THE : FUTURE : LABORATORY

: MARCH : 2009

: : THE FUTURE OF GARDENING

Strategy and insight directors : Martin Raymond, Chris Sanderson, Tom Savigar
Creative director : Kate Franklin
Design trends editor : Caroline Till
Senior trends analyst : Vicky Langdon
Trends analysts : Jacob Strand, Anne-Fay Townsend, Jasmine Labeau
Trends researchers : Max Reyner, Ravi Khanna
Copy editor : M. Astella Saw
Design manager : Jodie Friend
Design intern : Alex Johns
Report writers : Jonathan Bell and Tom Savigar

Studio manager : Andrew Graham
Sales manager : James Brookes
Sales administrator : Alena Joyette
Finance manager : Sian Welsh
Production : Emma Baines

LS:N manager : Martin Farrington

The Future Laboratory : Studio 2, 181 Cannon Street Road,
London E1 2LX, United Kingdom
Phone +44 20 7791 2020 Fax +44 20 7791 2021
Email office@thefuturelaboratory.com
thefuturelaboratory.com

Introduction

The garden is a mirror of our home life, a space that reflects and exaggerates what we want from our homes. The garden is the space within people's home where their behaviours are increasingly changing because of the introduction of new technologies and innovations that make the garden more engaging, more self sustaining and more productive.

In urban, suburban and rural settings, the modern garden will evolve into a multitude of guises designed to accentuate not just our activities and our tastes, but also the way we aspire to use private outdoor space in the future.

To understand the relationship people will have with their gardens in the future Husqvarna commissioned The Future Laboratory to deliver a glimpse of what's to come. A quantitative survey of 1,000 male and female gardeners (per country) across all ages in Scandinavia, France, Britain, Russia and the United States, interviews with an expert panel and desk research were used to identity attitudes towards the contemporary gardening, and how social, cultural, economic and technological forces will shape how people spend more time and money on their gardens, and how gardens will become worthwhile and unique extensions of their homes.

At the centre of the analysis is the impact and adoption of technology and innovation. Many of today's social and economic challenges are increasingly being tackled and managed by the advancement of everyday consumer technologies and sciences. Hence, the final section of this report identifies with people's growing desire for automated, smart and effective gardens that rely on the innovative thinking, products and services of Husqvarna.

The experts

Towe Ressman, Sweden

Towe Ressman is Global Head of Design at Husqvarna, the global leader in outdoor powered products and the world's largest producer of lawnmowers, chainsaws and portable gas-powered garden equipment such as trimmers and blowers

Christopher Stocks, Britain

The writer and journalist Christopher Stocks, a regular gardening correspondent for British newspapers and author of Forgotten Fruits (2008), an historical survey of long-lost and obscure fruit and vegetable varieties.

Alexander Grivko, Russia

Alexander Grivko is a pre-eminent Russian designer and landscape gardener.

Tim Richardson, Britain

Tim Richardson is the British author of Avant Gardeners (2008), a global survey of new work in garden design. He is also a trustee of the Garden History Society and serves on the gardens panel of the National Trust, one of Britain's leading conservation charities.

Patrick Blanc, France

The French architect and designer Patrick Blanc is best known for his audacious vertical garden structures that cling to the side of existing buildings, using a system of anchors and irrigation to create the sensation of dense urban vegetation.

Richard Reynolds, Britain

Richard Reynolds created the Guerilla Gardening movement, re-appropriating abandoned urban land with covert planting schemes in order to enhance neighbourhoods and to build community spirit.

Bosse Rappne, Swedish

Garden expert Bosse Rappne has been running the successful conservatory 'Slottsträdgården Ulriksdal' in Sweden since 1985. He is a DIY celebrity on Swedish television and has recently written a book about a collection of his favourite gardening projects.

Gardening drivers

This section describes how and why technology, cultural, environmental and social forces are impacting on people's gardens and gardening behaviours. Indeed, consumers across the globe are looking at new and innovative ways to maintain the good life they've come to treasure, without the expense of going out all the time. This is not quite the indulgent, cocooning trend of a few years ago, but a savvy and positive way to style-out the economic downturn.

People worldwide are predominantly weekend gardeners, and although some see gardening as a bit of a chore, they agree it is an essential part of home maintenance. And with the right application of new gardening technologies and innovations their interests and behaviours are all the more enhanced.

Wholesome living

There is currently a strong reaction from communities within the countries we profiled to a perceived lack of authenticity and unknown environmental consequences of genetically modified food. This has in turn created a strong organic movement which directly affects how people view the 'productive' element of their garden space. One in five Russian gardeners and nearly one in ten Scandinavians feel that concerns of GM affect their future gardening behaviours.

Heightened consciousness

The arrival of second-generation biofuels is creating a direct link between garden waste and fuel, stimulating its production. High quality technology is demanded by consumers, who see cheap, disposable solutions to be at odds with their sustainable ideals. 13% of Americans agree that the introduction of new technologies specifically designed for the garden are key to their future gardening interests.

As a global leader of innovation and as the largest producer of lawn mowers and chain saws in the world, Husqvarna has an environmental responsibility. Therefore environmental responsibility is anchored in all operations and covers everything from production processes, consumption of material and energy, product features such as exhaust emissions, noise levels, and packaging to the recyclability of products.

New austerity

'In the last period of economic recession people retreated into a kind of romantic fantasy, rather than reflecting austerity,' Tim Richardson points out. 'This time, people will want fantasy, but one based on wilderness. Their own gardens will be havens of ecological correctness in the context of a damaged planet.'

With the current economic slowdown having a more global impact, the resurgence of vegetable gardens and wilderness areas is a common theme amongst our case studies. According to Richard Reynolds, vegetable seed sales have been rocketing as food prices go up. 'It seems that as people can't move so easily up the property ladder they turn to their garden as a source of fulfilment and a place in which to invest,' he says.

'The last couple of years have been a time where people have spent a lot of money in their gardens, inspired by new magazines, television programmes and books,' says Towe Ressman, who believes that social shifts have had an influence on contemporary garden design.

It seems that increasingly people will come to use to their garden for more than just spaces to extend their homes. 'People have no problem with imagining the garden as an extension of the house – a place to eat, socialise, play and work, not just somewhere to grow plants. However, this is currently somewhat in reverse, with self-sufficiency and allotment mania taking hold, powered by ecological and economic concerns' says Tim Richardson.

The British gardener

: In Britain, 44% of respondents have a medium garden and 28% have a small garden.

: Garden size is not correlated to income. More people in the middle income group of £35k-45k have a large garden than those in the top income bracket.

: Gardening was seen as an essential chore by 32% of respondents.

: Those with medium-sized gardens are most likely to see gardening as a chore.

: Weekend gardeners and those who enjoy learning about plants account for a large proportion of respondents (22% and 20% respectively).

: The casual attitude triumphs over commitment to the garden (44% to 25%).

: Getting old is most likely to affect future gardening behaviour (39%).

: Growing food interests 30% of respondents and is far more popular with younger people: 38% of 20-24 year olds are interested in growing food, compared with 25% of the over 65s.

: British people view their garden through a social and domestic lens. Over half would like tomorrow's garden to be a place of retreat, 49% a place to entertain and 39% an extension of their living room.

: A quarter of respondents would like to have a garden in the future that this is self-sustaining and environmentally friendly.

: Using the garden to reduce food bills interests 22% of respondents.

: Britons believe that technology would allow them to grow and maintain plants better (28%), and it would automate the mundane tasks leaving them to enjoy other activities (23%).

Case Study – Victor Lobley, Britain

Victor Lobley is retired and lives with his wife in Surrey, where they have a large garden. They travel extensively.

Attitude to gardening

'I'm keen on having a nice garden. The problem is that we travel quite a lot. It's hard to see things through so our garden is low maintenance – we have people to mow the lawn and plant beds in the spring. We've had a garden for the last 25 years, but when I was working we moved countries regularly and lived in typical rental properties, where the garden wasn't looked after in the same way.'

Aspirations for the garden

'We inherited a garden that was pretty well laid out – it's an acre with a lot of thought put into it. I like to have a nice lawn and in the past I would have aerated it quite a bit. As our desire to travel diminishes I think our interest in the garden will increase. We have space for a vegetable patch and I can see us growing our own vegetables and harvesting them for the table. That would be rewarding.'

Leisure in the garden

'We have a large conservatory – we were told it would be the most popular room when we bought the house and they were right. Even in the middle of winter we can sit there and enjoy the garden. We'd be outside in the garden every day if the weather was not a factor – we have garden furniture and terraces.'

Gardening in the future

'If we were to get serious about our garden I'd want us to do the work ourselves, if we were physically able. I feel somewhat embarrassed that we have others to do the lawn and the leaves. I'd like to be physically more involved. I imagine that as time becomes available, most people would be the same. Everyone that we know who is retired wants to spend more time and effort on their garden.'

New sobriety

There is a growing desire among consumers to save money and to improve their health through own-grown vegetables, as well as a marked increase in self-sufficiency. 20% of Americans and 22% of Britons feel the economic downturn affects their future gardening plans by bringing 'make do and mend' sharply into focus for them.

Consequently, attendance at restaurants is falling worldwide: in the US, 54% of consumers are cutting back on restaurant spending because of straitened financial conditions, according to Mintel; and in France, revenue of restaurants and cafés dropped 20% in 2008.

