

Compact living Quality without compromise

Thinking ahead report 2016



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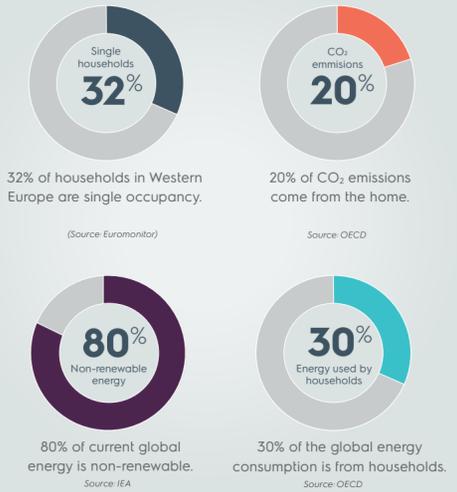
Introduction

It is projected that by 2050 the Earth's population will rise to 9.7 billion. By then, 67% of the global population will live in cities, creating both challenges and opportunities. In order to make cities more sustainable, all aspects of design need to be efficient and environmentally sound. One natural evolution is a more compact city. Compact architecture, design and product solutions will bring implications for the home. This report identifies the long term driving forces behind urbanisation and the impact of compact living on both society and the home, and provides our response to create smarter and more sustainable homes.



Expanding populations with restricted resources

The world is currently undergoing the biggest demographic shift in history. With more elderly and single people, and less space. The world has moved from ecological credit to ecological deficit in less than two generations. As a consequence climate change has emerged as the greatest threat to the future of our planet.



Changing lifestyles

The 60+ age group is projected to increase in every country in the world. This is known as 'demographic transition'. Today, 20% of the population in developed countries is over 60 and will rise to more than 30% in the next four decades. In less developed regions, older people account for just 8% of the population, but by 2050 are expected to account for 20%. By 2050, there will be as many people in the world over the age of 60 as under the age of 15. (Source: UN Population Division)

The social environment is rapidly changing. The size of families is decreasing, the role of extended families diminishing, and the perception of intergenerational support is changing. Rapid migration from rural to urban areas has contributed to decreased cohabitation of extended family units in many parts of the world.

Increasing female labour participation has been one of the most significant drivers of structural change in the labour force over the past 40 years. Marrying age has increased during the last 30 years, rising from the mid to the late twenties in all regions of the world, often due to better educational and employment opportunities for women. In most countries divorce rates have also increased significantly.

The number of single-person households worldwide reached 200 million in 2006, accounting for 12% of global households. This trend is closely related to culture and living standards. As such, developing regions tend to have a considerably lower proportion of single-person households than developed regions. Single-person households accounted for 32% of all households in Western Europe in 2013. (Source: Euromonitor)

Restricted resources

Energy is fundamental for the development of the world's societies. For people in the developed world, the energy issue is not shortage but waste, while billions in the developing world still lack access to electricity. We're using more energy than ever and a 33% increase in total global energy consumption is projected between the present day and 2035. Today, cities consume 75% of the global energy and there is a huge potential to find energy savings if a city's sustainability challenges are addressed correctly. (Source: Iied.org)

In 10 years, 1.8 billion people will be living in countries or regions with water scarcity. By 2050, as much as 75% of the world's population could face a shortage of fresh water.

Today the world's water, one of our most critical resources, is facing growing pressure from climate change, as well as agriculture and industry, fuelled by a growing population. In the last century, water use grew at more than twice the rate of the population. North Africa already suffers from acute water scarcity, as do Mexico, Pakistan, South Africa, China and India. Here irrigated agriculture is usually the first sector affected by water shortage. This results in a decreased capacity to maintain food production or meeting water needs for domestic, industrial and environmental purposes. The efficient use of all water sources - ground water, surface water, waste water and rainfall - will become increasingly important.

About 50% of the energy use in developed economies is expended on sustaining homes and for personal transport. Thus, unsustainable transportation in sprawled cities and household energy consumption are two major areas where greater levels of efficiency can contribute to an environmentally positive development.

The increasing rise in the number of single-person households also brings challenges; single-person households still require the same quantity of household appliances as multiple dwell households. For Electrolux, it is therefore important to facilitate social change while considering the environment, for example by developing appliances that are connected to smart grid networks in order to limit their power consumption.

