

Canute Garden, Tallinn

Creating a safe, inviting public space with changing lighting scenes

Canute Garden is one of the parks forming a “green belt” around Tallinn’s medieval Old Town. Pilot project in Tallinn is about creating a park of seasons: the light will change according to seasons, using different possibilities of modern lighting. We also follow a social ambition: bringing life to the park during dark times of the day. The park is a cultural heritage asset and the lighting will also be renewed to create a harmony with the lights of the nearby walls and the tower.

A thematic lighting plan was developed for all parks of Tallinn’s Bastion Zone. The thematic plan was realised in Canute Garden, which is one of the Bastion Zone’s parks. In Canute Garden, old pole lights were replaced with LED lighting, decorative smart lighting was installed to illuminate a fountain, a playground and the main seating area within the park was illuminated.

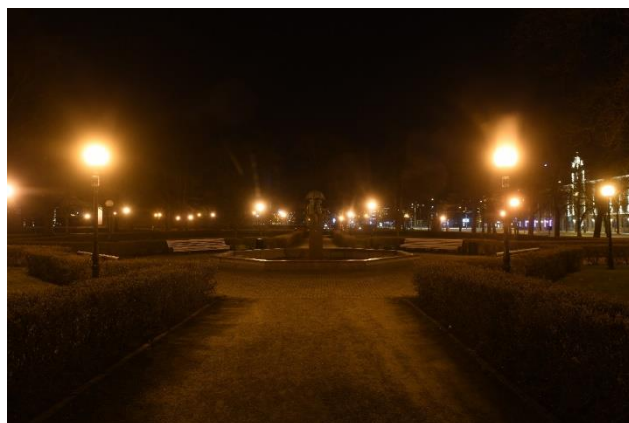
Characteristics of the pilot site area:

- The park is mostly used in summer at daytime by tourists.
- There have been problems with safety in the park.
- During cold times, nobody uses the park.
- There is a lack of activities in the park.
- No sense of place.



Old lighting situation:

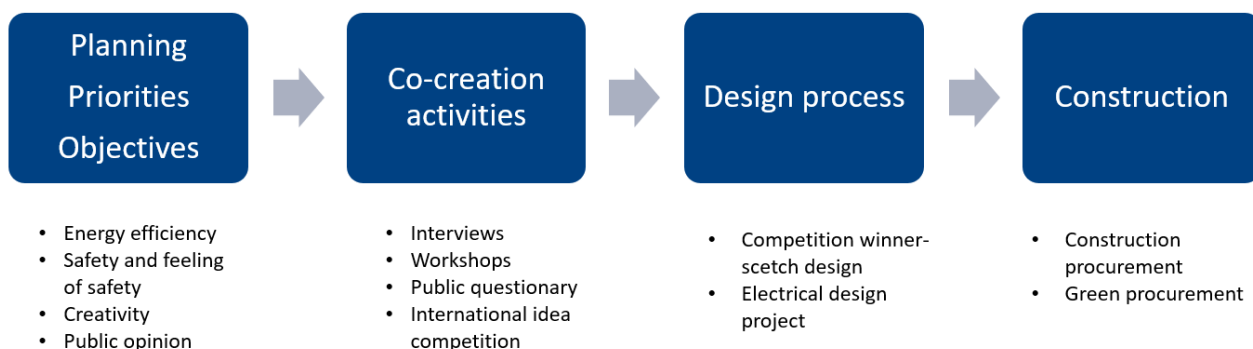
- 37 pcs of 70 W sodium globe lamps were used
- Only unexciting functional lighting.
- No decorative lighting no fountain lighting.
- The central area cannot be distinguished in the dark.



Aims of the pilot project:

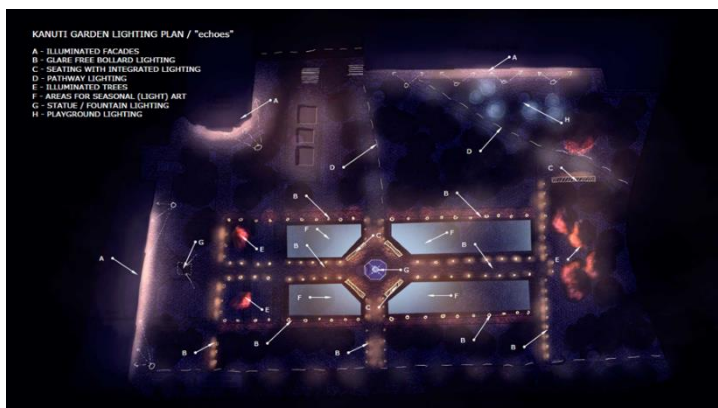
- Increasing energy efficiency by replacing old existing luminaires.
- Increasing the feeling of safety.
- Creating attractive innovative lighting in the center of the park area using RGBW technology (seating area with fountain).
- Creating a sense of place.

Process:



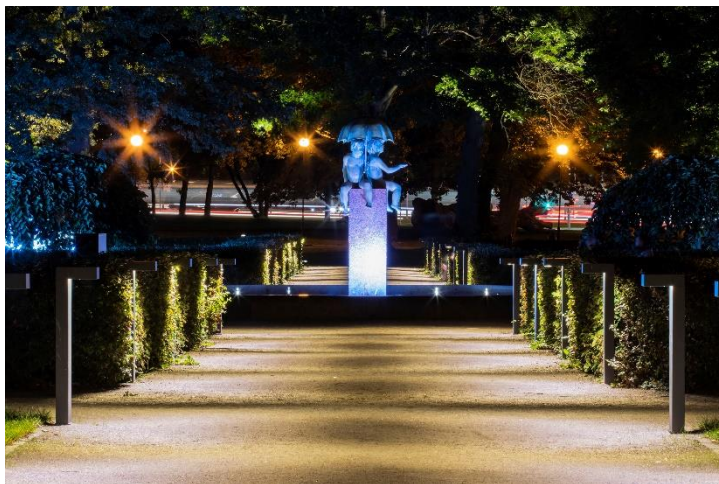
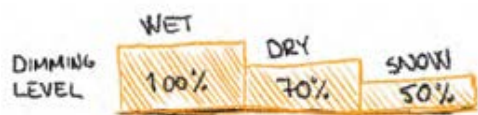
New lighting solution:

- Lighting design: VALOA Design, Finland
- Equipment: We-ef, Iguzzini, Targetti
- Illuminated facades.
- Glare free bollard lighting.
- Seating with integrated lighting.
- Pathway lighting
- Illuminated trees
- Areas for **seasonal light art**
- Statue/fountain lighting
- Playground lighting
- **Energy savings up to 47%**



Control system:

- Night-time dimming between 23:00 – 05:00 to 50 %.



LUCIA

LIGHTING THE BALTIC SEA REGION

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1 Sissejuhatus

Läänemere piirkonna linnavalgustuse projektide keskmes peab olema jätkusuutlike, turvaliste ja meeldivate linnaruumide tagamine pimedal talveajal. Mõistega "linnavalgustus" tähistatakse nii tänavavalgustust kui ka kaunistusvalgustust ja sellega seotud infrastruktuuri. Linnavalgustus moodustab olulise osa linna energiatarbimisest. 70% energiatarbimisest on koondunud linnapiirkondadesse, 60% sellest seostub linnavalgustusega. LED-valgustuslahenduste kasutuselevõtmisega on võimalik saavutada valgustite asendamise ja hämardamisfunktsiooni kasutades energiasäästu kuni 50% võrreldes olemasolevate lahendustega. LUCIA projekt aitab teadvustada säästupotentsiaali, pakkudes avalikule sektorile põhjalikku teadmist energiatarbimise olukorra kohta.

Projekti "LUCIA - Läänemere piirkonna valgustus - linnad kiirendavad säästvat ja aruka linnavalgustuse lahenduste kasutuselevõttu (Lighting the Baltic Sea Region - Cities accelerate the deployment of sustainable and smart urban lighting solutions)" üheks eesmärgiks on avaliku sektori asutustele ajakohaste teadmiste andmine energiatarbimise linnavalgustuse tehnilisest tasemest, keskendudes nii tehnoloogilistele ja majanduslikele aspektidele, üldsuse heakskiidule kui ka linnaplaneerimisele ja hankeprotseduuridele.

Projekti eesmärk: Elujõuliste, turvaliste ja meeldivate linnaruumide tagamiseks peab linnavalgustus olema Läänemere piirkonna linnaprojektide keskmes. Mõistega "linnavalgustus" tähistatakse nii tänavavalgustust kui ka muud linna kujundusvalgustust ja valgustusega seotud infrastruktuuri. Linnavalgustus on oma märkimisväärse rolli tõttu samuti oluline osa linna energiatarbimisest. 70% üldisest primaarenergiast tarbitakse linnapiirkondades, 60% sellest seostub linnavalgustusega. Valdkonnas on suuri, enamalt kasutamata säästuvõimalusi. Kaasaegse LED-valgustusega on energiasäästu võimalus kuni 50% võrreldes tavaliste süsteemidega. LUCIA projekt aitab kasutada sellist säästupotentsiaali, pakkudes avalikule sektorile põhjalikku ja ajakohast teadmist energiatarbimise olukorra kohta. Keskkonna, tehnoloogia, majanduse ja sotsiaalse heakskiidu lähenemisviisid peavad olema integreeritud linnaplaneerimise konteksti. Selleks pakub projekt ajakohast teavet linnaplaneerimise ja valdkonna hangete kohta, arutlusteemasid sihtrühmadele, sh riigiasutustele. LUCIA projekt aitab kaasa innovaatiliste, energiatarbimise valgustuslahenduste kasutamisele viies pilootpunktis (Hamburgis, Tallinnas, Porvoos, Jurmalas ja DOLL-i laboris (Albertslund, Taani)), kus paigaldatakse energiasäästlikud valgustuslahendused.

Projekti üheks alaeesmärgiks on teadmiste ja projekti tulemuste levitamine linnaplaneerijatele, energeetika ja kommunaalvaldkonna juhtidele ning ka Läänemere piirkonna riikide otsustajatele. LUCIA projekti tulemusi levitatakse laialdaselt ja sellest tulenevalt rakendatakse energiatarbimise valgustuslahendusi ka praktikas eesmärgiga muuta planeerimisprotseduure, et saavutada paremat linnateadlikkust valgustuslahendustes. Oodatava tulemusena tõuseb otsustajate teadlikkus energiainvesteeringutest. LUCIA projekt aitab märgatavalt kaasa piirkonna kliimamuutuste leevendamisele.

Projekt sisaldab järgmiseid tööpakette:

- Projekti juhtimine ja haldamine
- Energiatarbimise linnade valgustamise lahenduste igakülgne analüüs

- Planeerimine ja hankemenetlus
- Pilootalad
- Tulemuste kasutamine ja nähtavus

Projekti partnerid: Projekti partneriteks on lisaks Tallinna Keskkonna- ja Kommunaalametile erinevad kohaliku omavalitsuse asutused, linnavalgustusega seotud ettevõtted ja uurimisasutused ning erinevaid huvigruppe ühendavad asutused:

- Hamburgi Vaba Hansalinn;
- Tallinna Tehnikaülikool;
- Posintra OY (Soome);
- Porvoo Linnavalitsus;
- SIA „Jurmala gaisma“ (Läti);
- Rīgas Plānošanas regions (Läti);
- Gate 21 (Taani);
- LUCI – Lighting Urban Community International (Prantsusmaa).

1 Projekti Tallinna pilootala tegevused

Tallinna linn osaleb projekti LUCIA erinevates töopakettides, mille raames kavandatakse tegevused on järgmised:

1. Tallinna vanalinna Bastioni vööndi parkide valgustuse teemaplaneeringu koostamine, mis käsitleb järgnevaid parke: Kanuti aed, Hirvepark, Lindamäe park, Toompark, Tornide väljak, Margareeta aed;
2. Kanuti pargi valgustuse projekti koostamine;
3. Pilootala (Kanuti aed) valgustuse rekonstrueerimine,

Bastioniaalvööndi parkide arenemine sai alguse 19.sajandil ja tänapäeval kuulub sinna 11 parki, millest suurim on Toompark (9,2ha). Pargivalgustuse teemaplaneering käsitleb Bastionite vööndi parkidest kuute parki- Hirveparki, Lindamäe parki, Toomparki, Tornide väljakut, Margareeta aeda ja Kanuti aeda. Saja aasta jooksul on toimunud suuri muudatusi nii parkide kasutuses kui ka pargivalgustuse suundades.

Hetkel on parkides valgustid vananenud nii väliselt kui tehnoloogiliselt. Korraka kasutatakse nii elavhõbedalampe kui ka naatriumlampe, osad pargid on oranžika tooniga, teised jällegi sinakad. Selline kontrast mõjub häirivalt ja kumbki tonaalsus, arvestades ka kehva värviedastust, ei kaunista parke, ega loo meeldivat õhkkonda. Valgusteid kasutatakse ainult funktsionaalsel otstarbel, valgustamiseks käiguteid- purskkaevud, trepid, väljapääsud, skulptuurid, purskkaevud, parkide kesksed alad on valgustamata. Ootamatud pimedad tsoonid on segamini valgusreostust

tekitavate liig-võimsate lampidega. Samuti on vana valgustustehnika väga energiakulukas (kuues pargis kokku 36500W). Valgustuse kirju olukord ei tule kuidagi kasuks uuenenud linnamüüri ja linnamüüri tornide valgustusele.

Antud projekt keskendub pigem fragmentide valgustamisele ja müüri struktuuri ruumilisuse väljatoomisele, seejuures austades elanikke tasase sosistava valgusega. Ent parkide praegune valgustus karjub paraku sellest kaunist sosinast üle.

Tänapäeva pargivalgustuses ei ole oluline ainult funktsionaalsus- inimese suunamine, teenäitamine ning turvalisuse tagamine, vaid ka looduse ja keskkonna väärtustamine (ka kaitsmine), õhustiku loomine ning linnakunsti eksponeerimine.

Valgustus toetab koha funktsiooni (k.a tegevusi), kuid suudab olla ka sihtpunkt ja tegevus iseenesest, kutsudes inimesi õhtusel ajal endaga kohtuma. Selleks, et kasutada valgustust kohaloo tööriistana, vajame tugevat, läbimõeldud teemaplaneeringut. Valgustus kujundab linnaruumi kasutamist pimedal ajal- kuhu me läheme, millal ja millist liikumisteed me kasutame. Projekti eesmärk on luua parkidesse turvaline, meeldiv, energiasäästlik ja innovaatiline valgustuslahendus, milles kasutatavad disainivõtted peavad meie kliimas vastu aastakümneid.

1.1 Kanuti aed

Praeguse Kanuti aia pargi kohal oli kuni 19. sajandini Tallinna kaitserajatisena veega täidetud vallikraav. 1866. aastal anti praeguse pargi territoorium Tallinna linna poolt rendile Kanuti gildile, kes pidi rajama sinna avaliku suveaia ning sellest ajast kannab haljasala Kanuti aia nime.

19. sajandi lõpul peatusid haljasalal mitmed Tallinna külastavad rändtsirkused ja hiljem, kahe Maailmasõja vahelisel perioodil, tegutses lõbustuspark, kus oli köisraudtee, karussell ja vaateratas ning jalgrattalaenuus. Kanuti aia kõrval asus alates 1913. aastast kino "Grand Marina" (hiljem "Ars"), mis oli asutamise ajal suurim kino kogu Venemaa keisririigis.



Pilt 1 – Kanuti aia purskaev. Foto autor: Eva Tallo/ Tallinna Keskkonna- ja Kommunaalamet.

Teise maailmasõja käigus 1944. aastal hävis Grand Marina kinohoone ja selle asemel ehitati Tallinna Laevastiku ohvitseride maja, mis valmis 1953. aastal. Koos Ohvitseride majaga viidi läbi ka kõrvalasuva pargi ümberkujundamine neoklassitsistlikus stiilis.

Pärast Eesti iseseisvuse taastamist muudeti Ohvitseride maja Vene Kultuurikeskuseks ja park kujundati taas ümber. 2002. aastal paigaldati parki Fjodor Dostojevski mälestussammas (kujur Valeri Jevdokimov).



Pilt 2 – Fjodor Dostojevski mälestussammas (autor: Valeri Jevdokimov) Kanuti aia pargis. Foto autor: Eva Tallo.

2008. aastal rajati parki purskkaev Mare Mikofi skulptuuriga „Poisid vihmavarjuga“



Pilt 3 – Purskkaevu skulptuur Kanuti aia pargis „Poisid vihmavarjuga“ (autor: Mare Mikof). Foto autor: Tony Bowden.

Kanuti aias toimuvad talvel erinevad valgusinstallatsioonidega seotud üritused, näiteks 2019.aastal “Heade Soovide Park”, kus süüdati tuhanded LED-tuled, millede valguses said linlased imetleda valgusinstallatsiooni ja üksteisele ilusaid uusaasta soove edastada. Samuti on seal korraldanud oma valgusinstallatsioonide näituseid Eesti Kunstiakadeemia tudengid.



Pilt 4 – Heade soovide park Kanuti aias. Foto autor: Postimees TV.

Kanuti aias on olnud probleeme noortekampadega ja asotsiaalsete inimeste tegevusega. Tegemist on pigem alakasutatud pargiga, millele loodame projekti tegevustega uut elu tuua.



Pilt 5— Noortejõugud Kanuti aias 28.08.2018. Foto autor: Joakim Klementi.

1.2 Bastionite vööndi parkide valgustuse hetkeolukord

Enne uue valguskeskkonna loomise alustamist, on vaja tutvuda vana olukorraga ja selle puudustega. Bastionaalvööndi parkide valgustusalased suurimad puudused on:

1. Elavhõbedalampide ja naatriumlampide korraga kasutamine, osad pargid on oranzika tooniga, teised jällegi sinakad. Selline kontrast mõjub häirivalt ja kumbki tonaalsus, arvestades ka kehva värviedastust, ei kaunista parke, ega loo meeldivat õhkkonda.
2. Palju on kasutusel kera-tüüpi valgusteid, mille valgusviljakus on väga halb, valgusreostuse seisukohalt on see halvim lahendus.
3. Valgusteid kasutatakse ainult funktsionaalsuse otstarbel, valgustamaks käiguteid.
4. Parkides on ootamatud pimedad tsoonid segamini valgusreostust tekitavate liig-võimsate lampidega.
5. Pimedad on skulptuurid, monumendid, purskkaevud, trepid, väljapääsud.
6. Parkide keskseid alasid ei ole võimalik pimedal ajal eristada.
7. Mänguväljakutele ei ole mõeldud valgustamiseks erilahendusi.

8. Teede valgustamisel ei ole läbi mõeldud inimeste tegelikke liikumis-suundi.
9. Pimedal ajal ei toimu parkides organiseeritud tegevusi.
10. Vana valgustehnika on väga energiakulukas, kuues pargis on hetkel kasutusel kokku 36 385W.
11. Valgustuse kirju olukord ei tule kuidagi kasuks kohe valmivale linnamüüri ja linnamüüri tornide valgustuse projektile. Antud projekt keskendub pigem fragmentide valgustamisele ja müüri struktuuri ruumilisuse väljatoomisele, seejuures austades elanikke tasase so-sistava valgusega. Ent parkide praegune valgustus karjub paraku sellest kaunist sosinast üle.

1.3 Projekti eesmärgid

Projekti teostamise eesmärgid oleks tulenevalt hetkeprobleemidest ja projektile seatud prioriteetidest järgmised:

1. Tõsta turvatunnet ja pargi kasutatavust pimedal ajal
2. Asendada olemasolev valgustus uue, kvaliteetse, innovaatilise ja energiatõhusa valgustusega
3. Pimestusvaba valgustus, minimaalne valgusreostus, tark juhtimissüsteem, selged suunad ja vaated.
4. Luua atraktiivne, kutsuv avalik ruum ja tugevdada koha identiteeti.
5. Inimkeskne, loodussõbralik, tähistaevast kaitsev, elanikega koos loodud valgustuslahendus.

Projekti käigus seadsime olulisemad prioriteedid, mille järgi kaardistasime eesmärgid.

Tabel 1 – Projekti eesmärgid.

Prioriteetid	Hetkeolukord	Eesmärk	Tegevused
Energiatõhusus	36 500W 6-s pargis	Vähendada energiatarbimist 40-50%	LED tehnoloogia, juhitav sensoritega
Turvalisus ja turvatunne	Lapsi ei lubata õhtuti parkidesse mängima, vandaalitsemine	Rohkem tegevusi ja inimesi parkidesse pimedal ajal. Kanuti aia maine parandamine.	Parem valgustus tegevus-tsoonides, rohkem tegevusi, rohkem inimesi. Uus koht identiteet loodud valguse abil ja võimendatud meedia poolt.
Loomingulisus	Ainult funktsionaalne valgustus	Loominguline, kutsuv, innovatiivne valgustusdisain. New way of thinking about lighting techniques, technologies.	Kontseptsioon- mida valgustada, kuidas valgustada- rahvusvaheline ideekonkurss.
Avalik arvamus	Kanuti aia maine on halb tulenevalt noortekampade kogunemistest ja vandaalitisest	Kohalooma valguse abil hubane, turvaline kohtumise- ja ajaveetmispaik	Kohalooma valguse abil.

2 Projekti kaasamistegevused

Kaasamisel on väga oluline teha vahet, kas kavatseme kaasata inimesi selleks, et neid

- Informeerida (pressiteade, infotund vms)
- jagada teadmisi antud teemal (konsulteerimine, seminar vms)
- küsida arvamust (AvaLinn vms)
- küsida arvamust ja sellega arvestada (AvaLinn, juhitud seminar-töötuba vms)

Laiemalt võttes on see küsimus, kas me disainime keskkonda elanikele, elanikega või ongi kontseptsioon kaasatavate inimeste poolt tehtud (eelduseks tugeva idee olemasolu ja töötoa läbivi-

iijate professionaalsed teadmised). Pole kahtlust, et keskkonna disainimisel peaksime küsima arvamust eelkõige selle keskkonna tarbijalt, lõppkasutajalt. Keeruliste teemade puhul, nagu seda on ka valgustus, on kindlasti vaja enne ideede küsimist jagada valgustusteooria alaseid teadmisi ja tuua palju näitlikke fotosid. Kaasamine ei taga automaatselt sotsiaalset heakskiitu tulemustele, kuna ettekujutus tulemusest ei pruugi vastata reaalsele tulemusele. Samuti peame arvestama raamidega, mille sisse idee peab mahtuma- eelarve, teostusaeg, valgustehnilised normid, tehnika areng, muinsuskaitse jne. Kaasaja ülesanne on pakutavaid ideid kindlates raamidest hoida või siis paljude pakutud ideede seast välja valida need vähesed, mis sinna mahuvad. Oht on ka see, et teel ideest teostuseni võivad raamid veelgi kitseneda. Kui ruumi lennukatele ideedele on liiga vähe, peab kaasamisprotsessi ülesehituse ja küsimused hoolega läbi mõtlema.

Valgustusalaadset tulemust ei peaks olema ainult kirjeldatavad, vaid toetatud visuaalidega ning alati realsuses testitud. Selle saavutamiseks on plaanis teha ka gerilja-valgustuse tüüpi töötuba, kus tulemusi on võimalik kohapeal valgustitega testida ja nende mõju näha ning hinnata.

Kaasamistegevuste plaan vastavalt sihtrühmadele on järgmine:

Kogukonnad	Linna töötajad	Elanikud	Tudengid	Valgustusdisainerid
				
Intervjuu	Seminar-töötuba	Avalik ideekorje	Gerilja-valgustus	Ideekonkurss

Kaasamistegevuste plaan. Autor: Eva Tallo.

2.1 Intervjuu Vanalinna Seltsiga

Kaasamine ei tähenda, et kõiki peaks kaasama kõikjale. Üldjuhul ei soovi inimesed osaleda asjades, mis neid ei puuduta. Küll aga on oluline, et kaasa räägiks need, keda tehtav otsus mõjutab.

Eriti on valgustus teema, milles inimesed väga kaasa rääkima ei kipu, kuna puuduvad vastavad teadmised. Kohtumisel Vanalinna Seltsiga oli nende poolne esimene reaktsioon, et valgustusest nad küll midagi ei tea ja ei oska kaasa rääkida. Samas toodi välja parkide turvalisuse probleem, lapsi ei juleta parkidesse pimedal ajal mängima lasta. Siinkohal saamegi esimese probleemi püstitada ja seda lahendada asuda. Bastioni parkide valgustuse teemaplaneeringu kaasamisprotsessis tuleb alustada probleemide tuvastamisest ja eesmärkide seadmisest. Kaasamisprotsess võib ka sellega ainult piirduda- tuvastame elanike probleemid seoses parkide kasutamisega pimedal ajal ja nende probleemide lahendamise võtamegi endale eesmärgiks.

Toon ära ka Vanalinna Seltsi arvamuse antud teemal:

“Wikipedia: Park (varasema eestikeelse nimetusega puiestik[viide?]) on mitmekesise taimestikuga, sealhulgas puude või põõsastega haljasala. Park võib olla täies ulatuses tehiskooslus (mõned linna-pargid) või natuke kohendatud looduslik kooslus (pärandkooslus): parkmets, jahipark või loodus-park. Mõnes pargis, näiteks rahvusparkides, püütakse inimõju võimalikult palju vältida. Park võib olla puhkekoht või asula kujunduselement. Park on ühtlasi maastikuarhitektuuriline objekt.

Eeltoodu alusel: park on eelkõige haljasala, antud juhul pealegi muinsuskaitseala ja alles seejärel võimalik koht valgustus- ja muudeks disainiekperimentideks. Viimastega tuleks olla ettevaatlik ja mõõdukas, et ei „tapaks“ ära haljasala nagu see juhtus Tammsaare pargiga.

Vähemalt Toompargi ja Tornide väljaku pargi võiks valgustuse osas jätta haljasala teenivaks, mitte selle üle prevaleerivaks. Eksperimenteerida võiks pigem väiksemate parkidega.

Vähemalt osadesse parkidesse pole vaja inimesi juurde meelitada. Võiks jääda mõned pargid, kus on rahulikum. Kõik ei pea vilkuma ja särsuma.

Valgustuse osas on oluline, et käigurajad oleks valgustatud.

Fassaadivalgustusega ei ole vaja üle pakkuda. Seda tuleb teha valitud kohtades ja mõõdukalt.

Pargid jäägu eelkõige haljasalaks!”

Lisatud arvamus ei käsitle pargivalgustuse kõiki nüansse, aga kõlama jääb mõte, et kuna tegemist on nende koduga, siis võiks kodus olla rahulik ja turvaline õhustik.

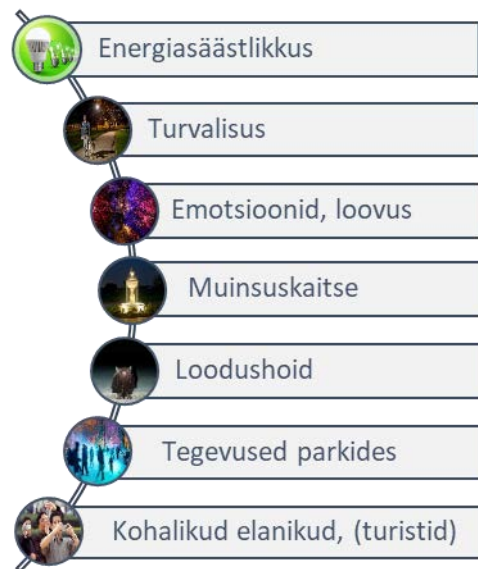
2.2 Seminar-töötuba linna töötajatega

17.aprillil 2019 toimunud kaasamisalane seminar-töötuba linnaametite töötajatega oli üles ehitatud järgnevalt:

1. LUCIA projekti tutvustus
2. Teadmiste jagamine
3. Arutlus
4. Töötoa praktiline osa

Oluline teema oli pargivalgustusega seotud erinevate aspektide väljatoomine. Linna erinevad ametid seisavad erinevate teemade eest; Keskkonna- ja Kommunaalamet energiasäästlikkuse, haljastuse ja loodushoiu eest, Muinsuskaitse osakond kõige ajas väärtusliku säilimise eest, Linnaplaneerimise Amet elanikega seotud teemade eest s.h. loova keskkonna kujundamise eest jne. Selleks, et

teemaplaneering saaks seista kõikide erinevate väärtuste eest, on vajalik osapoolte informeerimine, valgustuse alal harimine ja erinevate seisukohtade kaardistamine.



Pargivalgustuse erinevad aspektid. Autor:Eva Tallo.

Hea valgustuse märksõnadeks said:

- õige heledus
- hea valgusvärvsus
- turvatunde tekkimine
- huvitav
- üllatav valgustus
- õiged rõhud, tasakaalud, aktsendid
- energiasäästlik
- mitte liiga kontrastne
- funktsionaalne, ent ka detaile esile toov
- Ja mis kõige olulisem- Õige valgusti, õiges kohas, õigesti suunatud

Halva valgustuse märksõnadeks jäid

- Pimestus
- liigne kontrastsus

- valgusreostus
- tugevad varjud
- pimedad nurgad
- valgusti sinine toon

Rääkisime ka valgustitest ja siinkohal toon välja **hea valgusti** olulised näitajad: energiasäästlikkus; lambi värviedastus CRI; ei pimesta; valgusallikas on peidetud; suunatud valgusvoog; töötav!

Pooled pargivalgustid on hetkel kera-tüüpi valgustid, millel läheb kaotsi ca 70% valgusvoost. Oldi arvamusel, et tuleviks püüaks selliseid valgusteid vältida energiasäästlikkuse ja tähistaeva kaitsmise eesmärgil.

Samuti on oluline märkida, et suunatud valgustus tagab suurema turvatunde ja meeldivama valguskeskkonna. Keravalgusteid võiks kasutada ainult erandjuhtudel klassikalistes parkides (pigem dekoratiivsetena), asendades seejuures valgusallikad vähevõimsate LED-idega ning lisades valgustusele uusi kihte. Näiteks valgustatud pinkide alused, aktsendid, osad olulisemad käiguteed valgustada suunatud pargivalgustitega jne

Rääkides valgustuse teemaplaneeringust on olulisteks jaotusteks: Mida, millega ja kuidas valgustada. Töötoas proovisime lahendada eelkõige esimest punkti- **MIDA VALGUSTADA?** Oluline on valida õiged heleduse tasemed, et seeläbi kohtade hierarhia paika panna, inimesi suunata ja maastikul vaateid rõhutada/maalida. On teada-tuntud tõde, et inimesed liiguvad valguse suunas- seega valgustatud objektide hierarhia on vaja paika panna nii, et see ei eksitaks.

Pargivalgustus võib olla:

- Tegevuspõhine (mänguväljakud, kohvikute väliala, kogunemisplatsid)
- Objektipõhine (skulptuurid, puud, müür, trepid, paviljonid, purskkaevud)
- Vaatepõhine (pööratakse tähelepanu kaunite kaug-öövaadete tekkimisele)
- Funktsionaalne (valgustatud jalgteed punktist A-B ja valgustatud sissepääsud)

Loomulikult võib nende põhimõtete vahel valida, ent oluline on mõista, et ei pea valgustama kõike.

Eriti oluline on parkide puhul nende kasutatavus, mis annab parkidele väärtuse. Tänapäeval ei ole enam nii oluline parkide ruumiplaan ja geomeetria, vaid pigem tegevuste paljusid (rahulikud ja ka aktiivsed tegevused), huvitav keskkond, mis on mõeldud eri vanuses inimestele. Käesolev valgustuse teemaplaneering ei saa muuta parkide ruumiplaani, omades ainult valgustuse tööriista, kuid ka hetkeolukorda austades ja säilitades on võimalik selle üsnagi võimsa tööriistaga palju probleeme lahendada.

Kuid millised on tegevused, mis toovad parkidesse inimesi pimedal ajal? Miks mitte sportimine, mänguväljakud, seltsielu (s.h. kohvikud), jalutamine, dūnaamilised valgusetendused, valgusfesti-valid. Arutati, kas vārviline valgustus ja valgusinstallatsioonid vōiksid jāāda pigem valgusfestivalide pārusmaaks vōi vōiks neid ka muul ajal parkidesse lubada. Siinkohal jōuti seisukohale, et vārviline valgus vōiks olla kasutusel nāiteks lābivalt parkide mänguvēljakute valgustamisel, rōhutades seelābi sõna mēngulisus ja teha nad ka paremini nāhtavaks, kutsuvaks. Vārviline valguslahendus peaks olema aga eriti hāsti lābimōeldud turvalisuse seisukohalt. Tegevuskohad peaks jāāma valgustatuks hea valge valgusega, et vāltida kukkumisi ja muid õnnetusi.

Valgustuse juhtimine on tēnapāeval teema, mis tēnavavalgustus on vāga levinud, aga **millist valgus-tuse juhtimist vajaks pargivalgustus?**

Oldi nōus, et valgustuse hāmdamine ōtundidel vōiks olla kasutuses kōikides parkides, andmaks nii loodusele kui ka elanikele vōimaluse ōōrahuks, ent sensoritega sūsteemi puhul leiti, et positiivne efekt pole piisavalt tōestatud ja pigem tunneb inimene end ebaturvaliselt kui tee on heledalt val-gustatud, aga ūmbrus on liiga hāmar.

Pimeduse kaitsmine- Mujal linnades on parke, mis on ōōsel suletud ja pimedad, kuna meil on tegu parkidega, mida lābivad kasutatavad jalgteed, siis pāris pimedaks me neid jātta ei saaks. Samas, selleks, et hoida loodust ja kaitsta tēhistaevast, on oluline valida hea tasakaal valgustamise ja mit-tevalgustamise vahel.

Valgus ei pea olema ainult funktsionaalne, ūhtlane, igav, mōeldud keskkonnas orienteerumiseks- valgus on emotsionaalne side keskkonna tunnetamiseks.

Pimedusega on otseselt seotud jārgnev teema, milleks on **turvalisus**. Uuringud on tōestanud, et valgustuse parandamisega kasvab elanike turvatunne, aga see ei mōjuta oluliselt kuritegude arvu. Seega, parem valgustus ei suurenda turvalisust, kuid suureneb inimeste turvatunne. Turvatunne suureneb, kui on valgustatud sissepāāsud, on hea nāhtavus ja ūlevaade, nāhtav silmapiir, kui val-gustus annab selged suunad ja valikud. Turvatunnet vāhendavad aga jārgmised valgustusega seotud tegurid, mis enamasti kattuvad halva valgustuse mārksōnadega: valgusti pimestab, liiga suured kon-trastid, pimedad nurgad, valgus ei jōua maapinnale, tihe taimestik, halb hooldus (valgustid ei pōle, valgusallikas vilgub, on sinakas vms).

Pilootalal Kanuti aias katsetatakse uudsete valgustuslahendustega, et luua **aastaaegade park**. Pargi atmosfäär muutub erinevatel aastaaegadel kasutades erinevaid valgustus-stseene (valguspildid, mis eri aastaaegadele annavad draama ja maalilisuse).

Pūsivalgustuse abil saab erinevaid aastaaegu esile tōsta ja paremini valgustada. Loodus muutub eri aastaaegadel ja ka valgustuses vōiks luua erinevaid stseene suve, sūgise ja talve tarvis. Suvel, kui puud on lehes ja loodus on roheline, on tehisvalgustuse kasutamise aeg kōige lūhem, kuid tavaliselt keskendub valgustusdisain just suvele (haljastuse, puude vāljavalgustamine). Sūgisel kui puudel pole enam lehti ja maa on porine, on pimedat aega rohkem ja ka linnavalgustuses vōiks valgus-stseenid lūlitada uuele režiimile. Tāiesti erinevaks muutub keskkond ka talvel, kus valge lumi katab

maad. Dekoratiivvalgustuses võiks aina enam just rohealadel kasutada juhtimissüsteemi koos hämardamise võimalusega, et luua looduse erinevate ilmete tarvis ka erinevad stseenid. Selleks ei ole tegelikult palju vaja, piisaks ka dünaamilise valge võimaluste kasutamisest, kus saab valgusteid programmeerida väga soojust valgest kuni külma valguseni.

Töötuba praktiline osa:

Praktilises osas kasutasime parkide skeeme ja kaarte, et kõigepealt paika panna parkide tsoonid ja tegevused- käiguteed, kesksed alad, mänguväljakud, skulptuurid. Seejärel pakuti välja kontseptsioon, kuidas ja mida valgustuse abil eriliselt välja tuua. Soovitasime valgustada välja parkide kesksed alad (purskkaevu või skulptuuriga platsid, mida ümbritsevad istumiskohad), ühtse kontseptsiooniga sissepääsude trepid, valgustada värviliselt mänguväljakud ning erilahendust vajaksid ka mõned tähtsamad skulptuurid. Ei soovitatud valgustada kõiki väikseid skulptuure. Linnaplaneerijate sooviks oli, et paraneks parkide omavaheline ligipääsetavus. Samuti märgiti plaanidele ära olulisemad kõnniteede suunad, mida inimesed põhiliselt kasutavad parkide läbimisel.



Pilt 6- Töötuba. Foto:Eva Tallo

2.3 Avalik ideekorje

LUCIA projekti ideekorje eesmärk oli koguda linnaelanike arvamused ja ettepanekud Bastionivööndi parkide praegusest ja oodatavast valgustusest, aga ka parkide kasutatavusest, liikumissuundadest ja turvalisusest. Kogusime elanike ideid järgnevate parkide kohta: Kanuti aed, Margareeta aed,

Tornide väljak, Toompark, Hirvepark ja Lindamäe park. Antud ideekorje on esimene valgustusalane kaasamisprojekt Tallinnas.

Ideekorje oli esimene samm protsessis, mille eesmärgiks on saada parkidesse maitsekas, otstarbekas ja inimestele meeldiv valgustus. Linnaelanikelt kokku kogutud ettepanekuid ja arvamusi kasutati lähteseisukohtadena valgustusspetsialistidele suunatud rahvusvahelisel ideekonkursil, kus selgus bastionivööndi parkide parim üldine valgustuslahenduse kontseptsioon.

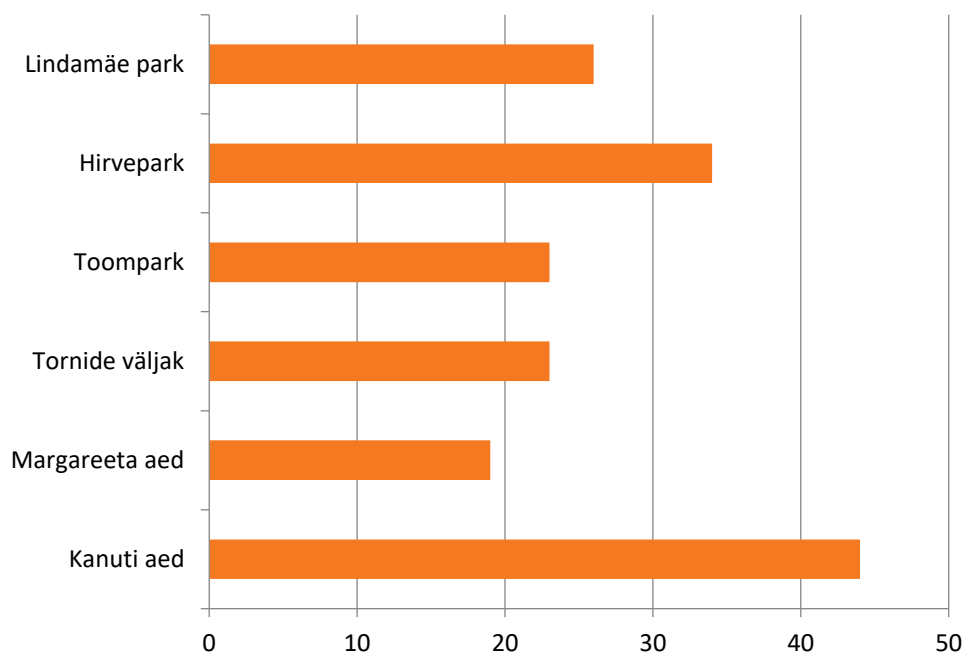
Ideekorje tulemusena anti elanike poolt 569 kaardiettepanekut ja hulganisti üldisemaid mõtteid. Ideekorjest võtsid enamasti osa elanikud vanuses 30-49 a ja mehi ning naisi osales küsimustikus võrdselt.

Uurisime, millisteks tegevusteks elanikud kõige rohkem parke kasutavad ja kui tihti nad seda teevad. Enamasti kasutatakse parke päevasel ajal jalutamiseks ja läbimiseks, vähemal määral ka sõpradega kohtumiseks, puhkamiseks ja sportimiseks sagedusega kord kuus kuni kord nädala.

Pimedal ajal liigutakse enamasti läbi pargi vajalikku sihtpunkti, aga ka jalutatakse ning kohtutakse sõpradega, tulemustest ilmselg, et pimedal ajal kasutatakse parke oluliselt vähem kui päevasel, kord kuus või kõigest kord paar aasta jooksul

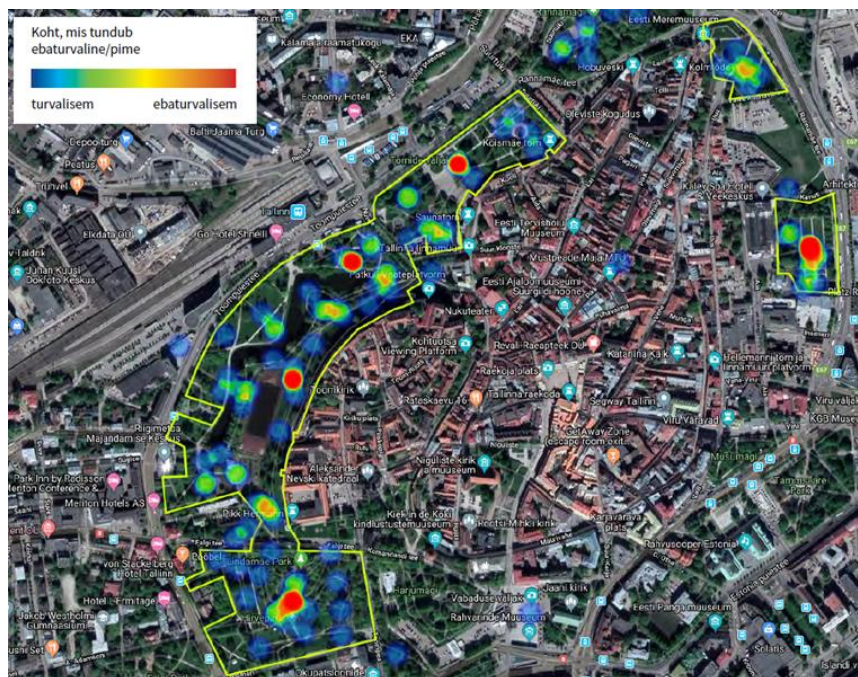
Kõige ebaturvalisemateks parkideks pimedal ajal peeti Kanuti aeda (44% vastanutest) ja seejärel Hirveparki (34% vastanutest) ning Lindamäe parki (26% vastanutest). Enamik arvas, et pargid peaksid kindlasti olema pimedal ajal valgustatud

Palun märki pargid, kus ei ole pimedal ajal turvaline. Võid valida mitu vastust.



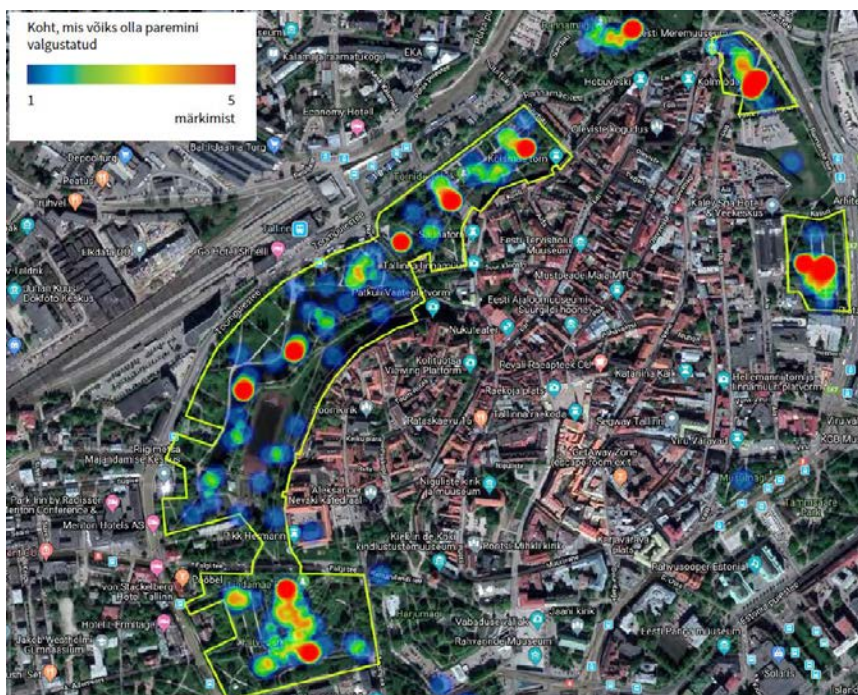
Graafik 1 – Ideekorje raames kogutud tagasiside linna parkide turvalisuse kohta.

Kaardivaates on näha, et parkides on kohad, mis elanikele selgelt kõige ebaturvalisemad tunduvad:



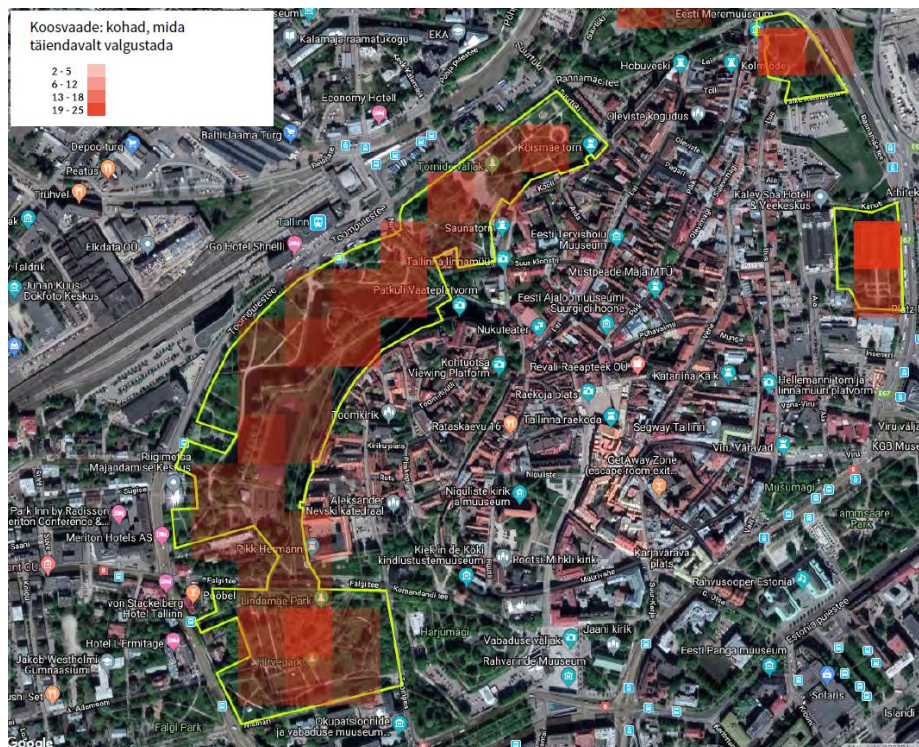
Pilt 7- Ideekorje kaardivaade. Maptionnaire.com

Samuti on näha kattuvusi ebaturvaliste kohtade ja kohaettepanekute vahel, mis võiks olla paremini valgustatud



Pilt 8- Ideekorje kaardivaade. Maptionnaire.com

Parke peeti üldiselt halvasti valgustatuks, mida näitab järgmine kaart, kus kajastuvad ettepanekud täiendava valgustuse osas:



Pilt 9- Ideekorje kaardivaade. Maptionnaire.com

Arvati, et pargid leiaksid õhtuti rohkem kasutust, kui parkides oleks rohkem valgusinstallatsioone, linnaruumi kunsti, kohvikuid ja toimuks enam kultuuriüritusi. Samuti kutsuks parke enam kasutama talispordivõimalused, spordiüritused ja avalikud trennid, eraldi mainiti mitmeid kordi parke läbivaid jooksuradasid. Mainiti ka heli- ja valgusetendusi ning interaktiivseid valgusmänge. Tehti ka ettepanekuid kasutada rahvamuusikuid, audiogiidi vanalinna kindlustusvööndist. Ainult 5% vastanuist arvas, et nemad ei näe vajadust parke pimedal ajal külastada

Spordi- ja mänguväljakuid kasutaks 69% vastanuist rohkem, kui need oleksid paremini, atraktiivsemalt valgustatud, eelistati erilahendusi (s.h ka värvilist valgustust.) Märgiti, et mänguväljakute valgustus peaks olema lapsesõbralik, turvaline, mitte liiga ere ja häiriv ning tehti ka ettepanek kasutada sisseehitatud valgustusega atraktsioone.

Pargivalgustuses peeti oluliseks valgustada välja treppe (79%) ja liikumisteid (62%) (funktsionaalne valgustus) Kuid samuti sooviti näha, et parema valgustuse saaks skulptuurid, purskkaevud, spordi- ja mänguväljakud, istumiskohad. Vähem oluliseks peeti haljastuse ja parkide kesksete platside väljavalgustamist. Eraldi toodi välja jalgteede ja liikumissuundade väljavalgustamist, aga sooviti parkidesse ka pikemaajalisi valgusinstallatsioone.

Eraldi kaart **Kanuti aia** kohta näitab, et vastanuist väga vähestele meeldib Kanuti aias viibida, olenevata, kas päeval või pimedal ajal. Meeldivaks kohaks on märgitud ainult purskkaevu ümbrus. Siiski on Kanuti aed oluline läbimise koht, mis pimedal ajal tundub elanikele ebaturvaline (eriti keskne

osa). Sooviti, et purskkaev ja selle ümbrus oleks paremini valgustatud ja välja toodi ka valgustamata Dostojevski skulptuuri. Samuti tehti ettepanek valgustada paremini mänguväljakut.

Põhilised märksõnad, mida elanikud soovitud valgustuse kohta kasutasid, olid:

- Rahulik
- Hubane
- Mõõdukas
- Tagasihoidlik
- Mõistlik
- Piisav
- Pehme

Veel toodi välja mitmeid kordi valgusreostuse vältimise vajadust, ökosüsteemi kaitsmist ja ei soovitud värvilist valgustust.

Idaekorje kokkuvõte on toodud Lisas 1

2.4 Gerilja valgustuse töötuba

Gerilja valgustus on võitlus halva ja raiskava, aga ka puuduliku valgustuse vastu, samas ka viis lõbusalt aega veete ja tõsta teadlikkust valguse võimalustest.

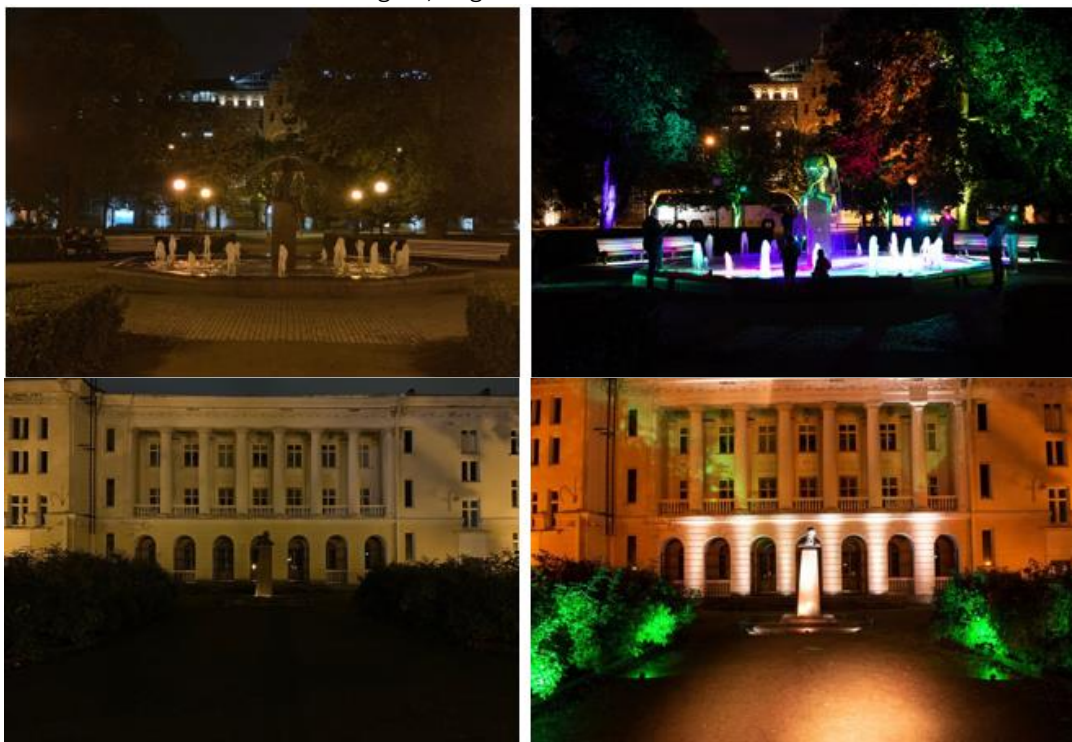
Kasutades kaasaskantavaid värvi vahetavaid RGBW LED-valgusteid luuakse erinevaid valguslahendusi, millest tehtud fotode meeldivuse üle saavad otsustada ka linnakodanikud läbi Tallinna Facebooki lehe.

See on võimalus muuta avaliku linnaruumi valgustuse kohad läbi valguse kutsuvaks ning õppida kasutama valgustust keskkonna muutmiseks. Sellelaadne ettevõtmine annab ettekujutuse, kuidas traditsioonilist linnavalgustust saaks muuta kreatiivsemaks ja kuidas valgus iseenesest võiks olla vaatamisväärsus.

Kanuti aias toimunud gerilja valgustuse töötoa eesmärkideks oli muu hulgas:

- Võimalus muuta ja kujundada linnaruumi valguse abil
- Kohene tagasiside erinevatest valgustuslahendustest
- Erinevate valgustamise tehnikate ja tehnoloogiate kontroll

- Õige valgustustugevuse valik
- Õigete valguse värvsuste valik
- Kaunid fotod
- Võimalus tunnetada valgust, kogeda emotsioone



Pilt 10- Gerilja valgustuse töötuba Kanuti aias 17.09.2019 Fotod: Hannes Vaga

2.5 Rahvusvaheline ideekonkurss

Ideekonkursi eesmärk oli leida sobivaim valgustusdisaini ideelahendus Tallinna Bastionaalvööndi parkidele. Konkursi võitjaga sõlmiti eskiisprojekti hankeleping Kanuti aia välisvalgustuse lahendusele vastavalt konkursil esitatud ideekavandile. Ideekonkurss toimus kahes etapis, esimese etapi eesmärk on selgitada välja osalejad, kelle varasem erialane kogemus ja lähenemine sobib enim võistlustöö koostamiseks. Võistlustöö esitamise ettepanek tehti kolmele osavõtjale, kes valiti välja esitatud portfooliote ja meeskonna CV-de põhjal. Osavõtjate meeskonnas oli nõutud valgustusdisainer ja/või valgustusinsener olemasolu, kellel on vastavat haridust tõendav dokument või kes on Eesti Valgustusdisainerite Assotsiatsiooni liige või muu professionaalsust tõendava rahvusvahelise liidu liige (näiteks IALD). Ülejäänud meeskonnaliikmed võisid olla arhitektid, disainerid, elektriinsenerid, valgustite tootjad või nende esindajad

Teemaplaneeringuga ootasime vastuseid küsimustele, mida, kuidas ja kui palju valgustada, milline saab olla valgustuse roll parkide väärtustamisel ja kuidas aitab valgustus õhtuti parkidesse rohkem inimesi meelitada. Samuti on oluline saada vastused küsimusele, milline on elanikele turvatunnet pakkuv valgustus, mis samas suudab kaitsta keskkonda ja tähistäevast?

Meie eesmärk on luua parkidesse turvaline, meeldiv, energiasäästlik ja innovaatiline valgustuslahendus, milles kasutatavad disainivõtted peavad meie kliimas vastu aastakümneid. Tähelepanu pöörduti ka valgustussüsteemide juhtimisele ja maailma tuleviku suundadega sellel alal. Läbi targa valgustuse juhtimise hoiame kokku energiat, kuid võime lahendada ka sotsiaalseid ning turvalisuse probleeme.

Konkursiga ootasime valgustuslahenduse ideed, mis arvestaks vanalinna ja seda ümbritsevate parkide ajaloolise väärtusega, on uuenduslik, kuid samas tagasihoidlikult sobituv vanalinna keskaegse õhustikuga.

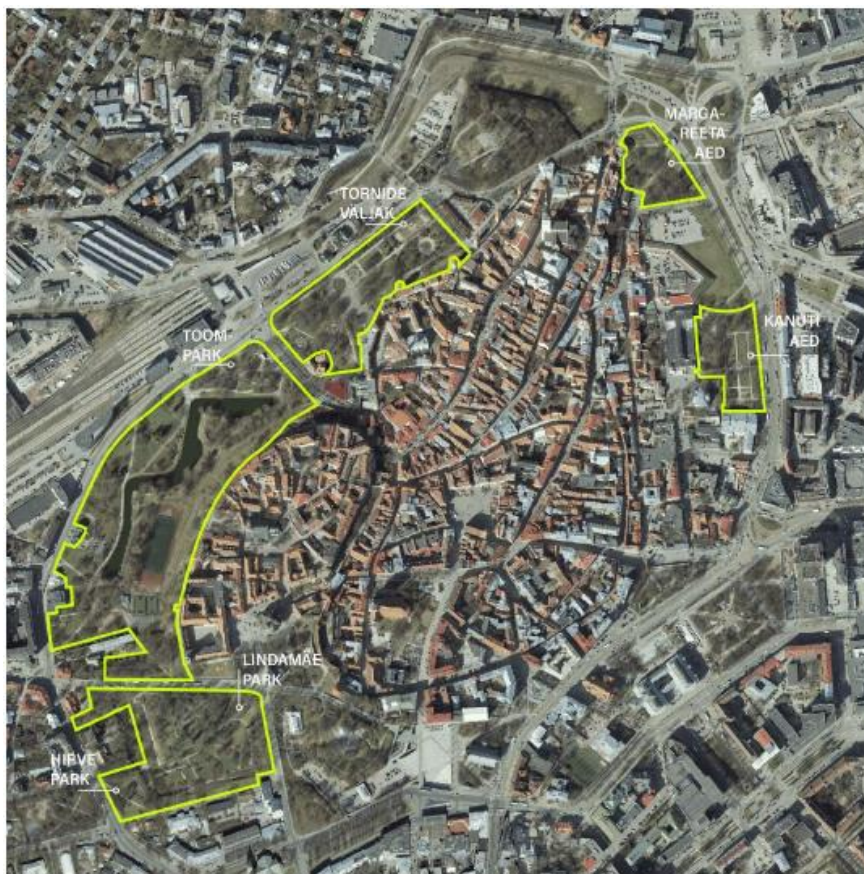
Konkursi idee pidi pöörama tähelepanu ka looduskeskkonnale ja näiteks Toompargis elutsevate nahkhiirte heaolule.

Tänapäeva avaliku ruumi kujundamine peab toimuma koostöös ruumi kasutajatega (linnaelanikega), loodava keskkonna lõpptarbijaga. Eelnevalt läbi viidud elanike ideekorje, mille eesmärgiks oli koguda linnaelanike arvamusi ja ettepanekuid Bastionite vööndi parkide praegusest ja oodatavast valgustusest. Ideekorje tulemusena anti elanike poolt hulganisti ettepanekuid, millega teemaplaneeringus ka arvestati.

Ideekonkursi võistlusülesanne on toodud Lisas 2

2.5.1 Võistlusala

Võistlusala koosnes kuuest Tallinna bastionaalvööndi pargist.



Pilt 11- Tallinna bastionaalvööndi pargid. Tallinna Linnaplaneerimise amet

1. Hirvepark
2. Lindamäe park
3. Toompark
4. Tornide väljak
5. Margareeta aed
6. Kanuti aed

Bastionivöönd tervikuna on kultuurimälestis kui osa all-linna kindlustustest – (linnamüür, tornid, väravaehitised, muldkindlustused, vallikraav, 13.-18.saj.) Linnaruumiline eesmärk on suurendada bastionivööndi parkide ruumilist sidusust, et pargid moodustaksid mugavalt ühendatud, turvalise ja huvitava jalutustekonna ümber Vanalinna. Valgustus on vahend, mille abil selle eesmärgi saavutamist toetada.

2.5.2 Võistlustööd

Konkursil soovis osaleda 15 ettevõtet kuuest erinevast riigist ja võistlustöö teostamise ettepanek tehti neist kolmele: Norra firma Zenisk AS; Soome firma VALOA Design Ltd ning Taani firma Ramboll. Kõik kolm osalejat esitasid väga põhjalikel ruumianalüüsidel põhineva valgustuse kontseptsiooni terviklahendused tervele Bastionite vööndi ala parkidele. Võistlustööd pakkusid väga erinevaid lahendusi ja ideid, olid põhjalikud ning uuenduslikud. Konkursi võidutööks valiti Soome firma VALOA töö „Kajad“. Võidutöös pakutud valgustuslahendus on mitmetasandiline, terviklikult läbimõeldud

ning seob eri paigad tervikuks ent võimaldab esile tuua ka parkide eripära. Lahendus arvestab hiljuti renoveeritud linnamüüri ja linnamüüri tornide valgustusega ja jätkab sarnast kontseptsiooni ka par-gialal. Töö keskmes on vanalinna keskaegse miljöö rõhutamise erilahendusvalgustiga „Uus Hansa“, mille puidust mastid mõjuvad uuendusliku ja sobiva ideena.

Võidutöös on pakutud uudseid valgustuse juhtimise skeeme, mis näiteks arvestavad ilmaolude ja ka Toompargi nahkhiirtega. Turvalisuse kohta ütlevad töö autorid, et kui valguskeskkond, milles me viibime on meeldiv, siis mõjub see ka turvaliselt.

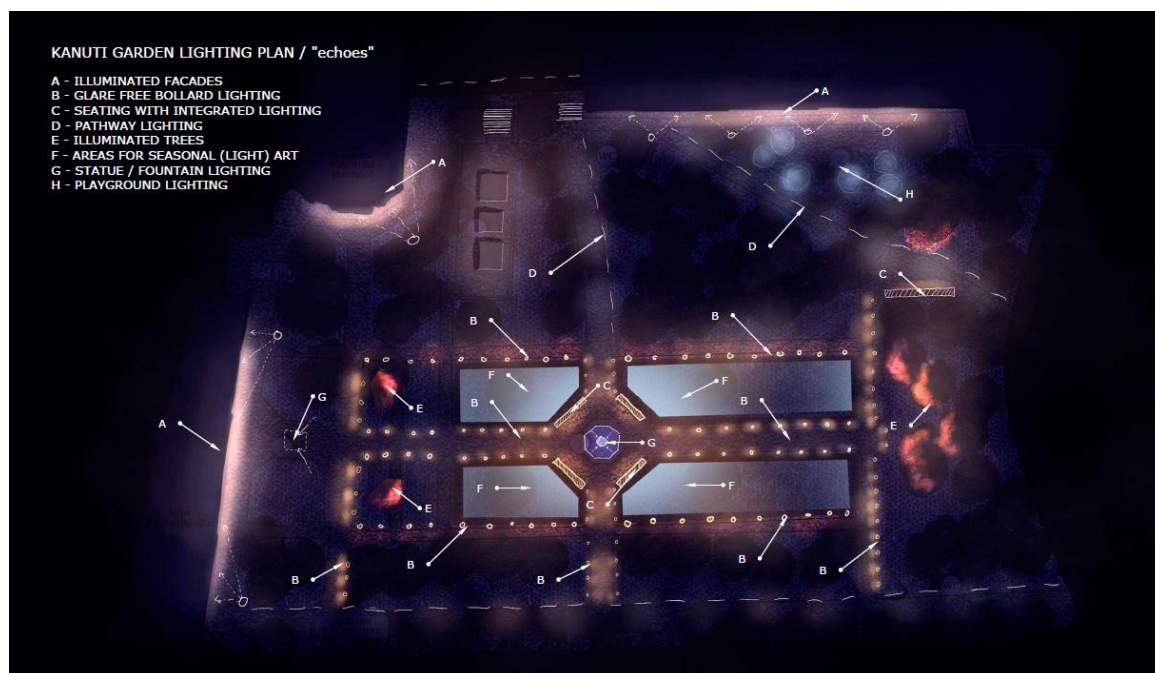
Võidutöö alusel sõlmitakse leping valgustusprojekti koostamiseks Kanuti aiale.

Võistlustööd on toodud Lisas 3

3 Kanuti aia välisvalgustuse eskiisprojekt

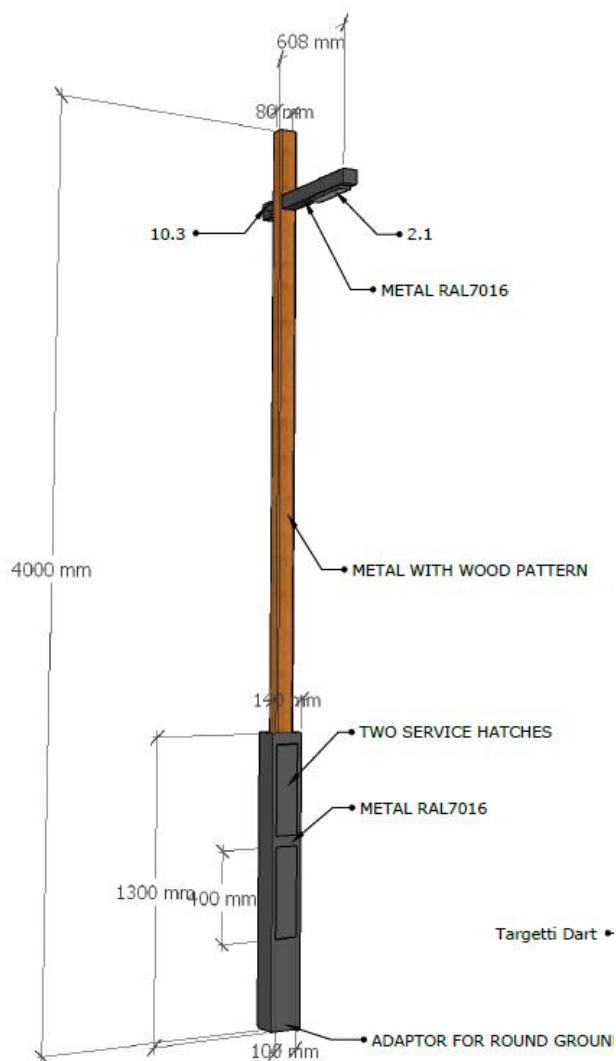
Eskiisprojekti tellisime vastavalt ideekonkursi tingimustele ideekonkursi võitjalt VALOA Design. Võidutöö „Echoes“ alusel koostati eskiisprojekt, mis omakorda sai aluseks elektri tööprojekti koostamisele, millele viidi läbi eraldi hange.

