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7 **Qualities and Functions Ascribed to Urban Cemeteries across the Capital**

8 **Municipalities of Scandinavia**

9

10 **Abstract**

11 Cemeteries are not only burial places that provide a public service. They are also green urban
12 spaces with cultural and natural qualities and could be integrated into the green infrastructure
13 planning system. In this study, we explore the extent to which environmental qualities and
14 functions are ascribed to urban cemeteries in the municipal master plans, green infrastructure
15 plans and websites of the capital cities of Scandinavia. In addition, we conduct a focus-group
16 interview in Oslo with six municipal employees representing green space
17 planning/management, cultural heritage and cemetery administration/management, focusing
18 on a broad perspective of qualities ascribed to urban cemeteries. The document study shows
19 that, across the Scandinavian countries, cemeteries are mainly included in the concept of
20 green infrastructure but they are not ascribed qualities similar to those ascribed to public
21 green spaces; instead, most qualities are related to cultural history. However, Copenhagen
22 municipality has a more inclusive approach, describing the cemeteries as green spaces and
23 inviting people to use them for recreational purposes. It even has a policy document with a
24 strategy on how to combine the primary function of a burial site with new needs for
25 recreational space. In the focus-group interview, cemeteries are described as *static places*,
26 *peaceful and quiet places*, *green spaces*, *spaces in which to experience darkness*, and *places*
27 *for all (multiple use)*. There is relatively high agreement among interviewees about the

28 recreational qualities of cemeteries, even though the cemetery administration/management
29 emphasizes several times that its main focus is on accommodating the bereaved and their
30 relatives. In the discussion, we focus on differences between the different countries in the
31 qualities and functions ascribed to cemeteries, and examine potential explanations for why
32 cemeteries are mostly described as green spaces, part of the green infrastructure, but treated
33 as private green spaces in the urban planning context.

34

35 **Keywords:** cultural heritage, nature, urban planning, green infrastructure, land use,
36 graveyards, churchyard

37 **1. Introduction**

38 Urban cemeteries in Scandinavia are green spaces in the cities. In most cemeteries, vegetation
39 has had a chance to develop over time. This has resulted in species-rich environments with,
40 for example, mosses and mature trees that provide important habitat for wildlife (Kowarik et
41 al., 2016). Urban cemeteries are also culturally valuable landscapes that mirror the history of
42 the community and provide windows onto memories and past times (Francis, 2003). Some
43 cemeteries are tourist attractions that attract high numbers of visitors, such as the World
44 Cultural Heritage site Skogskyrkogården in Stockholm (Sweden), which has about 400,000
45 visitors a year (Larsson et al., 2014). However, even lesser known or smaller cemeteries, such
46 as Gamlebyen cemetery in Oslo (Norway), have a relatively high number of visitors and have
47 been shown to be used for a variety of everyday activities, such as dog-walking, socializing
48 and cycling (masked for blind review) which are all examples of ‘active’ recreational
49 activities. However, cemeteries may also be used for more passive recreational activities,
50 such as relaxing, sitting on benches, thinking and reflecting, and therewith provide
51 possibilities for mental restoration (masked for blind review). In being recreational spaces,
52 cemeteries can, like several other green spaces, contribute to public health (WHO, 2016) but
53 as far as we know, research on the multifunctional use of cemeteries is sparse.

54 The public cemeteries in the Scandinavian capitals are maintained by a special
55 division of the municipal cemetery administrations in close cooperation with the national
56 church. Elsewhere in these countries, it is most common for the church itself to be
57 responsible for maintenance and development. The cemeteries we refer to in this study are
58 located in urban built environments. They are publicly accessible spaces, but with privately
59 owned graves, thus representing a public-private dichotomy (Swensen & Brendalmo, 2017).
60 In Scandinavia, public cemeteries facilitate burials for all denominations and religions, even
61 if the majority of the population choose a Christian ceremony. In most cemeteries, burial

62 space is recycled. This means that after a certain number of years, the burial space can be
63 reused by a different family under circumstances where there is no owner who wants to
64 extend the use of the burial space.

65 In this study, we set out to explore the role that public urban cemeteries play as green
66 spaces in the urban planning context. Our focus was on Oslo, whose municipal plans we
67 compared to those of Stockholm and Copenhagen. We found a comparison with the other
68 Scandinavian capitals interesting since there are several similarities, related to burial
69 traditions, management and design. In addition, we conducted a focus-group interview with
70 employees from different divisions of Oslo municipality. In this way, we hoped to contribute
71 new knowledge about the role cemeteries play as green urban spaces.

72

73 *1.1. Cemeteries as urban green spaces*

74 A cemetery is different from a churchyard in that there is no consecrated building, such as a
75 church, at a cemetery. In line with other Scandinavian research (Kjøller, 2012), we use the
76 word ‘cemetery’ when referring to both cemeteries and churchyards. The municipalities of
77 Oslo, Stockholm and Copenhagen manage twenty, eleven and five cemeteries, respectively.
78 Together, these cemeteries amount to a significant proportion of the green space in the cities.
79 For example, the twenty cemeteries in Oslo cover 183 hectares of land (Oslo municipality,
80 2016), which is 7% of the total protected green space in Oslo (Oslo municipality, 2010). The
81 cemeteries in Stockholm and Copenhagen cover, in total, 174 and 130 hectares of land,
82 respectively.

83 Cemeteries in Scandinavia, as elsewhere, are magnificent historical green spaces,
84 sometimes referred to as gardens or parks (Kjøller, 2012), with a strong architectural order
85 (Kragh, 2003). Many cemeteries are surrounded by hedges or stone walls that facilitate a
86 peaceful enclosed environment. Most cemeteries have large open areas that are divided into

87 smaller spaces by neatly cut hedges, bushes or trees. The grounds are often covered in grass,
88 but can also be gravel, especially in older cemeteries. In Denmark, only a quarter of the
89 ground is used for graves (Kjøller, 2012) and the amount of burial spaced is decreasing due to
90 fewer coffin graves and an increase in cremation (Copenhagen municipality, 2015c). Some
91 cemeteries are closed during the night time, while others are open all day and night. To
92 provide a peaceful atmosphere, most cemeteries have rules posted near their entrances. These
93 rules describe what activities are allowed, as is the case in Copenhagen, or not allowed, as in
94 Oslo. The design of the individual graves varies widely (Søndergaard Holm, 2015),
95 depending on trends and cultural differences.