New authenticity

Consumers' growing interest in eco and civic concerns is increasingly reflected in the purchase of local foods. Towe Ressman believes that there is an interest in authenticity and tradition among the new generation of gardeners. 'In the next 10 to 20 years, I think nature and the cultural landscape also will move into the cities. More resources will be focused on small areas and the rest will be left natural. Why should we have large, perfectly cut lawns and flowerbeds if there is no social activity?'

In America, traditional implements by companies like Ames True Temper are proving increasingly popular. These tools can point to hundreds of years of experience with creating hardwearing, long-lasting hand tools.

Home grown

Consumers are taking a more considered approach to the way they shop for and prepare food. Indeed, consumers are even becoming producers themselves, as increasing numbers of them turn to growing their own food.

Gardening is becoming increasingly interesting because of the desire to grow one's own food. 23% of Americans, 30% of Britons, 32% of French, 16% of Scandinavians and 40% of Russians want to grow their own good in their gardens.

The health benefits of the garden are also recognised, with surveys demonstrating that horticultural activity has major therapeutic effects, placing gardening at the forefront of the drive to a healthier population, in the face of rising obesity rates in particular. Home grown food not only provides exercise during cultivation, it allows consumers to cultivate their own pesticide-free fruit, vegetables and herbs.

Beauty too

Nonetheless, certain societies are rejecting the emphasis on grow your own as per capita income rises and the middle class increases. Russia is a case in point; all three case study respondents have removed vegetable patches and replaced them with decorative planting, perhaps rejecting the essential social role the kitchen garden had in their country's recent past.

'In Russia, small gardens tend to be about feeding your family, whereas parks or gardens of a few acres are designed for contemplation and beauty, especially important when ecological and green issues are so prominent. However, gardening has always been associated with design, but design is very rarely drawn to the subject of gardening', says Grivko.

Quality of life

The traditional role of the garden, as a place that gives visual pleasure and regular exercise, improving the quality of life as the population ages, will continue to be a crucial part of our lives.

A dominant issue and barrier to enjoying the benefits of the garden is working long hours and leading a busy lifestyle. 16% of Scandinavians, 24% of French, 13% of Russians, 22% of Britons and 19% of Americans agree that work commitments stop them from gardening. Similarly amounts of people in these countries agree that busy lifestyle supersede gardening activities too.

Gardening plays an important role in developing and maintaining a healthier lifestyle, and innovative garden technology and new techniques can help gardeners invest more time in their hobby and therefore in their health. The automation of the garden, which we explore later, is key to this.

Modern day refuge

The modern garden is a place of sanctuary, a refuge from a busy world, with technologies and design strategies allowing us to maximise its use. These refuges are not just for us, but for wildlife and diverse plant species. Legislation to retain garden space throughout cities and suburbs cites the importance of a green lung to soak up CO2 and return rainwater to the water table, combating key issues like climate change, localised pollution and drought.

Year-round use of the garden has become the goal, though it is not always attainable, especially in more extreme climates. New technologies and innovations will emerge to cater for demanding consumers and enable them as gardeners. As working hours expand, the desire to use the garden later in the day has grown, with patio heaters and external lighting especially popular. One in ten Americans, 15% of Britons, 22% of Russians, 27% of French and 13% of Scandinavian gardeners would buy technologies that allow them generate their own light source.

Evolution of the private garden

'The most significant change in the private garden is the transition from the functional garden to the garden as an extension of our homes,' says Towe Ressman. 'People are spending money on designing their gardens. The garden helps to reflect social status in the same way as we are used to looking at interior design or cars.'

Furthermore, design and technology will move from home to garden. Towe Ressman believes that there will be 'improved technology when it comes to materials. Not only from a visual perspective but also tactile. In addition, noise and sound will be important: people will pay for silence. I believe that light is an important tool.'

Low-maintenance lives

Garden technology is advancing to help maintain people's gardens, with leaf blowers, robotic mowers and other tools by Husqvarna helping to extend the living space into the garden. The Husqvarna Auomower® Solar Hybrid is the world's first solar-electric hybrid robotic mower, with the ability to mow 75-110 sqm per hour, depending on light conditions. The more sun light, the better the capacity.

'A lot of trends have led us towards the low maintenance garden: longer working hours, both adults working, house sharing for longer, long haul holidays, the popularity of mini breaks and the widespread availability of fresh fruit and vegetables,' says Richard Reynolds. As a result, gardens that act as purely social spaces have become popular.

According to Christopher Stocks, the integration of house and garden has been going on since the 1920s, but we are now using our gardens less but more intensively, mainly because working and family patterns have changed so much. 'Longer working days and both partners working mean that there are fewer people around the house and garden except in the evenings and at weekends, when relaxation has become more important as a counterbalance,' he says.

The Scandinavian gardener

: The Scandinavian gardener typically has a house surrounded by a large garden and space (28%) or a medium or small back yard (24% and 21% respectively).

: Terraces and balconies are the preserve of the young – 36% of 20-24-year-olds and a quarter of 25-34-year-olds have terraces or balconies.

: High-income respondents are nearly three times as likely as the lowest-income respondents to have a large garden: 47% of those with an income of around £65k have a large garden compared to 17% of those with an income of less than £15k.

: Gardening is seen as an essential chore by 27% of respondents, 24% describe themselves as weekend gardeners and 18% disavow gardening altogether, including 32% of young people.

: Interest in plants and plantsmanship is very low overall (12%). It is highest amongst the young (16%).

: Most respondents are laid back when it comes to looking after their gardens, with 47% of respondents saying they are fairly casual about maintenance.

: The younger generation is especially apathetic; 28% of 20-24 year olds say they are fairly inactive when it comes to the garden (against an average of 13%).

: Growing old is most likely to affect future gardening behaviour (39%), followed by a lack of sunlight (19%). Self-sufficiency was low on the list at 17%.

: Weekend gardeners are especially worried about how lack of time and working long hours will impact on the garden (21% and 20% respectively, against averages of 16% and 16%).

: The overwhelming majority of respondents say that they would use their gardens as retreats (60%). Potentially, 38% of respondents will use their gardens to generate energy, a figure that rises sharply with increased income (50% of those older than 65 say they do or would like to use their gardens to generate energy).

: The ultimate future garden will be organic and focused on nature. In our survey, 56% of respondents expressed a desire for a garden that offers a tranquil space.

: Scandinavians favour technology driven solutions, and are concerned primarily about better ways to control pests (27%), generate compost (25%) and generate water (14%) through the use of technology in the garden.

Case Study – Carsten Andersen, Denmark

Andersen works in his garden every day and describes it as 'classical, but bigger than average'. He grows plants, vegetables and fruit. 'I am an expert gardener, and a very enthusiastic one,' he says.

Andersen gets his information through his job. He uses the internet extensively and also subscribes to gardening magazines. Generally he feels that Danes want their gardens to look nice, but they don't want to spend a lot of time getting there. Doing things the easy way is popular.

Aspirations for the garden

In the growing season, Andersen can spend up to 20 hours a week in the garden. In the next six to eight years he plans to work less, which will give him more time to spend in his garden.

Leisure in the garden

'When the children were little there was more playing in the garden, now it's sunbathing,' he says. The look of the garden is becoming more important, so there are now more plants and flowers.

Andersen has made use of technology, especially since his financial circumstances have improved: he has a range of equipment including a lawn mower, lawn tractor, rotary cultivator, hedge shears, chain saw and bush remover.

By using better equipment he can save a lot of time and enjoy his garden more for relaxation.

Gardening in the future

Andersen looks forward to spending more time in the garden in the future. He acknowledges that he probably spends more time in the garden than most people. He will definitely use future technology and he is considering a self-propelled lawn mower. In general, he believes that we will see a growth in garden equipment to ease people's everyday lives.

Case Study – Steen Korsbakke, Denmark

Steen Korsbakke is 41. He lives in a city and has a medium-sized garden attached to his house. He runs a garden centre in Silkeborg.

Attitude to gardening

Korsbakke tries to work in his garden once a week in the growing season. He maintains the space with a set of what he calls 'basic' gardening equipment, including a lawn mower, hedge shears and some hand tools. He describes himself as an expert gardener.

Aspirations for the garden

Over time, his aspirations for his garden have remained constant. By designing a space that requires minimum maintenance, he doesn't need to rely on new technology. He has a kitchen garden where he grows vegetables for the dinner table.

Leisure in the garden

Korsbakke has created a working garden, providing small but important amounts of produce. As a gardening professional he doesn't envisage spending any more time in his garden than he does now, and in the future he imagines that he will be more careful with his free time.

Gardening in the future

If the right equipment came along in terms of price and functionality, Korsbakke would consider purchasing it. He says it is important that products are durable and straightforward. He doesn't enjoy mowing his lawn, so would like future equipment to help with that task; he would therefore be interested in an automower. However, he doesn't believe that current technology is good enough for his purposes and is happy to wait until it improves.

Case Study – Marja Konttinen, Finland

Marja Konttinen is a communications consultant who lives in a small cottage in an urban area. She has an allotment garden attached to her home.

Attitude to gardening

Konttinen describes herself as an enthusiastic amateur, getting her information from the internet, tv, magazines, friends, neighbours and family. 'I have plenty of very old gardening tools and one brand new trimmer,' she says. 'On the whole I hate gadgets that make a noise.'