Eskiisprojekti olid lahendatud teede valgustus, purskkaevu valgustus, puude valgustus, mänguväljaku valgustus, Dostojevski skulptuuri valgustus, pargi külgnevate fassaadide valgustus ja loodud võimalused ka hooajalise linakunsti eksponeerimise tarvis.



Pilt 12- Väljavõte Kanuti aia valgustuse eskiisprojektist. Autor: Valoa Design

Jalgteedele ja mänguväljakule mõeldud puitmastid on projekteeritud eritellimustootena, mastid “New Hansa” on varustatud teevalgustiga ja prozektoriga haljastuse valgustamiseks.



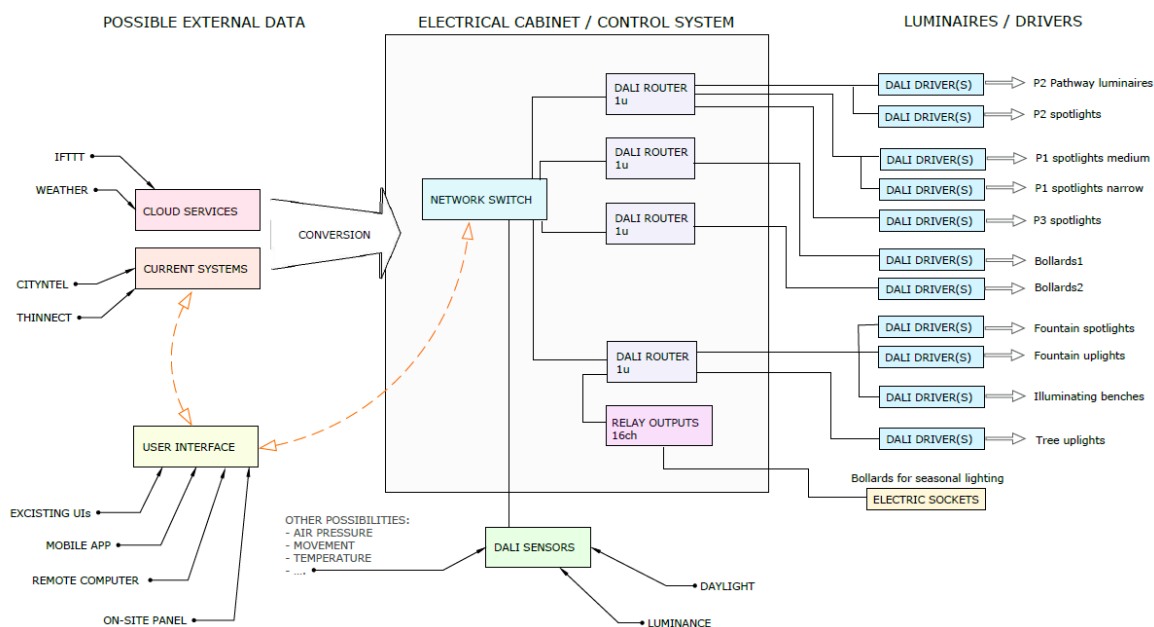
Pilt 13- Väljavõte Kanuti aia valgustuse eskiisprojektist. Valgusti “New Hansa” Autor: Valoa Design

Lisaks valgustusele on projektis lahendatud ka pinkide alune valgustus:



Pilt 14- Väljavõte Kanuti aia valgustuse eskiisprojektist. Pingialune valgus. Autor: Valoa Design

Juhtimisüsteemil on palju täiendamise võimalusi erinevate anduritega. Juhtimisüsteem lähtus ideekonkursil pakutud lahendusest, kus valgustust juhitakse vastavalt ilmaoludele ning nakkhiirte ja lindude elurütmile.



Pilt 15- Väljavõte Kanuti aia valgustuse eskiisprojektist. Juhtimise skeem. Autor: Valoa Design

Eskiisprojekt on toodud Lisas 4.

4 Geodeesia ja dendroloogia

Projekteerimisele eelnevalt hanksimie Kanuti aia geodeesia ja dendroloogia projektid.

Geodeesia ostumenetlus Lisa 5

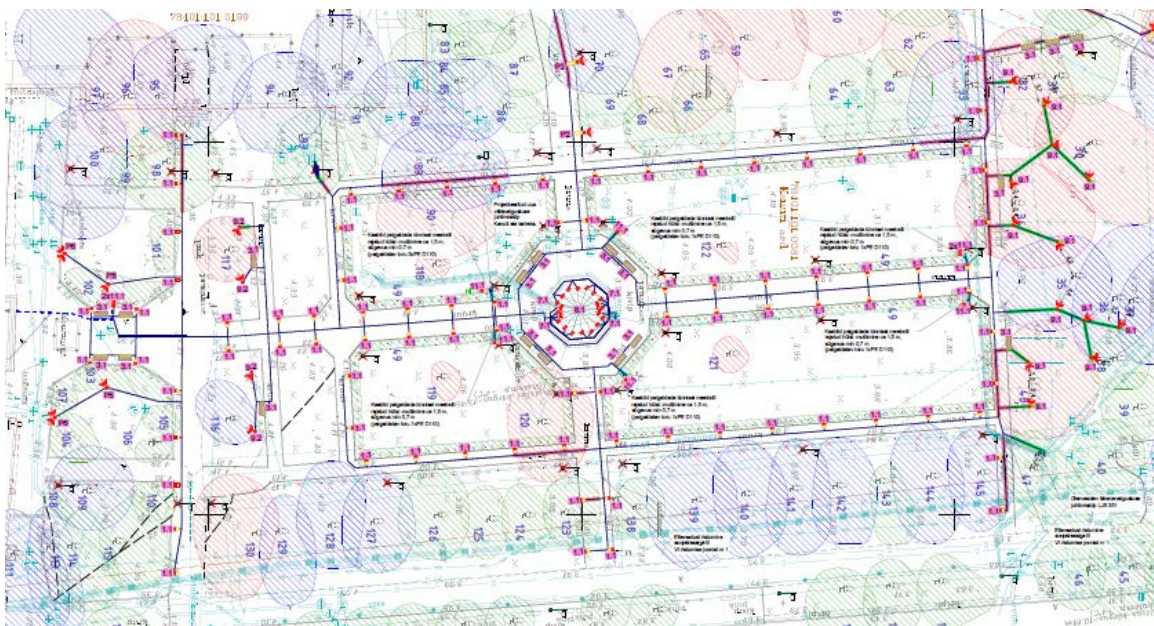
Geodeesia projekt Lisa 6

Dendroloogia ostumenetlus Lisa 7

Dendroloogia projekt Lisa 8

5 Kanuti aia valgustuse tööprojekt

Tööprojekti hanke dokumendid on esitatud Lisas 9. Tööprojekt tagines VALOA Ltd eskiisprojektile. Selle koostas Leonhard Weiss OÜ. Ostumenetlusele laekus kaks pakkumist: ProSystem OÜ (24 500,00 eurot+km20%) ja Leonhard Weiss OÜ (16 345,00 eurot +km20%).



Pilt 16- Väljavõte Kanuti aia valgustuse tööprojektist. Autor: Leonhard Weiss OÜ

Tööprojekt on toodud Lisa 10.

6 Ehitushange

Ehitushankes osales 5 ettevõtet

1. Mefab OÜ
2. AS Elektritsentrum
3. Leonhard Weiss OÜ
4. AS KH Energia-Konsult
5. AS Elero

Võitjaks osutus Mefab OÜ, pakkumuse hinnaga 396 965,00 eurot +km20%.

6.1 Rohelised kriteeriumid

LUCIA projektis on palju tähelepanu pööratud rohelistele riigihangetele. Tallinna pilootala dokumentides on rohelistele kriteeriumitele tähelepanu pööratud juba ideekonkursi lähteülesandes ja projekteerimisprotsessis. Kanuti aia ehitushanke rohelised kriteeriumid olid järgmised:

1. Pargivalgustus peab olema turvaline, energiasäästlik, jätkusuutlik, uuenduslik, looma meeldiva linnaruumi. Piisavalt rahulik ja hubane, austades elanikke ja loodust ning kaitstes tähistaevast. Toompargis peab arvestama seal elutsevate nahkhiirtega ja sealne valgustuslahendus peab toetama nende elutegevust.

2. Valgustuse hämardamine öötundidel peab olema kasutuses kõikides parkides, andmaks nii loodusele kui ka elanikele võimaluse öörahuks.
3. Valgustuslahendused peavad arvestama aastaaegade ja ilmastikutingimuste vaheldumise-ega.
4. Valgustite asukohad tuleks planeerida selliselt, et pimestus oleks minimaalne. Vältida valgusreostust.
5. Nõuded valgustitele on järgmised:
 - a. Kasutada leedvalgusteid. Valgusti vandaalikindlus valida vastavalt valgusti paigalduskõrgusele: 6
 - b. meetrit ja kõrgem - IK07, kuni 6 meetrit - IK08, erijuhtudel IK09 kuni IK 10.
 - c. Valgusti peab olema kergesti hooldatav
 - d. Valgustid peavad vastama kohalikele kliimatingimustele. (vastavalt ET-2 0102-0329, „Eesti kliima
 - e. teatmik ehitajale“).
 - f. Valgustite kaitseaste peab olema valitud vastavalt EVS-EN 60529:2001/A2:2014 Ümbristega
 - g. tagatavad kaitseastmed (IP-kood) ja peab olema vähemalt IP65, IP66.
 - h. Valgustite värviedastus peab olema vähemalt CRI 80
 - i. Üldvalgustuse valgustemperatuur on 3000K. Võib kasutada ka valge tooni erinevaid temperatuure, kui nende kasutamine on põhjendatud ja sobitub tervikuga
 - j. Valgusti eluiga peab olema vähemalt 50 000 h.
 - k. Maasse süvistatavaid valgusteid võimalusel vältida.
 - l. Uutel paigaldatavatel valgustitel peab olema CLO (constant lumen output) funktsioon
 - m. Valgusti ja LED mooduli valgusviljakus peab olema vähemalt 90 lm/W;
 - n. Valgustil peab olema kehtiv CE- ja ENEC sertifikaat ning Euroopas tunnustatud sertifitseerimislabori märgis.

- o. Valgusti garantii peab olema vähemalt 5 aastat alates paigaldamisest. Tallinna linnas eelnevalt mittekasutatud ja eraldi komplekteeritavatel valgustitel on nõutav maaletooja või tootjapoolne sellekohane ametlik kinnituskiri.
- p. Valgusti kõik komponendid peavad olema vahetatavad ja saadaval varuosadena 10 aastat pärast paigaldust. Nõutav on tootja ametlik allkirjastatud dokument.
- q. Projekt peab tehnilise lahendusega tagama ökonoomse välisvalgustuse ehituse-, elektrienergia- ja hoolduskulud.
- r. Arvestada tööde planeerimisel ja teostamisel ELi keskkonnahoidlike riigihangete kriteeriumitega tänavavalgustuse ja valgusfooride puhul

Ehitushanke dokumendid on esitatud Lisas 11.

7 Ehitus

Ehitustööd algasid plaanipäraselt ja lõputähtajaks oli 19.august 2021.a, valgustite tarneprobleemidega seoses pikendati lepingu tähtaega 24. Septembrini 2021.a.



Pilt 17- Ehitus Kanuti aias. 9.06.2021. Foto: Eva Tallo

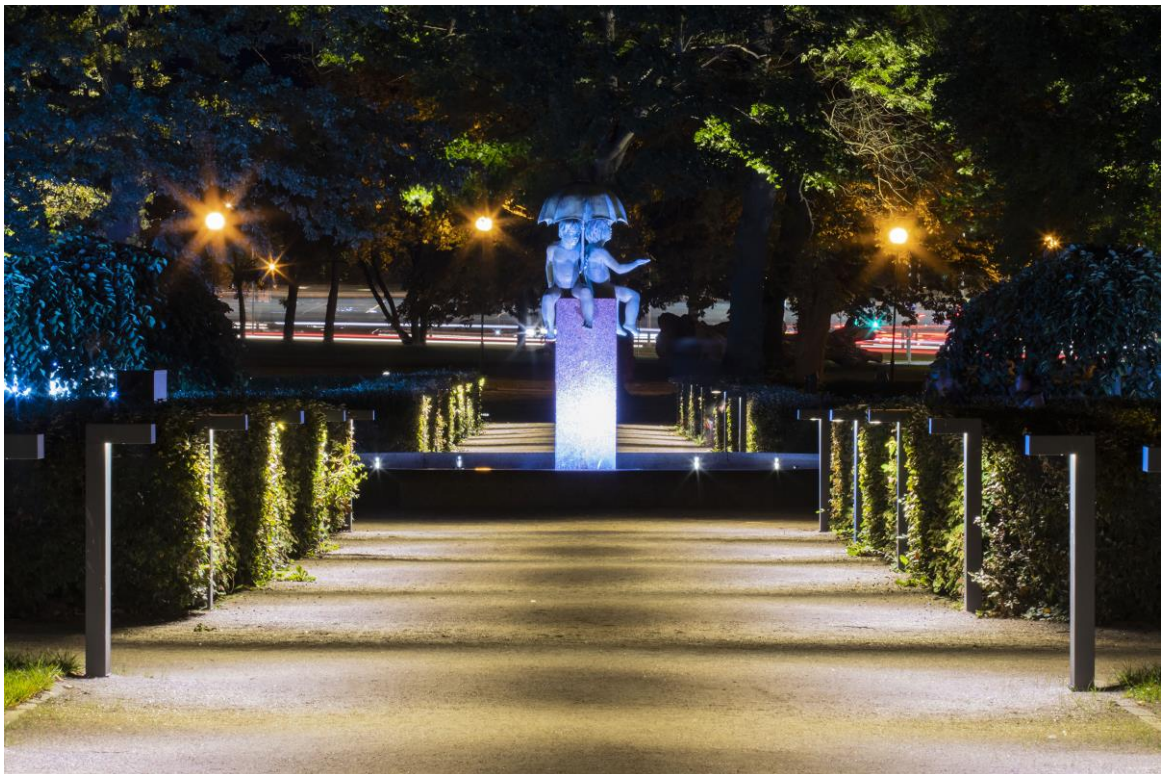
2.augusti seisuga olid paigaldatud eritellimusel puitmastid, pargipingid ja tehtud kõikide valgustite kaabeldus.



Pilt 18- Ehitus Kanuti aias. 2.08.2021. Foto: Eva Tallo



Pilt 19- Ehitus Kanuti aias. 2.08.2021. Foto: Eva Tallo



Pilt 20 Valminud projekt. Kanuti aed 10.09.2021. Foto: Janar Siniväli



Pilt 21 Valminud projekt. Kanuti aed 16.09.2021. Foto: Hannes Vaga

Projekti kasutati järgmisi valgusteid:

Valgustid ja nende tarvikud			
Nimetus	Tehnilised parameetrid	Ühik	Kogus
1 Pollar valgusti koos vundamendiga	We-ef PSY424 LED_114-0134, 15W, 3000K, IP66, IK10, RAL 7016, 1,5m paigalduskaabel (5x1,5mm ²)	tk	88
2 Prožektorid puude valgustamiseks koos vundamendiga	We-ef ESC140 LED_185-3003, 27W, 3000K, IP67, IK07, RAL 7016, keskmine optika, 1,5m paigalduskaabel (5x1,5mm ²)	tk	17
3 Maapost We-ef prožektoritele	We-ef 014-1988, h-600m, RAL 7016	tk	13
4 Prožektorid Vene kultuurikeskuse fassaadi valgustamiseks	We-ef FLC220 LED_139-2026, 30W, 3000K, IP66, IK07, RAL 7016, keskmine optika, 5m paigalduskaabel (5x1,5mm ²)	tk	4
5 Prožektorid F. Dostojevski mälestussamba valgustamiseks	We-ef FLC220 LED_139-2030, 30W, 3000K, IP66, IK07, RAL 7016, väga kitsas optika, 5m paigalduskaabel (5x1,5mm ²)	tk	2
6 Kõnnitee valgusti	iGuzzini Laser Blade In Out BX85, 36,4W, 3000K, IP65, IK06, RAL 7016, 5m paigalduskaabel (5x1,5mm ²)	tk	13
7 Konsool iGuzzini Laser Blade In Out valgustile	100x100x600mm, RAL 7016	tk	13
8 Prožektorid mänguväljaku ja kõnnitee mastidele	Targetti Dart Medium_1E2996, 37W, 3000K, IP66, IK10, RAL 7016, keskmine optika, 6m paigalduskaabel (5x1,5mm ²)	tk	22
9 Prožektorid mänguväljaku ja kõnnitee mastidele	Targetti Dart Medium_1E2998, 37W, 3000K, IP66, IK10, RAL 7016, kitsas optika, 6m paigalduskaabel (5x1,5mm ²)	tk	8
10 Pargipink koos valgustuse ja vundamendiga	EXTERY voog 1800 + vundament + LED riba pingi alla(VarioLED™ Flex HYDRA SLD3 White IP67).Pargipinkide puitosa on kahekordselt Osmo Woodstain õliga kaetud oksavaba termotöödeldud saar(OC-010) ning metallkonstruktsioon on pulbervärviga viimistletud(RAL 7016) kuumtsingitud terasest	tk	19
11 Purskkaevu valgustus ja selle kaabeldus		kmpl	1

8 Summary

Creating a safe, inviting public space with innovative technologies.

LUCIA project helps municipalities in the Baltic Sea region to unlock the enormous potential of energy efficient urban lighting solutions. It provides decision makers and experts with state-of-the-art lighting knowledge, covering aspects of environment, technology, economy, social acceptance, urban planning and green public procurement.

LUCIA partners install modern LED lighting in six Baltic Sea region cities to provide a tangible experience of its potential. The six LUCIA pilot sites are located in:

- Albertslund (Denmark),
- Hamburg (Germany),
- Jūrmala (Latvia),
- Porvoo (Finland),
- St. Petersburg (Russia),
- Tallinn (Estonia).

The replication potential is then evaluated by metropolitan regions of Copenhagen, Hamburg, Riga, Helsinki-Uusimaa, St. Petersburg and Tallinn.

In LUCIA pilot Tallinn project, Canute Garden, we are aiming to raise the feeling of safety, to replace old lightings solutions by modern ones and to create an attractive inviting urban place with a strong identity.

We also follow a social ambition: bringing life to the park during dark times of the day. The park is a cultural heritage asset and the lighting will also be renewed to create a harmony with the lights of the nearby walls and the tower.

A thematic lighting plan was developed for all parks of Tallinn's Bastion Zone. The thematic plan will then be realised in Canute Garden, which is one of the Bastion Zone's parks. In Canute Garden, old pole lights will be replaced with LED lighting. Furthermore, decorative smart lighting shall be installed to illuminate a fountain, a playground and the main seating area within the park.

Canute Garden is one of the parks forming a "green belt" around Tallinn's medieval old town. In 1953, the park was designed as a neo classical park. Canute Garden creates a contrast to the urban modern ambience. Although the park is situated in the middle of Tallinn centre, there have been problems with hooligan gangs. Results of public questionnaires indicate that the feeling of safety is low in the area.

Current lighting situation:

- 37 pcs of 70 W natrium globe lamps are used.
- Only unexciting functional lighting.
- No decorative lighting no fountain lighting.
- The central area cannot be distinguished in the dark.

In November 2019, the municipality of Tallinn launched an open call for ideas for a general lighting conception for all six Bastion Zone parks. The work "Echoes" submitted by Finnish VALOA Design

Ltd. was chosen as the winner in that competition. The winner of the competition provided a schematic design project for Canute Garden. Electrical design and construction procurement followed after that. After completing the Canute Garden lighting project, the city will continue with the other parks of the green belt around the old town and also install smart, energy-efficient lighting there.

Tallinn pilot tendering process started with International lighting design competition „Thematic plan for the lighting of parks in Tallinn’s Bastion zone“. Three companies were invited to submit competition work (thematic plan). Winner was VALO Lighting Ltd (prize 8000 EUR), other two places got each prizes 6000 EUR. The winner was contracted for schematic lighting design project of Canute Garden. Contract (no. 20HD00006) was made in 10.03.2020 and project was completed in 15.04.2020.

For preparing electrical design procurement and approval procedure of project we have also contracted a geodetic plan (contract no.20TVL00007, 23.03.2020) it was completed in 15.04.2020.

Dendrology was contracted for same reasons (contract no.20TVL00014) in 16.04.2020 as it could be done only after geodetic plan was ready. Dendrology was completed in 06.05.2020.

After we have received electrical design project we started construction and supervising procurement.

GPP criterias in tender documents

Schematic lighting design is done according to design competition task and competition winning work.

Next technology related GPP criterias have been taken into account:

- Lighting solution and luminaires with minimum glare, avoiding light pollution.
- luminaires are equipped with a good cut-off optic so they do not create glary points that would disturb the view
- Using only LED luminaires
- Using bollards with IK10 (vandalism proof)
- Using luminaires with lifetime at least 50000h

All luminaires are controlled via DALI-bus and can be adjusted individually or in groups. Areas are divided in groups which can be controlled separately. Smart conditions create intelligence to the control system and lighting can adapt to varying environment.

Control system with dimming is provided

Control system takes weather conditions and bats life cycle into account

Thematic plan of Bastion parks starting points are:

- Protecting night sky
- Glareless lighting solution
- Gentle lighting of the surroundings elements generates feeling of safety
- Lighted keypoints (trees, poles, statues) help us orientate and navigate through the space (lighting hierarchy)

Lisad

LISA 1 – IDEEKORJE KOKKUVÕTE

LISA 2 – IDEEKONKURSI VÕISTLUSÜLESANNE

LISA 3 – IDEEKONKURSILE LAEKUNUD VÕISTLUSTÖÖD

LISA 4 – ESKIISPROJEKT

LISA 5 – GEODEESIA OSTUMENETLUS

LISA 6 – GEODEESIA PROEJKT

LISA 7 – DENDROLOOGIA OSTUMENETLUS

LISA 8 – DENDROLOOGIA PROJEKT

LISA 9 – TÖÖPROJEKTI HANKEDOKUMENDID

LISA 10 – TÖÖPROJEKT

LISA 11 – EHITUSHANKE DOKUMENDID

BASTIONIVÖÖNDI PARGIVALGUSTUSE IDEEKORJE KOKKUVÕTE

11.07.2019

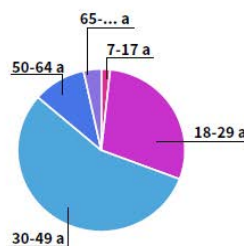
LUCIA projekti ideekorje eesmärk oli koguda linnaelanike arvamused ja ettepanekud Bastionivööndi parkide praegusest ja oodatavast valgustusest, aga ka parkide kasutatavusest, liikumissuundadest ja turvalisusest. Kogusime elanike ideid järgnevate parkide kohta: Kanuti aed, Margareeta aed, Tornide väljak, Toompark, Hirvepark ja Lindamäe park. Antud ideekorje on esimene valgustusalaane kaasamisprojekt Tallinnas.

Ideekorje on alles esimene samm protsessis, mille eesmärgiks on saada parkidesse maitsekas, otstarbekas ja inimestele meeldiv valgustus. Linnaelanikelt kokku kogutud ettepanekuid ja arvamusi kasutatakse lähtesekohtadena valgustusspetsialistidele suunatud rahvusvahelisel ideekonkursil, kus selgub bastionivööndi parkide parim üldine valgustuslahenduse kontseptsioon.

Ideekorje tulemusena anti elanike poolt 569 kaardiettepanekut ja hulganisti üldisemaid mõtteid. Ideekorjest võtsid enamasti osa elanikud vanuses 30-49 a ja mehi ning naisi osales küsimustikus võrdselt.

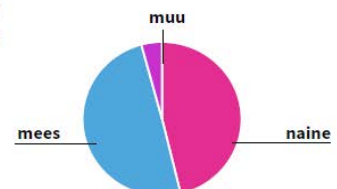
Osalejate vanuseline koosseis:

7-17 a	2
18-29 a	34
30-49 a	65
50-64 a	12
65-... a	4



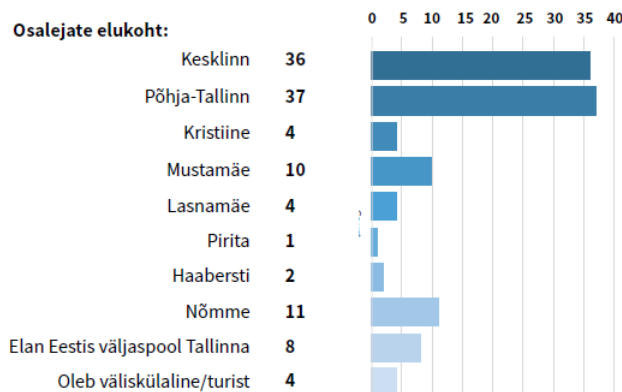
Osalejate sooline koosseis:

mees	59
naine	55
ei avalda	4

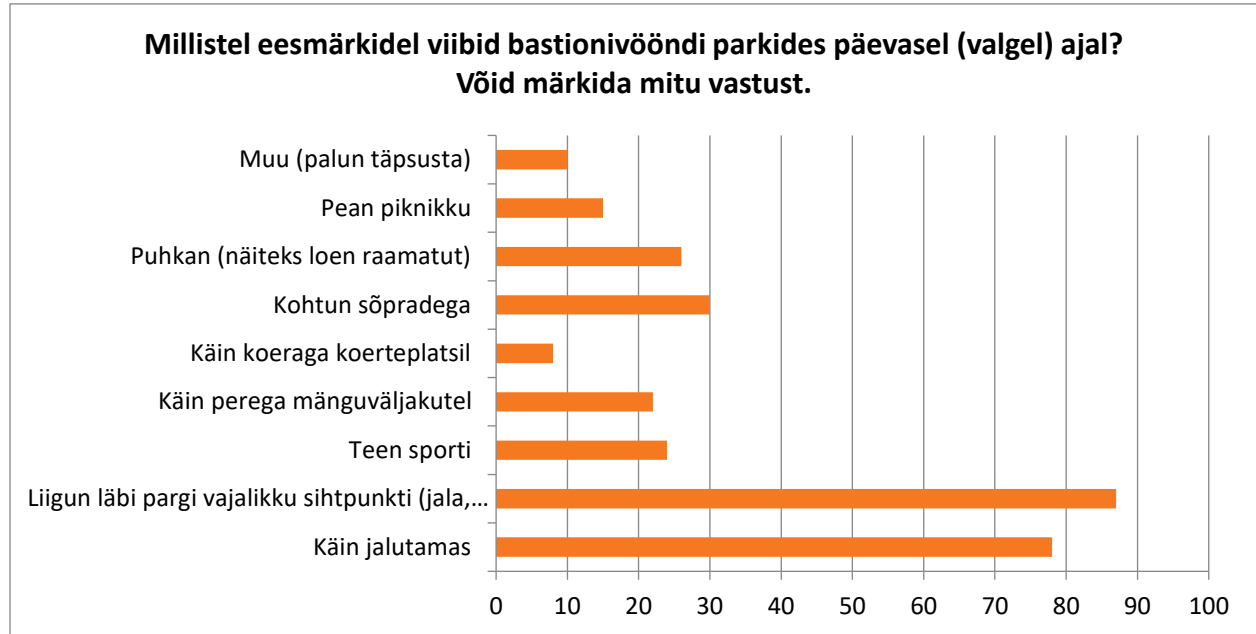


Osalejad olid enamasti Kesklinna ja Põhja-Tallinna elanikud, kes nimetatud parkidega ka kõige enam kokku puutuvad.

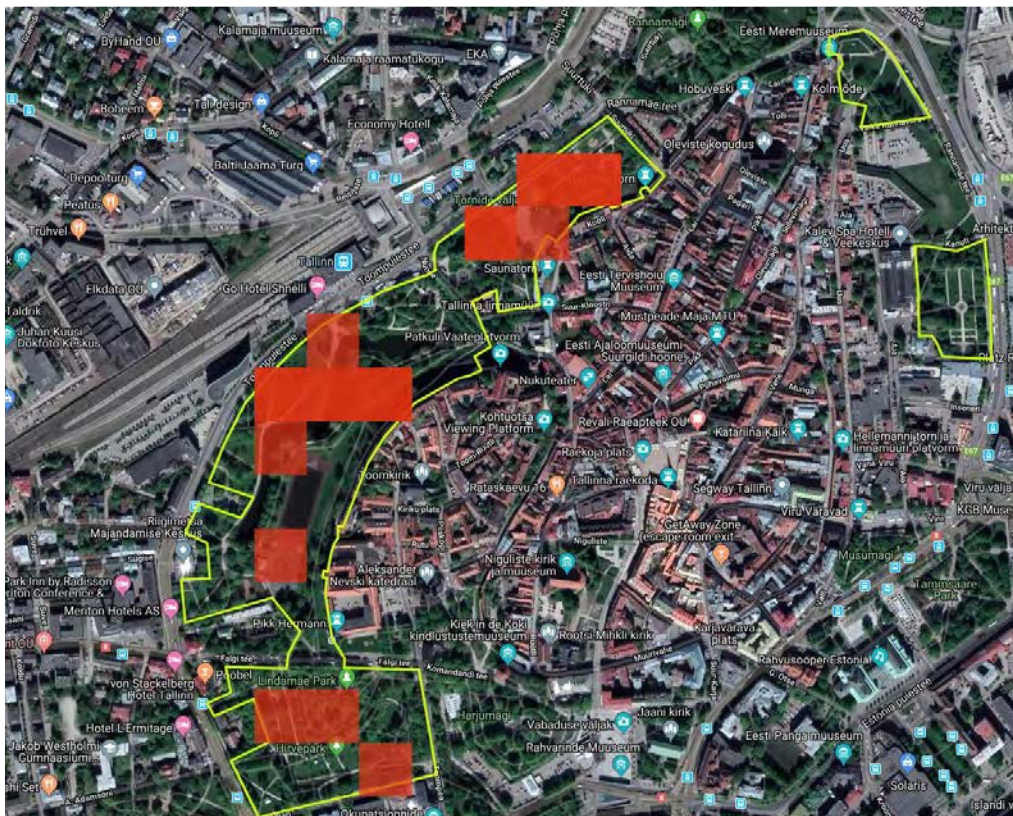
Osalejate elukoht:



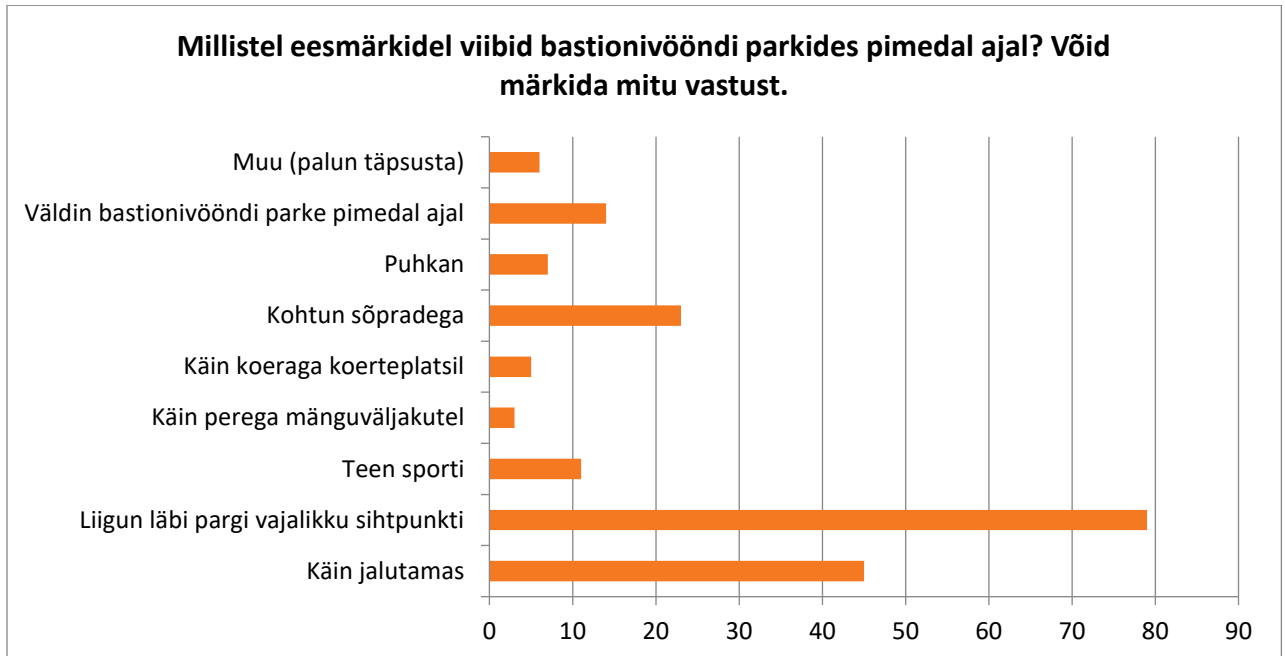
Uurisime, millisteks tegevusteks elanikud kõige rohkem parke kasutavad ja kui tihti nad seda teevad. Enamasti kasutatakse parke päevasel ajal jalutamiseks ja läbimiseks, vähemal määral ka sõpradega kohtumiseks, puhkamiseks ja sportimiseks sagedusega kord kuus kuni kord nädalas.



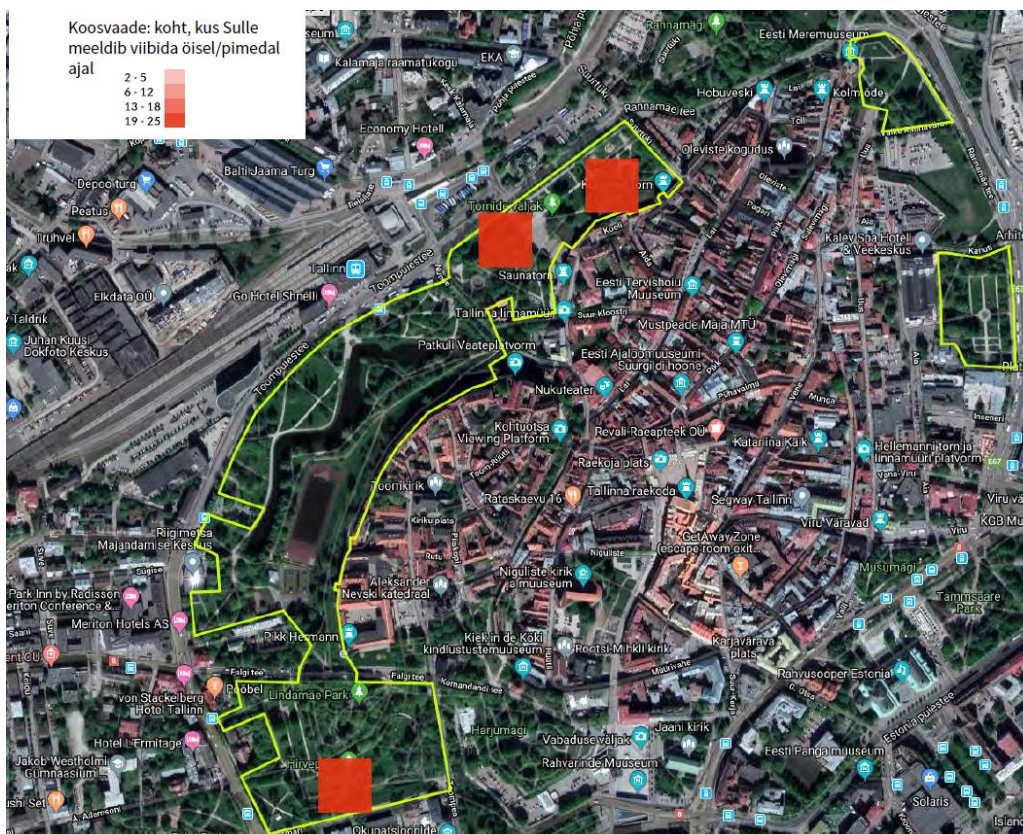
Palusime märkida kaardile kohad, kus elanikele meeldib viibida päevasel ajal:



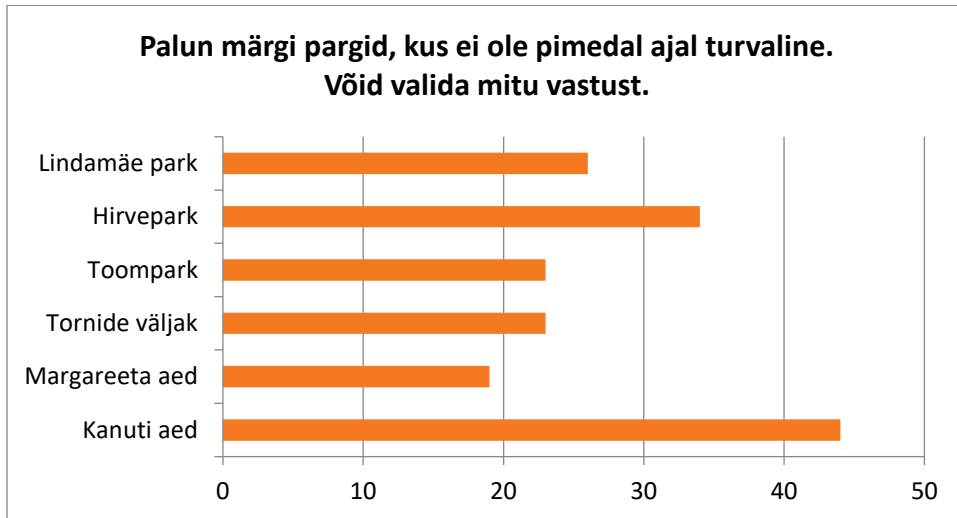
Pimedal ajal liigutakse enamasti läbi pargi vajalikku sihtpunkti, aga ka jalutatakse ning kohtutakse sõpradega, tulemustest ilmnes, et pimedal ajal kasutatakse parke oluliselt vähem kui päeval, kord kuus või kõigest kord paar aasta jooksul.



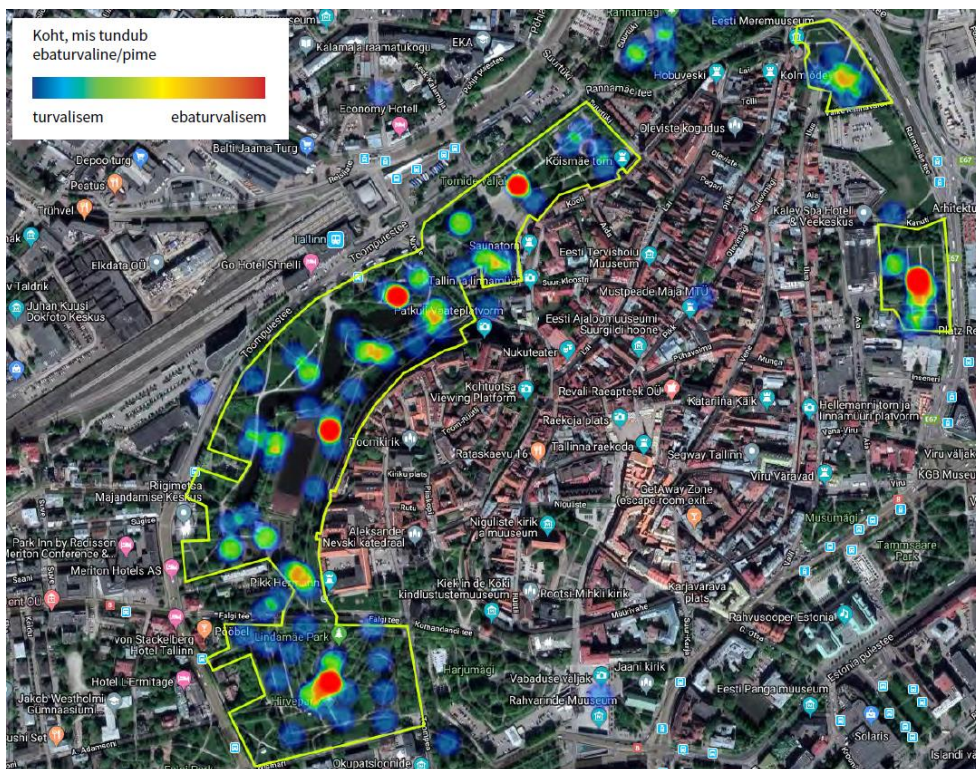
Kohad, kus elanikele meeldib viibida pimedal ajal:



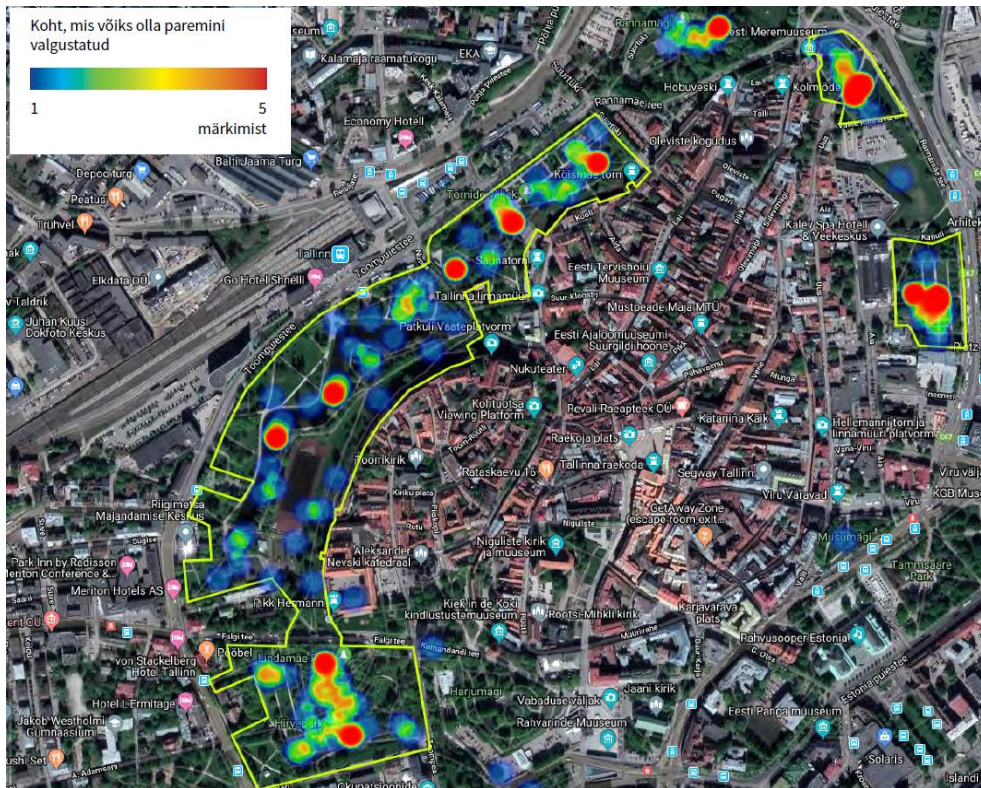
Kõige ebaturvalisemateks parkideks pimedal ajal peeti Kanuti aeda (44% vastanutest) ja seejärel Hirveparki (34% vastanutest) ning Lindamäe parki (26% vastanutest). Enamik arvas, et pargid peaksid kindlasti olema pimedal ajal valgustatud.



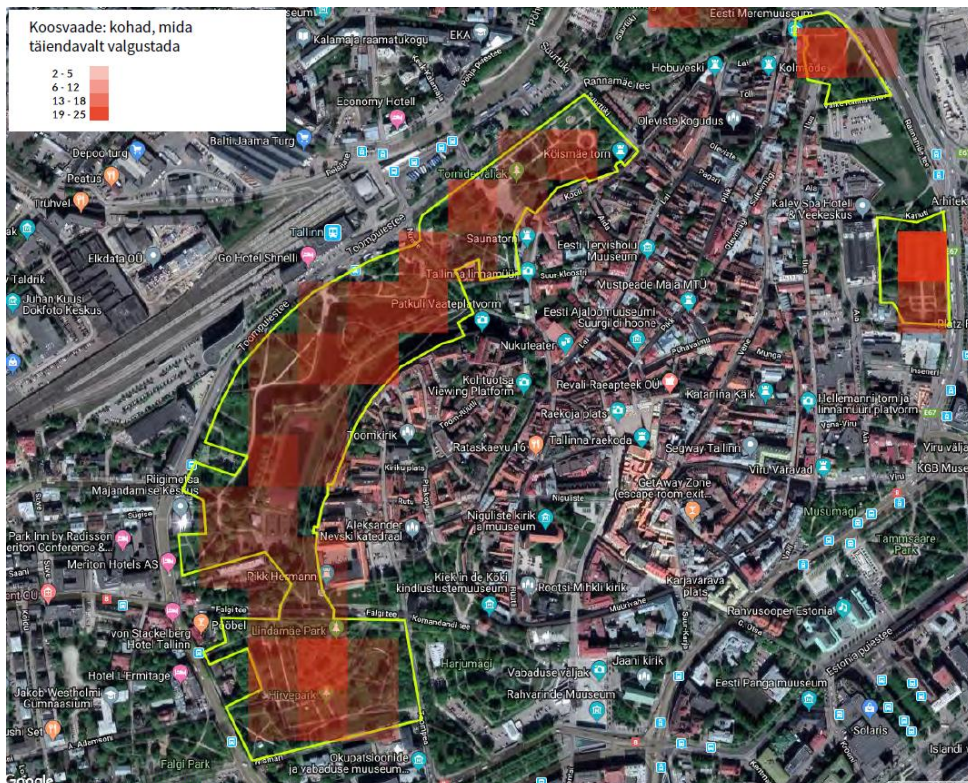
Kaardivaates on näha, et parkides on kohad, mis elanikele selgelt kõige ebaturvalisemad tunduvad:



Samuti on näha kattuvusi ebaturvaliste kohtade ja kohaettepanekute vahel, mis võiks olla paremini valgustatud.



Parke peeti üldiselt halvasti valgustatuks, mida näitab järgmine kaart, kus kajastuvad ettepanekud täiendava valgustuse osas:

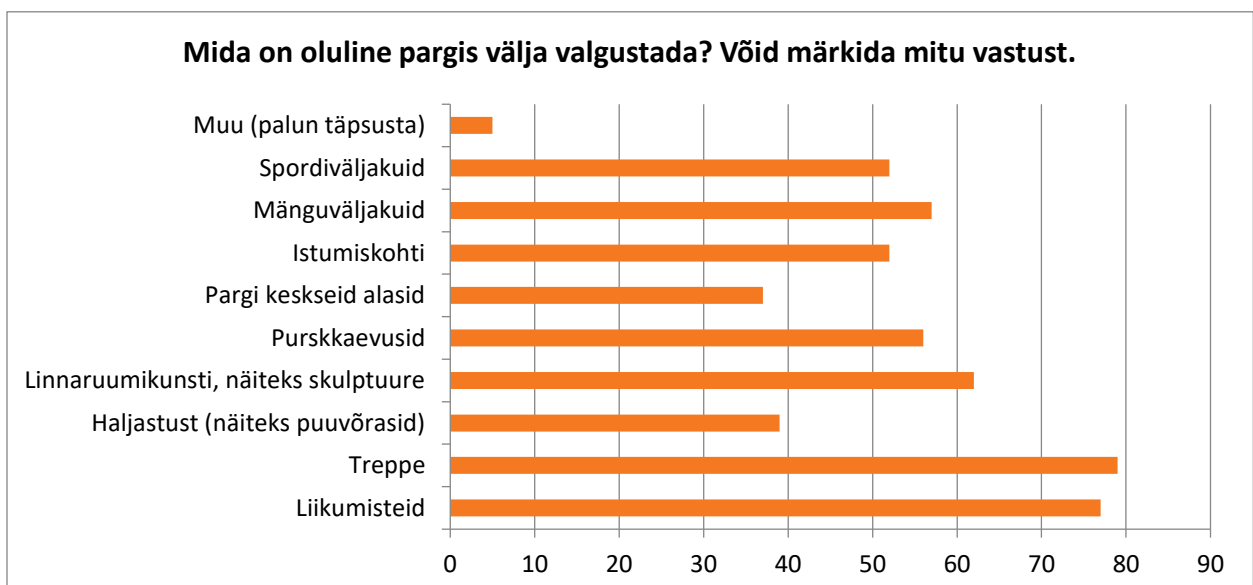


Arvati, et pargid leiaksid õhtuti rohkem kasutust, kui parkides oleks rohkem valgusinstallatsioone, linnaruumi kunsti, kohvikuid ja toimuks enam kultuuriüritusi. Samuti kutsuks parke enam kasutama talispordivõimalused, spordiüritused ja avalikud trennid, eraldi mainiti mitmeid kordi parke läbivaid jooksuradasid. Mainiti ka heli- ja valgusetendusi ning interaktiivseid valgusmänge. Tehti ka ettepanekuid kasutada rahvamuusikuid, audiogiidi vanalinna kindlustusvööndist. Ainult 5% vastanuist arvas, et nemad ei näe vajadust parke pimedal ajal külastada.



Spordi- ja mänguväljakuid kasutaks 69% vastanuist rohkem, kui need oleksid paremini, atraktiivsemalt valgustatud, eelistati erilahendusi (s.h ka värvilist valgustust.) Märkiti, et mänguväljakute valgustus peaks olema lapsesõbralik, turvaline, mitte liiga ere ja häiriv ning tehti ka ettepanek kasutada sisseehitatud valgustusega atraktsioone.

Pargivalgustuses peeti oluliseks valgustada välja treppe (79%) ja liikumisteid (62%) (funktsionaalne valgustus) Kuid samuti sooviti näha, et parema valgustuse saaks skulptuurid, purskkaevud, spordi- ja mänguväljakud, istumiskohtad. Vähem oluliseks peeti haljastuse ja parkide kesksete platside väljavalgustamist. Eraldi toodi välja jalgteede ja liikumissuundade väljavalgustamist, aga sooviti parkidesse ka pikemaajalisi valgusinstallatsioone.

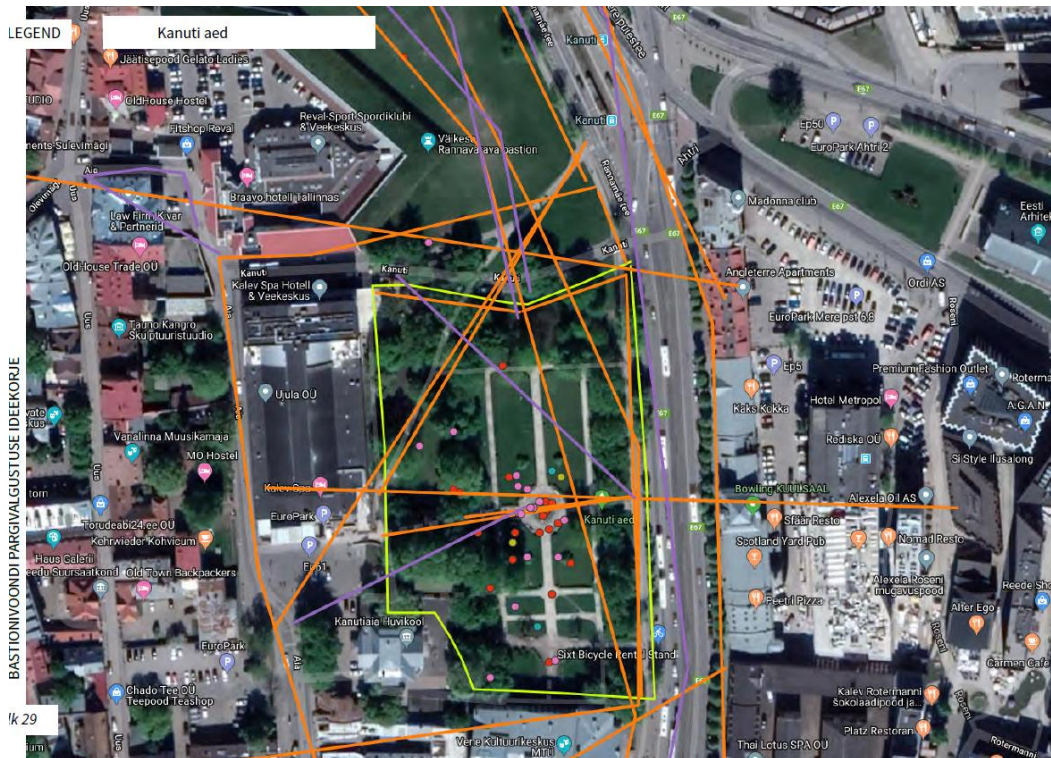


Eraldi kaart **Kanuti aia** kohta näitab, et vastuist väga vähestele meeldib Kanuti aias viibida olenemata, kas päeval või pimedal ajal. Meeldivaks kohaks on märgitud ainult purskkaevu ümbrus. Siiski on Kanuti aed oluline läbimise koht, mis pimedal ajal tundub elanikele ebaturvaline (eriti keskne osa). Sooviti, et purskkaev ja selle ümbrus oleks paremini valgustatud ja välja toodi ka valgustamata Dostojevski skulptuuri. Samuti tehti ettepanek valgustada paremini mänguväljakut.

Kohad, mis võiksid olla paremini valgustatud:



Oranziga on näidatud liikumissuunad, mida inimesed kõige rohkem kasutavad ja lillaga liikumissuunad, mis on halvasti läbi mõeldud.

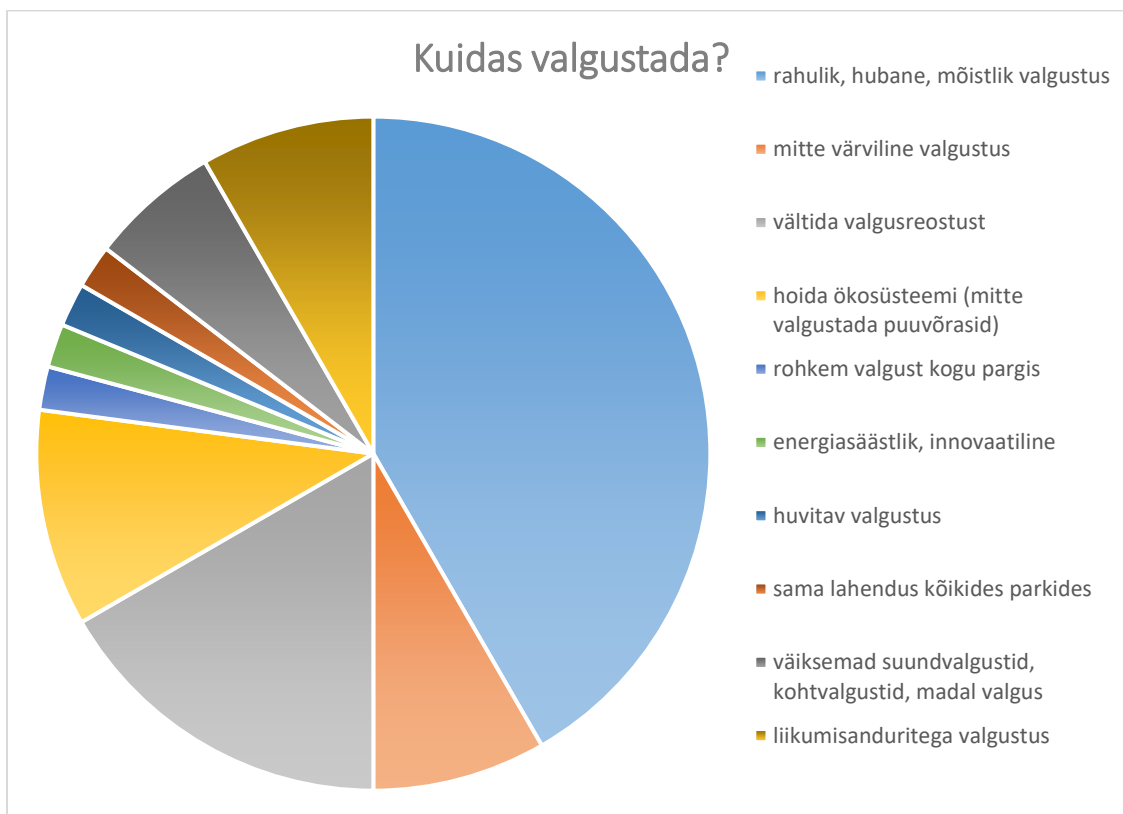


Elanike ettepanekud valgustamiseks.

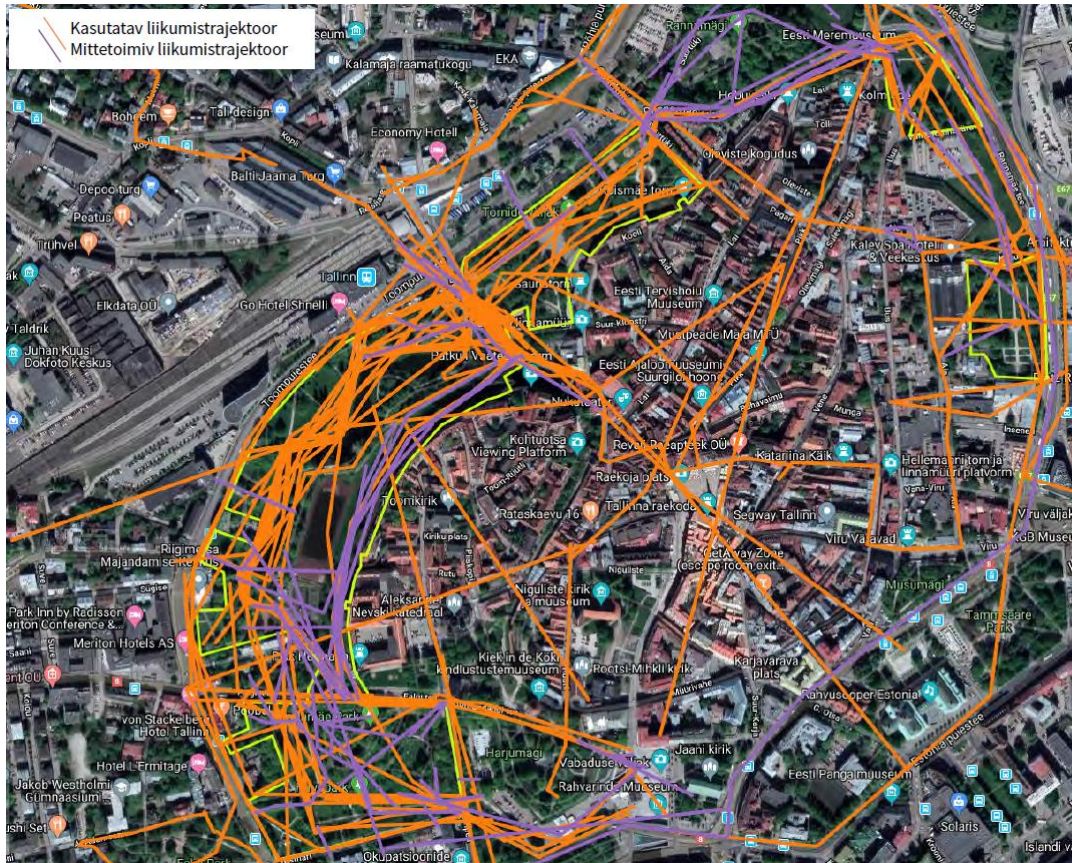
Põhilised märksõnad, mida elanikud soovitud valgustuse kohta kasutasid, olid:

- Rahulik
- Hubane
- Mõõdukas
- Tagasihoidlik
- Mõistlik
- Piisav
- Pehme

Veel toodi välja mitmeid kordi valgusreostuse vältimise vajadust, ökosüsteemi kaitsmist ja ei soovitud värvilist valgustust.



Lisaks valgustusalaatele ettepanekutele tehti ka soovitusi teistel teemadel, milledest jäid kõlama, et parkides võiks olla tasuta tualetid, joogivesi. Keskkonna alastest soovitud: rohkem linnaloodust, liigutatav linnamööbel, multifunktsionaalne keskkond, kohvikud ja mänguväljakud võiksid olla kõrvuti, kogukonna aia olemasolu. Küsitlusest ilmnis ka elanike mure parkide ligipääsetavuse osas, sellealased soovitud on märgitud eraldi liikumisteede kaardil:



Eva Tallo

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LINNAD EDENDAVAD SÄÄSTLIKE JA
TARKADE VALGUSTUSLAHENDUSTE
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TALLINNA BASTIONITE VÖÖNDI PARKIDE VALGUSTUSE TEEMAPLANEERING

Ideekonkursi võistlusülesanne

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Sissejuhatus

Ideekonkursi eesmärk on leida sobivaim valgustusdisaini ideelahendus Tallinna Bastionaalvööndi parkidele. Konkursi võitjaga sõlmitakse eskiisprojekti hankeleping Kanuti aia välisvalgustuse lahendusele vastavalt konkursil esitatud ideekavandile. Ideekonkurss toimub kahes etapis, esimese etapi eesmärk on selgitada välja osalejad, kelle varasem erialane kogemus ja lähenemine sobib enim võistlustöö koostamiseks. Võistlustöö esitamise ettepanek tehakse kuni kolmele osavõtjale, kes valitakse välja esitatud portfooliote ja meeskonna CV-de põhjal. Osavõtjate meeskonnas peab olema valgustusdisainer ja/või valgustusinsener, kellel on vastavat haridust tõendav dokument või kes on Eesti Valgustusdisainerite Assotsiatsiooni liige või muu professionaalsust tõendava rahvusvahelise liidu liige (näiteks IALD). Ülejäänud meeskonnaliikmed võivad olla arhitektid, disainerid, elektriinsenerid, valgustite tootjad või nende esindajad.

Teema kirjeldus

Bastionaalvööndi parkide arenemine sai alguse 19.sajandil ja tänapäeval kuulub sinna 11 parki, millest suurim on Toompark (9,2ha). Pargivalgustuse teemaplaneering käsitleb Bastionite vööndi parkidest kuute parki- Hirveparki, Lindamäe parki, Toomparki, Tornide väljakut, Margareeta aeda ja Kanuti aeda. Saja aasta jooksul on toimunud suuri muudatusi nii parkide kasutuses kui ka pargivalgustuse suundades.

Hetkel on parkides valgustid vananenud nii väliselt kui tehnoloogiliselt. Korraga kasutatakse nii elavhõbedalampe kui ka naatriumlampe, osad pargid on oranžika tooniga, teised jällegi sinakad. Selline kontrast mõjub häirivalt ja kumbki tonaalsus, arvestades ka kehva värviedastust, ei kaunista parke, ega loo meeldivat õhkkonda. Valgusteid kasutatakse ainult funktsionaalsel otstarbel, valgustamiseks käiguteid- purskkaevud, trepid, väljapääsud, skulptuurid, purskkaevud, parkide kesksed alad on valgustamata. Ootamatud pimedad tsoonid on segamini valgusreostust tekitavate liig-võimsate lampidega. Samuti on vana valgustustehnika väga energiakulukas (kuues pargis kokku 36500W). Valgustuse kirju olukord ei tule kuidagi kasuks uuenenud linnamüüri ja linnamüüri tornide valgustusele. Antud projekt keskendub pigem fragmentide valgustamisele ja müüri struktuuri ruumilisuse väljatoomisele, seejuures austades elanikke tasase sosistava valgusega. Ent parkide praegune valgustus karjub paraku sellest kaunist sosinast üle.

Tänapäeva pargivalgustuses ei ole oluline ainult funktsionaalsus- inimese suunamine, teenäitamine ning turvalisuse tagamine, vaid ka looduse ja keskkonna väärtustamine (ka kaitsmine), õhustiku loomine ning linnakunsti eksponeerimine.

Valgustus toetab koha funktsiooni (k.a tegevusi), kuid suudab olla ka sihtpunkt ja tegevus iseenesest, kutsudes inimesi õhtusel ajal endaga kohtuma. Selleks, et kasutada valgustust kohalooma tööriistana, vajame tugevat, läbimõeldud teemaplaneeringut. Valgustus kujundab linnaruumi kasutamist pimedal ajal- kuhu me läheme, millal ja millist liikumisteed me kasutame.

Teemaplaneeringuga ootame vastuseid küsimustele, mida, kuidas ja kui palju valgustada, milline saab olla valgustuse roll parkide väärtustamisel ja kuidas aitab valgustus õhtuti parkidesse rohkem inimesi meelitada. Samuti

on oluline saada vastused küsimusele, milline on elanikele turvatunnet pakkuv valgustus, mis samas suudab kaitsta keskkonda ja tähistaevast?