96 The Scandinavian cemeteries are often well-maintained spaces compared to other
97 green spaces in the cities. Researchers from other parts of Europe have found that poor
98 management of cemeteries can cause negative perceptions among local inhabitants (Tudor et
99 al., 2013). Keeping the cemeteries well-tended accounts for a large proportion of the
100 municipal budget for green space management. The standard of maintenance and the variety
101 of plants at cemeteries are highly appreciated by visitors (xx masked for blind review).

102 Research on cemeteries covers topics such as design (Clayden et al., 2015;
103 Søndergaard Holm, 2015; Wingren, 2013), contamination of soil or water (Fiedler et al.,
104 2012; Żychowski, 2012), biological processes in the disposal of human remains (Santarsiero
105 et al., 2000), conflicts related to the creation and planning of new cemeteries (Bennett &
106 Davies, 2015; Santarsiero et al., 2000), location of existing cemeteries (Tudor et al., 2013),
107 cultural and historical perspectives on cemeteries (Francis, 2003) and people's use and
108 experiences of cemeteries (Francis et al., 2000; Francis, 2003; xx masked for blind review, xx
109 masked for blind review). As others have pointed out (e.g. Woodthorpe, 2011), the
110 interdisciplinary interest in cemeteries means that the literature is fragmented, with
111 publications spread between various discipline-specific journals. To our knowledge – and

112 supported by others (e.g. Kjølner, 2012) – research focusing on cemeteries as urban public
113 green spaces is limited.

114

115 *1.2. Qualities and functions ascribed to urban green spaces*

116 One of the roles of urban planning is to identify, develop and provide for green spaces. These
117 can serve to provide many benefits, including natural and cultural, that might afford
118 recreational use. The concept of green infrastructure planning evolved in the early 21st
119 century. According to Benedict and McMahon (2006), green infrastructure includes a
120 ‘network of natural areas and other open spaces that conserves natural ecosystem values and
121 functions, sustains clean air and water, and provides a wide array of benefits to people and
122 wildlife’ (p. 1). On the basis of this broad definition, cemeteries should be part of the green
123 infrastructure, and policy documents and plans should acknowledge the importance of these
124 urban green spaces from an ecological and recreational point of view. The green
125 infrastructure plan (GIP) is a plan that aims to identify, evaluate and develop urban green
126 space (Sandström, 2002; Thorén & Saglie, 2015). The GIP mainly focuses on public spaces,
127 although all kinds of green space should be included in the definition of green infrastructure.
128 Mapping and evaluating green spaces has become particularly important as pressure on urban
129 green space increases due to urbanization and densification (Benedict & McMahon, 2006;
130 Thorén & Saglie, 2015). This is particularly the case in the Scandinavian capitals and
131 surrounding areas. As stated, cemeteries in Scandinavia are green spaces that offer both
132 natural and cultural qualities, thereby facilitating recreation. In this study, we therefore set out
133 to explore:

- 134 • The extent to which cemeteries are included as green spaces in municipal
135 master plans (MMPs) and GIPs in the municipalities of Oslo, Stockholm and

136 Copenhagen. In addition, the qualities and functions that the municipalities
137 ascribe to the cemeteries.

- 138 • The qualities and functions that different divisions within Oslo municipality
139 ascribe to urban cemeteries.
- 140 • Whether the cemetery administration in Oslo carries out any measures to
141 facilitate the recreational use of urban cemeteries.

142

143 **2. Method**

144 The methodological approach was based on a combination of document studies and a focus-
145 group interview. In the document studies, we analyzed MMPs and GIPs, or similar ‘green’
146 policy documents, from the three capitals. In addition, we analyzed the presentation of the
147 cemeteries at the municipalities’ websites (see Fig. 1 for an overview of the documents
148 analyzed in the respective municipalities). To gain a better understanding of the qualities
149 ascribed to cemeteries and attitudes to multifunctional use, we conducted a focus-group
150 interview at which we brought together people from different divisions of Oslo municipality.

151

152 *2.1 Document study of MMPs, GIPs and websites*

153 To begin with, the MMPs for Oslo (Oslo municipality, 2014), Stockholm (Stockholm
154 municipality, 2010) and Copenhagen (Copenhagen municipality, 2015b), and the GIPs, or
155 similar green policy documents, of the respective municipalities (Copenhagen municipality,
156 2015a, 2015c; Oslo municipality, 2010; Stockholm municipality, 2013) were screened for the
157 keywords *grave* and *church*. All hits were marked and explored for potential qualities
158 ascribed to the cemeteries. Results from this search are presented in section 3.1.

159 Thereafter, we studied the maps attached to the MMPs and GIPs. We registered the
160 qualities or functions ascribed to the cemeteries in the maps. The municipalities used

161 different categories of quality and function. In the presentation of results from this analysis
162 (see section 3.2), we use the same categories (wording) as the municipalities do. Therefore,
163 we present the results from each municipality individually. In the discussion, however, we
164 address similarities and differences between the municipalities.

165 In Oslo, the GIP referred to a map attached to the MMP, and we therefore used that
166 GIS map in the analysis (<http://od2.pbe.oslo.kommune.no/xkart/kpinnsyn/>). We analyzed the
167 four thematic GIS categories (layers) – *nature environment, cultural heritage value, blue and*
168 *green infrastructure* and *noise* – all of which are relevant to the aim of the study. Seventeen
169 of the twenty cemeteries in Oslo are included in the study (see Table 1). Two cemeteries were
170 excluded since they are located on the outskirts of Oslo, far from densely built areas, while
171 another was excluded because it is an inactive cemetery.

172 In Stockholm, the GIP (Stockholm municipality, 2013) and Park plan (Stockholm
173 municipality, 2004) are strategic documents at the overarching level. The city is divided into
174 districts, each with its own local park plans. In the analysis of maps, we used the maps
175 included in the local park plans. Ten of the eleven cemeteries in Stockholm are included in
176 the analysis (see Table 2). One was excluded because it is located outside the municipal
177 boundary. The structure of the park plans varied, but they all covered the following
178 overarching categories: *ecological qualities, cultural heritage qualities, recreational/social*
179 *qualities* and *count of accessibility of green infrastructure*.

180 At the time of the analysis, Copenhagen municipality had not developed a GIP.
181 Instead, the municipality had the policy documents ‘City nature in Copenhagen’
182 (Copenhagen municipality, 2015a) and ‘Five cemeteries towards 2065’ (Copenhagen
183 municipality, 2015c). In addition, the Ministry of Environment (2013) had published a
184 strategy for green infrastructure in the Copenhagen region, which had a map attached
185 (<http://kort.erst.dk/spatialmap?profile=fingerplan2013>) in which the following qualities and

186 functions were registered: *cycling lane, path, green wedges, outdoor recreation facility* and
187 *city wedge*. We used this map in the analysis of qualities and functions (see Table 3). All five
188 cemeteries in Copenhagen are included in the analysis.

