

Circular Economy & Condomerie

**How an SME can benefit
from adopting the Circular Economy**
*The world's first specialized condom shop switches to
Circular EConomy*



Green condoms on Condomerie patio

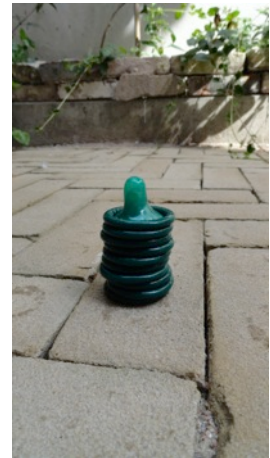
**Business Case by Jeanine Zoet, Tim Fresen, Kalja van der Linden
and Theodoor van Boven
for Condomerie**

Amsterdam, 30 July 2013

Preface

Fair Deal Trading condoms, CO₂ neutral condoms, vegan condoms: all of these have been on sale at the Condomerie for some time now. Yet according to the Circular Economy principle, they are by no means real Eco-condoms. Latex comes from rubber trees and even though a latex condom consists of 97% natural rubber latex, it is nowhere near being a real Eco-condom (packaging and all). It's time for action.

Environmentally responsible manufacturing now goes by many names: EcoProduction, Ecological Manufacturing, Circle Economy, Sustainable Production, Green Manufacturing, Cradle To Cradle, Economy in Loops, Zero Impact Growth Economy, Circular Economy and Blue Economy. I like to talk about a Circular Economy. This important term is now spreading across the world of business and industry, slowly but surely. Everyone I've spoken to, whether they do business on a large or small scale, is absolutely convinced of the importance and necessity of a transition to a Circular Economy. Getting there isn't easy, but the need for rapid change is strong; a combination that makes it a huge challenge. Which is why something needs to be done right now! It's how businesspeople like to do things: less talk, more action! And that is exactly what the Condomerie is doing.



Green condoms on Condomerie patio

As part of my membership of ISO/TC 157, the Condomerie wants to encourage and initiate global research and development into real Eco-condoms. Circular Economy principles should gradually be incorporated into this, so that within 3-12 years it will be the starting point for international standards. An initiative that began in 2008 led to the successful establishment in 2012 of the 'ISO/TC 157 Task Group on EcoProduction in a Circular Economy', something I'm very proud of.

Why did I choose the longer, slower route via ISO? Quality marks are expensive for SME companies (e.g. C2C quality mark) or don't have enough effect, while ISO links them to the standards of the European Union's CE marking. ISO may take longer, but is ultimately much more effective. Its rules and regulations apply not only to Europe but to the whole world and are linked to strict assessment, testing and inspection systems that work within legal frameworks.

Rudi Dutschke put it well when he said in 1968: "Lieber den langen Weg durch die Institutionen der Macht", advocating a long march through the institutions of power. In 2011, using Gandhi's words 'Be the change that you want to see in the world', we began to analyse our own management practices. How 'green' was the Condomerie? We wanted to have a better understanding of possible bottlenecks at an international level, and to be able to use this knowledge to answer questions at ISO/TC 157. After all, manufacturers have a lot in common with SMEs: office, canteen, cleaning, storage, packaging and logistics. And whether a company is large or small, they all have the same determining factor: their employees. From waste separation to green cleaning products and green energy, from toilet paper to LED lighting and better packaging materials; we now look at every aspect of our SME from a Circular Economy perspective. For example, Van Gansewinkel office paper and Satino Black toilet paper both have a silver Cradle to Cradle certification and that helped us make the right choice. Ecover cleaning products do not have this specific certification, but they have already gone quite far down the Circular Economy route. Which is why we decided on that cleaning brand. The Condomerie was runner-up for the 2012 Amsterdam DAM award, a prize for sustainable SMEs. A big compliment for our all-encompassing approach.

The Condomerie is not there yet, but we are well on our way. We've already found the answers to many of our questions. This report gives an insight into our whole sustainability process. We hope that other companies can learn from it and use our research to their advantage. Eco-condom manufacturing is the final, but difficult change our company would like to achieve. That will definitely take a few more years. In the meantime, going through this detailed report gives you a great opportunity to benefit from the research we've done. In the report, we list and explain all the advantages of applying Circular Economy principles to an SME, and how that can even cut costs. An hour's reading can save you tens of hours of research. And as time is money, that is your first saving!

Theodoor van Boven, Co-Founding Director Condomerie

Amsterdam, 30 July 2013

This report was originally written for readers in the Netherlands. In order to give a full description of the sustainability process at the Condomerie we have included the references to companies and websites that are only aimed at businesses in the Netherlands and are therefore written in Dutch. In those cases we indicate this with ^{NL}.

Contents

Preface	1
Summary	5
1. Introduction	6
1.1 Why was this business case written?	6
1.2 Who will find it interesting?	6
1.3 Condomerie objective	7
1.4 Importance of this business case	7
2. Explanation of terminology	8
2.1 Cradle to Grave: linear approach	8
2.2 Cradle to Cradle: waste doesn't exist, waste is food	8
2.3 Circular Economy	9
2.4 Other relevant terms	9
2.5 Performance Economy (PE)	9
3. Research & making choices	10
3.1 Possibilities	10
3.1.1 Energy	10
3.1.2 Waste separation and recycling material	13
3.1.3 Transport	14
3.1.4 Also ...	16
4. Implementation & obstacles	17
4.1 Energy	17
4.2 Waste	17
4.3 Transport	18
4.4 Staff involvement	19
5. Buying & Alliances	20
5.1 Supertape	20
5.2 Van Gansewinkel	20
5.3 Plastech Group	20
5.4 Bio Futura	20
5.5 Ecover	20
5.6 Geels	21
5.7 Eco-Logisch	21
5.8 Paardekooper	21
6.9 Banking	21

6. Results	22
6.1 Huge savings in energy costs	22
6.2 Good Envirometer score	23
6.3 Cleaner working environment	23
6.4 Sustainability is infectious	23
6.5 Runner-up for eco DAM award, Amsterdam city centre	23
6.6 Alliances with innovative pioneers	23
6.7 Competitive advantage	23
6.8 Reduction in CO ₂ emissions	24
6.9 Useful alternative cost-benefit analysis	24
6.10 Reducing impact of waste treatment	24
 7. Conclusions & recommendations	 25
7.1 Waste separation is teamwork	25
7.2 Management both Decision-maker and Eco-manager	25
7.3 Energy saving better for environment and saves money	26
7.4 Invest immediately if possible	26
7.5 Sustainability is catching	26
7.6 A new way of thinking works!	26
 8. What next?	 27
8.1 More green improvements in working practices	27
8.2 Local alliances	27
8.3 On our way to a sustainable condom industry	27
8.4 Environmental Issues related to Condom Manufacturing	28
 9 Checklist “Fast route to sustainable enterprise”	 29
9.1 Sustainability and innovation	29
9.2 Energy	29
9.3 Waste	29
9.4 Transport	29
 10 Sources, information, links and reports	 30
10.1 Information, sources and links	30
10.2 Our technical reports	31
 Acknowledgements	 32

Summary

The Condomerie is an example of a small SME (small and medium sized enterprises) that has decided to apply Circular Economy principles to all its management and working practices. This is partly as a contribution to a sustainable condom industry, but also out of personal interest: how can we make sure that our children and grandchildren will live in a clean and healthy world? Theodoor van Boven, owner of the Condomerie, is a member of the NEN (Netherlands Standardization Institute) and the ISO (International Organization for Standardization). Since 2008 he has been working within the ISO on an initiative to make the global industry more sustainable.

In October 2011, the Condomerie itself started to actively research all the possibilities to make its management practices more sustainable and environmentally responsible. We also looked at what exactly makes an enterprise sustainable, and what businesses have to comply with if they want to become more sustainable.

We spent a lot of time looking at the possibilities for energy, waste and transport. We also took a close look at office supplies such as printer paper, toilet paper, washing-up liquid and coffee. What we have achieved at the Condomerie could also be interesting for other businesses. Results such as a reduction of 22% in our energy consumption and an exemption from waste collection tax.

The process of research, making choices and then implementation was valuable but also slow and costly. By sharing the knowledge and experience we have gained with other SMEs, and also larger companies, we hope to make it easier for them to take that first step to becoming a sustainable enterprise.

The **Condomerie checklist “Fast route to sustainable enterprise”** is a quick and useful guide to which measures are interesting and feasible for your business and where to start looking for changes.

This report does not mean that we’ve achieved all our goals. The Condomerie is still moving forward in leaps and bounds. What’s more: innovative sustainable solutions are still in the early stages of development, so we can expect to see many more of them in the years to come.

1. Introduction

The Condomerie opened on 1 May 1987 – the world’s first condom shop. Today, we sell condoms and lubricants to consumers in our shop and our webshop. The Condomerie is a wholesaler too, distributing to businesses and health centres. We also provide information and hold workshops. The shop is located in Amsterdam’s Warmoesstraat. Our office and warehouse are on the same premises.