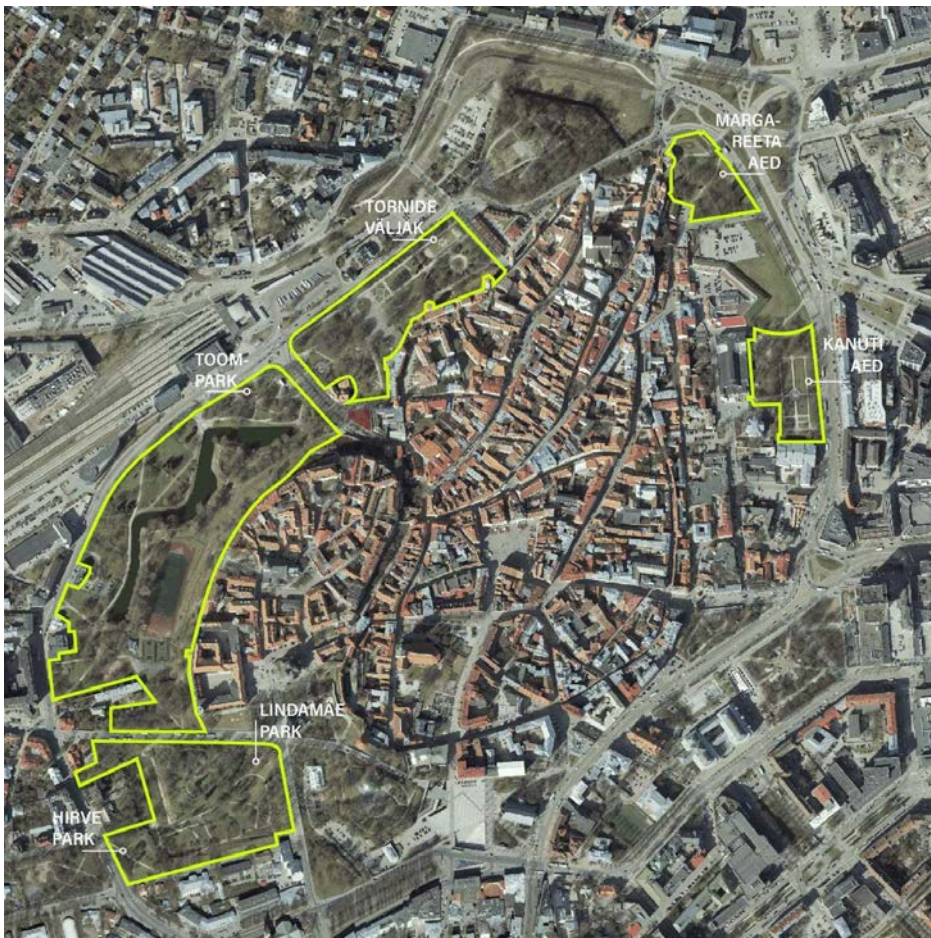
Meie eesmärk on luua parkidesse turvaline, meeldiv, energiasäästlik ja innovaatiline valgustuslahendus, milles kasutatavad disainivõtted peavad meie kliimas vastu aastakümneid.

Tähelepanu tuleb pöörata valgustussüsteemide juhtimisele ja siinkohal arvestada maailma tuleviku suundadega. Läbi targa valgustuse juhtimise hoiame kokku energiat, kuid võime lahendada ka sotsiaalseid ning turvalisuse probleeme.

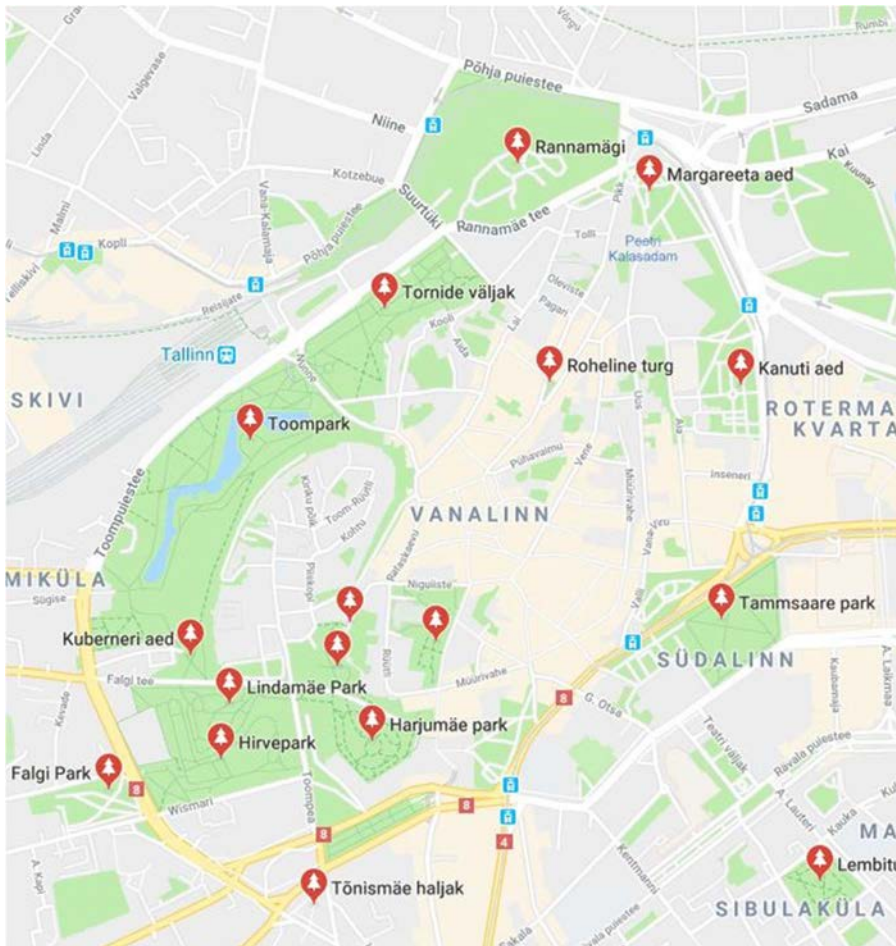
Tänapäeva avaliku ruumi kujundamine peab toimuma koostöös ruumi kasutajatega (linnaelanikega), loodava keskkonna lõpptarbijaga. Oleme eelnevalt läbi viinud elanike seas ideekorje, mille eesmärgiks oli koguda linnaelanike arvamusi ja ettepanekuid Bastionite vööndi parkide praegusest ja oodatavast valgustusest. Ideekorje tulemusena anti elanike poolt hulganisti ettepanekuid, millega teemaplaneeringus arvestada. Ideekorje kokkuvõtte on konkursi materjalidele lisatud.

1. Võistlusala

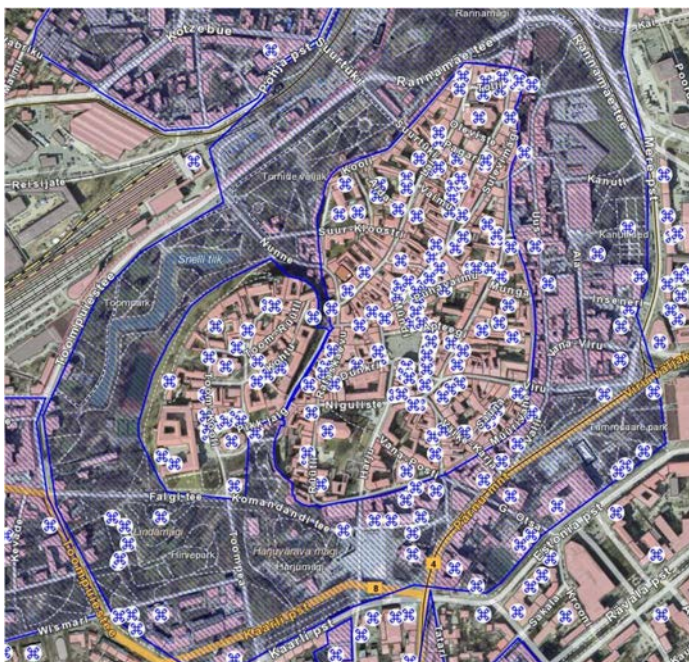
Võistlusala koosneb kuuest Tallinna bastionaalvööndi pargist.



1. Hirvepark
2. Lindamäe park
3. Toompark
4. Tornide väljak
5. Margareeta aed
6. Kanuti aed



Bastionivöönd tervikuna on kultuurimälestis kui osa all-linna kindlustustest – (linnamüür, tornid, väravaehitised, muldkindlustused, vallikraav, 13.-18.saj.) Linnaruumiline eesmärk on suurendada bastionivööndi parkide ruumilist sidusust, et pargid moodustaksid mugavalt ühendatud, turvalise ja huvitava jalutustee ümber Vanalinna. Valgustus on vahend, mille abil selle eesmärgi saavutamist toetada. Järgneval kaardil on näha Tallinna kultuurimälestiste ala:



Sinise piirjoonega ala tähistab kultuurimälestise ala: bastioni vöönd tervikuna on kultuurimälestis kui osa All-linna kindlustustest –(linnamüür, tornid, väravaehitised, muldkindlustused, vallikraav, 13.-18.saj.)



Kõik teemaplaneeringu ala pargid (v.a. Margareet aed) on looduskaitse all. Punane joon tähistab looduskaitsealuseid parke bastionaalvööndis.

Hirvepark

Hirvepark on kaitsealune park Tallinna kesklinnas Toompea nõlva all. Ta piirneb idas Toompea tänavaga, lõunas Wismari tänavaga, läänes Toompuiestee ja selleäärse hoonestusega ning põhjas Rootsi bastioni ja Falgi teega.

Hirveparki, mille pindala on tänapäeval 3,6ha, hakati kujundama 1865.aastal. Looduskaitse all on ta alates 1959.aastast.

Hirvepargi vaatamisväärsuste hulka kuuluvad bastionide müürid, skulptuurid ning Falgi teelt laskuv paetrepp, pargis kasvab 102 erinevat puuliiki. Hirvepargi võõrpuuliikide kooslus on tähelepanuväärne.

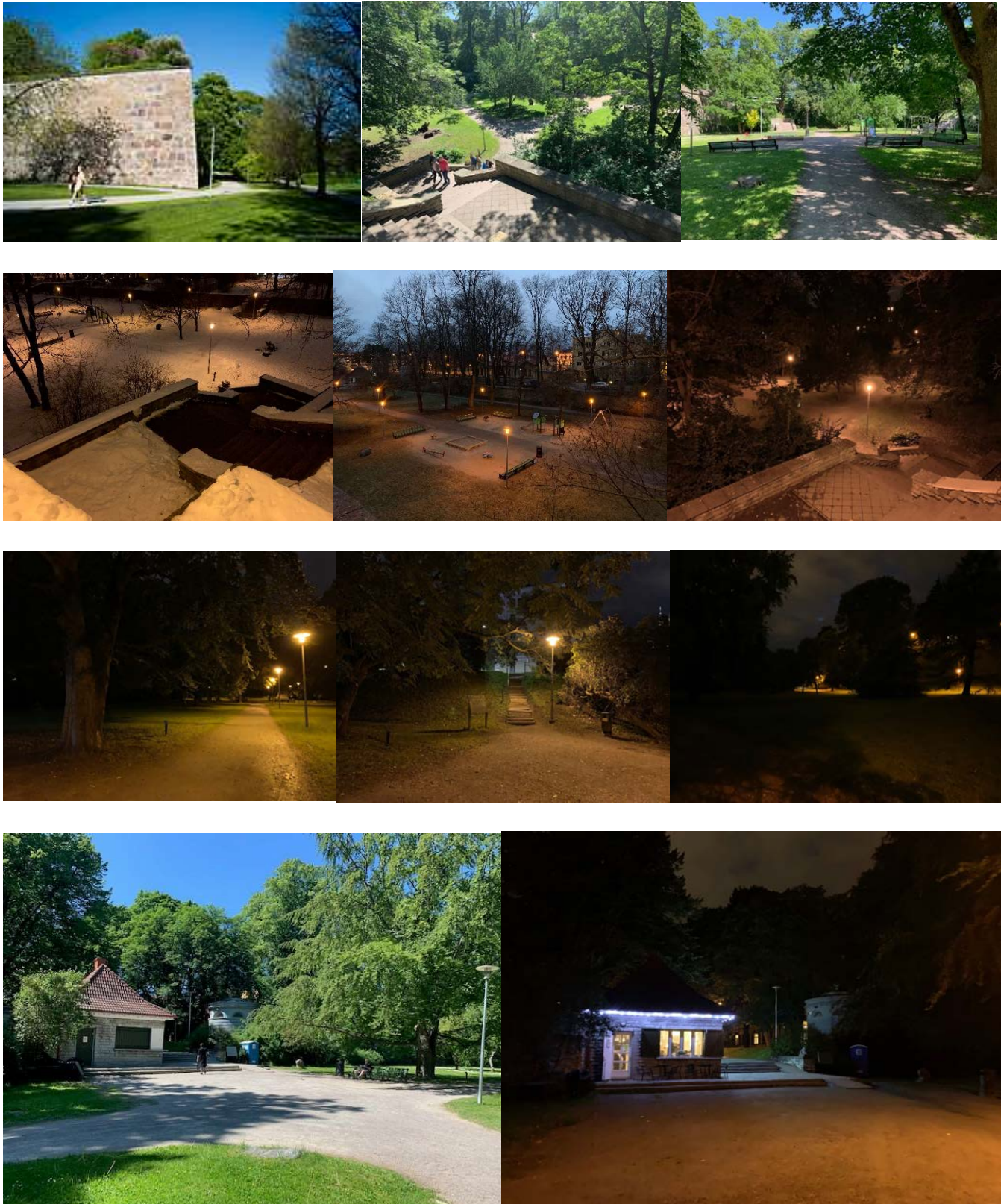
Pargis on laste mänguväljak (mänguväljaku alale lisavad mitmekesisust ka väikesemõõdulised loomaskulptuurid); pargi keskosas tegutseb kalakohvik Kalambuur; Wismari ja Toompea tänava poolne osa on mitmekesise puistuga looduspark.

Hirve pargi maastikus joonistub selgelt välja kunagise vallikraavi asukoht- piki vallikraavi keset kulgeb pargi keskne jalutustee. Seetõttu on park reljeefilt mitmekesine, pargi keskosa paikneb ümbritsevast linnaruumist madalamal, süvendis. Talviti käivad lähiasumite lapsed järskudel parginõlvadel kelgutamas.

Kevadeti ja sügiseti viiakse pargis läbi lähipiirkonna koolide ja lasteaedade kehalise kasvatus tunde.

Laula revolutsiooni ajal toimusid Hirvepargis rahvakoosolekud.

Fotod Hirvepargist:



Lindamäe park

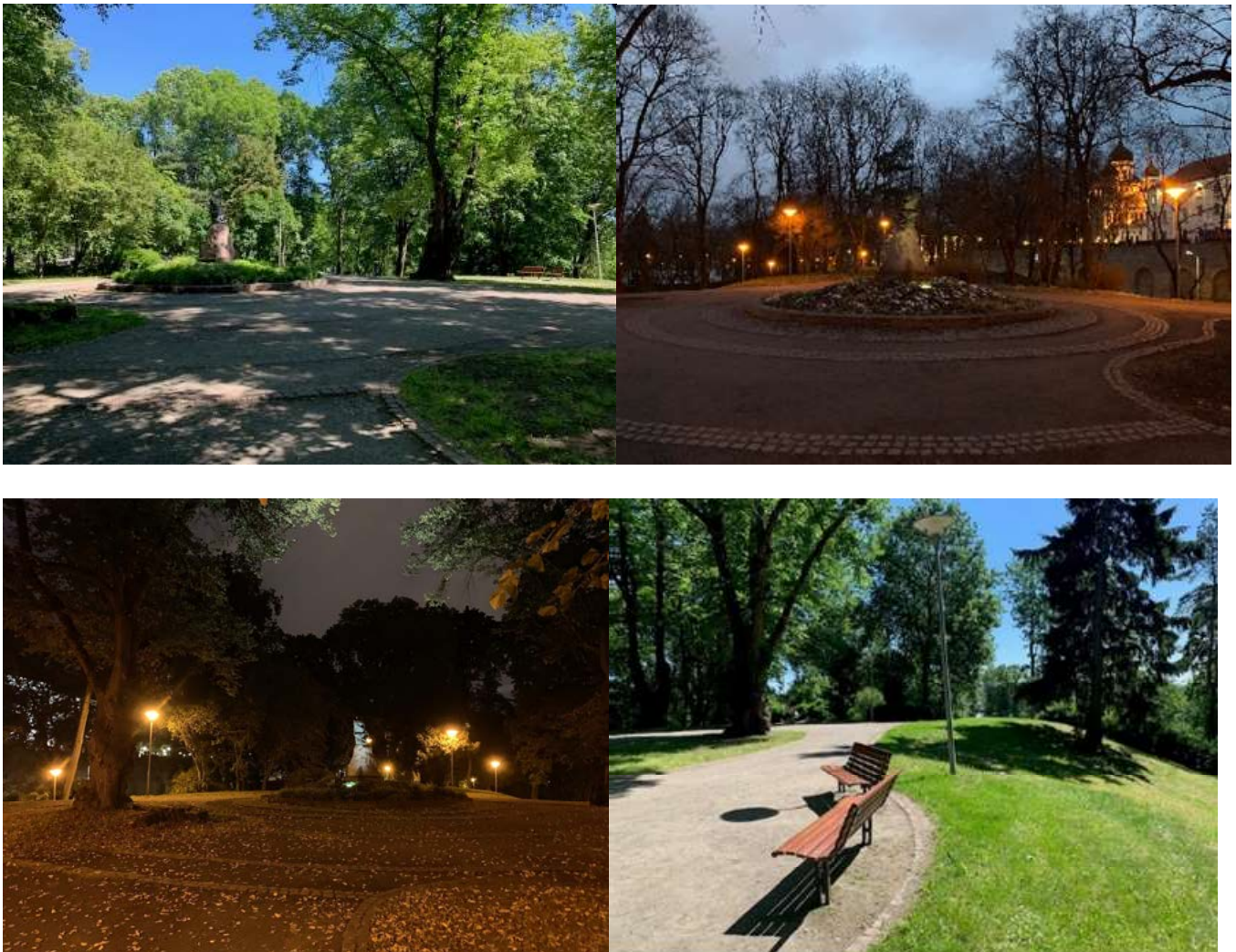
Lindamäe park paikneb kunagise Rootsi bastioni muldkehal. Rootsi kants ehk Lindamägi ehitati 17.sajandil. 18.novembril 1856.a avati Falgi tee, otsepäas Paldiski maanteelt Toompeale. Tee äärde istutati puiestee, puid istutati ka bastioni servale. Bastionipealne korrastati pargiks 1862.aastal.

1920.a püstitati siia A. Weizenbergi skulptuuri „Linda” pronkskoopia, mille järgi park on ka oma nime saanud. Bastioni originaalpuude ring ümber Linda kuju on pärit kõigi bastionide haljastamise ajast pärast kuju valmimist. Lindamäe tähelepanuväärseimad puud on kavaljeeril ringina paiknevad seitse umbes 250 aastast läänepärna.

Linda kuju ümbrus on kujunenud kohaks, kus peetakse nõukogude võimu ajal toimunud massirepressioonide ohvrite mälestusüritusi.

2007.a sügisel kasvas pargis 26 nimetust puittaimi. Alates 1959.aastast on Lindamäe park looduskaitse all.

Fotod Lindamäe pargist:





Toompark

Bastionaalvööndi suurim park – Toompark – on kujunenud endisele muldkindlustuste alale Šnelli tiigi ümber. Tiik, mis on ainus säilinud osa linna kunagi ümbritsenud vallikraavist (kaevatud selles lõigus 1760. aastail), sai oma nime rootslasest linnaaedniku Johan Šnelli järgi, kelle aed ja maja asusid 19. sajandil tiigi kaldal. Toompark on kujundatud maastikuaia (inglise pargi stiilis). Pargi rajamist alustati linlaste endistele heinamaadele samuti juba 1920. lõpuaastatel.

1903. a avati Toompead all-linnaga ühendav Patkuli trepp. Toompargis on mitmekesine puittaimestik, mille on tinginud nii reljeef kui ka pargi rajamine mitmes osas ja eri aegadel. Toompark on kesklinna parkidest liigi- ja sordirikkaim. Algselt põhiliselt lehtpuudega parki on hilisema istutusega lisatud mõned okaspuud. Pargis on kiviktaimla ja huvitavaid ilupõõsaid, nagu harilik ja alpi kuldvihm, hariliku jugapuu kultivar „Dovastonia”, pensilvaania saare kirjuleheline kultivar „Variegata”, ruaani ja Prestoni sirelid jt. 2007. a sügisel oli Toompargis umbes 110 mitmesugust puittaimet. Toompargis elavad nahkhiired.

Toompargis paiknev Snelli tiik on Toompea lossi vallikraavi ainus veekoguna säilinud osa. Tiigis ja selle kallastel elutsevad linnaoludega kohastunud sinikaelpardid. Kuigi kalapüük tiigist on ametlikult keelatud, kasutatakse tiigi lõunapoolset osa mitteametliku kalapüügikohana. Külmematel talvedel on olnud võimalik ka tiigijääl uisutamine.

Toompea ja tiigi vaheline, vahelduva reljeefiga ala on talviti populaarne kelgutamiskoht. Pargis oleva amortiseerunud paviljon-kuuri asemele on planeeritud uus väikesemahuline parki teenindav hoone. Uue paviljoni juurde on kavandatud ujuvsild. Tulevikus on võimalik paviljonist laenutada vesijalgrattaid ja paate ning talviti uiske.

Bastionivööndi suurima pargina on Toompark populaarne ürituste korraldamise koht. Suve lõpus toimub pargis tänavakultuurifestival, talvel jääskulptuuride festival. Lumelinn. Toompargis toimuvad kevadeti ja suviti kehalise kasvatus tunnid (jooksmine).

Toompargi ja Hirve pargi vahele, Falgi tee alla on planeeritud jalakäijate tunnel, et parkide ruumilist sidusust parandada.

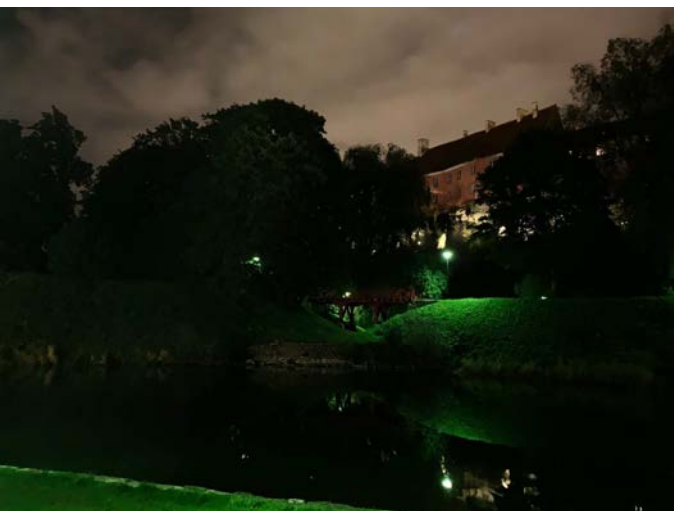
Snelli tiigi Toompea poolsele nõlvale on kavandatud amfiteater, mis suurendaks pargi potentsiaali vabaõhu ürituste korraldamise paigana veelgi.

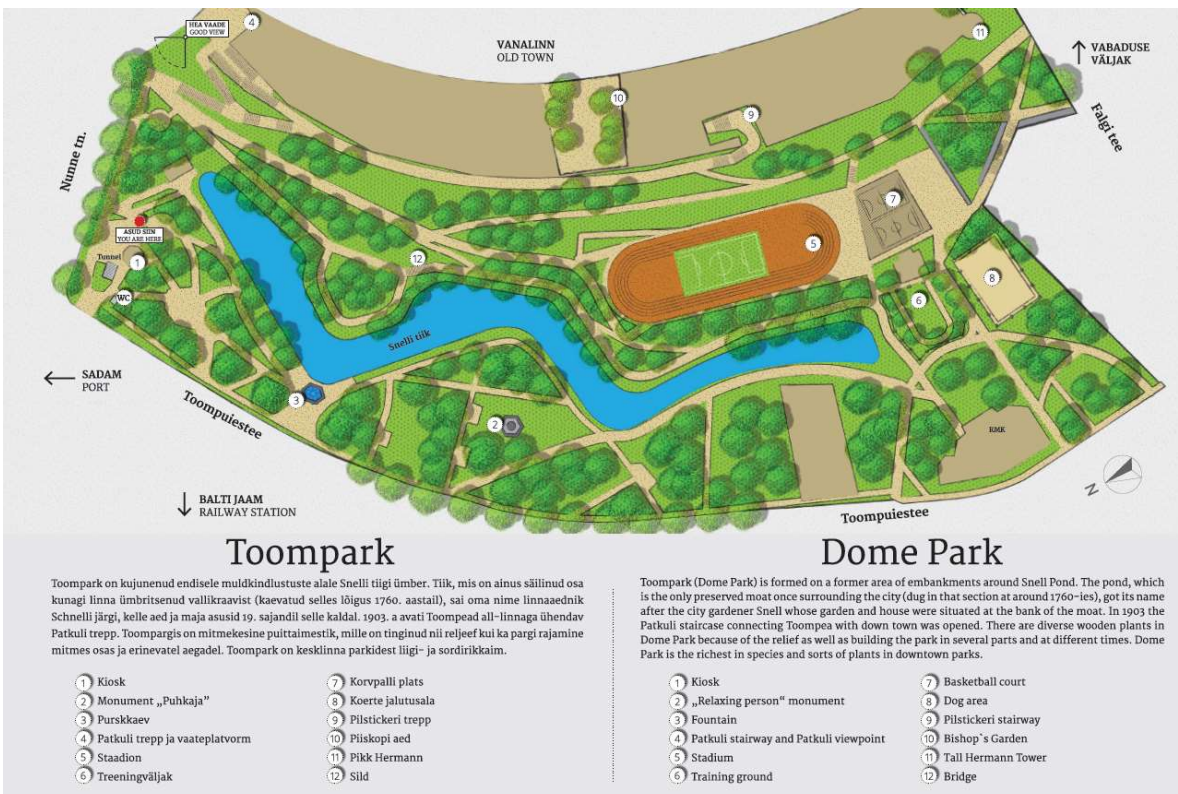
Toompargi elusloodus on kesklinliku konteksti kohta haruldaselt mitmekesine. Toompargis paiknevad mitmete nahkhiirlaste (nahkhiired, veelendlased, sh teise kaitsekategooria liigid) pesitsus- ja toitumiskohad (näiteks vanade puude õõnsustes). Nahkhiirlased on valgustundlikud, seetõttu on oluline, et pargis säiliks ka hämaraid kohti. Ülevalgustamist tuleks vältida kindlasti Snelli tiigi Tõnismäe poolses otsas- hämarus on nahkhiirlastele väärtus elukeskkonna mõttes. Puuvõrade alt-üles valgustamine on nahkhiiresõbralik vaid talveperioodil (nahkhiired pesitsevad muuhulgas vanade puude õõnsustes)

Toompea paljand ja Patkuili trepi paljand on looduskaitsealused vaatamisväärsused.

Võistlusala ei hõlma treeningväljaku ja staadioni ala.

Fotod Toompargist:





Tornide väljak

Tornide väljak on oma nime saanud selle äärde jäävate rohkete linnamüüri tornide järgi, peale selle paistab siit mitu kirikutorni. Keskajal nimetati paika Nunnakopliks, kuna see kuulus praeguse Gustav Adolfi Gümnaasiumi hoonetes toona asunud naistsistertlaste nunnakloostri. 17.–18. sajandil rajati Tornide väljakule aga muldkindlustused ja kaevati vallikraav. 19. sajandi keskpaigaks kaotasid kindlustused oma sõjalise tähtsuse. 1864. a vallikraav selles lõigus täideti ja ala hakati kasutama heinamaana. 1896. aastal tehti Tornide väljaku ala näituseplatsiks ja aastatel 1931–1933 muudeti see üldkasutatavaks pargiks. Pargis on säilinud ka 1900. aastate algusest pärit valgustipost.



1936. aastal sai Tornide väljak purskkaevu skulptor Juhan Raudsepa kauni skulptuuriga „Naine vaagnaga” (ka „Kaeval”). See on pargi ainus vee-element.

1930. aastate lõpul oli Tornide väljak Tallinna üks nooblimaid funktsionalistlikus stiilis haljasalasid oma liigirikkuses ja lillekülluses.

Praeguseks on toonane lillerohe haljasala kasvanud heas seisundis puistuga varjuliseks pargiks, mis on võetud looduskaitse alla.

2007. a sügisel kasvas Tornide väljakul umbes 75 eri puittaime. Pargis korraldatakse erinevaid üritusi (kontsertide tarbeks on pargis lava ja keskväljak)

Keskajal asusid siin linnaelanike köögiviljaaiad. Muldkindlustuste rajamise järgselt kulges piki tänast pargi-ala samuti vallikraav, kuid selle täpne asukoht pargi maastikus välja ei joonistu, kuna vallikraavi säng on täidetud.

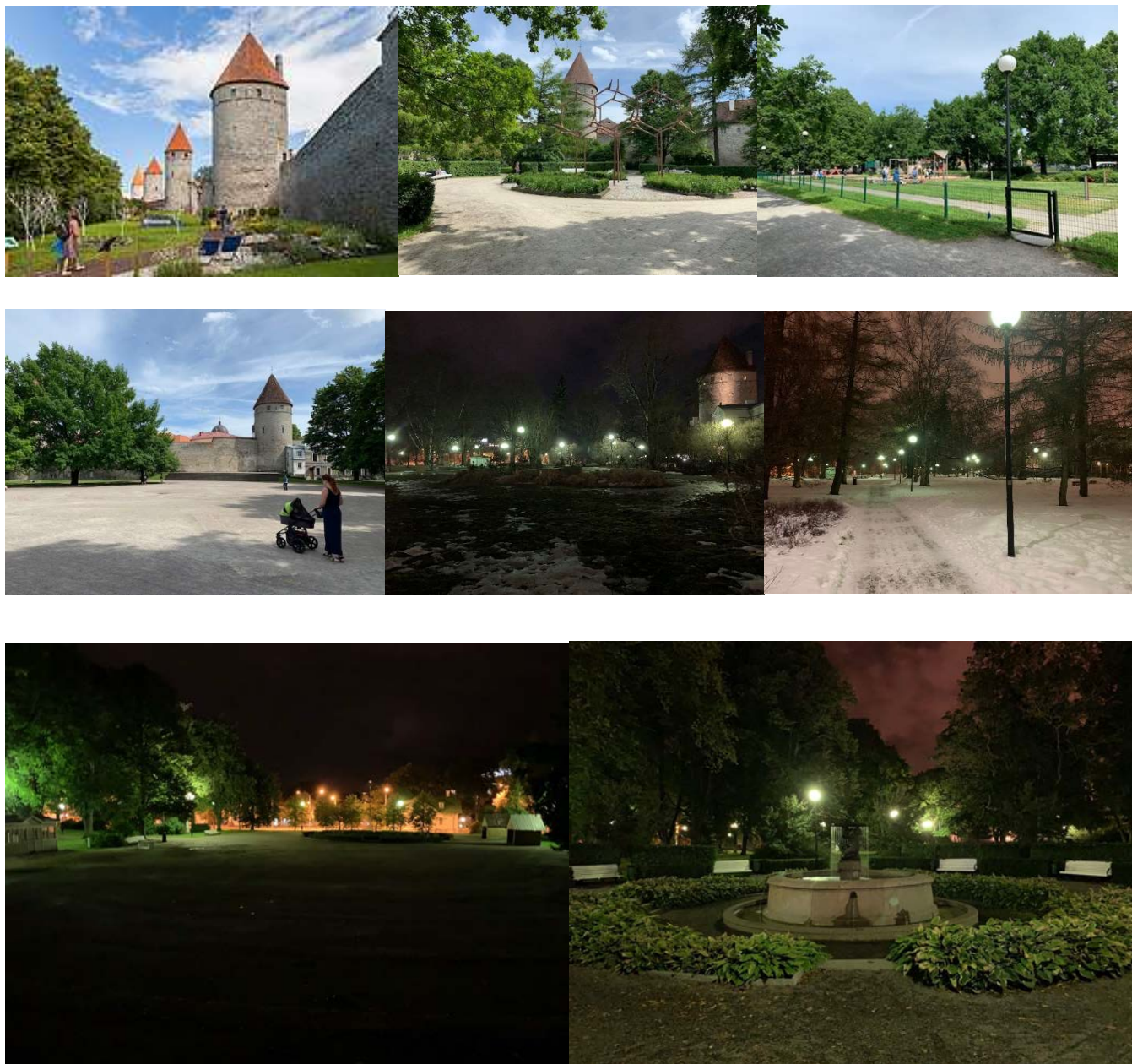
Tornide väljaku maastikus on nii sümmeetrilise planeeringuga kujundatud alasid kui loodusliku ilmega varjulisemaid pargialasid. Pargi maastikus on kordub labürindi motiiv (hekilabürint; sillutiskivi labürint)

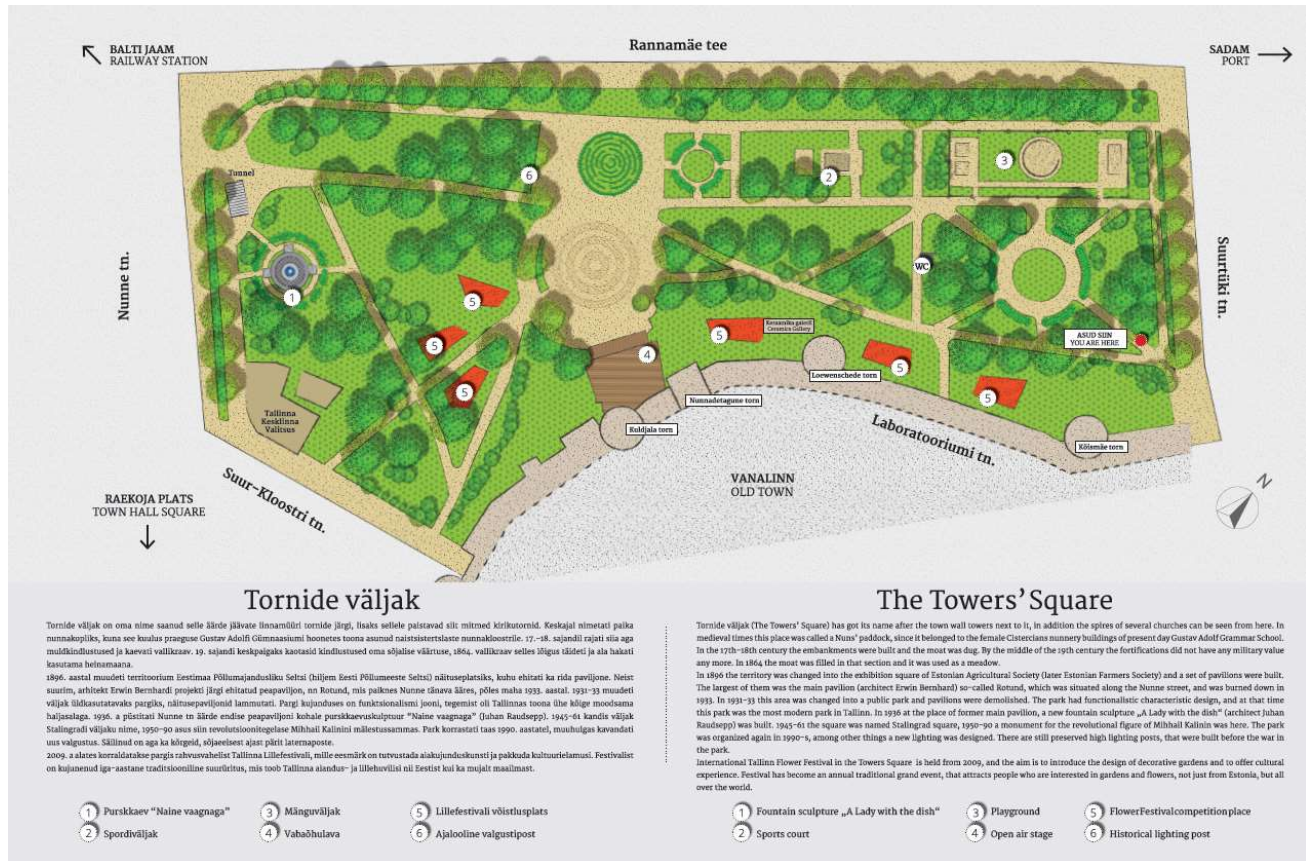
Pargis on välitrenažööride ala ja väikelaste mänguväljak.

Keskset lava kasutatakse ürituste korraldamiseks; seda toetavad puitpaviljonid. Näituseala funktsioon ja seda toetavad paviljonid ja lava on mõtteline jätk ajastule, mil ala kandiski Näituse väljaku nime

Näituse väljakuna kasutati seda ala juba alates 19. sajandi lõpust. Lähiaastatel on korraldatud Tornide väljakul lillefestivali, mille raames kujundati parki ajutised iluaiad.

Fotod Tornide väljakust:





Margareeta aed

Margareeta aed on aed Tallinna vanalinnas Väikese Rannavärava, Pika tänava ja Rannamäe tee vahel. Aia pindala on 1,8 ha.

Bastioniesine vallikraav täideti alles 19. ja 20. sajandi vahetusel, mil likvideeriti Paksu Margareeta vangimaja tarbeks rajatud kapsaaed ja prügi mahapaneku koht. 1930. aastatel kujundati Skoone bastion ja Suure Rannavärava mägi arhitekt Anton Soansi kava järgi ümber.

1980. aastatel taastati osaliselt Väikese Rannavärava bastion. 1996 püstitati Rannavärava mäe Paksu Margareeta-poolsele osale mälestusmärk „Katkenud liin“ (skulptor Villu Jaanisoo), mis on pühendatud 1994. aastal parvlaev „Estonia“ katastroofis hukkunutele. Margareeta aia valgustus rekonstrueeritakse 2020. aastal vastavalt ideekonkursi teemaplaneeringule.

Fotod Margareeta aiast:



Kanuti aed

Praeguse Kanuti aia pargi kohal oli kuni 19. sajandini Tallinna kaitserajatisena veega täidetud vallikraav. 1866. aastal anti praeguse pargi territoorium Tallinna linna poolt rendile Kanuti gildile, kes pidi rajama sinna avaliku suveaia ning sellest ajast kannab haljasala Kanuti aia nime.

19. sajandi lõpul peatusid haljasalal mitmed Tallinna külastavad rändtsirkused ja hiljem, kahe Maailmasõja vahelisel perioodil, tegutses lõbustuspark, kus oli köisraudtee, karussell ja vaateratas ning jalgrattalaenutus. Kanuti aia kõrval asus alates 1913. aastast kino "Grand Marina" (hiljem "Ars"), mis oli asutamise ajal suurim kino kogu Venemaa keisririigis.

Teise maailmasõja käigus 1944. aastal hävis Grand Marina kinohoone ja selle asemel ehitati Tallinna Laevastiku ohvitseride maja, mis valmis 1953. aastal. Koos Ohvitseride majaga viidi läbi ka kõrvalasuva pargi ümberkujundamine neoklassitsistlikus stiilis.

Pärast Eesti iseseisvuse taastamist muudeti Ohvitseride maja Vene Kultuurikeskuseks ja park kujundati taas ümber. 2002. aastal paigaldati parki Fjodor Dostojevski mälestussammas (kujur Valeri Jevdokimov).

2008. aastal rajati parki purskkaev Mare Mikofi skulptuuriga „Poisid vihmavarjuga“

Kanuti aias toimuvad talvel erinevad valgusinstallatsioonidega seotud üritused, näiteks 2019.aastal "Heade Soovide Park", kus süüdati tuhanded LED-tuled, millede valguses said linlased imetleda valgusinstallatsiooni ja üksteisele ilusaid uusaasta soove edastada. Samuti on seal korraldanud oma valgusinstallatsioonide näituseid Eesti Kunstiakadeemia tudengid.

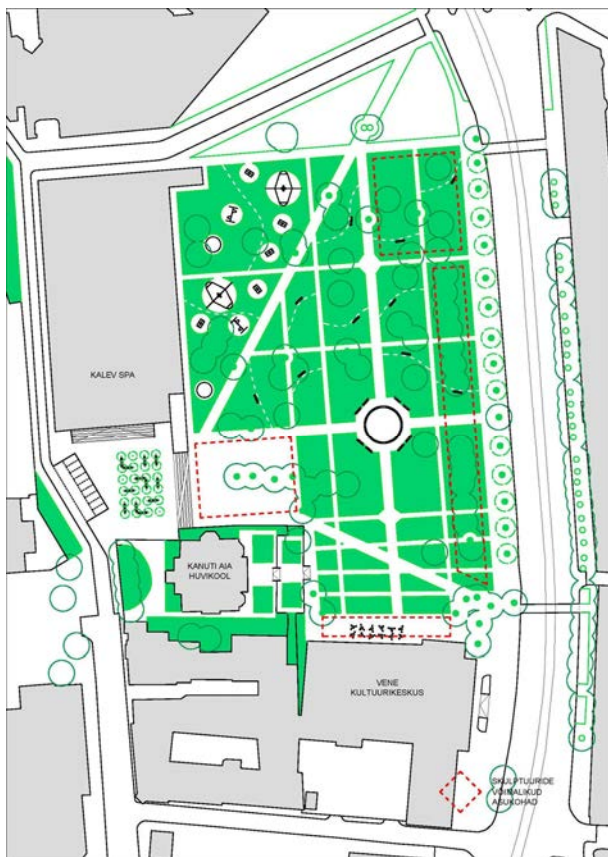


Linnaplaneerimisamet on esitanud ettepaneku, kuidas pargi ortogonaalset struktuuri jätkata, parki ruumiliselt korrastada, luua loogilisi ühendusteid Vanalinna (Kalevi ujula), Mere puiestee, südalinna vahel; anda selgem siht Vanalinnast sadamasse suunduvatele turistidele. Parki plaanitakse täiendada Sergei Dovlatovi mälestusmärgiga. Mälestusmärgi täpne asukoht selgub ideekonkursi käigus, kuid määratletud on selleks potentsiaalsed alad.

Fotod Kanuti aiast:







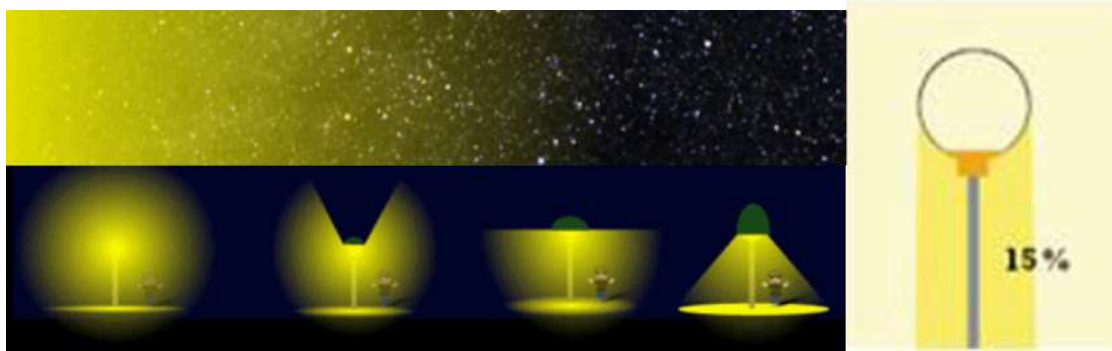
Kanuti aeda rajatakse 2021.aastal monument kirjanik Sergei Dovlatovile, mälestusmärgi rajamise asukoht on täpsustamisel, võimalikud asukohad on Mere pst-ga paralleelselt lineaarsel pargiosal või riskülikukujulisel alal pargi tagumises sosis.

2. Bastionite vööndi parkide valgustuse hetkeolukord

Enne uue valguskeskkonna loomise alustamist, on vaja tutvuda vana olukorraga ja selle puudustega.

Bastionaalvööndi parkide valgustuselased suurimad puudused on:

1. Elavhõbedalampide ja naatriumlampide korraga kasutamine, osad pargid on oranzika tooniga, teised jällegi sinakad. Selline kontrast mõjub häirivalt ja kumbki tonaalsus, arvestades ka kehva värviedastust, ei kaunista parke, ega loo meeldivat õhkkonda.
2. Palju on kasutusel kera-tüüpi valgusteid, mille valgusviljakus on väga halb, valgusreostuse seisukohalt on see halvim lahendus.



3. Valgusteid kasutatakse ainult funktsionaalsuse otstarbel, valgustamaks käiguteid.
4. Parkides on ootamatud pimedad tsoonid segamini valgusreostust tekitavate liig-võimsate lampidega.
5. Pimedad on skulptuurid, monumendid, purskkaevud, trepid, väljapääsud.
6. Parkide keskseid alasid ei ole võimalik pimedal ajal eristada.
7. Mänguväljakutele ei ole mõeldud valgustamiseks erilahendusi.
8. Teede valgustamisel ei ole läbi mõeldud inimeste tegelikke liikumis-suundi.
9. Pimedal ajal ei toimu parkides organiseeritud tegevusi.
10. Vana valgustehnika on väga energiakulukas, kuues pargis on hetkel kasutusel kokku 36 385W.
11. Valgustuse kirju olukord ei tule kuidagi kasuks kohe valmivale linnamüüri ja linnamüüri tornide valgustuse projektile. Antud projekt keskendub pigem fragmentide valgustamisele ja müüri struktuuri ruumilisuse väljatoomisele, seejuures austades elanikke tasase sosistava valgusega. Ent parkide praegune valgustus karjub paraku sellest kaunist sosinast üle.



3. Konkursitöö lähtekohad

1. Valgustuslahenduse idee peab arvestama vanalinna ja seda ümbritsevate parkide ajaloolise väärtusega, olema uuenduslik, kuid samas tagasihoidlikult sobituma vanalinna keskaegse õhustikuga. Tallinna vanalinn on 1997.aastal kantud UNESCO Maailmapärandi nimekirja.
2. Pargivalgustus peab olema turvaline, energiasäästlik, jätkusuutlik, uuenduslik, looma meeldiva linnaruumi. Piisavalt rahulik ja hubane, austades elanikke ja loodust ning kaitstes tähistavast. Toompargis peab arvestama seal elutsevate nahkhiirtega ja sealne valgustuslahendus peab toetama nende elutegevust.
3. Valgustuslahendused peavad meeles pidama kõiki parkide kasutajaid (sihtgrupe) ning kasutusviise.
4. Valgustuse hämardamine öötundidel peab olema kasutuses kõikides parkides, andmaks nii loodusele kui ka elanikele võimaluse öörahuks.
5. Võistlustöös arvestada valgustuse kolme kihiga, millede ettepanekud tuleb selgelt eristatavatena vormistada. 1) funktsionaalne üldvalgustus (valgustamiseks käiguteid, liikumissuundi, parkide sissepääsud ja treppe), 2) dekoratiivne kujundusvalgustus (haljastuse, linnakunsti, purskkaevude, platside, istumisalade, mänguväljakute, skulptuuride jne valgustuslahendused, valgustusega linnamööbel), 3) sündmuste ajutised valgustuslahendused (digitaalselt juhitud valgustus-stseenid, talvevalgustuslahendused, valgusinstallatsioonid jne)
6. Funktsionaalse valgustuse kontseptsioon peab olema läbivalt kõigis parkides sarnane. Igale pargile iseloomulikke nüansse saab esile tuua dekoratiivne valgustus. Juhul kui peetakse oluliseks mõnes pargis kasutada erinevat üldvalgustuse (või valgustite) lahendust, tuleb see põhjendada. Parkide üldvalgustite (käiguteede valgustamiseks) erinevaid tüüpe ei tohi olla rohkem kui 2-3.
7. Valgustuslahendused peavad arvestama aastaegade ja ilmastikutingimuste vaheldumisega.
8. Valgustite asukohad tuleks planeerida selliselt, et pimestus oleks minimaalne. Vältida valgusreostust.
9. Värvilist püsivalgustust mitte kasutada. Võib kasutada ainult juhul kui valgustid võimaldavad valida ka valget valgust s.t valgustus on dünaamiline ja värvilise valgustuse kasutamise idee on selgelt põhjendatud ning sobitub üldise kontseptsiooniga.
10. Ideekvandis tuua välja valgustite näidistüübid. Nõuded valgustitele on järgmised:
 - Kasutada leedvalgusteid. Valgusti vandaalikindlus valida vastavalt valgusti paigalduskõrgusele: 6 meetrit ja kõrgem - IK07, kuni 6 meetrit - IK08, erijuhtudel IK09 kuni IK 10.
 - Valgusti peab olema kergesti hooldatav
 - Valgustid peavad vastama kohalikele kliimatingimustele. (vastavalt ET-2 0102-0329, „Eesti kliima teatmik ehitajale“).
 - Valgustite kaitseaste peab olema valitud vastavalt EVS-EN 60529:2001/A2:2014 Ümbristega tagatavad kaitseastmed (IP-kood) ja peab olema vähemalt IP65, IP66.
 - Valgustite värviedastus peab olema vähemalt CRI 80
 - Üldvalgustuse valgustemperatuur on 3000K. Võib kasutada ka valge tooni erinevaid temperatuure, kui nende kasutamine on põhjendatud ja sobitub tervikuga
 - Valgusti eluiga peab olema vähemalt 50 000 h.
 - Maasse süvistatavaid valgusteid võimalusel vältida.
11. Eraldi pakkuda valgustuslahendus mänguväljakutele.
12. Pakkuda kontseptuaalne lahendus valgustamiseks parkide sissepääse ja treppe läbivalt sarnaselt.
13. Pakkuda lahendus, kuidas valgustus võiks parandada parkide omavahelist puudulikkust ühendatavust.
14. Oodatud on ideed püsivatele valgusinstallatsioonidele, valgusetendustele, valgusega linnamööblile jne.
- 15. Kanuti aed**

Kanuti aia valgustuslahendus tuleb läbi mõelda detailsemalt, kuna pargi uus valgustuspaigaldis on plaanis projekteerida ja välja ehitada 2021 aasta alguseks. Kanuti aed on võistlusala esimene park, kus valgustuspaigaldis uuendatakse. Kanuti aias soovime kasutada uudseid valgustuslahendusi, et luua aastaegade park (muutuste park). Otsime vastuseid küsimusele, kuidas valgustus inimesi läbi muutuste üllatada saaks või inimesed valgustust muuta saaks. Pargi atmosfäär muutub erinevatel aastaegadel kasutades erinevaid valgustus-stseene (valguspildid, mis eri aastaegadele annavad draama ja maalilisuse).

Valguspiltide muutumine võib olla seotud ka sündmustega või inimtegevusega (s.t inimesed on kaasatud valgustuse kujundamisse nutiseadmete aplikatsioonide või sensorite kaudu).

Kanuti aias pakkuda olemasolevate üldvalgustite (kera-valgustid) asemele uued parki sobituvad pargivalgustid ning lahendada pargi keske purskkaevuga osa valgustus, Dostojevski mälestusmärgi ja Kanuti aia mänguväljaku valgustus.

4. Vormistus

Konkursi võistlustöös esitada:

1. Uue valgustuse kontseptsiooni kirjeldus/ lähtekohad valgustuslahenduse ideele. Pargivalgustuse spetsiifika.
2. Kirjeldada ja visualiseerida võtmetegurite kaudu välisvalgustuslahenduste osas järgnevad väljavõtted:
 - 2.1. Funktsionaalne üldvalgustus (igale punktile minimaalselt 1 visualiseering)
 - a. Pargi üldvalgustus. Liikumisteede valgustamine. Esitada valgusti näidistüüp. Ideest tuleneva parkide erinevuse korral esitada mitu lahendust.
 - b. Sissepääsude valgustamine (s.h trepid)
 - 2.2. Kujundusvalgustus (igale punktile minimaalselt 1 visualiseering)
 - c. Parkide kesksed istumisalad (s.h purskkaevude valgustamine). Üldine käsitlus ja täpsem lahendus valitud keskele osale (visualiseering istumisalale ja purskkaevule).
 - d. Mänguväljakute erivalgustus. Parkide üldvalgustuse lahenduste erinevuse korral esitada mitu lahendust.
 - e. Parkide omavaheline sidusus. Ühenduste loomine/parandamine valgustuse abil.
 - 2.3. Sündmuste ajutised valgustuslahendused, püsivad valgusinstallatsioonid (minimaalselt 1 visualiseering)
 - f. Püsivad valgusinstallatsioonid/ talvevalgustus.
3. Kanuti aed:
 - a. Üldvalgustuse plaan
 - b. Pargi keske osa valgustamise kontseptsioon, s.h purskkaevu valgustuse suvine ja talvine lahendus
 - c. Dostojevski mälestusmärgi valgustamise ideelahendus
 - d. Mänguväljaku valgustamise ideelahendus
4. Parkide valgustuse üldplaan. Märkida alusplaanile üldvalgustus, kujundusvalgustus, erivalgustus, dünaamiline valgustus jm. Tuua välja valgustite näidistüübid.
5. Nimekaart, kuhu on märgitud andmed kavandi autorite, kontaktide ning arveldusarve numbri kohta.

Võidutöö teostamise õigus läheb konkursi korraldajale üle pärast preemiate tasumist.

Võistlustöö esitada eesti keeles. Välismaised osalejad võivad esitada võistlustöö inglise keeles.

Võistlustöö esitada digitaalselt ja trükikõlblikult.

5. Võistlustööde hindamiskriteeriumid

- kontseptuaalse idee terviklikkus, unikaalsus, lahenduse arhitektuurne sobivus ning vastavus hankija eesmärkidele 60%
- majanduslikult otstarbeka käitlemise (energiasäästlikkus, hoolduskulu, vandalismikindlus) arvestamine 25%
- innovaatiliste, uuenduslike lahenduste kasutamine (nii tehnoloogiliselt kui kontseptuaalselt) 15%

6. Žürii

Zürri esimees:	Tarmo Sulg, Tallinna Keskkonna- ja Kommunaalameti juhataja asetäitja
Žürii liikmed:	Boris Dubovik, Tallinna Linnaplaneerimise Ameti Muinsuskaitse osakonna juhataja Kaidi Põldoja, Tallinna Linnaplaneerimise Ameti Üldplaneeringute sektori arhitekt Aigar Palsner, Tallinna Kesklinna Valitsus Linnakeskkonna osakonna juhataja Ain Järve, Kadrioru park, juhataja Kristiina Kupper, Tallinna Keskkonna- ja Kommunaalameti Haljastuse osakonna juhataja- linna maastikuarhitekt Hannes Vaga, Tallinna Keskkonna- ja Kommunaalameti Inseneriosakonna juhataja Eva Tallo, Tallinna Keskkonna- ja Kommunaalameti Inseneriosakonna peaspetsialist, valgustusdisainer

7. Auhinnafond

Auhinnafondi suurus on kokku **20 000** eurot.

Esimene koht/võitja – preemia suurus **8000** eurot (lisandub Kanuti aia eskiisprojekti maksumus 7000eurot)

Teised kaks võistlustööd – preemia suurus mõlemale **6000** eurot
(kõik summad on esitatud käibemaksuga)

Preemiad makstakse välja konkursi korraldaja poolt ühe kuu jooksul pärast konkursi paremusjärjestuse väljaselgitamist. Konkursi korraldajal on õigus jätta preemiad maksmata või vähendada auhinnafondi suurust kui võistlustöö sisu ja vormistus ei vasta lähteülesandes toodud nõuetele.

Võitjaga sõlmitakse lisaks hankeleping Kanuti aia eskiisprojekti tegemiseks summas 7000 eurot (käibemaksuga) mis peab sisaldama:

- 1) Seletuskiri
- 2) Välisvalgustuse asendiplaan koos valgustite täpse asetuse ja suunamisega
- 3) Valgustusmastide täpne asukoht, kõrgus ja tüüp
- 4) Tehnilised lahendused ja parameetrid
- 5) Seadmete ja materjalide spetsifikatsioon
- 6) Seadmete juhtimise skeem

Eskiisprojekti teostamise aeg on kuni 2kuud lepingu sõlmimise hetkest.

Geoaluse ja tehnilised tingimused hangib tellija. Kanuti aia välisvalgustuse eskiisprojektiga tuleb lahendada pargi üldvalgustus, pargi keske osa ja purskkaevu valgustus, mänguplatsi valgustus, Dostojevski mälestusmärgi valgustus. Arvestada ka perspektiivse Dovlatovi mälestusmärgi asukohaga.

Kanuti park on võistlusala parkidest esimene park, kus valgustus uuendatakse, järgnevatel aastatel järgnevad ka teised pargid.

8. Tähtajad

Osalemistaotluse esitamise tähtaeg on 22.11.2019

Osalemistaotlusega esitatakse varasemate referentstööde portfoolio viimase viie aasta jooksul teostatud avaliku ruumi välisvalgustuslahendustest (minimaalselt 3 projekti) ning meeskonnaliikmete CV-d (vajadusel ka haridust tõendavad dokumendid). Portfoolio ja CV-d saata emailile: Eva.Tallo@tallinnlv.ee

Žürii valib osalemistaotluse esitanud meeskondadest välja kuni kolm osalejat, kellele tehakse ettepanek esitada võistlustöö. Eelis on osavõtjatel, kes on varasemalt teostanud analoogse mahuga avaliku ruumi valgustuse planeeringut, analüüsi ja/või projekteerimist. Hinnatakse teostatud avaliku ruumi valgustuslahenduste kvaliteeti ja lahenduste uudsust. Osalejate soovil teeb hankija neile võistlusala tutvustava ringkäigu eelnevalt kokkulepitud ajal. Võistlustöö vormistamise nõuded on toodud võistlusülesandes punktis 4.

Võistlustöö esitamise tähtaeg on 27.01.2020

Žürii valib võistlustööde seast võidutöö välja kahe nädala jooksul peale tööde esitamist. Võidutöö sobivuse korral sõlmitakse võitjaga eskiisprojekti koostamise leping Kanuti aia välisvalgustuspaigaldisele.

9. Lisad

1. Parkide kaardid
2. Hirvepargi infovoldik
3. Parkide alusplaanid
4. Pargivalgustuse ideekorje tulemuste kokkuvõte
5. Nimekaart

Lisad antakse üle teises etapis osalejatele, kellele tehakse ettepanek esitada võistlustöö.

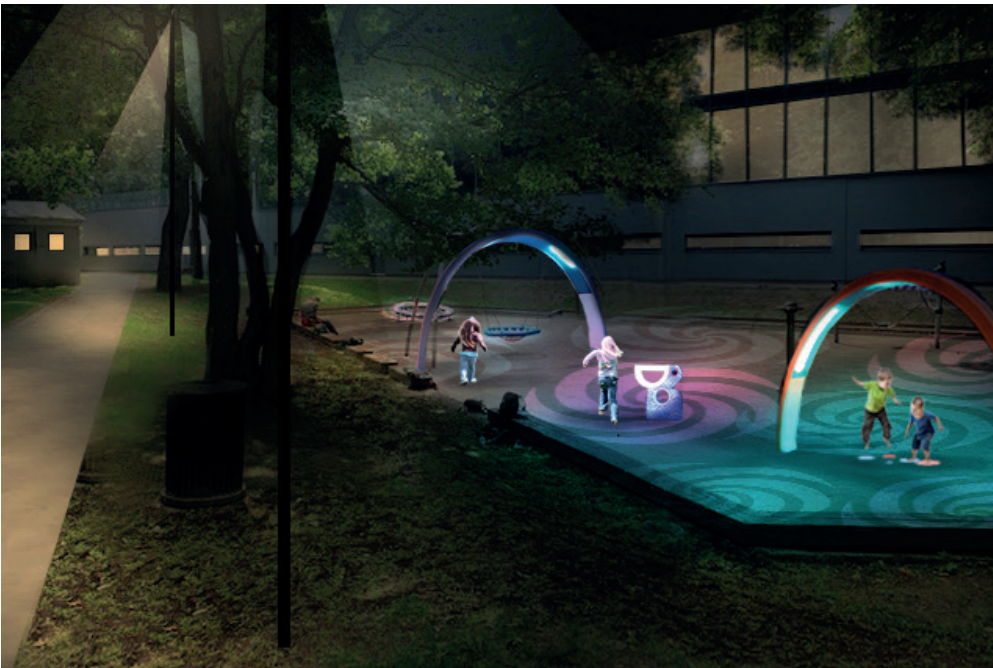
ZENISK

String of memories

Competition entry for Bastion Zone park lighting

Date: January 2020

Version: 1



"In the past, when I shot films about fishermen and hunters, I always had to admire their ability to perceive time in its entirety. The present was always temporary."

Lennart Meri



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Introduction

"In every walk with nature one receives far more than he seeks." John Muir

A walk through nature is a multi-sensory experience which connects us to our subconscious and our instincts, it relaxes and inspires us and gives us time to reflect.

Bastion Zone park is a charming and enchanting green belt around Tallinn old town. A visitor is instantly immersed in a different world, filled with heroic and magical stories, transported into another reality.

At night, these parks have a great potential to communicate their identity and charm better by a holistic lighting strategy.

The concept draws inspiration from rich layers of history meeting present activity, and a peek into the unknown future. It uses layers of light as a tool in a controlled and subtle manner, conveying a narrative, strengthening identity and sense of belonging.

The final aim is to create a harmonious environment where lighting can improve the night-time experience by inspiring and engaging.

All this is done by reducing and tidying up the existing lighting layout. In terms of lighting, less is often more. The concept should be possible to realize with minimum new construction. Concept relies on re-using existing positions where it is viable and finding affordable and durable equipment. Since the parks already have an extensive lighting layout, it is a sustainable approach to try to re-use as much as possible.

Analysis

Existing lighting situation

- Glare
- Light pollution
- Visual incoherence
- Outdated technology
- Lack of controlled lighting distribution
- Energy consumption
- Lack of hierarchy

Goals

- Directed light without glare
- Minimal light pollution
- Visual clarity and clear hierarchy
- Orientation and overview
- Upgrade to LED
- Dimming and controlled light levels
- Lower energy consumption
- Long views
- Pleasant atmosphere

Considerations

- Illumination according to activity and user needs
- Avoid overillumination
- Keep specific places in darkness to protect the animal habitat
- Vertical illumination for orientation, but avoiding uplights



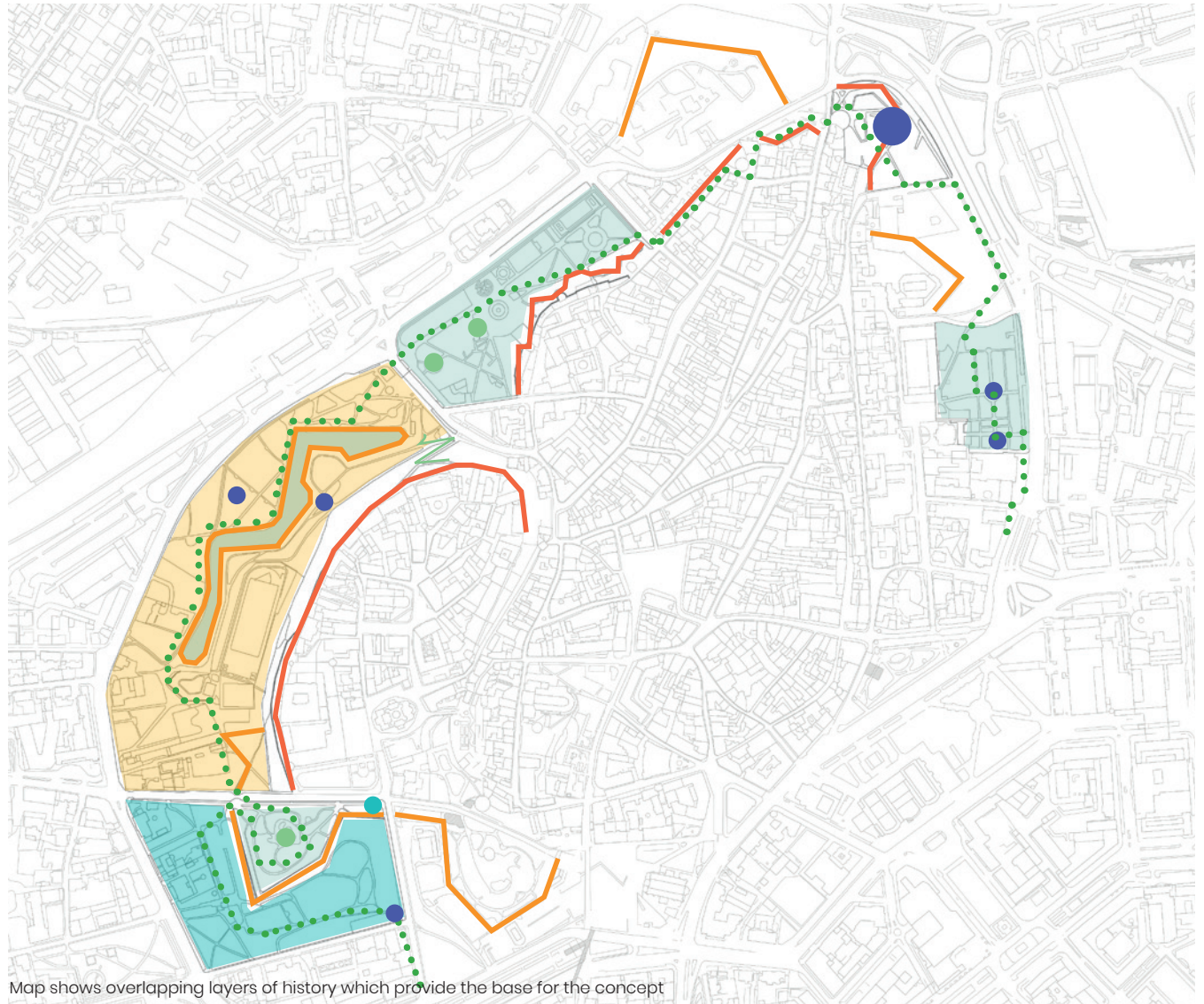
Concept

Time

Bastion parks and their temporal value

Bastion Zone parks are formed around the old city of Tallinn, on the base of the former moat around the Toompea castle. The centuries of gradual development all left various marks in this space.

- MEDIEVAL TOWN
- SWEDISH TRACES
- THE ENGLISH GARDEN
- ENLIGHTENMENT
- THE REVOLUTION
- CONTEMPORARY
- FUTURE



Map shows overlapping layers of history which provide the base for the concept

Places

Bastion parks and their identity

The six parks are easy to distinguish from each other due to their different topography, size, function and ambience. Still, various obstacles (mostly traffic) result in a lack of connection throughout. However, different identities of all individual parks complement each other and can be strengthened into a coherent whole by reaffirming the unclear or missing connections.