189 Cemeteries that were ascribed qualities or functions were also visited, either
190 physically or virtually, the latter by using Google street map view or aerial photo view.
191 Visiting the cemeteries was important because sometimes it was difficult to determine from
192 the maps attached to the plans whether the quality or function (such as cycling lane) was
193 inside or outside (beside) the cemetery.

194 Lastly, the municipalities' websites that provided information about the cemeteries
195 were visited. Here, we analyzed the type of information that was presented at the websites,
196 differentiating between information related to burial services and information about the
197 cemetery environment. Results from this analysis are presented in section 3.3.

198

199 [Insert Figure 1 approximately here]

200

201 *2.2. Focus-group interview*

202 A focus-group interview was conducted with a strategic sample of six employees from Oslo
203 municipality. The selection of interviewees was intended to represent different divisions
204 within the municipality: green space planning/management (N=2), cultural heritage (N=1)
205 and cemetery administration/management (N=3).

206 The interviewees were invited to a three-hour discussion about the role of the
207 cemetery in the urban fabric. Prior to the interview, a list of questions was sent to the
208 interviewees. In this article, their thoughts covering the following questions are presented:
209 What qualities do they ascribe to urban cemeteries? How are the cemeteries used by the
210 public? Does the cemetery administration undertake any measures to facilitate recreational

211 use? The focus-group interview began by asking all interviewees, one by one, to present their
212 thoughts on the environmental qualities of the urban cemetery. This was followed by a more
213 open discussion around the role of the cemetery in the contemporary city. The interview was
214 recorded with the permission of all the participants.

215 In the analysis of the transcript, we applied a step-wise process, as described by
216 Creswell (2009). First, the recorded interviews were transcribed. Second, the authors read the
217 whole transcript to obtain a general idea of the depth of the material. Third, the authors
218 individually coded the transcript and highlighted 1) the qualities ascribed to the cemeteries by
219 the interviewees and 2) the measures carried out to facilitate qualities or activities. The
220 authors compared highlighted segments of text, discussed preliminary themes on the basis of
221 the coded transcript and marked quotations that particularly illustrated any of the themes.
222 Finally, the themes were named, described in the text and illustrated with quotations.

223

224 **3. Results**

225 *3.1. Cemeteries as one type of green space in municipal plans*

226 In the MMP for Oslo, little mention was made of cemeteries, but a need for new cemeteries
227 and different kinds of cemeteries was acknowledged due to an increase in population size and
228 in cultural diversity. In the GIP for Oslo, cemeteries had their own heading and were
229 presented as examples of green spaces covered by the definition of green infrastructure. To
230 quote the GIP (p. 24): ‘The cemeteries can be compared to quiet parks, but they have a
231 distinctive role as places for mourning and meditation.... The cemeteries are probably the
232 oldest built green areas, and are linked to our history and tradition.... Primarily, they are
233 places where activities take place with consideration and respect for the surroundings.
234 Secondly, park-like use of the cemeteries, such as taking a walk, sitting on benches,
235 looking at old graves, etc., is an important and desirable use of the cemeteries. The

236 cemeteries are therefore distinctive gems of great intrinsic value within the spectrum of
237 recreational areas and arenas in Oslo.’

238 In the MMP for Stockholm, little was written about cemeteries. Skogskyrkogården
239 was described as having national cultural heritage value. In addition, access to cemeteries, as
240 well as to other green spaces in the city, was described as ‘contributing strongly to
241 Stockholm’s attraction, character and beauty’ (p. 18). Interestingly, cemeteries were excluded
242 from both the GIP and the parks plan, but included, as will be seen later in this article, in park
243 plans at the local level.

244 In the MMP for Copenhagen, cemeteries were included as one type of green space
245 with recreational value. It was also stated that they have an unexploited potential for
246 recreation. In the strategy document ‘City nature in Copenhagen’ (Copenhagen municipality
247 2015a), cemeteries were included in the definition of city nature, and ecological qualities
248 were addressed in the following way (p. 9): ‘In the city’s cemeteries, user intensity is lower
249 and the richness of species can be higher. Here, the city nature is both extremely cultivated
250 and planned, but at the same time, there are also more overgrown areas, with mature trees and
251 rare species.’

252 It was also stated that the municipality aimed to develop the cemeteries, making them
253 part of the recreational facilities for people living in Copenhagen, without losing their
254 atmosphere as peaceful places. To achieve this, it was stated, the level of experiences at
255 cemeteries and the level of maintenance would be increased, and steps would be taken to
256 facilitate solutions that were more multifunctional. In the policy document ‘Five cemeteries
257 towards 2065’ (Copenhagen municipality, 2015c), the municipality addressed what it called
258 ‘five tensions’ at each cemetery:

259 1. The cemetery as a public resource (both cultural historical and natural) or private
260 place.

- 261 2. The cemetery as a place for recreation or a place for grief.
262 3. The cemetery as a place for all or a place for certain activities.
263 4. The cemetery as a familiar place or a distant (unknown and sometimes scary) place.
264 5. The cemetery as a timeless place or a place in transformation.

265 With a visual presentation, the municipality showed the direction in which it wanted to
266 develop the qualities at each cemetery in the future (see Figure 2).

267

268 [Insert Figure 2 approximately here]

269

270 3.2. *Qualities and functions ascribed to the cemeteries – an analysis of the maps*

271 In this section, we present findings concerning the qualities ascribed to the cemeteries in the
272 maps attached to the MMPs or GIPs.

273

274 3.2.1. Oslo

275 In the GIP for Oslo, cemeteries were described as green spaces in the text, but they were not
276 marked as green spaces when calculating access to green spaces. In the map attached to the
277 MMP for Oslo, cemeteries were registered as ‘Buildings and facilities’, designated as ‘burial
278 grounds for graves and urns’. Four of the seventeen cemeteries were assigned ecological
279 qualities, marked as locally, regionally or nationally important areas (see Table 1).