Aspirations for the garden

'I really hope I can spend more time in the garden in the future. It is much more than just a garden, it is a whole different space for me. I do not have any specific long-term plans, but gardening will definitely remain a part of my life in the future.'

Leisure in the garden

The garden is a retreat and a functional space. 'I use my allotment garden for many purposes: harvesting vegetables, berries and fruit, having picnics with friends, relaxing and being alone. It is a good place to be. Sometimes it's pure work, sometimes it's just sitting and watching the grass grow.'

Gardening in the future

'I'd love to have software for garden planning and choosing species,' she says. 'I also dream of new gardening gadgets that are silent and rechargeable. However, I hope that my garden will always be a place without unnecessary gadgets. I get enough of those at work and at home.'

Gardening trends

This section describes the attitudes and behaviours of consumers across the countries we examined – Britain, Scandinavia, Russia, France and the United States. The garden plays a multiplicity of roles in everyday life, and technology and innovation is key to the gardeners behaviour.

An evolution of opinion is clearly occurring as technology becomes something people take for granted. Indeed, when asked what technology can do for the gardener, the results of our survey in each market show the following :

The top five influences of technology in gardens :

1: Technology would allow people to maintain the garden better

2: Technology would allow them to automate mundane tasks

3: Technology would make the garden more interesting

4: Technology would make the gardening experience more satisfying and worthwhile

5: Technology would make the garden/yard-cum-home experience seamless

The top ten technologies people would buy for their gardens :

1: Technology to deter garden villains (slugs, deer's, rodents etc)

2: Technology to generate their own compost, water and light source

3: Technology to learn about the plants they have

4: Technology to feed their family

5: Technology to automate physical activities

Connoisseurship : the new green knowledge

Horticultural connoisseurship is on the rise. The French are the most devoted to the appearance and maintenance of the garden: 48% of French respondents describe themselves as very committed to garden upkeep compared with 30% of Americans, 28% of Russians, 25% of Britons and 25% of Scandinavians. However, we are also witnessing the emergence of green aficionados, attracted by the new cultural cachet of planting, learning about new and obscure varieties and reviving traditional skills such as bee-keeping, fruit growing and home brewing for the 21st century.

In our survey, 28% of French respondents state they are learning about plants and getting the gardening bug, a figure that increases steadily with age until it peaks in the 35-44-year-old group. Similarly, 26% of Russians and 20% of Americans fall into the same category, albeit with interest peaking at a younger demographic in America (25-34) than in Russia (35-44). In Britain the figure is also 20%, but the peak is later in life. The percentage of potential connoisseurs is lowest in Scandinavia (12%).

Digitally inspired

For some, new technology, the knowledge economy and the application of new – and forgotten – skills are a spur to experiment with their garden. The internet has provided them with a first-class resource, breaking down the barriers to the often arcane information that defined the master gardener.

New books, for example, Growing Stuff: An Alternative Guide to Gardening (2009) in the UK, and The Urban Homestead: Your Guide to Self-Sufficient Living in the Heart of the City (2008) in the US, Michel Caron's Jardin bio: Vrai ou Faux? (2008) and Kerstin Engstrand's Latmansträdgården ('Lazy Garden') (2003) are aimed at gardeners with limited space and experience but plenty of enthusiasm.

Websites like Treehugger, Semeiotica, Jetson Green, Earth Friendly Gardening, Earth Pledge, the Inadvertent Gardener, and Girl in the Green Dress are global aggregators of information about the new movement, one that encompasses not just planting but also product design and architecture. More focused sites such as Shootgardening or Myfolia provide users with a forum for planting diaries and layouts.

Television has played a major role, albeit one that has diminished at the end of the decade. At their peak, garden makeover television shows were second in popularity only to interiors shows, syndicated around the world.

'Gardening has become the subject of so much media attention: the private garden has become a more self-conscious space than ever before,' says Christopher Stocks. 'There are now mass-market garden programmes on radio and television around the world, with an enormous impact on the average back garden. There is intense media interest at all levels, from exclusive and intellectual magazines, such as Hortus, to pictorially led coffee-table books that dominate the bookshelves.'

According to Tim Richardson, artists are now much more interested in ideas around gardens and this will trickle down: 'Gardening is no longer seen only as an outdoor version of DIY, done only by old people.'

Although self-conscious and image-driven, these digitally inspired generation is also eager to broaden conventional contemporary definitions of gardening, mixing elements of self-sufficiency with new skills and experiences.

For example, the rise in urban bee-keeping demonstrates the innovative consumer's desire to experiment. In London, there are around 5,000 hives in gardens and on rooftops, and a dedicated organisation for the capital's bee-keepers, The London Bee-keepers Association. There are similar organisations in San Francisco and other major American cities (although it is illegal to keep bees in New York). The Fairmont Royal York hotel in Toronto keeps bees in its rooftop kitchen garden, adding another layer of bespoke produce to the menu.

The US gardener

: The US sample is dominated by conventional houses with backyards (32%), whether medium, large or small. Allotments, courtyards and balconies are statistically insignificant.

: Americans describe themselves as 'weekend gardeners' (30% of respondents). The younger consumer is more interested in learning about plants (24% of 20-24-year-olds and 29% of 25-34-year-olds, compared to an average of 20%).

: A large number (40%) of respondents claim to be casual about maintenance, countered by 30% who say they are very committed to a garden's appearance. Self-proclaimed experts are minimal (3%).

: Commitment to maintenance falls off significantly amongst the young (15%) compared to an average of 30%.

: Growing old is most likely to affect future gardening behaviour (37%), followed by environmental concerns such as climate change (31%), too much heat and humidity (26%) and changing seasonal patterns (25%).

: Younger people are most likely to grow food: 30% of 25-34-year-olds cite this activity, compared with 23% of all the respondents.

: Gardens are primarily places of retreat (37%) and places to work (35%). Over a quarter of respondents describe the garden as a place in which to entertain (26%).

: The older the respondent, the more likely the garden is to be seen as an extension of the home: 28% of all respondents agreed with this statement compared with 17% of 20-24-year-olds.

: When asked about the ultimate garden of the future, the popular response was 'one that is entirely self-maintaining' (38%) followed by 'one that is a self-sufficient ecosystem' (26%).

: The main reason to use technology is to improve the ability to grow and maintain plants (42%), followed by improving the ability to feed the family (27%). Younger people were the most positive about the ability of technology to help deliver self-sufficiency (39%).

Case Study – Todd Provence, United States

Todd Provence is a 43-year-old health care salesman from North California. His detached house in a cul-de-sac has about three-quarters of an acre of garden, including a patio, lawns, shrubs and trees.

Attitude to gardening

'I enjoy gardening. I would say I'm knowledgeable – I know different trees and shrubs, for example. I do my own concrete work, hand landscaping and irrigation. I have a leaf blower, edger – all these things. It makes gardening a lot easier, keeps things looking right. My mower is about four years old – it's a durable Husqvarna model.'

Aspirations for the garden

'I hope to put in some decking and a patio. In the spring, I'll put in a vegetable garden, just to have fresh produce. With the economy how it is and things going up in price, it'll be really nice to have fresh lettuce, squash, tomatoes. There are quite a few people in our area who are doing this.'

Leisure in the garden

Leisure activities play a big part of using the garden, and the entire back yard is currently set up for entertaining, with French doors opening off the main living area.

Gardening in the future

'I think vegetable gardens will be more common because of the way the economy is going. Also, people want to have control over what they are eating – contamination and pesticides are big issues. The price of fruit and vegetables is going up, and it's gratifying to see things growing in your own garden instead.'

Home indulgence : staying in and enjoying life more

The home is increasingly the ultimate place for sanctuary, entertainment and relaxation. To bolster this trend, we are seeing the adaptation of domestic technologies for outdoor use: outside cooking areas, fireplaces, audio systems, lighting, media projection systems, wi-fi technology and alternative power sources.

The Homedulgence trend is also driving high-end designer furniture, which can be used to expand the indoor space. Jinny Blom's 'Spore' range of furniture is organic in form, designed to resemble stones or pebbles; indoor and outdoor versions are available.

The garden is evolving into a place for working, learning and entertaining, with the boundary between inside and outside blurred as much as possible. The architectural approach is key, influenced by high modernism, and the role of glass, light, air and openness in residential design.

'The 1990s saw an upsurge in new materials and technology in the garden, as seen in Paul Cooper's work for example. Televisions, sound systems and new plastics were increasingly used. Increased home ownership has had its effect – there is more pride in garden space. The garden has become a venue where personal taste and personality are expressed, it's not just a yard or vegetable patch', comments Tim Richardson.

Functional pieces

A new multi-functionalism is emerging, with innovative garden furniture that reflects its occasional use but its near-permanent exposure to the elements. Afroditi Krassa has designed a patio table which can generate energy when not in use; 'Violent Sun' is covered in photovoltaic cells that collect solar energy and which can supply the home with clean electricity. Gurdeep Sandhu's 'Solar Tree' is a portable and compact set of solar panels designed for small urban spaces which can be opened up to provide shade from the sun.

The 'Rox' bench designed by David Andrew Bottom doubles up as external storage when not in use, extending the use of outdoor space.

The outdoor office or playspace has also increased in popularity, particular in urban gardens where architectural additions to the main property are not possible. Hence the arrival of micro-work spaces, designed in a modern or traditional style to blend into a green environment.

