



The lawn as a social and cultural phenomenon in Sweden



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ABSTRACT

Lawns have a significant influence on the cityscape as one of the essential elements of green spaces and an important part of people's everyday lives. Most people in the Western world view lawns as a compulsory element of the urban landscape, almost an icon, without questioning their social, symbolic, ecological or aesthetic values. This research is a part of the conceptual framework and methodological approaches that are being used in an ongoing transdisciplinary collaboration project to study lawns in Sweden as a social and ecological phenomenon.

The overall aim of this study was to investigate social and cultural perceptions of lawns, as well as motives behind decisions about the establishment and management of lawns in Sweden. Two multi-family housing typologies, the 'Million Programme' and 'People's Homes', were examined due to their dominance in Swedish cities. We also studied how an alternative vision of conventional lawns can be applied and accepted by urban residents. We estimated lawn cover in multi-family housing areas and links to people's perception and use of lawns. Questionnaires, semi-structured interviews and observational studies were used (N = 300). Our results showed that people like lawns even if they do not always directly use them. Lawns cover the most significant amount of outdoor spaces in all multi-family residential areas and accompany people everywhere from the house to the schoolyard or park. The total lawn cover in the study areas was 27.8%. Lawns were particularly valued as important places for different outdoor activities (playing, resting, picnicking, walking, socialising) and enjoying the green colour. However people do not want to use a vast monotonous lawn, but a variety of spaces that provide good conditions for different senses (sound, smell, touch and sight) and activities. Alternative lawns were also appreciated by many citizens, politicians, planners and managers. The implementation of new types of lawns requires special planning and design solutions adjusted for each particular neighbourhood.

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1. Introduction

Lawns occupy a significant proportion of green spaces in many cities worldwide today (Stewart et al., 2009). According to the most recent EU study "Green Surge – A typology of urban green spaces, ecosystem provisioning services and demands" (Braquinho et al., 2015), green spaces are defined as "any vegetated areas found in the urban environment, including parks, forests, open spaces, lawns, residential gardens, or street trees". In 44 identified types of urban green areas, the lawn is one of the most common elements, for example in large urban parks, botanical and zoological gardens, historic parks/gardens, institutional green spaces, green playground/school grounds, street green or green verges and house

gardens. The complex character of urban green areas is well recognised and there is a growing body of research investigating the roles of green spaces in social, economic, cultural and environmental aspects of sustainable development (Haq, 2011). Even if lawns are one of the most dominant elements in green areas in all countries (irrespective of climatic differences), this phenomenon itself is not well researched, and especially not its socio-cultural component. At a time of climate change and the search for a sustainable urban environment, there is an urgent need to have interdisciplinary empirical quantitative and qualitative studies on lawns: the values of different lawns are revealed and conclusions drawn about their negative and/or positive environmental impact (Ignatieva et al., 2015).

There are many different definitions of 'lawn', but we define it here as an artificially created or modified plant community (phytosociological composition) consisting predominantly of grass (more technically graminoids), but it may have spontaneously occurring herbaceous species (which are also called 'lawn weeds'). Lawns are used for recreation and sports, and as a pleasant green backdrop for displaying other plants or functional (playgrounds)

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and decorative elements (pieces of art, fountains, benches and pavilions). One of the main characteristics of lawns is their construction technique (preparation of soil and seed mixtures) and management regime (mowing, herbiciding, fertilising, watering) aimed at maintaining grass species, controlling weeds and mosses, and keeping a certain grass height.

The lawn is quite a recent ecological and cultural phenomenon. Lawns are an artificially created grass-dominated plant community designed mostly for pleasure and/or decorative purposes. It most probably appeared in medieval times in Europe (Fort, 2000; Ignatieva, 2011). A broader use of lawns is connected to the development of the most influential landscape architectural styles, such as picturesque and gardenesque (18th – 19th centuries), in Europe, the US, Australia and New Zealand. The 20th century Modernism movement used lawns as a massive prefabricated element in all green areas (public and private). Lawns today are seen as a symbol of globalisation and the market economy (Ignatieva, 2010).

An ecological component assessment of lawns (floristical and phytosociological composition, urban biotope) has been a primary subject in lawn research since the 1990s in Germany (Müller, 1990) and later in England (Thompson et al., 2004), New Zealand (Ignatieva et al., 2000; Stewart et al., 2009) and recently in other countries (Bertocini et al., 2012; Pooya et al., 2013).

The US and UK are trying to raise awareness of broad-scale research – an estimation of lawn cover in cities (Milesi et al., 2005; Gaston et al., 2005; Edmondson et al., 2014) because of the dominant role of lawns in suburban private gardens and public green spaces. For example, the combined area of lawn (turfgrass) represents an estimated 23% of urban land cover in the USA (Robbins and Birkenholz, 2003). In the early 1990s the area cultivated with lawns in the US was up to three times greater than that of irrigated corn crops. Awareness of the environmental impact of intensively managed lawns in US suburbia resulted in a rising number of scientific and popular publications on the history of American and English lawns and an analysis of socio-cultural and even anthropogenic reasons (speculation that people love lawns because of the evolution of humans in savanna-like landscapes in East Africa) behind an obsession for the perfect short-cut green lawn in modern society (Schultz, 1999; Teyssot, 1999; Fort, 2000; Macinnis, 2009). In recent years, particularly in the US, England and Germany, there is a growing number of papers discussing the ‘evils’ of modern monotonous and homogenous lawns and the need for alternative sustainable solutions as well as the education of local citizens in favour of a new vision of lawns in urban nature (Borman et al., 2001; Pollan, 1991).

The social norms and psychological and social predictors of lawn fertiliser application have been studied in the private gardens of American suburbia (Kaufman and Lohr, 2002; Carrico et al., 2012). However, there are still very few proper empirical social studies on perceptions, norms and aesthetic values of current use and management practices of lawns, especially in non-American countries.

Swedish cities share the same lawn pattern as many other cities around the world. Lawns are widely advertised by urban planners, landscape architects, developers and mass media as a very useful consumer product for the market. It is the dominant component of green areas in multi-family housing, public parks and gardens, street verges and cemeteries as well as in private gardens and on golf courses. However, no studies of the biodiversity, environmental impact or public use of lawns, for example, have been conducted in Sweden (Ignatieva et al., 2015).