280

281 [Insert Table 1 approximately here]

282

283 A substantial number of cemeteries were assigned cultural heritage values. Most of the
284 cultural heritage qualities were related to a built structure, such as a church. At Vår Frelser
285 gravlund and Østre Aker kirkegård, the whole cemetery landscape was categorized as cultural

286 heritage, while at five cemeteries, only part of the cemetery landscape was defined as cultural
287 heritage. The blue and green infrastructure category in the MMP included paths and streams.
288 Even though there were several walking paths at the cemeteries, none of the cemeteries was
289 registered in the MMP as having a walking path running through it, but several of the
290 cemeteries were registered as having walking paths running alongside them. When visiting
291 these cemeteries, however, we found that some had signed walking paths running through
292 them. One example is Grefsen kirkegård, which had a posted sign for a walking path through
293 it (see Figure 3). Another example is Østre Aker kirkegård, which had posted signs for a
294 national pilgrimage path through it (see Figure 4). In the map of Norwegian pilgrimage paths
295 (<http://pilegrimsleden.no/no/map/print>), the path was also marked as running through the
296 cemetery, not alongside it, as in the MMP. There was also a plan to open up a walking path
297 through Voksen kirkegård in the future. Only one of the cemeteries had an open stream.
298 However, at two of the cemeteries, there were plans to open up streams through them.

299

300 [Insert Figures 3–4 approximately here]

301

302 Oslo municipality has designated fourteen quiet zones ($L_{den} < 50$ dB) within the city in
303 accordance with the European Noise Directive (Oslo municipality, 2013). In the MMP, none
304 of the cemeteries was registered as a quiet zone, although some of them were located adjacent
305 to designated quiet zones and registered with a sound level below 50 dB. In Figure 5, Vestre
306 gravlund is not marked as a quiet zone, although the park (Vigelandsparken) located next to
307 the cemetery is marked (hatched) as a quiet zone. In this example, most of the cemetery was
308 registered as having sound levels that were within the guidelines for quiet zones, and there
309 were no physical barriers between the cemetery and the quiet zone. Interestingly, the
310 cemetery was nevertheless not marked as a quiet zone. In the GIP, however, the municipality

311 suggests that cemeteries should follow similar recommendations with regard to noise levels
312 as those that apply in quiet zones.

313

314 [Insert Figure 5 approximately here]

315

316 3.2.2. Stockholm

317 Even though it was stated in the overarching park plan that cemeteries were excluded, several
318 qualities and functions were ascribed to the cemeteries in the park plans at the local level (see
319 Table 2). First, cemeteries were often included in the calculation of access to green space. Six
320 of the cemeteries were given ecological qualities, such as intensively managed lawns or urban
321 forest. Only one cemetery was registered as having cultural quality in the maps, while three
322 were described as having cultural qualities in the text. In the park plan from Enskede Årsta
323 Vantør (2016), several social/recreational qualities were ascribed to the two cemeteries
324 Skogskyrkogården and Sandsborgskyrkogården. They included *serenity*, *flower magnificence*
325 and *promenade*.

326

327 [Insert Table 2 approximately here]

328

329 3.2.3. Copenhagen

330 As can be seen in Table 3, very few qualities were registered at the cemeteries in the strategy
331 for green infrastructure in the Copenhagen region published by the Ministry of Environment
332 (2013). Only Assistens kirkegård was registered, as part of the category ‘city wedges’ and
333 with an existing cycling lane in it. However, as mentioned in ‘City nature in Copenhagen’
334 (Copenhagen municipality, 2015a) and ‘Five cemeteries towards 2065’ (Copenhagen
335 municipality, 2015c), the municipality aims to develop the cemeteries and to make them part

336 of Copenhagen's recreational spaces. This was followed by some suggestions for
337 operationalizing this goal.

338

339 [Insert Table 3 approximately here]

340

341 *3.3. The cemetery as a place for the dead or the living? An analysis of websites*

342 When assessing the municipalities' websites and examining the information they provide
343 about the cemeteries, we found very different approaches. The municipality of Oslo presented
344 addresses, contact information and sometimes a short description of the size and year of
345 origin of the cemeteries. The municipality of Stockholm had a similar approach, but also
346 provided a brief history of the cemetery. Information about the cemeteries in the
347 aforementioned municipalities was posted under the category 'funeral services', which was
348 largely aimed at the bereaved. In Copenhagen, the municipality had two paths to obtaining
349 information about the cemeteries, one for the bereaved and one for other visitors. For the
350 latter group, the information about cemeteries was placed under the menu 'The city's green
351 oases'. The cemeteries were described as serene places suitable for both the bereaved and the
352 living (see Figure 6). Each of the cemeteries was described and information was provided
353 that was mainly aimed at visitors and tourists, such as details of opening hours, guided tours
354 and brochures.

355

356 [Insert Figure 6 approximately here]

357

358 *3.4. Qualities ascribed to the cemetery by the administration*

359 In the following section, we present the results of the focus-group interview. The analysis
360 resulted in five qualities ascribed to the cemeteries in Oslo: *static places, peaceful and quiet*

361 *places, green spaces, spaces to experience darkness, and places for all (multiple use).* In
362 addition, we added a theme about measures that the municipality carried out to facilitate these
363 qualities. The quotations are marked with ID numbers. IDs 1–3 represent people from the
364 cemetery administration/management, IDs 4–5 represents people from the green space
365 management, while ID 6 is the person from the cultural heritage division.

366

367 3.4.1. Static places

368 Cemeteries were described as static places, places that did not change. As can be seen from
369 the quotations below, interviewees from both the green space planning/management and
370 cemetery administration/management stated that they appreciated the static atmosphere in a
371 rapidly changing society. The continuity at the cemeteries was mentioned as important to
372 both people and wildlife:

373

374 ID 4: *And we have, kind of ... venerable, lovely parks that are just there, static, lying*
375 *peacefully. Everything else around them is dynamic and changing all the time, while, to*
376 *us, the cemeteries are kind of loyal, he-he, you could say. I think the continuity of these*
377 *areas is very important because they will be there for a long time, as an ecological*
378 *factor, you know?*

379

380 ID 1: *... fairly satisfied that things are the way they are for us as well, because it's a*
381 *quality in itself that it doesn't, like, get eaten up by society, but that it doesn't change*
382 *very much. And I think that maybe you need that in a society where everything is*
383 *changing all the time ... perhaps it's good that the cemetery is 'frozen' in this way ...*

384

385 During the interview, the informants returned to the issue of strong legal protection and how
386 important that was. The protection was mainly appreciated, but could sometimes be perceived
387 as an obstacle when different divisions within the municipality wished to cooperate.

388

389 *ID 2: So we're really lucky, in that sense; they're not even trying to change us. But we*
390 *do appreciate being part of the city if it isn't detrimental to the things that are*
391 *important to us and that we are there for, the inhabitants of the city.*

392

393 *ID 5: ... the cemetery has an important function in the context of the city, and they are,*
394 *you know, for us who work with green areas, there is a long tradition of having to fight*
395 *to prevent green areas from being built over, and the cemeteries at least have strong*
396 *protection, so they won't disappear.*

397

398 3.4.2. Peaceful and quiet places

399 The cemeteries were ascribed qualities as peaceful places, places in which one could think
400 and reflect, as described by this interviewee from the cemetery administration/management.