Even the tool store has been re-imagined in a more seductive light. In 2006, German product designer Nils Holger Moormann created 'Walden', a playful concept named after Henry David Thoreau's book. The 'Walden' tool shed presents a world where everything has its place, and the demands of life and gardening are slotted together into a solid wooden structure. Gardening tools – forks, wheelbarrows, buckets and spades – are each given their own dedicated niche.

The garden as retreat

With space – particularly urban space – at a premium, there is a demand for architectural or design-led solutions that make the interaction between house and garden more seamless than ever before. This is the realm of a forward-thinking consumer who believes that design and technology are the best ways of maximising garden use.

This consumers approach can be seen in the town garden, the roof terrace or the back patio. 'In the next 10 to 20 years I expect to see more personal food production and more use of walls and roofs,' says Richard Reynolds. He also predicts increased use of plants as part of a building's engineering, for example to cool air and to clean water, along with greater use of grey water.

Complementary spaces

The garden as retreat is markedly more popular in countries where the natural environment has traditionally acted as a complimentary space to cities and suburbs, with architecture and leisure activities arranged to match. While only a quarter of French respondents say the garden is a retreat, 37% of Americans and nearly half of Russians say this, perhaps reflecting Russia's long tradition of out-of-town garden retreats, or dachas, for all levels of society.

Similarly, 52% of Britons state the same thing, indicating Britain's long association with gardening, leisure and spare time (the British phrase to indicate a period of forced unemployment is 'gardening leave'). In Scandinavia, the percentage is even higher, with 60% stating that retreats are a key garden use. This percentage peaks at 65% for the 35-44 age group.

Home extensions

Gardens are also seen as extensions of the home: 55% of the French agree, as do 49% of Britons, 40% of Scandinavians, 28% of Americans and 24% of Russians. As well as garden offices, there is a move towards more compartmentalised gardens, with living and playing areas defined by zero maintenance plants and large foliage for privacy.

The greenhouse is undergoing a revival. Its traditional conservatory form is being replaced with new glass technology that brings inside and outside together. The exquisite Japanese pavilion at the 2008 Venice Architecture Biennale (Extreme Nature: Landscape of Ambiguous Spaces, a collaboration between botanist Hideaki Ohba and architect Junya Ishigami) was a series of vertical glass greenhouses. Their joints were invisible and the greenhouses were furnished with plants, seats and cabinets. The design team intended the project to 'make us aware that everything in it – the plants inside and outside, the furniture, the architecture, the topography, and the environment – exists simultaneously'. Gardening thus becomes an activity that is intimately connected to the home.

Tranquil space

Tranquillity is a key aspirational trend for Scandinavian, French and Russian respondents; 56%, 44% and 43% respectively hope that a future garden will be a 'tranquil space to forget about daily life and relax in', compared to 37% in the UK and 24% in the US. Currently, Scandinavians demonstrate a pragmatic response to landscape, refusing to worship outdoor space for the sake of it and realising its potential for energy generating or even simply car parking. Land easily adapts to a number of functions when more of it is available. Their future wish list rejects the desire for the garden to be an extension of the home; the boundaries are very clearly delineated.

The Russian gardener

: Allotments are by far the most popular garden in Russia – 44% of respondents have an allotment, followed by 21.5% with a balcony/terrace; 17% of respondents have a large garden.

: Russians are weekend gardeners first and foremost (44%), a percentage that increases with age. Those who enjoy learning about plants most are in the 35-44 age bracket (32% as opposed to an average 26%).

: Appearances matter most to the older generation, with 30% of the 65-plus age group stating they are committed to the upkeep of their garden/yard, compared to an average of 28%.

: Asked what will affect future gardening behaviour, 40% cite food growing. However, 31% state that new home technologies are important, a figure that is consistent across age ranges.

: An average of 17% of respondents think that buying automated devices will affect their future garden behaviour.

: Half of respondents use their garden as a retreat, 46% as a place to entertain family and friends and 43% as a means of feeding their families.

: There is a steady increase in the percentage of family feeders correlated to age – the older the respondent, the more likely they are to grow their own produce.

: The ultimate future garden is a tranquil space, according to 43% of respondents. This was followed by the garden as a wildlife-friendly organic space (26%).

: Low-maintenance proves popular, with pest-free and zero-maintenance gardens anticipated by 20% and 19% of respondents.

: Technology will 'make the gardening experience more satisfying and worthwhile', say 41% of respondents, a figure that rises to 50% of over-45s and 61% of over 55s.

: The automation and maintenance potentials of technology are also favoured by the 45-plus age groups.

: The technologies in most demand are pest prevention (36%), followed by garden design technologies (33%) and technology to help feed one's family (29%).

Case Study – married woman, Russia

Our first Russian case study is a 52-year-old married woman. She earns an above-average wage and owns a house with a large garden.

Attitude to gardening

She describes herself as an enthusiastic amateur who likes to use the garden the whole year round. She gets her information from Russia's main gardening magazines, Landshaftniy Dizain, Vestnik Zvetovoda and Zvetochniy Klub. She has also attended gardening courses in order to learn more about plants and plant care.

Aspirations for the garden

She has high aspirations for her garden, having changed the layout from one that focused on bedding plants to new areas of lawn and alpine gardens. As the garden is large, she uses a lot of equipment including a tractor, trimmers, cutters and lawn mowers. She always keeps track of new developments.

Leisure in the garden

She sees gardening as a key leisure activity, but as she gets older she will increasingly want her garden to live 'all by itself', with the ultimate goal of a 'self-maintaining garden'. Technology might play a role in reducing the amount of time she has to spend keeping the garden looking good.

Gardening in the future

Her ideal vision of the garden of the future is one that will be little more than a tamed part of wild nature, a personal wilderness located just outside one's front door. However, the garden will still be divided into areas for entertaining and relaxing. She envisages that she may grow vegetables again.

Case Study – married man, Russia

Our second Russian case study is a 36-year-old married man, with an average family income.

Attitude to gardening

An enthusiastic amateur, our respondent is in his garden all year although he tends to make use of his gardening equipment in the summer. He has spent a lot of time turning his garden into a space that reflects his personality and tastes. He gathers information from books, guides and gardening magazines, including Moi Prekrasniy Sad, Sadovnik and Potrebitel.

Aspirations for the garden

Over time, he has changed the configuration of his garden, most notably changing the vegetable patch into a lawn, as the availability of fruit and vegetables in the shops improved and the status of home-grown produce fell.

Leisure in the garden

It's taken a while, but our respondent now feels that his garden is the perfect space for light gardening and relaxation. The current configuration of his garden conforms to all his needs; he has flowerbeds, lawns, bushes and right now can see no reason for any changes.

Gardening in the future

The garden of the future will be hi-tech, he believes, although he doesn't specify how the technology will be applied. However, he does state that labour-saving devices are very important for modern gardeners; although he owns the basic gardening equipment he tries not to buy every novelty available on the market.

Self-sufficiency : the rise of 'seed banking'

Perhaps the most pertinent trend for the modern era is the evolution of the garden as a functional machine, a way of feeding the family, preserving energy and water and securing the local eco-system. Outdoor space is the primary generator in the search for the self-sufficient lifestyle.

Asked about the 'ultimate garden of the future', 31% of French respondents wished for 'a garden that is productive, self-sustaining and environmentally friendly' and 31% for a garden that 'helps with weekly food bills'. Figures were much lower for Russia (17% and 13%) and Scandinavia (14% and 9%). However, US and UK gardeners were more interested in the garden's role in future self-sufficiency (24% and 24% for the US and 25% and 22% for the UK).

Recession resistant

How can the modern garden be transformed into a functional place, providing food and fuel for families in a time of economic downturn, while simultaneously helping to recycle food and household waste, without squandering practicality or aesthetics? 'Seed bankers' are the least aesthetically self-conscious and the most practical of all consumers. They are less prevalent in economies that emerged from a long period of stagnation (such as Russia) or in countries with a long tradition of self-sufficiency (for example, Scandinavia).

With the threat of a period of slow or no economic growth (most pertinent to the UK, France and the US), the seed banking mentality is increasing. Young people in particular are more likely to want garden produce than those who are middle aged or older. The well-maintained garden, a place that provides lifestyle, leisure, produce and personal satisfaction, will be a central part of the new cultural sobriety.

Allotments and patches

Seed banking is demonstrated through the rise in the urban allotment and the vegetable patch. In 2009, the UK Government will launch a scheme to increase home vegetable production, hoping to capitalise on the economic downturn and the interest in healthy eating.

Similar initiatives are underway in France as part of the Programme National Nutrition Santé, while the World Health Organization's conference on fruit and vegetable promotion in 2003 recommended an increase in cultivation in private gardens as part of the drive to improve global intake (according to the WHO, 2.7m lives could be saved if fruit and vegetable consumption was increased).

By 2006, seed sales in the UK reflected a move towards home grown vegetables. The British company Suttons Seeds reported a 60/40 vegetable/flower sales ratio for the year, the first time vegetables had outsold flowers since the Second World War. The Eglu chicken house provides the design-conscious with a contemporary way of keeping chickens.