HIRVEPARK - forest in the city



LINDA'S HILL - reader's corner



TOOMPARK - the lake walk



TOWERS SQUARE - a labyrinth garden



MARGARET GARDEN - the green break



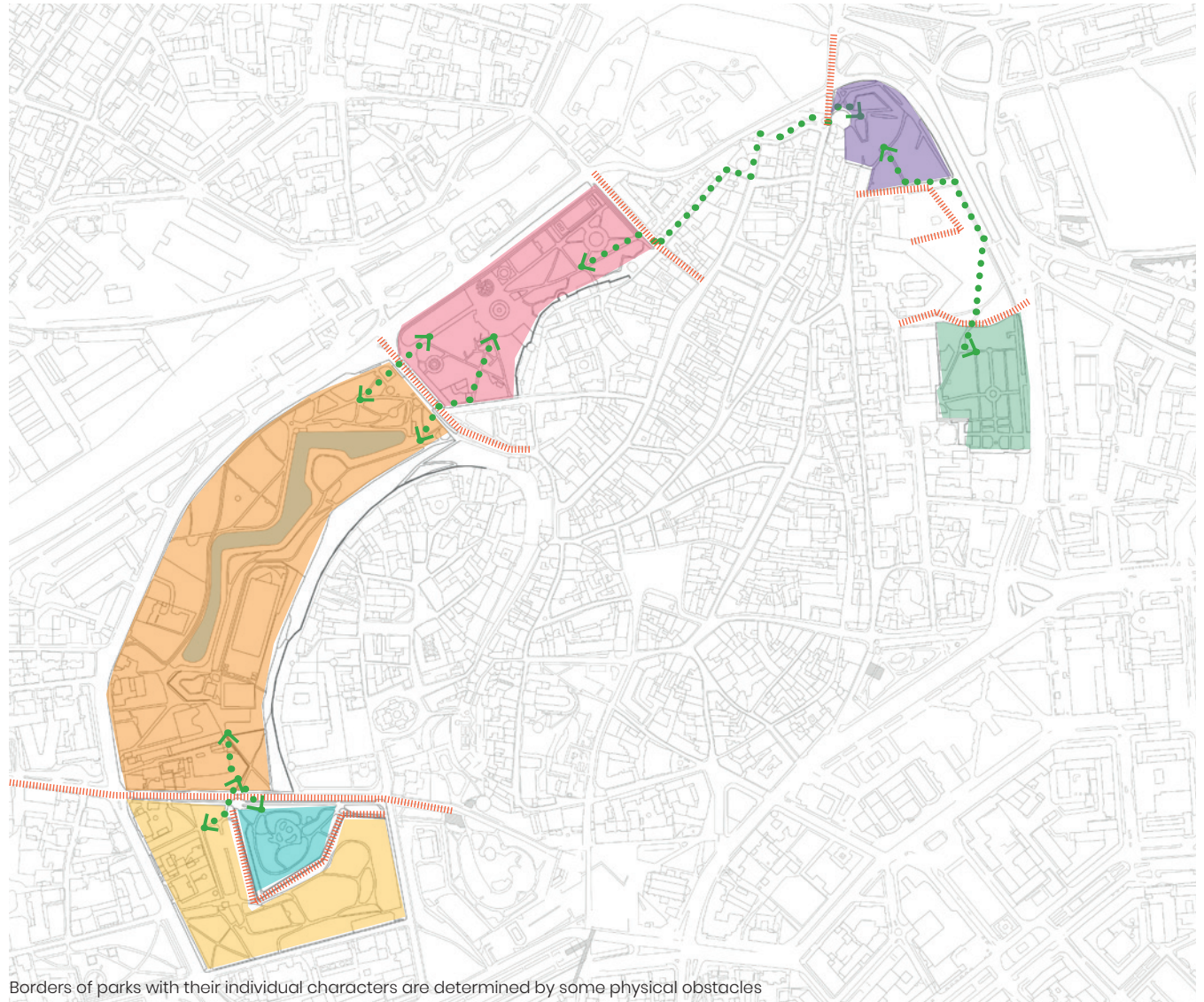
KANUTI GARDEN - culture park



OBSTACLES



(POSSIBLE) CONNECTIONS



Borders of parks with their individual characters are determined by some physical obstacles

People

Bastion parks and their users

Different groups of users with their different needs are overlapping in this space of activity, circulation and recreation.

Locals come to meet their friends, walk, run, rest or read and relax. They need good **overview and orientation** to feel safe and relaxed. This is achieved with good visual hierarchy which highlights **main axes and connections**. Tourists admire the **views**, take pictures or just have a short rest in nature. Their main concern is **safety** as well, but they also need interesting **visual highlights**. There are a lot of **animals** in the parks and human activity has a huge impact on them. Lighting should therefore be used carefully in order to sustain animal life. This in addition to reduce light levels late at night.

main paths



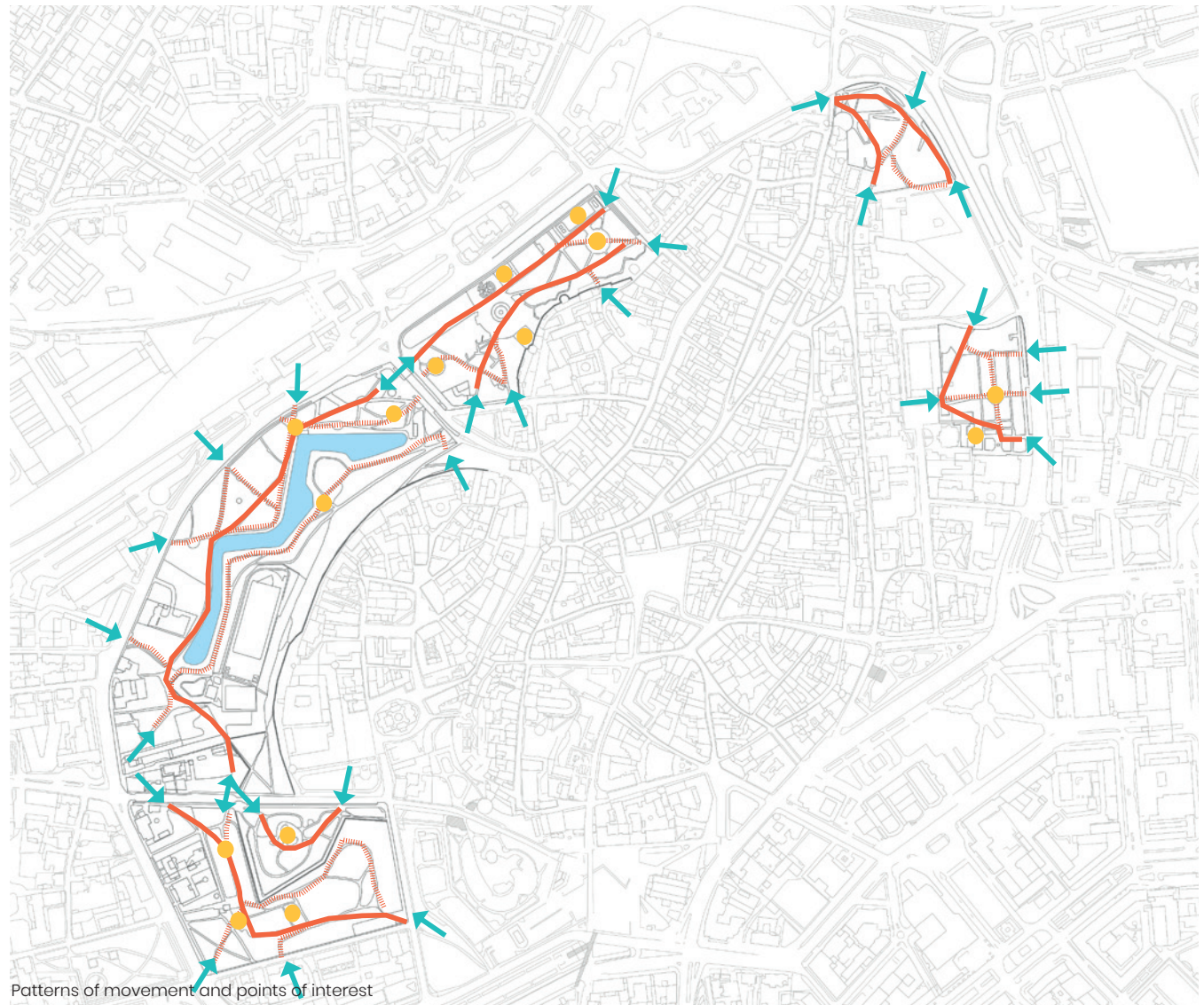
secondary paths



access and entrances



meeting points



String of memories

Concept statement

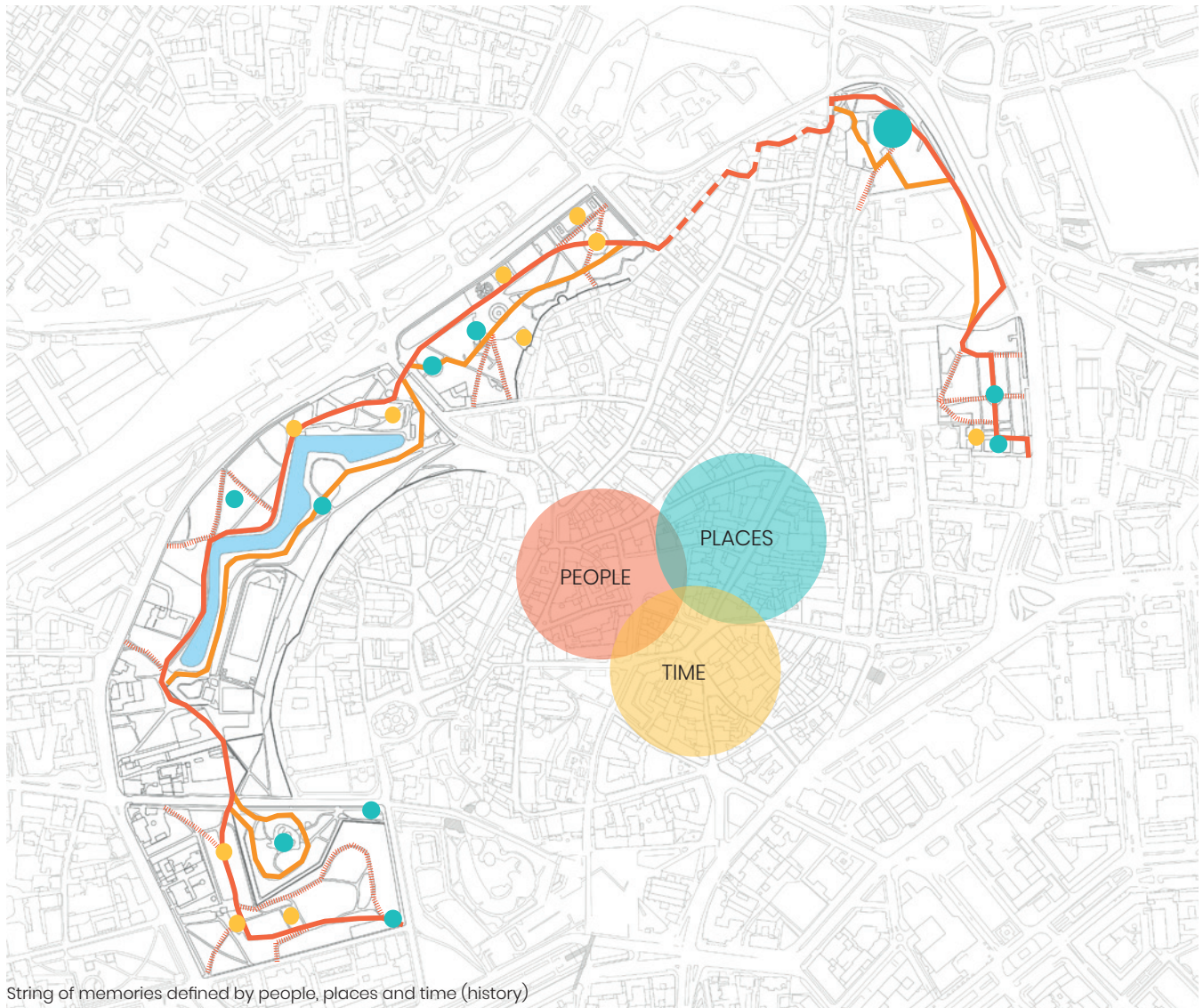
The Tallinn way

Bastion parks silently guard the old town of Tallinn, like the moat that once existed here. They reach out to each other with invisible hands, forming a green link through space and time.

The lighting concept focuses on people, places and time. It aims to re-link the parks, creating new connections and revealing their unique identities.

- connecting people by providing new meeting places
- connecting layers of history
- connecting places in one long discovery walk

The aim is to offer a clear interpretation at night in order to experience the local identity. People should feel safe and able to fully immerse in the historical atmosphere. It is in our human nature to feel safe around other people, which is why attractions, activities and experiences are a crucial part of the concept.





Solutions

Functional lighting

Hierarchy of walks

The solution for the functional lighting of the parks is based on the idea of establishing clear visual hierarchy. This is done in several steps.

The first step is eliminating excess lighting and focusing on the main paths. The second step is creating a visual axis that shines light on the path without glare to the person walking. Lighting fixture provides functional light for pathways, with precise cut-off optic to avoid spill light and light pollution.

All secondary paths should be evaluated to decide if they need illumination or not. The most important parts to be highlighted are the entrance, exit and occasional objects along the way. In a park it is better to encourage people to use main paths at night for security. The place is more safe where there are more people, and for the day image it is better to reduce technical equipment.

Some vertical elements can be illuminated in order to further define the space and give depth, for example the red bridge as a recognizable coloured accent or certain greenery.

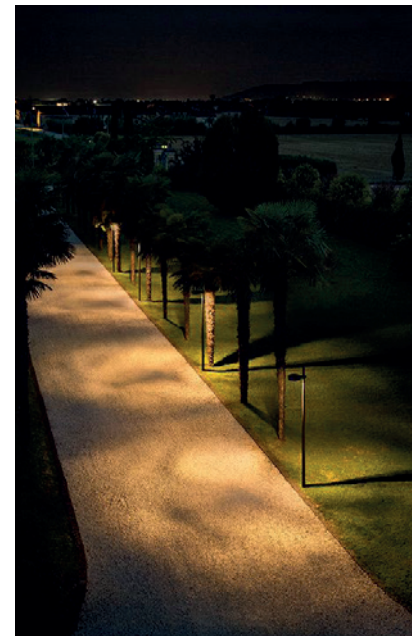
Where the walk passes a fountain, a different lighting is suggested to signalise a change in atmosphere and pace, inviting in to relax.



Main paths, mounting height 4-5m



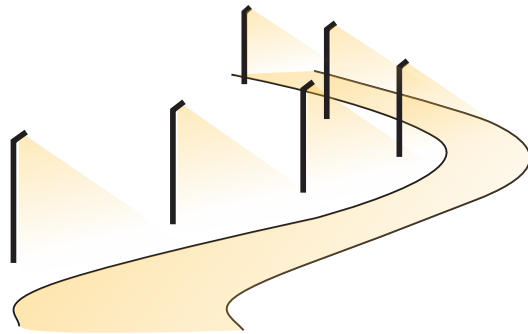
Secondary paths, mounting height over 6m



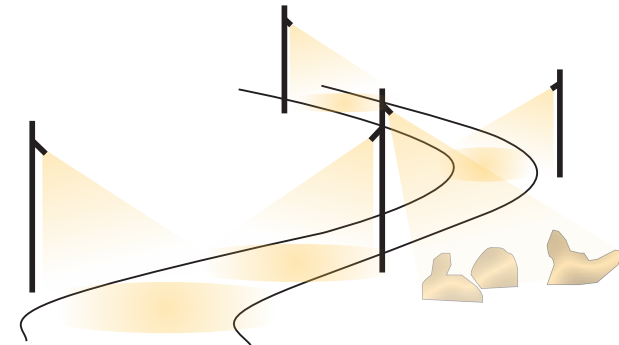
Main paths,



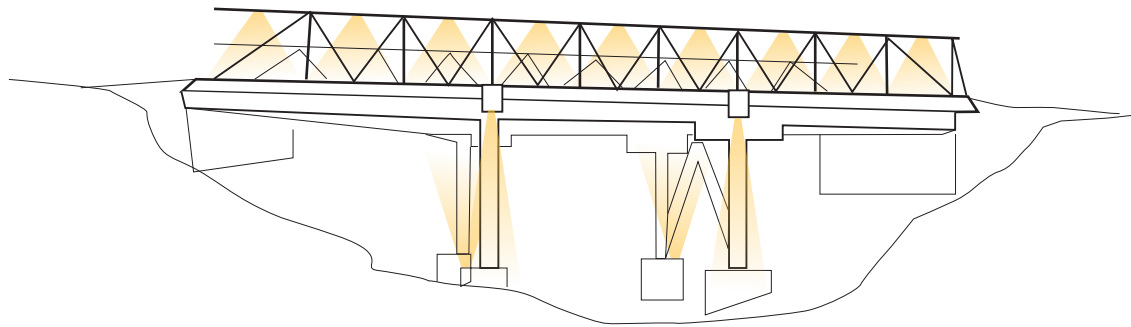
Secondary paths



Main paths are evenly illuminated to provide good visibility and clear guidance



Secondary paths are illuminated in a fragmented way, highlighting entrances, bends, change of direction and objects (sculptures) along the way



The red bridge is well perceived during daytime and helps to understand space and get a good orientation. For this reason, it should be illuminated also by night. Highlighting its red colour will provide an intriguing and warm marker in space.

Entrances

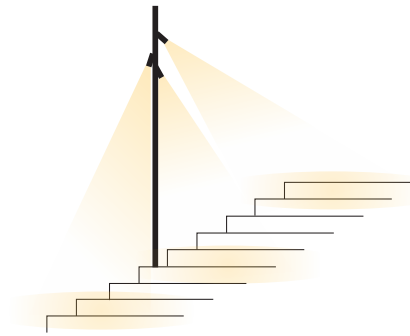
Know where you are going to

Key for entrances is that users should intuitively know where they are. This creates a sense of overview and a feeling of security. When excess lighting is removed, and a clear hierarchy in space is created, it should be obvious to the users where the walks start and stop, and where the entrances to parks are located.

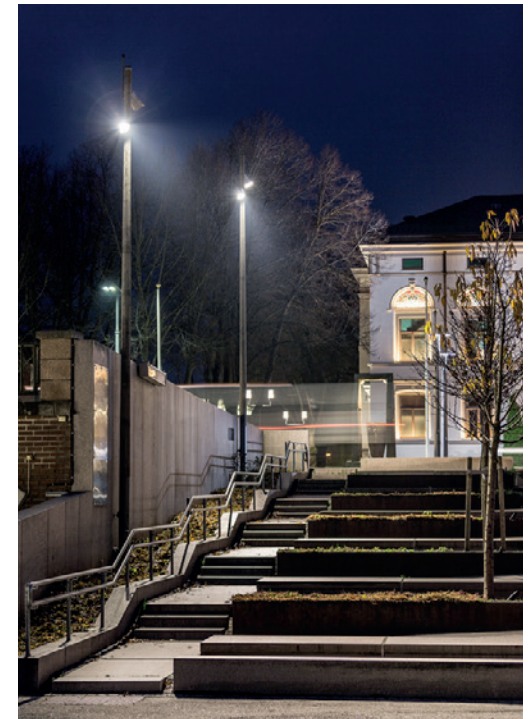
The entrances are illuminated as a highlight, from tall masts with adjustable spotlights with shielded light sources. The aim is to enable form and materiality of the entrances/stairs to be understood, without noticing the lighting fixture.

Creating a good balance between illuminated surfaces and small shadows enhances universal design. This brings out the three-dimensionality of forms, making it easy for users to see the changes in direction of steps or paths.

New lighting of Patkuli stairs is a good example of this strategy. By applying the same solution to the other stairs, we aim to create a recognizable pattern and concept throughout the parks.



Steps are illuminated with adjustable spots on a high mast, with a good cut-off to avoid glare.



Seating areas and fountains

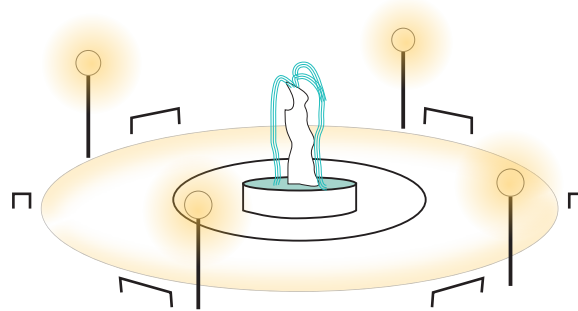
Secret garden

Seating areas and fountains are one of main attractions found in almost all parks. People like to gather here, relax and enjoy the sounds of water and wind in the trees.

These are the areas where warm and enclosed atmosphere is priority. Each situation should be evaluated for vertical lighting to be able to perceive the people around you. This is achieved by using a different type of fixture which gives a soft glow in addition to functional light.

This approach highlights the area and makes it more visible from a distance and it cares for the atmosphere. To avoid light pollution, it needs a light source giving directed light towards the ground and a globe in transparent glass. New LED technology allows for 10% glow and 90 % directional light.

We suggest a blend of warmer colour temperature of 2700K for the seating areas next to 3000K for general areas.



Example lighting fixture



Zenisk project Tøyen Torg in Oslo using a similar fixture



Zenisk project Tøyen Torg in Oslo using a similar fixture

Playgrounds

Fantasyland

"Parks and playgrounds are the soul of a city." – Marty Rubin

Playgrounds are the oasis where children feel safe and get to express themselves, but also places which spark creativity and fantasy.

Children's point of view, especially the youngest ones, is often lower facing up. In these situations it is paramount to avoid glare.

An immersive quality is sought after. This is a peek into the future. Although this invites for interactive technology, solutions can also be very low tech and easy to install.

By integrating lighting in playground equipment, low level lighting adequate for small children is ensured. A balanced lighting with several dimmed light sources combined will create a safe and inviting environment.

The lighting integrated in the playground equipment can be dimmed via a presence sensor when the playground is not in use.

The equipment can have integrated smart city solutions, solar panels, USB chargers or Wi-Fi.



Connections

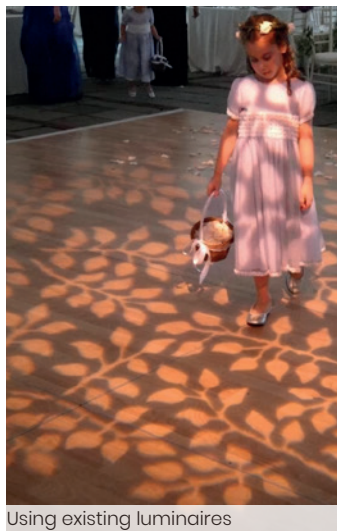
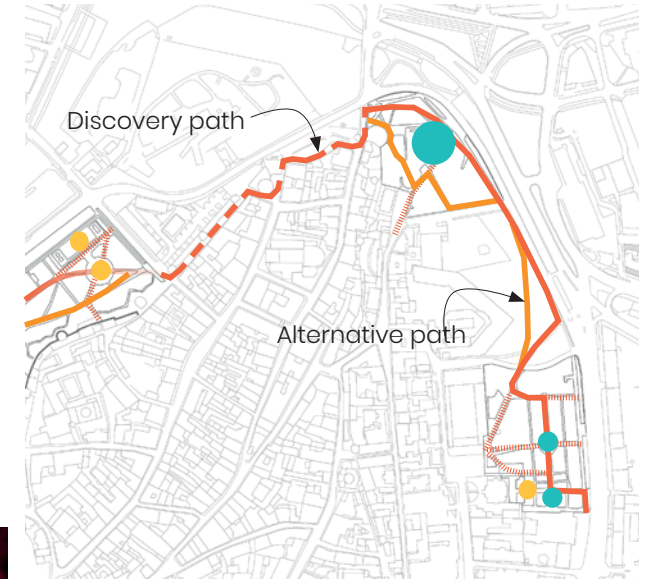
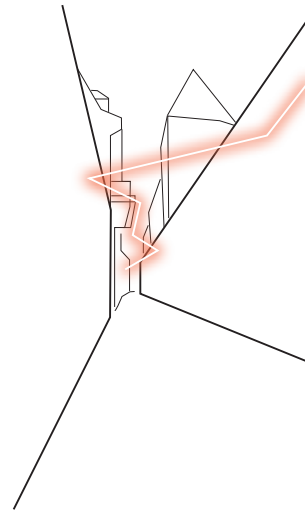
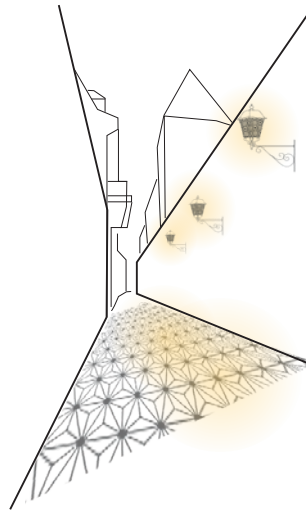
Discovery path

An important part of the lighting concept is re-establishing connections between the parks. The biggest challenge lies between Towers Square and Margaret Garden.

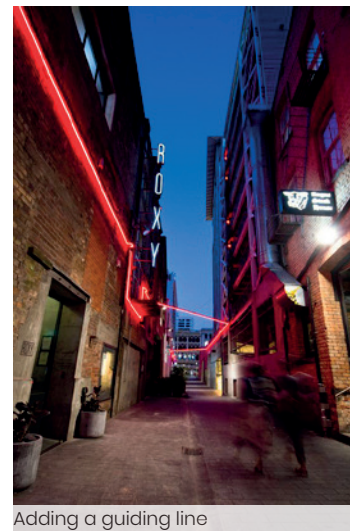
The opportunity is present, however: a slightly off-the-beaten-path, almost secret passage connects these two parks in a way which can inspire and engage the users. This connection is to be discovered and visited because it provides an extraordinary experience.

The discovery path invites us to continue our walk, engaging our senses and imagination. It creates a link not only between the two parks, but also between them and the old town. In this way we create curiosity and engagement in a less-frequented area and invite users to go on a walk through the green belt around the city. One of two options is suggested: either to use existing luminaires mounted on the wall to create a guiding shadow pattern or create a light art piece like a red thread stretched in the air.

The second missing link between Margaret Garden and Kanuti Garden is at the moment established by the adjacent street. However, an alternative walk can be made over the unused grass plane, shortening the route for those going to old town and providing a different experience.



Using existing luminaires



Adding a guiding line



Alternative path through the grass plane

Light art/installations

Light pavillions

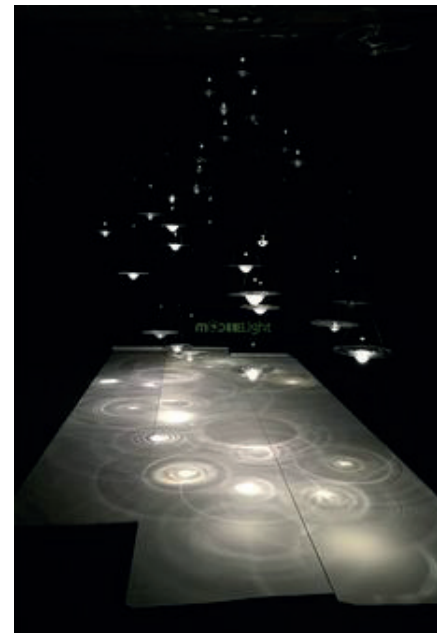
Secret passages, hidden coves – what happens there?

In a place rich with history and folklore like old town Tallinn, there are many stories to be told.

The sculpture of Linda sitting lonely on top of Linda's Hill can be the starting point for telling the story of the city from the times of Linda and Kalev through present times. The stories are interpreted by artists creating a site specific light art.

By activating the secret passages and rooms which are not or rarely in use, we can create engagement throughout the year. These rooms act like small galleries where light art is exhibited and enjoyed by both locals and tourists.

There are several interesting points that can be used besides the Linda statue: the Kalambuuri cafe in Hirvepark, the kiosk on Towers Square, the small cove under the red bridge in Toompark for example.



Historical mast

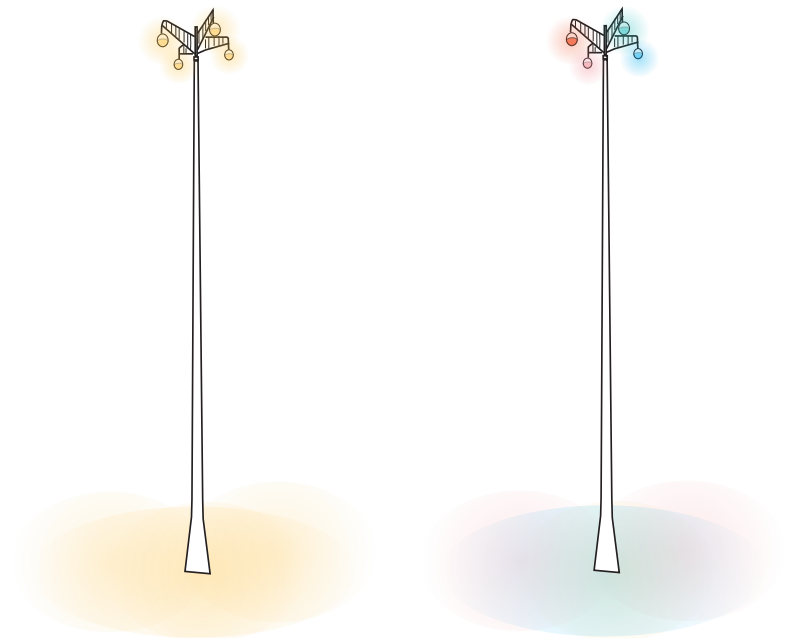
A jewel from the 1900s

Centrally on the Towers Square we find a feature from the early 1900s, a tall lighting mast with a unique design.

This is a rare jewel from the early electrification time, the revolutionary era which promised to make cities better by making them brighter. Since then, lighting technology has made a huge leap and enabled us functions people could not even have imagined back then.

Light attracts us and mesmerises us by influencing our subconsciousness. A hint of past times can trigger emotions and inspire our imagination. By upgrading the lighting on the historical mast we can create an eye-catcher which will make the passers- by stop and wonder. At the same time we will add a link to our story of Tallinn.

The lighting fixtures on top of the mast look inconspicuous, but in the evening they make the square come alive with their inviting dynamic light. The play of light lasts only for a short while before it returns to the static mode.



Kanuti Garden

Concept

Revival of the Garden

At the end of our walking tour, we reach Kanuti Garden – a beautiful calm oasis with its warm glowing lights.

This is a place to rest and contemplate the fantastic walk we have been on, with all its scenic routes, hidden features and stories we discovered.

The views are open and the area is readable. It feels safe and calm, yet the glow keeps us mesmerised for a few more moments.

Whether stopping or just passing by, you will have no troubles perceiving the space and finding your favourite shortcut or best spot to rest, since the clearly defined axes provide good orientation.

The luminaires which resemble the good old globes you are used to see, are now giving directional light to the greenery and the paths, without glare, so you have a better overview. The globes are still there, recreating a feeling of being in a familiar place.



Functional lighting

A better globe

The old familiar globes are replaced with a transparent one with direct light focused on the ground. This is the way to preserve the impression and identity of the garden while improving the lighting effect and reducing light pollution.

This is made possible by modern LED light source created for optimal replacement of conventional light sources inside decorative luminaires. This fixture creates a perfect balance between the technical lighting of good quality and the aesthetic function needed for a representative park like Kanuti Garden.



Example lighting fixture



Luminaires on Tøyen Torg at daytime



Zenisk project Tøyen Torg in Oslo before the refurbishment of luminaires



Zenisk project Tøyen Torg in Oslo after the refurbishment

A part of the refurbishing process at the Kanuti garden should be an evaluation of existing historical masts. Reusing the existing masts would not only be the sustainable solution, but would also keep some of the historical charm and identity of the park.

However, if the masts are in too bad shape to be refurbished in a sensible way, new masts can be designed which would balance the historical identity with the modern technology.

The example bellow is a project in Oslo where Zenisk designed a mast to fit the refurbished historical fixture on top.



Bankplassen in Oslo with refurbished lighting fixtures on top of newly designed masts



3D model of the new mast/ Zenisk



TIP: The globes standing at the entrance of the cultural centre can be replaced with the same type of fixture, keeping the historical base. In this way, a connection would be established between the park and the cultural centre, enhancing the holistic approach.

Fountain

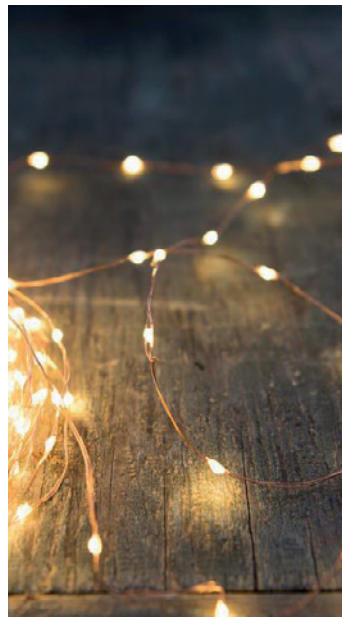
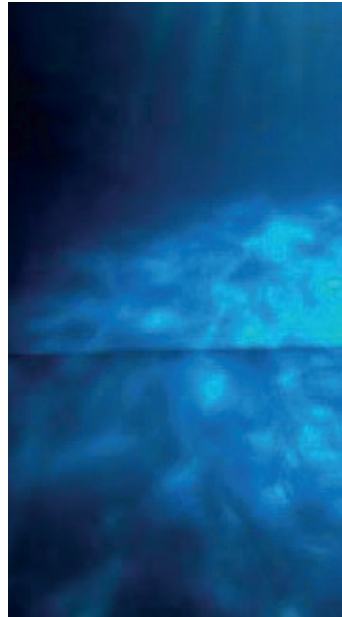
The fountain at Canuti garden is one of the favourite spots for the users and a central motif in the park.

The general lighting around the fountain follows the same principle like the other fountains – it is surrounded by historical lanterns with the new transparent glass globes.

In the centre, the two boys sitting under an umbrella are bathing in their own light. The light is warm and inviting and reflecting softly in the water in the summer evenings.

In the winter, the light creates a dynamic effect slowly moving and shifting colour temperature, to suggest the movement of the absent water.

During Christmas season, additional sparkle is added in form of Christmas lighting, signalling the start of the cosiest time of the year.



Sculpture

In the background, discreetly lit stands Dostoyevsky's statue.

This cultural monument is lit in such a way to stand out in the background, but stay discreet. The light from a tall mast creates just the right amount of drama and play of light and shadows, enough to perceive the object and its three-dimensionality.

From the same mast, we can softly illuminate the background, to further enhance the perception of both the sculpture and the park as a whole.



Playground

Playground at Kanuti Garden lies adjacent to a path often used as a shortcut to old town. The path is lit in line with the concept like a secondary connection, with fixtures that have a good cut-off and precise optic.

The same tall masts are used to project a pattern on the playground, creating an inviting and inspiring environment for children. Together with light integrated in the playground equipment, this gives a balanced and playful lighting.

Lighting at the playground itself is programmed to dim late at night, giving just a low light level if the playground is not in use. When the playground is in use, the light dimmes up to full via a presence sensor.



General lighting plan

Night plan

The lay out of Canutti Garden is one of order and structure with a strong central heart. When light emphasizes form, both gets more power. By reducing and tidying up the lighting we want the historical garden to be a magical spot and a destination. It will be warm an glowy without glare and light pollution.

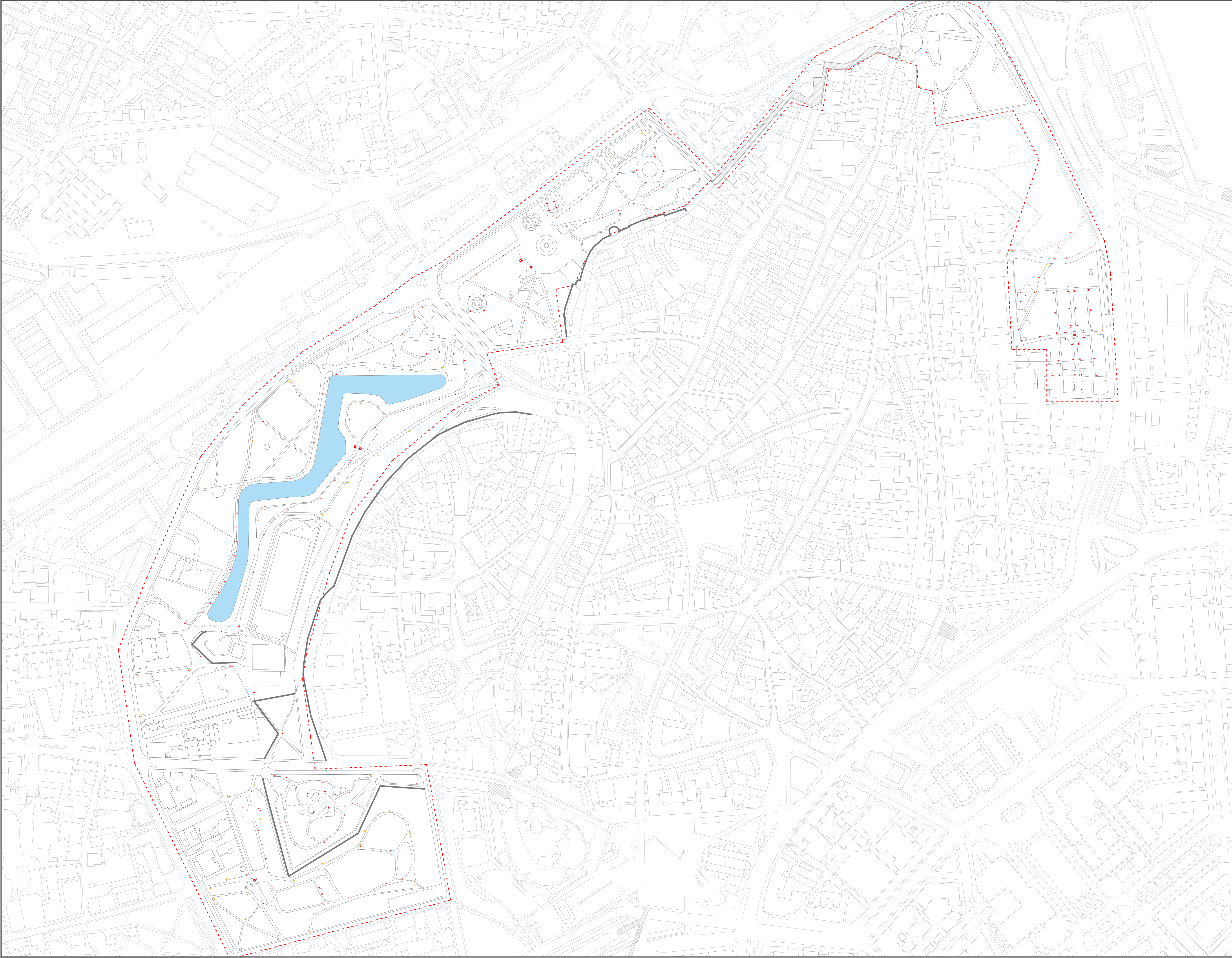


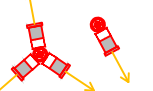
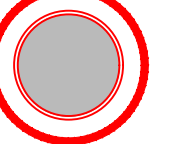
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ATTACHMENTS



-  Functional lighting main walk
-  Functional lighting secondary path, entrances, stairs
-  Lighting for seating areas and around fountains
-  Integrated lighting in playground equipment
-  Feature lighting and light art
-  Feature lighting for discovery walk

ZENISK

Project:

Bastion Zone parks competition entry

Drawing name:

Plan of positions - overview

Status:

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Date:

27.01.2020

Tegnet av:

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Kontrollert av:

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Godkjent av:

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Format:

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Scale:

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Project number:

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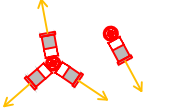
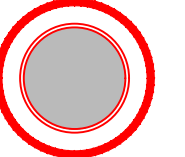
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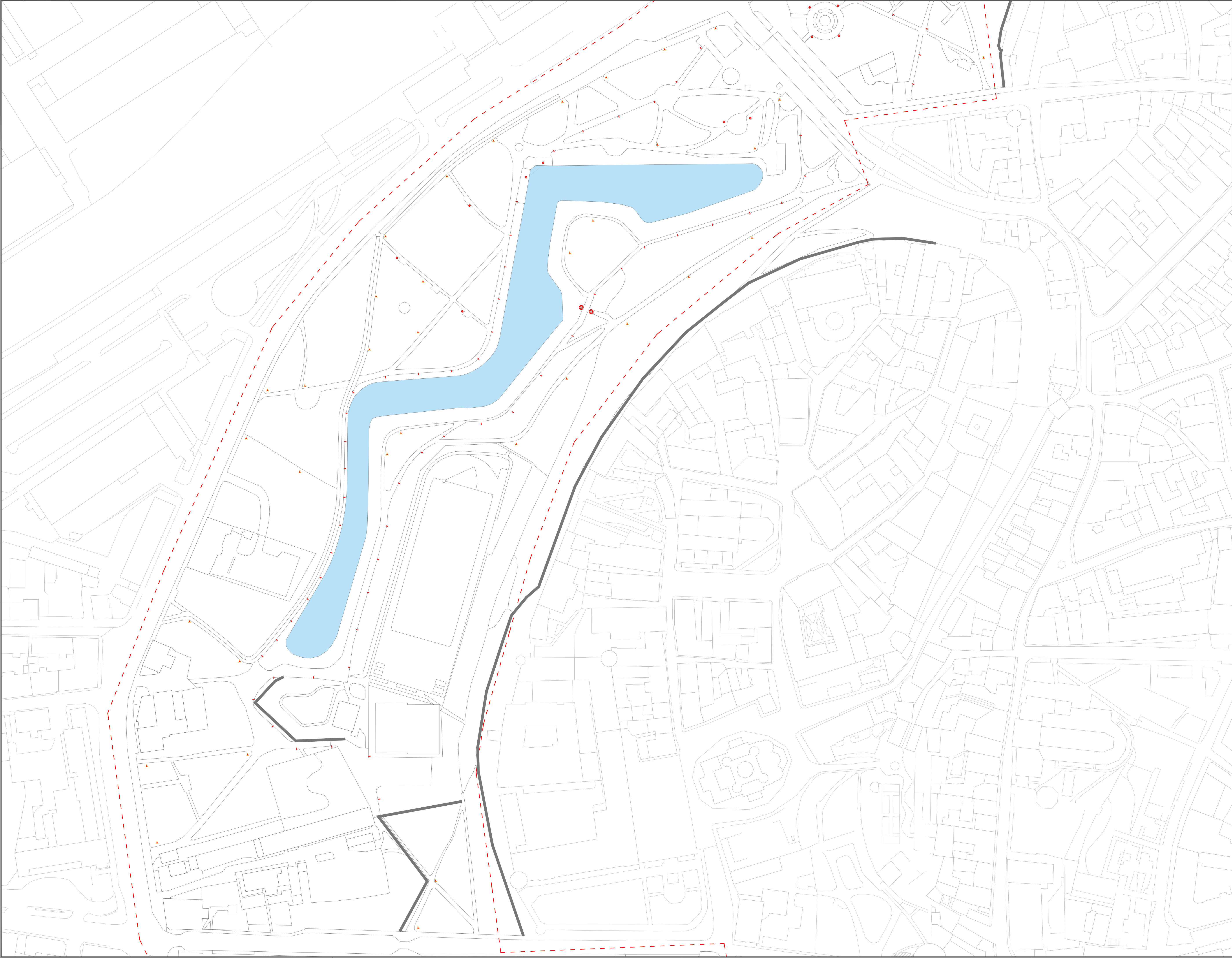
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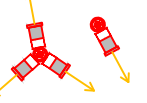
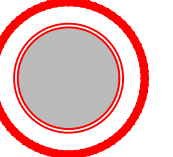


-  Functional lighting main walk
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ZENISK

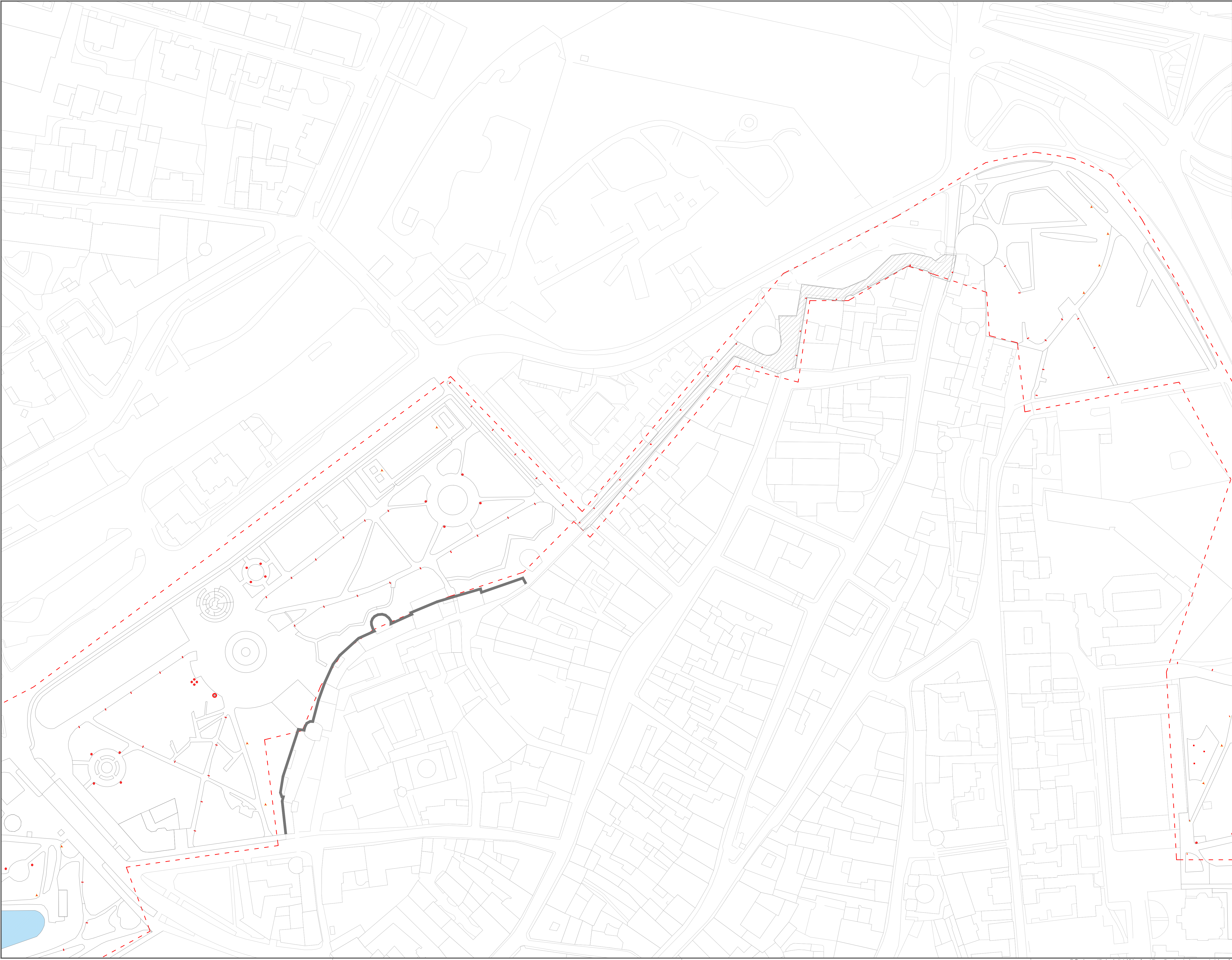
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Drawing name: Plan of positions - Hirvepark and Linda's Hill		
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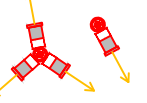
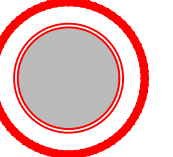


-  Functional lighting main walk
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ZENISK

Projekt: Bastion Zone parks competition entry		
Drawing name: Plan of positions - Toompark		
Status: D	Date: 27.01.2020	
Tegnet av: XXX	Kontrollert av: XXX	Godkjent av: XXX
Format: A1	Scale: 1:1000	
Project number: 342	Drawing number: 003	Rev: -



-  Functional lighting main walk
-  Functional lighting secondary path, entrances, stairs
-  Lighting for seating areas and around fountains
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-  Feature lighting and light art
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ZENISK

Prosjekt:

Bastion Zone parks competition entry

Status:

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Date:

27.01.2020

Tegnet av:

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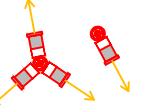
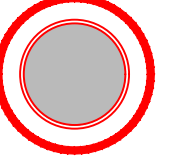
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Rev:

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Plan of positions - Towers Square and Margaret Garden



-  Functional lighting main walk
-  Functional lighting secondary path, entrances, stairs
-  Lighting for seating areas and around fountains
-  Integrated lighting in playground equipment
-  Feature lighting and light art
-  Feature lighting for discovery walk

ZENISK

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Prosjekt:

Bastion Zone parks competition entry

Plan of positions - Kanuti Garden

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Date:

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A night photograph of a snowy park path in Tallinn, Estonia. The path is illuminated by modern, tall, black streetlights with warm white light fixtures. The path is covered in snow and leads towards a large, multi-story building on a hill in the background. The building has many lit windows, and its roof is covered in snow. Bare trees are visible along the path and on the hill. The sky is dark blue.

LIGHTING DESIGN PROPOSAL FOR THE PARKS OF TALLINN'S BASTION ZONE

27. 01. 2020

RAMBOLL

We strongly believe that a successful lighting scheme depends mainly on its connection to its site. That is why, our proposal for this competition is based on series of thorough site analyses. As presented in this document, our vantage point for the design is rooted in research of local daylight conditions; diversities and visual qualities of the natural, and man-made environments; cultural and social heritage; spatial functionalities; and the existing lighting installations on the site.

The parks of Tallinn's bastion zone consist of a sequence of complex environments, which have been shaped through many centuries. The quality of the visual experiences fluctuates significantly throughout the parks, depending on the line of sight, time of day and in particular the season. Hence, when the visitors are strolling through the parks, they are exposed to many different visual impressions. Currently, only a few of these visual experiences are of high aesthetic value.

Our proposal is a strategic approach, which is aimed to establish a visual hierarchy within the area, and to improve the quality of the visual environment in the bastion zone. The goal is to reduce the visual noise perceived when walking through the parks, preserving the beautiful view towards the old town, and allowing the visitors to appreciate the dark starry sky.

Our approach is minimal. The conscious use of only a few lighting elements creates a relationship between the different parks, strengthens their identity and creates a visual connection. The artificial lighting is used with care, allowing people to move safely and in respect of nature and darkness. We believe that the reduction of lighting elements will result in a beatification of the parks. We also believe that beautiful environments itself attract people, and that people feel safe, when they are surrounded by other people. Consequently, the subjective feeling of security at the night-time will inevitably improve when the quality of visual environment improves.

We are using the lighting elements with care and purpose. They are located in a logical manner and with respect of the natural and built heritage. All lighting hardware is designed and dimensioned to produce minimal visual impacts. At the daytime the lighting hardware will appear subdued in relation to the nature. At the night-time we want the lighting hardware to be even more discrete to the point where it almost becomes invisible. By using cut-off luminaires, the environment will be perceived as safe and well-lit. The lighting fixtures are not invasive and they do not create light pollution towards the sky.

Much needed coherence along the bastion zone is achieved by a repetition of the lighting elements through the parks. At the night-time it is the quality of artificial lighting that binds the parks along the bastion zone together.

Identity - The new lighting installation defines a strong visual and aesthetic identity for the Bastion zone. - Visual coherence between the parks of the bastion zone is created. - The lighting concept relates to the history of city and parks.	5
Personal Security - People will feel safe to use the parks for recreation or as a transition area at the night-time - People will emotionally relate to the parks: “I like to visit this place at the night-time. I enjoy walking through the parks. this is my favorite walking route. I would like to stay here longer!” - Glare-free visual environment	4
Traffic Safety and Orientation The new lighting installation does not create light trespass and disturb the traffic in the immediate surroundings.	4
Increased Socialization The residents of Tallinn will spend more time together in the public space. The lighting is used as a tool that reinforces the social bonds in the local society.	3
Environmental-friendly Solutions - The new lighting installation has a low energy consumption. - Over illumination is prevented. The light levels are adjusted during the night-time with a modern fully automated light control system. - Spill-light and light pollution is reduced to the bare minimum so the nocturnal flora and fauna can flourish.	2
Easy Installation and Maintenance - The lighting installation is designed to be robust and vandal-safe. - The lighting installation is easy to install. - The most of the lighting hardware is accessible without lift or ladder which makes the installation easy to maintain. - High-quality lighting hardware ensures long maintenance period and low maintenance cost.	2
Economic benefits An active city district with extensive social life generates new business opportunities and financial profits.	1

The value barometer is one of our tools, which forms a point of departure for our design. It is a list of values that defines a basis for the development of the project. The aim is that these values will be achieved once the project is fully implemented.

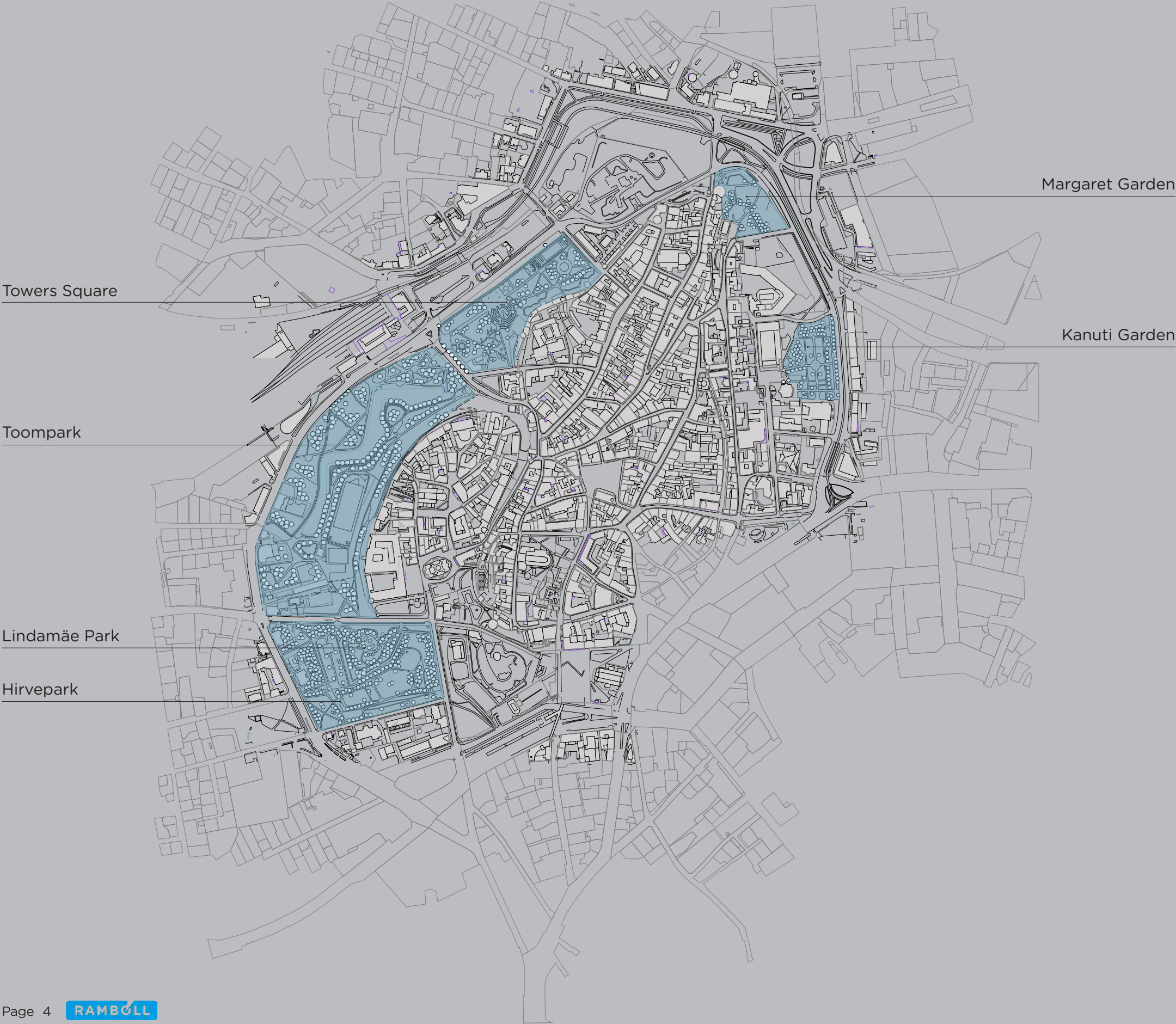
The value barometer is equally beneficial to our clients and to ourselves, and it is often created in a dialogue with the client. During the design phase we check the value barometer regularly, in order to verify, that all the partial design solutions are in line with the targets defined in the value barometer.

All the aspects described in the value barometer are important and the goal is that they will all be reached. However, establishing a hierarchy of the values is necessary for the purpose of decision making.

Establishing a strong visual identity by means of light is defined as the most important value, that we want to achieve with our lighting design for the bastion zone.

The bastion zone is one of the central districts of the Estonian capital. As such it should have a distinctive visual character during night-time. Secondly, the goal is to improve the subjective feeling of security, and that of traffic safety. We wish that both tourists and locals find a visit to the bastion zone enjoyable. For the sake of traffic safety, the new lighting installation should not cause glare or in any way be obstructive for the road users.

Ramboll is always committed to look for environmental-friendly and energy-efficient solutions for the benefit of our clients. That will also be the case on this project. However, low energy-consumption is not this project’s primary concern.

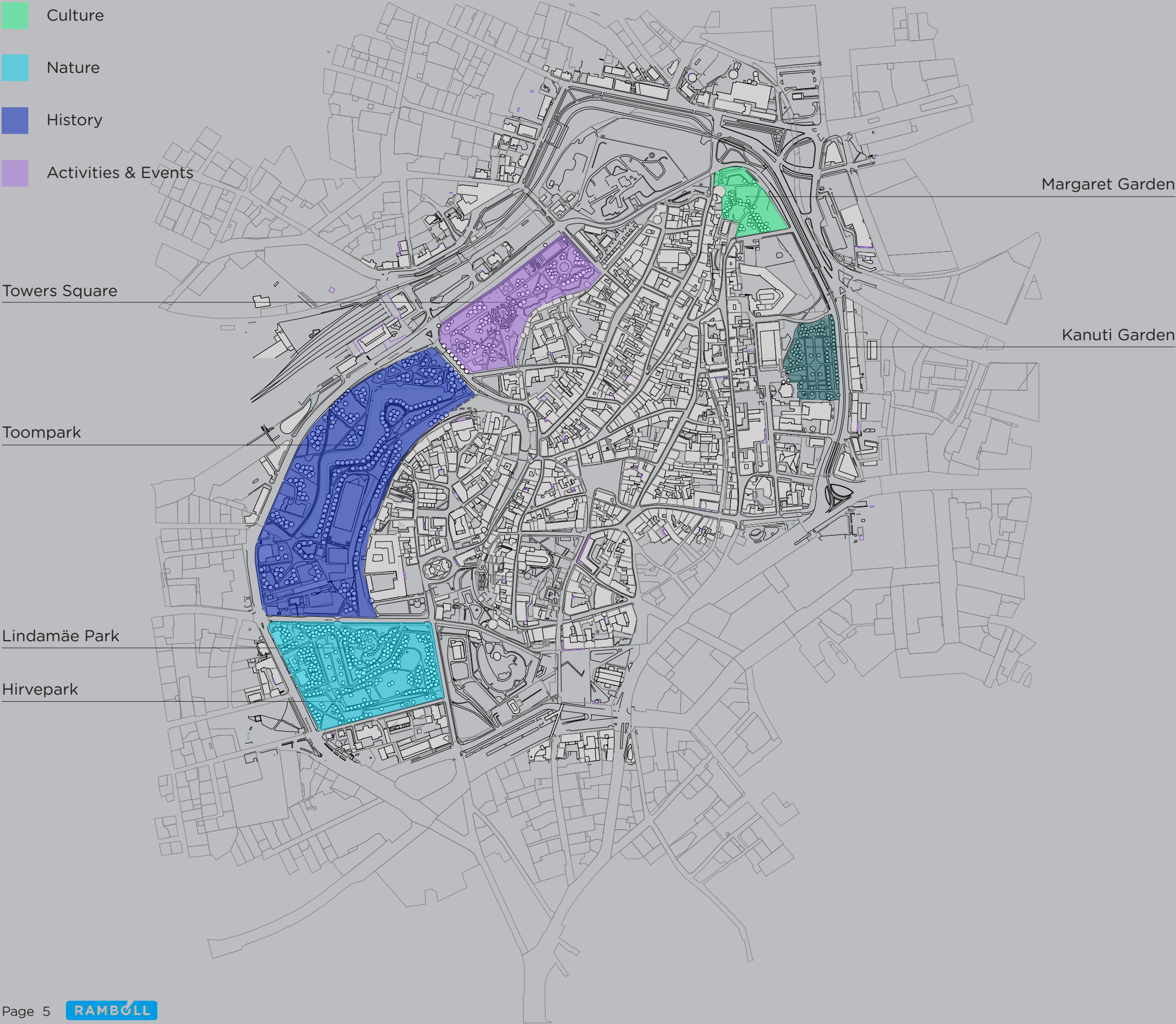


This map is an overview of the competition area. It explains the physical relationship between the competition area and Tallinn's historical centre. It also provides information about the structure and shape of the competition area, and it shows how the individual parks and gardens are interrelated.

The competition area represents a stretched discontinuous strip of land, which is surrounded by dense urban built environment and major city boulevards with heavy traffic.

This analysis raises the question of how to establish a coherence within this disconnected area, which is today impacted by myriad visual stimuli from its surroundings?

- Tourism
- Culture
- Nature
- History
- Activities & Events



The Bastion zone as a whole has a strong historical value and each park has its own main characteristic.

Kanuti Garden is located on one of the main routes from Tallinn harbour to the Old town. It is an important tourist destination.

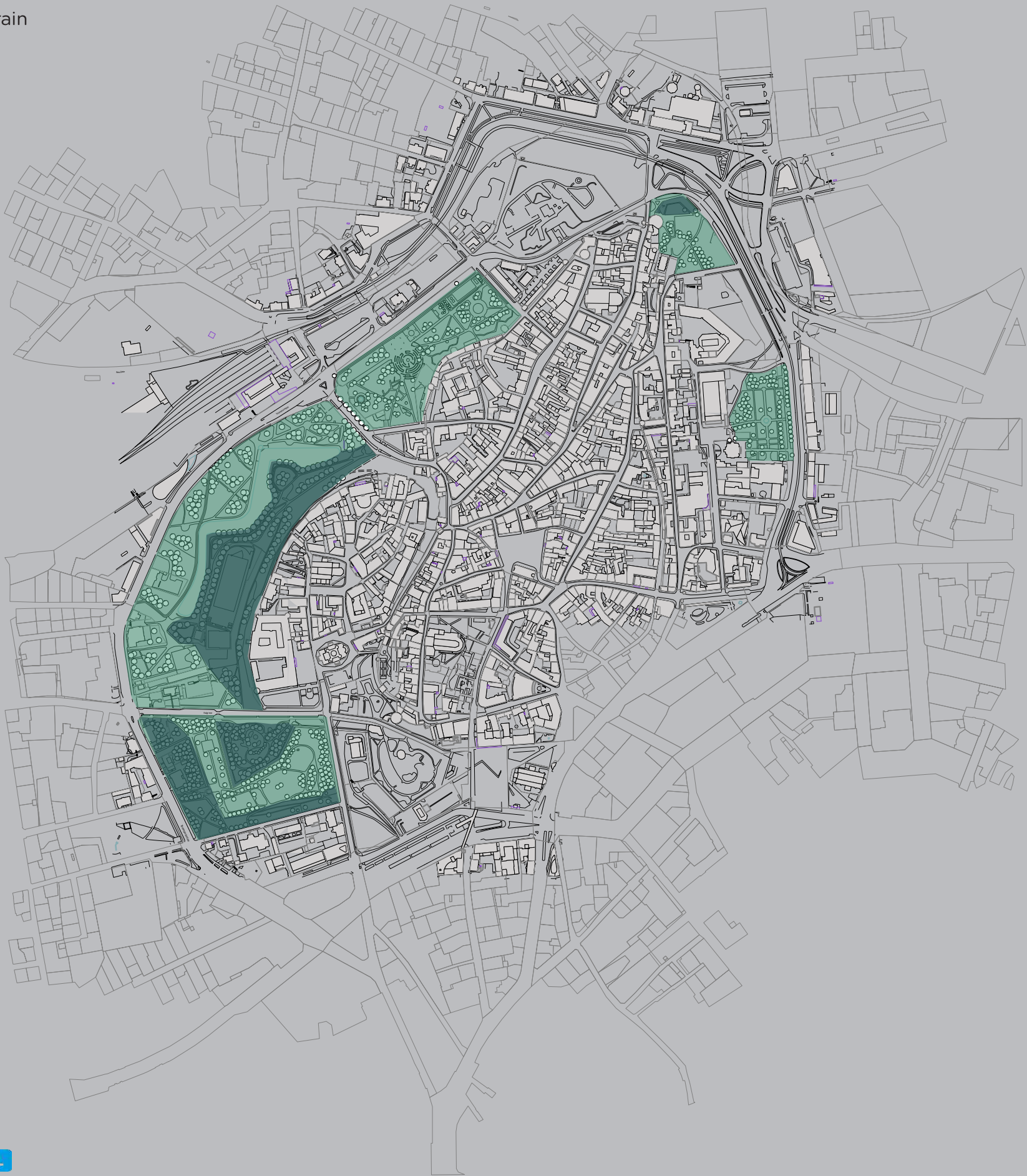
Margaret Garden is situated between the walls of the old town. The entrance to the Estonian Maritime museum and the memorial sculpture The broken line are located there, transforming the park into a cultural destination.

