



# Waste Management Plan for Keanne Tmi an Illustrator

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BACHELOR'S THESIS  
May 2022

Degree Programme in Energy and Environmental Engineering

## **ABSTRACT**

Tampereen ammattikorkeakoulu  
Tampere University of Applied Sciences  
Bachelor of Energy and Environmental Engineering

SERLIPPENS, JAATE:  
Waste Management Plan for Keanne Tmi an Illustrator

Bachelor's thesis 34 pages, appendices 0 pages  
May 2022

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The purpose of this thesis was to plan a waste management plan for Keanne Tmi. The waste management plan was based on existing data from the client, legislations and the clients wishes. The thesis introduces the different information needed for planning and practical information of waste management for the client.

A well-planned waste management plan can have a positive impact on the environment. Less waste goes to the landfills and more products are recycled or reused. Following a well-constructed waste management plan can lower the client's costs and possibly lower the amount of waste in future.

The thesis deals with the required legislations for the waste management plan and the effects of the local area where the client is located. The thesis gives information on how important a good waste management is also towards the environment and population. The client wished to get a waste separation plan in her studio and more information on what she needs to recycle and how.

The thesis resulted in a waste management plan for the client and a guide on how to separate and recycle her waste. It was also stated in the thesis that the client should concentrate on collecting data on the amount of waste generated and what products are used. Furthermore, the thesis gives the client tools that she can implement in different situations in the future.

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Key words: waste management, recycling

## TIIVISTELMÄ

Tampereen ammattikorkeakoulu  
Energy and Environmental Engineering

SERLIPPENS, JAATE:  
Jätehuoltosuunnitelma kuvittajalle Keanne Tmi

Opinnäytetyö 34 sivua, joista liitteitä 0 sivua  
Toukokuu 2022

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Tämän opinnäytetyön tarkoituksena oli laatia jätehuoltosuunnitelma Keanne Tmi-nimiselle asiakkaalle. Jätehuoltosuunnitelma pohjautui asiakkaan jo olemassa olevaan tietoon, lakeihin ja asiakkaan toiveisiin. Opinnäytetyössä avattiin asiakkaalle tarkemmin tietoa, mitä tarvitaan suunnitteluun, ja käytännön asioiden hoitamiseen.

Opinnäytetyön tavoitteena oli vahvistaa asiakkaan ymmärrystä, kuinka oikein laaditun jätehuoltosuunnitelman avulla pystytään vaikuttamaan positiivisesti ympäristöön. Silloin kaatopaikalle päätyy vähemmän materiaalia, kun sitä kierrätetään ja uusiokäytetään enemmän. Onnistuneesti laadittua jätehuoltosuunnitelmaa noudattamalla saadaan paitsi vähemmän jätettä myös taloudellista hyötyä.

Raportissa avataan lainsäädännön vaatimuksia, mitä jätehuolto tarvitsee ja mitä asiakkaan asuinalue vaatii. Työssä esitetään myös tietoa, kuinka tärkeää hyvä jätehuolto on ympäristöä ja kansaa ajatellen. Asiakas toivoi jätteiden lajittelusuunnitelmaa studiotaan varten ja lisää tietoa, mitä hänen kannattaa kierrättää ja miten.

Opinnäytetyön tuloksena syntyi asiakkaalle jätehuoltosuunnitelma ja ohjeita, miten lajitella ja kierrättää. Työssä myös esitetään, että asiakkaan pitäisi keskittyä tulevaisuudessa tiedon keräämiseen. Tämä tieto sisältäisi syntyvän jätteen määrän ja se mitä tarvikkeita asiakas käyttää. Lisäksi opinnäytetyö antaa asiakkaalle työkaluja, joita hän voi jatkossa muokata eri tilanteisiin.

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Avainsanat: Jätehuolto, kierrätys

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# 1 INTRODUCTION

## 1.1 Background

Waste management is not really talked about in the art industry, although artists use a lot of chemicals and other products that could have negative impacts on the environment and on their own health if not recycled properly. There are many opportunities to improve just by raising awareness and give information to the people who need it. There is also a huge market for reusing products in the art industry which could help lower the amount of waste in the future.

In 2020 the amount of municipal waste produced was 3,3 million tons, when compared to the previous year the amount rose by 170 000 tons so over 5%. (Suomen Virallinen Tilasto, 2021). Seeing this number, it is important to improve waste management in the future in the smaller industries that are not that talked about. Even though these the statistics are not solely connected to the art industry, all the fields will have a part in this and it is important that all the possible changes and improvements are made so that hopefully instead of rising those numbers they will lower in the future.