In 2002, some 92% of local authorities were reporting waiting lists for allotments, a figure that has grown throughout the decade. In the UK, the Landshare campaign is an attempt to go beyond the often restrictive allotment system and aims to match eager small-scale producers with vacant land. Participants can register as growers, landowners, land-spotters or facilitators, and ultimately a map will become available matching up land with growers.

In the US, the Urban Farming project is a Los Angeles-based initiative that includes the creation of 'food chains', city walls that are planted with organic fruit, vegetables and herbs in low-income neighbourhoods. In Australia, the Joost Greenhouse was a temporary installation and event venue in Melbourne's Federation Square made of recycled and recyclable material. Food was grown on its roof and served to visitors. It demonstrated the building blocks of urban agriculture and tempted gardeners into making the most of unwanted spaces.

Community plots

In Scandinavia, allotments are state owned and leased by the year, leading to scarcity and high demand. In France, allotment culture has a long history, with jardins familiaux performing a social and cultural function rather than a major economic one. Urban vegetable gardens make up a key slice of new green infrastructure, infilling previously derelict land or placed adjacent to new parkland and housing.

America has 'community plots', while Russian allotment culture has its roots in the allocation of land amongst peasants in the imperial era. This continues to have huge relevance, as the dacha culture fed a generation during the economic upheaval following the fall of communism.

Home cultivation

All of these methods of land distribution exist for a single reason: to grow produce. Other technologies are aimed at bringing cultivation into the home and the office. Hydroponics, using prepared solutions of nutrients in place of soil, will leave the laboratory and enter the home, buoyed by design-driven solutions for living walls of growing produce. Aeroponics, a technology developed by NASA, dispenses water and nutrient in a fine, highly efficient mist, making water use even more efficient.

American architects Kiss + Cathcart proposed an urban hydroponics installation for an office building and inserted a layer of hydroponics installations into a conventional façade. French architects R&Sie(n) have swathed a private house with a dense fern (Dryopteris filix-mas) which is being hydroponically maintained and interspersed with 300 blown-glass beakers that collect rainwater. Part artwork, part baroque playground, the work, 'I'm lost in Paris', explores the boundary between installation and garden, nature and technology. In the UK, companies such as BioTecture create the infrastructure for green wall systems, a new discipline that fuses architecture, construction and garden design.

The French gardener

: Large gardens dominate the French survey; 38% of respondents have a 'large garden and space' surrounding their house.

: Equal numbers (28%) of respondents state they keep their garden 'tidy on occasions' and that they are 'learning about plants and enjoying it'.

: The French are garden proud: 46% of respondents say they are 'very committed' to the upkeep of their home and garden. A further 34% 'take pride' in the design and maintenance of their gardens.

: By far the most committed to their gardens are those aged 65 or over (59%). Young people are more likely to 'take pride in designing' their gardens (42% of 20-24-year-olds and 39% of 25-34-year-olds, as opposed to 21% of 55-64-year-olds).

: Climate change is most likely to affect future gardening behaviour (34%), followed by the desire to grow food (32%).

: Financial concerns are low down on the list (7%), as is the purchasing of automated devices (5%).

: Climate change concerns affect keen gardeners far more – 44% against an average of 34%. Only in the over-65s does it become less of an issue.

: The majority of respondents use their garden as an extension of their home (55%), while a third use their gardens to grow their own food. Allotment owners are the most likely to grow their own food (47%).

: Tranquil spaces are envisaged in the future by 44% of respondents, a figure that rises with age. However, younger people are most likely to want to develop their gardens into personal ecosystems in the future (40% of 20-24-year-olds versus an average of 30%).

: Young people are more likely to believe that technology will enhance the garden (23% compared with an average of 17%).

: When asked which technology they would be most likely to buy, regardless of price, most people (40%) said technology that could help to grow food. This was followed by technology that could generate either water (34%), compost (28%) or electricity (27%).

Case Study – Susheel Surpal, France

Susheel Surpal lives in Rueil-Malmaison, a western suburb of Paris. He is 47 years old.

Attitude to Gardening

Describing himself as an 'enthusiastic amateur,' Surpal is a largely self-taught gardener. Other information comes from reading and observing others, while more recently he has used the internet and gardening television shows to help broaden his knowledge.

Aspirations for Garden

'We have young children, so our garden is both garden and play space,' he says, 'as the kids grow up, it will be less of a play space, and return to being more of a garden. We'll also need to ensure that water consumption is taken account of, by choosing plants that don't need so much watering.'

Leisure in the Garden

Technology is useful, especially if devices 'are affordable, easy to use and environmentally friendly,' he says, 'I use devices such as trimmers, a rotary lawnmower, electric hedge trimmer etc.' Gardening is a leisure activity, and thanks to increasing means and advances in garden tools, he finds he is spending more time in the garden.

Gardening in the Future

In the future, he hopes gardening tool technology will improve still further, 'at least for those who are older, do not necessarily have lots of time, and like me, have a problem with back strain.' He also notes that there also needs 'to be an environmental and ecological balance in new technology for the garden', for example choosing electric devices over petrol-powered ones.

New organics

The drive to authenticity in product design and architecture translates to a new organic approach in gardening. However, authenticity is a moot point: because species have been distributed around the world throughout human history, the idea of 'native' species has been destroyed.

'With micro climates and with major climate change coming, there is a need for us to tinker and to help the ecosystem adjust quicker than it would without us moving species around or topping up the nutrients available', says Richard Reynolds.

Amongst Seedbankers, there is an emphasis on wild and organic planting, attracting flora and fauna, and protecting species. Climate change is a key driver, influencing 34% of French, 31% of Americans, 21% of Scandinavians, 28% of Russians and 20% of Britons. At the same time, gardens and garden products can be designed to provide solutions for major issues: rainwater can be collected, plants can provide protection from the sun and a diverse range of species can be encouraged.

'The negative environmental and ecological impact of 'hard' landscaping has been widely noted; this was due to garden centres who realised that more money can be made from paving slabs and decking than from low-cost plants,' says Christopher Stocks. 'By contrast, a smaller segment has become increasingly aware of the important role private gardens have to play in the wider ecology, although manufacturers' green claims are viewed with great suspicion.'

Waste management

Composting and recycling systems will aid self-sufficiency. In the UK in the 19th century pineapple pits were created where the warmth from rotting material created the climate in which pineapples could grow – these could be mimicked in the 21st century.

Waste management, either through wormeries or products such as 'Droplet', the electric mulching lawnmower designed by Ashley Marsh Croft, show the appetite for low-impact technological solutions.

Gardens offer different things to different people, with cultural responses diverging and converging as globalisation's grip tightens or loosens on different parts of the world. With less time in our lives for long-term projects, instant results often take precedence. Gardens provide a useful exception: they are spaces that evolve throughout our lives but which also act as a place of consistency.

Gardening futures

This section describes future gardening scenarios that are predominantly influenced by the introduction and normalisation of technology and innovations. Consumers worldwide are becoming increasingly used to the advantages technologies bring, and in many cases the benefits in terms of a better quality of life. Once they experience these advantages technologies become household must-haves.

Technology will ultimately enable people to enjoy their gardens more in the following three ways :

1: Technology will automate many physical activities and mundane tasks, allowing people to use their gardens for other social, cultural and communal activities, as well as making the garden more interactive and engaging

2: Technology will allow people to manage and cultivate the greenness of urban centres where limited space and pollution surround people. This will enhance their immediate environment and bringing communities closer together

3: Technology will enable people to easily and effectively grow their own produce, as well as generate their own light source, water and compost, thereby allowing them to be self sufficient

The ultimate garden of the future will be :

: A garden that is a tranquil space to forget about daily life and relax in

: A garden that needs no weeding, watering, digging or feeding and can be left to look after itself for weeks, even months, on end

: A garden that is free from villains (slugs, deer's, weasels, rodents etc)

: A garden that is organic, wildlife-friendly and environmentally friendly

: A garden with an ecosystem that provides people's home with food, fuel and medicine, and reduces people's weekly food bill

Autogardens

On average, one in five people in the countries we surveyed see a primary benefit of technology as automating many of the mundane tasks that gardening entails. With a large number of casual, weekend and leisure orientated gardeners current in existence, innovations like Husqvarna's Automower and Gardena's automated irrigation systems and moisture sensors make gardening all the more enjoyable and manageable for those with medium and large sized gardens.

Garden performance indicators

An experimental technology like Botanicalls, a means of enabling plant-human communications through sensors and messaging technology, becomes mainstream, allowing precise measures of nutrients and water to be delivered to the right part of each garden. Meanwhile, automated products and devices will be sprinkled through people's gardens to monitor, manage, prune and report on its upkeep.

Linked to this will be people's ability to learn about their flora and fauna in their garden through garden data. 'Data stories' will be methods for visualising data about something in a more compelling way. This is particular important for those who believe technology will increasingly enhance their garden in the future by making it more interactive (17% of French, 13% of Britons, 16% of Americans and 32% of Russians believe this)

Hydroponic solutions

The Autogarden will take the hydroponic technology of the early 21st century as a starting point, developing the method of growing plants in a nutrient solution without soil. It will also feature new infrastructure for recycling and reusing, such as Dow Jones Architects' proposed London waste towers, or the ongoing drive to ensure new buildings exceed existing efficiency codes. American architecture and landscape studio Mithun, sustainable design specialists, note that 'approximately 75% of the built environment in the US will be comprised of new and renovated buildings that do not yet exist.'