1.1 Why was this business case written?

Both internationally and locally, Condomerie owner Theodoor van Boven applies the ‘Be the change that you want to see in the world’ principle. Via the International Organization for Standardization (ISO) he hopes to create a sustainable condom industry. The Netherlands is a member of ISO/TC 157 for condoms and female condoms.¹ Theodoor van Boven is a member of ISO/TC 157 because of his expertise as a member of the Netherlands Standardization Institute (NEN). He would like to set a good example at the Condomerie. That’s why he is actively developing sustainable management and working practices for our company. Studying all aspects of sustainability is also out of personal interest. Because we want our children and grandchildren to enjoy nature and grow up in a healthy, cleaner world.²

Plans to make the Condomerie more sustainable had been there for quite a while, and in 2005 we had the resources to implement them. The sustainability process started the same year and renovation of the building began the following year. At the end of 2011 we pressed ahead with our plans to adopt sustainable management and working practices at the Condomerie. Our ultimate aim is for all Condomerie operations to fully incorporate Circular Economy principles. The Circular Economy is based on cycles. A Circular Economy is one in which all the components of a product can be recycled or are biodegradable and do not harm the environment. You will find a more detailed explanation of this principle in chapter 2.

In 2011, we began to look into the ways in which the Condomerie could operate more sustainably. That research was the starting point for a review of all the available options. In this business case you can read about the steps we took in that process, and the reasons why we decide to implement some of these options.

1.2 Who will find it interesting?

The aim of the report is to inspire SMEs and the condom industry. We hope that businesses who want to become more sustainable and environmentally responsible will follow the Condomerie’s example. Businesses can learn from each other in that respect. Where do you start? What obstacles will you encounter? How do you motivate your employees? When it comes to sustainable enterprise, you don’t need to reinvent the wheel. Condomerie’s research findings can make a useful contribution to improving sustainability at SMEs, particularly in our own sector. This could involve making an office, warehouse, stockroom, shop or webshop more sustainable. Transparency is important. That’s why we have published this business case, instead of keeping all the knowledge we’ve acquired on the subject to ourselves. The results of the Condomerie’s efforts to become more sustainable and environmentally responsible are on the Envirometer and are available on request. The Envirometer is a useful online tool that was developed by the Stimular Foundation for the business community. It gives businesses the opportunity to measure their own progress on

¹ http://www.iso.org/iso/iso_technical_committee?commid=53290

² For further information, go to www.condomerie.com/ecoproductie

sustainability and make that information available to others.³ It also gives insight into the costs involved. The tool was developed in close cooperation with SKAO (Independent Foundation for Climate Friendly Procurement and Business), who is responsible for promoting and further developing the CO₂-Performanceladder⁴. The CO₂ Performanceladder was originally developed by ProRail, who operate the railway infrastructure in the Netherlands. It is a tool that helps companies to reduce CO₂. If the ladder is used in calls for tenders, companies who take reductions in carbon emissions seriously are rewarded with a “reduction” of the tender bid they submit.

1.3 Condomerie objective: fast transition to Circular Economy

In July 2013, when this report was written, sustainable latex condom manufacturing was still in the early stages of development. Carbon neutral condoms are available, but even these are not yet 100% biodegradable. And that is exactly what Theodoor van Boven is aiming for in condom manufacturing. Both the condoms themselves and the manufacturing process should be sustainable. It is the packaging, however, where there are the greatest opportunities for improvement. In general, the condom industry does not use more sustainable and environmentally responsible materials. We intend to make great strides in that area, while Theodoor van Boven is doing the same for the Condomerie itself. Our aim is to base all our management and working practices on Circular Economy principles.

1.4 The importance of this business case

Large companies like Ford and Nike are making significant contributions to a better world. This is good for their businesses, and in the long term the changes will also be better for all of us and our planet.⁵ Many companies in the Netherlands are also in the process of making their management and working practices more sustainable. In this business case we give examples of companies like these because the Condomerie works with them. Our research findings can encourage other SMEs to adopt sustainable practices. They too can benefit from sustainable and environmentally responsible enterprise while making a contribution to a cleaner, healthier environment for future generations.

³ www.milieubarometer.nl/english

⁴ www.skao.nl

⁵ Braungart, M. & McDonough, W. (2002) *Cradle to Cradle: Remaking the way we make things*. New York: North Point Press.

2. Explanation of the terminology

As described in the introduction, our aim is to apply the Circular Economy to all Condormerie management and working practices. In this chapter, we explain the concept, which is based on the 'Cradle to Cradle' approach. Swiss architect Walter R. Stahel is the founding father of this.⁶ In 1976 he described his vision of an economy in loops. That is the origin of today's basic principles of sustainability: compatibility in economic, ecological and social terms. In 2002, Braungart and McDonough went into greater depth on the subject in their book *Cradle to Cradle; remaking the way we make things*.



Walter R. Stahel

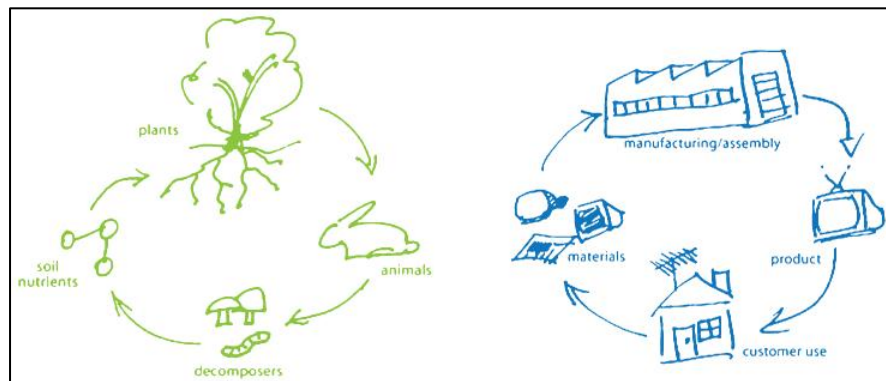
2.1 Cradle to Grave: the linear approach

In their book, Braungart and McDonough discuss the life cycle of products and the consumer society. Before explaining Cradle to Cradle, they talk about the current situation and today's consumer behaviour. They mention the fact that people often buy brand new products which only they use. 'If that person doesn't need the product any more, then no one needs it' is the idea. The product is thrown away. That is a linear approach to the product life cycle. Braungart and McDonough call this *from Cradle to Grave*. Metaphorically speaking, the used product ends up in a grave. Nothing else happens with it. That's the end of the life cycle. However, even if the product's life cycle has come to an end, what most people don't realize is that what's thrown away never really 'goes away'. It seems like only a few of us attach importance to the realization that, at some point, the natural resources needed to develop products will run out. To prevent this happening, Braungart and McDonough argue in favour of the Cradle to Cradle system, in which waste doesn't exist.

2.2 Cradle to Cradle: Waste does not exist. Waste equals Food

Braungart and McDonough describe two different metabolisms. The first is biological, the biosphere which covers the cycles of nature. Nature deals with its own waste, turning it into usable substances. The second is technical, the technosphere in which businesses and industries operate.⁷ Industries take their waste to incineration plants or landfill sites. More and more is being recycled, but waste remains a problem. The

Cradle to Cradle approach (C2C) says that waste does not exist. Waste simply becomes food for new products. New product development should involve manufacturing in which all materials can be reused or are biodegradable. This keeps them in the technosphere



and biosphere. For both cycles to remain healthy, it is important that one does not contaminate the other. Otherwise natural resources will be lost for both the biosphere and the technosphere. This is how the quality of technical materials would be weakened. These raw materials then couldn't be

⁶ <http://product-life.org/en/cradle-to-cradle>

⁷ Illustration from Braungart & McDonough (2002)

reused in new products. What's most important is that products do not damage people or our planet in any way.

2.3 Circular Economy

The term Cradle to Cradle is a registered trademark. Another term used in the Netherlands is Circular Economy. This term was introduced to the Netherlands by Louise Vet.⁸ Louise Vet is a professor of Evolutionary Ecology at Wageningen University and director of the Netherlands Institute of Ecology (NIOO), the largest institute of the Royal Netherlands Academy of Arts and Sciences (KNAW). Circular Economy and Cradle to Cradle actually have the same basic principles. Both concepts talk about an economy in loops. This means that all the materials used for product manufacturing are either biodegradable or reused for the same or a different product. With no loss of quality and no environmental impact.

2.4 Other relevant terms

As sustainable development gains momentum, we see more and more new terms. Taking stock of the most recent trends, we think that several terms are worth mentioning here with regard to the current situation and the future. Back in 1994 Gunter Pauli (former director of Ecover) founded *Zero Emissions Research and Initiatives* (ZERI). This organization sets up knowledge centres with the aim of developing sustainable manufacturing methods with no waste. Pauli thought up the term *Blue Economy*,⁹ an economy in which business models tackle environmental and related issues. In a Blue Economy, innovative businesses put competitive products and services on the market that produce no waste, use renewable energy and build social capital.¹⁰

Zero Impact Growth is also a term that is increasing used. Thought up by Deloitte Innovation and Volans, a sustainability consultancy, as they worked together with the aim of creating so-called 'zeronauts'. These are inventors, entrepreneurs, managers and intellectuals who promote wealth creation, while driving adverse environmental, social and economic impacts towards zero: *Zero Impact Growth*.

2.5 Performance Economy (PE)

C2C pioneer Walter Stahel published an important book in 2010: *The Performance Economy, second edition*. This is highly recommended for anyone involved in Circular Economy implementation as it combines a pragmatic approach with detailed technical descriptions. The International Journal of Performability Engineering wrote: "*This book stands out distinctly on the theme sustainability....The economic objective of the Performance Economy (PE) is to create the highest possible use value for the longest possible time so as to provide the lowest material input per year (MIPS) of service, while consuming as few material resources and energy as possible.*"

In 1982 Walter Stahel founded Europe's oldest sustainability-based consultancy organization: the Product-Life Institute. It is located in Geneva, near The International Monument to the Reformation. The motto of both the Reformation and Geneva is *Post Tenebras Lux* (Latin for 'After darkness comes light'). The Circular Economy might do just that.