This thesis aims to make a waste management plan for the company Keanne Tmi. The owner of the company, Keanne van de Kreeke, is an illustrator who lives in the city of Somero (Finland). The client Keanne van de Kreeke gives permission to use her name in the thesis. Van de Kreeke moved to Finland in 1999 from Belgium. Already from the beginning she pursued her dream of being an artist and making illustrations through freelance works. In 2011 she started her own company and has worked as an entrepreneur ever since.

## 1.2 Objective

The goal of this thesis is to make a waste management plan for Keanne Tmi and research how the costs can be lowered, see what she can reuse and recycle in her field of work. The waste management plan should be easy to carry out in the

future and follows the clients wishes. The thesis will go cover the legislation and directives that will have an impact on the waste management plan and the waste management plan will follow the recommended guidelines. During the thesis the goal is to find more information on the waste management in the art industry.

A well conducted waste management plan is a project that is done by properly using existing information and following the information that is provided by the client. The thesis will present possible solutions to problems that surface and explain how to solutions can be put into practice. The waste management plan will also suggest possible improvements to the current situation. Finally, the waste management plan might lower environmental impacts.

Even though waste management is not that widely discussed about yet in the art industry it will possibly have a huge impact on the future if we start concentrating on it now. It is difficult to track the amount of material disposed of by the art industry and that is something that should be focused on more in detail in the future. Waste management will provide a perspective on what can be reused or how something can be used to its end life and then recycled, which will potentially save the client a lot of money in the future. The aim is also to raise awareness in the art industry and hopefully this will help other artists in the future to improve their waste management.

## 2 LEGISLATIONS AND DIRECTIVES THAT HAVE AN IMPACT ON THE WASTE MANAGEMENT PLAN

### 2.1 EU directive in waste hierarchy

The waste framework directive from the EU will have an impact on the waste management plan. The idea behind the waste framework directive is to set up some basic waste management principles to support making a waste management plan. The basic rules are that it can't endanger human health or harm the environment; it should not cause any risk to water, air, plants or animals; It should not cause any inconvenience through noise or possible smells, and it should not affect countryside's or places of special interest. (2008/98/EC). The waste hierarchy can be seen in figure 1, it tells the idea of what should happen with waste and what the waste management plan should also follow. The main idea of the hierarchy is to prevent waste and the last resort should be sending waste to the landfill. (European Commission, N.d.)



FIGURE 1: waste hierarchy (European commission, N.d)

The targets set for 2025 state that the re-use and recycling of municipal waste should increase to 55% and onwards there the target is to increase to 60% by 2030 and 65% by 2035. For the client van de Kreeke this will mean that the waste plan should concentrate on recycling and re-using. (European Commission, N.d.)

## 2.2 Legislation related to waste management

The goal of the legislation for waste management is to minimize the amount of waste generated and, it also requires that the ones in responsible know what kind of waste is generated and how to recycle it properly.

Legislations that will affect the clients waste management in Finland are Waste Act (646/2011), Environmental Protection Act (527/2014), Government Decree on Waste (179/2012) and Environmental protection Decree (169/2000) (Ministry of the Environment, N.d.)

The legislation (714/2021) will change the purpose of the Waste Act (645/2011). The purpose is to improve circular economy and the sustainability on using natural resources. The idea is also to reduce the amount of waste and see that it will not cause any harm. Prevent danger and harmfulness to the human health and environment caused by waste and waste management. It will also help create a working waste management and prevent littering. (Waste Act (714/2021), 1§.) This legislation is applied in situations that are connected to waste, waste management and littering. But legislation (714/2021) will change the purpose. (Waste Act 646/2011, 2§.)

According to the waste legislation the common responsibility is to follow the priority arrangement, which means that the priority lies with trying to lower the amount of waste and lower the amount of harmful waste. (646/2011, 8§.) If there still is waste, then the priority lies with reusing it and after that recycling it. If recycling is not possible then the owner of the waste needs to utilize it, this can also include using it for energy. If all the possible steps are checked in priority order the waste needs to be exhausted. The person who creates the waste is responsible to assess the waste and follow the priority arrangement. These aspects should be taken into consideration in a proper waste management plan; the products and wastes life cycles impacts, the environmental protection aspects, and industries technical and financial requirements to follow the priority arrangements. (646/2011, 8§.)