Towers Square is the park where the majority of the activities and events take place during both summer and winter season. These activities and the presence of playgrounds make this park the center of social and community life.

Toompark has the most historical value because of the presence of the only left part of Toompea castle moat.

Hirvepark and **Lindamäe** parks are separated by the old wall. Both parks have an important natural value because of the variety of their vegetation.

- Flat terrain
- Elevated terrain



In some areas there are significant level differences within parks. Mapping the level differences is important because level differences influence the extend of the observer's view.

When looking towards the sloped landscape, the slope creates a vertical “backdrop” which limits the extend of the visitor's field of view. The slope will represent a large part of the image which the visitor will have in his or her field of view. Thus the field of view becomes more restricted than the panoramic view obtained looking out from a high point over the park and surrounding city. In this situation the visitor's field of view is expanded when he or she is watching from the slope. The competition area's immediate and distant surroundings will occupy a large portion of this view. The field of view becomes more diverse, and the visual impact from the surroundings influences the visual experience of the Bastion competition area.

This undulating aspect of the park's landscape is important to bear in mind when deciding what to illuminate and how to create an interesting visual composition.

Water feature

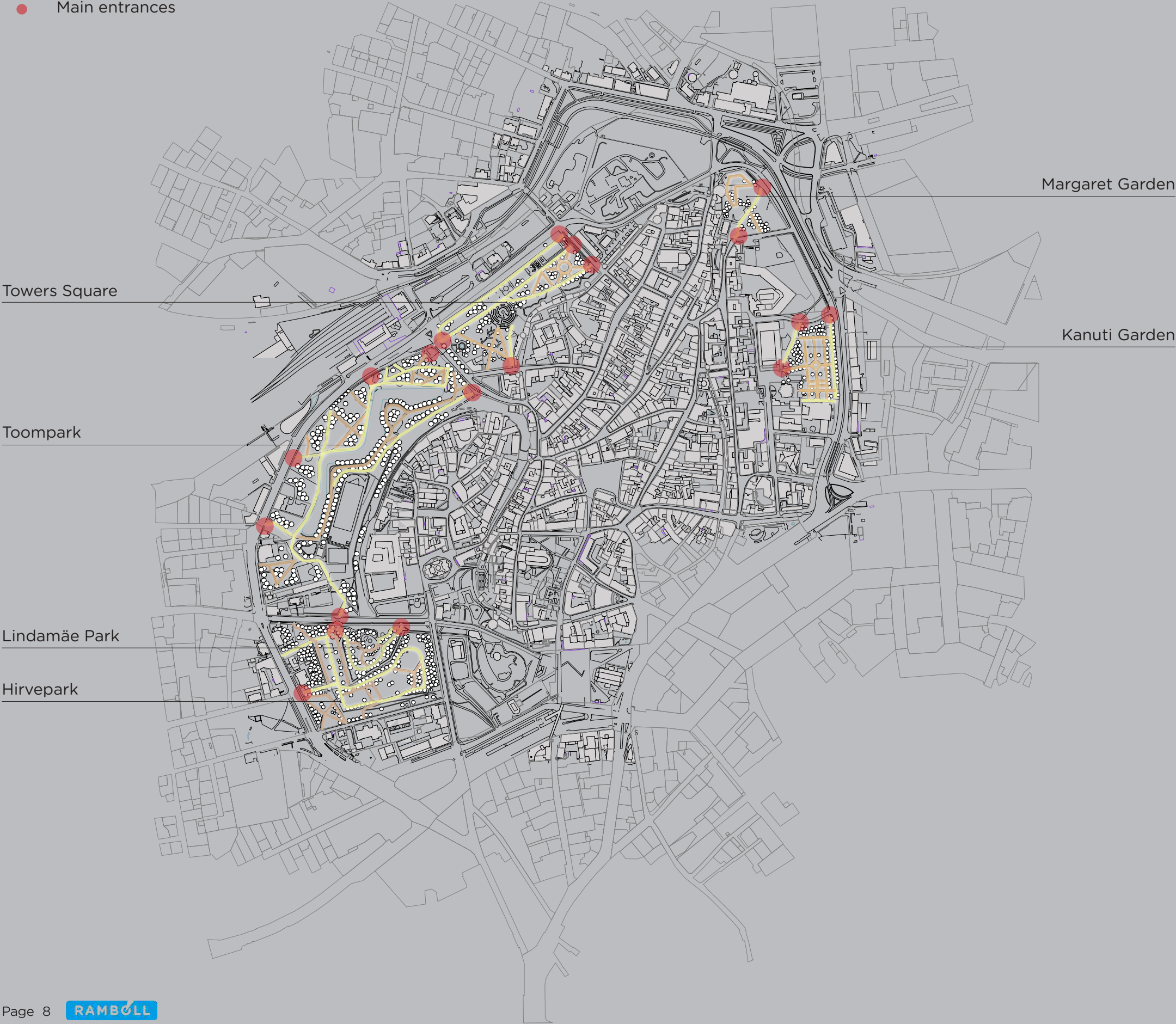


The surface of still water functions as a black mirror in the darkness. A black mirror is the most perfect reflective surface. This means that a still water surface perfectly mirrors its surroundings and particularly in a situation when the surroundings are illuminated.

This physical phenomenon tricks the human eye and creates an illusion - an illuminated landscape with a water feature appears larger than it is.

This is relevant in Toompark where an elongated pond stretches along the edge of the slope separating it from the flatter portion of the park.

- Primary routes
- Secondary routes
- Main entrances



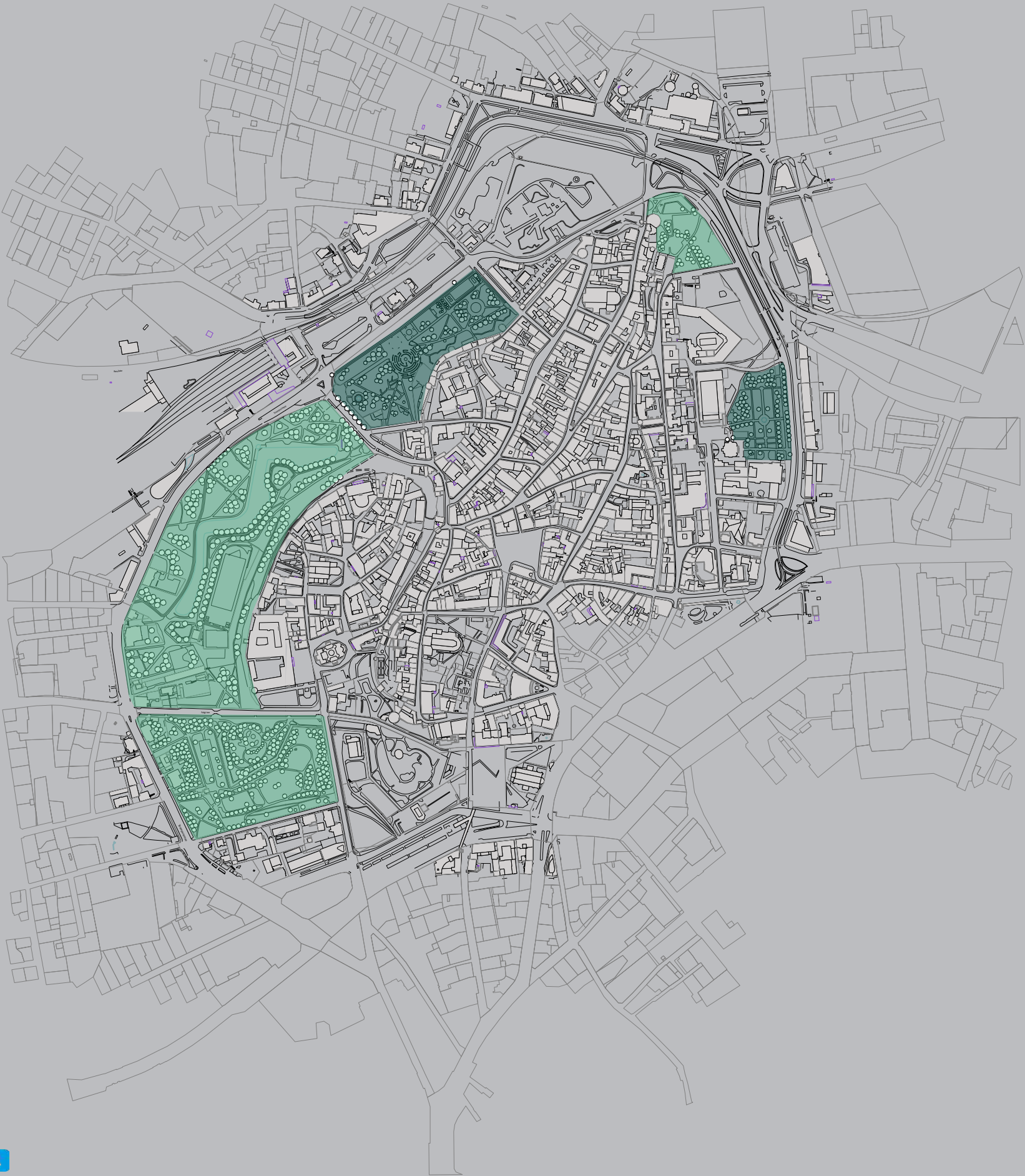
Based on observations of pedestrian habits, we have divided all the paths of the competition area into two groups: primary and secondary paths.

The primary paths are used more frequently than the secondary. As a rule of thumb, they represent the shortest walking connections between the major junction and nodes.

The secondary paths are used to a lesser extent and, more importantly, at a lower speed than the primary paths. They can be described as walkways to the more quiet “pockets” in the parks, where the visitors can find a place for relaxation and meditation.

Establishing this hierarchy is essential since it influences the creation of a visual hierarchy at night-time.

- Neoclassical
- Free formed



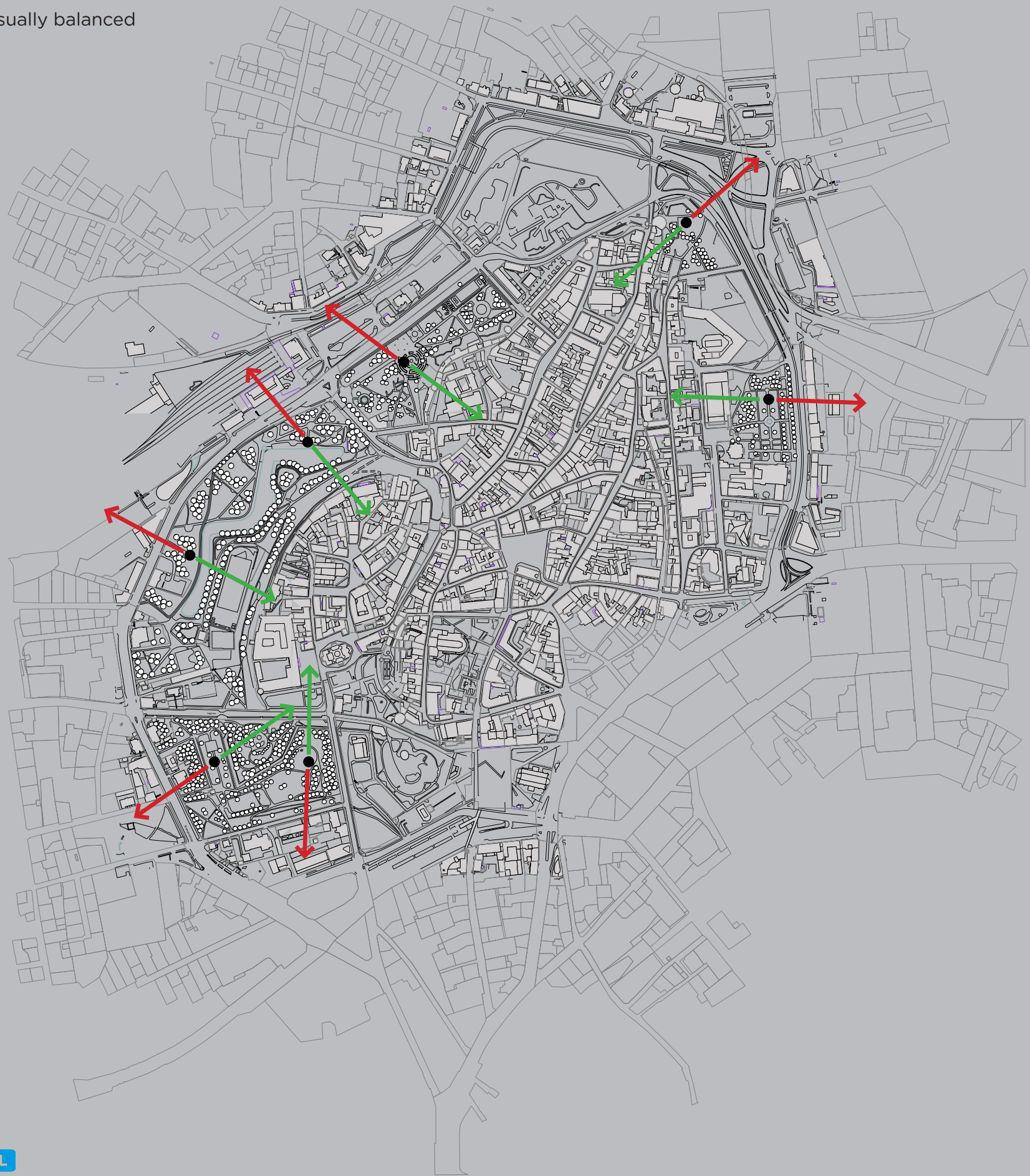
In relation to the different appearance of the parks, they can be divided in two groups:

Neo-Classical: Characterized by a rigid orthogonal pattern of paths. These parks often have a fountain or a sculpture located at the crossing of major paths within the park; usually in the middle of the park as a main visual focal point. The urban furniture within the parks is arranged symmetrically along the paths' axes.

Free formed/Romantic: The paths within these parks appear to have developed organically and randomly. The routes of the paths are not based on imposed geometry. The paths appear to be related to the natural elements within the park, e.g. a pond or a hill.

It is important to understand the differences between the two typologies. We believe that the permanent lighting installation should reinforce the landscape characteristics of the parks' design, rather than deny them.

- Visual noise, high light level
- Visually balanced



When walking along the park of the Bastion zone in the evening, it is noticeable that the view towards the outer perimeter, and the view towards the inner perimeter of the competition area, have different aesthetic values.

The surrounding multi-story, glass-façade buildings act as huge luminous surfaces in the evening. This effect, combined with the street lighting along the boulevards located along the bastion zone perimeter, creates big areas where the light levels are much higher than the light levels within the competition area. The human eye struggles to compensate for the contrast between these two luminous environments, and this causes glare. This means that the view from inside the parks looking towards the urban surroundings is not always pleasant. This effect is even stronger in the winter when the trees shielding the spill-light from the surroundings, loose their leaves.

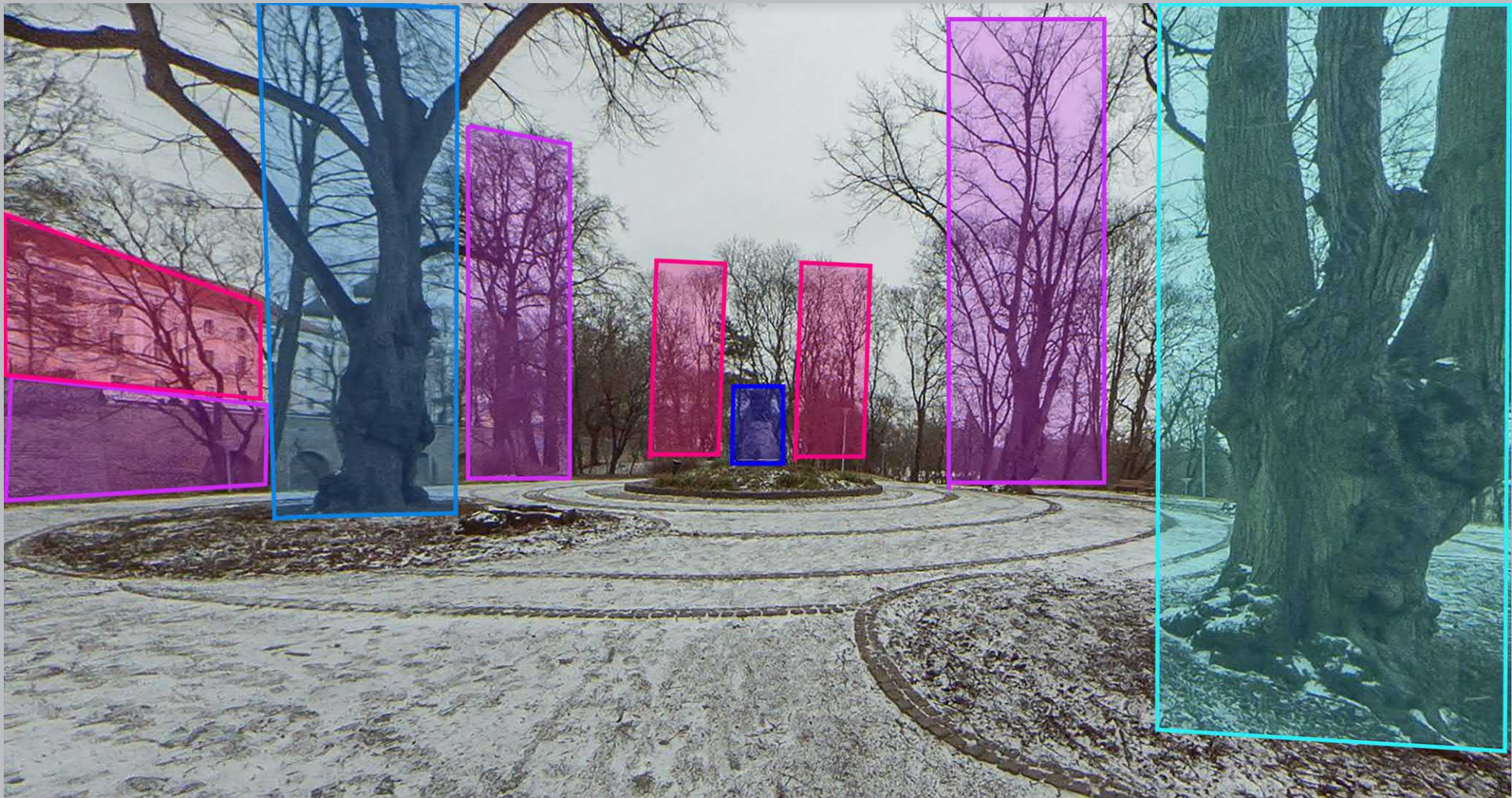
The opposite view towards the inner perimeter and the historic centre, is more in balance with the lower light-level of the parks. The remains of the fortification walls are gently illuminated and they appear as a well-defined edge. This situation is a visual quality which we want to maintain, preserve and emphasize further with our design.

Park name	Unique features (e.g. sculptures, fountains etc.)	Significant level difference (Y-N)	Water presence (Y-N)	Lighting in surroundings Does it affect the park? (1. it affects a lot - 5. it doesn't affect at all)	Spatial Characteristics	Dominant lines of sight (*)
Hirvepark	sculptures playground limestone staircase bastion walls	Y	N	3 (big roadway)	Free-formed	page 13
Lindamäe Park	sculpture “Linda” trees circle	Y	N	4 (big roadway)	Free-formed	page 14
Toompark	bats kiosk	Y	Y	1 (big roadway and office buildings)	Free-formed	page 15
Towers Square	fountain sculptures playground stage maze decorative gardens flowers festival	N	N	3 (big roadway)	Neoclassical	page 16
Margaret Garden	memorial sculpture bastions	Y	N	2 (big roadway and parking lot)	Free-formed	page 17
Kanuti Garden	memorial sculptures fountain orthogonal structure link between the Old Town and the harbour	N	N	2 (big roadway and buildings)	Neoclassical	pages 18-19

The table is a summary of the results of our analyses and observations, that are shown on the previous pages.

(*) The dominant lines of sight are shown on the plans in the following pages.

- 1st vertical layer
- 2nd vertical layer
- 3rd vertical layer
- 4th vertical layer
- 5th vertical layer



Analysis - Dominant lines of sight

Our view fields consist predominantly of the vertical surfaces that our vision puts together into 3D images that we see. Understanding relations between the vertical surfaces of the competition area help us to understand the spaces that we are preparing a lighting scheme for. These vertical surfaces appear as different layers within the line of sight - some layers are immediately next to us and some of them are at the rear of the image that we see. The closest layers occupy the largest portion of the image whilst those at the background appear as the backdrop. The relation between the layers defines the perspective and the depth of the space.

We analysed the dominant lines of sight for all the parks within competition area. We mapped the different vertical layers for all of them.

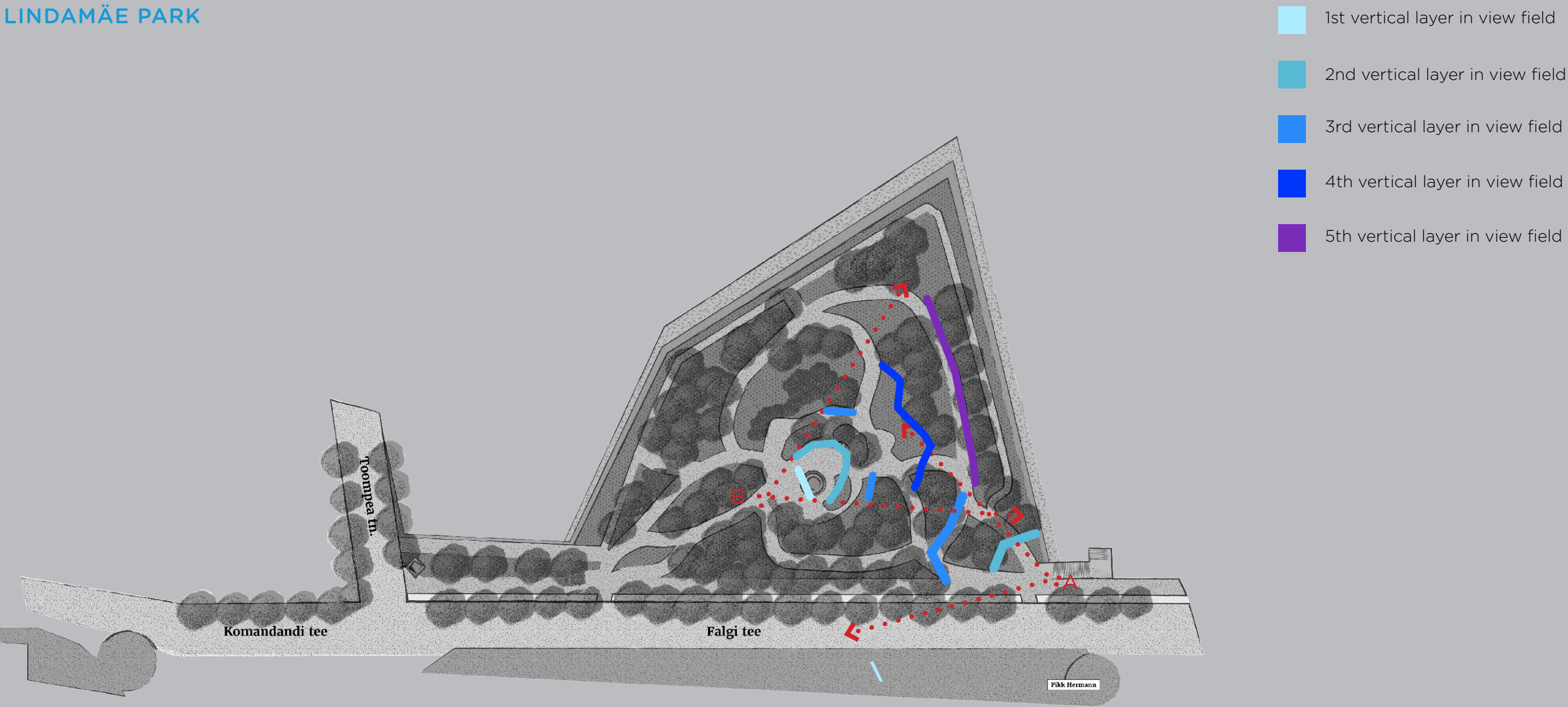
The results of this analyses are shown on the following pages.

HIRVEPARK

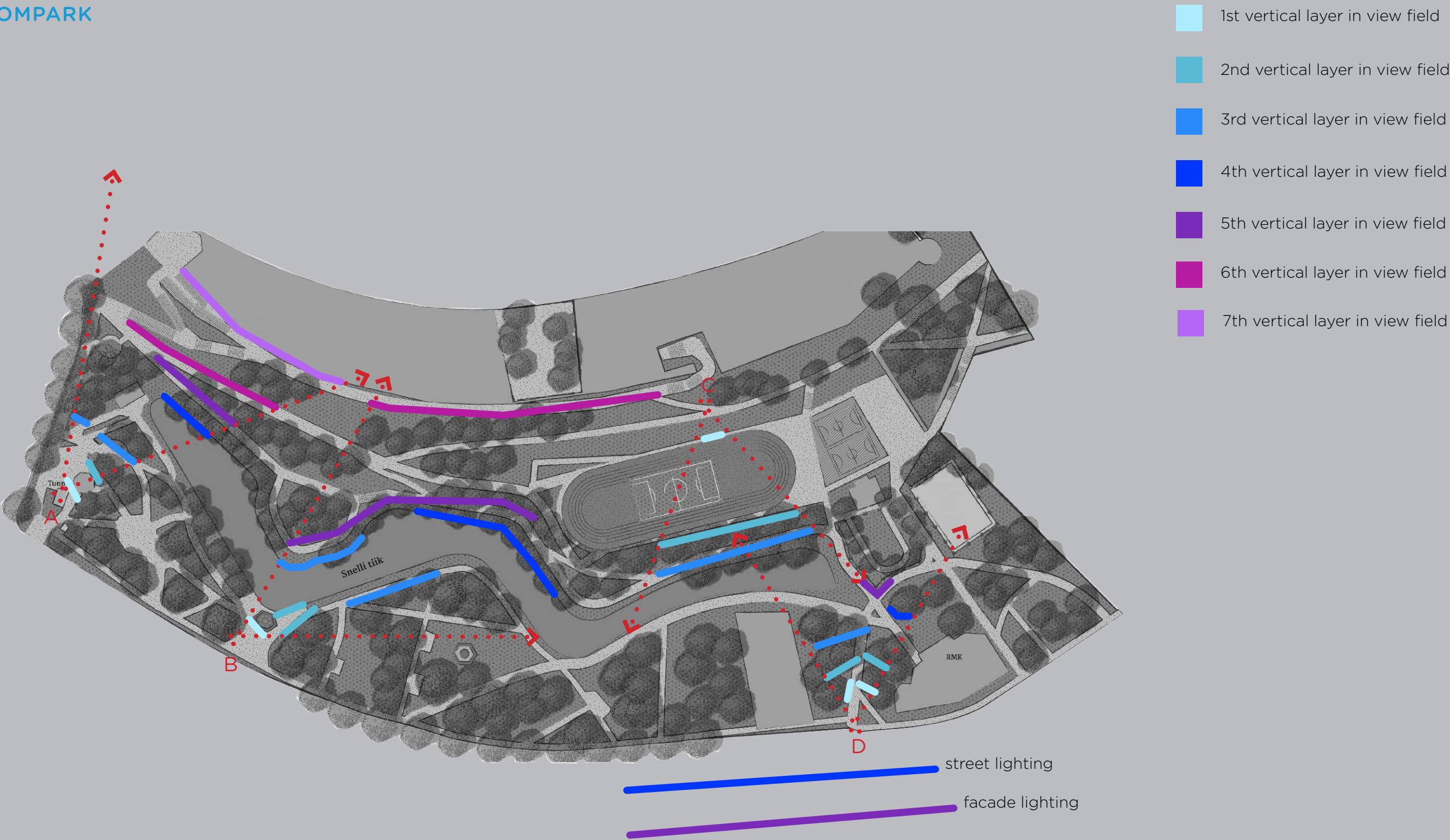
- 1st vertical layer in view field
- 2nd vertical layer in view field
- 3rd vertical layer in view field
- 4th vertical layer in view field
- 5th vertical layer in view field



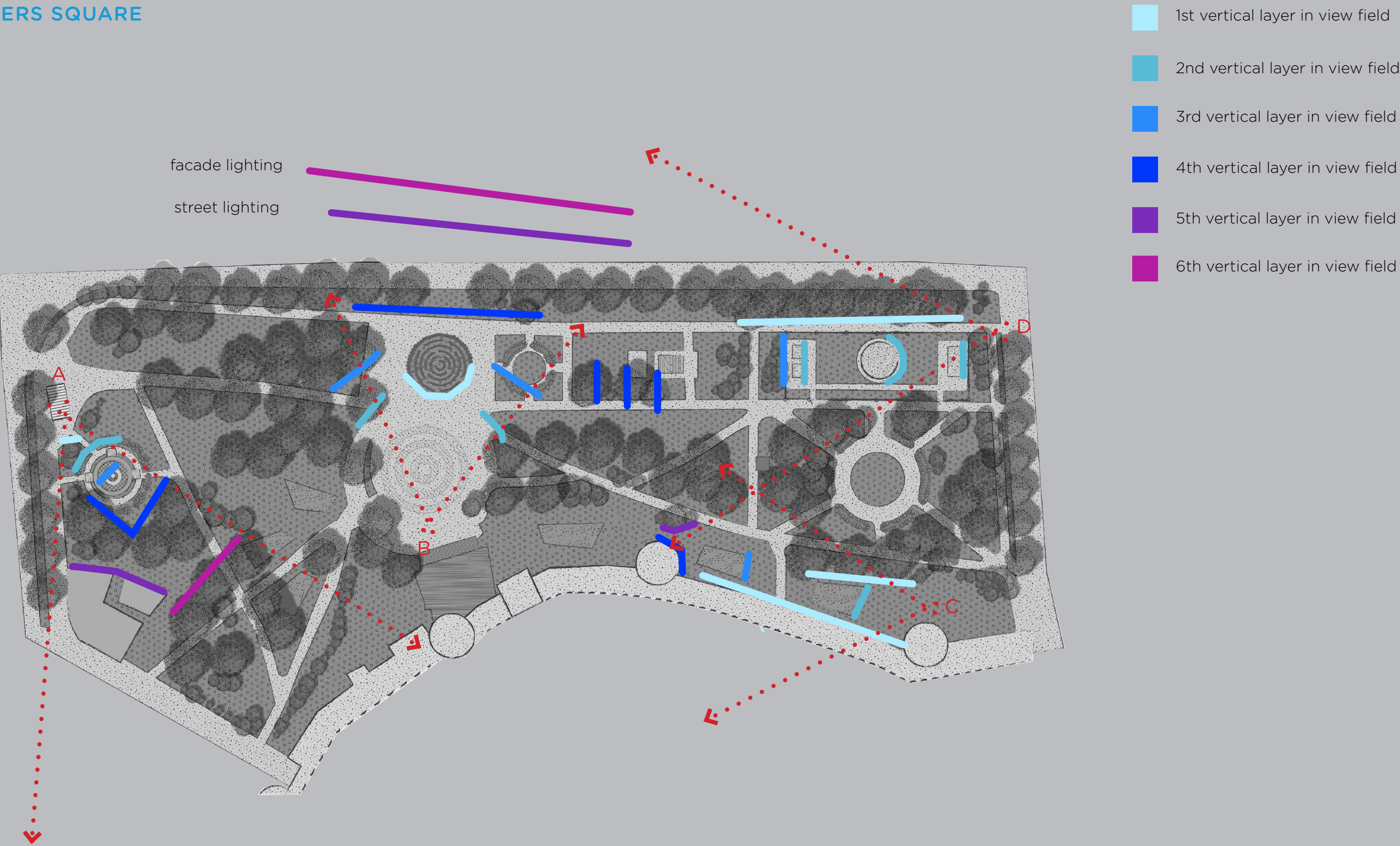
LINDAMÄE PARK



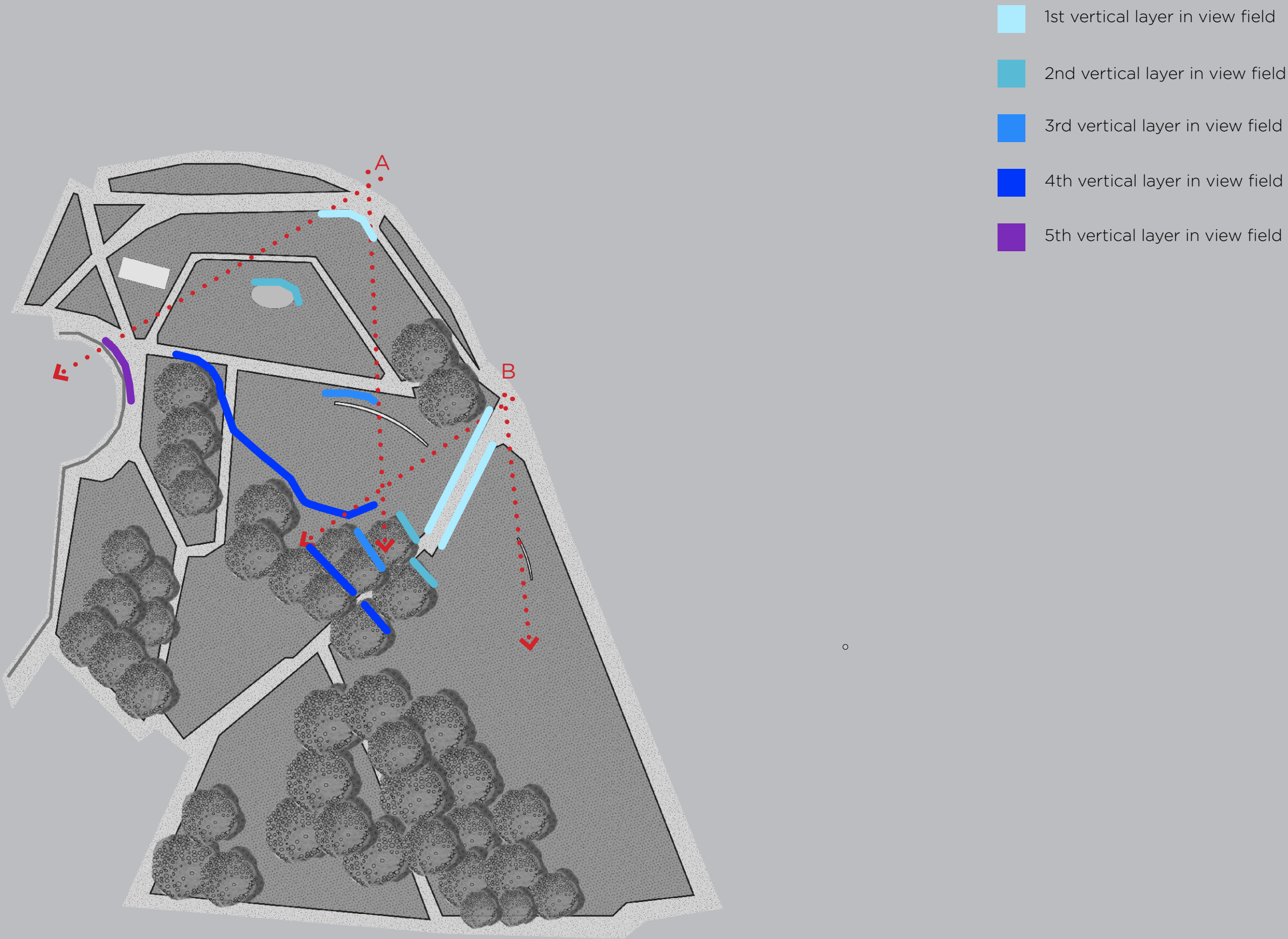
TOOMPARK



TOWERS SQUARE

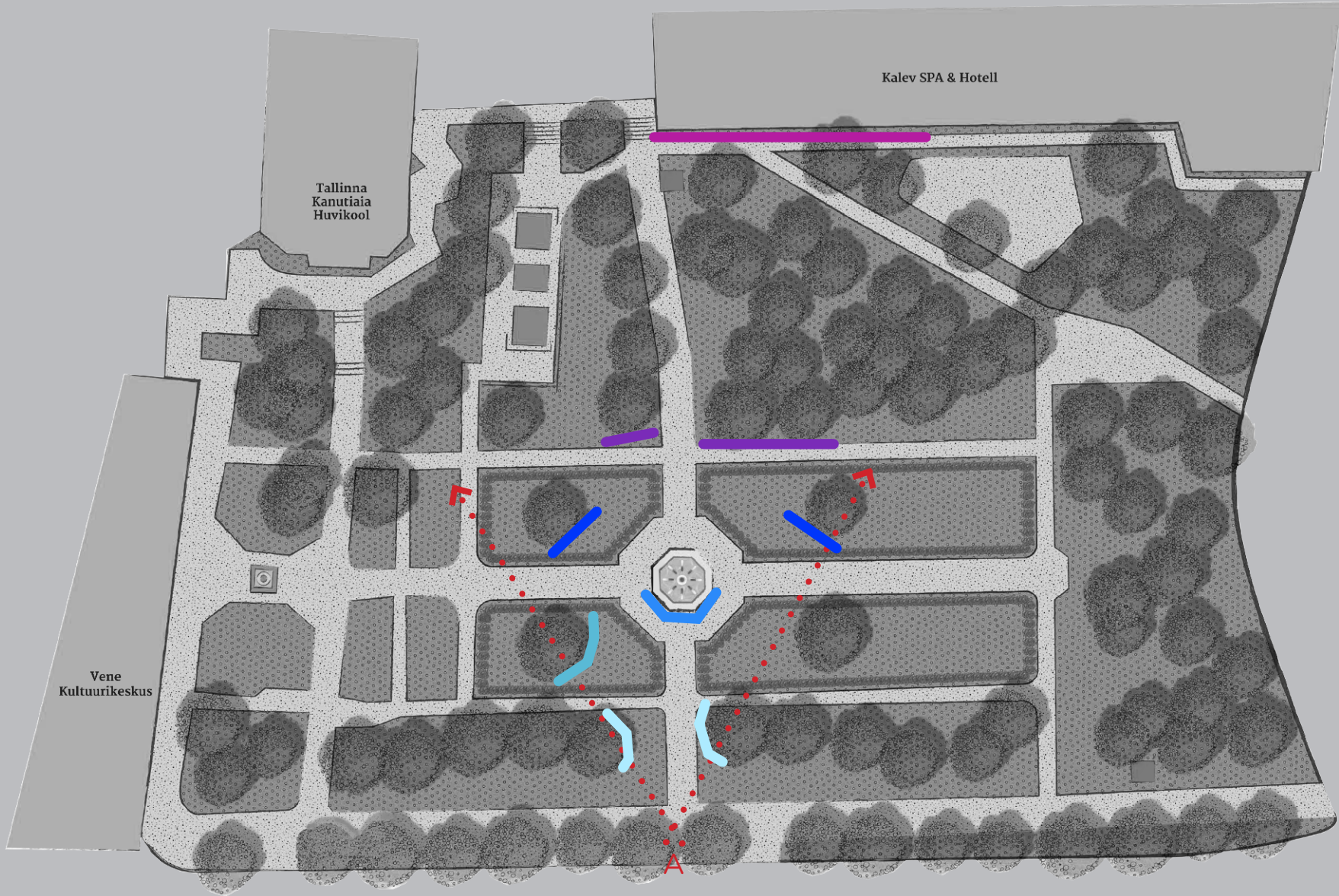


MARGARET PARK



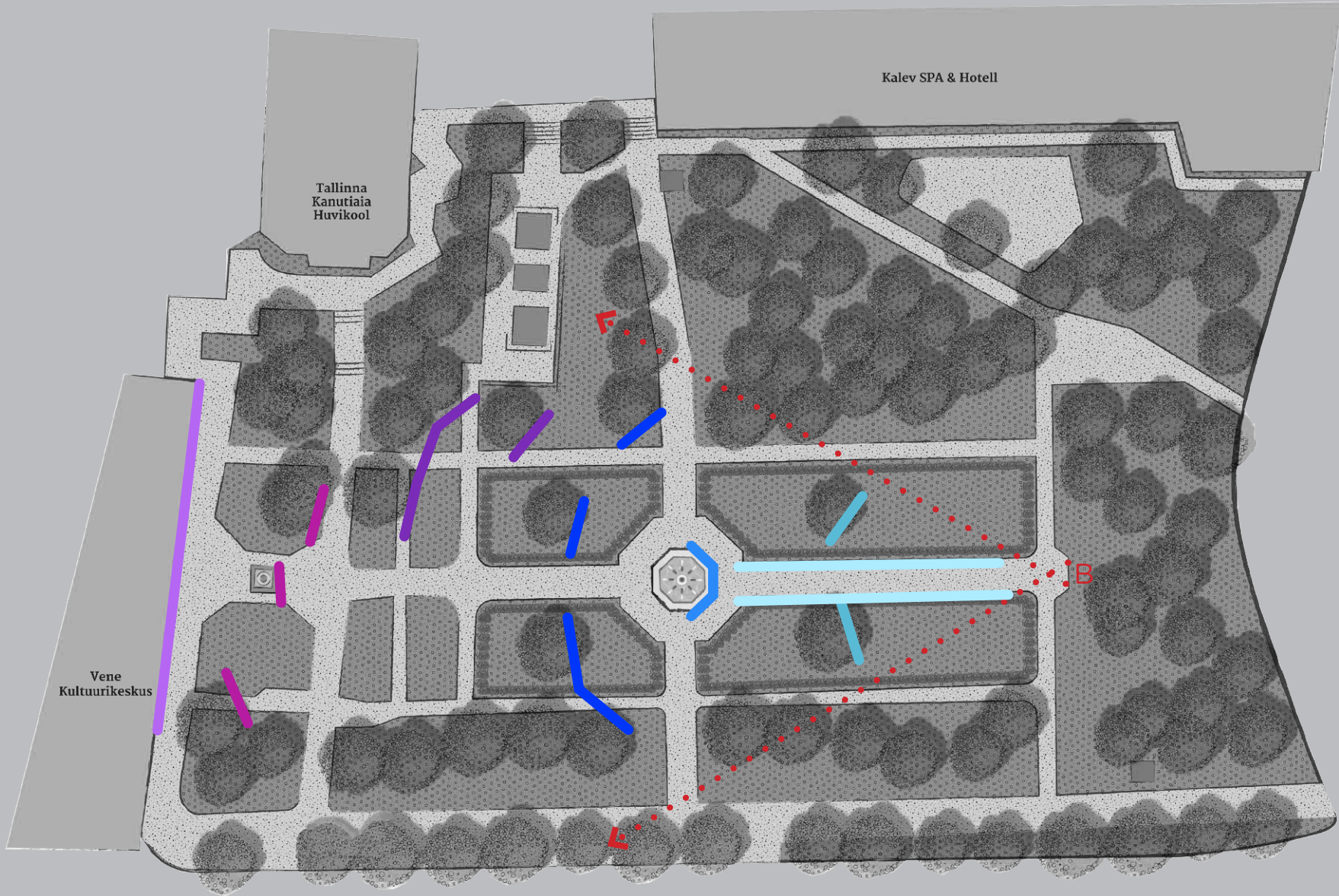
KANUTI GARDEN

- 1st vertical layer in view field
- 2nd vertical layer in view field
- 3rd vertical layer in view field
- 4th vertical layer in view field
- 5th vertical layer in view field
- 6th vertical layer in view field

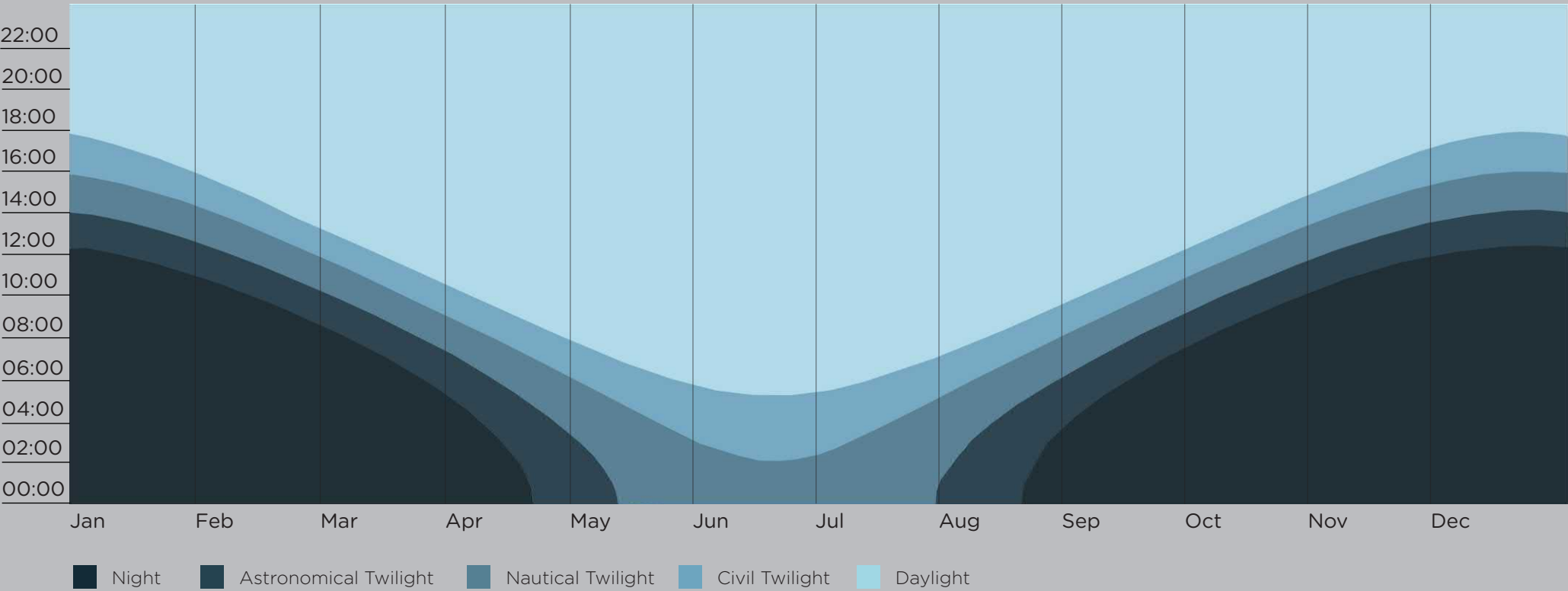


KANUTI GARDEN

- 1st vertical layer in view field
- 2nd vertical layer in view field
- 3rd vertical layer in view field
- 4th vertical layer in view field
- 5th vertical layer in view field
- 6th vertical layer in view field
- 7th vertical layer in view field



Analysis of natural light conditions

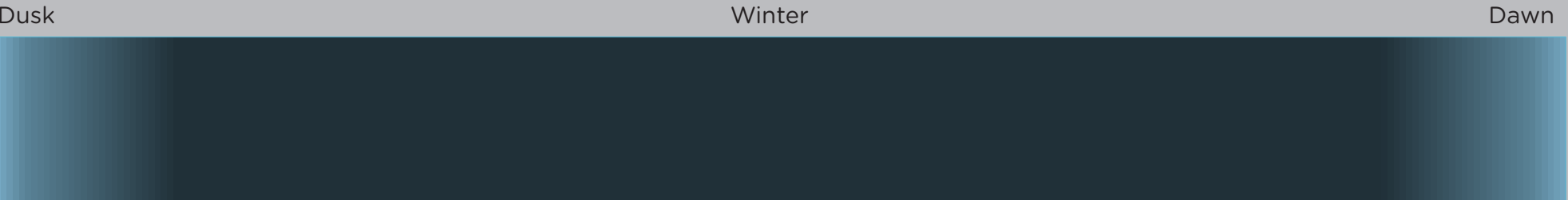


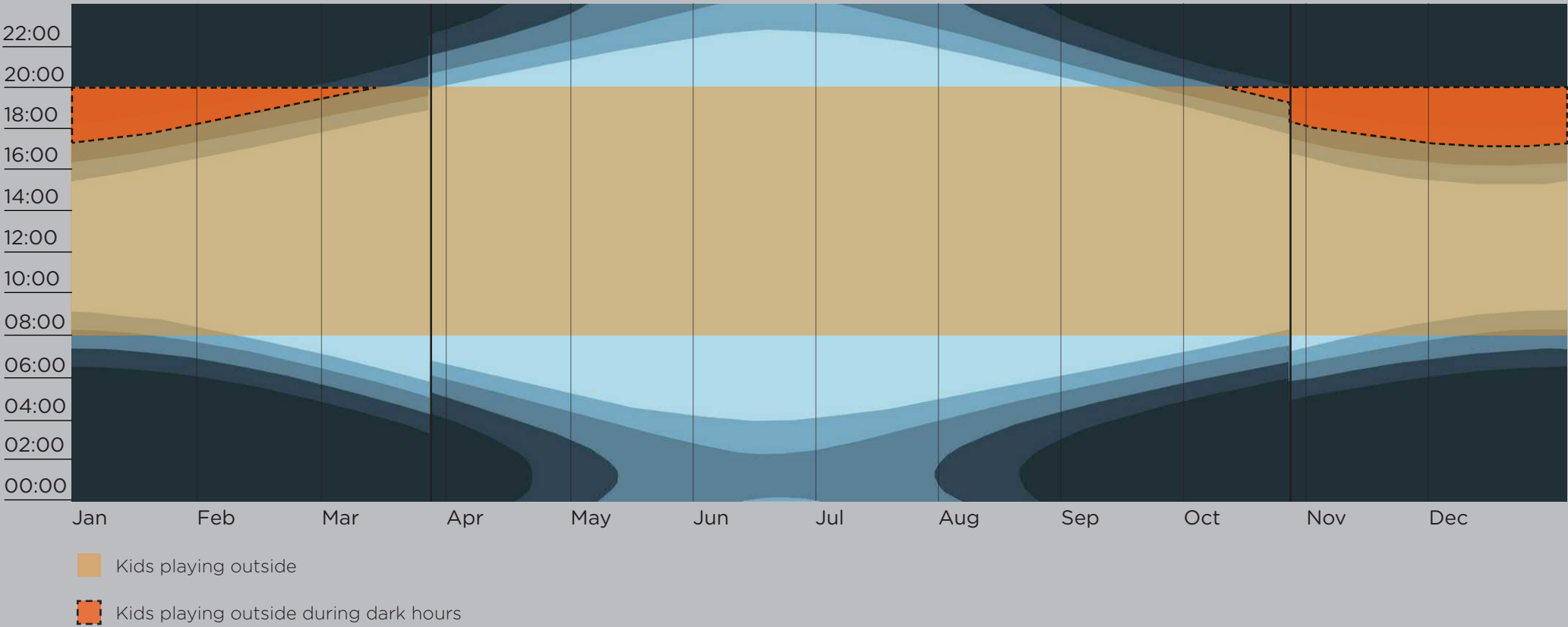
Tallinn is a Northern city, which means that there is a significant difference between summer and winter season in relation to the duration of the day. During the summer there are very few dark hours; in particular from May to August there is almost absence of total darkness. Whereas during the winter there are very few daylight hours and very long nights.

On the following pages we show the periods during the year when the typical activities that happen in the parks find place.

The analysis is interesting because it shows the total period during the year where one specific activity finds place compared with the portion of time when that very activity finds place during the dark hours.

The analysis gave us the answers whether it is necessary, desirable and feasible to provide special lighting installation for specific activities.



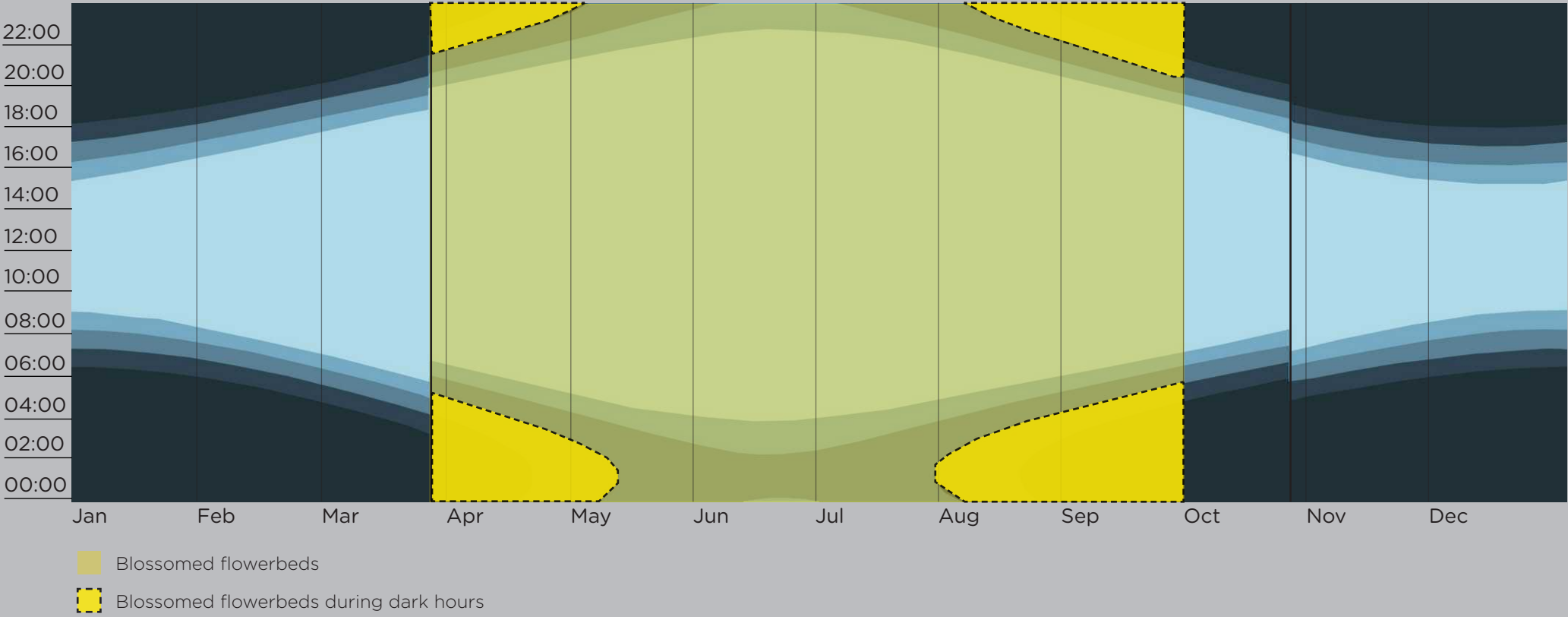


We assumed that the children of Tallinn play outdoors from 08:00-20:00 all year along. When this period is juxtaposed with the period when the darkness occurs, we can see that the total period when we expect the children play at the night-time is relatively small.

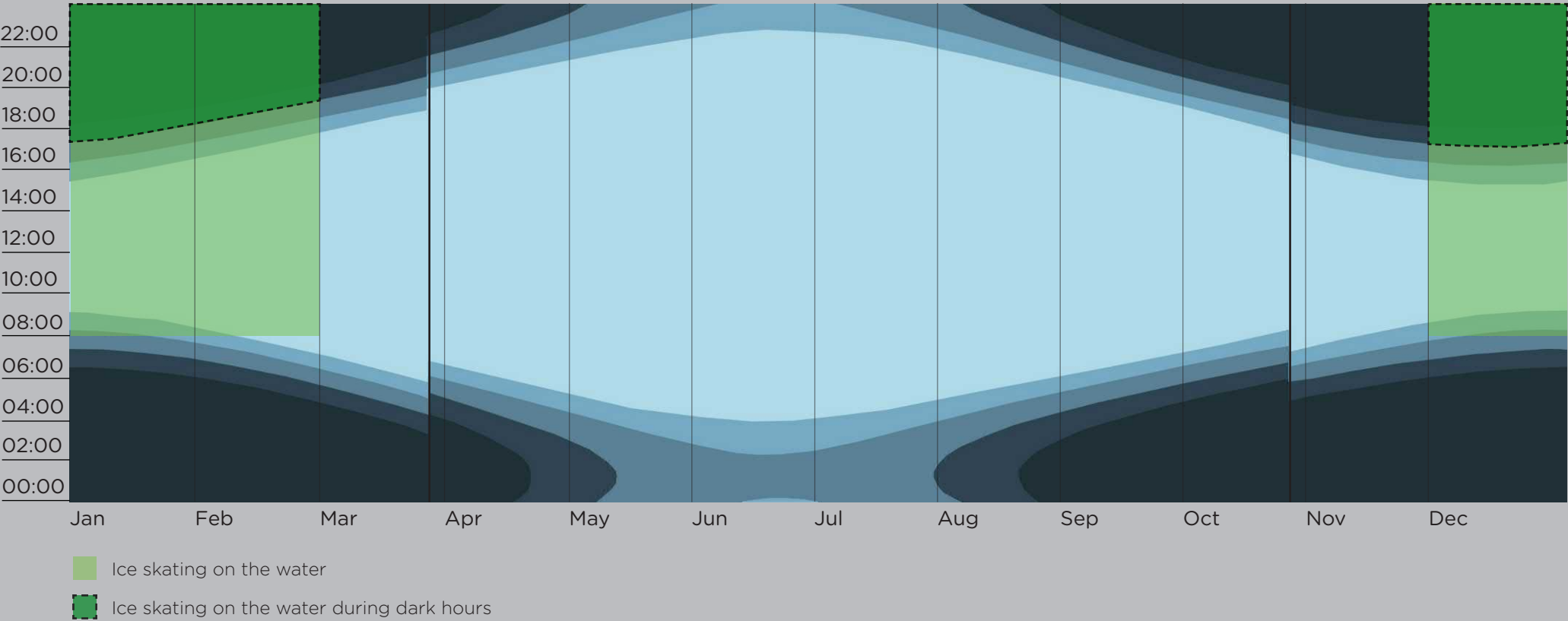
Based on this analysis we concluded that it is not feasible to provide a special lighting installation for the playgrounds since the special lighting installation would give limited results during the period of one year.

It is expected that the flowerbeds in the parks are in full blossom in the period from mid-April to the end of September. As the graph shows this period is characterized by very long days and short nights.

This means that the daylight itself is almost sufficient to illuminate the flower beds. Providing a special lighting installation for the flowerbeds only does not sound financially reasonable.



We based our conclusions on the analysis of investments costs, running costs, maintenance cost and environmental impact in relation to all the effects and gains that an installation will give.

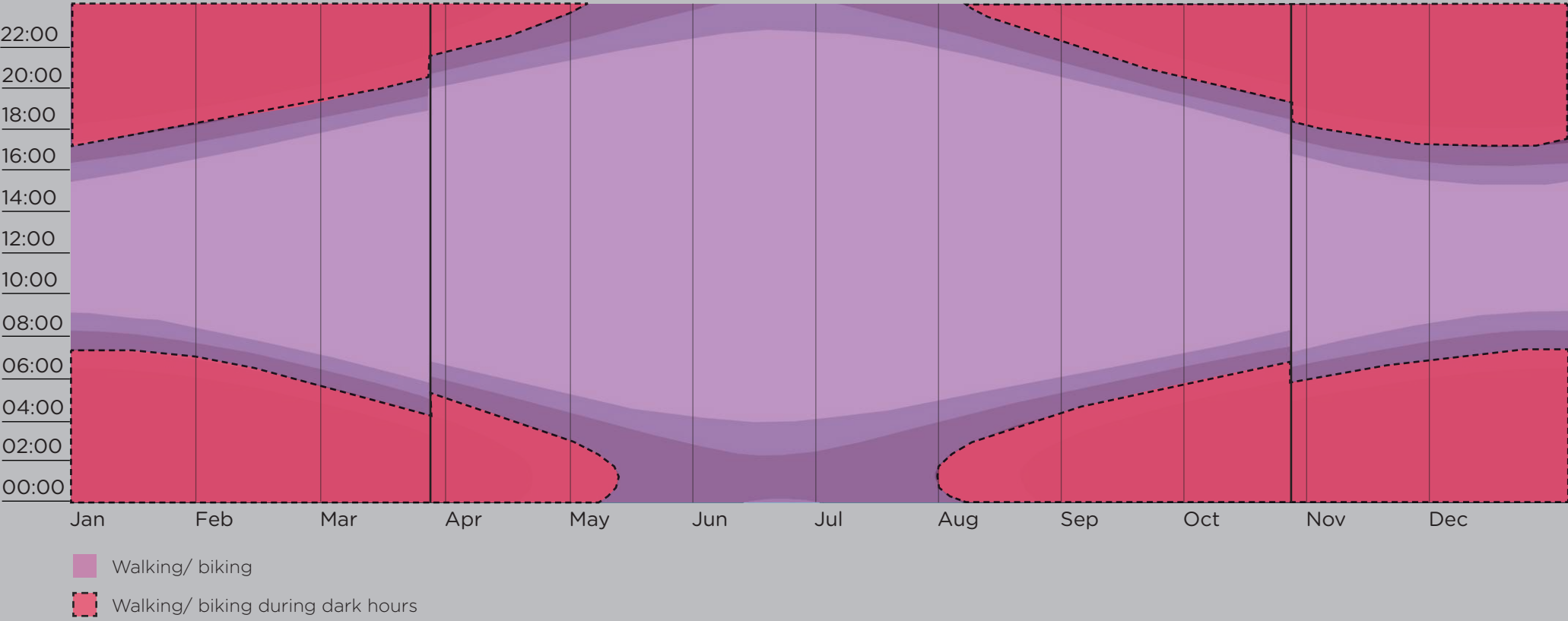


The period when it is possible to ice-skate on the pond is expected to be roughly from early December to early March. During this period the nights are very long and the daytime period is short. However, it is not expected that people ice-skate from midnight to 08:00 (at least not every day).

As result there is again a very limited period of the natural darkness when the ice-skating on the pond can happen.

Again, we do not find it reasonable and feasible to provide a special lighting installation only for this activity.

We suggest that the lighting installations for all these activities that happen within the dark hours for a limited period of time during the year should not be partial solutions, but parts of a coordinated lighting strategy.



We based our conclusions on the analysis of investments costs, running costs, maintenance cost and environmental impact in relation to all the effects and gains that an installation will give.

Areas left dark to
preserve nature

Bright paths

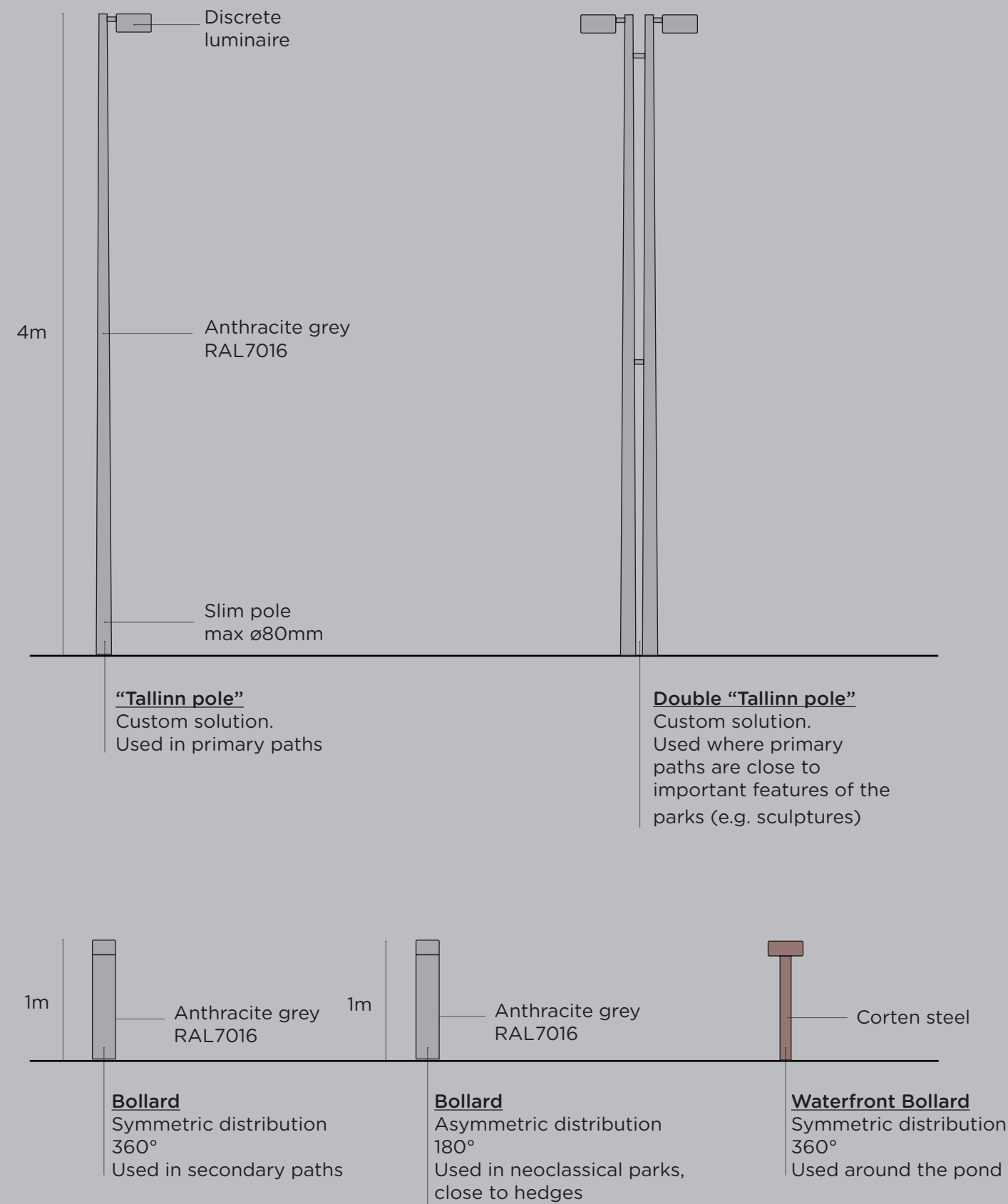


The aim of this lighting concept is to establish a pleasant and well-balanced visual environment in all areas of the Bastion zone parks. The goal is that the lighting becomes the element that invites people to visit the parks after sunset. The parks should appear desirable to visit for recreation, socialization and entertainment.