⁸ <http://www.tedxamsterdam.com/2009/video-louise-vet-on-the-marriage-between-economy-and-ecology/>

⁹ <http://theblueeconomy.org/blue/Home.html>

¹⁰ YouTube short graphic animation about the *Blue Economy*: <http://www.youtube.com/watch?v=1af08PSlals>

3. Research & making choices

In October 2011, we started to research the possibilities available to us that would make Condomerie management and working practices more sustainable and environmentally responsible. This meant looking at sustainable enterprise from all angles, to find out exactly what businesses have to do if they wish to become more sustainable.

3.1 The possibilities

There are many ways to make companies and other organizations more sustainable and environmentally responsible. We looked into several options, concentrating on the unique characteristics of the Condomerie and the market our business operates in. In this chapter we discuss the choices we have made, divided into three categories:

1. Energy (utilities such as electricity, gas and water)
2. Waste (waste separation and recycling materials)
3. Transport (deliveries and shipments)

Although the options we mention are particularly useful for the Condomerie, they are just as relevant to other enterprises. All companies have offices and some have shops, stockrooms and/or warehouses. Adapting Condomerie examples for use in another business is quite simple.

3.1.1 Energy

We decided to concentrate on energy used for lighting and heating in the Condomerie building. We also looked at staff energy use; on average, there are seven employees on the premises each day. Finally, we looked at water consumption.

On their website^{NL}, Milieu Centraal¹¹ gives detailed descriptions of different types of energy-saving light bulbs and how to make the right choices. The Consumentenbond¹² website^{NL} also gives several alternatives to traditional, incandescent bulbs. Despite there being so much information available on the internet, we eventually decided to commission Joost Rienks from the independent consultancy Rienks EAP for specific lighting advice for the Condomerie. A two-week measurement performed using the Plugwise monitoring system gave us insight into the kWh use of Condomerie lighting and equipment. The reports 'Analysis of Condomerie electricity consumption'^{NL} and 'Energy-saving advice for the Condomerie'^{NL} allowed us to make several decisions that would make the company more sustainable. The consultancy also made recommendations about heating the premises, and suggested some other ways to reduce our energy consumption. Adding extra radiators to the building, for example, would have an energy-saving effect. A section from the advice given in 2011:

*'The Condomerie currently uses 10,000 kWh per year, 5,500 kWh of which (2011) **for lighting alone**. Using energy-saving light sources (LED, low-energy light bulbs, reflectors), as well as light sensors, can save a total of 4,500 kWh, some 62%. This saves €590 per year on energy costs and another €100 on purchases, as the bulbs last longer. The €1,100 investment pays for itself in less than two years. Colours will also look better in areas where there is now fluorescent lighting. The biggest saving is from the ten spotlights in the shop window. Replacing these with LED spots already saves €320 per year. An investment in better lighting for the office would slightly reduce overall savings. The cost*

¹¹ Milieu Centraal is an independent organization that provides consumers in the Netherlands with reliable, practical information on energy use and the environment.

¹² Consumentenbond is the Dutch consumers' association. It tests products and services and gives advice.

saving would then decrease by €90-140. People working in the office would, however, have more and better light.'

We conducted a considerable number of tests to determine what type of light bulb was the most suitable for each particular area of the Condomerie building: a tailored approach. At the moment it is not advisable to use LED bulbs for most parts of the office. We need to wait until these light bulbs are further developed: when they give more light and prices goes down. The situation does change continually. There are now many reasonably priced energy-saving bulbs which give a lot of light and good colours. We had an internal discussion about whether all Condomerie light bulbs should be replaced immediately or whether we should wait until they had blown. We decided on the former, but rather than throwing away old bulbs that were still working, we gave them to staff. Replacing the shop window halogen bulbs gave a good return on investment and immediate savings because of the alarmingly high energy consumption of halogen. Finally, there was the option of connecting movement sensors and timers to lighting to achieve the highest possible efficiency in energy consumption. We decided to use these in parts of the building where people don't go regularly, for example the warehouse. To give an idea of the reduction in energy consumption at the Condomerie: energy consumption in kWh per day went from 34.1 in 2001 down to 26.4 in 2007 (after building renovation) and dropped further to 16.5 kWh in 2012 (after energy-saving measures), while opening times increased considerably. In chapter 6 you will find more details.

Switching energy suppliers

We did extensive research to find the most suitable energy supplier for the Condomerie, looking in particular at sustainability and costs. A study^{NL} commissioned by the Dutch consumers' association and Greenpeace showed that suppliers are often not quite as green and sustainable as they say on their websites. The findings showed that Greenchoice has the best balance between sustainable and inexpensive energy. There is one energy supplier that is greener still – Windunie – but they only supply SMEs via Greenchoice. The Condomerie therefore switched from Oxxio to Greenchoice and now benefits from a lower energy bill and a contribution to a cleaner environment. By making a conscious choice of energy supplier, we also limited the price rise on our energy bill between 2002 and 2012 to just 3%, despite rising fuel prices, extending our opening times, and increased use of electronic equipment. We now had the opportunity to use a 'guarantee of origin' to indicate where power should be generated. Electricity for the Condomerie is now generated by wind turbines at Afrikahaven in the Amsterdam port area, therefore very locally. And, according to Greenchoice.nl, the biogas has been offset by tree planting in forests.

Insulating foil

Go Green foil is to be placed behind all Condomerie radiators. Attaching foil to the radiators with magnetic tape insulates the radiators, preventing heat loss and increasing energy efficiency. The actual energy saving depends on the insulation of the wall the radiator is attached to:

- Cat. 1. Uninsulated solid wall saves 35 m³ gas per year;
- Cat. 2. Uninsulated cavity wall saves 25 m³ gas per year;
- Cat. 3. Cavity wall with insulation saves 10 m³ gas per year;
- Cat. 4. Very well insulated wall saves 4 m³ gas per year.

Condomerie walls are between categories 2 and 3, giving a saving of 17 m³ per year. A single investment in foil for all Condomerie radiators amounts to just €30.40, while it provides a saving of €61.10 per year.

Radiator use and balancing the central heating system

While consultant Joep van de Ven looked around the premises, his first advice was to install one or two extra radiators. His report 'Setting up and using the central heating boiler at Warmoesstraat 141'^{NL} is available on request. The idea is that two radiators use less energy to heat a room than one does. The logic of this argument persuaded us to have an extra radiator installed at the Condomerie which will pay for itself in the long run. The consultant also adjusted the existing radiators, a procedure called *balancing*. Giving the radiators the correct water flow ensures an efficient allocation of energy and means that radiators will no longer 'work overtime' and there will be a pleasant temperature in all workspaces.



Joep van de Ven at work

Finally, there will be a new system for the central heating when the last person leaves the premises. In future, the night temperature in the winter will be set to 10°C instead of 16°C.¹³

Green facade

We came up with a green solution to make the Condomerie name stand out on our shopfront. Jan Verburg was asked to make attractive, reflective wooden letters. Circular attachments reflect light from the sun, street lights and cars. The letters also move in the wind. This sign attracts the attention of passers-by in the afternoon and evening without using any electricity.

We had seen the circular pieces (in several interchangeable colours) lying in a rubble container belonging to neighbouring department store De Bijenkorf 26 years ago and had kept them. Although not all businesses have this kind of material lying around in a cellar like the Condomerie, it is a good example of a sustainable idea implemented by an artist which can inspire other businesses to do the same.



Luminous electricity-free Condomerie shop sign

Heat pump to generate energy yourself

We also looked into heat pumps. On the Greenchoice website it says^{NL} that a heat pump is 3.5-5 times more efficient in use than the best high efficiency boiler. The energy generated is 100% sustainable, as a heat pump draws heat from its environment (air or water). The pump can replace a large part of a building's gas consumption. It can be used to heat in the winter and cool in the summer. The only disadvantage for a business is the investment's long payback period. We have shelved the plan for now as the investment needed to buy a heat pump is considerable. There is, however, the possibility of the Condomerie investing in something like this together with neighbours and neighbouring businesses so we are currently looking into that.

¹³ By setting the thermostat close to the temperature outdoors, it will use less energy.

Daylight in the building: Sollektor

In the near future it will be possible to collect daylight with a so-called 'Sollektor' and to bring it inside via plastic optical fibre. This method will allow rooms to be lit with natural daylight.¹⁴ This lighting method is better for the environment as it is more efficient than solar panels, provides immediate costs savings as energy consumption is much reduced, and daylight contains no harmful infrared or ultraviolet components.¹⁵ Although the Sollektor is not yet available on the consumer market, we are very interested in this technology. Sollektor development is progressing rapidly and is extremely interesting for architects, policymakers and decision makers.

3.1.2 Waste separation and recycling materials

When we started our research in October 2011, the Condomerie was not separating waste, although this had been done in the past. The company's growth and limited space after the initial renovation made waste separation impossible. Once the back of the premises had been renovated, there was enough space for mobile containers. Between 2011 and 2012 we made great strides in reintroducing waste separation at the Condomerie. The logic behind this is simple: you cannot implement Circular Economy principles without waste separation. The higher the level of waste separation, the greater the potential for recycling and the less tax you pay for waste treatment and disposal. For the Condomerie we defined the following waste categories:

1. Paper and cardboard;
2. Plastic: both plastic film and hard plastic;
3. Organic waste: used coffee filters and tea bags, leftovers, etc;
4. Non-recyclable refuse: everything else;
5. Household chemical waste: used batteries, light bulbs, computer parts, etc;
6. Bulky household refuse: worn out furniture, etc;
7. Reusable materials.