The person responsible for creating the waste needs to stay on track about the amount of waste produced by the product, its environmental impacts, health impacts and what kind of waste management is needed. (646/2011, 12§.) This person also needs to investigate opportunities for developing production and create products in order to decrease the amount of waste and the harmfulness of the waste. The owner of the waste created needs to monitor the origin, amount, waste sort, quality and other important factors that will affect the set-up of the waste management. Furthermore, awareness about the health and environment factors and in some cases passing on this information to the persons handling the waste. The waste also can't be abandoned or handled recklessly. (646/2011, 12§, 13§.)

The legislation (179/2012) so the Government Decree on Waste will give more in detail information on how to handle waste. This legislation explains how packaging should be labelled, how the waste is collected, how it is transported and separated. This legislation will need to be followed when planning how the waste is separated in the waste management plan. The waste needs to be easily accessible when collected. (Government Decree on Waste 19.4.2012/179, 1§.)

The purpose of the Environmental Protection Act (527/2014) is to prevent the contamination of the environment, also to decrease the amount of emissions and lower the amount of the factors that cause problems towards the environment. Also to secure a healthy, comfortable, durable and diverse environment, and to support sustainable development and prevent climate change. The legislation also advocates using natural resources in a sustainable way and decrease the amount of waste and its harmful effects. The idea is to increase the assessment on factors that have a negative impact on the environment and take more factors into consideration in a wider perspective. The hope is also that citizens can participate more in the decision making. (Environmental Protection Act 27.6.2014/527, 1§.)

### 2.3 Environmental impacts from art industry

Up until now the environmental problems caused by the art industry are not much discussed. There are a lot of different factors that can arise problems, such as for example products, chemicals, production, exhibitions, and transportation. It is also often forgotten how big of an impact art can have. (Jiaxin, 2016.) Waste is also often used as art itself and reused, old metals can be reused and moulded into art. Art can also be used to make a statement and enable to make people understand the current problems. There is a term called “Artistic waste” in other words it is waste but put into something different. One thing however links all the different artistic wastes which is that they are not made by only using one single source or material but many different ones. One art installation can include welded metal, fabric and clay. This is a great way of reusing materials and showing the world that there is more to waste than the eye meets. (Jiaxin, 2016.)

Even though artists can reuse a lot of the waste in their art projects there are still environmental problems caused by the industry. These are for example greenhouse gas emissions arising from frequently held exhibitions with the transportation needed to make it possible. This will also damage biodiversity. Some artworks can release chemical substances indoor; this can affect visitors and the artist making the art, and will affect the human health. On the other hand if there is an outdoor exhibition the paintings might have a coating that can emit toxic chemicals due to the rainwater runoff. This might cause contamination to waters and due to this there can be negative impacts on ecosystems and possibly on the long term also on human health. (Audouin & Osset, 2020.)

Then there is digital art, which is somewhat still new to the art industry but growing fast. Digital art does not necessarily have a less impact on the environment compared to physical art. Digital arts problems are in energy consumption and possible rare metals that can cause problems. Some things that could be done to help the environment are artist design choices and for the artist to check the life cycle of the product and use it to its end. (Audouin & Osset, 2020.)

Having a good waste management plan will also have a positive impact on the environmental problems. A well-constructed waste management plan can

improve the quality of air and water. It can also reduce greenhouse gas emissions. When waste is recycled properly it can also have a positive impact on energy consumption, because the manufacturing of new products can be reduced. One of the most significant impacts is the protection of the environment and the health of the population. These days due to recycling new useful substances can be created. Thanks to recycling less waste goes to the landfills and therefore the production of harmful substances is reduced. A proper waste management can have a significant impact on the environment. (Right Away Rubbish Removals, 2018.)

#### **2.4 Waste management directives in the city of Somero**

Keanne van de Kreeke lives in the city of Somero; it needs to be taken into consideration in the waste management plan what the regulations are in this area. The waste board in Somero is located in Forssa, they are in charge of informing about the decisions made and what kind of operation models utilized. The waste board follow the legislation (646/2011). According to Waste Act (646/2011) section 3§ everywhere where there is a property it needs to have their own waste bin. The resident needs to make their own contract with the waste management company when the waste will be picked up. On top of the payment for emptying the waste bin the resident also needs to pay a waste management fee, this covers the waste management services such as the recycling centre, counselling and etc. It also covers the salaries of the waste management. (Somero, N.d.)

The waste bins need to be emptied during the summer in the city area every two weeks and at the area of dispersed settlement every four weeks. During winter four weeks is also okay in the city area. At Somero there is a recycling centre called Ecotekola and some flea markets to help recycling. Most of these aspects are already taken into consideration by the client and will also be included into the waste management plan. (Somero, N.d.)