We wish to establish a visual hierarchy where movement becomes intuitive. For that being the case it is necessary that the visitors can read and understand the space and the immediate surroundings. We would like people to have a more emotional connection with the parks after the parks get their new light settings: “I know this place. I like this place. I am connected to this place. I feel good when I spend time here with my friends. I want to stay here longer.”

In order to achieve this, similar lighting levels will be established throughout the whole area. There will be neither over-illuminated nor under-illuminated pockets. All areas will look equally desirable to visit, but distinguishable due to their different landscape qualities. To promote the feeling of security, we want to create almost glare-free environments. The choice of luminaires and their location will ensure the highest possible visual comfort. We want that people experience the light and the surroundings, but not the lighting equipment. Good facial recognition, which creates a raised sense of personal security, is highly prioritised. All the permanent artificial lighting has a warm colour temperature of 3000K, which is suitable for the Nordic cultural context.

The new light installation will be operated and controlled with a modern automatic lighting control system. With smart automated light controls we achieve energy savings, prevent over-illumination and ensure that the new lighting installation has a minimal impact on the natural environment.



We propose to illuminate the whole competition area with very few luminaires. With this strategy we want to achieve the following goals:

- Reduce visual noise. Fewer luminaire types means fewer visual elements that the eye registers. Instead of paying attention to the luminaires we want the visitors to experience the landscape.
- We want to create coherence within the bastion zone. When the same elements are repeated in a logical manner a recognized pattern is created subconsciously in the visitor's mind.
- The investment and maintenance costs will be reduced. Fewer luminaire types means lower unit price.

The first lighting tool that we use is 4,0m high lighting pole. The pole is designed to carry one luminaire. We want the pole to be as slim as possible, max 80mm in diameter and painted in a dark colour. A slim pole creates a minimal visual impact and it blends visually with the trees and bushes at the daytime. That is why we propose that the pole is custom-made so its dimensions are maximally reduced. Since this pole is meant to be an element that gives the unique identity to Tallinn, the pole can be called "Tallinn Pole".

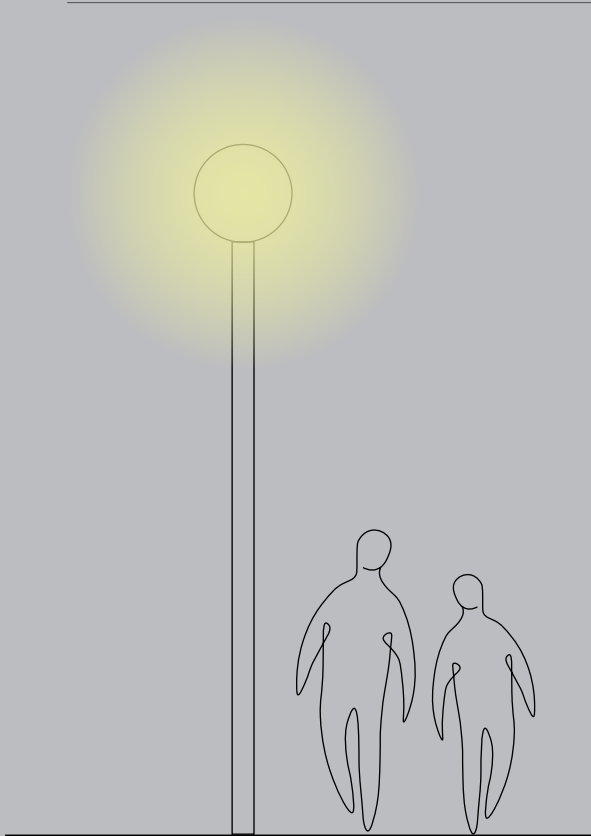
The pole is used for general lighting along the primary paths.

The second light tool is the extended version of "Tallinn Pole". It has the same geometry and colour, but it is an element that consists of two poles, where the second pole's luminaire is pointing in the opposite direction. Using a double slim pole is meant to be a distinctive design feature. Functionally this pole is used in the situations where (decorative) supplementary illumination is needed next to the primary paths: playground, flowerbeds, artworks, etc. Instead of designing special installations for these functions, we want to utilize the lighting installation for general lighting for this purpose.

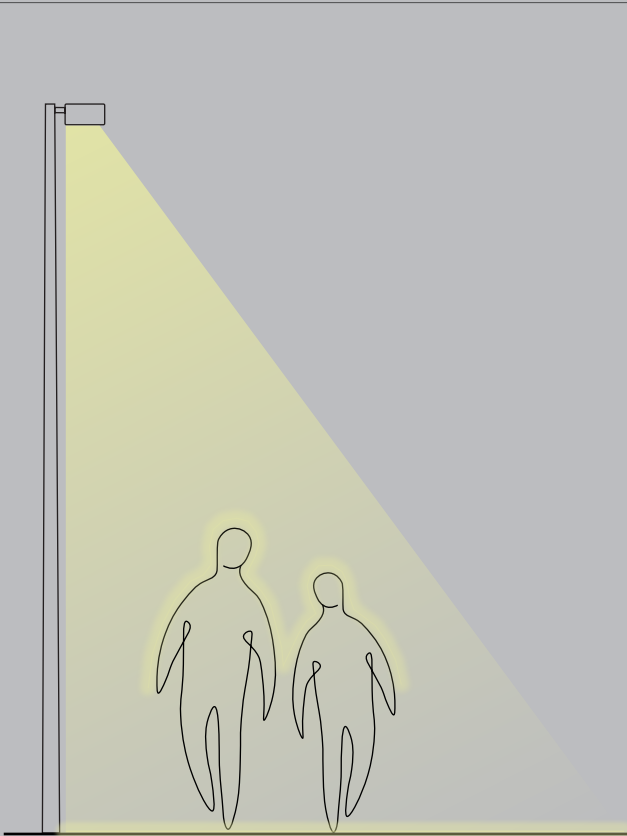
For the illumination of the secondary paths we use two types of bollards. Both bollards are 1,0m high and painted in the same colour as the poles. The luminaires are fully integrated in the bollards' cylindrical shapes. Again, the goal is the same as with the poles – we want the bollards to appear very discrete in the space. The difference between the bollards is that one of them comes with rotationally symmetrical light distribution (360 degrees) and the other one with 180 degrees light distribution. The first version is to be used in the situation where the bollards are installed as free-standing objects along the secondary paths, whilst the second version is to be used when the bollards are to be installed in the hedges along the secondary paths.

The last luminaire type is a slim bollard with rotationally symmetrical light distribution. This bollard is used along the pond perimeter (see page Pond) and not along the paths like the other bollards. It is made of corten steel so it visually fits in the natural environment.

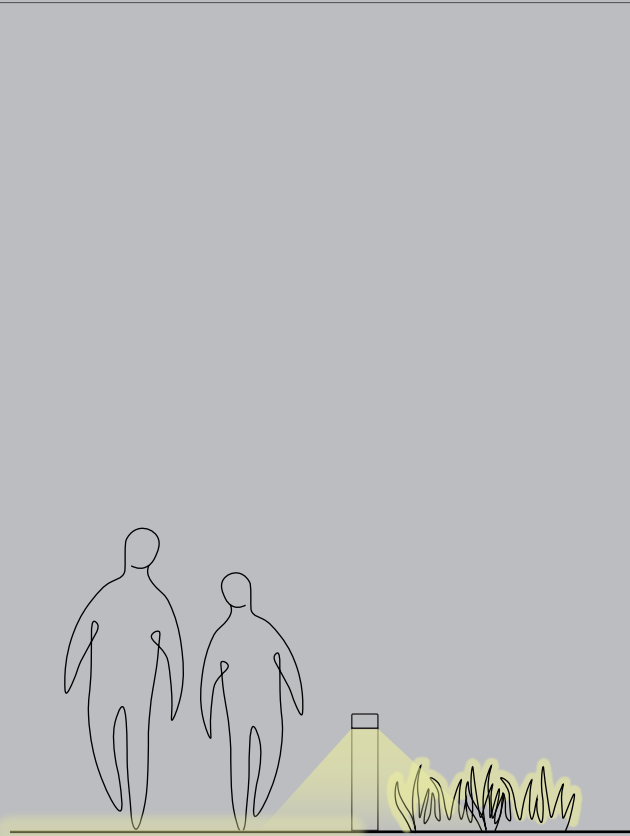
Primary and secondary paths



Existing solution



Primary paths proposed lighting solution



Secondary paths proposed lighting solution



Reference image



Reference image

The primary and secondary paths are illuminated with two different lighting strategies. With this differentiation we want to establish a common visual hierarchy, which will be recognizable through the entire Bastion zone.

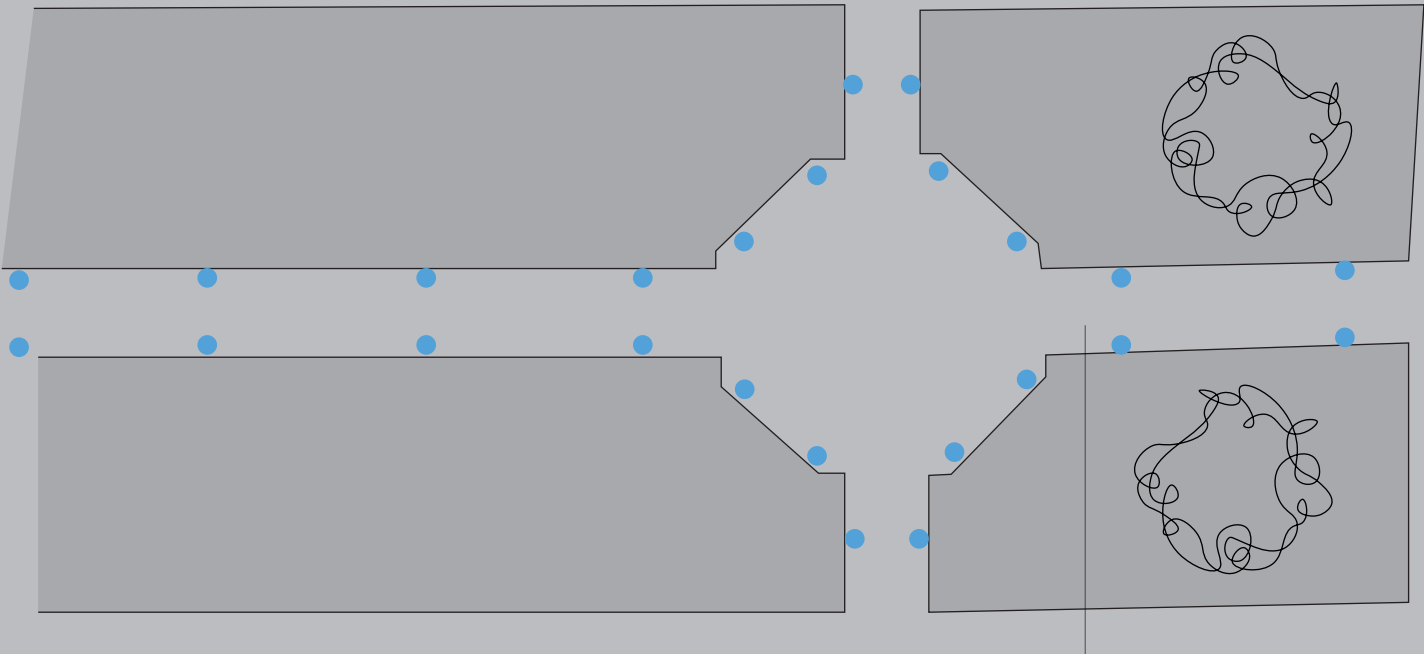
The primary paths are illuminated with the poles. The height of the poles indicates that the primary paths are the main connecting lines and the people are moving slightly faster here. Still the height of 4,0m is within human scale. This is a lighting for people, not for cars. The luminaires installed on the poles come with asymmetric light distribution – the light is spread along the paths. Thus, the primary paths are illuminated uniformly, like luminous bonds that stretching through the parks. This concept is supporting easy and intuitive flow of people.

They are well-shielded and their entire luminous flux is directed downwards. No direct light is emitted horizontally or upwards.

The lighting concept for the secondary paths is further scaled down compared to the primary paths. The secondary paths are illuminated with bollards. We decided to use bollards with rotationally symmetrical light distribution for the paths which do not have hedges along the edges because this light distribution is directionless. We want that people move slower here. We want the light invites the visitors to stay, communicate and socialize. It is a lighting in human scale. People can come close the light sources and better feel the light on their bodies.

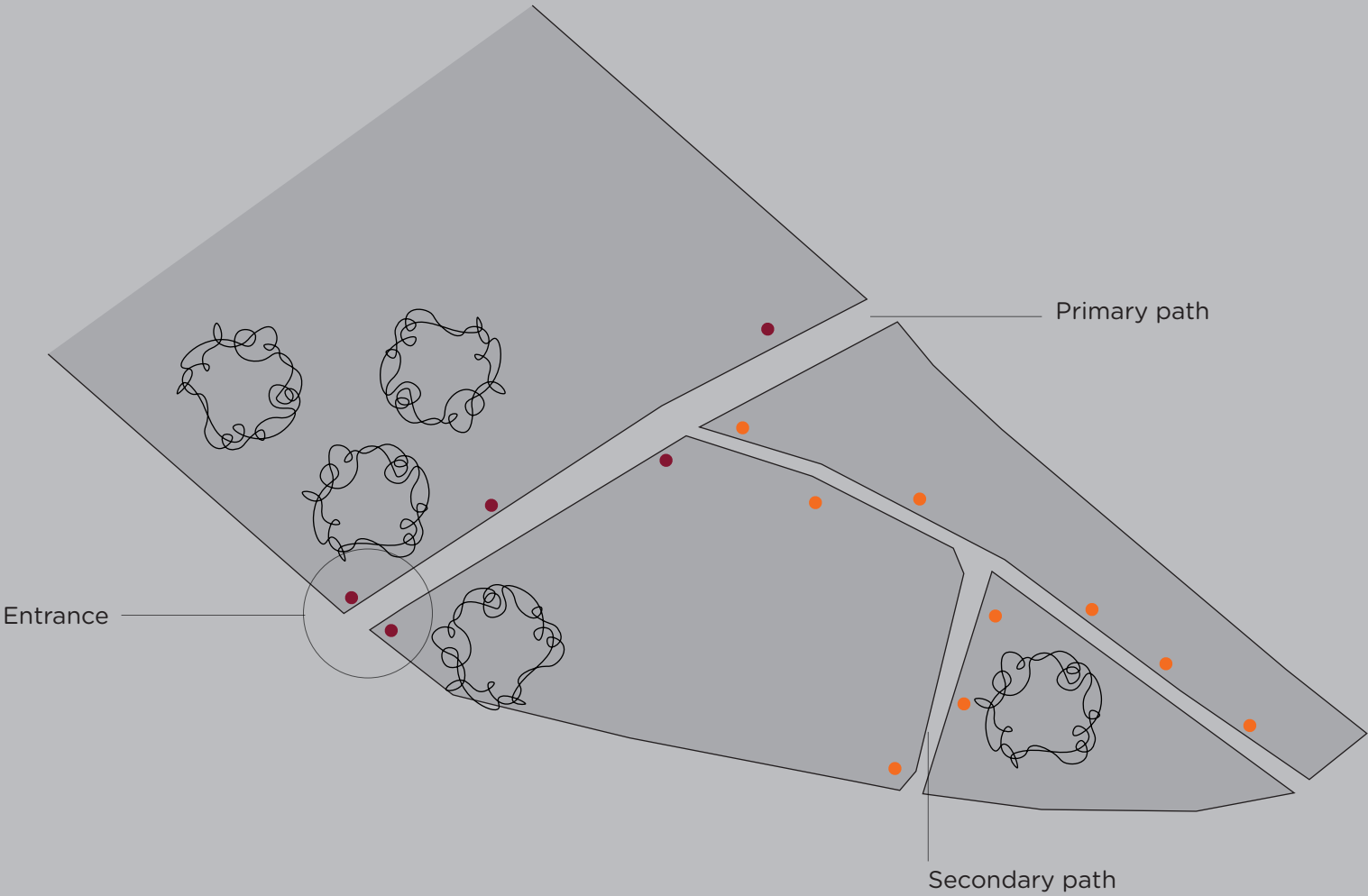
This lighting strategy is the coherent element that visually binds the parks.

- Bollards 180°
- Bollards 360°
- Poles



Principle plan neoclassical park

In the **neoclassical parks** the luminaires are placed symmetrically and repeatedly so the luminaire locations are aligned with the strict landscape design geometry.

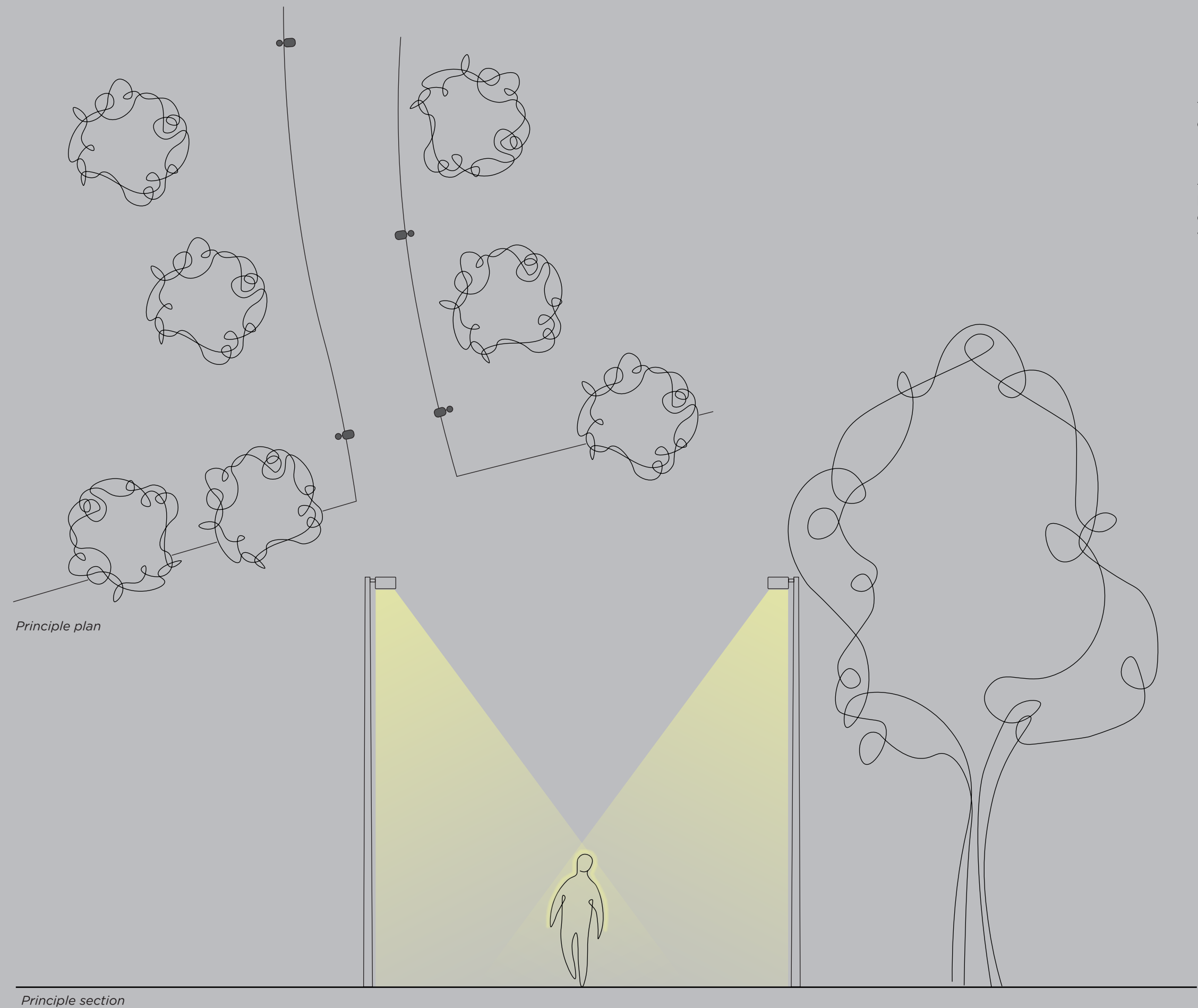


Principle plan free-formed park

In the **free-formed parks** the luminaires are located in an organic and more random manner which suits better the curved shape of the paths.



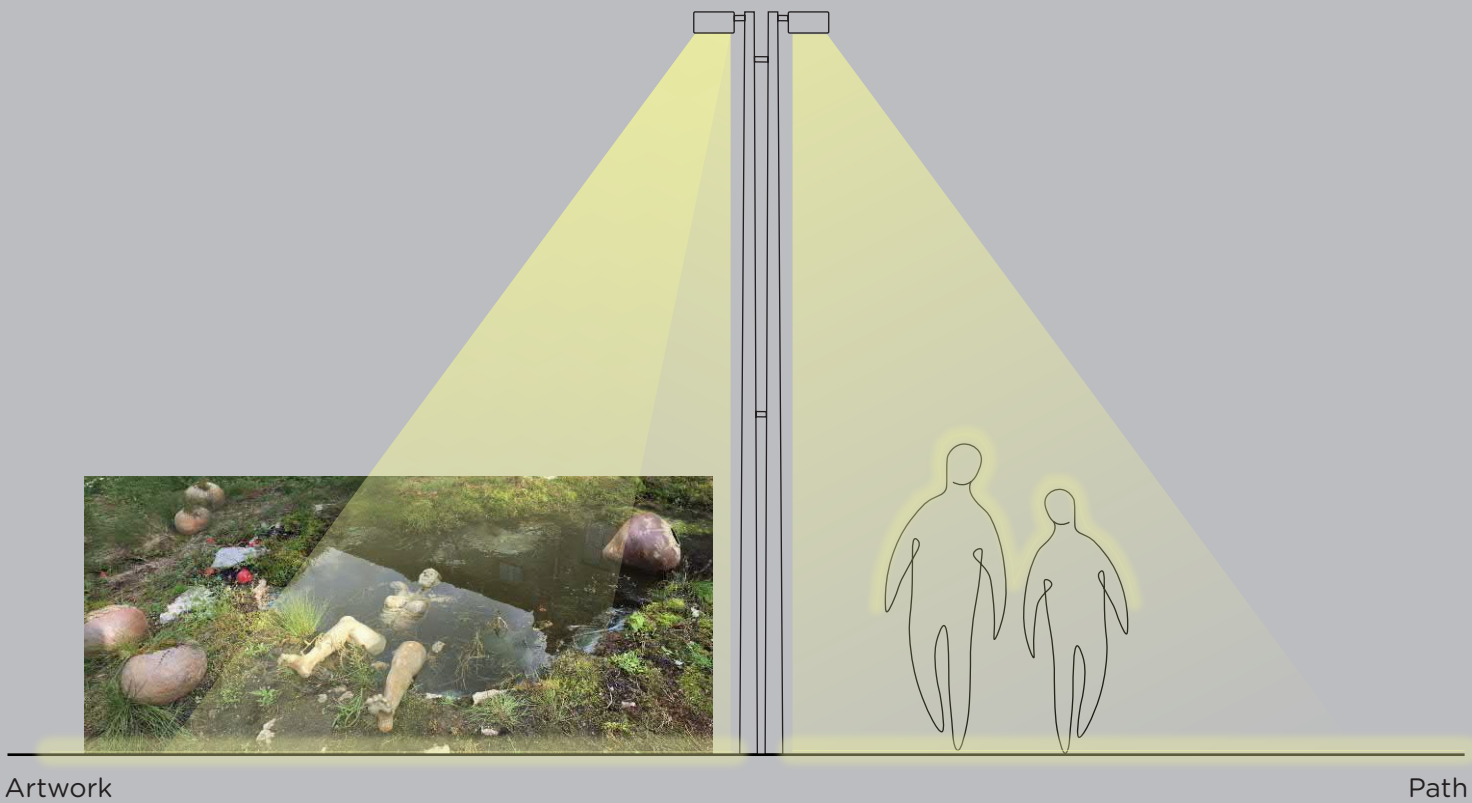




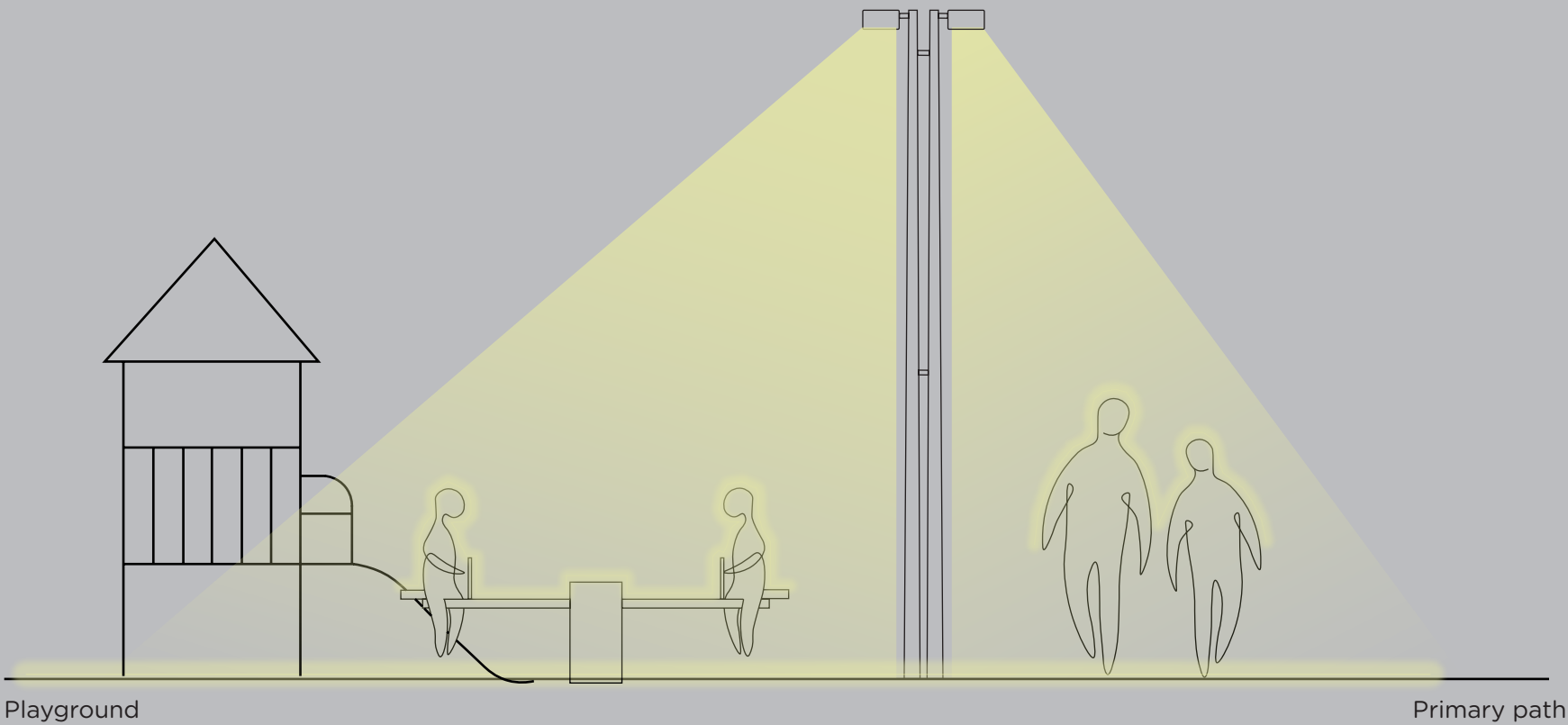
For the purpose of easy and intuitive way finding the locations of major entrances to the competition area are enhanced by the means of light.

At every major entrance there is a couple of poles – one on each side of the path. The pool of light on the crossing of paths informs the visitors that they are approaching an entrance.

The principles how decorative (supplementary) lighting is established, are explained in the chapter “Lighting tools”. See page 24.

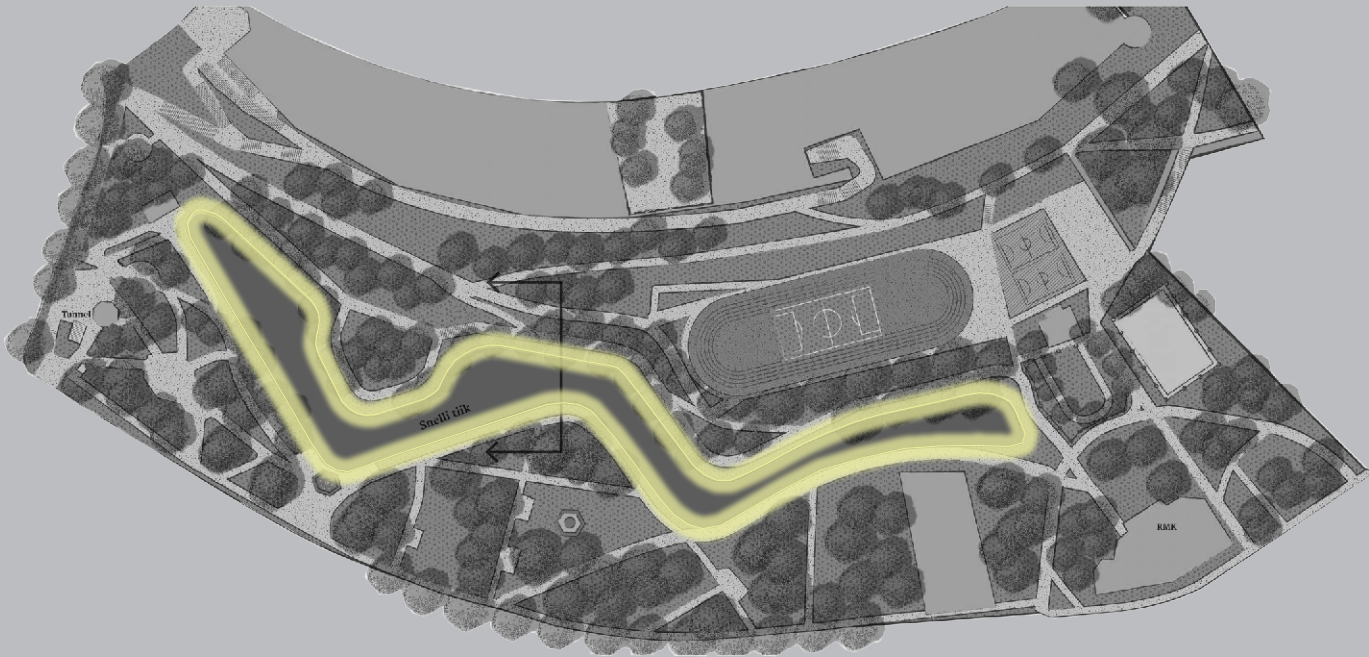


Principle section



Principle section





Principle plan



Principle section

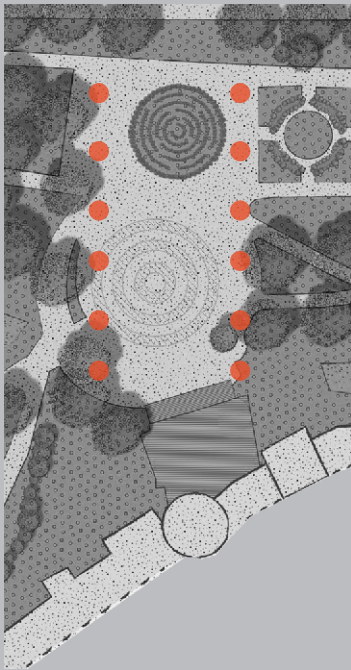
Since the pond is frequently visited and used for recreational purposes all year around, we would like to strengthen its importance with a supplementary (decorative) lighting installation. The banks of the pond are illuminated more-or-less evenly with a line of bollards, which are located on the even distance from the water. The bollards will illuminate the banks. The idea is that the environment around the pond is gently illuminated with a low lighting level, so the illuminated surroundings reflect in the pond surface. This effect will create beautiful visual impressions for the visitors in this section.

At the winter, when the pond is frozen this supplementary lighting installation will function as general lighting for the skaters. The installation will provide a lively and playful contrast since the edges of the pond will be brighter than the central part. The warm white light from the bollards reflecting in a snowy landscape will for sure appear romantic and “lock” the visitors to stay longer.



Reference image



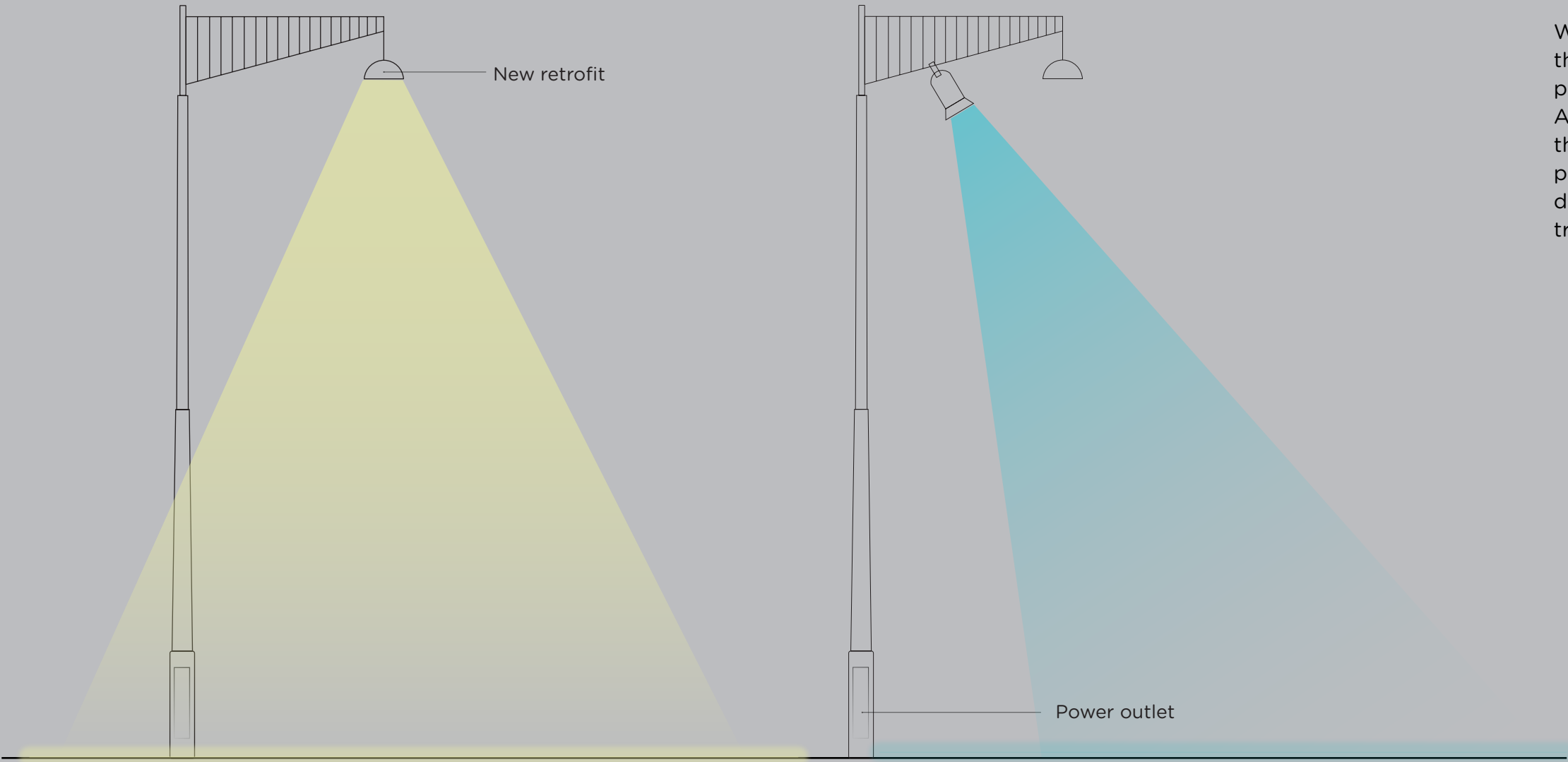


Principle plan
Luminaries layout

At the Towers Square we want to reuse the existing lighting pole to establish the connection with the historic development of artificial lighting in the Bastion zone.

The existing pole will be refurbished and equipped with a modern retrofit luminaire with cut-off lighting distribution. On the bases of the existing pole there will be reproduced a number of replicas. The historic pole and its replicas are located along the two edges of the Towers square facing each other. The pattern of poles will shape the square and strengthen its image as a gathering spot.

When the Towers Square hosts cultural events, the new lighting installation can be used as a platform for festive temporary lighting. Additional luminaires can be mounted onto the trusses on top of the poles. After that the permanent lighting is turned off or dimmed down so the temporary lighting installation transforms the Square into a festive arena.



Principle section
General lighting

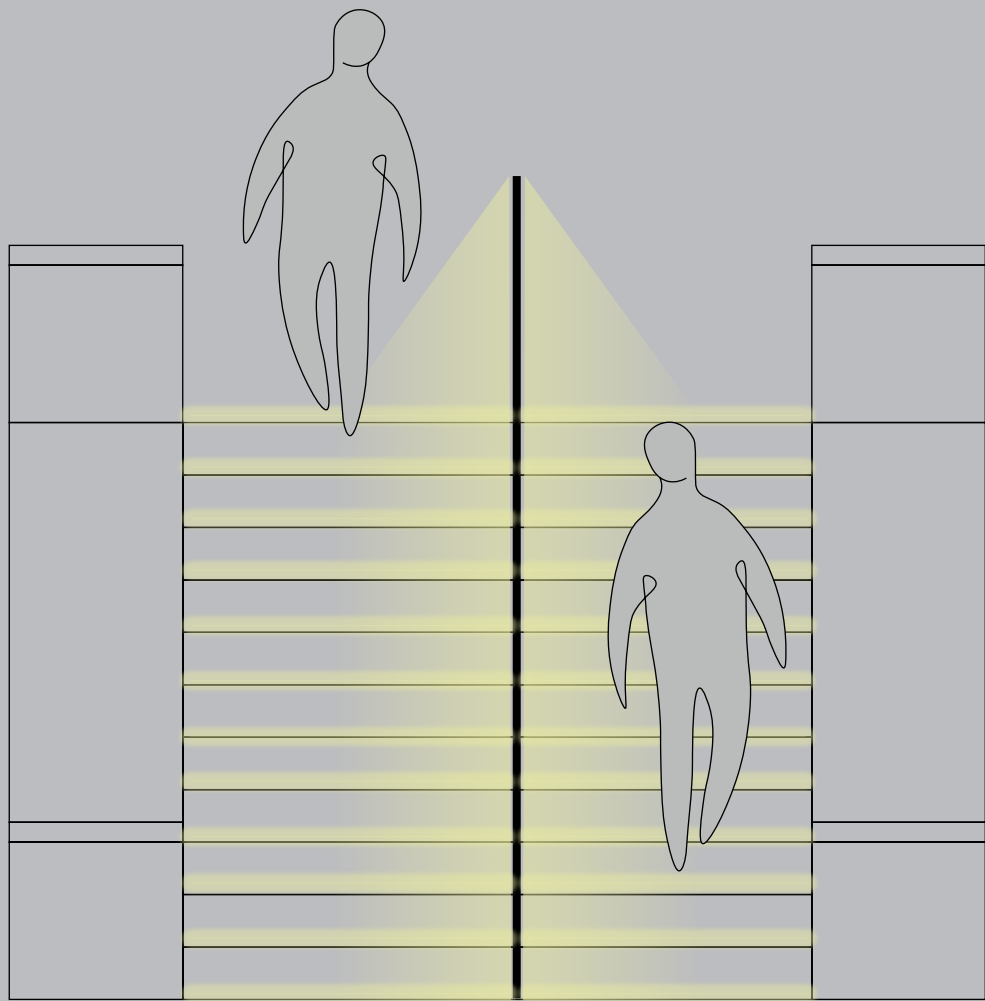
Principle section
Temporary lighting





We believe that the installation for general (functional) lighting along secondary paths is both sufficient and appropriate for the illumination of the seating areas. The lighting bollards provide a very local illumination in the diameter of approx. 5-12m around the bollard. They deliver a low-light level and a soft light distribution.

This is a lighting in the human scale. All these characteristics fit very well to seating, conversation and relaxation in the public space.



Principle sketch

The staircases are illuminated by luminaires integrated into the handrail. We suggest this solution because it is aligned with the general lighting design principles, which are described before.

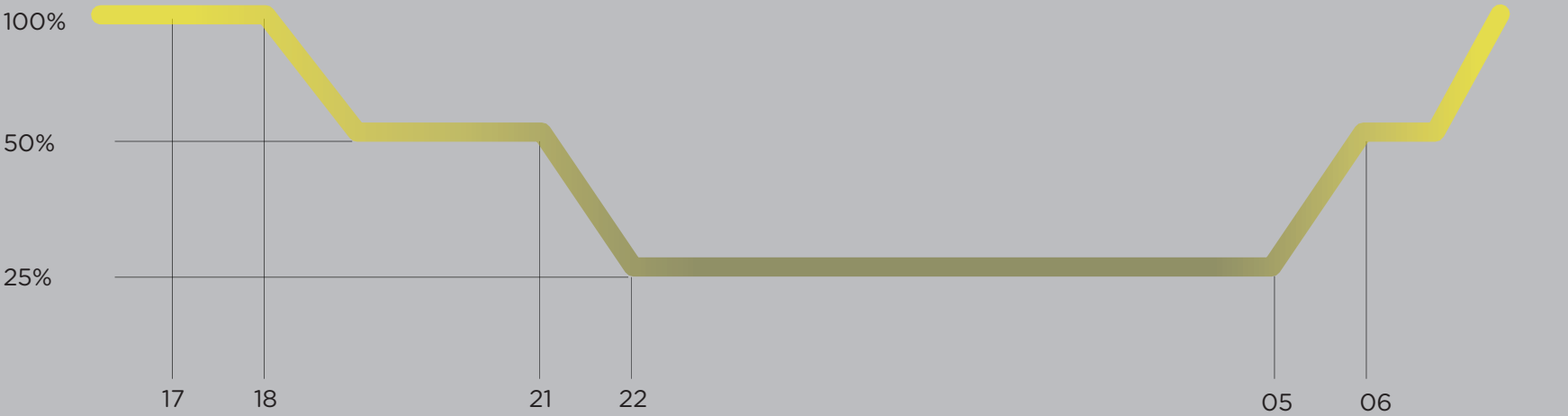
The light from the luminaire in the handrail illuminates evenly the horizontal surfaces of the staircases - the light is provided exactly where it is needed. Once again, the light source is located under the eye height for most of the viewing incident angles. This solution provides a high visual comfort - the visitors will experience a well illuminated staircase in a glare-free environment.

The new handrails are also expected to be useful as supports for the people with walking difficulties.

In the wide staircases the handrail is going to be implemented in the middle of staircase, whereas in the narrow staircases the handrail is mounted on the side. Since the staircases are built in natural stone it is expected that handrail installation can be done relatively easy.



WINTER

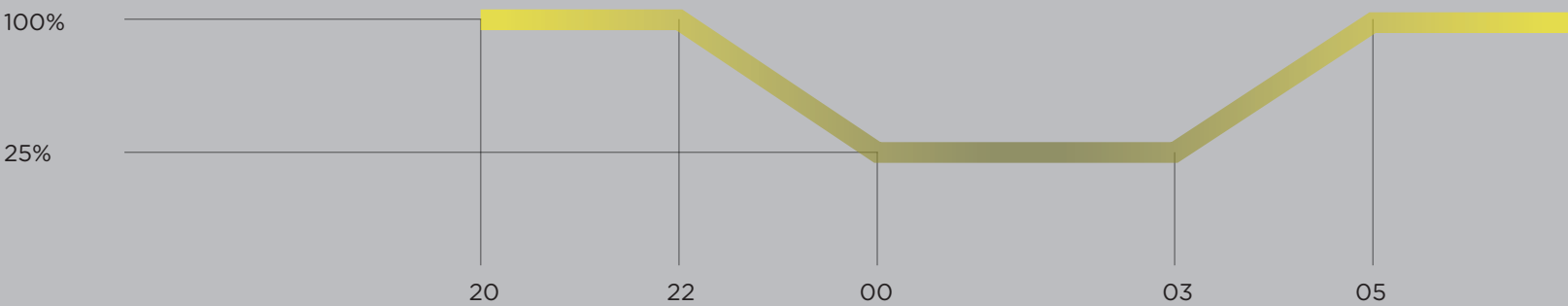


The new lighting installation will be controlled with a centralized lighting control system. We propose to use the modern lighting control system because we aim to tune the lighting levels for each park individually so the lighting levels are customized for each of the locations.

The general idea is that the lighting is controlled automatically with the astronomic clock. The clock will turn the light at the sunset on the highest defined light output. As the evening progresses the natural environment gets darker which means that the lighting installation can be dimmed down. The dimming is suggested for several reasons: the dark environments are experienced as more beautiful when they are illuminated with low light level; the nocturnal flora and fauna is disturbed less when the artificial lighting is dimmed down and last but not the last the dimming obviously contributes to the energy savings.

Especially in Toomepark, the bats residence, light will be significantly dimmed down or even turned of for some parts of the night during the crucial months.

SUMMER



Although it is stated in point 3.15 of the competition programme that the client wishes Kanuti garden to be transformed into a park of seasons, where the ambience of the park changes during different seasons by using different lighting scenes, we would like to suggest slightly different lighting concept for Kanuti garden.

Kanuti garden is a neoclassical garden with a well-defined orthogonal pattern of paths, a fountain and a sculpture located on its main axis. This distinctive geometry creates strong mental images that a visitor bears in his mind after the visit.

As a such the garden demands a lighting concept that further reinforces its neoclassical heritage and does not reject it.

We do not find Kanuti garden to be an appropriate location for a dynamic lighting installation.

In this proposal Kanuti garden is mainly illuminated with bollards (1m high), that are installed concealed in the hedges located along the paths. During the day the bollards are almost unnoticeable. The bollards are always installed in pairs – one on each side of the path directly across each other. The

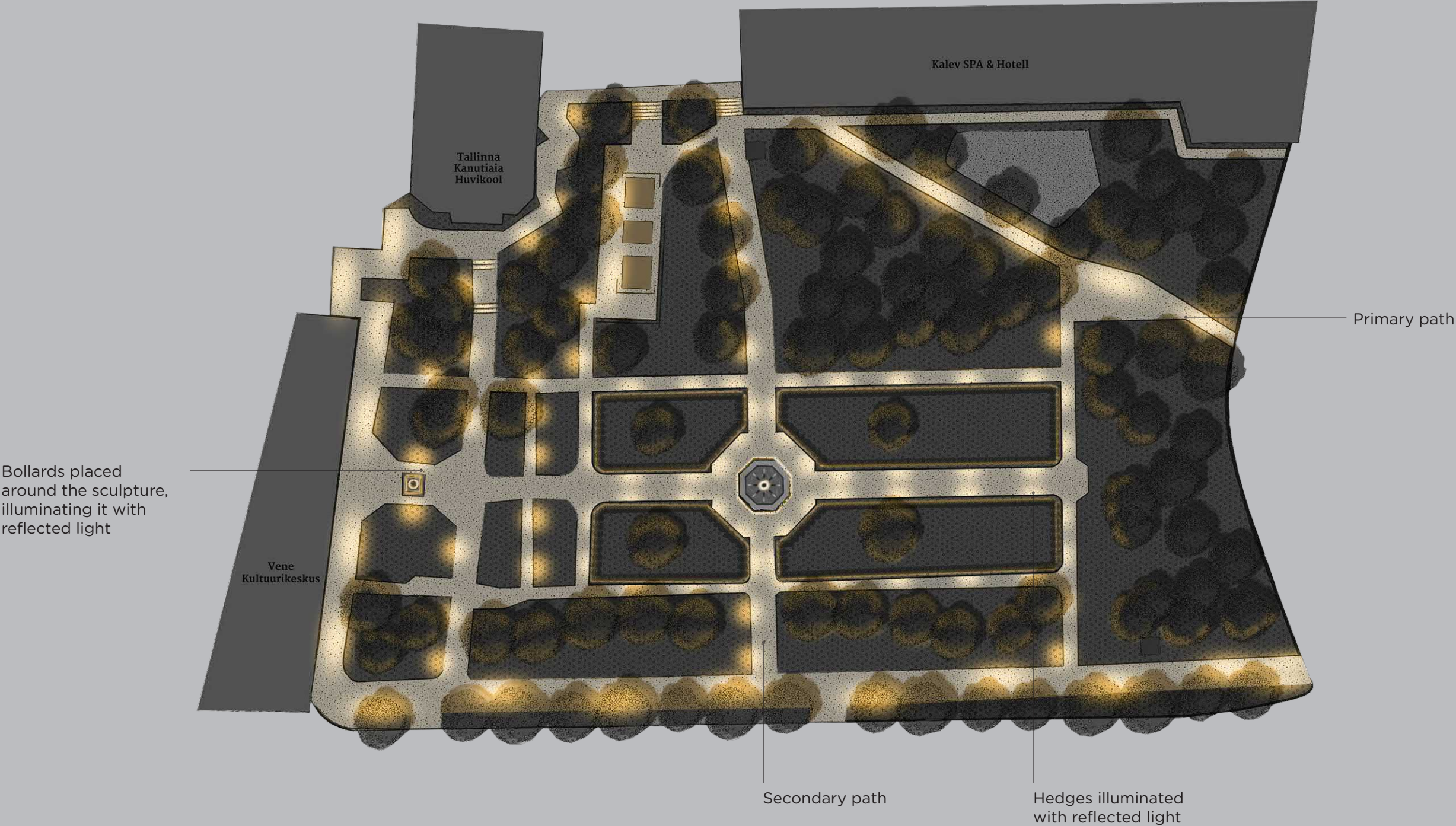
bollards have 180 degrees light distribution with low-glare light optics. The bollards illuminate the path itself and the hedges on the opposite side of the path.

With this lighting concept the path and the inner surfaces of the hedges are evenly illuminated so they create an illuminated half-tunnel. The visitors will experience bright surfaces but the luminaires will stay concealed for most of the viewing angles. The light reflected from the hedges and path will fall naturally on the visitors' faces and provide the necessary facial recognition.

Similarly, we estimate that the reflected light is entirely sufficient to illuminate the fountain and sculpture. The accentuation of the fountain and sculpture can be achieved by adjusting the dimming values for the luminaires located next to the fountain and sculpture so they deliver higher lumen output than the luminaires located along the paths.

In addition to the bollard illuminated two other parts, which we defined as primary are illuminated with poles. The poles, likewise the bollards, are located in pairs along the primary paths.

We believe, that this is the correct way to illuminate Kanuti garden.



Principle plan





BASTION PARKS OF TALLINN

proposal for the lighting concept

“echoes”



STORY OF LIGHT

Lighting is more than a fixture

What we see is the Big picture

Collection of moments and **emotions**

Sunrise

Sunset

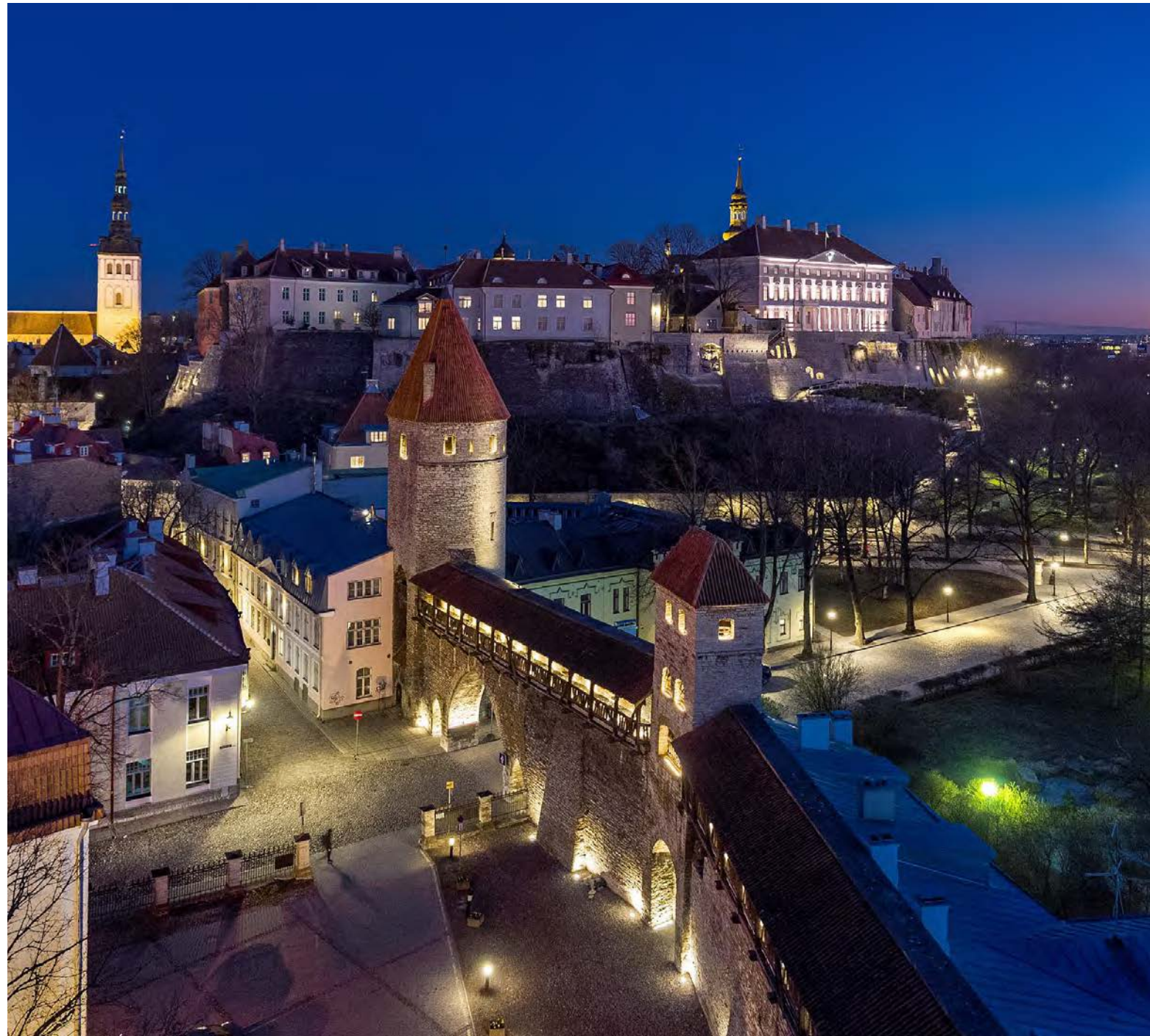
Moon and the stars

It is a whisper

It is beautiful

It respects

It makes us **feel safe**



STARTING POINTS & GOALS

SKYGLOW

"diffuse luminance of the night sky"

"In the cities, there is no such thing as total darkness. The sky always reflects some amount of artificial light back on earth as diffused ambient light"



GLARE

"difficulty of seeing in the presence of bright light"

"luminaires with high luminance value should be eliminated from our field of vision. This is the starting point to enable visual comfort and can often be done by removing, shielding, dimming and re-directing the light sources"





BIG PICTURE

"emphasizing the boundaries"

"Gentle lighting of the surrounding elements such as walls and towers generate a feeling of safety as the environment is revealed in silhouette. This significantly helps orienting yourself in a space as you are moving towards the light"

A photograph of a statue in a park at night. The statue is illuminated by warm, golden light, making it stand out against the dark background. The background shows silhouettes of trees and several streetlights that create a bokeh effect. The overall mood is serene and focused on the statue as a key point of interest.

ACTORS

"emphasizing the elements"

"In addition to illuminated backdrop the highlighting of elements such as trees, poles, or statues create illuminated keypoints that help us orientate and navigate through the space"

NEGATIVE CONTRAST

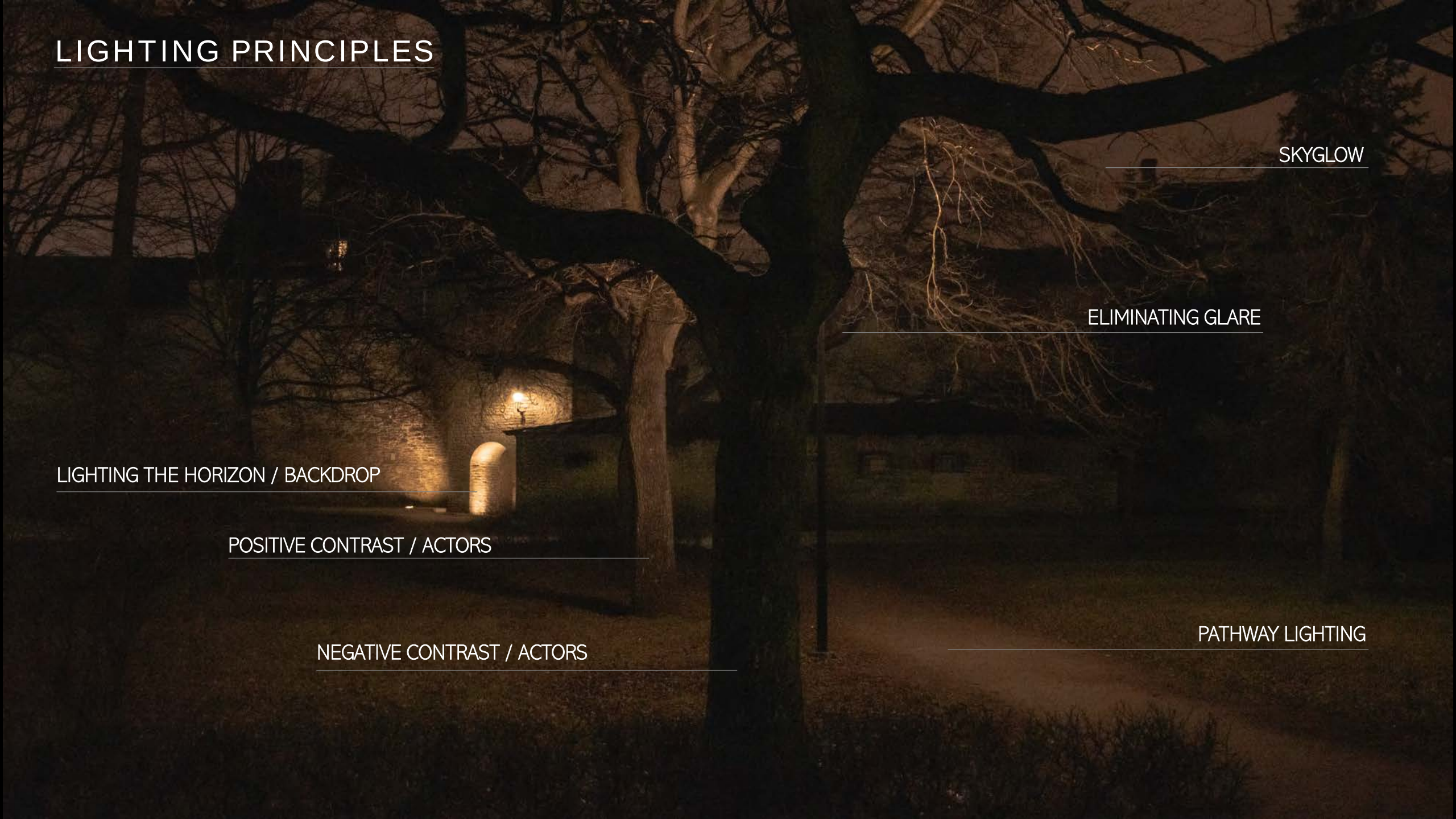


POSITIVE CONTRAST



"Perception of the space around us is achieved by using contrasts"

LIGHTING PRINCIPLES

A night scene of a park with trees and a building, illustrating various lighting principles. The scene is dark, with light sources creating highlights and shadows. A large tree trunk is in the foreground, and a building with a lit archway is in the background. The sky is dark, and the ground is covered in grass and trees.

SKYGLOW

ELIMINATING GLARE

LIGHTING THE HORIZON / BACKDROP

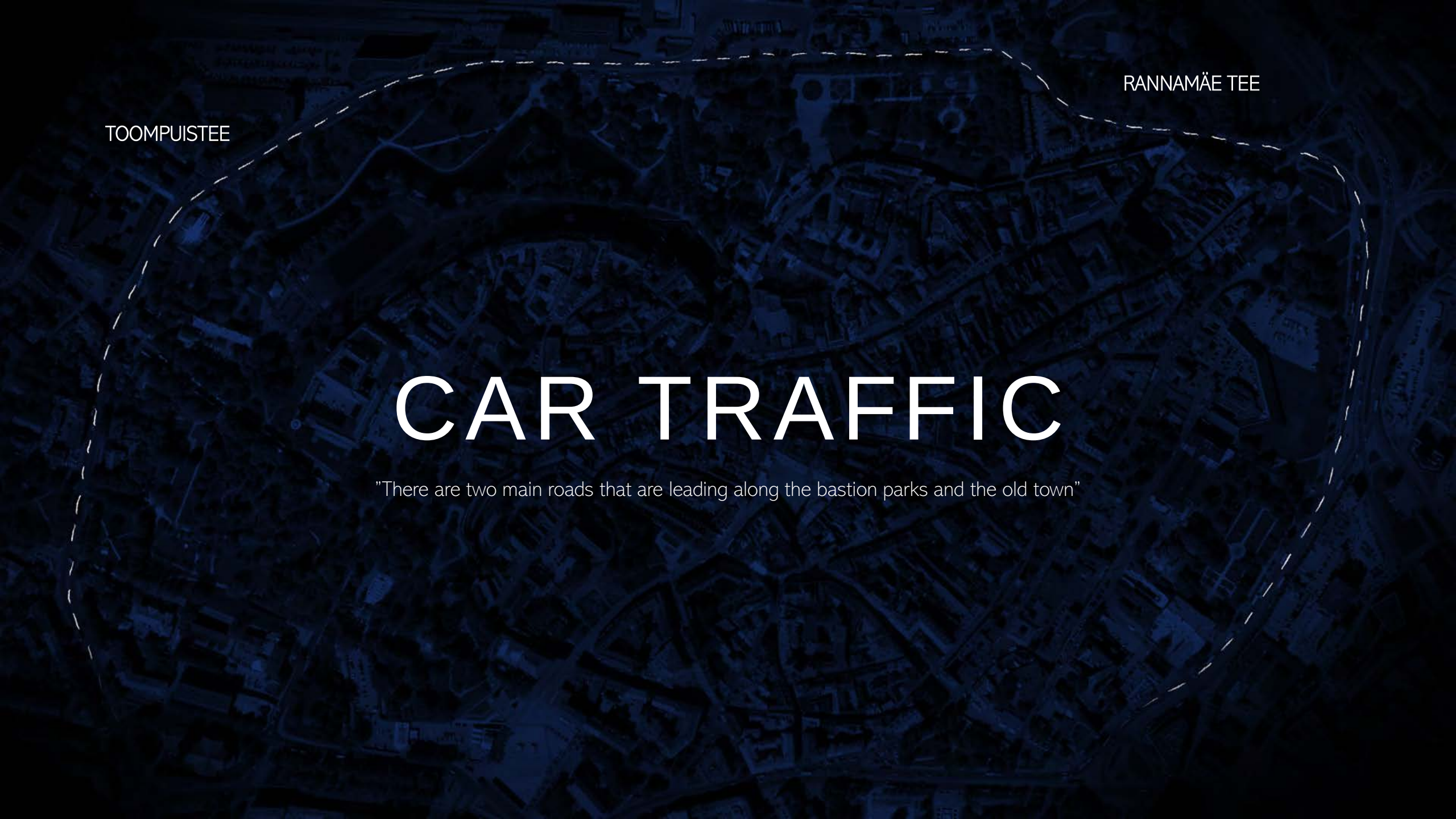
POSITIVE CONTRAST / ACTORS

NEGATIVE CONTRAST / ACTORS

PATHWAY LIGHTING

An aerial photograph of a dense urban neighborhood, likely in a European city. The image shows a complex network of streets and buildings, with a prominent river or canal winding through the center. The word "ANALYSIS" is overlaid in large, white, sans-serif capital letters across the middle of the image. The surrounding area includes green spaces, trees, and other urban infrastructure.

