wool was adapted to the machines, this often proved a difficult task and therefore wool and yarn was imported to be used with the Icelandic wool, or even alone. We also have to deal with an agricultural system that I believe is a part of the problem, even though I don’t fully understand what the system means exactly for the farmers I do know that there is not much incentive for innovation, and so Icelandic wool remains an undervalued product.
07 Possibilities in production

During the research process, I have made several visits to sheep farmers across the country and formed a network that enables me to get wool straight from the farmer. As I am working with pure wool it does not need cleansing and so there is no need for washing facilities as the situation is with the wool processing on the production stage now.

The farmers I’ve formed relationships with are prepared to put in the work to deliver the wool to me so that it is ready for production. The woolly smell fades when the wool is hung out in the open air for a while. The manufacturing takes place in small factories so there is no danger of over-production. Wool is a natural material and when it is processed in this way the environment simply embraces it when its lifespan as a product comes to an end.

The Sheep Farmers’ Association has in the past few years done a lot of marketing, where the focus is on a clean product. So far, the emphasis has been on the meat production side the sheep farming but as this excellent ground work has been laid, it is possible to shift focus and turn to the wool. The Association also owns a part of Varma, the manufacturing company that buys most the wool production, and so it can influence the company regarding production of wool products.

My project involves looking to the past, finding solutions for today, for the future, to inspire and encourage innovation and production, and to look to nature for solutions in design, because nature is perfect in structure.

The design project in the exhibition will be a book on Icelandic wool, a text containing technical information, and information on the qualities of the wool, benefits for the environment, the community, and the economy. The book will also contain material samples made from wool, and I hope that people will not only want to experience it visually, I also want them to touch the wool for another way of sensing the material.

In my opinion, creating a book for my final assignment was a logical development of my research, as I think it is more important to instigate a dialogue with people than to design a final product. The word is first in everything, the word becomes a conversation that is visualised into a product that benefits people. Further reasons are stated in this research report.

Who is the product for? Who is the client? With some simplification and a wide angle we could say that it is anyone who is interested in improving the world, making it more environmentally sound, preventing over-production, environmental damage, and waste.

To speak frankly; if we want to halt the destruction of the Earth caused by the greed of men, we humans need to look at economic profit in a wider context. What are we going to do when the natural resources have been depleted due to over-production? What are they going to do, the people that never get enough of economic profit and who have hoarded all the wealth and resources and made the public so poor that it has no finances to keep up economic growth? These are questions that we need to ponder.
During my research, my mind has often wandered to King Midas, the epitome of greed, who loved two things more than anything - gold and his daughter the princess. The Fates gave him a single wish and Midas wished that everything he touched would turn to gold. His wish was fulfilled and everything around him was turned to gold. And thus, his whole life was closed off and bore no fruit, and because of his greed he ended up all alone in a lifeless world where everything had a golden glow, including his own daughter who he loved next best to gold.

But aside from all this, I think marketing specialists would be frustrated with the too wide angle on the target group. So, I am going to look to my country, Iceland, and see who might benefit from the product. It is common knowledge that wool has a sound dampening quality but a lesser known fact is that it also dampens or reduces electric waves, and as Icelanders are technologically advanced as a nation this quality of the wool could have health benefits for people in the home and in the workplace. We also have a growing tourist industry and could create a product containing instructions and product design information about how people in other countries can use wool from their own immediate environment to improve their health.

My work is a call to arms to designers and inventors to come and work into the Icelandic wool world and find a new approach to woolen products. To converse with people of all ages with different background. There are many possibilities in innovation with wool and space for many interested parties to lend a hand. There are people interested in reducing waste and there are numerous opportunities in the sheep sheds to use what is there to be found, there is more than lambs’ wool in the sheds, as I have discussed in my description of the project. Also, that which is left over when products have been manufactured, the left-over wool also might have potentials.

There is a growing awareness among designers to be responsible for the environment and to prevent the over-production of products where the principal goal is economic profit. There is also discussion about the negative effects on the planet’s natural resources and waste of worker’s life energy due to the driving need of the monetary powers to maximise the efficiency and productivity of both machines and people who often work for a low salary.