Somero has its own recycling point that is located on Salontie 91. Keanne van de Kreeke can bring all her recycled waste to this location. (Somero, N.d.)

### 3 CURRENT SITUATION OF THE CLIENT

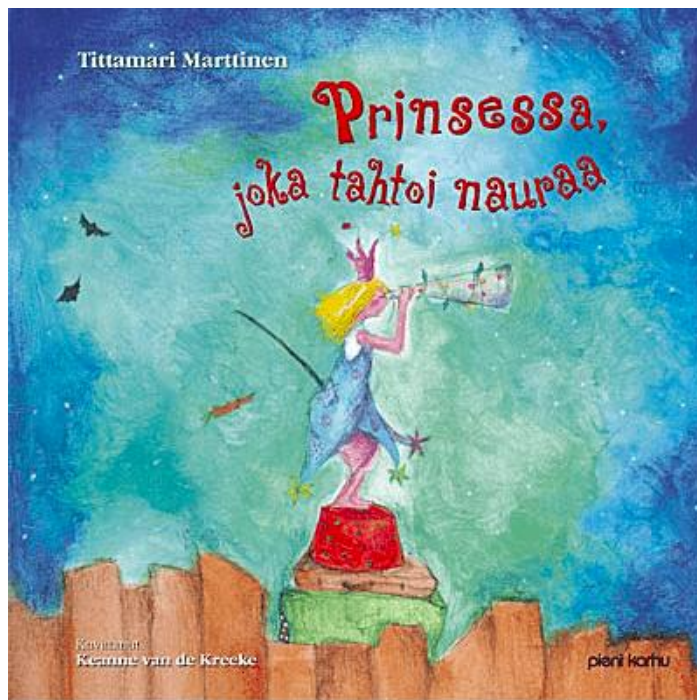
#### 3.1 Information on what Keanne van de Kreeke makes and does

Keanne van de Kreeke is Dutch, she moved from Belgium to Finland in 1999. She is located in a small city called Somero. She graduated in Antwerp with a master's degree in audio-visuals and graphic arts. Van de Kreeke likes to mostly work on illustrations.

Van de Kreeke created a wide variety of different art works, she has illustrated books for elementary students, for example the religion books for 1-6 years in elementary, they are called "Sydän". She also has illustrated different children's books, for example called "Miten mörkö kesytetään?" translated "How to tame a monster?" (Picture 1) or "Prinsessa, joka tahtoi nauraa" translated "A princess who wanted to laugh" (Picture 2)



PICTURE 1 : Miten mörkö kesytetään? (Keanneillustrations, 2022. Used with permission. Picture taken with permission.)



PICTURE 2: "Prinsessa, joka tahtoi nauraa" (Keanneillustrations, 2022. Used with permission. Picture taken with permission.)

Van de Kreeke also creates wall art. These works can be custom made or ordered from her already existing works. The illustrations can be purchased as originals or prints (Picture 3). Most of the illustrations made by van de Kreeke can also be bought as cards, posters or calendars.



PICTURE 3: Focus, part of memory bubbles (keanneillustrations, 2020. Used with permission. Picture taken with permission.)

Apart from the illustrations van de Kreeke also works for theater and other projects where she uses a lot of recycled products. She makes theater sets as can be seen in picture 4 where she has used cardboard boxes to make the set and drew on them. The cardboard boxes are collected from various people's households who had them standing around at home. Van de Kreeke also leads workshops with children, disabled people, and the elderly. In these workshops van de Kreeke uses a variety of recycled products that she gathers from other projects, collects at home, or have been given to her (Picture 5). In these workshops they work on how to stimulate the brain and what can be used for this purpose. How do different textures feel, smell, look and how to use other senses, and at the same time using your imagination and creativity (Picture 6).



PICTURE 4: Cardboard boxes made into theatre props (keanneillustrations, 2020. Used with permission. Picture taken with permission.)



PICTURE 5: Workshops in Kuusjoki, Amazing machines (keanneillustrations, 2020. Used with permission. Picture taken with permission.)



PICTURE 6: Taide tullee luu (keanneillustrations, 2020. Used with permission. Picture taken with permission.)

Van de Kreeke concentrates a lot on recycled products and using equipment until its end, but there are still many of theoretical aspects that she would need more knowledge about, such as chemical products and how to recycle her products in the correct way.