Cities of tomorrow

The year 2008 marked the beginning of a new urban era when, for the first time in history, the majority of the global population lived in a city. The number of urban dwellers will continue to grow at a rapid pace and means that we face unprecedented challenges within infrastructure, architecture and sustainability.

Neo-urbanization

At present, an estimated 180,000 people are added to the world's urban population each day, equivalent to adding seven new cities the size of London every year. By 2050, 3 billion additional city dwellers will be added to the existing 3.3 billion, amounting to 67% of the total world population.

Mega-cities are cities with at least 10 million inhabitants. Sixty years ago, there were only two: New York/Newark and Tokyo. Today, there are 22 such mega cities - the majority of them found in the developing countries of Asia, Africa and Latin America.

To create a sustainable future for cities there is a growing support for new compact city forms. As interest in creating a sustainable future grows, so to does the support for new compact city forms - cities designed to be resource efficient with carbon-neutral buildings and an infrastructure more geared to pedestrians and public transport.

The way we design our homes in the future will be altered. As towns and cities become more densely populated, the need to find interior design solutions that increase living space or make it more flexible is essential.

In response, future home designs see integrated rooms that provide multi-purpose functionality. Another possible living arrangement for the future is co-housing, combining the advantages of private homes with the benefits of more sustainable living, including shared common facilities.

At the beginning of 1990s, the average floor space in developed countries was 60 square metres and historically, developed countries have increased the average amount of floor space available. Today we are beginning to see a decline in floor space and indications are that this decline is not only related to economic downturn, but other factors such as changing family models and rising single occupancy homes are also playing a part.

Other considerations in heavily populated areas are health and hygiene. The air in today's homes often contains bacteria, virus and mould, which contributes to many illnesses. According to the American Medical Association, 50% of all illness is caused or aggravated by polluted indoor air. Technology is playing a vital part in combating this. For instance, the Electrolux Air Conditioner with PureO₂ system provides maximum air purification for a particle and allergen free environment, energized with vitamin C.

Average residential floor space per capita in m²



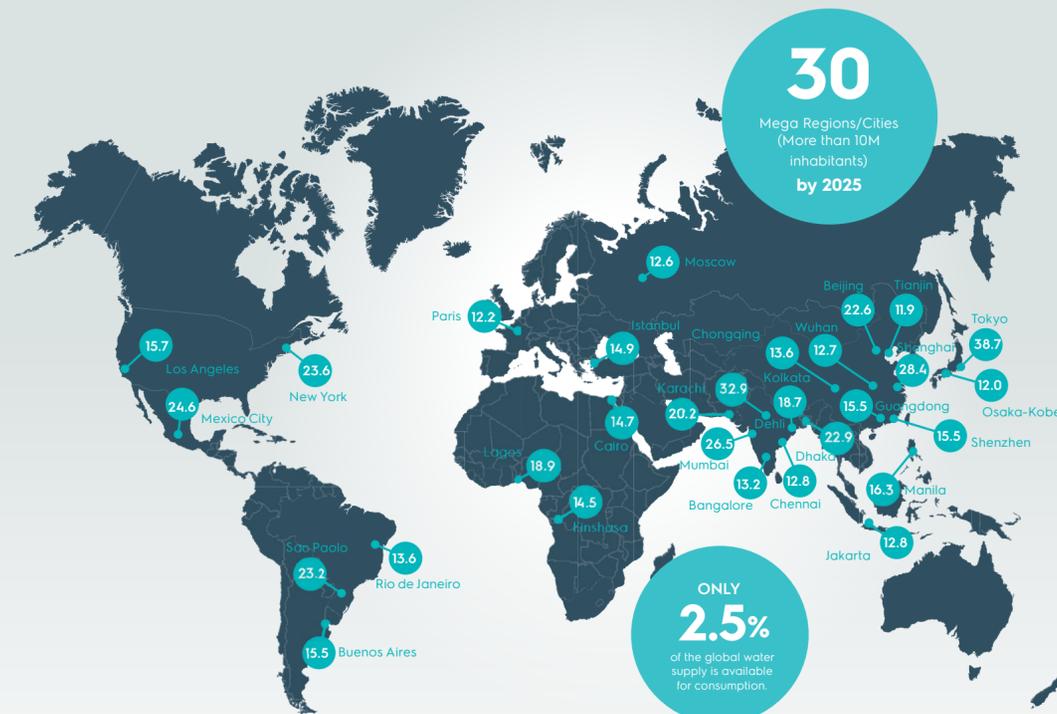
To put these figures in perspective, the average area for a two-car garage is between 33 and 36m².