These new buildings provide enormous opportunity, allowing architects and gardeners to combine and reorganise open garden space into multi-layered systems. Urban foliage, public and private, will manifest into a series of canopies, much like a tropical rainforest. Even the low-rise city benefits, with dense vegetation shading low-level bedrooms from bright sunlight to maintain a constant temperature, and mitigating the effects of airborne pollution. At upper canopy level, living areas oversee a green panorama, re-shaping the traditional urban view.

: AUTOGARDEN
TECHNOLOGY WILL CONTINUOUSLY MAINTAIN AND ADVANCE PEOPLE'S GARDENS, THEREBY PROVIDING THEM WITH THE TIME AND PEACE OF MIND TO SIT BACK AND ENJOY THEIR SPACE. A VARIETY OF INTELLIGENT AND UNOBTRUSIVE DEVICES LIKE AUTOMATIC LAWNMOWERS, IRRIGATION AND MOISTURE SENSORS WILL WATER, FERTILIZE, TRIM, PRUNE, GROW, STORE AND MONITOR A GARDEN'S TRANQUILITY, CLEANLINESS AND RESOURCEFULNESS

1: AUTOMOWER® SOLAR HYBRID

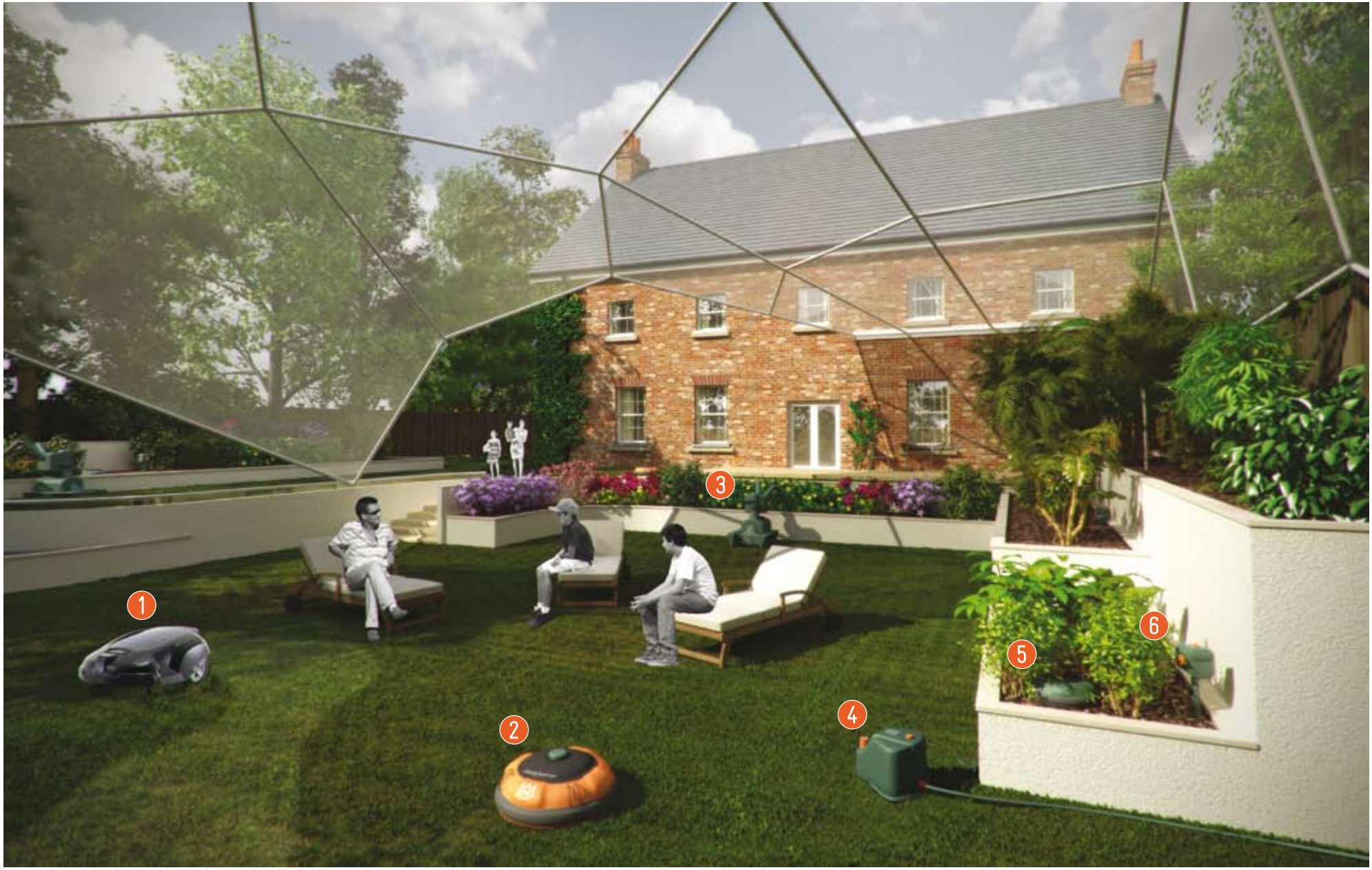
2: CORDLESS GARDEN 'HUB' TO CONTROL ALL APPLIANCES

3: AUTOMATIC PRUNING AND TRIMMING DEVICE

4: GARDENA AQUACONTOUR AUTOMATIC IRRIGATION SYSTEM

5: AUTOMATIC FLOWER BED COMPOSTING SYSTEM

6: GARDENA AUTOMATIC SOIL MOISTURE SENSOR


1
2
3
4
5
6

Advanced cultivation

The move towards the Autogarden will support the emergence of 'tranquillity terrains'. These are organic strategies for creating retreat areas and private spaces within the domestic garden, with an emphasis on exotic plants and advanced methods of cultivation. A new era of botanical awareness will lead to the propagation of plants that offer the benefits of tropical species: heat retention, shade and privacy, noise reduction.

Green roofs

Green roof developments will become a key component of the Autogarden. This will allow people to automate watering and feeding, growth monitoring, even pruning. People's houses will also become efficient and effective generators of food and fuel, and act as the lungs of densely populated spots.

Green roof technologies are leading to large expanses of undulating terrain. Examples include the 18,200-square-metre rooftop park atop the California Academy of Sciences (www.calacademy.org/) in San Francisco by Renzo Piano Building Workshop, and the new housing development by Kjellgren Kaminsky Architecture (http://www.kjellgrenkaminsky.se/) proposed for a large tract of derelict land at Heden, Gothenburg.

Vertical concepts

Vertical gardens are also key to this scenario. Green vertical concepts will be prominent, creating hanging gardens in homes around the world. Influential architects include Ken Yeang, creator of the eco skyscraper concept. Daniel Libeskind's proposed sky gardens for One Madison Avenue in New York build on the promise of earlier planted lobbies by Foster + Partners and Marks Barfield, to deliver a sliver of vegetation within the skewed, twisted forms of a skyscraper.

Scaled down version of these projects will demonstrate a blueprint for the rural or suburban house of the future, a place where vegetation is layered and folded into living space, from neo-organic forms like Enric Ruiz-Geli's Villa Nurbs in Spain to the spectacularly chaotic world of R&Sie(n)'s 'I'm Lost in Paris'.

Plug-in glasshouses

The glasshouse will also undergo a revival as an expression of architectural skill and innovation. This harks back to the 19th century, when giant glasshouses were one of the most advanced architectural elements of the great international exhibitions that took place around the world. The greenhouse of the future is part living space, part personal rainforest, plugged in to the side of existing houses or forming links and walkways in new structures.

Larger gardens will also benefit from plug-in modules. More space gives more options, allowing consumers to order pre-fabricated clip-together units dedicated to growing their particular favourites; a fruit farm could be combined with a compost unit and a private fish farm, for example. Modular construction means that such clip-together kits will accommodate any garden shape or size. American studio WORK AC's Public Farm 1 concept was constructed in Long Island in Summer 2008, comprising of 260 standard cardboard cylinders planted with over 50 varieties of plant and crops.

Plug-In Gardens

Urban centres are set to dominate the future of many people's living environment. Over the next twenty years, these sprawling capitals will undergo a number of social, cultural, technological and regulatory criteria so that they will 'perform' in an effective, efficient and energetic manner. The mandate for a city will therefore incorporate garden concepts that together will deliver much needed solutions to an increasingly environmentally friendly population.

Open source solution

Plug-In Gardens derive their ethos from the concept of 'open source' thinking. Each plug-in garden will act as one node within entire garden programme within cities that will transform offices, infrastructures and housing stock into low-emission, nutrient-rich spaces.

The integration of gardens into structures and sites that are not traditionally 'green' will continue apace throughout the second decade of the 21st century. The combination of green architecture, planting systems and ingenuity and enthusiasm of the 'guerrilla gardening' movement means that no empty area in the city, however unlikely or inaccessible, is left uncultivated.

Future green

From awkward spots on traffic islands or intersections, to technologically dramatic systems that allow plants and creepers to integrate with building facades, the Plug-In Garden will be a key feature of the future city. Rooftop spaces will be used to encourage bio-diversity, rainwater collection, thermal insulation and aesthetic improvement.

This trend also reflects the movement towards miniature ecosystems. New legislation for the preservation of urban micro-plots will generate new ecosystems throughout urban and suburban spaces: a fluid yet almost invisible tapestry of biodiversity that will encourage flora and fauna to colonise previously abandoned land.