For each category, we looked into the possibilities for collection and treatment:

1. Paper

Two companies who could help us with Condomerie paper and cardboard waste emerged from comparative analysis – Van Gansewinkel Groep¹⁶ and Nederlandse Recycle Bank. The waste service provider Van Gansewinkel supports the Circular Economy concept, saying "waste is no more". They also manufacture Cradle-to-Cradle certified office paper. Having a contract with Van Gansewinkel gives the added financial benefit of the possibility of exemption from the Amsterdam council's waste collection tax, which would lead to a tax refund. The Nederlandse Recycle Bank's motto is: Waste pays off! Unlike other companies, Nederlandse Recycle Bank pays its customers per kilo of paper/cardboard, plastic packaging and other materials, textiles and household chemical waste. But as Nederlandse Recycle Bank does not collect in Amsterdam, Van Gansewinkel was the obvious choice for the Condomerie.



Mobile paper/cardboard container

2. Plastic

Condomerie plastic waste is now going to the company Plastic Heroes.^{NL} The plastic they collect is used as raw material for new product development, completely in line with the Circular Economy



Plastic Heroes bag set to go

¹⁴ <http://www.pofac.de/sollektor/en/> Consulted on: 22 december 2012

¹⁵ Pictures of the Future: Magazine for Research and Innovation. Siemens, spring 2011: pp. 24-25.

¹⁶ <http://www.vangansewinkelgroep.com/activities.aspx>

principle. There is a Plastic Heroes collection container very near to the Condomerie, at Amsterdam's Nieuwmarkt.

3. Organic waste

We have decided to separate organic waste at the Condomerie. By doing so, less waste needs to be taken to landfill sites or incinerated. Landfills take up a lot of space and lead to soil and groundwater pollution. Incineration pollutes the air. Less landfill and less incineration mean less environmental impact. Local councils can either ferment or compost the organic waste collected. We have decided to compost our organic waste as part of our plans to make a Condomerie wall garden.

4. Non-recyclable refuse

This is all the waste that waste treatment companies cannot recycle. It includes: drink cartons, cans, chewing gum, chewing gum strips, tape, laminated paper and packing protection materials such as bubble wrap. At the Condomerie we separate this waste too.

5. Household chemical waste

Household chemical waste is kept separately to take to the chemical waste collection container at Nieuwmarkt.

6. Bulky household refuse

The Condomerie reduces the amount of bulky household refuse as we find some of our furniture from what others have put out for waste collection. These items are given a second life.

7. Reusable materials

The simplest way to apply Circular Economy principles is by reusing materials. Condomerie staff reuse about 10% of all paper and cardboard to fill the parcels they send to customers. Some suppliers put special protection material in their delivery boxes. There is a separate collection bin for this in the Condomerie warehouse. Employees then use the material to fill the parcels they put together. The advantage is that we do not need to buy any unnecessary filling material. Cardboard boxes are also reused as packaging material.

3.1.3 Transport

In our study of alternative methods of transport for Condomerie deliveries, we looked at companies who are well aware of the importance of reducing carbon emissions. The following were possibilities:

- Stichting de fietsdienst bike couriers
- Electric Piaggio scooters
- Peeters Vervoercentrale transport for Amsterdam city centre
- TNT Post for letters and parcels
- GLS transport for longer distances
- Mokum Maritiem canal transport
- Ter Haak Group overseas container logistics

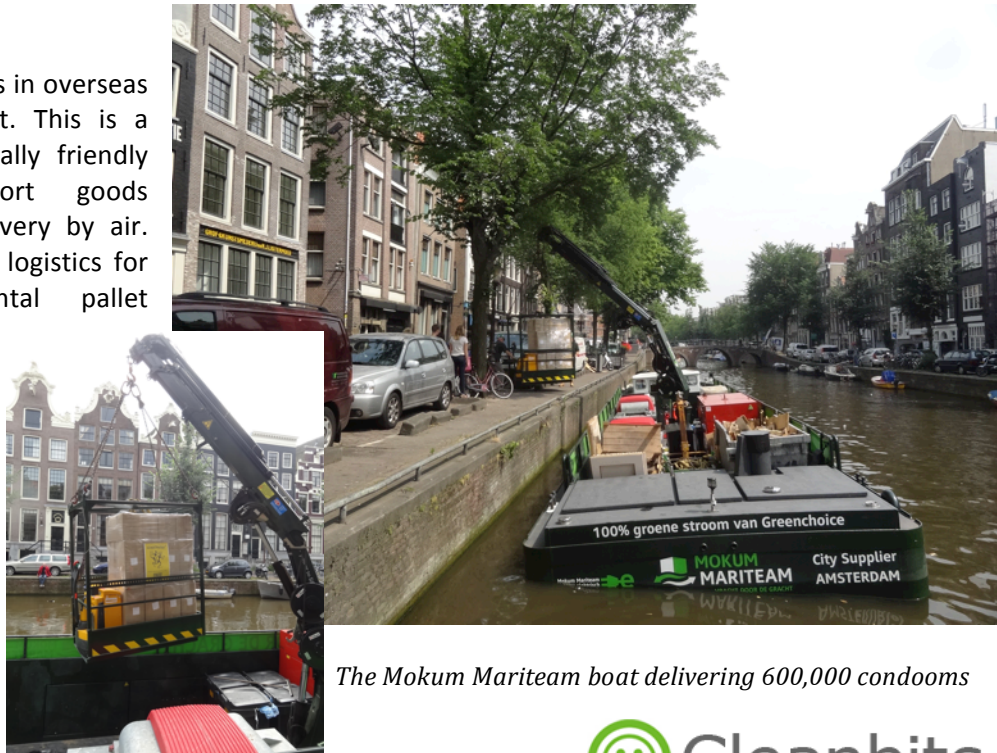
Peeters Vervoercentrale is a transport company that provides an environmentally responsible delivery service in the Amsterdam city centre. They do this with a 100% electric truck. We use Peeters for all incoming and outgoing pallet distribution for the Condomerie.

Transport company GLS has a great deal of experience in the reduction of carbon emissions. They have ISO 14001 certification. This means that they comply with an internationally accepted standard for improving and maintaining environmental management. TNT Post also has ISO 14001

certification. We decided to use GLS and TNT Post for Condomerie letters and parcels. Larger and heavier parcels are sent with GLS, within Amsterdam they go by bike courier or electric Piaggio scooter.

Mokum Mariteam moves goods by water through the centre of Amsterdam: Cargo along the Canals. The company has hybrid boats that run on 100% electricity, clean and quiet energy. Whenever possible, we use Mokum Mariteam for Condomerie deliveries. This is no more expensive but it is more sustainable and environmentally friendly for two reasons: the boat is emission-free because it is electric, and it doesn't contribute to traffic jams in the city centre. Mokum Mariteam is used for larger pallets that arrive by ship at a terminal belonging to Ter Haak, the logistics company we work with.

Ter Haak specializes in overseas container transport. This is a more environmentally friendly way to transport goods overseas than delivery by air. Ter Haak does the logistics for our intercontinental pallet shipping.



The Mokum Mariteam boat delivering 600,000 condoms

3.1.4 And also ...

- Hosting and provider: A green internet provider and web hosting service was a conscious choice for the Condomerie. Web host Byte has servers that run on green energy, with energy efficient computer chips. The data centre's already reduced carbon emissions are compensated for by the fact that most employees use bikes and public transport to get to work. CO₂ emissions caused by any work-related travel, at home and abroad, are offset by tree planting. The Cleanbits logo is on the Condomerie website. This states that our website is carbon neutral while encouraging others to go green too.
- Furniture: 80% of our office and shop furniture was bought second-hand from other businesses or organizations, or found discarded in the street. This is a form of recycling that gives a product a longer life. We do buy new computers, but 50% of our computer screens are second-hand.
- Printing: We always use Van Gansewinkel recycled office paper.
- Awareness of water saving: We make clear that the toilet has a dual-flush water-saving button.
- Central heating maintenance: The high efficiency boiler has been serviced.
- Packaging material: We buy packaging material for the Condomerie from Paardekooper. The company works with a scientific approach to CSR called Smarter by Nature, which gives its customers the opportunity to make conscious packaging choices.
- Bags for organic waste: Organic waste is collected in biodegradable liners to stop the organic waste bin getting dirty.
- Cleaning products: Once we'd discovered that the environmentally friendly cleaning products on the market are effective too, we immediately switched to those products. The Condomerie now only uses Ecover cleaning products. Their larger sizes (5 litres) are more economical.
- Toilet paper: Satino Black, the toilet paper used at the Condomerie is, as you would expect, 100% recycled paper with Cradle to Cradle certification.



water-saving toilet



Condomerie visits Ecover



C2C toilet paper 'Satino Black'

4. Implementation & obstacles

While implementing the choices described in the previous chapter, we encountered several obstacles. Waste separation, which seemed to be the simplest change, was much harder to introduce than we'd expected. The biggest challenge was winning over staff to the Circular Economy idea. In this chapter we describe the measures taken at the Condomerie to implement our sustainability plans and how we overcame any obstacles.