The overall aim of this study was to investigate social visions and perceptions of lawns and motives for decisions about the establishment and management of lawns in common housing areas in Swedish cities. The main research question involved studying lawns from different perspectives. This also included an examination of how sustainable (alternative) design and management

of lawns could be applied and accepted by urban residents, an estimation of lawn cover in typical multi-family housing areas, and people’s perception and use of lawns. Without understanding the social motives behind the strong attachment of modern western society (including Sweden) to lawns, it is impossible to introduce potential alternative solutions and change conventional management routines. The transdisciplinary approach (in this particular case between data on lawn cover in Swedish residential areas and visions of lawns by local residents) allows us to exchange knowledge between scientific disciplines and achieve a multi-dimensional understanding of the lawn as a phenomenon.

2. Lawns in Sweden

The history of lawn establishment in Sweden is similar to that in many other European countries. Grazed meadows have existed for millennia and during the Iron Age it became possible to harvest hay in larger amounts. It is difficult to say exactly when grass-dominated plots (lawns) for entirely decorative purposes appeared in European gardens, including Sweden (Ignatieva and Ahrné, 2013). In Medieval European gardens of the 12th–15th century, cut turf from meadows with their various grass and herbaceous flowering plants was used in monastery (and castle) gardens. Lawns were first used in Sweden as entirely decorative short-cut grass areas during Renaissance and Baroque times (1600–1750s). The establishment and maintenance of lawns was expensive and resource-consuming and lawns were initially used only in limited amounts as a parterre element or *tapis vert* (green carpet) in the grand parks of royalty and the nobility. During the English landscape park era (1750s–1840s), rather large undulating lawns were still the prerogative of the nobles. Public parks first emerged in the second part of 19th century, marking a new era of Swedish lawns. They started to be an important decorative and recreational element and served the needs of the common people rather than those of the privileged higher social classes. Swedish parks at that time were valued as places for good health and ‘moral education’. They provided a pleasant environment for strengthening the family’ by taking people’s minds away from drinking and gambling (Wärn, 2013).

From the second part of the 19th century, the process of transformation of an agrarian country to a highly industrialised nation began, resulting in accelerated urbanisation. After the Second World War, Sweden’s undamaged industry needed even more urban labour to produce goods for the destroyed Europe. New urban development plans and a new generation of housing areas with apartment blocks were built all over Sweden. The planning structure of Swedish cities before and after the war directly reflected the economic and political situation and were connected to the “Swedish Model” implemented by the Social Democratic Party (in power from 1932 to 1976) with the aim of creating a more equal society. This policy resulted in creating the progressive welfare state. One concrete goal was to provide simple, but good-standard apartments and healthy outdoor environments for the working class (Dahlberg, 1985). Influences also came from the international functionalism movement, strongly expressed in the Stockholm Exhibition in 1930. The basic idea was that form or design should follow the function of dwelling both indoors and outdoors in new housing areas. Functionalistic planning and architectural values and policies included equal access to high-quality public spaces and provision of sun, light and air and an improvement in the population’s health. As a result, functionalistic multi-family housing areas – “People’s Homes” (*Folkhemshusen*) in 1940–1959 and the “Million Programme” (*Miljonprogrammet*) in 1960 until the mid-1970s – were established all over Sweden. 500,000 apartments were built in 15 years during the People’s Home programme and



Fig. 1. The People's Homes area of Tunabackar in Uppsala, with bright lush inner courtyards covered by large public lawns. (Photo: Per G Berg).

900,000 homes in 10 years for a nation with a population of seven million. In both forms of housing, lawns cover large areas. Following the ideological and social goals of providing a cheap and functional space, lawns were seen as an excellent outdoor element for play, walking and recreation. Lawns were a standard element that fitted well into functionalistic aesthetics of a simplified, rationalistic (prefabricated) style with limited variation in design schemes.

2.1. People's Homes and the Million Programme

The People's Homes project originally consisted of mostly rented apartments in three-storey houses in natural settings or in closed blocks around lush inner courtyards (Fig. 1). Lawns were initially used to cover large spaces next to the houses because of their simple and cheap maintenance.

Green resources then became common in courtyards, with a plethora of garden rooms, large trees, pergolas, lush playgrounds and appropriated ground-floor gardens. The initial idea for the lawns was to constitute the green floor of the individual courtyards and the core of larger common green parks (Persson and Persson, 1995). In many cases, lawns were built on former agricultural or meadow land. Playgrounds, flower beds, pathways, street furniture, gravel ball parks, shallow paddling pools and, in later decades, picnic places were all surrounded by lawns.

During the Million Programme most houses were initially low-rise, but later comprised larger-scale high-rise areas. The strongest

green-blue infrastructure values for these areas were considered to be their closeness to nature in the periphery (urban fringe) of the city. Forest patches and larger lawn areas were suggested as an asset in the Million Programme as well, but the courtyards between buildings had only small patches of lawn. Larger lawn areas were therefore established in large-scale residential parks and adjacent groves, meadows and garden plots. The weakest expression of green planning in the Million Programme was inner courtyards planted with exotic standard plant material (*Berberis* and *Dasiphora*) growing on very thin topsoil within monotonous lawn areas.

3. Methodology

3.1. Case studies

Our research was conducted in three case-study cities (Göteborg, Malmö, Uppsala, see Fig. 2) in 2013–2016. Göteborg, on the south-west coast, is the second largest city in Sweden, with a population of 533,000 (1 January 2015). The topography, with rough, barren rocky outcrops and cliffs, has influenced the city's spatial development. Malmö is the third largest city in Sweden, with a population of about 319,000 (1 January 2015). Unlike Göteborg with its hilly landscape and remnants of natural vegetation, Malmö has plain topography and many of Malmö's neighbourhoods have artificial turfed green hills to fill this topographical 'gap'. Uppsala is the