Sources: www.entranze.enerdata.eu - www.bfs.admin.ch - www.statinfo.biz

Urban Farming (SWE)

As city populations swell, and space becomes scarce, new solutions are needed to manage urban living without greater strain on the local environment. The Plantagon Greenhouse will be under construction in the Swedish city of Linköping in late 2015. 60 meters high when finished, it will serve as an international model in enabling cities to produce their own food. The outer part will be reserved for urban agriculture with the inner functioning as a 16-storey office space. This solution is one that meets the increasing number of urban challenges we face head-on.

#UrbanFarming
www.plantagon.com



Electrolux Herb Garden concept: Under-counter herb solution allows for regulated growing of herbs to provide self-replenishing indoor garden to expand consumer cooking capabilities.

Electrolux Air Conditioner with PureO₂ System combines Cold ION Plasma Generator, Active Carbon and Bio HEPA filters to help prevent pollutants and bacteria in confined spaces.



Moving towards greener households

Big business is often seen as the main culprit in the global warming and resources debate, but it's easy to forget the environmental impact of ordinary households - 30% of global energy production and 20% of all CO₂ emissions are attributable to domestic use and as water scarcity increases, sustainable consumption becomes ever more important.

Now more than ever, our business success is interconnected via innovative, energy-savvy, resource-efficient appliances. Our strategy is to meet the urbanisation and compact living challenge by developing appliances that are safe for consumers and for the environment - now and for future generations. This means **a.** continuing the drive to provide more energy and water-efficient products. **b.** improving everyday life through better food hygiene and less waste. **c.** designing products for recycling that are free from hazardous materials.

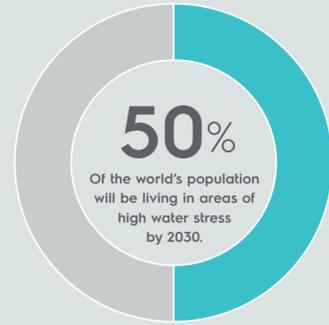
The reason for buying more sustainable products and services differs among consumers and nations. For some, the reason is to save money, for others it's ethical. For Electrolux it's important that we play our part, by acting responsibly, delivering energy and water-efficient products whilst helping raise awareness of the need for change.

In practice this means developing products that make efficient use of greywater, i.e. all household wastewater, except toilet waste, including water from showering, bathing, washing dishes and clothes.

One appliance that makes use of greywater is the **1** Electrolux RealLife® WaterSave Dishwasher. Equipped with WaterSave technology and needing only 50% as much water* to deliver spotlessly clean glass and dishware, it stores the cleanest water, used in the final rinse of the previous wash, inside a dedicated, internal 3.5 litre tank. Having already been used once this water is then made available for the next cycle in the Prewash phase. Furthermore, in the compact environment the dishwasher reduces clutter in the kitchen with its XXL tub - accommodating a three-course dinner set for as many as 15 people at once, and the AutoSense function continually measures dirt, allowing for energy efficient cleaning - with both temperature and water distribution altered as required.

Another example showing how recycling and careful use of raw materials can be implemented is **2** Electrolux UltraOne Green vacuum cleaner. The Cleaner contains 70% recycled plastics, zero PVC, and has radically reduced energy consumption. 92% of the cleaner can be recycled and the packaging is made from 100% recycled material. The use of recycled plastics saves on average 90% of the water and 80-90% of the energy compared to using virgin plastics.

* According to Electrolux research 49,4% lower water consumption per place setting compared with all dishwashing models sold in Europe during 2013.



Vertical Forest (ITA)

Serving as an answer to a host of urban issues, the Bosco Verticale is a new and welcome addition to the Milan skyline. Not just designed for aesthetics, these two towers function as a pair of green lungs for the city. In principle, a high rise residential block, they serve a much deeper purpose than merely housing people as every apartment has a balcony, complete with an abundance of trees, bushes and shrubs. This provides almost 2.5 acres of urban vegetation, which absorbs carbon dioxide, creates oxygen, and dampens noise. They also make vital use of greywater for irrigation and feature photovoltaic cells.