4.1 Energy

Considering all the energy-saving measures we have implemented at the Condomerie and the time in which it was done, you could definitely call these changes radical. The positive effect of this is an immediate return on investment and the fact that becoming more sustainable did not take too long (although sustainable development remains high on the Condomerie agenda). However, the main obstacle was obviously: the investment needed. Sustainable alternatives often involve a high level of investment which only pays off in the long term. What's more, taking on someone to do research costs money and doing it yourself is time-consuming. But one thing is certain: the investment will eventually pay for itself and that was the vital argument for the Condomerie. Materials were replaced by sustainable alternatives when they needed to be replaced. On the other hand, the Condomerie motto was: if you have an opportunity to make a change immediately, then do it. For example, many things were replaced during the last building renovation in 2007 (part of a pilot project involving energy-saving renovation of medieval listed buildings in our area). As a result, Condomerie energy consumption is already 50% less than before. The improvements included:

- Draught-proofing doors and windows;
- Floor and wall insulation;
- Energy-efficient glass in windows;
- New high-efficiency central heating boiler.

After the 2007 renovation, we had to turn off the brand-new air curtain on the second day of use; it made a lot of noise, ate up energy and didn't work properly. We decided to replace it with a classic internal glass porch, with swing doors and draught-proofing strips. An expensive investment, all in all, costing €6,500 plus a loss of shop floor space, but it does make it a much more pleasant place to work. This kind of porch is simpler, cleverer than an air curtain, means less street noise and, last but not least, less carbon emissions.

Much of the transition to energy-saving materials and measures was hardly noticeable to our staff. But movement sensors turning lights on and off in the warehouse was an obvious change for employees. It is therefore advisable to inform them right from the start about changes they can expect and why you are making them. That's the best way to avert any resistance.

The argument for replacing materials, for example putting in new, energy-saving light bulbs, is an economic one, but different principles, motives and interests will apply in different businesses. The Condomerie rule is: immediate replacement is immediate savings.

4.2 Waste

At first, waste separation seemed to be a measure that was easy to implement. In fact, the opposite was the case. Staff suddenly had to cope with different containers for paper, biodegradable waste, reusable packaging, nonrecyclable waste and two separate containers for plastic. That waste separation was not an immediate success wasn't really surprising. Separating the waste required too much effort and this simply got in the way of correct implementation. It meant that only half of the

waste separation was done properly, and that was pointless. It took some time to pinpoint the exact bottlenecks and think up solutions for staff resistance. Our point of departure was that it should not get in the way of work routines. Carefully listening to employees themselves and making some simple changes led to increasing and noticeable staff support for waste separation.

The company that collects plastic, suitably named Plastic Heroes, also separates the different sorts of plastic, i.e. hard plastic and plastic film. Separating thick sheets, thin sheets and hard plastic was simply too difficult for us to do. All types of plastic can now be put into one container and taken to the Plastic Heroes collection point.

We decided to stop separating waste at the Condomerie counter. It was an almost impossible task to do at the point of sale and affected customer service. Now all waste is put into one basket at the counter and separated at the end of the day.

Another problem we encountered was to do with hygiene. Particularly handling biodegradable waste, such as used coffee filters and leftover food, was felt to be unhygienic. This was solved by having just one biodegradable waste bin (with a lid!) near the kitchen. When this is full, it is emptied into a new large compost bin outside. No one needs to get their hands dirty as the biodegradable bin liners mean that the waste bin can be emptied in one go. Our neighbours soon started to make use of the compost bin too. The bin is on the renovated patio and wall garden behind the office.



Our first spadeful of compost

The final improvement was for the bins in which we collect the waste. At first, these plastic bins were just stacked on top of each other. Now and then one would fall over when they were being emptied, or even when someone walked past them. This obviously caused a lot of irritation and meant that waste separation had negative associations. The solution was a sizeable investment in special wooden cupboards designed by a furniture maker in which the bins can stand safely.

Not long after the introduction of waste separation we discovered some unexpected benefits. First, our staff felt that the workplace was more hygienic. No more dirty refuse bags collecting up in one spot and spreading a bad smell until they're picked up. Second, we noticed that putting biodegradable waste in the compost bin and paper in the paper container outside the Condomerie seems to be infectious. People living nearby now also have an opportunity to separate their biodegradable waste and paper.

4.3 Transport

It is often thought that sustainable, green transport is more expensive than transport that runs on non-renewable fuel. This is no longer the case. Green transport companies who use, for example, electric vehicles are well aware that they need to be competitively priced. The sustainable options we have found for transporting goods are the same price as non-sustainable alternatives. But as green transport is still in a relatively early stage of its development, finding the right partners isn't always easy. This time-consuming activity may be an obstacle which will stop many businesses taking action. At the Condomerie we took on an intern to do both this search and other research into sustainable options. That was a good way to start studying all the possibilities for making our

management and working practices more sustainable and to pinpoint the areas where there is room for improvement.

4.4 Staff involvement

Staff involvement needs to be highlighted here because it is of vital importance during implementation of sustainable changes to working practices. If employees do not support the changes, there is a great risk that implementation of sustainable measures will be much less effective than expected. That is not good for the staff themselves nor does it help us achieve our sustainable objectives for the Condomerie. After trial and error, we decided to conduct a brief survey among our employees to find out what they thought of newly introduced measures such as waste separation. That gave us some interesting data. For example, 93% of staff said they were willing to contribute to a cleaner working environment, while only 66% of them said they liked the idea and fewer still (52%) said they too believed in sustainability. But despite most employees' good intentions, we still didn't get the results we'd hoped for. The simple explanation for this was the fact that 74% of Condomerie staff said they thought waste separation took up too much time, effort or both. So, together with employees, we assessed and then solved the major bottlenecks. Since then there have been no more problems with waste separation.

After switching to Ecover biodegradable cleaning products, we gave all the staff some products to try out at home. A few of them now say that they only use Ecover. Our gesture contributed to their understanding of sustainable and environmentally friendly working practices.

Some results from the staff survey conducted by Jeanine Zoet at the beginning of 2012 are given below:

- Rating for overall sustainability policy: 7.6 (range 6-9, N=25)
- Willing to contribute: 59.3 % (agree) + 33.3% (completely agree) = 92.6% (N=27)
- Believe in sustainability: 44.4% (agree) + 7.4% (completely agree) = 51.8% (N=27)
- Happy to contribute to cleaner working environment:
40.7% (agree) + 25.9% (completely agree) = 66.3% (N=27)
- Condomerie is working towards a cleaner and healthier working environment:
51.9% (agree) + 22.2% (completely agree) = 74.1% (N=27)
- Condomerie encourages you to contribute to a better environment:
63.0 % (agree) + 18.5 % (completely agree) = 81.5% (N=27)
- Able to implement the changes: 51.0% (agree) + 37.0% (completely agree) = 88.9% (N=27)
- Gender: male 7x =25.9% / female 18x =66.7% (N=25; 2 missing values)
- Average age: 32.76 years (min: 16 max: 63) (N=25; 2 missing values)
- Environment is important: 29.6% (agree) + 7.4% (completely agree) = 37% (N=26; 1 missing value)
- More sustainable Condomerie is good: 51.9% (agree) + 33.3% (completely agree) = 85.2% (N=27)

5. Buying & alliances

Suppliers and alliances have an important part to play in a corporate sustainability policy. If a company makes CSR and sustainable enterprise an important criterion in their choice of suppliers and partners, it is making a clear statement. At the Condomerie we prefer to work with other companies who have sustainability and CSR high on their agenda. In this chapter we describe a number of them.

5.1 Supertape

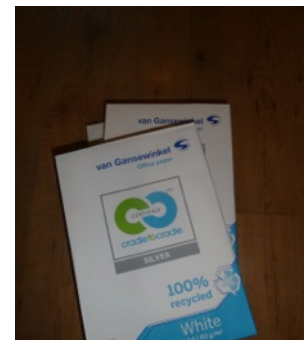
International retailing group Ahold wanted to send all its cardboard boxes for paper/cardboard recycling. This was, however, impossible as they used plastic packaging tape which was difficult for them to remove. Ahold asked Supertape to develop a long-fibre paper tape that could be recycled just like cardboard. We did a wet weather test at the Condomerie and this paper tape seemed stronger after a shower than plastic tape, as it completely adheres to the cardboard. It also looks nicer and it makes the parcels anonymous. Condomerie parcels used to be recognizable by the sender address on the tape and its colour. Supertape tape greatly reduces the risk of parcels somehow 'getting lost'.

5.2 Van Gansewinkel

Cradle-to-Cradle office paper is purchased from Van Gansewinkel.

5.3 Plastech Group

We use Blibox clamshell packaging for items and gifts that are on sale in the Condomerie shop or webshop. These are recycled transparent plastic packs, about the size of a DVD cover. We buy them from the British company *C2C office paper* Plastech Group.



5.4 Bio Futura

Bio Futura supplies the Condomerie with biodegradable bags which can be used for customer purchases. The problem with plastic bags is that they are hardly or not at all biodegradable and often end up as street litter. The only disadvantage of the biodegradable bags is that they have an expiry date.

5.5 Ecover

We buy all our cleaning products, from multi-purpose cleaner to liquid hand soap, from the Belgian company Ecover. Ecover manufactures its washing and cleaning products ecologically. Its packaging materials are made from plant-based ingredients, completely in line with Circular Economy principles. Ecover products clean effectively and have a pleasant fragrance – no nasty chemical smells. Using Ecover products means that hardly any contaminated water gets into pipes or drains. That means less work for the council's waste water treatment works.



Complete transition to Ecover

5.6 Geels

We buy coffee for the Condomerie from the wholesale company Geels, which is down the road to us. One of our employees picks up the coffee, bringing it back in our own containers. That means no waste for either business.