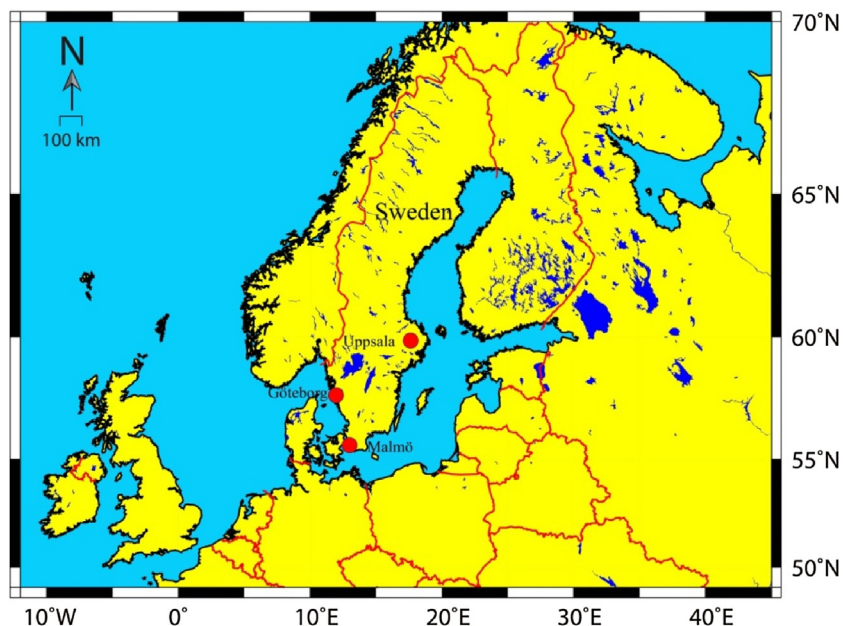


Fig. 2. Location of the case study cities in Sweden.



Fig. 3. The Million Programme area Eriksbo (1967–1971) in Angered, Göteborg. Light green is lawn (and small amount of meadows or sports lawn) and dark green is trees, shrubs and an all-weather soccer pitch. The reddish and whitish blocks are roofs and the grey is roads or parking lots. Houses and outdoor spaces were renovated and partly rebuilt in 1985–1990.

fourth largest city in Sweden, with a population of around 207,000 (1 January 2015). The city has many remnants of forests, which have mostly been transformed into accessible recreational spaces. The city covers 48.8 km², of which 10.5 km² are covered by natural plant communities (Park plan for Uppsala City, 2013).

The cases in each city were strategically selected from well-researched (Berg, 2004; Berg et al., 2010) dominant townscape types (Million Programme and People's Homes areas) representing ordinary housing (Johansson, 1991; Reppen et al., 2012) for up to a third of the Swedish population – areas where lawns inside and adjacent to housing areas are still dominant elements in the green spaces (Persson and Persson 1995). The cities represent some of Sweden's major urban regions, but in various landscape settings in different parts of Sweden.

In each city, we studied one People's Homes area and two Million Programme areas: Kyrkbyn, Eriksbo and Angered in Göteborg, Augustenborg, Holma and Rosengård in Malmö and Tunabackar, Gottsunda and Eriksberg in Uppsala. These particular neighbourhoods were selected based on consultations with stakeholders from municipalities involved in the LAWN transdisciplinary project who had pronounced interest of knowing more about these areas in particular. Downtown and industrial areas of the cities were not included in the analysis.

3.2. Types of lawns

There are two types of lawns officially identified by Swedish municipalities (Hellener and Vilkénas, 2014). The majority are 'conventional' lawns, which are cut at least 10 times per season to a height of 4–10 cm according to official municipal definitions (Andersson and Bergbrant, 2015). The other type is "meadow-like" lawns, which are cut once or twice per season. Meadow-like lawns currently cover only a tiny area and are mostly located next to remnant natural vegetation on the outskirts of neighbourhoods or within public parks. There are also sports lawns, such as football fields, which are often more intensively managed. They represent a small proportion of the total urban lawns.

To estimate lawn cover we used aerial photos and ArcMap background data from May 2015 for manual mapping. The outer border of each specific housing type was strategically chosen, which

affected lawn cover, since it was estimated by dividing area of lawn by total area. The outer borders of People's Homes were easy to detect, while the borders of the Million Programme housing areas were more difficult to define as these areas often lie on the urban fringe of cities adjacent to nature, making the borders less distinct. Furthermore, vast green areas are present in the surroundings and it is difficult to see whether these belong to the housing areas or the surrounding landscape (Fig. 3). In each location, the total area of lawn, meadow, sports lawn, trees, shrubs, gravel (mainly all-weather sports pitches), bare rock (rocky outcrop, very common in Göteborg), bare soil, water and agricultural fields was mapped (Fig. 3). Roads, parking lots and dwellings were not included (but were indirectly estimated when everything else was removed).

For the social part of this study of lawns, we used questionnaires, semi-structured interviews and observational studies (Sjoberg and Nett, 1968) at 10 sites in the case-study neighbourhoods in our three cities. Our focus was particularly on lawns and the specific qualities provided by lawns. Lawns are the dominant element of green areas in all the researched neighbourhoods. Green areas here consist of lawns with scattered groups of shrubs and trees, with the intrusion of flowerbeds and playgrounds. Designed pedestrian paths and cycle ways were also typically surrounded by lawns.

We started our research with a pilot study in 2013 in Uppsala and tested the questionnaire. Ten questions were related directly to the main research questions on lawns (perception, expectations, use of lawns, their management and attitudes towards using some alternatives to conventional lawns with more biodiverse and less resource-intensive options) and the last question (11) aimed to connect lawns as a phenomenon to the wider context of green area qualities (Table 1). We asked randomly selected people (who were passing by or sitting on lawns, playing, sunbathing or relaxing, or sitting on the benches next to lawns) to answer questions (Somekh and Lewin, 2005). We tried to cover people of different cultural and ethnic backgrounds, ages and genders. Before starting the interview, we asked people whether or not they lived in the vicinity of the site. Interviews were performed in the late spring and summer months (due to the nature of the Swedish climate and use of lawns) on weekdays and at the weekends, at different times of day (morning, afternoons, late afternoons), aiming to cover as many categories of local residents as possible. We also asked the respondents

Table 1
Questions on social activities in housing areas.