ANALYSIS

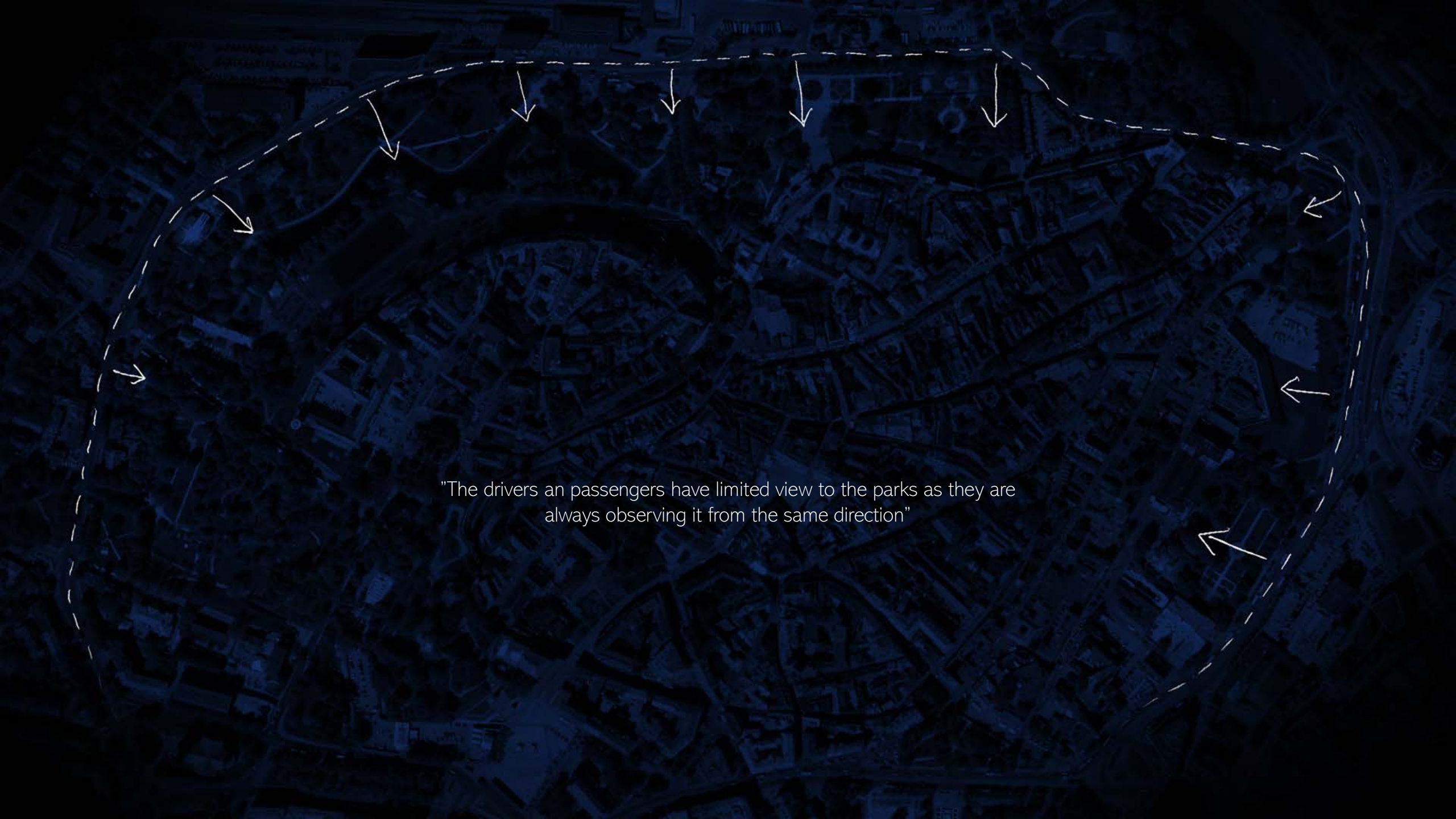


TOOMPUISTEE

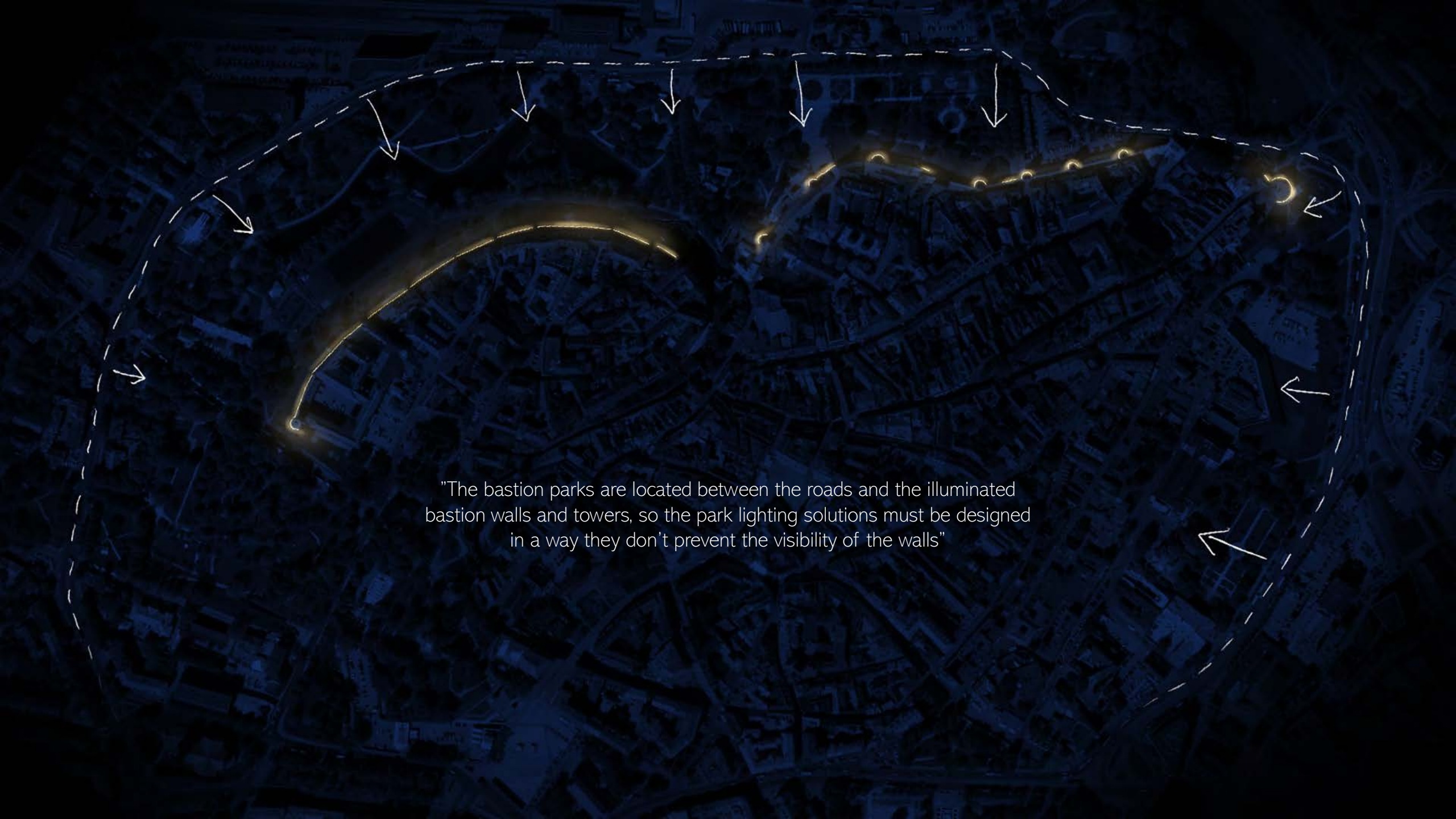
RANNAMÄE TEE

CAR TRAFFIC

"There are two main roads that are leading along the bastion parks and the old town"



"The drivers and passengers have limited view to the parks as they are always observing it from the same direction"

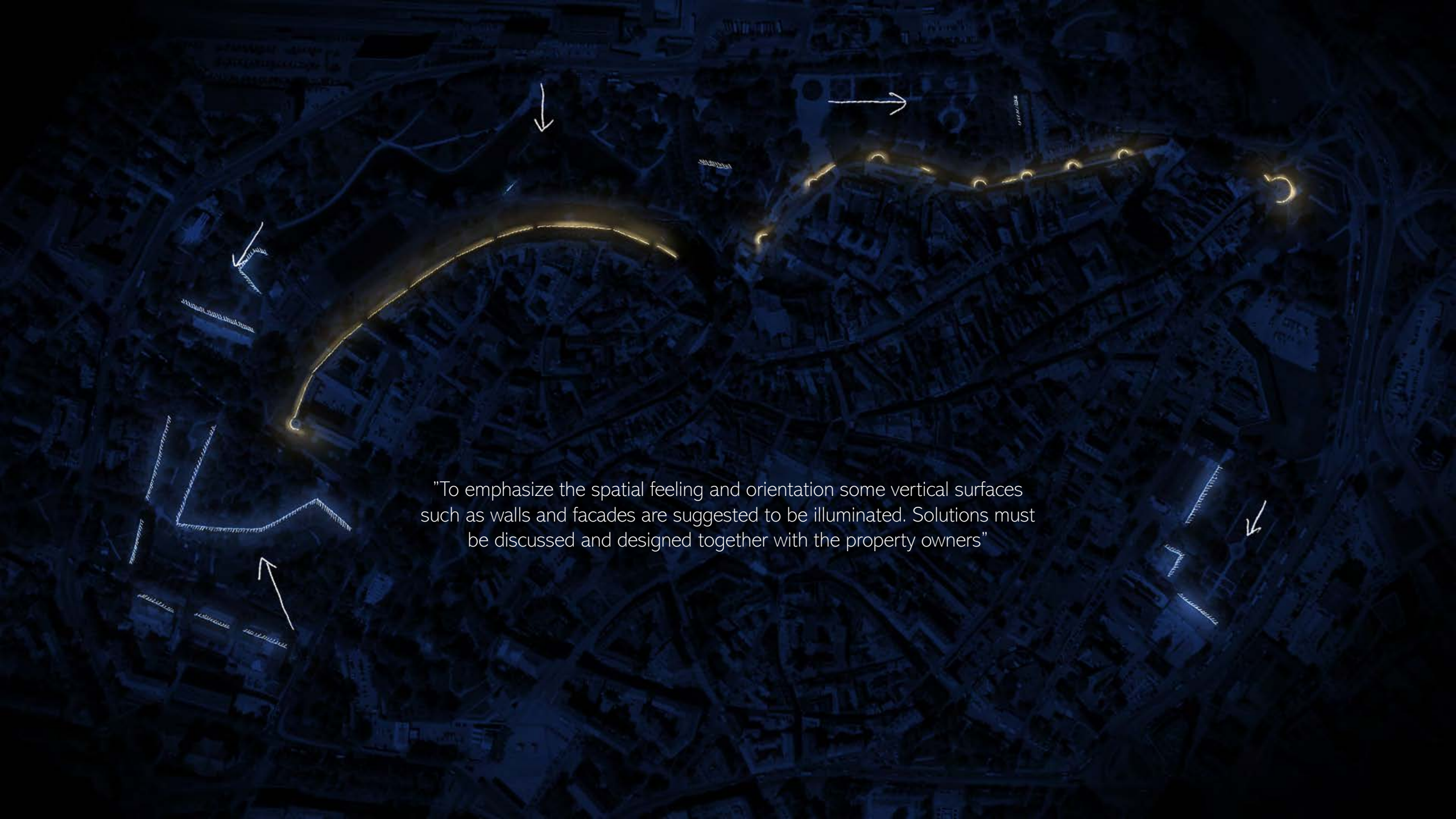


"The bastion parks are located between the roads and the illuminated bastion walls and towers, so the park lighting solutions must be designed in a way they don't prevent the visibility of the walls"

An aerial night photograph of a city street grid. A glowing yellow line traces a path through the city, starting from the bottom left, curving upwards and to the right, and then continuing as a series of connected loops towards the top right. Several white arrows are drawn on the image: one points down towards the path, another points right, a third points down-left, and a fourth points up-left. The word "PEDESTRIANS" is centered in large white capital letters.

PEDESTRIANS

"People using the parks are not limited by the same views as the drivers.
The main views need to be observed and designed."



"To emphasize the spatial feeling and orientation some vertical surfaces such as walls and facades are suggested to be illuminated. Solutions must be discussed and designed together with the property owners"

An aerial night photograph of a city, likely London, showing a dense urban grid. Several green spaces and parks are highlighted with glowing yellow and orange lights, indicating a lighting plan. A large, curved park area in the upper left is particularly prominent, with a long, glowing yellow line following its boundary. Other smaller green spaces are scattered throughout the city, each with its own unique lighting arrangement. The city's buildings and streets are visible in the background, with some buildings also highlighted by glowing outlines. The overall scene is dark, with the city lights providing a stark contrast.

"In addition to these vertical elements it is important to highlight some individual trees and groups of trees that play a keyrole in the views painting the Big Picture"



"All parks have some unique features such as fountains, statues and garden labyrinths. These features must be designed with care"



"The final touch to link the parks together is illuminating the pedestrian routes with special poles and glare free lighting solution"

LIGHTING

How is it done?

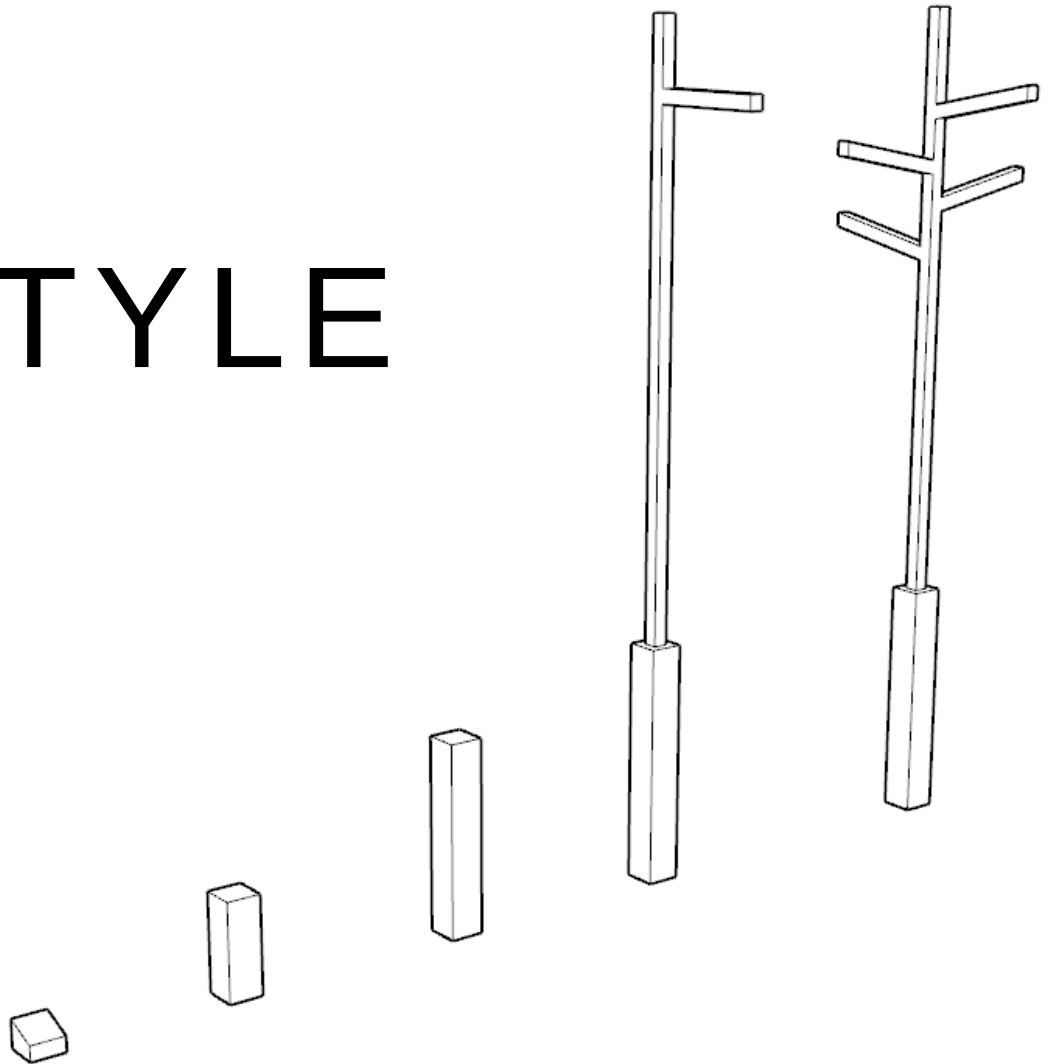
OLD OR NEW ?

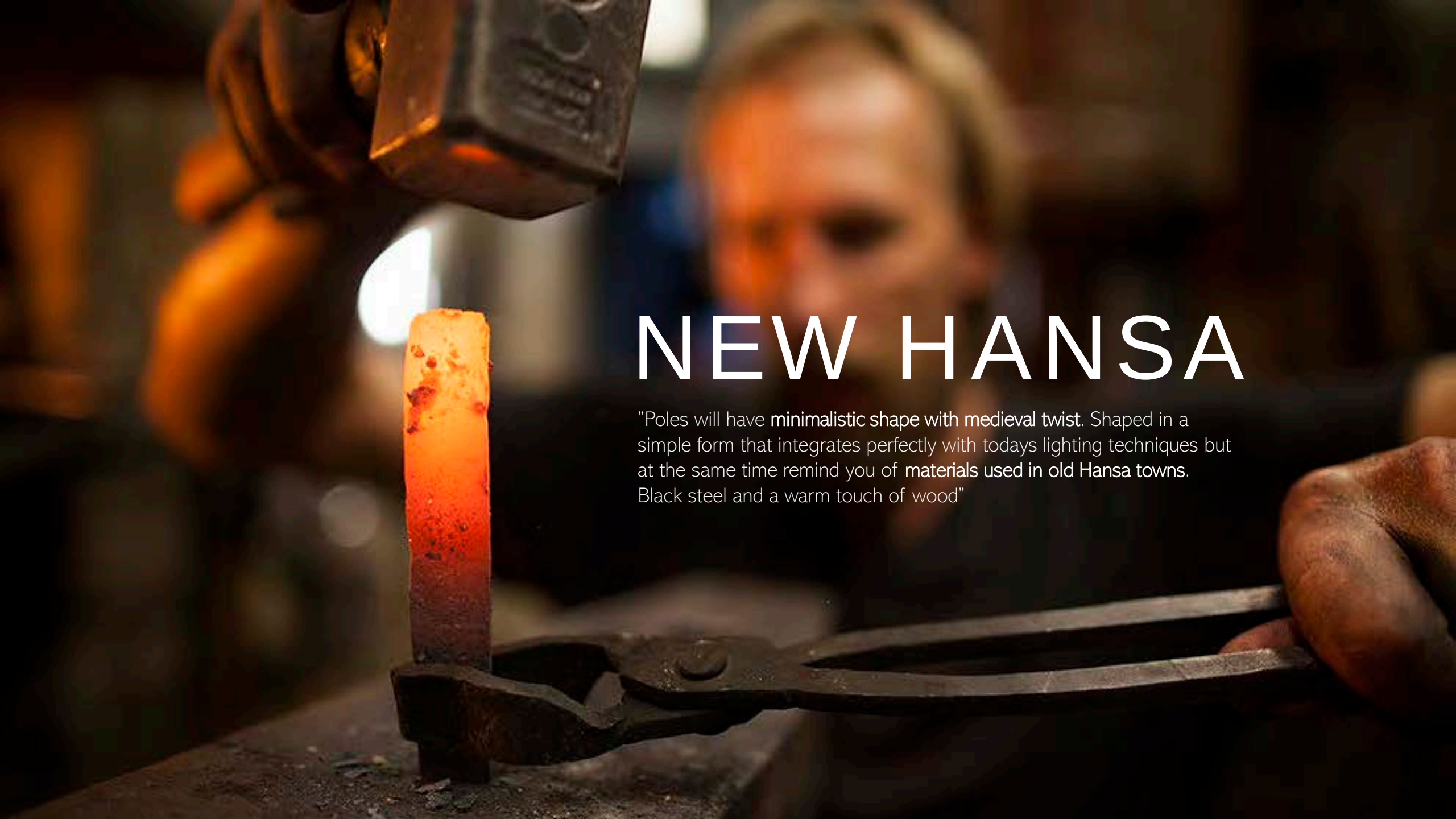
"Finding the right style for luminaires and poles in old historical parks is always a challenge. Technology and techniques have developed dramatically after the old lantern-style. How to combine the atmosphere of an old town with today's technology"



SIGNATURE STYLE

"Having a **proper set of tools**, meaning carefully chosen luminaires, poles and street furniture will not only make the upcoming parks design process faster but also helps with future maintenance. Customised poles will create a **connection between parks** and gives a **unique appearance** that plays in harmony with the whispering light of bastion walls and towers"



A blacksmith is working on a glowing red-hot metal pole in a workshop. The pole is being held by a pair of tongs. The background is blurred, showing the blacksmith's face and other workshop elements.

NEW HANSA

"Poles will have **minimalistic shape with medieval twist**. Shaped in a simple form that integrates perfectly with todays lighting techniques but at the same time remind you of **materials used in old Hansa towns**. Black steel and a warm touch of wood"



NEW HANSA

"Case eample : Row of lightpoles creates a **easily recognisable path** and a connection between parks. Wooden material gives warmth to the view of the pathway. Poles are fairly low and the luminaires are equipped with a **good cut-off optic** so they do not create glary points that would disturb the view"



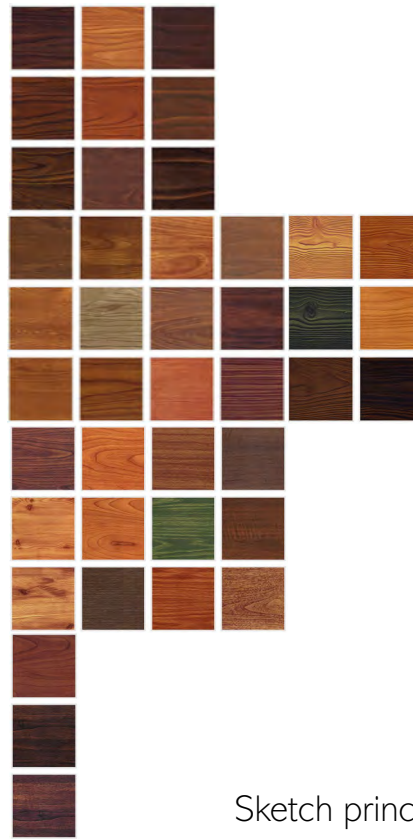
NEW HANSA

"As an example of a luminaire with great glarecontrol (iGuzzini laser blade In/Out). Light source is deep recessed and barely visible, you only see the light that comes out and hits the surface. Light source must have CRI >80 and colortemperature of 3000K"

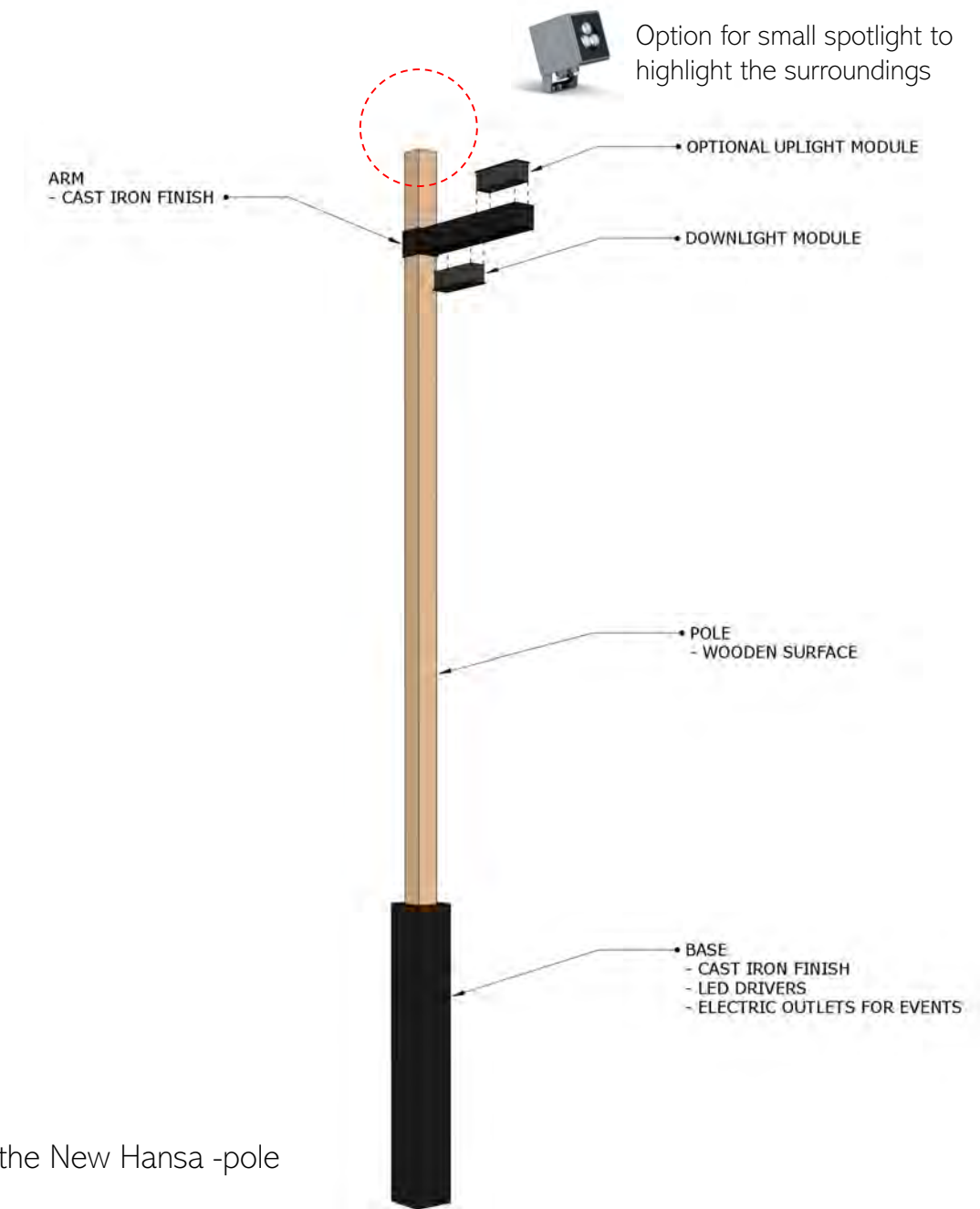


NEW HANSA

"Wood patterned steelpoles by Tehomet are a great new option for wooden poles as they have the same look but the durability of a steel pole"



Sketch principle of the New Hansa -pole



NEW HANSA

"Visualisation of the pole principle in pathway use. Pole dimensions are to be adjusted based on the selected luminaire"



A nighttime photograph of a park landscape. In the center, a small red metal bridge crosses a dark, calm body of water. Behind the bridge, a large tree is brightly illuminated from below, its leaves glowing with a warm yellow light. To the right, a multi-story building with a red roof is partially visible, with some windows lit. Several tall, thin, vertical light poles are spaced out along the grassy bank in the foreground. The sky is dark and overcast.

TREES / POSITIVE CONTRAST

WALLS / NEGATIVE CONTRAST

BRIDGE / POSITIVE CONTRAST

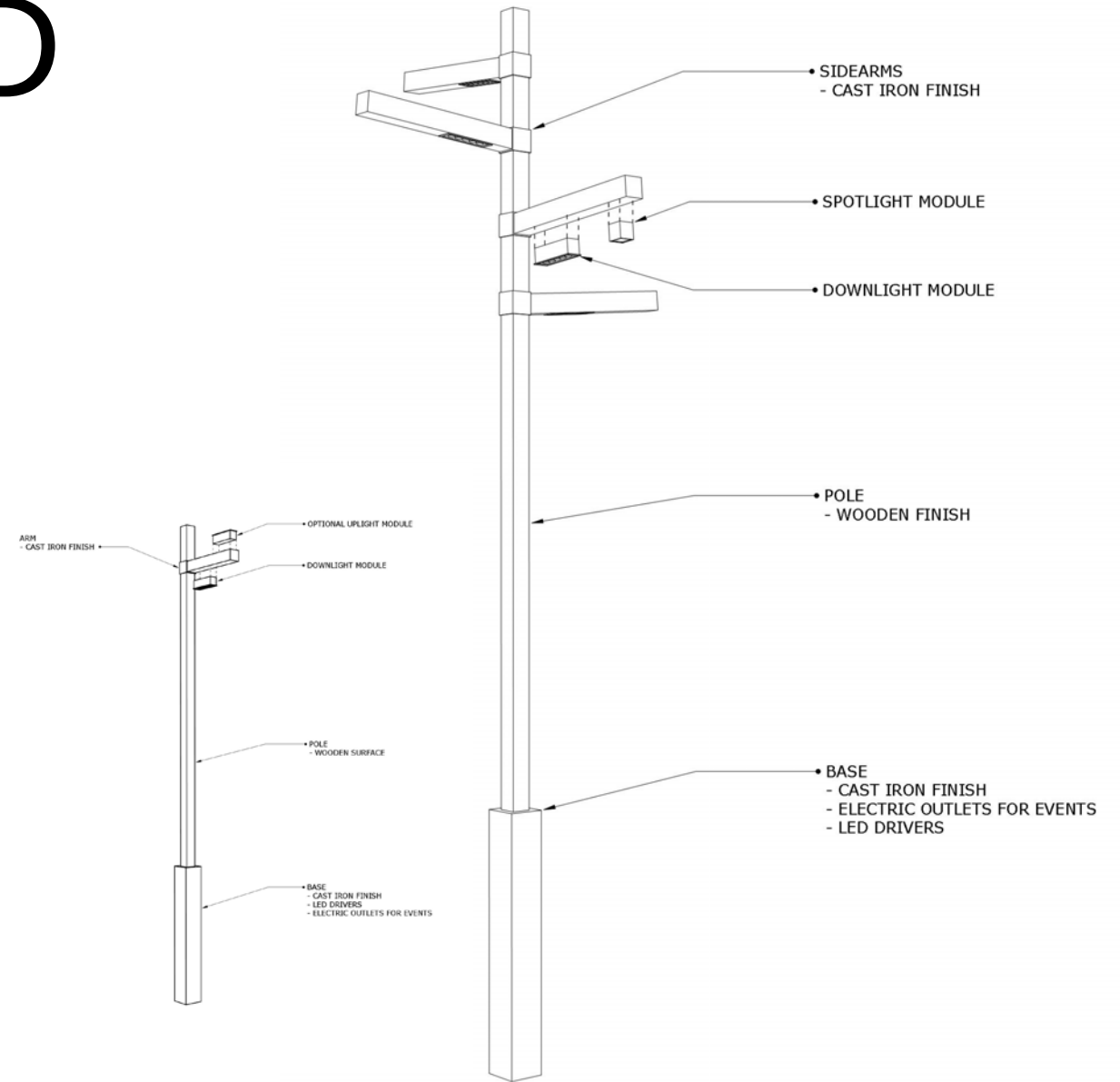
POLES / POSITIVE CONTRAST

NEW HANSA

"Visualisation of a view at Toompea Park"

PLAYGROUND

"At the playgrounds the lighting is more general to illuminate the area better, but the form of the poles is related to the pathway lighting. Dimensions will be designed according the chosen luminaire type"



BOLLARD

Bollard lighting can be considered glare free when the light source and reflectors are not visible for the human eye. Bollard lighting creates pleasant human scale environment for slowly walking pedestrians.



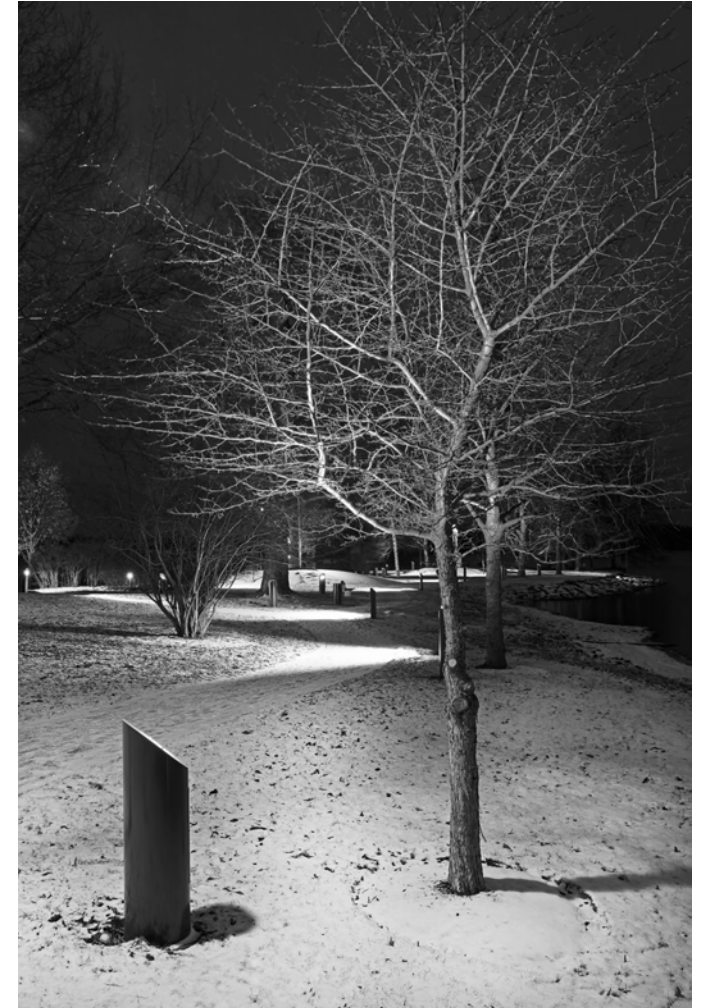
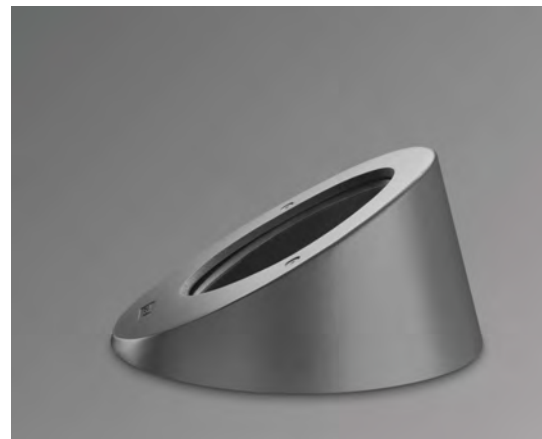
INGROUND

Eventhough it was recommended not to use inground luminaires we cant neglect the fact that light directed upwards to a wall or a tree reminds us from the atmosphere of a bonfire. As humans we are always attracted by fire and thisdirection of light plays an important role when setting up the atmosphere for parks.

LED inground luminaires produce a limited amount of heat and in some occasions they may be left under snow for some periods of time affecting the light output and appearance at that time.

Yet there is solutions available the use "onground" solutions rather than inground solutions. This is a proper solution in a snowy environment.

Inground luminaires could in some cases be integrated into the benches and aimed at the surrounding trees



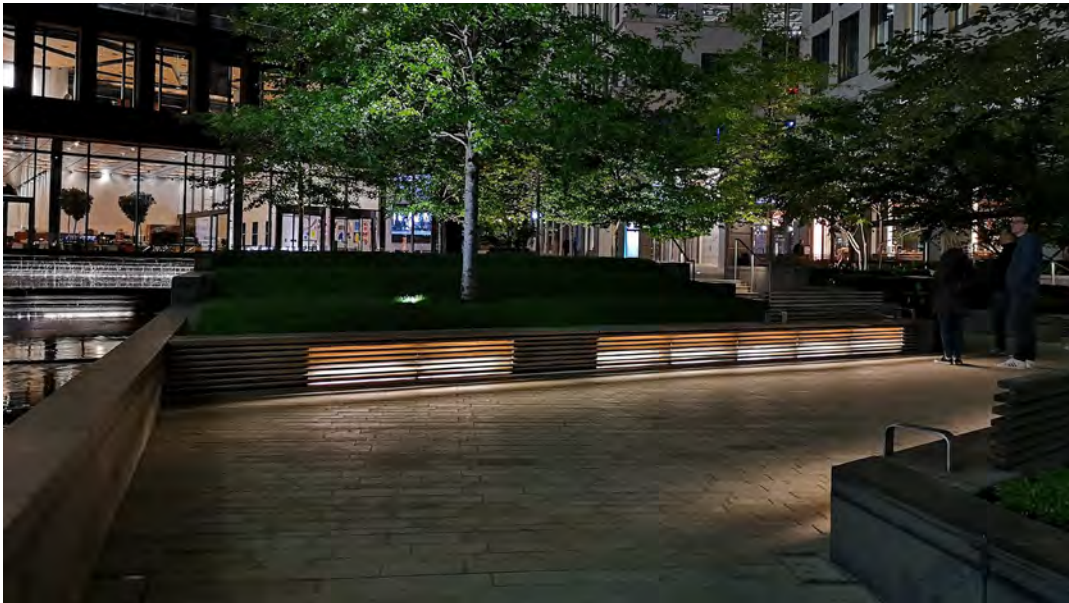
BENCHES



BENCHES

Lighting should be integrated into the seatings in a way it is vandalproof and illuminates the vertical surface rather than only the ground. Here is a sophisticated solution from London combining wood and lighting. Color temperatures below 3000K are recommended as they bring out a nice cozy glow.

Inground luminaires could in some cases be integrated into the benches and aimed at the surrounding trees



DESIGN LIGHTING

"It is important to create calm lighting for the seating areas around the fountains and statues. Luminaire arrangement follows the circular shapes of fountains and garden labyrinths and keeps the lighting low.





LIGHTING OF THE
SURROUNDING VERTICAL
SURFACES / INDIRECT LIGHT

STAIRS

"Lighting of the Patkuli Stairs is what we found to be a solution we recommend to continue using where ever it is possible. It is a combination of illuminated vertical surfaces combined with direct spotlighting. The key is to reduce the glare even the light levels are not even"

DIRECT LIGHTING WITH
PROPER OPTICAL GLARE
CONTROL

STAIRS

"illuminated vertical surfaces combined with direct spotlighting. The key is to reduce the glare even the light levels are not even"



GLARE FREE VIEW TO THE
SURROUNDINGS

LIGHTING OF THE
SURROUNDING VERTICAL
SURFACES / INDIRECT LIGHT

DIRECT LIGHTING WITH
PROPER OPTICAL GLARE
CONTROL

CONTROL

If this then that

All luminaires are controlled via DALI-bus and can be adjusted individually or in groups. Areas are divided in groups which can be controlled separately. Smart conditions create intelligence to the control system and lighting can adapt to varying environment.

CONTROL

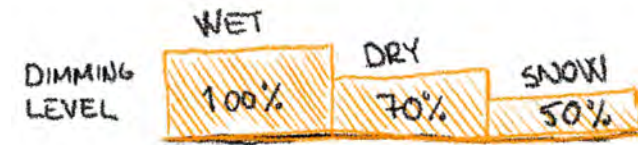
LIGHTING AND CONTROLS ARE DIVIDED IN TWO CATEGORIES :

1. ORIENTATIONAL LIGHTING WHICH CONSISTS OF PATHWAYS AND SURROUNDINGS
2. DECORATIVE DESIGN LIGHTING WHICH CONSISTS OF LANDMARKS, STATUES, TREES ETC.

1. ORIENTATIONAL LIGHTING

o TRIGGERS FOR DIMMING:

- o DATE/TIME
- o SURFACE ILLUMINANCE
- o WEATHER



2. DECORATIVE DESIGN LIGHTING

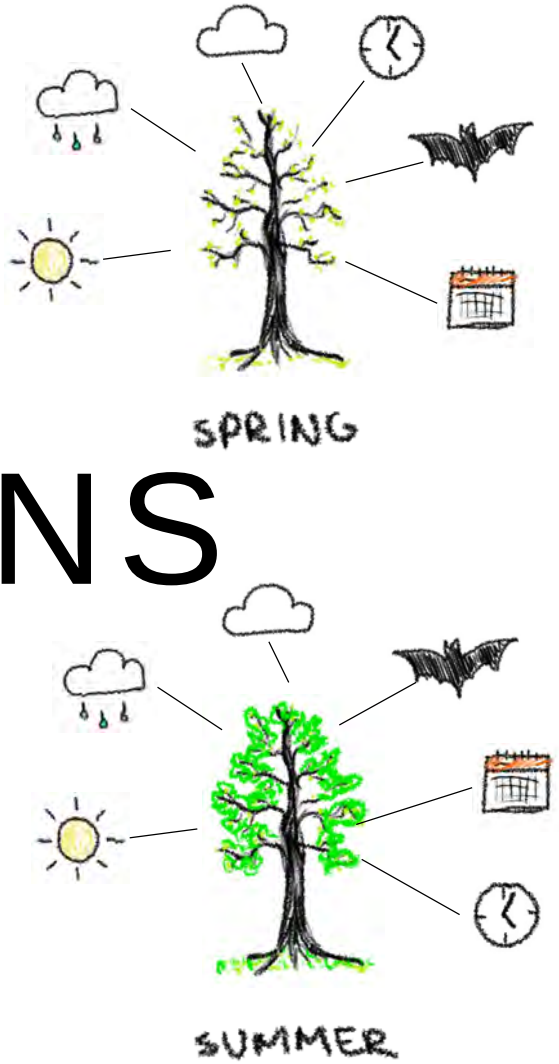
o TRIGGERS FOR DIMMING:

- o DATE/TIME
- o WEATHER
- o BATS (season)
- o SEASON

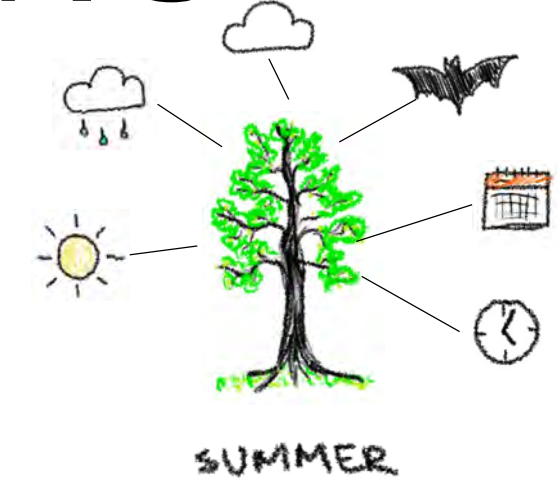
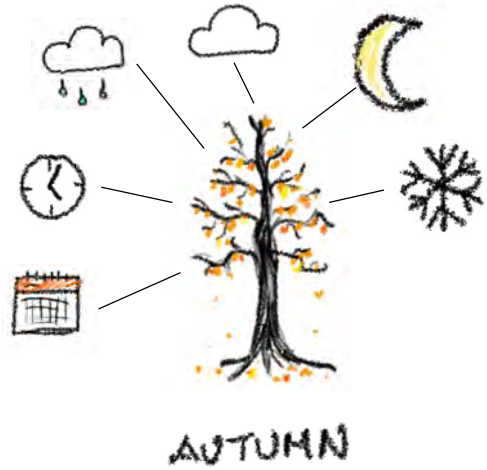


Treelighting, adaptive pathway lighting, decoratives, seasonal lights, events

Adaptive pathway lighting, decoratives



CONDITIONS



Treelighting, adaptive pathway lighting, decoratives

Adaptive pathway lighting, decoratives

CONTROL



EXAMPLE CONDITION 1.

In August when the bats are active, the treelights are off. When the weather conditions are ok the streetlights are at 70% power. If the ground is wet the intensity is raised to 100%

EXAMPLE CONDITION 2.

In January the ground is white of snow and reflects the light more than gravel. Pathwaylights adjust to 50% intensity. Bats are sleeping in the bastion walls so the trees can be illuminated at 100%

An aerial night photograph of a city area, likely Bastion Parks, featuring glowing light trails and city lights. The image is dark, with the city lights providing a blue-toned background. Overlaid on this are several bright, glowing light trails in yellow and orange. These trails form various shapes: a large, wavy, horizontal shape in the upper left; a series of small, circular lights in the upper right; a long, horizontal line of lights in the middle right; and a series of small, circular lights in the lower right. The text "BASTION PARKS" is centered in the image in a large, white, sans-serif font.

BASTION PARKS

LINDAMÄEPARK

LINDA park is located higher than the surroundings. Lighting of the trees around the statue creates a nice view from the parks below and guides people to see the LINDA statue.

Illuminated benches can be placed around the statue or trees and the tree lighting can be integrated to the benches.

S = LINDA STATUE

T = ILLUMINATED TREES

B = BENCH LIGHTING





Illuminated benches can be placed around the statue or trees and the tree lighting can even be integrated to the benches.

HIRVEPARK

Hirvepark is surrounded by massive bastion walls that create beautiful negative contrast (silhouette) if illuminated. Groups of trees are picked up from the horizon views.

Surroundings of the stairs are illuminated to help find the exitpoints

Facades are recommended to be illuminated to create visual balance



W = WALL LIGHTING
T = ILLUMINATED TREES
P = PLAYGROUND
S = STAIRS
F = FACADE LIGHTING



Hirvepark is surrounded by massive bastion walls that create beautiful negative contrast (silhouette) if illuminated.

TOOMPARK

W = WALL LIGHTING

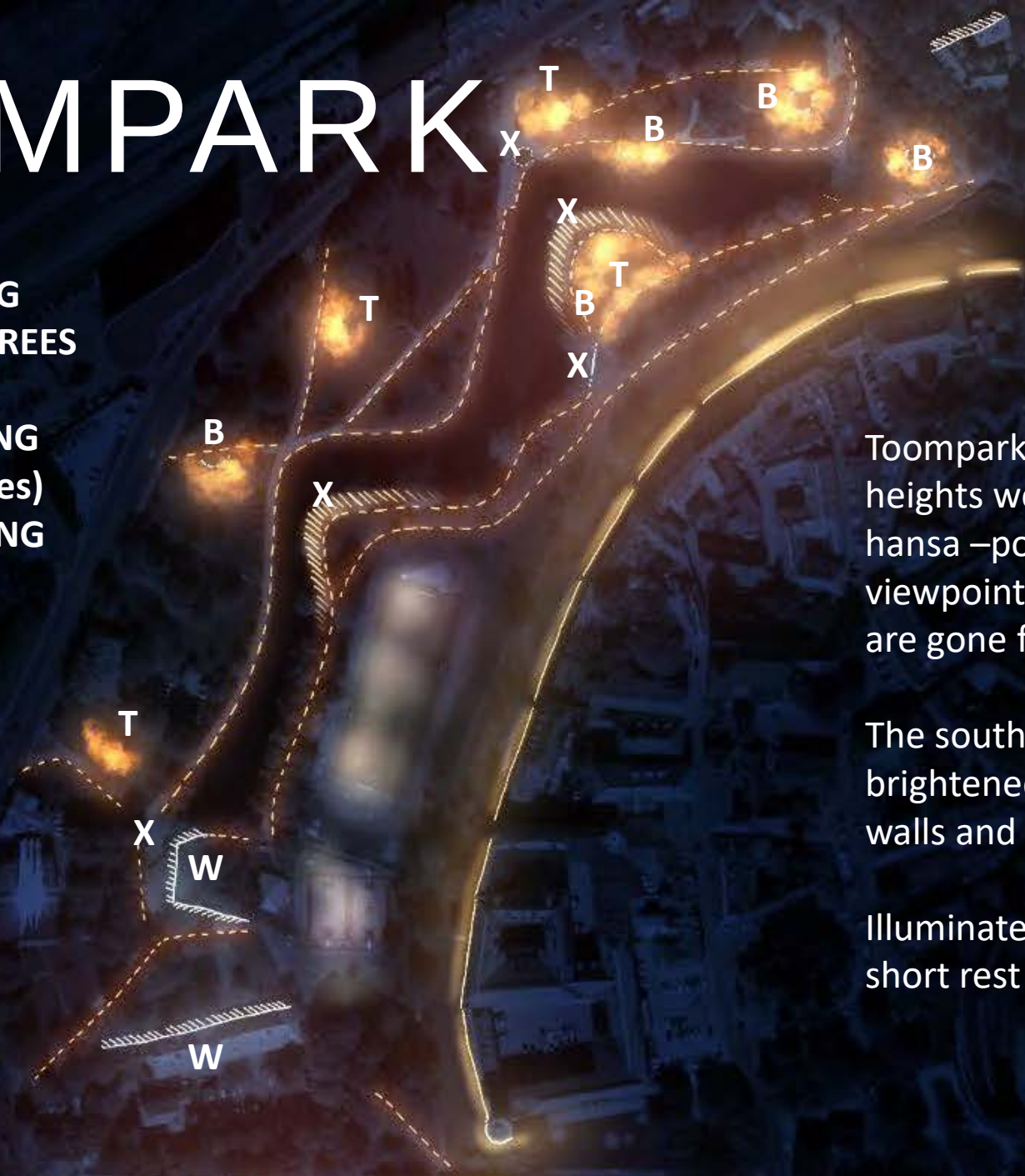
T = ILLUMINATED TREES

P = PLAYGROUND

F = FACADE LIGHTING

B = BENCHES (+ trees)

X = SPECIAL LIGHTING



Toomparks curvy paths and views to different heights work perfectly with the idea of new hansa –pole. Some groups of trees in the end viewpoints are only lit at winter when the bats are gone for their winter sleep.

The south area around the Dog park will be brightened up by gently lighting up the vertical walls and buildings.

Illuminated seating areas will provide places for short rest here and there.



Toomparks curvy paths and views to different heights work perfectly with the idea of new hansa –pole.

The south area around the Dog park will be brightened up by gently lighting up the vertical walls and buildings

An aerial night photograph of Tornidepark, showing a large, irregularly shaped green space. The park is surrounded by urban buildings and streets. Various lighting features are highlighted with labels and dashed lines. Labels include 'W' for wall lighting, 'T' for illuminated trees, 'P' for playground, 'S' for statue, 'F' for facade lighting, 'B' for benches (+ trees), and 'X' for special lighting. The lighting is warm and yellow, contrasting with the dark blue night sky and the dark green of the trees. The overall atmosphere is cozy and inviting.

X = SPECIAL LIGHTING

Large area in front of Tower square is left unlit as the towersquare wall and stage is illuminated.



Tornidepark has many places for special lighting and there is a good chance to create nice garden-style lighting and cozy atmosphere

MARGAREETA GARDEN



The image is an aerial night photograph of Margareeta Garden. A winding path is illuminated with warm, golden light. To the left, a large, glowing circular sculpture is visible. Various points along the path and in the surrounding area are marked with letters: 'S' at the top, 'T' at the top right, 'X' in the middle right, and 'T' at the bottom center. A dashed line connects the 'S' and 'T' at the top. The background is dark, showing silhouettes of trees and buildings.

T = ILLUMINATED TREES
S = STATUE
B = BENCHES (+ trees)
X = SPECIAL LIGHTING

Margareeta gardens bollard lighting next to the "Broken line" sculpture is a bit glary and is to be updated as is the lighting of the sculpture and the lighting of the trees behind it.

The stairs and the tree next to it are to be illuminated. This will be the first view of the new hansa -poles for the passengers coming from the harbour.



The stairs and the tree next to it are to be illuminated. This will be the first view of the new hansa -poles for the passengers coming from the harbour.

KANUTI GARDEN

T = ILLUMINATED TREES

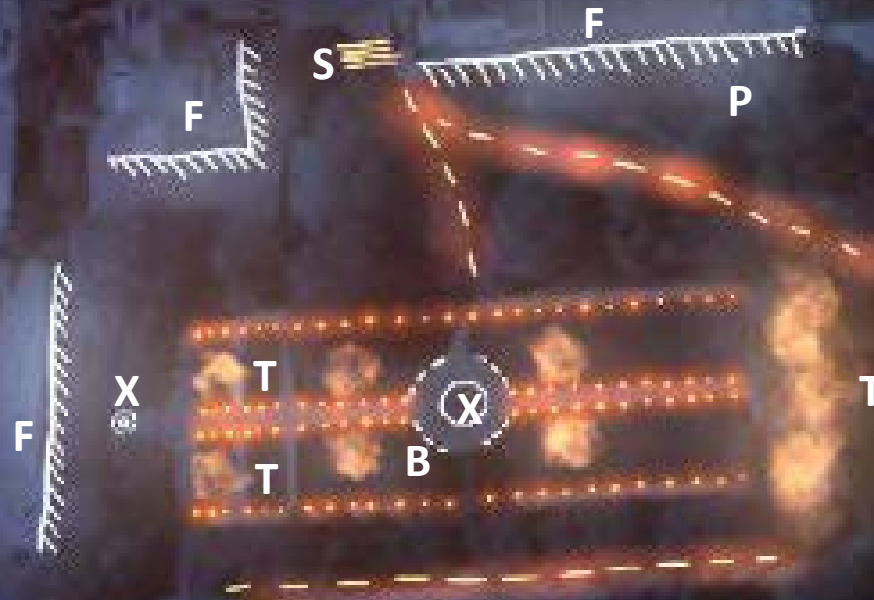
P = PLAYGROUND

F = FACADE LIGHTING

B = BENCHES

X = SPECIAL LIGHTING

Kanuti garden is presented
in more detail on the
upcoming slides







ILLUMINATED FACADES

ILLUMINATED FACADES

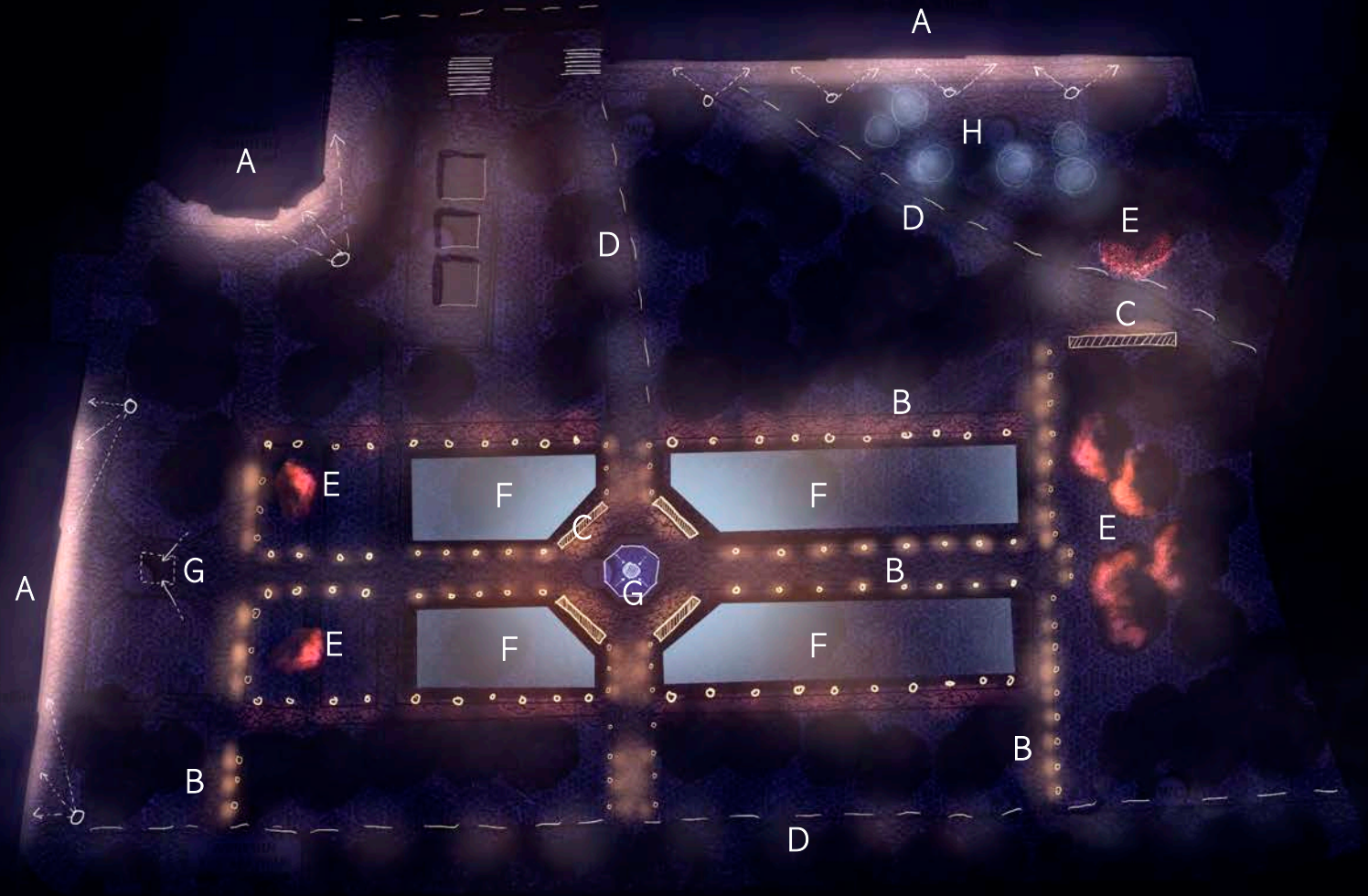
LIGHTING OF STATUES AND BENCHES

SEASONAL ART / LIGHT ART AREA

GLARE FREE BOLLARDS / HUMAN SCALE

KANUTI GARDEN LIGHTING PLAN

- A) ILLUMINATED FACADES
- B) GLARE FREE BOLLARD LIGHTING
- C) SEATING WITH LIGHTING INTEGRATED
- D) PATHWAY LIGHTING
- E) ILLUMINATED TREES
- F) AREAS FOR SEASONAL (LIGHT) ART
- G) STATUE / FOUNTAIN LIGHTING
- H) PLAYGROUND LIGHTING



A) ILLUMINATED FACADES



Vene Kultuurikeskus

The facade of Kultuurikeskus could be illuminated from poles that are placed on both sides in front of the building. Details such as columns and arches and facade decoration can be emphasized with luminaires recessed in ground or fixed on the building balcony



Kanutiaia Noortemaja

The facade of Kultuurikeskus can be gently illuminated from a pole that is to be placed on the yard. Details can be emphasized by fixing the luminaires on the facade.

The current "security lighting" placed on top of the building creates glare and needs to be removed



Kalev Spa

Facade of Kalev Spa is mostly windows and less decorative but by gently illuminating the plinth it creates a negative contrast (silhouette) that helps creating the feeling of safety

Plinth can be illuminated for example by lighting it from the top of the building or using ground recessed luminaires

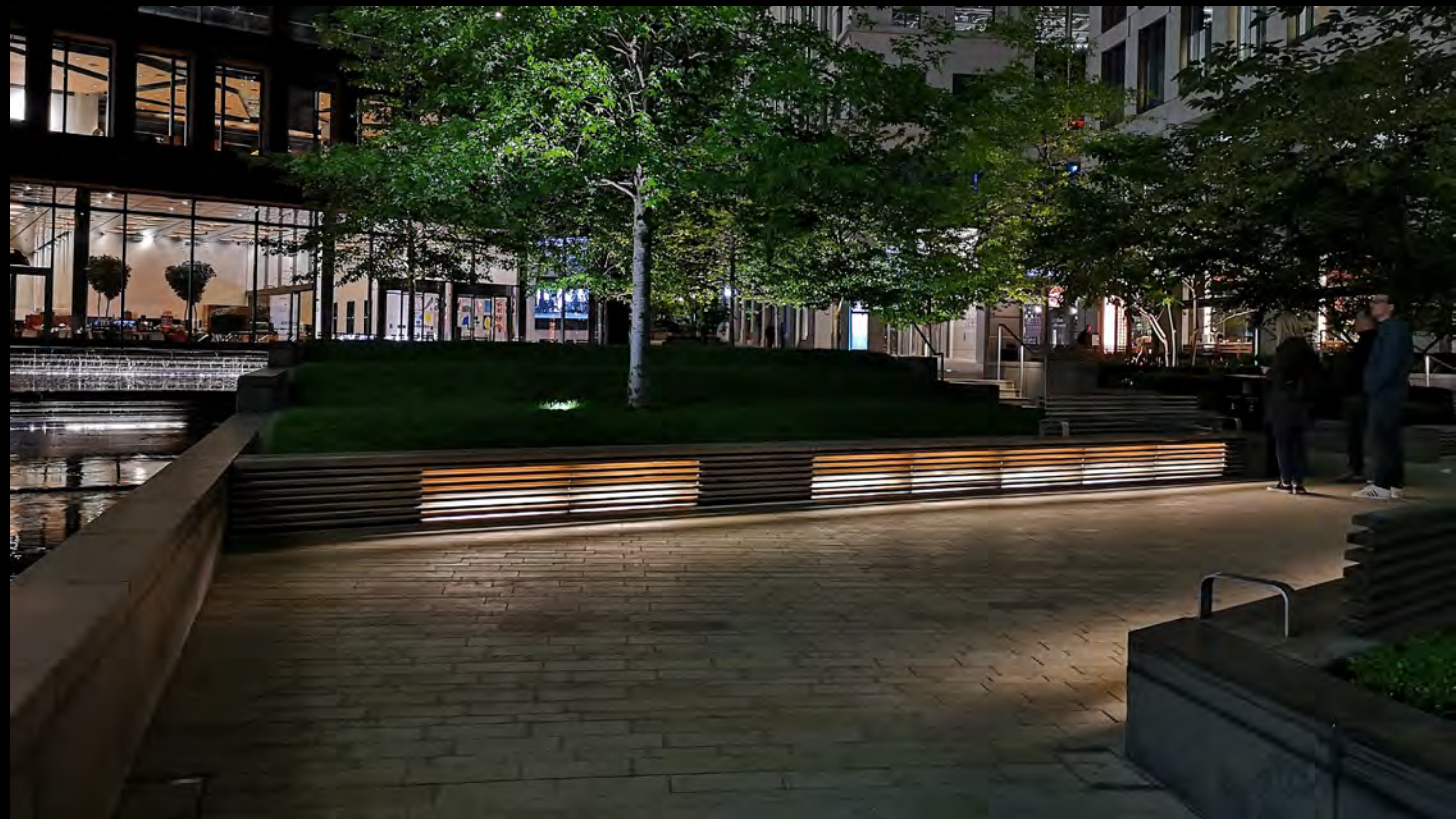
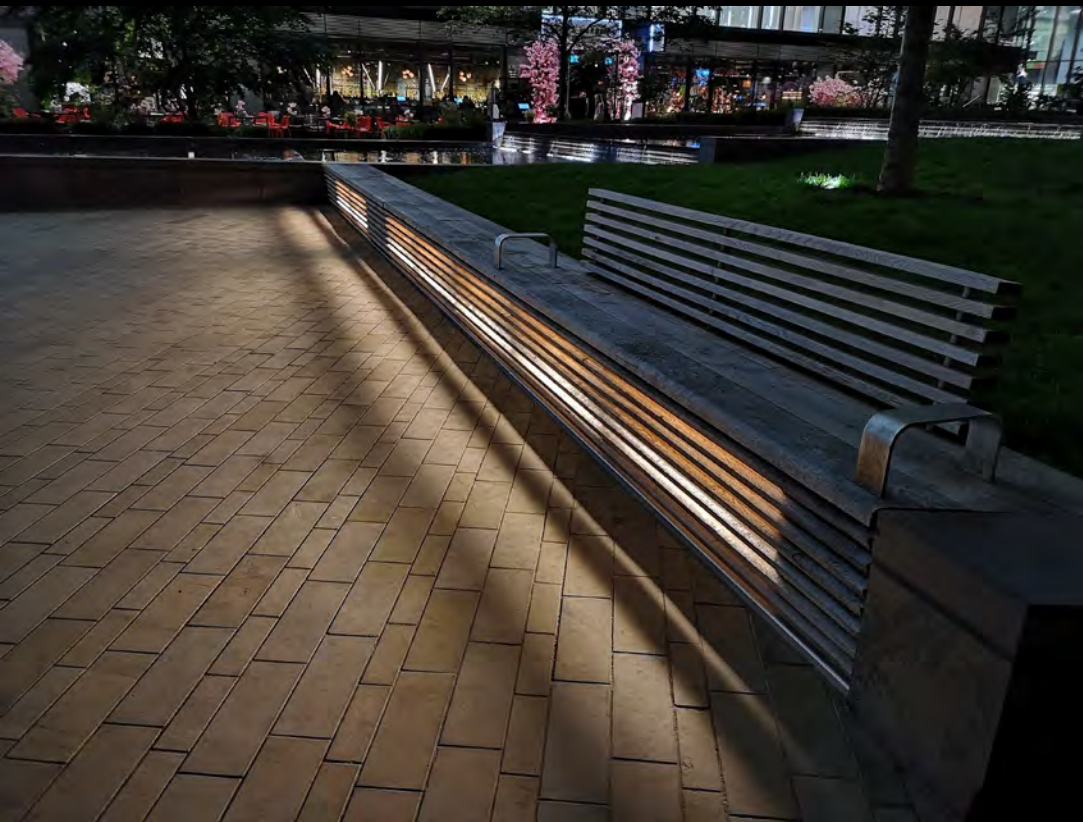
B) GLARE FREE BOLLARD LIGHTING



Bollard lighting can be considered glare free when the light source and reflectors are not visible for the human eye. The height of the bollard needs to be lower than the vegetation around it. Bollard lighting creates pleasant human scale environment for slowly walking pedestrians.

The Core of the Kanuti Park is lit with bollards.

C) SEATING WITH LIGHTING INTEGRATED



Lighting should be integrated into the seatings in a way it is vandalproof and illuminates the vertical surface rather than only the ground. Here is a sophisticated solution from London combining wood and lighting. Color temperatures below 3000K are recommended as they bring out a nice cozy glow.

Main seating area is placed around the fountain / statue but the same idea can replace the other existing seatings.

D) PATHWAY LIGHTING



Main paths of Kanuti Garden (excluding the core area of the garden) are lit with pole lighting solution presented in this presentation. On the Rannamäe Tee side the row of illuminated columns creates a visual connection with other bastion parks.

E) ILLUMINATED TREES



Some of the existing trees are chosen to be illuminated. For example a group of trees placed opposite the Vene Kultuurikeskus creates an visual endpoint and balances the lighting of the facades. Trees are to be illuminated with inground or onground luminaires with good glare control and medium beam. Color temperature of 3000K is recommended.

F) AREAS FOR SEASONAL (LIGHT) ART



The green grass areas around the fountain are left without illumination and they hold a place for seasonal lights or temporary light art allowing the appearance of the park change from time to time. Low scale lighting around the core areas of the park enables various type of installations even on ground level. There is no need to switch off orientational lighting at the times of event. In the summer time areas can be used in non-illuminated purposes.