#SustainableDesign
www.stefanobericarchitetti.net



UltraOne vacuum cleaner is made from 70% recycled plastics and saves 50% energy, compared with an average 2000v cleaner.



Narrowest Building (POL)

Making use of the 'cracks' left between the city's painful wartime history and modern day urban planning, the Keret House is an art exhibit between two buildings in the old Jewish ghetto in Warsaw. Designed by artist Jakub Szczesny, it's a fully functioning living space with a micro kitchen, mini bathroom, sleep cubicle and even a work area, all connected by ladders. 133cm at its widest, the home demonstrates what can be done with ingenuity and daring within greatly reduced urban spaces.

#CompactDesign
centrala.net.pl

Optimising space & style

With accelerating global urbanisation more and more people have no choice but to live in smaller apartments. This makes the need to find optimal, space-saving living solutions increasingly important, especially as the number of single households is predicted to keep growing.

In smaller spaces, distinctions between pleasant or uncomfortable become even more pronounced. People don't want to reduce their quality of life, so it's important that our design continues to enhance the way we feel. Sensual experiences will not only be necessary, but will become even more important as space becomes a greater premium. At Electrolux we see the future of design as a culmination of the visual and interactive experience one enjoys when using a product, whilst at the same time allowing us to make a change for the better. In the age of interactive dialogue, designers are now better placed than ever to take this forward in tandem with consumers. In the short term, the next generations of appliances will appear much the same as those found in our kitchens and laundry rooms today, but they will be more intuitive, more energy efficient and material-homogenous.

In addition to the need to make more efficient use of space, the rising population places greater strain on natural resources, such as water and energy. As a thought-leader in home support, Electrolux has been looking at ways to ensure quality of life, despite increasing pressure on the amount of space available to them - without compromising results. One innovative solution is the Electrolux CompactCare washing machines, which offer best-in-class performance with clever features to free valuable domestic space for alternative uses.

3 The slimmest washing machine in the range, for example, is just 34cm deep. And the 38cm version is a market first, offering a 6kg wash, or about 24 shirts worth of laundry, combined with a 43% reduction in space (compared to a traditional 60 x 60cm appliance) yet with no compromise on results, thanks to the latest technological advances. Being Woolmark® Blue endorsed, it safely washes woollens that are labelled 'hand wash only'. Perfect for small living spaces with only single, or limited wash basin facilities. **4** The DualCare washer/dryer in the range has a Woolmark Blue certificate for both washing and drying cycles, ensuring an excellent yet gentle wash and dry, including even hand-wash only woollens - and all in the space of just one machine.



Thinking of the future. Electrolux Design Lab is an annual competition that challenges young designers to envision the future of home solutions. The 2010 theme 'The Second Space Age' invited contestants to focus on designs for compact living. Out of 1,700 applicants from 60 different countries, eight finalists were chosen. From a shellless refrigerator using gel to store and preserve food to a micro-sized washing machine. The winning concept 'The Snail' was a portable micro version of an induction hob. To find out more, visit www.electroluxdesignlab.com

* The Woolmark brand is property of the Australian Wool Innovation company, a non-profit organization that invests in research, development, innovation and marketing along the global supply chain for Australian wool.

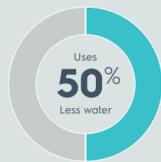


** Population Division of the UN Department of Economic and Social Affairs, World Urbanization Prospects Report, 2014 Revision.



Combined washer/dryer keeps compact and open living spaces free from hanging/drying laundry.

Ergorapido cordless vacuum is a two-in-one space saving solution.



WaterSave technology uses 50% less water* by utilising greywater.



RealLife® WaterSave Dishwasher, equipped with WaterSave technology.



The Electrolux CompactCare washing machine not only saves valuable floor space but also efficiently cares for delicate items of clothing.

Multi-purpose & customisation

Devices in the home are becoming increasingly smart thanks to advanced technology that influences the way we live our lives. Convenient solutions remove the boundaries between different appliances and can connect spaces in the home, as well as bridging the gap between professional and personal use.