401

402 *ID 1: Yes, I also think it's a place for peace and quiet and for contemplation; that you*
403 *can reflect on all the different phases of life and that kind of thing.*

404

405 Even though there was some uncertainty among the interviewees from green space
406 planning/management, one of them said that he thought cemeteries were part of the quiet
407 zones in the MMP, or at least should be:

408

409 ID 5: *In Oslo in recent years, this thing with quiet areas has become a quality, an*
410 *important value worth preserving. I also think of the cemeteries in that context ... I*
411 *didn't have time to check it, whether there is any particular connection there ... but I*
412 *would imagine that some of the cemeteries are also in that category.*

413

414 The cemetery administration/management had observed how interest in memorials had
415 increased and expected it to increase even more in the future. The interviewers asked for
416 thoughts on what would happen to the experience of peacefulness if the cemeteries were
417 turned into park-like memorials without headstones. A segment from the transcript describing
418 a discussion on the topic between three of the interviewees is included below:

419

420 ID 3: *... it's clear that when you create memorial areas, especially memorial areas*
421 *without names, they will often consist of a large area of lawn or a park landscape that*
422 *many people find invites them to engage in the same type of activity you find in a*
423 *normal park. So, how do you manage this or, perhaps, do you just put up a sign and ask*
424 *people to show consideration, or ...?*

425

426 ID 2: *No, I think that we probably manage it using vegetation, we make like a kind of*
427 *separate area, and it's never near the edge, it's always right in the middle, so that it*
428 *isn't the first place you come to when you come through the gate. We also screen it off*
429 *in a way, without it being so screened off that you feel unsafe, but that you enter a*
430 *different space with vegetation ...*

431

432 ID 6: *But if people enter like a more open ... a grassy space without very many symbols*
433 *or markings, how would you feel if people were to play with a Frisbee or bring along a*
434 *picnic basket or sunbathe, or...?*

435

436 ID 2: *No, well, if they sit on the grass, then I don't see that as a problem. A Frisbee, I'm*
437 *not so sure.*

438

439 ID 3: *People who throw a Frisbee for their dog, those people we have a word with, but*
440 *those who sit there quietly and many have a child with them, lift it out of its pram and*
441 *just sit peacefully ... we don't have a word with them ...*

442

443 3.4.3. Green spaces

444 Deer, birds, owls and insects were all observed at cemeteries in Oslo. Interviewees from the
445 green space management/planning division described the cemeteries as ecologically rich
446 environments that are part of the urban green infrastructure, as shown in the discussion
447 below.

448

449 ID 5: *The cemeteries are like green oases and lovely areas that ... I think that they fit in*
450 *really well with something like that, if you think of them as a whole and in the context of*
451 *where it's nice to go for a walk, and ...*

452

453 ID 4: *Yes, but I think it's the access to recreational areas, nature areas, green areas ...*
454 *cemeteries play a really important role in that connection, for recreation; people are*
455 *having to go further and further afield to find parks, because they are getting smaller*

456 *and narrower and ... but the cemeteries are static, so I believe that will be an important*
457 *function in future.*

458

459 When we asked where cemeteries were part of the green spaces in MMPs, there was
460 uncertainty, as can be seen in this quote:

461

462 ID 4: *It's my belief that when they sit drawing green areas on the map, then they also*
463 *draw cemeteries because they are completely green.*

464

465 ID 2: *Yes, that was kind of my experience as well ...*

466

467 ID 4: *They carry out surveys, you know, of how many people live 300 meters from a*
468 *green area, and it's not necessarily the case that it's actually zoned as such in the*
469 *zoning plan, but that it could be a graveyard or a cemetery; that's probably enough,*
470 *it's green enough to say that you live nearby.*

471

472 Researcher: *Yes, is that how people think, then? Do you know if that's the case?*

473

474 ID 4: *Yes, the maps I've seen, they include that, at least as far as I remember, that's*
475 *how it is. I would have included that myself; I don't really know ... they have that*
476 *quality that you are looking to register.*

477

478 Some of the cemeteries in Oslo, specifically those with a church, are located on hillsides with
479 great views of the surrounding landscape, and the quality of 'beautiful *vistas*' was addressed

480 in the interview. The following is a quotation from the interviewee from the cultural heritage
481 division.

482

483 *ID 6: ... but you also have some lovely viewpoints where you can look at the city from*
484 *above and admire the big landscape, which offers really nice experience qualities. And*
485 *I think that's a quality and a type of use that we should try to preserve and preferably*
486 *also develop further ...*

487

488 *3.4.4. Places to experience darkness*

489 Cemeteries in Norway are not lit during the hours of darkness. This means that cemeteries are
490 relatively dark places in the afternoons/evenings in winter. In the quotation below, the
491 experience of darkness was addressed as being unique in the city:

492

493 *ID 1: Another thing is that it's one of the few places in the city where it's dark. When*
494 *darkness falls, it's dark because there are no street lights there, so it's also a great*
495 *place to look at the night sky and ... there aren't many such places left.... That's a*
496 *quality as well, I think ...*

497

498 The cemetery administration/management had received several questions from the public
499 about lighting at some cemeteries, but there seemed to be a general consensus that light was
500 not desirable in the cemeteries. However, interviewees from the green space
501 planning/management division could also see the value of lighting as a means of increasing
502 perceived safety. Even though the cemetery administration/management appreciated the
503 darkness at the cemetery, they had also experienced a negative side of this:

504

505 ID 3: – *one negative thing about it being dark is that people are left in peace there;*
506 *you can also come to such places to stash stolen goods and the like, because it's a*
507 *place you can be by yourself, you know?*

508

509 3.4.5. Places for all (multifunctional use)

510 Throughout the transcript, we find examples of different types of activity ascribed to or
511 observed at the cemeteries in Oslo, such as people walking (with or without dogs), resting on
512 benches, drinking beer, eating lunch and running. There was general agreement that the
513 primary function is that of a burial site but the cemetery administration/management was
514 concerned that everyone should feel welcome in the cemeteries:

515

516 ID 2: *I think that what kind of places the city's cemeteries are depends a lot on who you*
517 *ask ... There should be room for everything; it's really important that we don't exclude*
518 *anyone if they behave within reasonable bounds.*