5.7 Eco-Logisch

For many of the sustainable changes made to the Condomerie building, we went to Eco-Logisch, a wholesaler and webshop with environmentally friendly products and building materials for in and around the office. Eco-Logisch has a large assortment, which saves time when you are looking for green products.

5.8 Paardekooper

Paardekooper supplies the Condomerie with its packaging material. Searching for new solutions that combine maximum added value for products with minimal environmental impact is how Paardekooper describes its sustainable responsibility. The company uses Smarter by Nature, a scientific approach to CSR, to help its customers make conscious packaging choices.

5.9 Banking

We looked into the option of switching from our current bank to a sustainable bank like Triodos. But Condomerie management didn't feel comfortable with the anthroposophical principle that is key to the way Triodos Bank works. Eventually, and after much thought, we decided to stay with the ING Bank. This decision was taken after some research and a talk with their account manager. The ING is, after all, in the process of making their own operations more sustainable. Even banks are keen to cut costs where they can in the current financial crisis.

6. Results

Since we started introducing measures to make Condomerie management and working practices more sustainable, there have been many tangible and less tangible results.

6.1 Huge savings in energy costs

After the 2007 renovation, many improvements were made which reduced energy consumption. Independent studies carried out by Rienks EAP contain useful recommendations on how to further reduce Condomerie energy consumption. This would mean even less environmental impact and we are currently looking into it. The figures below show that the building renovation reduced energy consumption by almost 25%. Sustainable measures introduced since that time have led to a further reduction of energy consumption. We would expect this to save another 22%.

Electricity Consumption

kWh

	Annual kWh	Daily kWh	=	averages
Building before renovation				
2000-2001	12,523	34.3		
Renovated building 2007				
2007-2011	9,624	26.4		
2013 after eco-changes				
24-12-2012 to 16-06-2013		16.54		

Gas Consumption

m³

	Annual m ³	Daily m ³	=	averages
Before renovation				
2001-2002	4,143	11.35		
Renovated				
2007-2011	1.692	4.7		
13-12-2011 to 28-12-2011		6.13		
2012 after eco-measures				
28-12-2011 to 17-5-2012		5.31		

Gas consumption is affected more by seasonal changes than electricity. What's more, the Condomerie shop is now open 362 days a year instead of 308, an 18% increase. It is therefore

difficult to draw any conclusions from the figures, but our general impression is that balancing the heating system and other energy-saving measures have reduced consumption and provided a more comfortable working environment.

6.2 Good Envirometer score

The Envirometer is a quick and easy way to analyse a company or organization's environmental performance, carbon footprint and energy costs.¹⁷ You are asked to input data for energy, water, waste, emissions, transport and paper use. The Envirometer then gives you key figures, diagrams and scores so that you can see where improvements are possible.



Logo Envirometer

6.3 Cleaner working environment

Staff think their working environment is cleaner as a result of waste separation. No more dirty refuse bags on the premises, just collection bins with plastic and paper that never start to smell, regardless of how long they stay there. Organic waste is outside in the compost bin.

6.4 Sustainability is infectious

'Sustainability fever' seems to be infectious. When the Mokum Mariteam electric canal boat delivered a Condomerie order in the Amsterdam centre, several neighbouring businesses showed an interest. We had given our cleaner and window cleaner Ecover biodegradable cleaning products to try out. They were so satisfied that they switched to these cleaning products too. Neighbours and others in the area are now happy to use the Condomerie paper container and organic waste bin outside the building. This proves that people want to be sustainably and environmentally responsible as long as the facilities to do so are nearby.

6.5 Runner-up for eco DAM award, Amsterdam city centre

In 2012, we took part in a competition for the DAM award, a prize given to Amsterdam's most sustainable SME. Although the Condomerie didn't come first, we were runner-up. This was not only a reward for all our efforts. It also gave us the opportunity to be part of a network of the leading and most progressive Amsterdam businesses.

6.6 Alliances with innovative pioneers

More and more companies are beginning to see that sustainable solutions are usually clever solutions. At the Condomerie we are keen to work with companies that feel very strongly about sustainability, such as Ecover and Eco-Logisch, as well as with 'normal' companies like transport company GLS, Supertape and packaging specialist Paardekooper. We also make sure we keep up to date on the latest developments and learn from the experiences of businesses who are further down the sustainability route. Working with innovative pioneers means that we can be sure that everything we purchase or develop ourselves for the Condomerie is top quality.

6.7 Competitive advantage

All our efforts to make Condomerie management and working practices more sustainable and environmentally responsible are paying off in one way or another. First there are, of course, the cost savings. But we mustn't forget that by improving the Condomerie's image we are also gaining competitive advantage. Sustainability is increasingly an important selection criterion for tenders and purchasing. The leading company in that area will certainly have a better chance (as previously mentioned in the introduction). ProRail, responsible for the rail network in the Netherlands, is already working this way in the logistics sector.

¹⁷ For more information go to: www.envirometer.eu

6.8 Reduction in CO₂ emissions

We take carbon emissions into account as much as possible for parcel delivery and internet activities. All the companies we work with include reductions in carbon emissions in their CSR policy.

6.9 Useful alternative cost-benefit analysis

Choices we make for the Condomerie are not only based on measurable, financial cost-benefit analysis. We attach equal importance to factors that cannot be expressed in numbers, such as job satisfaction, enjoyment and happiness ... very much like what Robert Kennedy once said (see chapter 8). This sometimes means looking at things in a different, unconventional way. A good and interesting example of this is the investment we made which virtually solved the irritation felt by Condomerie staff when it came to waste separation. Earlier in this report we mentioned that the collection bins were originally stacked on top of each other, leading to them easily falling over and all the problems caused by that. It wasn't surprising that this waste separation method caused much irritation. The most common annoyances were the following:

- Annoyance 1 was that it was 'ugly', you saw the waste;
- Annoyance 2 was that emptying was difficult as you couldn't easily remove one bin from the stack;
- Annoyance 3 was that the stack wasn't stable and sometimes fell over when used or when stacking the bins again after emptying;
- Annoyance 4 was that the stack sometimes fell over when someone walked past;
- Annoyance 5 was that it all took up too much space, with stacks of collection bins in different parts of the building;
- Annoyance 6 was the ugly colour combination of the collection bins.



Condomerie waste separator

It was obvious that something had to be done about all this. That's why we asked furniture maker Steye Smulders to design cupboards in which the collection bins would fit. The cupboards cost us a total of €1,245. Our argument for this Condomerie investment was: the solution to these 6 annoyances is worth the effort and the money. €1,245 divided by 6 annoyances is €207 per annoyance. The irritation was there every day, but now it's over and done with. That's an annual cost of 56 cents per annoyance per day. And the calculation itself puts a smile on people's faces which is worth at least 56 cents, every day, every year. So there is an immediate return on investment.

6.10 Reducing the impact of waste treatment

We sometimes forget exactly why we are separating waste, as we are always simply hearing that it's 'better for the environment'. By separating Condomerie waste, we are actually helping to prevent environmental pollution by reducing the amount of waste going to landfill sites. Incineration plants are also used less, which means less energy consumption, and that is better for the environment too. As separated waste can be used to make new products, that leads to a reduction in the use of natural resources. All this ensures that we will leave our planet in a better condition for future generations. So we must not underestimate its importance as part of the Circular Economy concept.

7. Conclusions & recommendations

The Condomerie has gained a wealth of knowledge and experience from trying out measures, talking to like-minded people and getting professional advice. If we had known what we know now before starting to make our management and working practices more sustainable and environmentally responsible, it would have saved us a lot of money.

7.1 Waste separation is teamwork and must have the support of all employees. If it doesn't, it just won't happen.

To put it another way: it is employees who do most of the waste separation, every hour of every day. Businesses will need to provide facilities that make the waste separation process as easy as possible. This means having collection bins in the right places and solving any problems that arise. Ongoing dialogue with staff is therefore vital. It is also important to talk to employees beforehand, telling them that waste is going to be separated, what they have to do and why, and asking them what they think about that. If employees hear from their employer that their requests and experiences will be taken into account when the change is introduced, they will feel that they are being taken seriously. Then they are more likely to do their best to make the new measures work, coming up with practical solutions themselves.

7.2 Management both Decision-maker and Eco-manager.

To make a Circular Economy project a success, it is essential that SME owners or management are directly involved in decision making and implementation from start to finish. They will need to make decisions about (perhaps large) investments, unforeseen costs for research hours, alternative products, different purchasing patterns and new suppliers. Price and quality control is of vital importance to every business, especially for an eco-project like this. Extra expense brings down those crucial profit margins, and that means a lower salary for management in the year of investment.

In this case, co-owner Theodoor van Boven was the driving force; the person who kept the eco-project going by motivating others, looking for financial headroom, deciding that the directors would accept less profit, immediately discussing any budgetary issues with his business partner. It all gave this challenging project extra momentum. He was also prepared to listen to employees' practical objections and to work with them to come up with solutions. In short, management must give its full backing to the eco-project, otherwise it will end up being little more than a statement of good intentions. It will be a long haul and you need to be a real entrepreneur: proactive and willing to take risks. That's why Circular Economy successes are often achieved by business entrepreneurs.

With management approval, we were able to spend much more money on various types of specific studies, make budget available for hundreds of research hours, and also spend quite a lot of money on internal reporting, external meetings and translations.