1	How do you perceive the value of having access to a lawn/grass areas in your neighbourhood?
2	Are there lawns here or nearby that you usually visit? If yes, then which one/ones?
3	What do you think about the maintenance of grass areas in your neighbourhood in general?
4	What do you think about lawns that are cut only 1–2 times per year (for example meadow-like lawns)?
5	What do you think about alternative lawns (such as flower-rich lawns, meadows with perennials or annual pictorial meadows)?
6	If you could decide, how would you like to design grass areas in your neighbourhood?
7	How would you rate the following statements regarding the grass area in this neighbourhood (rating from 1-disagree to 5-agree): well maintained, safe place for children and adults, beautiful and friendly place, suitable for leisure activities, a great place for rest and recreation, an important place for socialising with neighbours and friends?
8	Do you think that lawns generally create a good habitat for living creatures, such as insects, birds and mammals?
9	How often do you use lawns for different purposes (rating from 1-disagree to 5-agree): exercise/sports, sit/rest, social activities with neighbours/friends/family (party, meal, barbeque etc.), to get to other areas (shortcut), to experience nature, to look at (aesthetic value), other?
10	In which season do you use lawns most?
11	Is there anything you would like to add concerning lawns and green areas?

how long they had lived in the neighbourhood, their occupation and their type of household (single or family with children). All answers were written down by the interviewers on printed questionnaires. At each of the 10 sites, we conducted 30 interviews with residents (300 interviews in total).

The field data collection was based on the principles that 50% of the respondents in the six sites should be female and 50% male. We aimed to have 30 respondents at each site who were equally spread among the following age categories (15–24, 25–50, 51–65 and 66+). People were asked to answer questions related to alternative lawns, illustrated by pictures (such as flower-rich/grass-free) lawns with low-growing herbaceous plants, meadows with perennials that are framed by conventional short-cut lawns, or meadows with annuals (pictorial meadow) (Fig. 4).

Observation studies were carried out in places where we could observe people's movements. At each site, we conducted observation studies in three different spots. We recorded activities and their frequency for 10 min on selected days in June, July and August. Data were collected by using a pre-coded schedule in which different kinds of activities were listed, such as walking/passing through, walking with a dog, cycling, picnicking (and social gathering), playing, sitting and exercising (Whyte, 1984). We also wrote additional notes about how long people stayed in each site and if they were alone or in company. We also recorded weather conditions (sunny, cloudy, rainy, cold, and warm). The aim was to discern and identify usage patterns linked to the character of lawns in the different case study sites.

Politicians, municipality managers, city planners, landscape architects and property managers were interviewed about policies, lawn management and biodiversity (a total of 23 interviews). We also asked about their level of education, their responsibility in the particular municipality, plans and resources (budget, staff availability etc.) for lawn management, their understanding of lawns and their role in modern green areas, and the opportunities for environmentally-friendly lawns and the presence of wildlife, such as bees and butterflies. Furthermore, we sought to determine the 'perfect' lawn from the stakeholders' point of view. The qualitative data from interviews were analysed by: 1) sorting the data

into themes and codes, 2) counting the number of occurrences of the themes and codes, and 3) selecting statements that were representative of the majority and minority of interviewees.

4. Results

4.1. Lawn cover

In all our case studies lawns occupied quite significant areas. The total lawn cover ranged between 17.7% and 47.7% (average 27.8%) in the multi-family areas (both Million Programme and People's Homes) (Fig. 5). The Million Programme areas in all cities had on average 24.8% lawn (lawns, meadows and sports areas), 18.7% forest and shrubs and 49.9% infrastructure. The People's Homes areas had on average 33.1% lawn, 12.4% forest and shrubs and 54.4% infrastructure.

*Sport lawns were not considered in the social study but mapped as one of the lawn types existing in cities.

4.2. Social study

We succeeded in obtaining the planned balance (50% male and 50% female) and age distribution in all six case studies. Since humans often have a complex personality and different lifestyles they need different spaces for different activities depending on the weather, time of the day and even individual moods at a particular moment.

We could not find any specific patterns between the answers of males and females in our data. In all three cities, people appreciated lawns in their residential areas and surroundings. There was no significant difference depending on age, but there was a tendency for younger (5–15 years) and elderly people (65+) to have more opinions and expectations concerning lawns and also the green outdoor environment. The majority (more than 70%) of the youngest and eldest respondents in our study who commented on lawns also had many opinions about how lawns could be more attractive.

Households with small children also had many suggestions about how lawns and the green spaces between buildings could be used much more efficiently. Households with middle-aged people (who have full-time work) and who had no children or older children (that mainly stay at home) did not, in most of the cases, mention anything specific that they would like to change. They seemed to be satisfied with the existing conditions of lawns. Parents of small children and the elderly often stressed the importance of accessibility, closeness and functionality of playgrounds, benches and other elements located on lawns. People from all kind of households mentioned the importance of having an extra "outdoor space" close to home.

One of the very first impressions in the study was very good familiarity with local lawn areas among respondents. People were actually even surprised to be asked about lawns, since all their life it has been one of the most familiar and commonly seen elements of their outdoor environment. The lawn cover estimate for each neighbourhood studied corresponded with our social data reporting that lawns surround residents everywhere. As one of Kyrkbyn's residents said: "I see it as a given element. I would miss lawns if they were not here". Respondents often associated lawns with summer and most lawns were designed for summer activities.

When we asked about the value of having access to lawns in outdoor spaces, the majority of interviewees responded that such access is "very valuable" and "very important". One resident said that lawns "become more important as you get older" and are "especially important for those who have no opportunity to go to other green places outside their house". Lawns seem to be appreciated for their aesthetic value, even if they are not directly used for



Fig. 4. Three alternative options for lawns presented to respondents that were linked to question 5 in Table 1. (Pictures: J. Vilkenas and A. Helner, 2014).

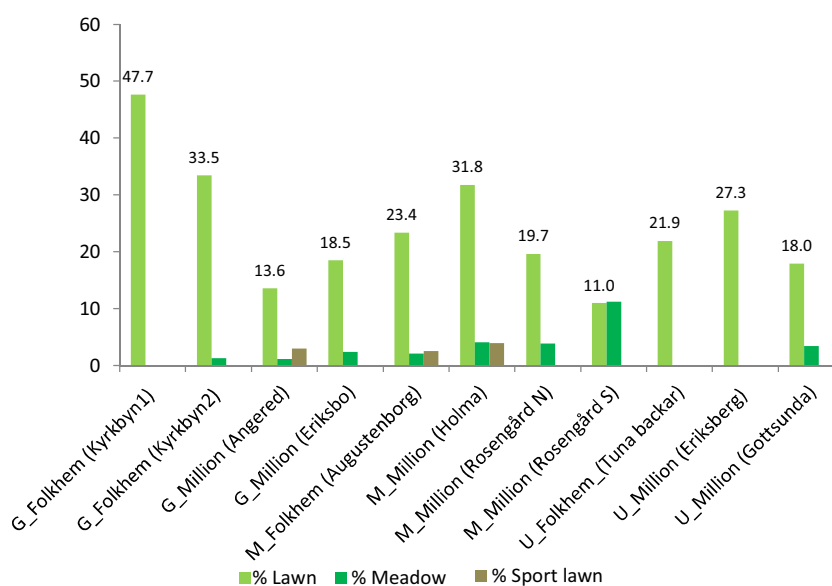


Fig. 5. Total lawn cover by lawn, meadow and sports lawn in each of the study areas (G = Göteborg, M = Malmö, U = Uppsala). Two of the areas were separated into two units (Kyrkbyn I and II in Göteborg and Rosengård N and S in Malmö) to illustrate the potentially large differences in meadow areas and within areas.

activities. One interviewee said: “Since I use a wheelchair I am not outdoors that often. But I enjoy the view from my balcony”.