519

520 3.4.6. Measures to facilitate multifunctional use

521 It was evident that the bereaved were the first priority of the cemetery
522 administration/management when facilitating different kinds of use of cemeteries. However,
523 several measures that benefited the bereaved would also benefit other users, such as cutting
524 or removing vegetation to increase perceived safety and using equipment that is less noisy,
525 such as electric grass trimmers, to facilitate a peaceful atmosphere. In the material, we also
526 find examples of measures that were intended to avoid conflicts between users, such as
527 planting a new hedge, as described in this quote:

528

529 ID 1: *We've also had a lot of cycling through the cemetery at Vestre ... Well, we want*
530 *people to cycle, of course, because it's a good thing, but it has presented some*
531 *problems, you know, with collisions and the like. But we have now built a completely*
532 *new road around the edge of the cemetery, and we note that people cycle there instead,*
533 *and that's really a very positive thing, that they keep to that area, and we have planted*
534 *a hedge that provides some privacy for people standing beside a grave or who want to*
535 *visit the graves. (See Figure 7.)*

536

537 [Insert Fig. 7 approximately here]

538

539 The cemetery administration/management was open minded about multifunctional use. The
540 interviewees appreciated that people used cemeteries, as long as this did not disturb funeral
541 services or the bereaved. They even raised the idea of using the chapels for activities that
542 were more cultural, such as concerts. It was also mentioned that there had recently been a
543 performance/open-air theatre performance at one of the cemeteries.

544

545 **4. Discussion**

546 In this study, we have explored the qualities and functions that the municipalities of Oslo,
547 Stockholm and Copenhagen ascribe to public urban cemeteries. On the basis of an analysis of
548 the different sources of data, (document study of MMPs, GIPs, municipal websites and a
549 focus-group interview), the study finds that cemeteries are referred to as one type of green
550 space and partly included in the concept of green infrastructure in the Scandinavian capitals.
551 However, when it comes to ascribing qualities and functions to cemeteries in MMPs or GIPs,
552 relatively few qualities and functions are mapped.

553 In the GIP for Oslo, cemeteries are clearly described as part of the green
554 infrastructure, but cemeteries are not marked as green spaces in the MMP. Instead, they are
555 marked as ‘buildings and facilities’. It may seem surprising that cemeteries are not included
556 in the category ‘green infrastructure’ in the MMP, since, in the GIP, they are clearly
557 described as spaces that are part of the green infrastructure. As stated in the GIP for Oslo,
558 urban cemeteries are natural environments, often with mature vegetation and a variety of
559 plant species, with both ecological and recreational qualities. They are literally described as
560 quiet parks, with a secondary function as recreational spaces.

561 Cemeteries invite recreational use by having features such as benches and paths and,
562 as seen in previous studies (xx masked for blind review), cemeteries are used for a number of
563 activities. The lack of qualities ascribed to cemeteries in the MMP of Oslo is most likely due
564 to their plan status as ‘buildings and facilities’, with the statutory purpose of serving as burial
565 grounds for graves and urns. This may be the result of their having a strong ‘owner’, namely,
566 the church, which means that, in the urban planning context, cemeteries are treated as private
567 even though they are publicly accessible green spaces. It may also be a result of a planning
568 system that until recently only allowed a space to have one statutory purpose. However, a
569 recent example from a cemetery in Arendal, in Norway, shows that a cemetery can be
570 regulated as both green infrastructure and burial ground. In this example, one protects the
571 green space surrounding the burial space from being used as burial space or developed for
572 other purposes. One may argue that a change in plan status from ‘buildings and facilities’ to
573 ‘green infrastructure’ might mean less rigid protection, something that is unwanted if one
574 wants to protect the cemeteries as quiet green spaces. However, this has to be explored
575 further.

576 In the local park plans from Stockholm, some cemeteries are assigned ecological
577 qualities and social qualities, such as serenity, flower magnificence and promenade. It is

578 clearly stated in the overarching park plan – and in several of the local park plans in
579 Stockholm – that cemeteries are excluded from the plans. We therefore find it particularly
580 interesting that cemeteries are ascribed qualities in some of the local park plans. We speculate
581 that a shift in perspective might have taken place in recent years with regard to the role of
582 cemeteries, since the plans in which the three cemeteries are assigned recreational/social
583 qualities were published after 2015. However, this needs to be explored further. It could also
584 be a result of some of the park plans being produced by the municipality itself, while others
585 were made by consultant companies. Across practices, there may be different perspectives on
586 the role of the cemetery as an urban public green space. In the park plans, there is an analysis
587 of the distance from people’s homes to the nearest green space; in several of these analyses,
588 cemeteries are included as a green space.

589 Comparing the results from Oslo and Stockholm with Copenhagen, we were even
590 more puzzled by the inconsistency in planning and policy documents. In the MMP for
591 Copenhagen, cemeteries are described as one type of green space, but when we analyzed the
592 ‘Finger Plan’ from 2013, we found that they are not included in the green wedges category,
593 except for the Assistens kirkegård. Note that, in 2015, Assistens kirkegård became a legally
594 protected area. The protection meant that the space is safeguarded as burial space, with
595 recreational and cultural qualities ([http://fredningsnaevn.dk/annonceringer/arkiv/assistens-](http://fredningsnaevn.dk/annonceringer/arkiv/assistens-kirkegaard/)
596 [kirkegaard/](http://fredningsnaevn.dk/annonceringer/arkiv/assistens-kirkegaard/)). In the policy document ‘City nature in Copenhagen’ (Copenhagen municipality,
597 2015a), however, cemeteries are clearly described as green spaces, and the municipality aims
598 to facilitate recreational activities at the cemeteries for urban dwellers. They even have a
599 policy document on how to do this with a 50 year timeframe (Copenhagen municipality,
600 2015c). On their webpages about cemeteries, Copenhagen municipality assigns natural,
601 cultural and recreational qualities to the cemeteries and invites people to use them for
602 everyday activities, while respecting funeral services. In Oslo, there are rules posted at the

603 cemeteries prohibiting people from using the cemeteries for activities such as jogging,
604 cycling and sunbathing. Copenhagen municipality takes a different approach. Instead of
605 focusing on what is *not* allowed at the cemeteries, it describes the types of activity that *are*
606 allowed. Furthermore, the municipality encourages people to visit the cemeteries, even on a
607 bicycle at some of the larger cemeteries. Oslo municipality and Stockholm municipality focus
608 on funeral services on their websites rather than on cemeteries as green open spaces for
609 recreational purposes. Multifunctional use may lead to conflicts or tensions, as described in
610 the policy document ‘Five cemeteries towards 2065’ (Copenhagen municipality, 2015c). In
611 another article, we elaborate on potential conflicts related to multifunctional use (xx masked
612 for blind review). We also discuss issues concerned with design for multifunctional use of
613 cemeteries and stress the need for more knowledge of cultural differences in attitudes to
614 multifunctional use.