Theodoor van Boven has actually taken on the role of Condomerie Eco-manager, with the job description '*Waste stream control, eco-purchasing, project monitoring, eco-agreement and eco-behaviour management, and Condomerie Waste Separation Coach*'. Eco-behaviour monitoring is particularly important in purchasing, as that is where decisions are made about sustainable products, less packaging or not, other packaging, other materials and green transport. Thinking in Circular Economy terms calls for continuous consideration of other possibilities, is the ultimate creative process and ... is fun too! At some point it will be time to delegate and take on a Condomerie Eco-manager whose job it will be to sustain the momentum that has now been created.

7.3 Energy-saving is not only better for the environment, it also saves you money.

LED lighting is a long-term investment that will certainly pay off. Bringing in a consultant who can give tailored advice about lighting and heating is an important part of making effective choices. Switching energy suppliers can also mean a considerable saving. Some of these measures might only have a marginal effect, but it is often the small gains that lead to significant savings. When you add it all up, you may be surprised by how much you've saved. And of course: the larger the business, the greater the saving.

7.4 Invest immediately whenever you see an opportunity.

Has a lamp gone? Replace it with an energy-saving one. Does the building need to be altered or renovated? Always think about how it could be done sustainably. The earlier a sustainable, energy-saving measure is introduced, the greater the profit.

7.5 Sustainability is infectious.

Support for the Condomerie sustainability policy came from unexpected quarters. It is confirmation that we are on the right track. Biodegradable cleaning products, goods transport by electric canal boat, making compost – what all these measures have in common is that other people get enthusiastic about them. Another aspect is the wide range of possibilities; all businesses need transport, office space or storage.

7.6 A new way of thinking – it works!

Let's be honest, not all sustainable and environmentally responsible measures pay off immediately. But we believe that this shouldn't stop you taking measures anyway. Because apart from economic reasons there are still plenty of other reasons for investing in sustainable solutions to existing problems. Our investment in furniture for the collection bins is a good example. To justify this kind of investment, there are other ways to make a cost-benefit analysis that expresses intangible results in financial terms.



Robert Kennedy

In 1968, when Robert Kennedy was a US senator, he summarized this as follows:

*"Our gross national product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities. It counts Whitman's rifle and Speck's knife, and the television programs which glorify violence in order to sell toys to our children. Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything, in short, except that which makes life worthwhile."*¹⁸

¹⁸ From an inspiring speech given by Robert Kennedy at Kansas University, USA, on 18 maart 1968.

8. What next?

The Condomerie has been through the whole sustainability process. It wasn't always easy. And it was both time-consuming and costly. Because it's like dieting: it doesn't happen overnight. And there are bound to be ups and downs. Making a business more sustainable and environmentally responsible is an ongoing process. What's more: innovative green solutions are still in the early stages of development. We can expect to see many more of them in the future.

8.1 Further improvements in management and working practices

Waste water management using bacteria and plants in a unique 20-year-old – although actually much older – reed bed flow system (e.g. the Tolplas holiday park in Hoge Hexel, Wierden, the Netherlands), or using the more recent reed bed technology in new treatment systems (e.g. PJ Reddy's condom factory in Haiderabad, Andhra Pradesh, India) or water filtration in established systems (e.g. Sassandra, Ivory Coast); unfortunately, none of these are an option for the Condomerie in the Amsterdam city centre. But we would like to make some more sustainable changes. For example, we are interested in getting together with neighbours and neighbouring businesses to buy a heat pump to generate our own energy. We are also following new developments in the lighting sector. The Sollektor, in particular, a device that collects daylight and brings it into the building using plastic optical fibre may well be an attractive option in the future. The benefits of the Sollektor are not only efficient energy use which saves money, but also the positive effect of natural daylight on people in the building. We think there is still a lot of potential for making energy-saving alterations to the Condomerie building. A good example of this was the 25-year-old idea of making a Condomerie sign for the shopfront using reflective and therefore electricity-free letters. This has finally been done as part of our Circular Economy way of thinking.

8.2 Local alliances

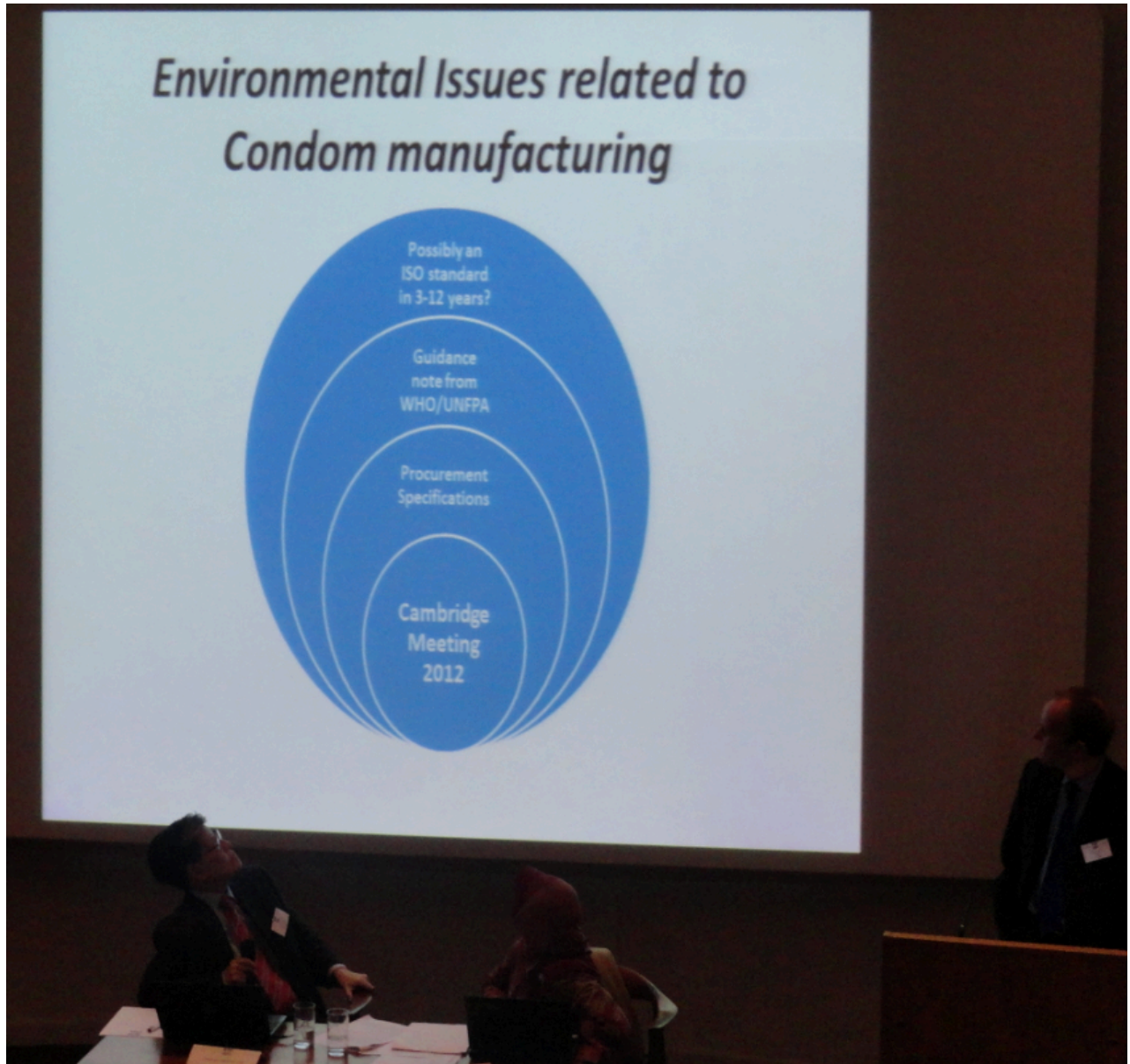
Working together with others in the immediate area is obviously a good idea as implementation is then easy. Examples of this are the previously mentioned organic waste bin and heat pump. We are also interested in mobilizing businesses near the Condomerie to change the street lighting to LED. This idea was once put to the local council but it wasn't approved.

8.3 Sustainable condom industry

Besides making changes to the Condomerie and locally, we also want to 'put our green foot forward' at an international level. Because of his know-how, Theodoor van Boven represents the Netherlands in the ISO Technical Committee for Non-Systemic Contraceptives (ISO/TC 157). Using our own company as an example, he hopes to get manufacturers and other companies in the condom and lubricants industry interested in the Circular Economy concept. At the ISO conference in Bangkok in October 2011, Theodoor van Boven and Jaap Havinga, senior rubber consultant at international quality authority Kiwa, presented a proposal for the creation of an eco task group. The proposal was approved by acclamation, gaining strong support later from Japan, India, Malaysia, China, South Korea, Switzerland, Sweden and South Africa. And in 2012 from Thailand. The United Nations Population Fund (UNFPA) and the World Health Organization (WHO) also support the task group. The Condomerie objective is not only to argue in favour of sustainable enterprise in the industry, but also in favour of the whole industry adopting the Circular Economy concept. This means that companies not only apply Circular Economy principles to their general working practices, but also to the products they manufacture and the packaging they use.

8.4 Environmental Issues related to Condom Manufacturing

In October 2012, UNFPA member Morten Sorensen gave a short presentation during the ISO/TC 157 plenary on the transition to eco condom manufacturing. The photo shows chair Dr Ong and secretary Roslina Harun, fascinated by the presentation. The diagram below gives a clear picture of how much time it takes to make global changes: 3 to 12 years.