Lawn enthusiasts argued that lawns are “important places to meet friends”, “important for different kind of activities” and “especially important for families with children”. Urban residents at all sites valued well-maintained lawns in their neighbourhood and were satisfied with municipal management of their grass areas. Only a few respondents were unhappy with noise from a mower or with rubbish left on the lawn (Fig. 6).

In all our research areas, lawns were used for different kinds of outdoor activities during the summer: walking/passing through, playing, sitting, sport, meeting friends, sunbathing and family partying/barbequing. The use of lawns (the particular activity performed most) varied in the different case studies depending on how the lawns were valued.

People greatly appreciated lawns for different kinds of pastimes (Fig. 7). We found that people living in sites with huge open lawns close to the buildings did not use these lawns for any kind of activity, but liked them as a viewing space. This is not surprising, since people see these open green carpets on a daily basis. Many people preferred to have green places in close proximity to their houses, or lawns with a “cosy” or “lush” character.

Observational studies confirmed the questionnaire data on the use of lawns for outdoor activities (Figs. 8 and 9). People mostly passed through or cycled on pathways alongside or through lawns

that had no specific attractions such as benches, playgrounds or flowerbeds.

The results showed that people often use the lawns as passages. Some lawns were also often used for walks (especially popular among dog owners). The time citizens spent directly on lawns depended on the quality of the grass and weather conditions. “Popular” lawns all had spots where people were protected from the wind or sun (Fig. 10). Social activities were more frequent in good weather.

The observation studies also showed that residents preferred places where they had a nice view, social activities or something over and above just plain lawn, for example decorative perennials, shrubs or water features.

In the daytime, families with children often used lawns between 10.00 and 15.00. Children were out after school and at the weekends. Dog owners were seen quite frequently from early morning to late evening. Elderly people over 65 used green spaces during the daytime. The weather conditions were important even for dog owners (in bad weather the lawns were used for a very short walk). There were several quite similar patterns in observation studies in all case studies in the Million Programme and People’s Homes sites in all three cities.

Lawns were mostly used in late spring and summer because of the Swedish climate with its defined winter and summer seasons. The questionnaire data supported this finding. Quite a few people

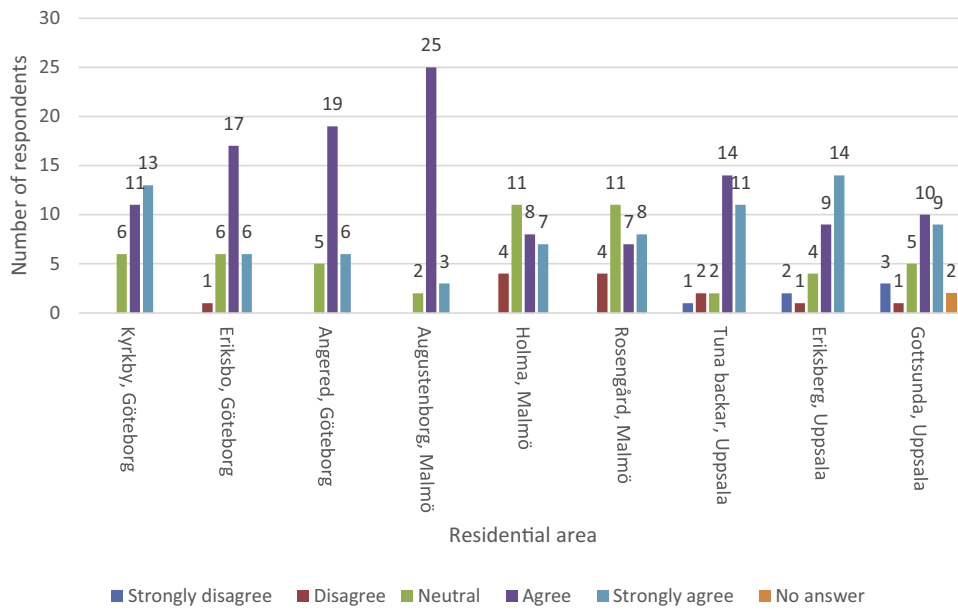


Fig. 6. Importance of well-maintained lawns in multifamily houses (Million Programme and People’s Homes).

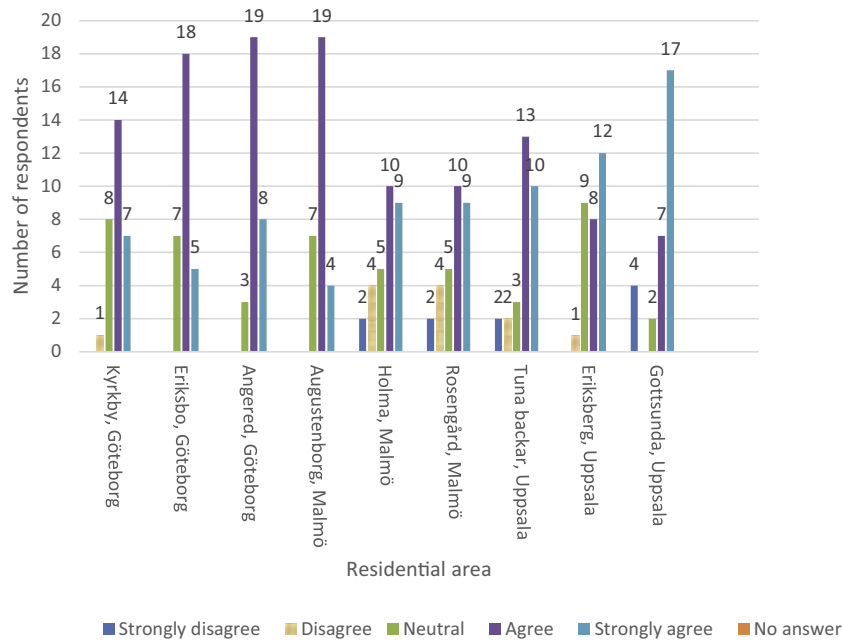


Fig. 7. The value of the lawns as a suitable place for leisure activities.

mentioned the importance of lawns on hot summer days in particular, but some people said that they used the lawn “all year round if the weather is good” and in places where they can enjoy the sun and also get some shade. Some respondents said that they avoided places that are windy, noisy, unattractive, less well managed or containing “unpleasant people”.