New technological solutions enable us to create homes that go beyond traditional living rooms and kitchen standards. It also provides the growing number of small, single households with compact and uncompromising living solutions. With a shortage of space, the transformation of objects into multi-purpose devices is becoming more and more of a necessity. Increasingly flexible products, offering enhanced customisation and tailored solutions are also an important factor, allowing us to go beyond traditional standards whilst saving space.

A prime example is miniature kitchens that pack into one little cabinet including all the basic essentials that a normal kitchen provides. Another such solution is the award-winning* three-in-one 1 Electrolux Quick Source Boiling Tap. The multi-functional QuickSource offers boiling water at the touch of a button, as well as cold and warm water solutions. This innovative appliance reduces waiting time and eliminates the need for a separate kettle and so reduces work-top clutter.

*Reddot 2015 Design Awards

"In developed markets, advanced online services are now enabling consumers to design their own products and services, which is paving the way for a hyper-personalised world".

2 Electrolux CustomFlex™ refrigerators, for example, let users fully customise storage to suit their needs. This is in response to research, which shows that one of the biggest issues consumers have with their fridges is lack of flexibility in food storage. The CustomFlex™ solution allows users to define what goes where and change according to need allowing them to manage their food better and reduce waste. The TwinTech™ system separates freezing and cooling functions to ensure that the freezer stays dry and frost-free, while the refrigerator retains the required humidity, meaning ingredients stay fresher for longer. Independent tests show that strawberries, for example, retain 92% of their weight after 10 days with the TwinTech™ system.* Better preservation has implied benefits for single occupancy homes, which have been linked to the increase in food waste due to people being forced to buy larger portions than they really need**.

Hyper-personalisation

This implies a large paradigm shift for consumers in mature markets, who increasingly expect it to be easier to find 'the right thing' instead of being bombarded by 'the best thing'. Although the white goods industry is a late mover in the area of customisation, in many other industries, consumers can already completely customise their own products. The Do-It-Yourself phenomenon is becoming a more interactive 'Design-It-Yourself' trend. Consumers can now design their own products, from furniture and houses to beauty products and skin care serums. Furthermore, the introduction of affordable 3D printers will accelerate this Design-It-Yourself trend, since it enables consumers to easily produce products that fit their own lives.

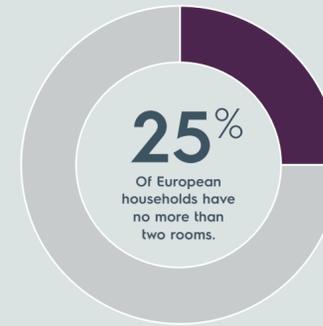
* Test performed by independent SGS INSTITUT FRESENIUS GmbH, Taunusstein, Germany. The detailed test results are available at Electrolux customer service.

** Source: telegraph.co.uk

Customised Living (RUS)

The Russian brother and sister design team, Ruetemple, have come up with an ingenious, space-saving living cube. It features a bookshelf which doubles as a staircase, as well as adaptable seating on wheels. An ideal space for studying, sleeping, or even for play when children are around, the room can be customised quickly and simply for the occasion. The seating can be arranged as 3 sofas, or a long seat, or even a bed. Slotting nicely into the current trend of 'customised design', the cube provides the freedom of a full sized home in the space of one room.

#CustomisedDesign
www.ruetemple.ru



Source: Euromonitor 2014



Farm-to-plate (FRA)

France's pavilion at the Milan Expo 2015 is a place for both harvesting and eating food. In view of the environmental impact of transporting food, and the lost relationship between food producer and eater, the pavilion, designed by X-TU Architects, negates the need for any transport and allows city dwellers to sample food exactly where it's grown. Combining these two connected elements in one building makes efficient use of resources and reduced urban space. The latticed timber market building uses hydroponics to grow vegetables, herbs, and hops and its design has been awarded prizes, tying in neatly with the theme of the Expo, 'Feeding the Planet, Energy for life'.

#MultiPurposeDesign
www.x-tu.com
www.expo2015.org



Green Product Award Winner 2013/14

The professional within the home

Consumers are progressing from consuming products and services to learning professional skills. Thus, there is increasing demand for pro-standard equipment. As the chosen supplier to almost 50% of Europe's Michelin-starred chefs, Electrolux not only has a unique insight into the requirements of some of the most demanding kitchens in the world, but also experience of how to apply this for domestic use.