There is also room in the wool world for people who want to have a positive effect on their immediate environment. I believe that when people want to contribute something to improve their environment and start to sow seeds for new ideas and thinking, they will find other like-minded people and together they can make a difference and instigate positive change that can lead to action here and now.
As has been stated earlier, the purpose of this project is to create a dialogue. A dialogue has now started between sheep farmers and the wool people, and with the Sheep Farmers’ Association and the only large-scale production company in the country. Within the Association there is a dialogue going on between the farmers, but what is missing is a connection between the public and the sheep farmers, and also designers, to address the possibility of working with a pure product toward innovation.

Experience has taught me that direct and personal communication with people, and creating the right atmosphere, is an effective way to get people to listen and understand. That is why I chose to visualise the wool and offer direct physical contact with the material, producing samples that can be handled, and that people can see and understand.

To begin with, when I started this project I set myself a few rules to follow, they were to let go of all preconceptions I had of wool in textile design, and my attitude towards Icelandic wool, which were quite prejudiced and tainted by ignorance. I also had fixed ideas about what was beautiful and what was ugly, what was possible and impossible, and I wanted to be rid of those ideas. I wanted to be unbiased and show the subject respect. I set myself these rules in order to find a new approach to textile design with Icelandic wool, and possibilities of finding a fuller role for it.

During the research period, various ideas on designing with Icelandic wool and its unique qualities manifested. For instance, with the strength of the yarn spun from the fleece in mind, the fact that the wool maintains its thermal qualities even when wet and that it self-cleanses, I got the idea to design outdoor hammocks that could be hung out and about in Reykjavik so that the homeless could rest. The homeless are on the move all day and might appreciate the possibility to rest in a woollen cocoon. When I was pushing the fleece through another material I got the idea that it might be interesting to make parting walls in houses that would dampen or absorb electric waves.

But if something is to happen people need to come together and collaborate. That is why I decided to go down this road, because I believe that the beginning is to create a conversation. When communication has been established people are prepared to work for the benefit of the community, which will lead to direct financial benefit for farmers, designers, and others involved. Indirect benefits are environmental and the well-being of nature and people.

The paralysing effect on the starting point of the Icelandic wool world is the abysmal price farmers get for their wool, and the political impact of the agricultural agreement with its strong grant system to make up for the low price of wool. I will not delve further into this controversial and slippery field, because I want to create a positive discussion between sheep farmers, designers, and the public, where these parties can converse in agreement to succeed. As has been stated earlier in this report, the goal with this project is sustainability and when I think about ways of funding the project to begin with, there is something beautiful and sustainable to reach out to people through crowdfunding sites, where people decide to support a project that interests them and they believe in. They can make an independent decision on how much they want to contribute and it can depend on how much each person has to spare. People can also decide to take an active part in the project.
When I look back to the beginning, to the time when the groundwork for the research began for my MA-thesis, I see the landmarks that have led the way, aside from the ones I mentioned above. They are the books Small is Beautiful by E.F. Schumacher, Cradle to Cradle by William McDonough and Michael Braungart, and Biomimicry by Janine M. Benyus. Schumacher writes about his concerns regarding humankind’s actions from the technological Revolution, over-production, and how out of touch with nature mankind is today. He also talks about our short-sightedness in our attitudes to economic growth, which is evident in over-production. Schumacher also poses an idea that I agree with, which is about who can achieve change and a new vision for the future. It is not the authorities but the individuals who change their way of life, and find like-minded people and form a movement.¹

McDonough and Braungart are in tune with Schumacher, they are concerned about over-production and talk about the importance of being aware of what materials are being used in product design. They address designers directly, asking them to look ahead when they start their design processes, and display responsibility from the outset, deciding up-cycling possibilities that do not come at a cost to the environment.²

Benyus encourages us to be curious and look to nature in our innovation. These four writers adhere to the concept of sustainable development, taking into account the environment, the community, and economic growth in the larger context.³

² William McDonough, Michael Braungart, Cradle to cradle, (New York, A division of Farrar, Straus and Giroux. 2002)
Bibliography

Books


Image Sources

Picture 1 Private picture
Picture 2 Private picture
Picture 3 Private picture
Picture 4 Private picture
Picture 5 Private picture
Picture 6 Private picture
Picture 7 Private picture
Picture 8 Private picture
Picture 9 Private picture
Picture 10 Private picture
Picture 11 Private picture
Picture 12 Private picture
Picture 13 Private picture
Picture 14 Private picture
Picture 15 Private picture
Picture 16 Private picture
Picture 17 https://en.wikipedia.org/The_Midas_Touch Image: Midas Touch
Picture 18 Private picture
Picture 19 Private picture