When asked about lawns as an important aesthetic place, most respondents really appreciated lawn as an “enjoyable” and “beautiful place” (Fig. 11).

Many of the spontaneous comments also confirmed that people like well-maintained green places between and around buildings.

When we asked if lawns generally create a good habitat for small creatures, such as insects, birds and mammals, many participants replied that lawns do not have much value for biodiversity and are not a good place for many living creatures. One of the

participants said that the lawn “is not a place for nature, it is cut too often”, another said it was “too sterile an environment” and “too monotonous”. Others said that the well-managed lawn is nice because you can have a good line of sight. Aesthetic values were often highly appreciated and places with such values were frequently used or visited. The green colour of lawns was also mentioned by people as a valuable feature.

We could see no significant differences in answers between cities as we researched two similar housing types in each city. However we observed some particular attitudes to lawns

in People’s Home areas related to particular local geographical or design features. For example, Augustenborg (Malmö) is one of the best examples of the urban eco-concept, with the installation of stormwater management devices such rain gardens, detention ponds, green walls and green roofs. Green areas between

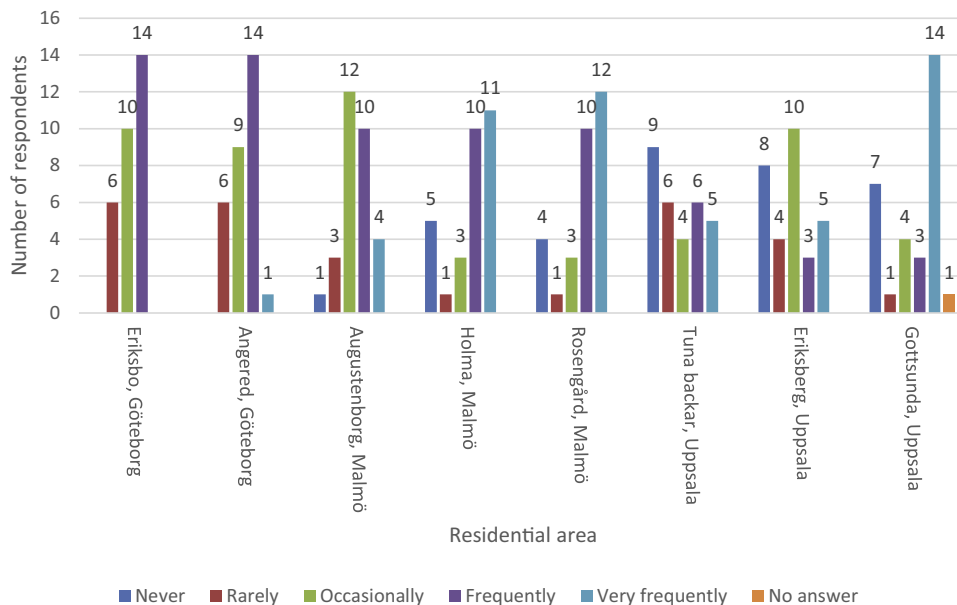


Fig. 8. Usage of lawns as a passage in multifamily housing areas.

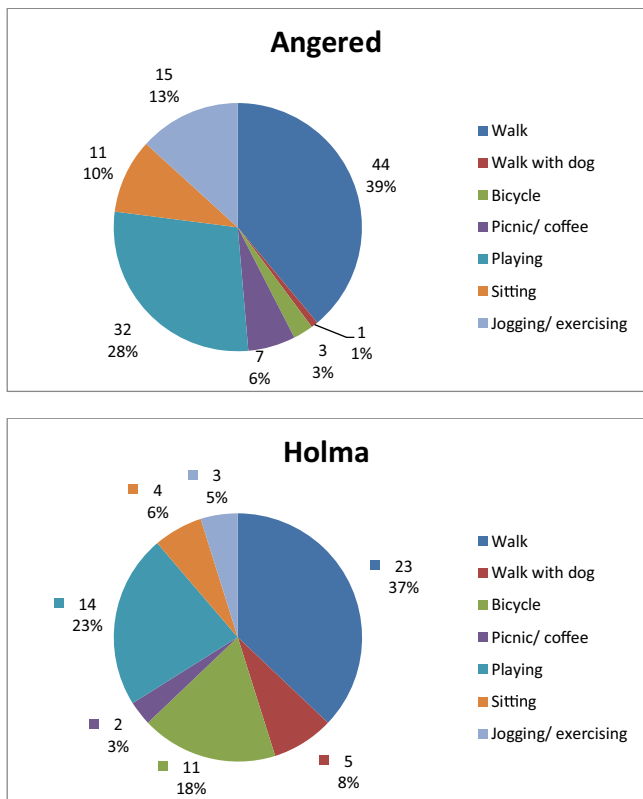


Fig. 9. Two examples of typical activities on a sunny summer day in the two Million Programme areas in Malmö. People often preferred ‘mobile’ activities on or beside the lawn (pathways).



Fig. 10. ‘Direct’ use of lawn; relaxed reader in Augustenborg (People’s Home, Malmö) on a warm day in August 2015.

In Million Programme areas, due to their planning character, there are a lot of unused monotonous lawns (more than in the People’s Home areas) and even some “dangerous” lawns which people avoid using because of “suspicious activity”.

The most attractive and actively used lawns were those with topographic variation Holma Hills (in Malmö) covered with a conventional short-cut lawn or those turned into a neighbourhood attraction (fountain or playground as in Angered (Göteborg)). In residential areas, lawns with ‘attractions’ (organised or planned for activities or for the senses) were used much more actively for recreation.