This trend has also seen amateur chefs expand from hobby cooking to selling meals prepared at home. This dramatic shift in behaviour puts even more pressure on the performance of products particularly as the demand grows for more compact home solutions. Appliances such as the 4 Electrolux Masterpiece collection of blenders are already providing compact-sized solutions for aspiring professionals within the home. As are steam ovens that offer SousVide functionality.

For example the Compact 6 CombiSteam Pro oven with vacuum sealer is a key part of the broadest compact range on the market. At a height of only 45cm it offers a diversity of cooking functions including conventional fan hot air cooking and a SousVide program within the range of steam modes. Other space-saving products to feature within the Compact Range are; a Wine Cooler, a Coffee Machine and an Integrated TV. In terms of sheer space saving, the 6 Compact CombiMWO (Multifunction Oven and Microwave-in-one) is effectively two products in the space of just one already compact appliance. The integration of a fan and microwave also provides great tasting dishes in half the time of a traditional oven.

Professional to consumer

The next generation is redefining the boundaries between professional chefs and consumers. Electrolux domestic products make it possible to achieve professional results at home through pro-standard appliances with intuitive shortcuts. For example, pre-programmed steam ovens, coupled with the opportunity to learn online at home, now empower consumers to achieve the great taste previously only found in a restaurant.

Numerous workshops and education programmes have popped up on the internet and on TV, and events such as the international Taste festivals (tastefestivals.com #SecretIngredient) encourage attendees to take part in live cooking lessons from professional chefs. Even Smartphone Apps are becoming mainstream. The 7 My Electrolux App, which not only takes you through the steam cooking process step by step, with free bi-weekly recipe updates to continue to inspire your cooking, it also converts recipes to be suitable for steam cooking.

Whatever your level of expertise, having the right equipment is an essential starting point. That's why Electrolux developed the 8 InfiniteChef Collection of cookware, in collaboration with professional chefs, with each part of the range developed to cook a specific dish or type of food.

And 9 Electrolux's GemLine™ modular hobs provide flexible and professional solutions, and at only 36cm are ideal for even the smallest kitchen spaces. Increasingly more chefs are using induction for its speed and precision. The hobs streamline design means they are easily integrated into worktops, enhancing the aesthetic within the home. As well as Teppanyaki and gas solutions, the GemLine™ range offers a choice of two different Induction hobs: a single module offering a large dual paella zone or one offering 2 self-sizing induction cooking zones with a bridging zone; perfect for fish kettles or plancha grills. As well as being energy efficient, induction hobs are safe and easy to clean as there is no waiting time for it too cool before it can be wiped and prepared for its next use. This also reduces clutter in a compact kitchen or open plan living space.



4. The Masterpiece collection are space saving domestic appliances derived from professional products.
6. Compact CombiMWO (Multifunction Oven and Microwave-in-one). Two products in the space of just one compact appliance.

5. The Compact Collection with modular design and My Electrolux App for professional Steam & SousVide recipe ideas.
7. GemLine Induction and gas modular units measure just 36cm wide and bring professional and compact solutions to the home.



Electrolux QuickSource Boiling Tap gives instant boiling water. 5 colour accent options allow it to be customised to match different worktops.



Roughly one third of food is lost or wasted every year.
Source: unep.org



61% of food waste is avoidable and could have been eaten had it been better managed.
Source: unep.org



Electrolux CustomFlex™ refrigerators let consumers fully customise storage to suit their needs

*The Infinite Chef Collection is first prize winner in the 'Home Accessory' category for its innovative and sustainable designs. The set also stacks perfectly for space saving.

#CompactLiving

Love your style Love your space

Clothes are precious, and living space is too. Electrolux is always seeking simple ways to maximize your space without compromising quality and functionality. That's why we have designed the Compact Collection range of laundry appliances perfectly tailored to you and your home. Clever solutions that use up to 50% less space than standard size machines, while still able to efficiently wash and dry large amounts of laundry with the utmost care.

Make the most of your living space, by choosing one of the individually configured appliances from the Compact Collection. With its smart engineering solutions, Woolmark certificate and energy efficient technology, you'll get the same top-of-the-line quality and delicate care in less space, with excellent performance that allows you to love both your style and your space.



For more information on
Electrolux products, please visit
www.electrolux.com