'Guerrilla Gardening has made people appreciate the possibilities for growing stuff in unpromising and constrained circumstances - they realise this space is theirs to tend,' says Richard Reynolds, the movement's founder. 'It also demonstrates the passion some people have for growing stuff, and broadens the focus on gardening for the whole community. I also hope it has helped engender more respect for public space.'

1
2
3
4
5

Self-contained ecosystems

The future desires of people emphasise the need for tranquillity and wellbeing, suggesting they expect the future to be stressful. In the future, a garden ecosystem provides their home with food, fuel and medicine will be essential to 30% of French, 35% of Britons, 26% of American, 19% of Russians and 18% of Scandinavians. The acknowledged transformative power of the garden, plus their continued faith in technological advances, mean that the idea of self-contained urban home ecosystems is gaining currency.

The 1970s experimental Integral Urban House in California demonstrated that domestic ecosystems are possible. Modern technology is close to delivering a truly automated ecosystem, and in the future the domestic home growing unit will replace the allotment, vegetable patch and supermarket counter as the primary source of food. Inspired by the vertical farm movement established by Professor Dickson Despommier, the growing unit is hydroponics-driven and is not space dependent, designed to be installed anywhere within a typical home.

The miniature ecosystem is also demonstrated by Daekwon Park's Vertical Garden, a plug-in module that can be attached, parasite-like, to existing building infrastructures and 'fill the gaps' in the city with a series of modular units, a vertical garden, sky dock, multi-functional program space and wind turbine unit. Mari Fujita and Matthew Soules' proposed EcoMetropolitanism concept suggests a new look at Vancouver's zoning and planning, intensifying the ways in which the built environment is used by making residential and commercial areas denser eco-systems.

Eventually, cities will be multi-functional and 'maximised' through the use of surface technologies that deliver far more functional cityscapes.

: PLUG-IN GARDEN
CITIES OF THE FUTURE WILL INCREASINGLY RELY ON THE 'GREENING' OF STRUCTURES LIKE SKYSCRAPERS, ROOFTOPS AND WALLS TO PROVIDE IT WITH ENVIRONMENTAL AND ECOLOGICAL BENEFITS. PEOPLE'S MICRO GARDENS WILL RESEMBLE SMALL OASES IN DENSE URBAN CITIES AND THEY WILL USE THEM AS EXTENSIONS OF THE INDOORS TO RELAX IN AND SOCIALISE WITH THE COMMUNITY

1: GARDENA AUTOMATIC SOIL MOISTURE SENSOR

2: HUSQVARNA 123HD65x – DOUBLE SIDED HEDGE TRIMMER

3: AUTOMOWER® SOLAR HYBRID

4: HUSQVARNA LC 48V THREE IN ONE CUTTING SYSTEM WHICH OFFERS COLLECTION, BIOCLIP AND REAR EJECTION

5: HUSQVARNA 356BFx LOW NOISE GARDEN BLOWER

Organic homes

The truly 'green' home will mean a radical new approach to the relationship between house and garden. With open space at a premium, the green house will also demand new patterns of use and challenge the traditional supply chain for food, which is currently dominated by supermarkets.

The Organic Home scenario is driven by people's desire for a garden with an ecosystem that provides their home with food, fuel and medicine as well as being organic and wildlife friendly. 17% of Scandinavian, 18% of Russian, 35% of British, 26% of American and 30% of French gardeners aspire to a garden that is effective and delivers all of these things; whilst 16% of French, 19% of American, 27% of British, 26% of Russian and 18% of Scandinavian gardeners aspire to an organic and environmentally friendly garden.

Maximising systems

Green roofs, vertical planting and rainwater recovery systems all aim to maximise the economic potential of the small garden, providing not just subsistence food, but high-quality produce that would, a few decades earlier, have only been available to exclusive markets.

The new Organic Home will go further, stripping back the barriers between garden and house, natural and artificial. Organically driven homes are not confined to urban areas. The wilderness garden movement requires, above all, space; recreating meadows and creating sanctuaries for wildlife and indigenous plants, rooting our lives within the landscape, and providing opportunities for cultivation and recreation.

: ORGANIC HOMES
THE IMPORTANCE OF THE TRULY 'GREEN' HOME WILL MEAN A RADICAL NEW APPROACH TO THE RELATIONSHIP BETWEEN HOUSE AND GARDEN. WITH OPEN SPACE AT A PREMIUM IN THE FUTURE, THE GREEN HOUSE WILL INVITE NEW BEHAVIOURS WITH THE EXTENSIVE USE OF HOMEGROWN ECOSYSTEMS, GREEN ROOFS, VERTICAL PLANTING AND RAINWATER RECOVERY SYSTEMS. THESE ENGAGING AND PRODUCTIVE SPACES WILL ENCOURAGE RARE VARIETIES OF FLORA AND FAUNA TO RETURN AND COLONISE PREVIOUSLY ABANDONED SPACES

1: RAIN WATER COLLECTION SYSTEM

2: HUSQVARNA 54 LIGHTWEIGHT CYLINDER MOWER

3: EXTENDED HOME GARDEN/KITCHEN SYSTEM

4: SPACE SAVING VERTICAL GARDEN CONCEPTS

5: GARDENA AQUACONTOUR AUTOMATIC IRRIGATION SYSTEM

6. HUSQVARNA TB 1000 LIGHTWEIGHT BATTERY-POWERED CULTIVATOR


1
2
3
4
5
6

Efficiency and sustainability

New homes are already responding to this demand for organic integration, translating green sensibility into low-energy spaces. Graft Architects' Energy House proposal for a site in Kuala Lumpur suggests twin pavilions separated but also united by dense vegetation. The Polygreen House in Australia by Bellemo & Cat architects illustrates how natural patterning is starting to crop up in domestic architecture. This trend has moved on from office design and has been accelerated by laser cutting and other production methods that can soften hard materials and make them blend into their surroundings.

The Polygreen house's translucent polycarbonate façade is imprinted with oversized blades of grass, helping the house merge into its surroundings. This fundamentally architectural approach is one stage on the route to a truly organic home: a place that will combine architectural solutions for energy efficiency with horticultural solutions for sustainability.

Integrated horticulture

Tomorrow's organic home will feature the seamless integration of horticulture into people's lives, with hydroponics joining electrical and plumbing systems as a standard home technology. Eventually, amateur food supplier networks will be increasingly noticeable within communities and supported by major providers of organic vegetable boxes. These will eliminate people's growing stigma surrounding businesses food miles. US consumers in particular are starting to hanker after self-sufficient ecosystems, with 26% of people saying they would like future gardens to be more self-contained.

A network of enthusiastic amateurs, who will collaborate via virtual village fêtes and enable communities to be self-sufficient, will also grow specialist items – such as exotic fruits or rare varieties. The produce will be made available via a series of interlinked regional and neighbourhood networks, allowing the consumer to specify exact quantities and qualities, with orders fulfilled as efficiently as possible by the nearest supplier.

Layered gardens

Design will be a key feature of future garden technologies and products, yet discretion is the key to success, rather than overtly branded goods, services or structures. Similarly, as gardens become key sources of food, shelter and escape, their design will leave nothing to chance. 'Plantsmanship' will be a key life skill once again, with general levels of knowledge within the population rising ensuring that plants are procured, placed and cared for attentively and properly.

Intricate formality

Interest in display gardens will tail off but not completely cease during this period. The classic lawn and border arrangement favoured in the UK and France, and, to a lesser extent, the US, will be replaced by a new, more intricate formality. Mathematically inspired models of geometry and pattern will dominate garden design, as practitioners look for new ways of expressing the relationship between inside and out, accentuating changes in tone to reflect the levelling of the seasons and the fresh intensity of the weather systems.

This intricacy mirrors the perceptions people currently have towards how they see and use their gardens in multiple ways, as well as their future plans for these spaces. Scandinavian gardeners see their future gardens as spaces to relax in (56%), to provides their home with food, fuel and medicine (18%) as well as being self-sustaining and environmentally friendly (14%). These high expectations extend elsewhere, with French gardeners hoping their future garden contains embedded technologies and devices which take care of its own maintenance and upkeep (12%), and gardens that become an extension of the home and contains home entertainment devices so that they can spend time outdoors but still watch television (10%).

By 2020, the emerging generation of digital natives will start to be able to acquire and plant their own outdoor spaces. The arrival of this tech-savvy generation, who have never known life without the internet or mobile phones, will act as another boost to the garden's role as a place of entertainment.

At the same time, their acceptance of technology and automation will help drive the Autogarden trend, removing drudgery and labour from the ideal of self-sufficiency.

Appendix/Background

Modern gardens and the home

The modern garden forms a fundamental component of the home – it is a visual extension of the living area and a physical extension of the entertaining space. As well as a location for cultivating plants and lawns, it is a place for games and play, for seating, sheds, barbeques, pools and patios.

The garden's domestic role also means that it is closely tied to social and economic shifts. For example, the economic climate of the early 21st century has led to more people treating their homes as personal entertainment hubs, driven by developments in information technology (wireless internet, home cinema, and plug and play networking). Coupled with a greater desire for safety, privacy and security, private play spaces have eclipsed the use of public parks and gardens, certainly in terms of product innovation.