615 According to the document study, Scandinavian urban cemeteries seem, to a certain
616 degree, to be invisible green spaces in the urban fabric. In the MMPs, they seem to be treated
617 as private spaces. We therefore find it interesting that cemeteries are partly ascribed qualities
618 in the GIPs. Other have pointed out that there is a gap between the academic understanding of
619 green infrastructure and how it is applied in planning (di Marino & Lapintie, 2017). We raise
620 the issue of whether green infrastructure planning should in future incorporate valuation and
621 strategies for private green spaces. The inconsistency with regard to whether or not the
622 cemeteries are defined as green spaces with recreational qualities is also confirmed in the
623 focus-group interview from Oslo. It is obvious that the interviewees from green space
624 management/planning mainly regard the cemeteries as green spaces, with natural and cultural
625 qualities that are important for both people and wildlife, while the cemetery
626 administration/management focuses on the bereaved, mourners and funeral services. There is
627 a consensus across the municipal divisions in Oslo that cemeteries are, and should remain,

628 peaceful, quiet environments. As seen in the interviews, the cemetery
629 administration/management in Oslo actively approaches and prevents people from engaging
630 in disturbing activities, such as throwing Frisbees to dogs at the cemeteries. However, it also
631 facilitates those who wish to visit the cemetery for more peaceful and quiet recreational
632 activities, by placing benches, using less noisy equipment, etc. People's attitudes towards
633 multifunctional use and the recreational activities that may or may not be perceived as proper
634 behaviour may vary. That said, in another study from Oslo, we found that visitors to a
635 cemetery seemed to appreciate activities that were more passive, peaceful and quiet (referred
636 to in that article as restorative activities) while activities that were more active and noisy
637 recreational, such as jogging, could disturb the restorative experience (masked for blind
638 review).

639 One of the interviewees from green space management/planning thought that
640 cemeteries are part of the quiet zones in Oslo. However, when analyzing the quiet zone
641 category in the MMP for Oslo, not one of the cemeteries is included, although several of the
642 cemeteries are located next to a quiet zone. An explanation for this could be that quiet zones
643 are defined as recreational areas, while, as mentioned, cemeteries are marked as 'buildings
644 and facilities' in the MMP. However, when looking at Oslo municipality's definition of quiet
645 zones, we find it very surprising that cemeteries are not included: 'A peaceful area offers
646 valuable qualities in terms of recreation, outdoor activities and/or cultural activities in
647 surroundings that are sheltered or at a good distance from dominating sources of noise' (Oslo
648 municipality, 2013, p 19). This is even more remarkable since cemeteries are described as
649 *quiet parks* in the GIP. If cemeteries are not defined as quiet zones, they are likely to be
650 exposed to traffic noise as cities develop, meaning that cemeteries would lose their quality as
651 peaceful places. The GIP for Oslo municipality suggests that, in order to keep the cemeteries

652 as quiet parks, the cemeteries should be subject to noise regulations, similar to those in quiet
653 zones.

654 The interviewees talk about cemeteries as static places. This is interesting since
655 cemeteries are environments that are constantly changing due to the addition of new graves
656 and the removal of graves. Across the world, one can find examples of cemeteries that no
657 longer accept additional burials because they are literally full. Such cemeteries often suffer
658 from poor management. In a way, such cemeteries are more static than the Scandinavian
659 cemeteries, which allow for the recycling of graves. The interviewees refer to the strong legal
660 protection as something that is highly appreciated. It could also be an obstacle, however, if
661 the different municipal divisions want to cooperate, for example, on facilitating new walking
662 paths through any of the cemeteries. Kjølner (2012) also argues that cemeteries are perceived
663 as stable and unchangeable, which explains why they differ in their administration and
664 management from other green spaces. He further acknowledges the need for better
665 coordination between cemetery and green space management, something that we also
666 support.

667 A large part of the discussion during the focus-group interview concerns the absence
668 of light at the cemetery. One would expect absence of light to have a negative effect on
669 perceived safety (Fotios et al., 2015), thereby preventing people from using the cemetery.
670 Instead, however, the cemetery administration/management identifies a positive aspect of the
671 lack of light, namely, the experience of darkness. There are few places within the city in
672 which it is possible to experience darkness and clearly see the stars in the sky. In that respect,
673 the experience of darkness can be a positive quality.

674 Our main impression after analyzing the focus-group interview is that the
675 interviewees describe cemeteries as places for all people. A number of activities that could be
676 performed in the cemeteries are mentioned in the interview, which is also supported by

677 previous findings (xx masked for blind review). The interviewees seem to welcome people
678 using the cemeteries, as long as they show respect for the place and the mourners, which is
679 also in line with the national funeral regulations in Norway (Ministry of Culture, 1997) and
680 similar to the description on Copenhagen municipality's website.

681

682 **Conclusions**

683

684 The primary function of cemeteries is to provide burial space. In Scandinavia,
685 however, cemeteries are well-maintained green spaces, with natural and cultural qualities.
686 They could be recreational spaces integrated within the green infrastructure planning system.
687 Cemeteries are publicly accessible spaces, and in the Scandinavian capitals they are
688 maintained by a special division of the municipal cemetery administrations, in close
689 cooperation with the national church. Interestingly, in municipal plans, they are mainly
690 treated as private spaces, but we can see the emergence of new perspectives on the use of
691 urban cemeteries. In this study of the environmental qualities and functions ascribed to urban
692 cemeteries in municipal planning, we found that urban cemeteries are partly ascribed
693 qualities as public green urban spaces, including qualities related to the experiences of nature,
694 culture and recreation. Such findings were found particularly in the latest park plans from
695 Stockholm, on the website and policy documents from Copenhagen municipality, and in the
696 focus-group discussion among employees from different divisions in Oslo municipality. In
697 times of densification and the pressing need for recreational spaces within cities, we identify
698 the need to discuss the future of urban cemeteries and what could be done to facilitate
699 multifunctional use without losing their primary function as burial spaces. We believe the
700 policy document 'Five cemeteries towards 2065' from Copenhagen municipality, to be an
701 inspiring starting point for the discussion.

702

703

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710

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805 Figures 3 and 4. Photos of the signs for the walking path and pilgrims' path through Grefsen
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807 Figure 5. A map showing quiet zones. The cemetery is marked with a black line.