Regarding the answers to question 5 (Fig. 4) about alternative lawns, people had quite a range of opinions. There were some nature enthusiasts who would like to see flower-rich meadows and said that “it is certainly good for the environment” and “it could save money and is worth having”, but many people still preferred more tidy, conventional lawns but also argued that meadows could be “very good in some places”. Some respondents believed that such places looked untidy and some were even afraid of snakes or ticks in tall grass close to buildings. This opinion can probably be explained by the fact that residents had not previously considered or seen such alternatives.

houses have small ponds. Local dwellers were very proud of their neighbourhood having such an “eco” status and they enjoyed and especially actively used those lawns leading to the ponds. In Kyrkbyn (Göteborg) people were particularly concerned about losing a specific lawn adapted to the local nature, such as a spot (located on an elevated rock) which was about to be removed due to the construction of a new building (densification).

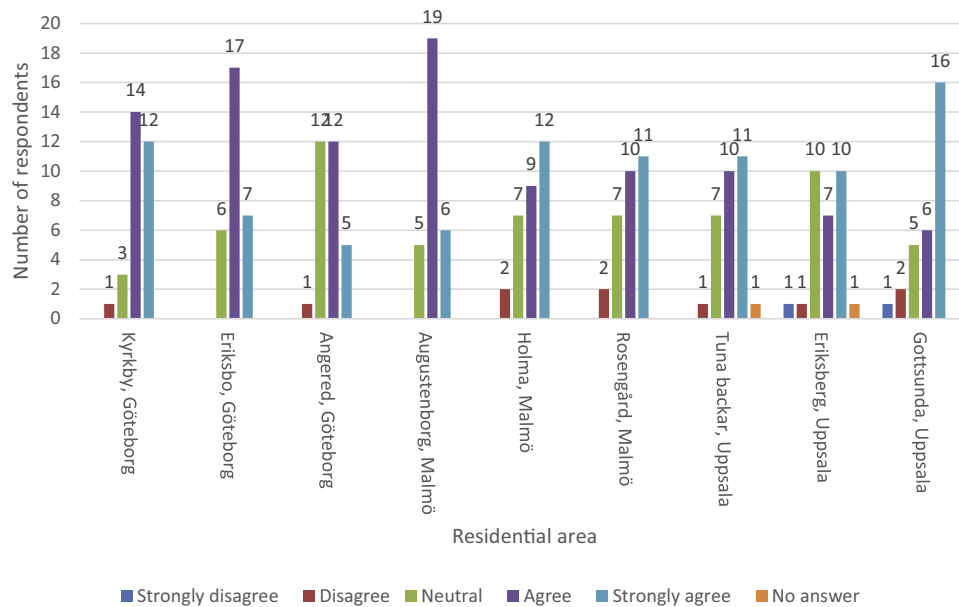


Fig. 11. Aesthetic value of lawns in multifamily housing areas.

Many people found grass-free lawns (lawns with low, flowering native herbaceous species) “amazingly beautiful” (for example 19 of 30 respondents in Kyrkbyn, Göteborg). However, people expressed a fear about walking on such lawns because of possible damage to plants and about picking the flowers, which could destroy the beautiful flowering carpet. One reason for this reaction could be a lack of information or the novelty of this kind of ‘lawn’. For many respondents, these kinds of flowery lawns were similar to flowerbeds.

Perennial meadows framed by mown grass areas received positive feedback from respondents in many cases. For example in Kyrkbyn, 22 out of 30 respondents were positive about this design and said that it would be good to have such a meadow since “we have a large area that is not used”. They mentioned that “meadows can be good for children; I think more people would be able to appreciate it”.

Our third alternative scenario of pictorial annual meadows received less enthusiastic feedback. Respondents thought that this type would be good to use “in large areas not used for other activities” or “outside residential areas”. One comment from many people was that they did not want to have such meadows close to buildings.

When we asked what people would like to suggest for improving green areas, they mentioned “have more Swedish flowers”, “more colour”, “opportunities to have nice seating areas with tables and benches, pieces of art, more trees and water features”.

4.3. Managers' and decision-makers' vision of lawns

Managers in all three municipalities had quite similar visions of lawn management. The majority of lawns in Sweden are conventional, regularly-cut grass communities, cut 12–20 times per season to a height of 4–10 cm (Andrén, 2008). However, each municipality surveyed had its own subcategories of conventional lawns and meadow-like lawns, depending on the management regime (number of cuts and removing or leaving clippings on the surface).

Swedish municipalities normally do not use herbicides or pesticides in their management of lawns. Due to the organisational and bureaucratic peculiarities of Swedish municipalities, it was difficult to obtain details about the management and maintenance of lawns. Construction and management were performed in several stages by

numerous contractors that often did not follow managers' instructions exactly. A common finding in our interviews with garden managers was their concern about high costs related to lawn management (very frequent mowing of conventional lawns). All three municipalities spent twice as much money per unit area on the management of conventional lawns compared with meadow-like lawns, which was why managers were quite open to considering alternatives to traditional lawns.

Many professional stakeholders interviewed, including landscape architects and park managers, believed that residents want to have short, manicured lawns (Eshraghi, 2014). Managers in Swedish municipalities have a quite practical maintenance “thinking”. For example shrubs, trees, rocks and benches were seen as “obstacles” to mowing lawns with water features, such as ponds, requiring great maintenance efforts. The dichotomy is that on the one hand, people in multi-family areas want to have more tables and benches on the lawns, but lawnkeepers often do not like residents eating on these lawns and leaving food leftovers, since this attracts “undesired” wildlife such as rats, rabbits and wasps. On the other hand, some stakeholders stressed that people are interested in places where they live and would like to participate in improving them.

The politicians interviewed were in complete solidarity with the managers and professionals; their definition and understanding of a perfect lawn was a smooth grass surface looking perfectly “green” and “good”. “We have to have lawns. They have been here for hundreds of years”. However, some of the interviewees in Uppsala stated that plain lawns can be boring and it would be nice to enrich them with other elements such flowers and trees (Eshraghi, 2014). All politicians and professionals (involved in lawn planning, design and management) strongly believed in the recreational, aesthetic, physical values of lawns and its mental health values for citizens. It was also revealing that the majority of politicians and even professionals interviewed were aware of the environmental issues that conventional lawns can cause, but would still prefer “familiar” conventional lawns.