UNFPA Morten Sørensen presents EcoProduction, plenary ISO/TC 157, Cambridge 2012



9. 'Fast route to sustainable enterprise'

✓ a checklist

1. Sustainability and innovation:

- ✓ Syntens www.syntens.nl/english
- ✓ Milieubarometer/Envirometer www.milieubarometer.nl/english

2. Energy:

- ✓ Green gas & electricity supplier – Greenchoice www.greenchoice.nl/en
- ✓ Green internet provider – Byte www.byte.nl^{NL} and Cleanbits quality mark www.cleanbits.net
- ✓ Energy consumption study – Joost Rienks www.rienkseap.nl^{NL}
- ✓ Energy-saving lighting www.consumentenbond.nl^{NL}
- ✓ Green, electricity-free shopfront – do it yourself
- ✓ Insulating radiator foil and much more – Eco-Logisch www.funfairgreen.com
- ✓ Balancing central heating system www.cvtuning.nl^{NL}
- ✓ Heat pump – www.milieucentraal.nl/themas/energie-besparen/energiezuinig-verwarmen-en-warm-water/nieuwe-cv-of-combiketel-kopen/warmtepomp-combi-en-hybridewarmtepomp^{NL}
- ✓ Water saving – do it yourself
- ✓ Service for high-efficiency central heating boiler – do it yourself

3. Waste:

- ✓ Plastic collection – Plastic Heroes www.plasticheroes.nl/#!/intro^{NL}
- ✓ Paper collection – Van Gansewinkel www.vangansewinkelgroep.com
- ✓ Compost bin – 360 liter 'Milko' www.sulo.nl^{NL+FR}
- ✓ Recycling materials – do it yourself
- ✓ Printer paper – Van Gansewinkel www.vangansewinkelgroep.nl/officepaper^{NL}
- ✓ Cleaning products – Ecover www.ecover.com/en
- ✓ Packaging material – Paardekooper www.smarterbynature.nl^{NL}
- ✓ Clear plastic packaging – Plastech www.plastechgroup.com
- ✓ Paper tape – www.supertape.co.uk/index.php?page=papierentape_EN
- ✓ Toilet paper – Satino www.satinoblack.com/home/lang_EN
- ✓ Biodegradable bags – Biofutura www.biofutura.nl^{NL}

4. Transport:

- ✓ 100% electric road transport – Peeters Logistiek www.peeterslogistiek.nl^{NL}
- ✓ Green road transport – GLS www.gls-netherlands.com/ThinkGreen.html^{NL}
- ✓ Sea freight – Ter Haak www.terhaakgroup.com/wps/wcm/connect/thg/thg-en/home/
- ✓ Canal transport – Mokum Mariteam www.mokummariteam.nl^{NL}
- ✓ Bike couriers – <http://www.fietskoerier.nl>^{NL}

10. Sources, information, links and reports:

10.1 Information, sources and links

- ✓ Walter Stahel – Product-Life Institute, Cradle2Cradle <<http://product-life.org/en/cradle-to-cradle>>.
- ✓ W. Stahel – The Performance Economy <<http://www.product-life.org/files/Flyer.pdf>>
- ✓ <<http://tegenlicht.vpro.nl/afleveringen/2006-2007/afval-is-voedsel-deel-1.html>>^{NL}
- ✓ <<http://tegenlicht.vpro.nl/afleveringen/2007-2008/het-nieuwe-ondernemen/afval-is-voedsel-deel-2.html>>^{NL}
- ✓ Condomerie Eco-condom production <<http://condomerie.com/ecoproductie>>
- ✓ Condomerie condom life cycle analysis <<http://condomerie.com/lusten-en-lasten>>
- ✓ Life Cycle Analysis sketch <<http://condomerie.com/life-cycle-analysis-latex-condoms>>
- ✓ Netherlands Packaging Centre <http://www.en.nvc.nl>
- ✓ Bioplastics Rodenburg <<http://www.biopolymers.nl/company>>
- ✓ Syntens Sustainability Scan <<http://dqs.syntens.nl>>^{NL}
- ✓ Milieubarometer.nl <http://www.milieubarometer.nl/english>
- ✓ Envirometer www.envirometer.eu
- ✓ <<http://www.mcdonough.com/speaking-writing/cradle-to-cradle/>>
- ✓ TED speech William McDonough <<http://www.youtube.com/watch?v=loRjz8iTVoo>>
- ✓ <<http://product-life.org/en/cradle-to-cradle>>
- ✓ TED speech Louise Vet on Circular Economy
<<http://www.tedxamsterdam.com/2009/video-louise-vet-on-the-marriage-between-economy-and-ecology/>>
- ✓ Blue Economy <<http://theblueeconomy.org/blue/Home.html>>
- ✓ Blue Economy Gunter Pauli <<http://www.youtube.com/watch?v=1af08PSlals>>
- ✓ <<http://www.milieucentraal.nl/themas/thema-1/energie-besparen/energiezuinig-verlichten/energiezuinige-lampen-op-een-rij/>>^{NL}
- ✓ <<http://www.consumentenbond.nl/test/woning-huishouden/woning/spaarlampen/extra/alternatieven-voor-gloeilampen/>>^{NL}
- ✓ <<http://www.consumentenbond.nl/test/woning-huishouden/woning/energieleveranciers/extra/groenste-energieleverancier/>>^{NL}
- ✓ <<http://www.pofac.de/sollektor/en/>>
- ✓ <<http://www.ryck.nl>>^{NL}
- ✓ <http://www.amsterdam.nl/wonen-leefomgeving/klimaat-energie/dam-prijs/>^{NL}
- ✓ MVO Nederland publication “Condomerie, MKB-bedrijf dat op alle fronten het verschil maakt” <<https://www.mvonederland.nl/content/praktijkvoorbeelden/condomerie-mkb-bedrijf-dat-alle-fronten-het-verschil-maakt>>^{NL}
- ✓ <http://www.un.org/millenniumgoals/>

10.2 Reports^{NL} written for the Condomerie during the sustainability process

- ✓ *Analysis of Condomerie electricity consumption* by Joost Rienks, January 2012
- ✓ *Advice on Condomerie energy performance* by Vervoort Technisch
- ✓ Condomerie business premises in Warmoesstraat 141 listed building awarded energy performance C label in March 2012 on the basis of Vervoort report, Plugwise measurement + Joost Rienks reports.
- ✓ *Setting up and using the central heating boiler at Warmoesstraat 141* by Joep vd Ven, 25 March 2012
- ✓ *Energy-saving advice for the Condomerie* by Joost Rienks, January 2012, description of ways to reduce energy consumption with energy-efficient lighting and equipment.

Acknowledgements

During the Condomerie sustainability process we were given a lot of advice and tips that proved invaluable for our transition to Circular Economy principles. Tim Fresen produced an excellent report for which I took photos. I would particularly like to thank Jeanine Zoet (research), Arie Penning (former civil servant at the Ministry of Infrastructure and the Environment), Jaap Havinga (KIWA and ISO/TC 157 colleague), Joost Rienks, Joep van de Ven, Irmine van der Geest (Syntens Innovation Centre), Mer Hajbarati (intern from the Amsterdam University of Applied Sciences), Benjamin van Gogh, Kalja van der Linden, Tim Fresen, Ineke Zijdeveld (ISO/TC 157 colleague from Bizzy Diamond), Caroli Buitenhuis (Greenovation/Syntens), Johan Tops (Ecover), Ger Standhart (ISO/TC 122 Prevention by Source Reduction from Netherlands Packaging Centre), Diane den Held (C2C team Braungart), Ben Gneba (Sape Moderne, Abidjan, Ivory Coast), Willem Post (Mokum Mariteam), Boudewijn Oranje (DAM prize), Marieke van t Root (NEN Delft), Arie Rodenburg (Rodenburg bio-Plastics), Stien van Boven (proofreading), Mandy Savage (editing and English translation), Egbert-Jan van Bel and Jan KleinJan (Tolplas holiday park), Hans Mooibroek (Senior Scientist Bioconversion, Wageningen University), Thijs Lenting (accountant), Lana Pasman & Linde Raadsen (Ijburg College work placements), Grace the cleaner and Nigel Ladderman the window cleaner.

All my Eco Task Group colleagues: PJ Reddy (India-manufacturer), Maggie Usher Patel (UK-WHO), Morten Sorenson (Denmark-UNFPA), Senthil Kumar (Malaysia-manufacturer), Jaap Havinga, Nick White (UK-Durex), John Gerofi (Australia-Enersol), Per Sima (Sweden-Valendor) and Dr Ong (chair TC157).

Stichting Condomerie Foundation board members: Lenting, ten Berge, van der Maas and Schouten.

All the Condomerie staff for their positive criticism and contributions: Hilde, Lieke, Willemijn, Bill, Minouche, Janneke, Belle, Eva, Joerie, Nina, Jorien, Tim, Annemarie, Kaj, Juliette, Marja, Sarah, Sean, Marieke, Kalja, Thialda, Esmeralda, Benjamin, Jol, Jildou.

And, of course, last but not least Co-Founding Director Marijke Vilijn, who not only gave us the freedom and financial approval for this expensive project, but also put a lot of patience and effort into testing all the light bulbs and LED lamps herself to make the best choice of energy-saving bulbs that would still provide the workspace with quality lighting.

Amsterdam, 30 July 2013
Theodoor van Boven Condomerie

Write to theodoorvanboven@condomerie.com

Warmoesstraat 141 | 1012 JB | Amsterdam | Holland | Europe

Tel: (00-31) 20-6274174

WEBSITE www.condomerie.com

FACEBOOK www.facebook.com/condomerie TWITTER www.twitter.com/condomerie