Early gardens

The garden has traditionally been a place of enclosure, a means of extending living space without sacrificing comfort, convenience or safety. Rectilinear enclosures, complete with pools and walkways, surrounded Egyptian villas in the Nile Valley 3,400 years ago, while more elaborate, pattern-driven forms of the paradise gardens were created in Persia, which later gave rise to the Moorish and Indian styles of courtyard-centred gardens.

Water features, scents, exotic plants and the combination of stone and shade to cool the visitor turned these gardens into private oases, distinct and different from the arid landscapes around them. Successive empires and civilisations continued to counter nature with formality. As private gardens grew in scale and ambition, the landscape itself became tamed, subdued and re-sculpted for spectacle and intrigue.

Romantic visions

The 18th-century British landscape architect Capability Brown was renowned for his grand visions where vistas were sculpted, lakes dug and whole communities moved for the sake of the picturesque. Although this approach may seem irrelevant to the modern gardener there is a common factor – longevity. Brown and his contemporaries designed not just for the moment but for the future; their planting of large stands of trees, for example, depended on these being appreciated many generations down the line.

'Russian gardening culture originates in the reign of Peter I, the creator of Peterhof, the Russian Versailles, in the early 18th century,' says Alexander Grivko, 'From then onwards, thousands of gardens and parks were created in its image. The revolution ended all this. During the reconstruction after the Second World War the art of gardening was revived, and there were major new public parks, like the gardens surrounding the All-Russia Exhibition Centre, the Botanical Garden of Moscow State University, and the Gorky Central Park of Culture.'

This sense of the distant future is now emerging as a key factor in the design of the contemporary garden and the actions of the modern gardener, as predictions about climate change, urban migration, food and water shortages, and population growth bear down upon the choices we make on a daily basis.

Living outside

The relationship between house and garden was formal and distinct until the early part of the 20th century. While the kitchen garden was obviously located for easy access to where food was being prepared, the formal garden was designed to be viewed from the house's principal rooms. The romantic, flower-filled garden removed formality in favour of dense arrays of colourful blooms, arranged in deep cascading beds. This movement made few concessions to the relationship between the interior and the exterior; gardens were display spaces, perfect for formal occasions, entertaining or sports.

It was the post-war American garden that combined the interior and exterior worlds of consumption. It was used as a yard, garage, poolside and patio as well as a space for plants. The American garden abstracted the symmetry of classical garden design, and the relatively small plots of the typical suburban home were divided into modernist, functional zones.

American informalism was given a further fillip in the modernist era by the tendency towards natural landscape in Scandinavian gardening culture, where a long-standing tradition of building in wild landscape meant that garden design was less concerned with seasonal displays than with the integration of building into the existing landscape, and the softening of architectural forms to blend in with the surroundings.

The private garden has continued to follow the patterns and fashions established by the grand garden, as the romantic tradition was gradually overtaken by a more formal style that accompanied the modern architecture of the 1920s and 1930s. Since then, the wildlife garden and patio garden have vied for the attention of the modern gardener, each offering a variety of reasons as to why they should be more practical for modern living.

The emergence of a 'room outside' in the late 1960s merged the Scandinavian and American approaches, bringing them to a wider European audience. Today, gardening and the garden form an important part of our relationship with the home. The garden has become a highly domesticated space that reflects cultural, social and economic shifts. The hierarchical divisions between formal and informal have been flattened, and the distinction between inside and outside has been blurred.

Gardening and design

'I would say that gardening absolutely has a relationship with design, gardening is about composition, forms, colours and materials. There is also another dimension: how nature responds and changes by season,' says Towe Ressman. 'We can't deny that the design industry creates trends that have a strong impact on people's behaviour.'

Even the profession of garden designer has been democratised and is far more accessible to people from all backgrounds. 'Garden fashions are no longer driven from the top down,' says Christopher Stocks. 'Until relatively recently, most garden fashions were set by rich, often aristocratic, or at least aristocratically aspirational, owners with large gardens. Designers such as Rosemary Verey and Penelope Hobhouse ruled the roost.'

To an extent, they still do, says Stocks. But he also points to the impact of television. 'In Britain for example, television has had a huge impact on the popular image of the garden designer, and generally speaking the more 'accessible' and classless a designer appears the more popular they are likely to be. The rich, such as Prince Charles at Highgrove, are still doing interesting things, but most people no longer take much notice of them.'

'Interest in private gardens in Russia has been steadily increasing in the past five years, when the government stopped allocating forest land for development, and owners of new large private houses demanded gardens of their own,' says Alexander Grivko, 'After the kitchen gardens of Soviet times we were at last free to create decorative gardens, without giving over all the free space to vegetables and some fruit trees and bushes,' he explains, 'in the late 80s early 90s the first landscape architects arrived, bringing lawns and alpine rock gardens. Also in the 90s, the massive increase in house building allowed us to come to the German nursery and garden market, bringing hitherto unknown species and varieties. Finally, in the 21st century, people are thinking about the design of the garden.'

As the media profile of the gardening industry rose, so certain designers and gardens came to the fore, eventually reaching global prominence. 'In Britain in the 1980s there was an upsurge in interest in garden history, and the rise of the period garden,' says Tim Richardson. 'This led to buttoned up, good-taste gardens with box topiary, white Iceberg roses and lots of purple flowers such as alliums. There were more statues and ornaments such as sundials.

'Around this time artist gardeners such as Derek Jarman and Ian Hamilton Finlay were making gardens very much 'out of the loop'. These gardens were widely admired, particularly Derek Jarman's shingle garden at Prospect Cottage. The idea that a garden could be an accessible artwork became popular amongst design-conscious urban gardeners.

'The interest in plants, spearheaded by Christopher Lloyd, was in full swing. Gertrude Jekyll's books had come out of copyright and were inspiring a new generation of gardeners. Modernism in the garden began to come back courtesy of Dan Pearson and Christopher Bradley-Hole, who won the best garden award at the Chelsea Flower Show in 1997 with a landmark modernist garden. This interest led to a makeover culture which empowered individuals to think about designing their own space.'

From classical to modern

French formal gardens also had an important influence on gardening culture. The gardens of Versailles, 800 hectares of meticulously planted and maintained avenues, fountains, lawns and vistas, were set out in the mid eighteenth century, the ultimate manifestation of humankind's triumph over nature. Their fame spread out from France in the decades that followed, and a majestic sweep of palaces in formal gardens spread from Germany to Russia.

In the modern era, the evolution of the apartment block, with its communal courtyard and narrow balconies, has become the space of private gardening, complimenting the more formally arranged parks and jardins. Roof gardens and terraces also became integral to the language of architectural modernism, part of Le Corbusier's 'Five Points of Architecture.' Yet rather than be verdant, green-saturated spaces, these roof gardens were austere and functional; the art of gardening was reduced to presentation, not planting.

Design and efficiency gardening

Where American architects and garden designers took advantage of space and climate to integrate house and exterior space, they used hardy indigenous plants to keep maintenance low. The other great tradition of twentieth century American gardening – the lawn – was not so nearly so easy to keep without intensive use of water. It has been estimated that some 30% of water use in urban areas on the country's east coast goes on lawn care.

Green walls

The work of designer and botanist Patrick Blanc has brought the green wall to a wider audience, thanks to installations in major cultural buildings in Paris and Madrid. Blanc himself lives in a home that is part garden, with his specially-devised automated watering system allowing for plants to be incorporated into the living area. For Blanc, the 'Vertical Garden' is a way of creating a natural modulated interior atmosphere, telling an interviewer that the projects create their 'own specific climate. It has been proved that the Vertical Garden enhances atmospheric humidity in its vicinity, thus enabling small ferns and mosses to appear and seeds to germinate.' Blanc's influence can be seen in other French projects like atelier SoA's 'link house' project of 2006, a lush, deep green façade that turns large buildings into inhabited hedges.

'Today, modern technologies allow us to realise gardens with incredibly daring, almost unlimited ideas,' Alexander Grivko says, 'the garden and house have always been stylistically linked, with landscape architects creating pavilions, for example. Today, we use materials in the garden that were originally invented for the construction of homes. The intelligent home now also includes the garden, with its irrigation and lighting systems.'

Background on Husqvarna

Husqvarna is a world leader in outdoor power products. We are also one of the leaders in cutting equipment for the construction industries.

The history of Husqvarna dates back more than 300 years. During this entire period, we've been dedicated to developing our technical expertise and applying it to create quality products. Husqvarna's reputation for quality products with reliable performance enabled steady growth and expansion of the product range.

In modern times, the company has also expanded through acquisitions that have been quickly and efficiently integrated into operations. By the end of the 20th century, Husqvarna had become an acknowledged world leader.

Husqvarna's product offering covers a wide spectrum of applications for consumers and proffesional users within three product areas:

Forestry - chainsaws, clearing saws and accessories

Lawn and garden - walk-behind lawn mowers, garden tractors, riders and other wheeled products, portable products such as trimmers, hedge cutters and leaf blowers, products for irregation and ponds as well as garden tools

Construction - machines and diamond tools for cutting concrete and stone

In 2007 the Husqvarna Group had sales of SEK 33.3 billion and an average of 16,000 employees. North America and Europe are the major markets, and the Group maintains production and sales facilities in more than 100 countries. Husqvarna products are designed for both consumers and professional users, and have established a world-wide reputation for performance, quality and reliability.