## **3.2 Collected data from the client**

In order to get more information for setting up a waste management plan, Keanne van de Kreeke was asked some questions on her current waste management situation and what products are used in her field of work. As a client she was also inquired about her wishes were also asked and what she hopes to achieve with this thesis.

### **3.2.1 Waste**

The waste that is mostly generated in van de Kreekes work is paper, along with tubes, jars of painting, old pencils, brushes, dried up paint, dried glue, tubes of glue and cardboard. One other big amount of waste comes from the theatre stage props that van de Kreeke makes. Because of this she has been working towards using as much as possible recycled products for example using old sheets a canvas to project images and illustrations on, to create a stage. This already creates a very visual effect by only using a few materials. The original illustrations are made small and with using as little as possible products so that the waste amount would still stay low. Van de Kreeke generates annually around 500 litres of mixed waste this contains products that can not be recycled or reused, such

as some plastics, packaging, some paint jars, etc. Van de Kreeke could not answer how much other waste she generates.

### 3.2.2 Mostly used products

Van de Kreeke mostly uses water-based paints in her work such as watercolour (Picture 8), ink (Picture 9) and ecoline (Picture 7). Sometimes a work needs spray paint or spray glue, these are used as little as possible, but if needed van de Kreeke tries to choose the more eco-friendly spray paints and chalk. She uses acrylic paint that contains plastic parts. Acrylic is mostly used when making theatre requisites, because it makes the items more waterproof. Acrylics will be recycled in the mixed waste basket. More information on the hazardous products the client uses can be seen in table 1.

TABLE 1: products used by van de Kreeke and chemicals

Chemical products	Chemicals	How to recycle
Spray pain	Acetone, Liquefied Petroleum Gas, Xylene, n-Butyl Acetate, Methyl Ethyl Ketone, Propylene Glycol Monoutyl Ether, Ethylbenzene, Magnesium Silicate and Carbon Black. Bottles may differ from what they contain (Sas, 2013.)	If empty it can be put into metal waste, but if there is any doubts it needs to be disposed of into hazardous waste (ekokymppi, 2022.)
Spray Glue "Maston"	Hydrocarbons, Dimethyl Ether, Butane, Propane, 2-butanone, Resin acids and Rosin acids, Potassium salts, Pentane and Tris (nonylphenyl) Phosphite (Maston, 2022.)	If empty it can be put into metal waste, but if there is any doubts it needs to be disposed of into hazardous waste (ekokymppi, 2022.)





PICTURE 7: Ecoline (van de Kreeke, 2022. Used with permission.)



PICTURE 8: watercolours (van de Kreeke, 2022. Used with permission.)



PICTURE 9: ink (van de Kreeke, 2022. Used with permission)

The acrylic paints van de Kreeke puts on old lids to reuse them before throwing them away instead of buying plates to put the paint on (PICTURE 10).



PICTURE 10: Acrylic paints on old lids (van de Kreeke, 2022. Used with permission)

Van de Kreeke also uses charcoal (Picture 12) and pencils (Picture 11) in her works. In the waste management plan these should also be taken into

consideration. For painting van de Kreeke uses different sizes of brushes (Picture 12).



PICTURE 11: pencils of different colours (van de Kreeke, 2022. Used with permission)



PICTURE 12: charcoal and a painting brush (van de Kreeke, 2022. Used with permission.)

Some of these products contain chemicals and they need to be recycled correctly, instead of throwing them in the mixed waste bin. When in doubt van de Kreeke has consulted the recycling centre; they advise her to dispose of most of the products via mixed waste or discard of bigger items, for example theatre props, via energy waste.

### **3.2.3 What waste is already separated or reused**

Van de Kreeke separates already a lot of her waste. Her waste management separation contains at the moment paper, cardboard, metal, glass and mixed waste. Metal waste is generated in very small quantities, glass waste mostly consists of small glasses or broken jars that are used for water and paints during the process of making illustrations. Jars of left-over paint are brought to the recycling centre but van de Kreeke is not sure how they are disposed of; she has seen that they are most often put into mixed waste. Van de Kreeke also has her own composting bin in her garden.

With regards to reusing and recycling, van de Kreeke likes to mostly reuse canvases, frames, cardboards as a base for her original works. She also reuses a lot of daily packaging materials for her classes and workshops, such as old magazines, wrapping paper, old cards, pieces of left over wood and other products. Van de Kreeke likes to teach children what can be reused and that you can use your imagination.