5. Discussion

Our social studies showed that people like lawns even if they do not always directly use them. For the majority of people, lawns are



Fig. 12. “Cues to care” in the Portland neighbourhood in London, UK where meadow is framed by traditional lawn that is actively used by local residents (May 2015).

just a given element of green areas. Lawns cover the most significant amount of outdoor area in most multi-family residential areas and accompany people everywhere. This conclusion corresponded with the main outcome of research by Kaufman and Lohr (2002) on social norms (and the reasons behind it) of well-maintained lawns in front gardens in central Iowa. When the Iowa Turfgrass Industry was asked about the percentage of homes that have a front lawn, the answer given was that it is a universal phenomenon. Despite differences in the planning structure of US and Swedish cities, lawns are a part of the modern urban social psyche. Kaufman and Lohr also argues that from a social point of view, grass “with its aesthetically pleasing colour and uniform texture, fosters a sense of well-being” (Kaufman and Lohr, 2002 p. 293). Another outcome of this US research can be also correlated with our conclusion that having a well-maintained lawn is considered to be the “normative” practice. It is particular supported by the results of our interviews with politicians, urban planners and gardeners in Sweden. The only difference is that private homeowners in the US dominate residential areas and keep their lawns well maintained. The dominance of the well-kept green carpet can most likely be explained by common knowledge conveyed in the mass media and national and local guidelines on green areas planning, design and management.

Another interesting parallel between the US and Sweden is that not all people adhere to the ‘norms’ of a manicured lawn. They are called conformists and nonconformists (Kaufman and Lohr, 2002). In our study, when asking question about different options for alternative solutions to lawns, in each case study we had ‘nature enthusiasts’ who preferred more nature-like ‘messy’ lawns.

The question of introducing and establishing alternative lawns in the urban environment is being discussed today in Germany, Switzerland, France, Austria and Sweden (Ignatieva and Ahrné, 2013), England (Woudstra and Hitchmough, 2000; Smith and Fellowes, 2014), Australia and New Zealand (Ignatieva, 2010). In the USA, the search for an alternative solution to front garden lawns is especially acute in states such as California, Arizona and Florida with their shortage of water (The Florida yards and neighborhoods handbook, 2015). In Sweden ‘pictorial meadows’ with annual plants and meadows with native grasses and perennials are established in a few public parks and traffic islands. In our research, alternative lawns were appreciated by many citizens as well as politicians, planners and managers. However, the implementation of new approaches requires special planning and design solutions adjusted for each particular neighbourhood. For example, the residents interviewed here believed that meadows definitely had aesthetic and biodiversity values, but were not useful for some activities and should be located on the periphery of the garden or green area. However, some people were keen to know more about alternative options to conventional lawns. There is a paradox here in people’s perception of lawns (“essential”, “norm” feature) and the use of lawns in reality. The preference for the middle choice in Fig. 4 (Image 2) out of the three alternatives clearly shows the importance of the ‘cues to care’ approach when there is a clear indication of the presence of design and human care in meadow-like lawns in residential neighbourhoods (Fig. 12). The ‘cues to care’ approach was introduced by J. Nassauer as one of the possible solutions for suburban American front gardens (Nassauer, 1995).

There was quite surprising interest and a positive response from Swedish residents to grass-free (tapestry, low-growing flowering perennial herbs) lawns, possibly because modern people are hungry for colour and variety in their cities. Another explanation is a growing awareness and gradual acceptance of ‘wild’ urban nature (Weber et al., 2014) in some European countries.

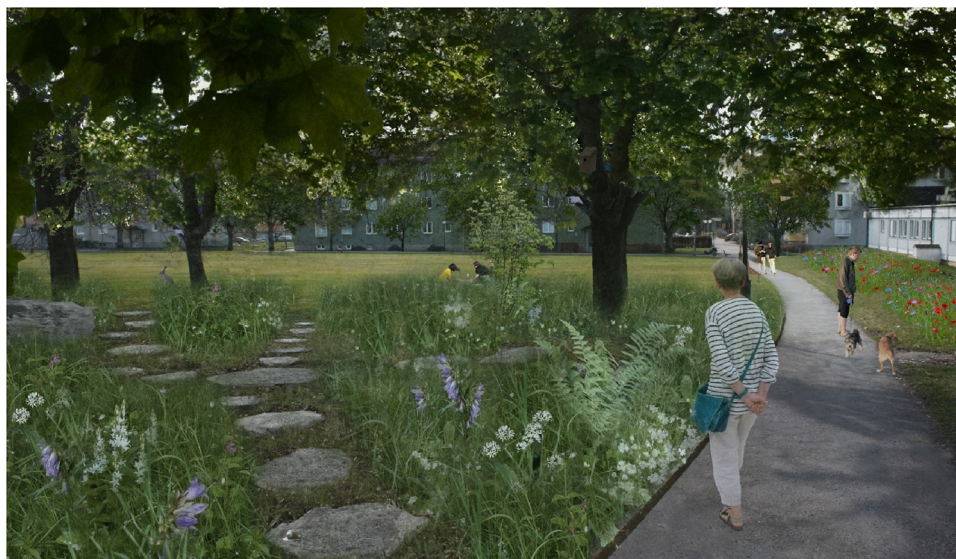


Fig. 13. Suggestion for lawn modification in a People’s Homes area in Göteborg, with shaded meadows and pictorial annual meadows (Andersson and Bergbrant, 2015).

In other projects related to the recent densification programmes in Swedish municipalities, planners, researchers and residents are concerned with a growing shortage of green space in which to meet, play and enjoy (Berg et al., 2015). The lack of green spaces in dense neighbourhoods also results in less light, more noise and social crowdedness in courtyards and streetscapes. One of the most important conclusions of our research is that people do not want to see a monotonous lawn, but a variety of spaces that provide good conditions for different senses (sound, smell, touch and sight) and social activities. This outcome is directly connected with the initial organisation of the urban planning structure and the creation of varied well-functioning private, semi-private and public outdoor spaces that can be attractive for a whole range of activities (voluntary or self-imposed or social) (Gehl, 2001). Lawns that serve as social meeting and activity points should be intensively managed, while lawns and green spaces that are not used should be considered for alternative designs (Fig. 13). Many urban lawns could have been developed as attractive places and spaces for a variety of activities if planners and landscape designers had originally thought about including elements for the senses and for being active. The planning and design of lawns should be guided by people's need for variety, but also by cost efficiency and environmental benefits.

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