808 Figure 6. Page print from Copenhagen municipality's webpage for public cemeteries.

809 Figure 7. The walking and cycling path at Vestre cemetery.

810

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814 **Figure 1**

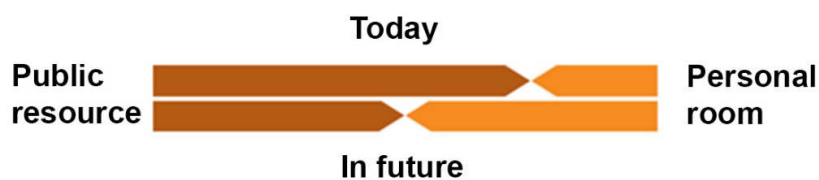


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818 **Figure 2**



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822 Figure 3



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825 Figure 4



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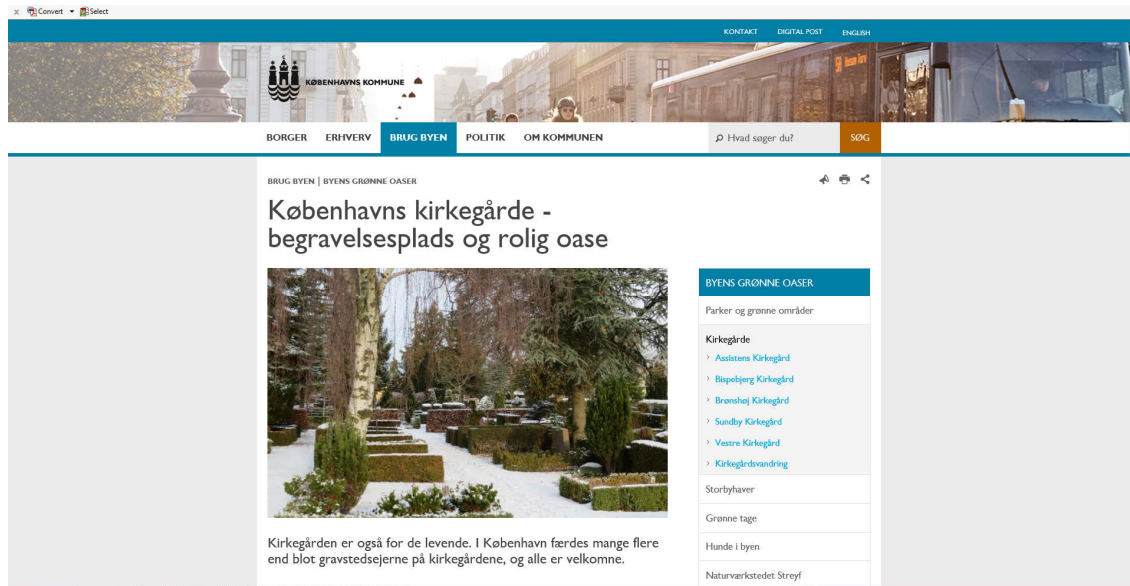
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846 Table 3. An overview of values ascribed to the cemeteries in Copenhagen, based on the
847 Finger Plan 2013.

848

849 **Tables**

850

851 **Table 1**

	Facts about the cemeteries			Qualities ascribed to the cemeteries in the map attached to the MMP			
	Origin of the cemetery	Church	Size (ha)	Nature environment	Cultural heritage value	Green infrastructure (path)	Blue structure (stream)
Norwegian cemeteries							
Alfaset gravlund	1972		25				
Bekkelaget kirkegård	1937	x	2.2		X		
Gamle Aker kirkegård	1100	x	1.3		X		
Gamlebyen gravlund	1874		4.7	C	X		Fu
Grefsen kirkegård	1904	x	18		X		
Grorud kirkegård	1904	x	3		X		
Høybråten kirkegård	1932	x	12				Fu
Nordre gravlund	1884		16		X		
Nordstrand kirkegård	1865	x	6.5		X		
Østre Aker kirkegård	1860	x	14		X		
Østre gravlund	1895		12.4				
Ris urnelund	1957	x	2.4	B	X		
Ullern kirkegård	1903	x	5.9		X		
Vår Frelsers gravlund	1808		8.5		X		
Vestre Aker kirkegård	1855	x	3.1		X		
Vestre gravlund	1902		24.7	C			
Voksen kirkegård	1992	x	23.6	B	X	Fu	Ex

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854 B= regionally important area, C= locally important area

855 Ex= existing path/stream through the cemetery. Fu= plans for a future path/stream through the
856 cemetery.
857 ¹ <https://www.oslo.kommune.no/natur-kultur-og-fritid/tur-og-friluftsliv/turkart-og-turguider/>
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	Facts about the cemeteries			Analysis of park plans at the local level		Qualities ascribed to the cemeteries in the park plans at the local level			
	Origin of the cemetery	Church	Size (ha)	Name of park plan	Origin of the park plan	Ecological qualities	Cultural heritage qualities	Recreational/social qualities	Cemeteries included in the count of accessibility of green infrastructure.
Swedish cemeteries									
Strandkyrkogården	1996		25	Skarpnäck	2007				
Galärvarvskyrkogården	1742		0.9	Östermalm Part 1	2009				
Spånga kyrkogård	1100	X	4.5	Spånga Part 1	2010				X
Bromma kyrkogård	1100	X	5	Bromma	2015				X
Råckstad begravningsplats	1960		17	Hässelby Vällingby Part 1	2015	X	X	Serenity	X
Hässelby begravningsplats	1928		1.5	Hässelby Vällingby Part 1	2015	X			X
Västberga begravningsplats	Late 1800		4.5	Alvsjö Part 1	2015	X			
Brännkyrka kyrkogård	Middle ages	X	1.5	Alvsjö Part 1	2015	X			
Skogskyrkogården	1920		102	Enskede Årsta Vantör	2016	X		Green oasis, serenity, flower magnificence, promenade, picnic/sunbathing	X
Sandsborgskyrkogården	1895		12	Enskede Årsta Vantör	2016	X		Green oasis, serenity, flower magnificence, promenade	X

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865 Table 3
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	Facts about the cemeteries			Qualities ascribed to the cemeteries in the Finger Plan 2013				
	Origin of the cemetery	Church	Size (ha)	Cycling lane (Kortbilag L)	Paths (Kortbilag M)	Green wedges (Kortbilag A)	Outdoor recreation facility (Kortbilag G)	City wedges (Kortbilag D)
Danish cemeteries								
Assistens kirkegård	1760		20	Ex				X
Bispebjerg kirkegård	1903	in proximity to the cemetery	43					
Brønshøj kirkegård	1200	X	3					
Sundby kirkegård	1872		10					
Vestre kirkegård	1870		54					

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