### **3.2.4 Clients' own wishes and thoughts**

Van de Kreeke hopes she can create a waste separation station in her workspace, because at the moment the waste is quite unorganized which makes it difficult to assess. She would like to go through her own workspace and possibly also calculate how much she could cut costs. Van de Kreeke is also thinking about expanding into digital work, but she would like to know whether it will be more ecological in the long run.

Waste management is not often a topic of conversation in the art industry in Finland according to van de Kreeke. Information is very hard to find and quite

unclear. In her opinion more work is needed in this field; there are some Facebook group platforms where unused products can be purchased, or they are given away. Van de Kreeke also would like to show her clients and the children she works with how the art industry could be more ecological.

## **4 WASTE MANAGEMENT PLAN PROCEDURE**

### **4.1 Goals and meaning**

The goal and meaning to create a waste management plan is to improve waste management for the artist and to create less waste in the future. Many people also lack knowledge about how to separate properly and what can be separated so it is important to spread information.

It is good to get a picture of what van de Kreeke can recycle and reuse in her projects and possibly some new ideas can be created for the future. The biggest problem in the art industry are the products that contain chemicals. There is not enough information or knowledge on how to recycle these properly and usually they are just thrown into the mixed waste bin. This is something the client wishes to get some more information on and that is one of the goals for this waste management plan.

Another aspect is also entailing the costs. The waste management plan will also check if some costs can be lowered. A proper waste management plan has many aspects that need to be taken into consideration and the goal is to check these as well as possible; it is also important to take into consideration my client's wishes for her waste management. This waste management plan will also include a visual presentation of a clear waste separation.

### **4.2 Methods used for designing the waste management plan**

Throughout this waste management plan the already existing data from van de Kreeke will be checked and evaluated, and consequently they will be used to make the waste management plan. Finally, there will be an evaluation on which aspects could be improved compared to the current situation.

While making the waste management the legislations that have an impact will be looked up and taken into consideration during the planning stage. For the visual planning of the waste separation an iPad will be used along with the drawing app

procreate to help visualize the idea. The goal is to lower costs; there will be a tracking sheet to be used by the client in the future, set up in Microsoft excel or another programme the client feels comfortable using. The sheet will contain collected data of the amount of waste generated, which new and old products are purchased and what chemicals they contain. This will create a clear overview for the client to follow her waste management development and how much waste is generated. This will help van de Kreeke to track her improvements and detect aspects that still need improvement.

## **5 WASTE MANAGEMENT PLAN**

### **5.1 Assessment of waste management plan**

The waste management plan is needed for better information on separation, and to know what needs to be recycled and how. The client also needs more information on how to monitor the amount of waste created to get a better picture on what she needs to improve on in the future.

The biggest areas that need to be worked on in the waste management plan are the chemical waste and how it needs to be recycled. What can be recycled, reused and how everything needs to be separated correctly.

### **5.2 Waste management plan**

The waste management plan is prepared according to the client's wishes and the legislations that will have an impact on the waste management such as waste legislation (646/2011), environmental protection law (527/2014), government commandment on waste (179/2012), commandment on environmental protection (713/2014) and the law on the changes of the waste legislations (714/2021). (Ministry of the Environment, N.d.)

The waste management plan will provide van de Kreeke with practical information on what she can possibly reuse and recycle and how to recycle correctly. The waste management plan will also give a visual presentation on how van de Kreeke can improve her waste separation. This will also make it clearer to measure how much waste she produces, and which waste is produced the most.

The waste management plan will consist of a basic plan which van de Kreeke can implement it in possible different situations. The plan will use the mostly used products as a base to see what mostly needs to be reused or recycled in van de Kreekes art projects or other workshops. Practical aspects should be taken into consideration.



### 5.3 Practical arrangement

The waste separation categories are mixed waste, cardboard, plastic waste, paper, biowaste, glass packaging, metal packaging and dangerous waste (Rinki 2022). More specific details about recycling can be found in table 2.

TABLE 2: Waste recycling more detailed information (HSY, N.d.)

Waste type	What can be put in the waste bin	Where it will be brought
Mixed waste	<ul style="list-style-type: none"> <li>Everything that can't be recycled and not dangerous waste</li> </ul>	Mixed waste bin that will be emptied once a month. Located near the housing of van de Kreeke.
Cardboard	<ul style="list-style-type: none"> <li>Packaging that is made from cardboard</li> </ul>	Someron jäteasema
Plastic waste	<ul style="list-style-type: none"> <li>Plastic packaging</li> <li>NO plastic with PVC</li> </ul>	Someron jäteasem
Paper	<ul style="list-style-type: none"> <li>Paper</li> <li>Newspaper</li> <li>Packaging products</li> <li>Paper bags</li> </ul>	Someron jäteasema or in van de Kreekes situation she can also burn it.
Bio-waste	<ul style="list-style-type: none"> <li>Food waste</li> <li>Biodegradable products</li> </ul>	Own compost bin that van de Kreeke has.
Glass	<ul style="list-style-type: none"> <li>Clean glass jars</li> <li>Glass packaging</li> </ul>	Someron jäteasema or waste collection bins
Metal	<ul style="list-style-type: none"> <li>Metal jars</li> </ul>	Someron jäteasema or waste collection bins
Hazardous waste	<ul style="list-style-type: none"> <li>Products with label, that can be seen in picture 12</li> </ul>	Someron jäteasema

The most used products by van de Kreeke are correctly recycled in the following ways. All the products that are in glass jars can be recycled by washing the jars

and putting them into glass waste. If the jar contains some chemicals that are not washable then the jar should be brought to the recycling centre where they process hazardous waste. Metal containers containing products such as water colours should be washed and put into the metal waste. Pencils and charcoal should be put into mixed waste (HSY, N.d.). With plastic waste van de Kreeke should check the packaging if it contains the sign 3 or 03 (PICTURE 13) meaning it is a PVC plastic packaging and it should be put into mixed waste or if the plastic packaging contains traces of hazardous products, it should be recycled into hazardous waste. Styrofoam that derives from packages and grocery packaging can be also recycled into plastic waste.



PICTURE 13: Polyvinyl Chloride (PVC) resin identification code (Shutterstock, N.d. Used with permission.)

Van de Kreeke uses very little hazardous waste. All the hazardous waste needs to be labelled so that their hazardous properties are visible. If the product contains one of the signs that can be seen in picture 12 it should be put into hazardous waste.



PICTURE 12: Hazardous waste labels (EC no 1272/2008.)

In Somero van de Kreeke only has a mixed waste bin at her studio. The rest of the waste will need to be brought to a recycling point in the city centre of Somero.

Therefore, a clear waste recycling area will help with separating the waste. The possible plan can be seen in picture 13. The picture shows which separation bins should be bigger and which ones can be smaller, the end results need to be decided by the client. If van de Kreeke has doubts she can ask Somero's waste recycling point or HSY has very detailed information how everything should be recycled.



PICTURE 13: Picture of the waste separation plan (Serlippens, 2022.)

Van de Kreeke can decide herself if she wants to locate the waste separation area outside or inside her studio. She can also choose what type of bin she wants to use. Van de Kreeke also can decide to go to a recycling centre for storage boxes or if she wants to have new ones which are made portable. But it is

important she has them labelled, to make it easier to track them. Also knowing the volume of the boxes will help to monitor the amount of waste produced.

#### **5.4 Costs**

One big first step to lower the costs is that van de Kreeke will go through her whole studio to see what she already has and what she can use before buying anything new. This should also be a standard procedure to remind her of what is already present in the studio. Products can be misplaced or forgotten over time and therefore they will not be used. It is important to reuse things and think about what can be used. But too much stock is also not good, because it might create more waste in the future. Furthermore, van de Kreeke should reflect upon what she can use or what she could donate or give away so that other people can reuse the products to its end. Following the waste production will possibly help lowering the costs in the future

The mixed waste cost is one set cost that she needs to pay. She will need to pay for is the following: 5,64€ for one-time emptying of the bin, 38,50€ for the mixed waste, including 24% tax. Van de Kreeke pays this 4 times a year so every 3 moths. The waste pickup is once a month. The volume of the mixed waste bin is 500 liters. However, this mixed waste bin is mostly used by van de Kreeke for waste that is generated from her own household. The costs are thus not only connected to her work.

#### **5.5 What will be recorded in the future**

Van de Kreeke should make a chart that she can easily fill in after every emptying of the waste bins, since it is important to know the volumes of the waste bins. This will make it easier to detect if some decisions made lowered the amount of waste or not. The most important aspect is to use the products to their end life. Van de Kreeke can make the table how it fits her best, but Excel is the most straight forward and easy to follow annually. If she doesn't want to use Excel she can use word, or some other platform she prefers.

Van de Kreeke should also record in her table the products she uses. It is important to track how many products she can reuse, and which products are the easiest to reuse and for what they can be used. Recording for what the product can be used and how many times will help to show whether the amount of waste is decreasing. These records will possibly help with lowering costs and waste. They can be recorded in the same excel or other platform as the amount of waste is collected. This sheet can also be used to record the chemicals that van de Kreeke uses and check if they have any hazardous waste symbols (PICTURE 12).

## **5.6 What can be reused and recycled**

Most of the materials that van de Kreeke uses can be recycled and reused. All the packaging materials can be reused and if not then they can be recycled in the proper way. Van de Kreeke can also help other artists or people in general by giving them the option of bringing her materials that they don't use anymore. This will also bring the community closer and give other people more ideas about how to reuse their products.

Van de Kreeke can reuse materials in her art projects, she can use products for packaging, or in her workshops for the participants to make new art from. Van de Kreeke has already thought in very creative ways how to reuse products, and this is a great aspect also for the future and it is very important she keeps doing this. This will hopefully motivate others to follow her example and reduce waste. Van de Kreeke has a lot of cardboard packaging, but before putting it into the waste she could think of as many things to do with them, as she has done before already, for example use again as packaging, or in workshops.

## **5.7 Solutions and improvements**

As has been indicated before the main problems in van de Kreekes waste management are the uncertainty and lack of structure and knowledge. The solutions and improvements are connected to a better waste separation area that is presented in picture 13. One possible idea for the waste separation bins is to

purchase bins that have the same size and are easy to stack on top of each other. This will save up room.

One other aspect that is a problem in the current waste management of van de Kreeke is the tracking of her waste. At the moment she can't provide exact numbers on how much waste she generates and how much is recycled in total. Therefore, an idea is presented to improve this: van de Kreeke can create an excel sheet or a table in another programme where she can track her amount of waste generated. This sheet will also be used to record other details as explained before. The waste management plan will provide tools to van de Kreeke to improve her waste management and which she can implement in her future projects and plans.

## 6 DISCUSSION

The waste management plan was created for Keanne van de Kreeke who is an illustration artist. The goal was to establish a waste management plan to help van de Kreeke understand how she can improve her recycling and waste management in general. Although van de Kreeke is already very mindful towards making her work environment more sustainable, she still has some aspects that remain unclear.

The majority of waste that is created by van de Kreeke derives from packaging and art products such as glass or metal jars. The aim is to provide van de Kreeke with insight on what she can recycle and how and where. Van de Kreeke also wished having a plan on how she can improve her separation in her workspace. To achieve this a visual plan was set up, including ideas what van de Kreeke can use as separation bins. The waste management improvements in this plan are developed to be easily implemented and do not create more costs for van de Kreeke.

Van de Kreeke already concentrates on recycling and reusing products which already follows important guidelines of the EU directive. Van de Kreeke also focuses on using materials to their end life and this, recycling and reusing are aspects she should keep up with in the future. Art in the end is all about imagination and creativity and many products can still be reused even if it doesn't look like that in first sight.

The solutions and improvements made for the waste management plan contain a visual presentation of a waste separation, information on how to recycle and what to recycle and detailed information on what information the client needs to collect. Compared to van de Kreekes starting point there are more recycling categories put into use and a more detailed plan on collecting information. The collected information should contain how much waste is generated and what products are used. She should also collect the products containing chemicals and make a list which chemicals the products contain. This will help van de Kreeke in the future to see if her costs and amount of waste lower. There is no exact

information on what van de Kreeke can do in her current situation to lower her costs.

To further improve the waste management plan more information on the products van de Kreeke uses could be obtained, their ingredients and their packaging. In this waste management plan the focus is on the production of the paintings and workshops. Van de Kreeke also participates in events where she sells her products, like cards, books, prints and original paintings. She also takes part in exhibitions and theatre which generate waste. These are all aspects that create waste and could be taken into consideration in the future.

Finding information on waste management in the illustration and art industry is very difficult. Not many artists concentrate on their waste production or collect data in anyway. In the end the art industry is very creative, and artist can use a lot of products to their end life. But having more detailed information on how to recycle and reuse artists could have a better picture on how much they use and how much they have left of products. This could possibly help them to save up on costs and make more eco-friendly choices.

It is important for van de Kreeke to have a basic knowledge on how to separate her waste so she can implement it also into her other ongoing projects and events in the future. This might possibly stimulate other artists to follow her example and obtain more knowledge. This could possibly bring the art community closer to each other and even for example share information. One possible step forward in sharing information in the future within artists is sharing products. Instead of throwing material away artists could ask between each other if someone else could use it.

The art industry still needs a lot of improvement with regards to sustainability and many people lack information, or information on the products used and how to recycle them properly is not provided. Hopefully by getting a better picture of the basics these problems will be solved in the future.



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