G) STATUES / FOUNTAIN LIGHTING



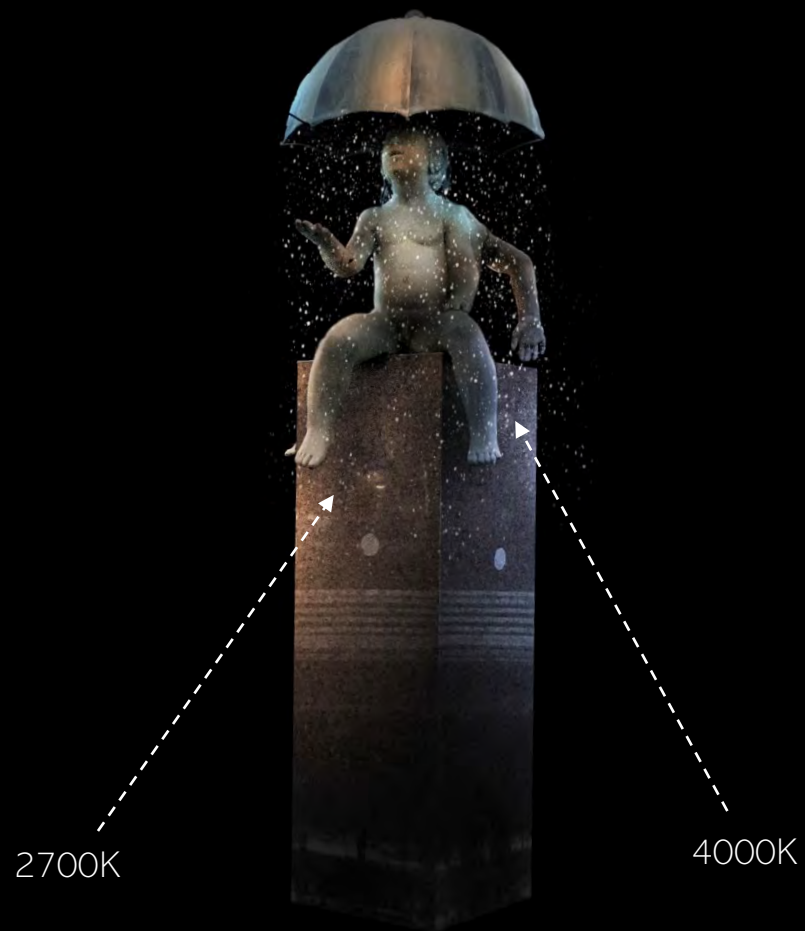
The Dostoyevski statue is to be lit from poles placed on both sides, slightly from the front approx 5 m away using low intensity very narrow beam spotlights aimed both to the statue and the top of the pedestal. Narrow beams with good shielding minimizes the amount of glare.



Lighting a statue that is placed inside a fountain is always a challenge and needs a proper test lighting to see how solutions work. Main idea is to use a mix of color temperatures between 2700K and 4000K to bring out the form and materials. Spotlights that are placed under waterlevel need to be IP68 rated and well protected.

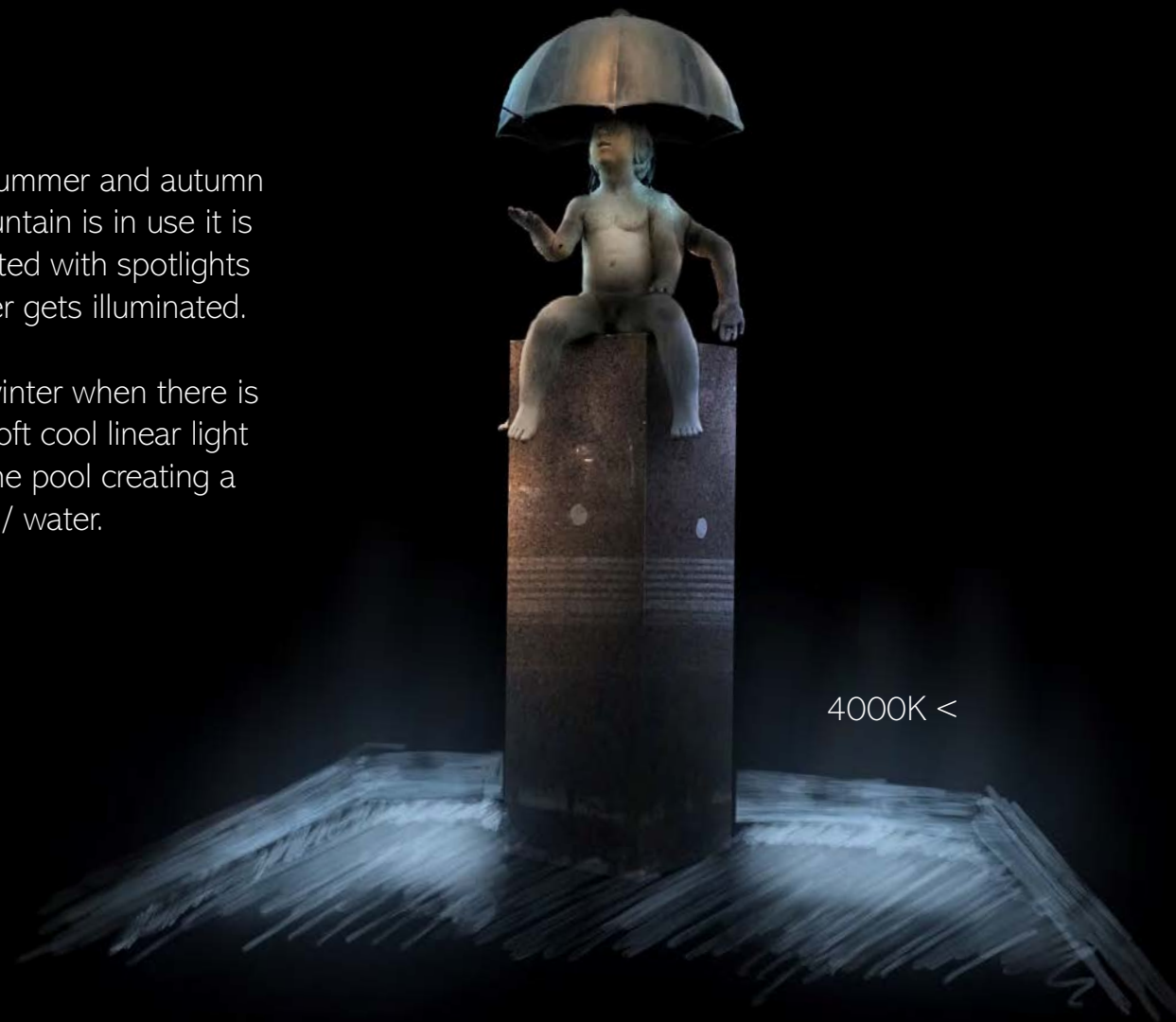
The statue is to be lit from four identical directions from inside and optionally from outside the pool. If any luminaires are placed outside the fountain (poles around the illuminated benches) they need to have good glare control. This picture of Guerrilla lighting has nice tones and shadow formation.

G) STATUES / FOUNTAIN LIGHTING



During the summer and autumn when the fountain is in use it is only highlighted with spotlights and the water gets illuminated.

During the winter when there is no water a soft cool linear light illuminates the pool creating a sense of ice / water.



H) PLAYGROUND LIGHTING



"At the playgrounds the lighting is more general to illuminate the area better, but the form of the poles is related to the pathway lighting. Dimensions will be designed according the chosen luminaire type"



An aerial photograph of a city at night, showing a dense grid of streets and buildings. The image is heavily darkened with a deep blue overlay, making the details of the city less distinct but the overall pattern of urban development clear.

SUMMARY

Glare free lighting in all the parks – see the Big Picture

Pathway lighting creates connections and uniformity

Perception of lit environment enhances the feeling of safety

Test it, Feel it, Trust it

V285 TALLINN BASTION PARKS KANUTIGARDEN

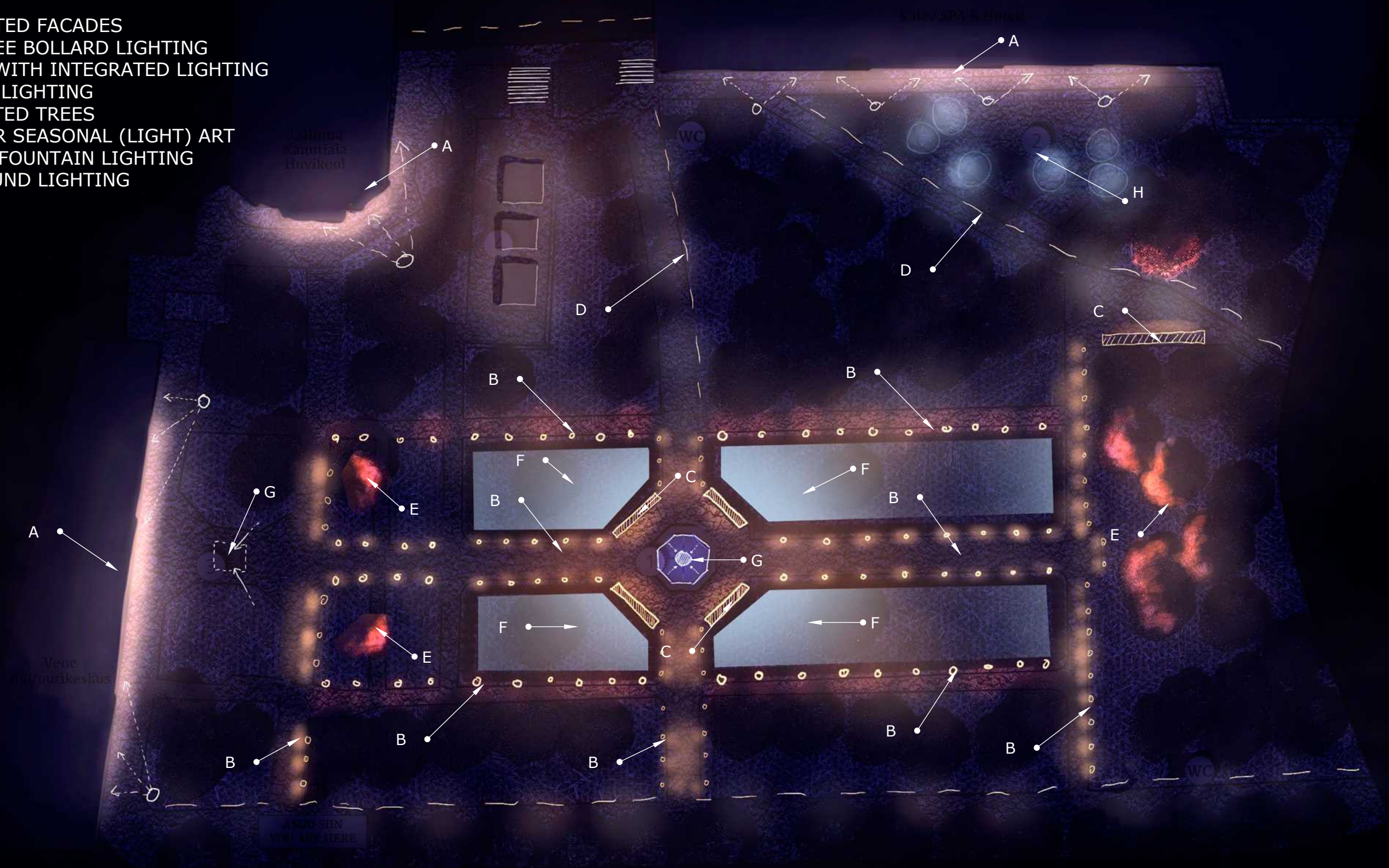
SKETCH PLAN / PRELIMINARY  VALOA

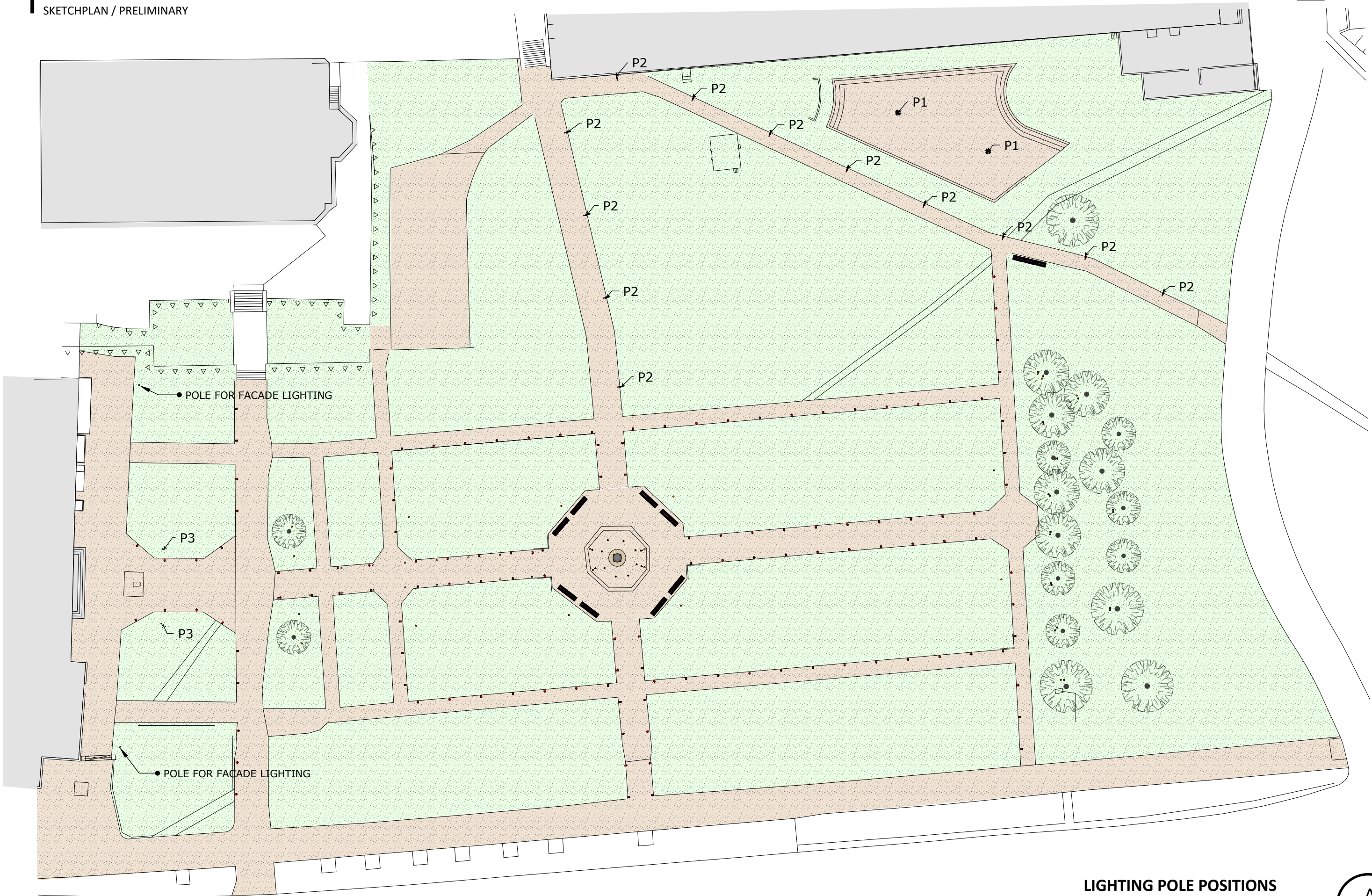
SKETCH PLAN IS BASED ON LIGHTING CONCEPT "echoes"



KANUTI GARDEN LIGHTING PLAN / "echoes"

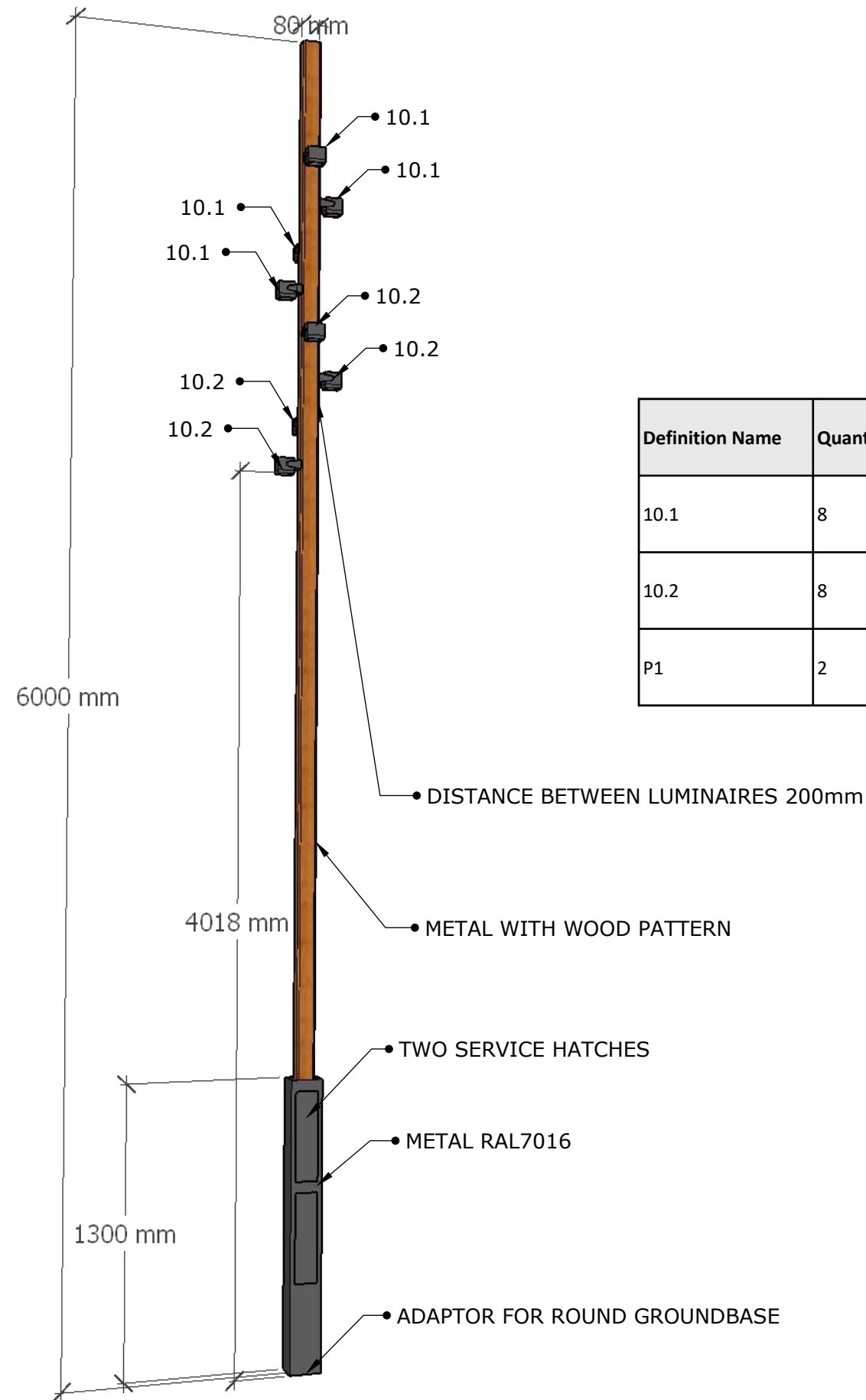
- A - ILLUMINATED FACADES
- B - GLARE FREE BOLLARD LIGHTING
- C - SEATING WITH INTEGRATED LIGHTING
- D - PATHWAY LIGHTING
- E - ILLUMINATED TREES
- F - AREAS FOR SEASONAL (LIGHT) ART
- G - STATUE / FOUNTAIN LIGHTING
- H - PLAYGROUND LIGHTING





LIGHTING POLE POSITIONS

1:500



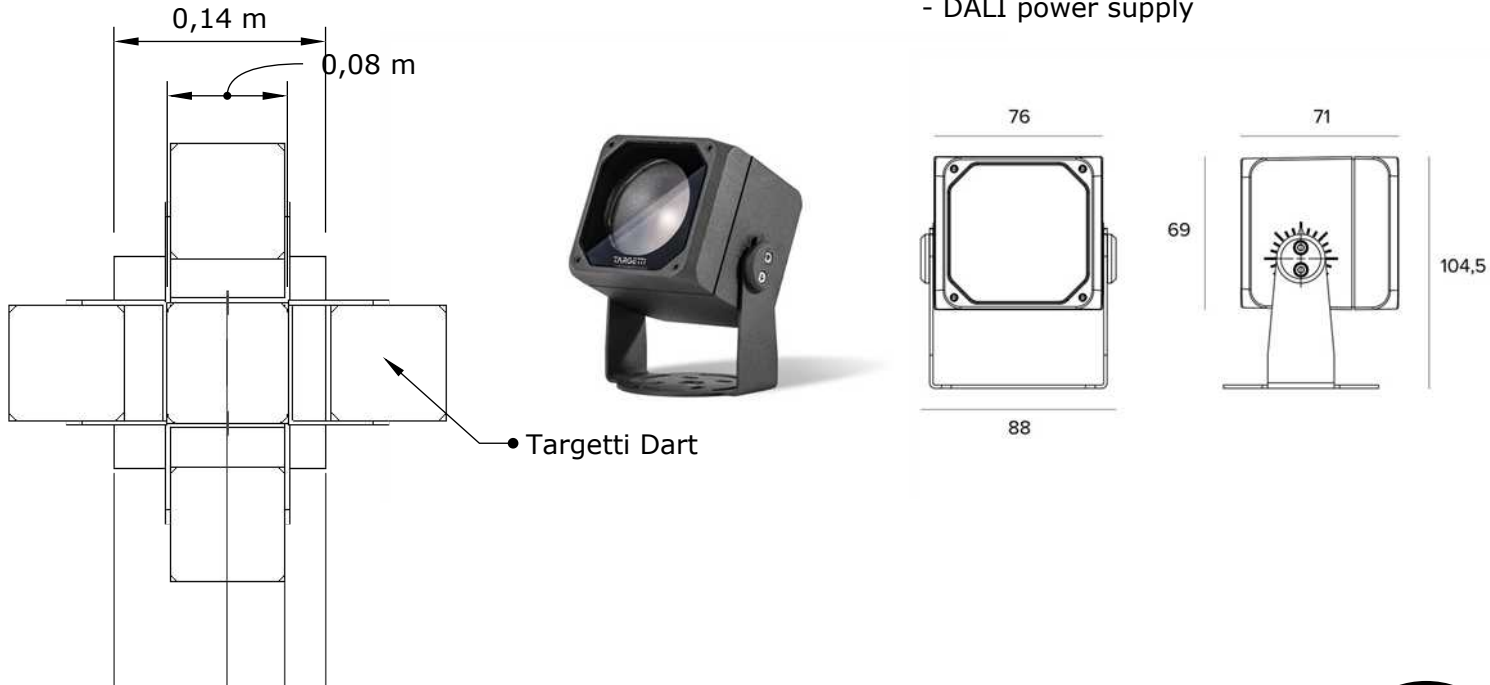
POS P1 - PLAYGROUND POLE
Custom design based on "New Hansa pole"-concept. Steel pole enhanced with Wooden pattern. Two Service hatches on column base. Luminaire mounting places for 8pcs of spotlights.

POS 10.1 - TARGETTI DART
4x Surface mount spotlight with narrow optics. Provides highlighting for street furniture. Color temperature warm white (3000K). Dimmable with DALI.

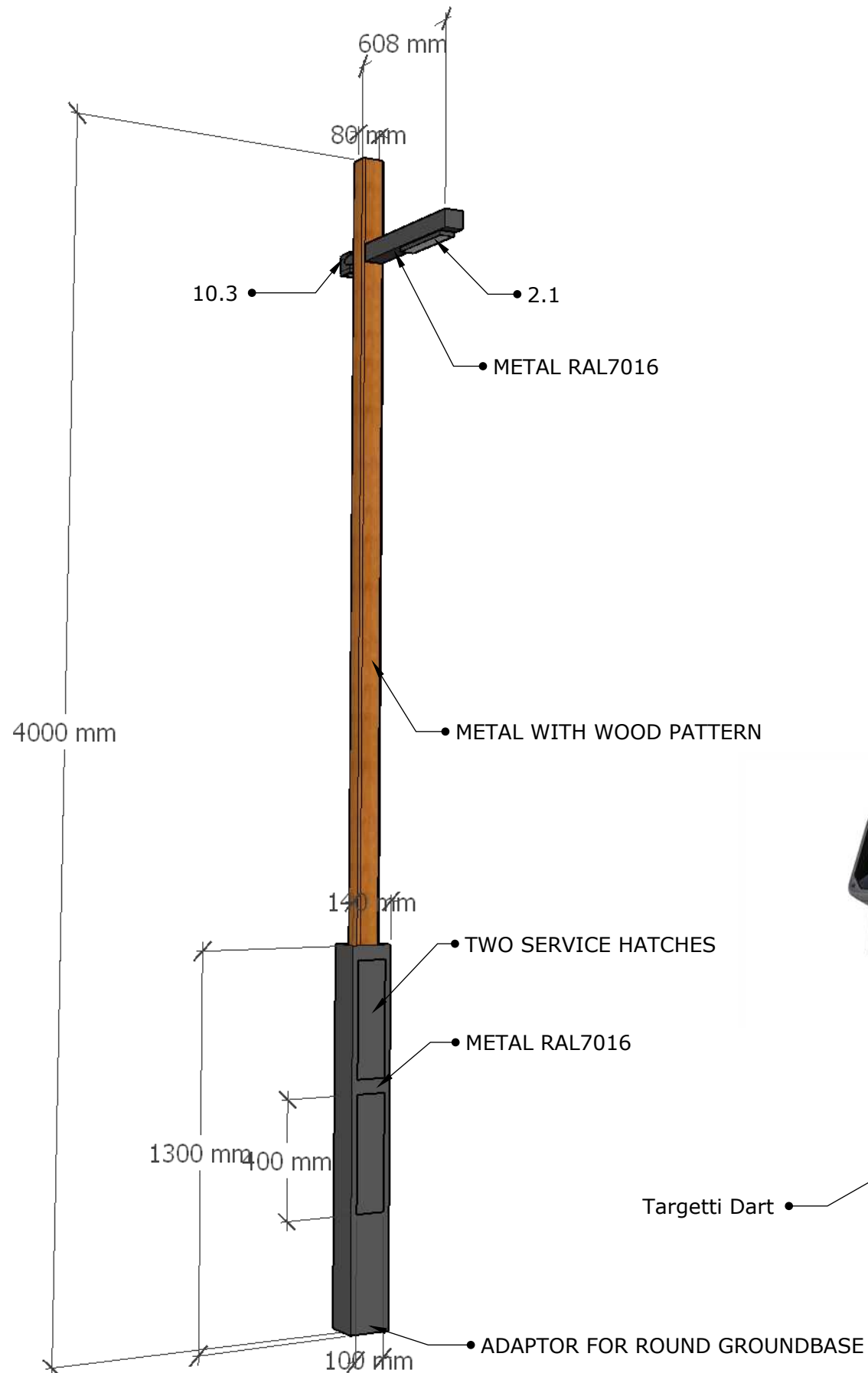
POS 10.2 - TARGETTI DART
4x Surface mount spotlights with medium optics. Provides general lighting for playground. Color temperature warm white (3000K). Dimmable with DALI.

Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
10.1	8	spotlight	Targetti	Dart small	1E2988	13W	DALI	pole mounted
10.2	8	spotlight	Targetti	Dart small	1E2990	13W, 14W (7)	DALI	pole mounted
P1	2	custom playground pole	TEHOMET	New Hansa pole / custom	custom	---	---	ground base

ACCESSORIES:
- Ati-glare GRID
- DALI power supply



P1 - PLAYGROUND POLE PRINCIPLE



POS P2 - PATHWAY POLE

Custom design based on "New Hansa pole"-concept. Steel pole enhanced with Wooden pattern. Two Service hatches on column base. Luminaire mounting places for one spotlight. Metal sidearm with recessing hole for pathway luminaire. Drivers and powersupplies assembled to column base behind service hatches.

POS 10.3 - TARGETTI DART

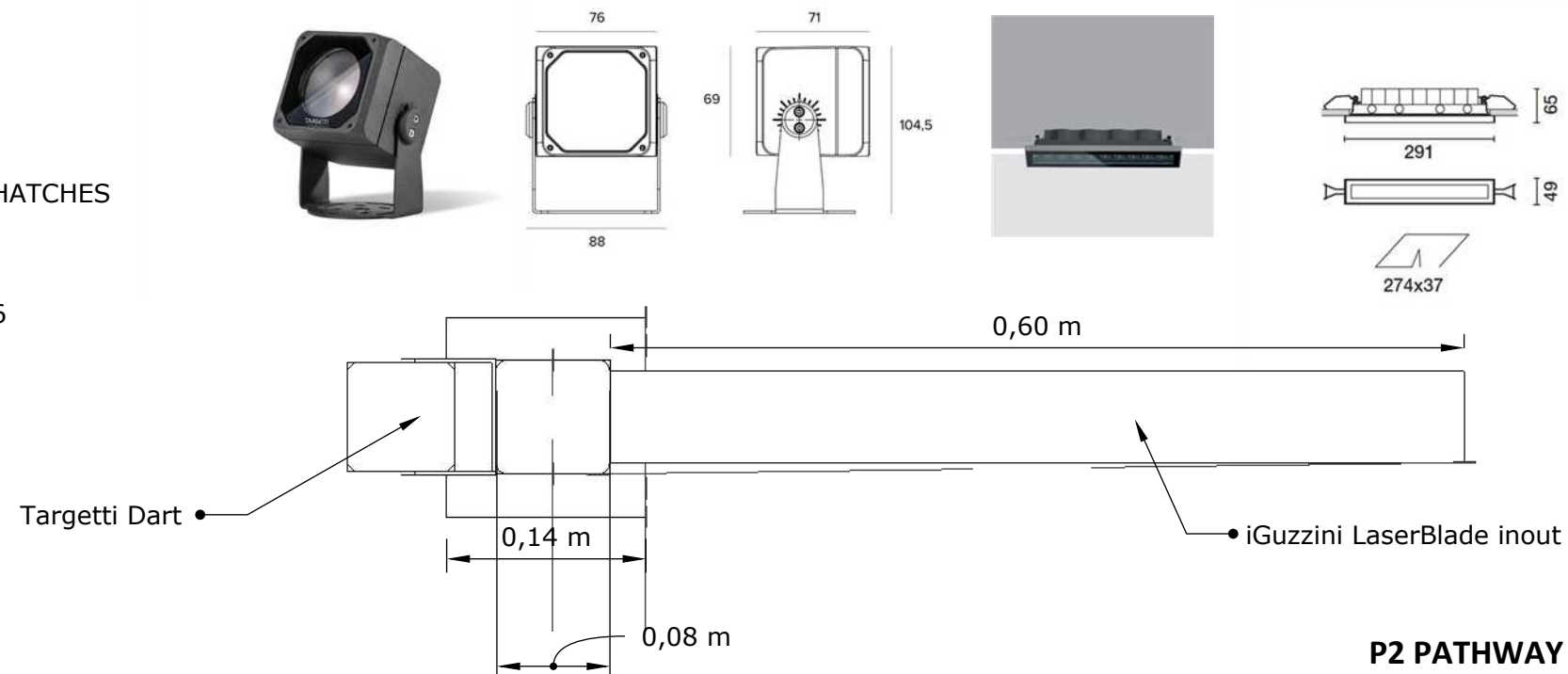
1x Surface mount spotlight with narrow optics and ellipsoidal lens. Provides highlighting for landscape and plants. Color temperature warm white (3000K). Dimmable with DALI.

POS 2.1 - iGUZZINI LASER BLADE INOUT

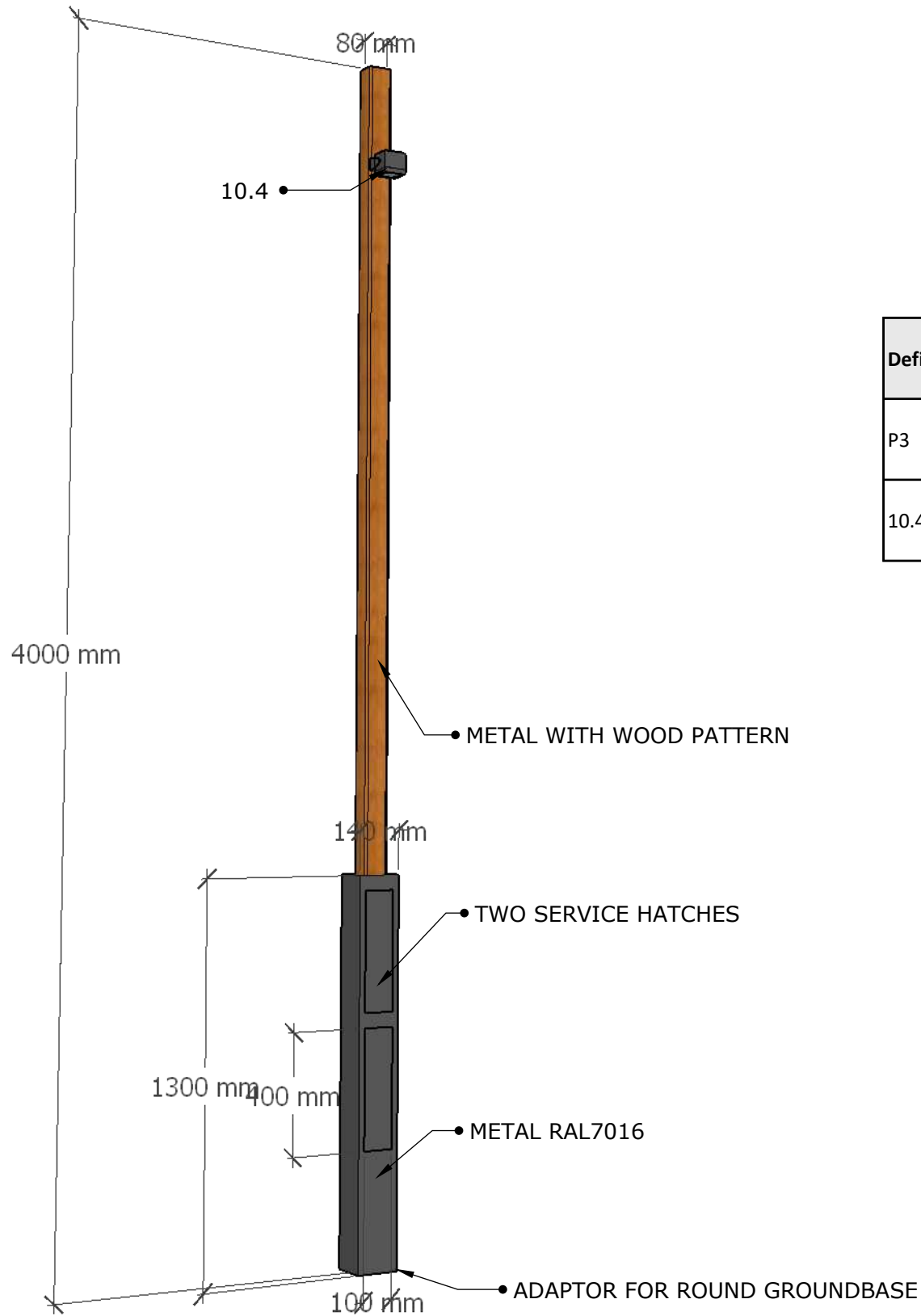
1x Recessed downlight with wide optics. Optics are customized with 35x80deg film (for example LUMINIT LSD). Provides lighting for the pathway and lights up the wooden surface of the column. Color temperature warm white (3000K). Dimmable with DALI.

Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
10.3	12	spotlight	Targetti	Dart small	1E2988	13W	DALI	pole mounted
2.1	12	recessed downlight	iGuzzini	LaserBlade inout	BX75	15W	DALI	recessed to pole arm
P2	12	custom pole	TEHOMET	New Hansa pole / Custom	custom	---	---	ground base

ACCESSORIES:
- Ati-glare GRID (DART)
- Ellipsoidal lens (DART)
- DALI power supply (DART)



P2 PATHWAY POLE PRINCIPLE



POS P3 - SPOTLIGHT POLE

Custom design based on "New Hansa pole"-concept. Steel pole enhanced with Wooden pattern. Two Service hatches on column base. Luminaire mounting places for two spotlights. Drivers and powersupplies assembled to column base behind service hatches.

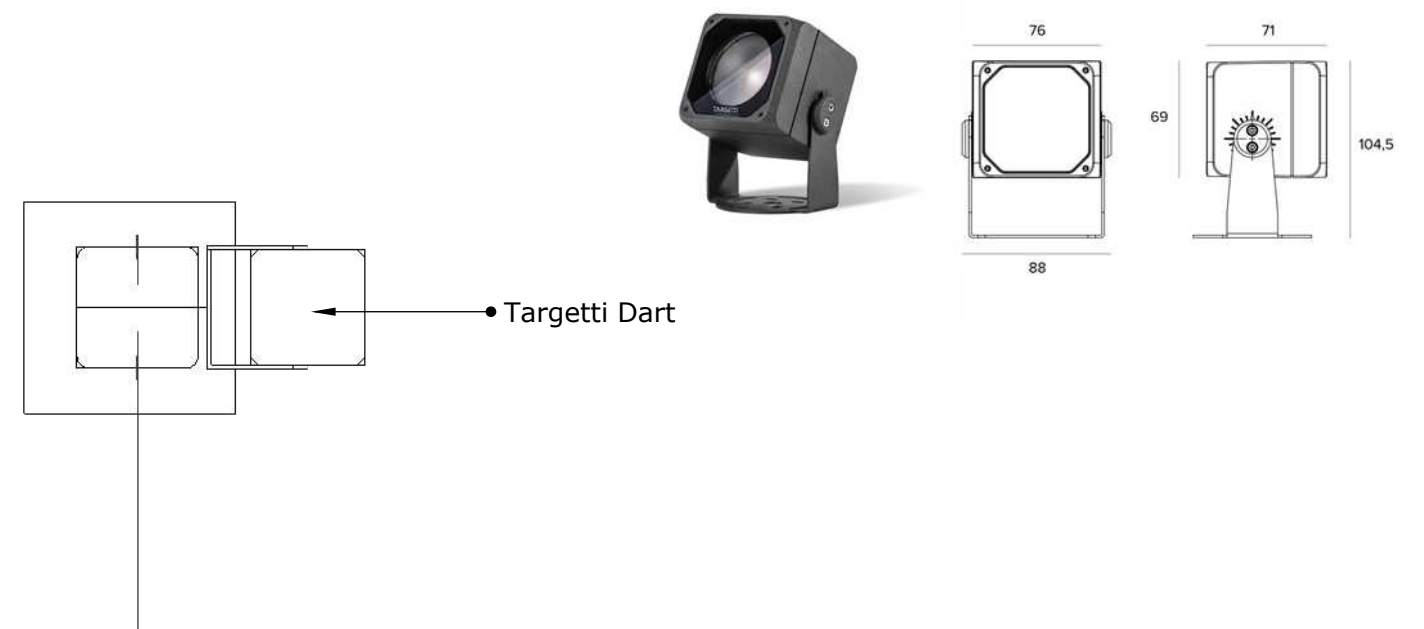
POS 10.4 - TARGETTI DART

1x Surface mount spotlight with narrow optics and louvre for glare control. Provides highlighting for Dostoyevskyi memorial. Color temperature neutral white (4000K). Dimmable with DALI.

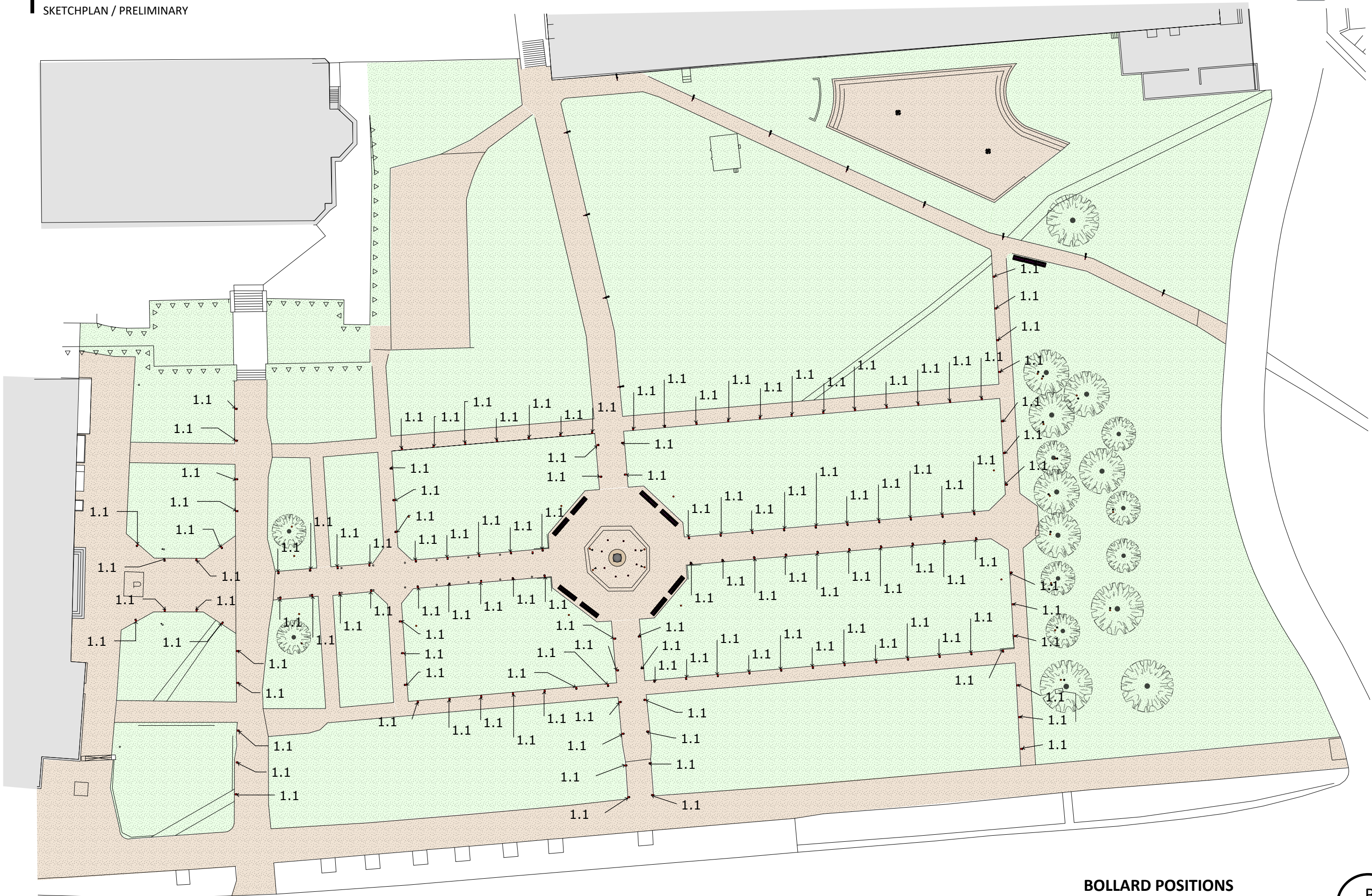
Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
P3	2	spotlight pole	TEHOMET	---	null	---	---	ground base
10.4	2	spotlight	Targetti	Dart small	1E2988	13W	DALI	pole mounted

ACCESSORIES:

- Ati-glare GRID
- DALI power supply



P3 SPOTLIGHT POLE PRINCIPLE



BOLLARD POSITIONS

1:500

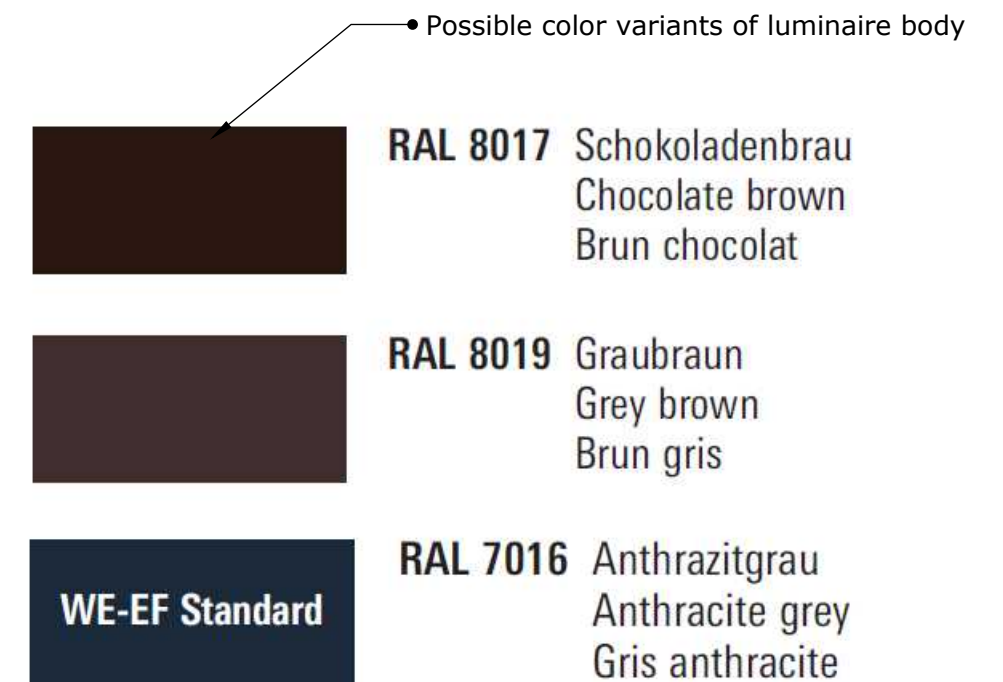
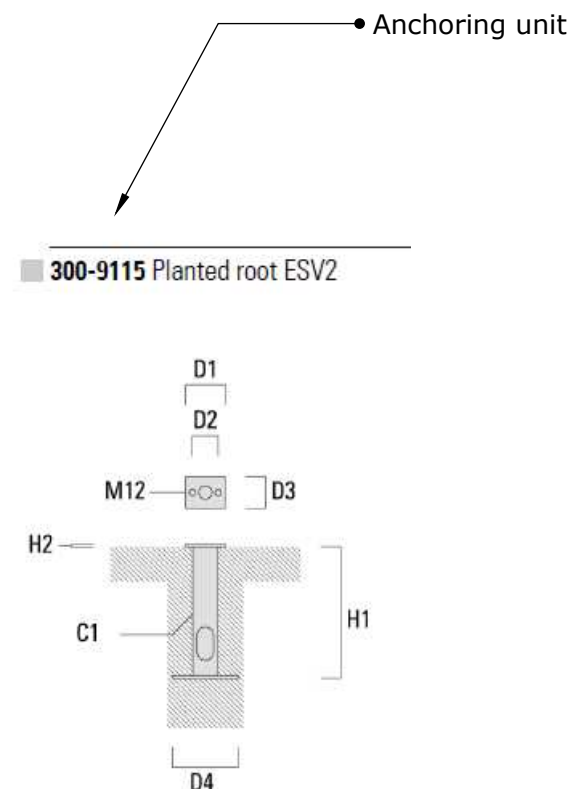
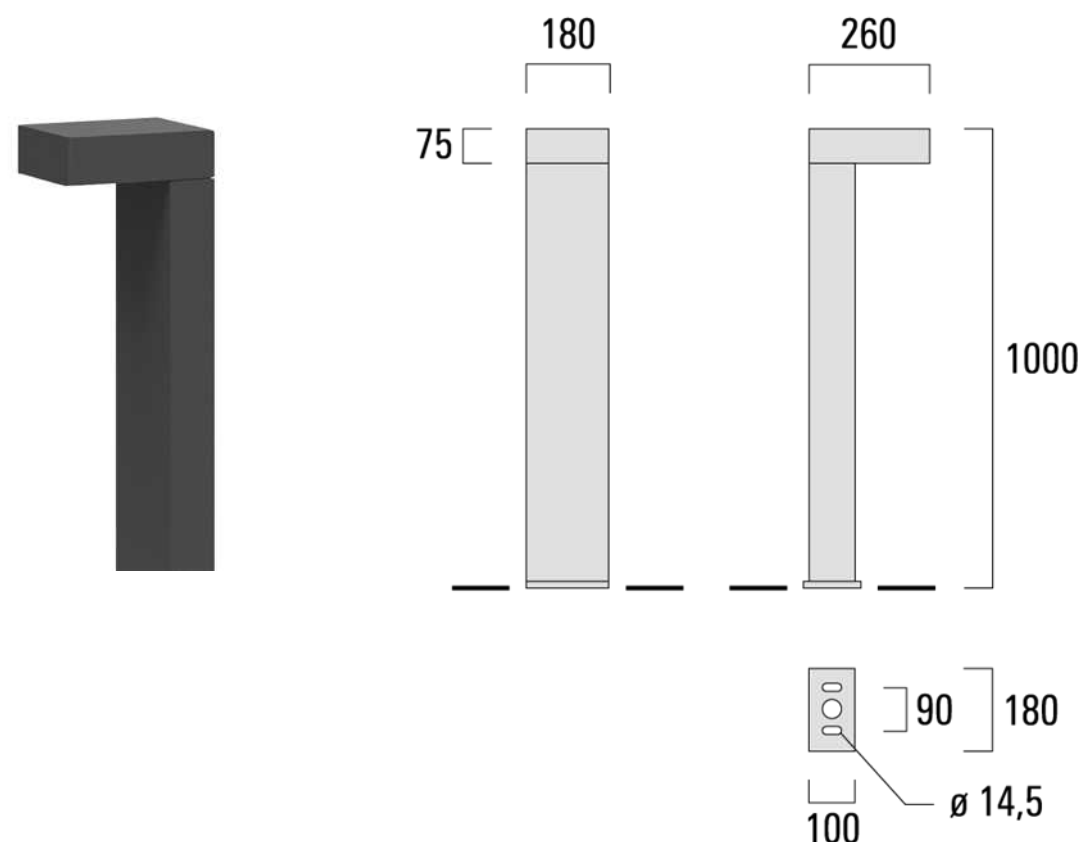
POS 1.1 - BOLLARD LUMINAIRE / **OPTION A** - WEEF PSY424

Bollards create human scale lighting in central part of Kanuti Garden. Central part of park is kept free of lighting poles to preserve spatial connection between facades and monuments. Bollards are equipped with glare free optics. Color of luminaire body is warm, brownish metal. Light color temperature warm white 3000K. Dimming with DALI control. Bollards are mounted in ground with anchoring units.

Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
1.1	129	bollard	Weef	PSY424	114-0134	12W	DALI	ground base

ACCESSORIES:

- Planted root for mounting
- DALI interface



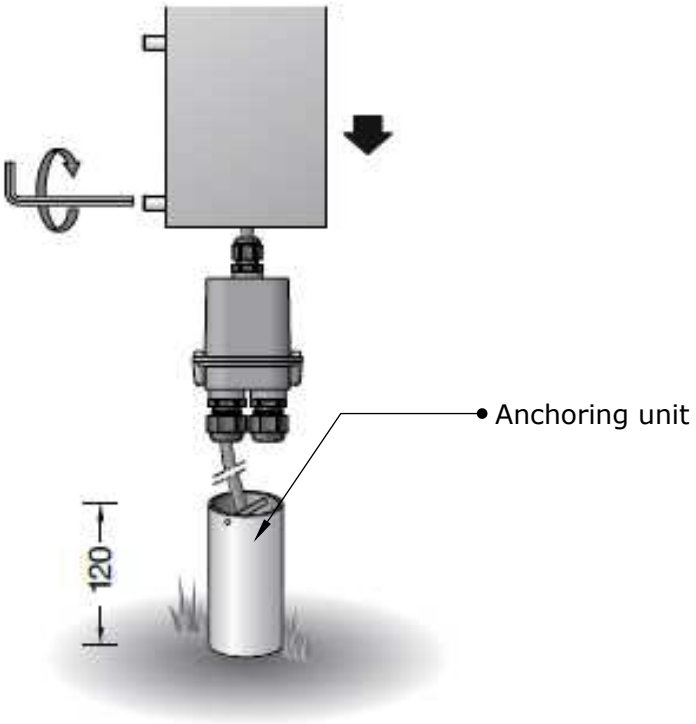
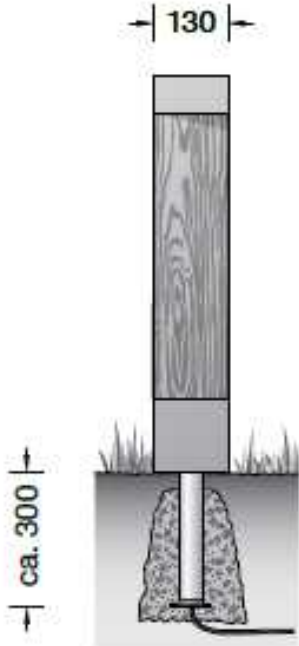
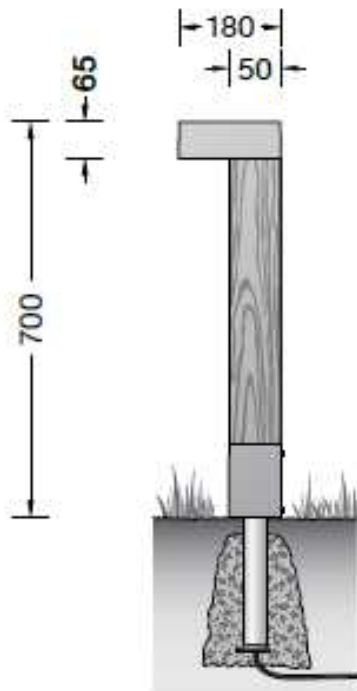
BOLLARD PRINCIPLE - OPTION A

1:500



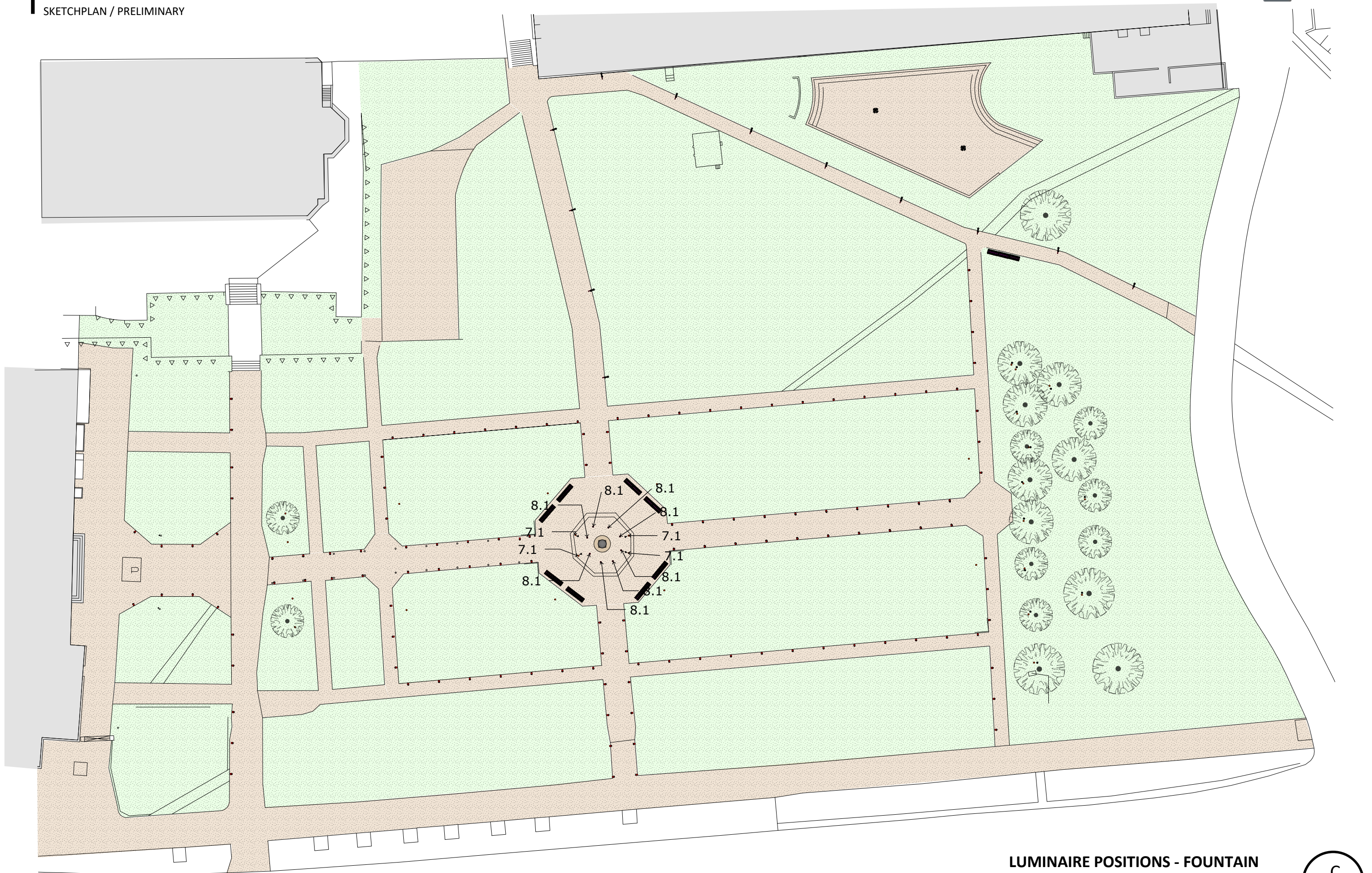
POS 1.1 - BOLLARD LUMINAIRE / **OPTION B** - BEGA 84479K3
Bollards create human scale lighting in central part of Kanuti Garden. Central part of parkis kept free of lighting poles to preserve spatial connection between facades and monuments. Bollards are equipped with glare free optics. Luminaire body made of aluminum and Accoya wood to create warm appearance both daytimes and evening. Light color temperature warm white 3000K. Bollards are mounted in ground with anchoring units.

Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
1.1	129	bollard	Bega	84479K3	84479K3	5,3W	DALI	ground base



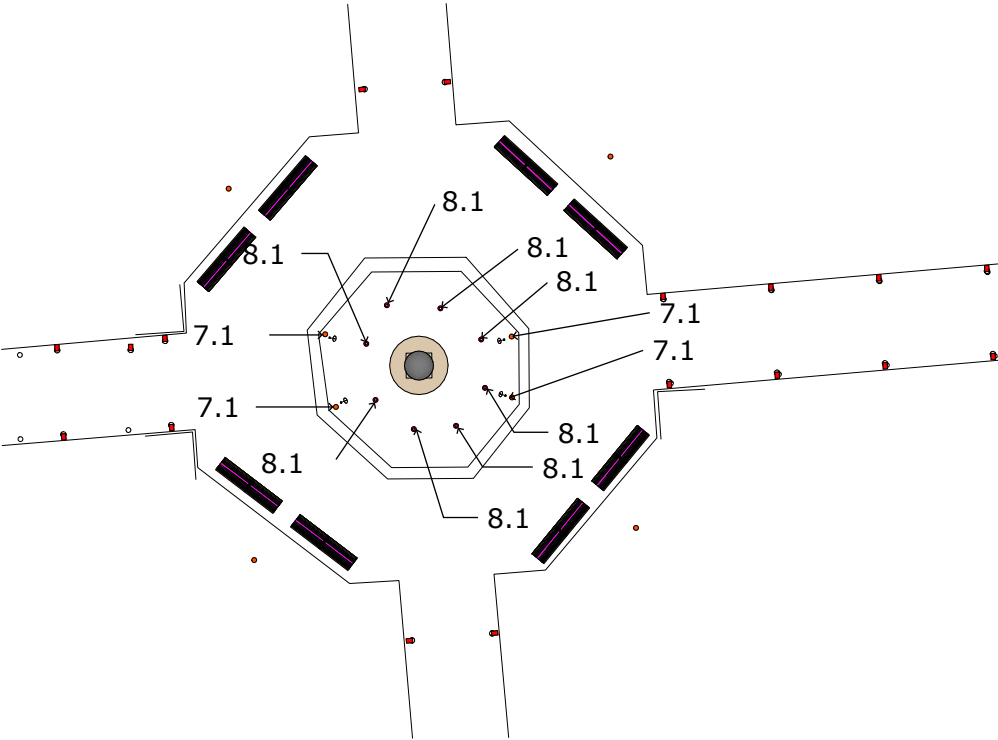
BOLLARD PRINCIPLE - **OPTION B**

1:500



LUMINAIRE POSITIONS - FOUNTAIN

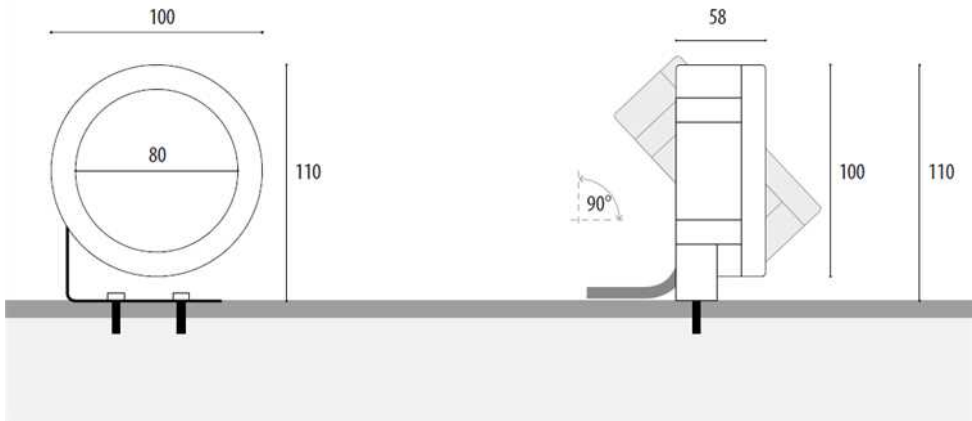
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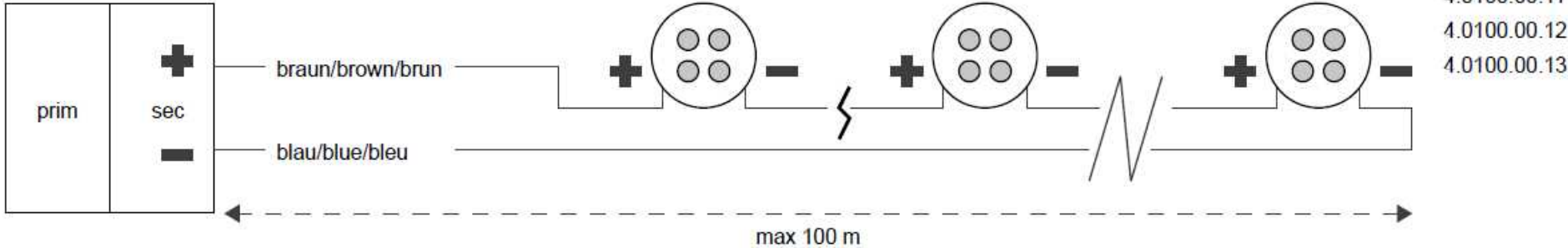
POS 7.1 - UNDERWATER SPOTLIGHT / WIBRE
 Spotlights mounted on bottom of pool. Provides lighting for the statue both summer and winter times. Luminaires don't need to be submerged to be able to operate so they can be used also during winter. Low voltage cabling, max connection distance 100m, max three luminaires behind one powersupply unit. DALI psu available on special request. Color temperature 3000K, equipped with honecomb louvres.

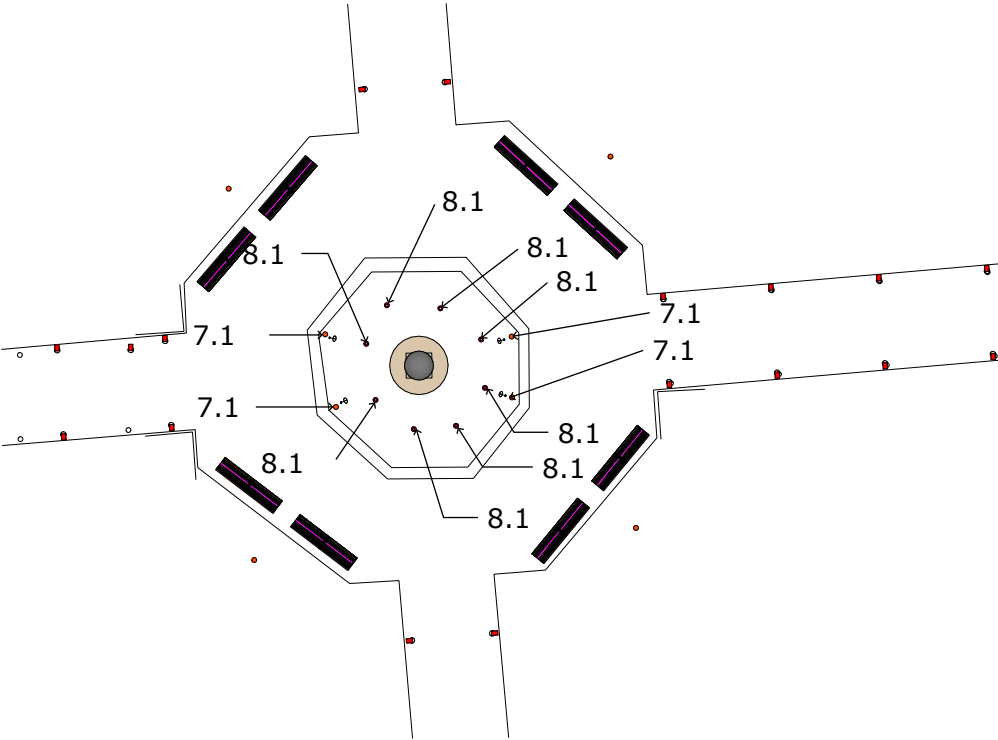
Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
7.1	4	underwater spotlight	Wibre	4.0100	4.0100.00.12	15W	DALI	pool/underwater

ACCESSORIES:
 - Anti-glare honeycomb louver
 - DALI power supply



4 POW-LED WHITE 350 mA



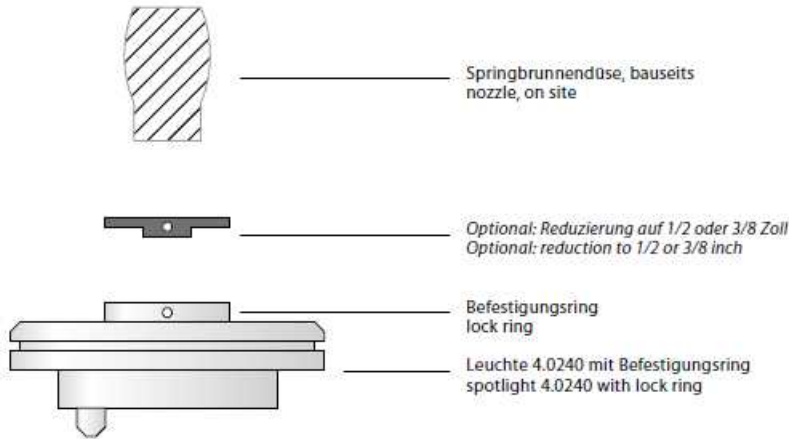
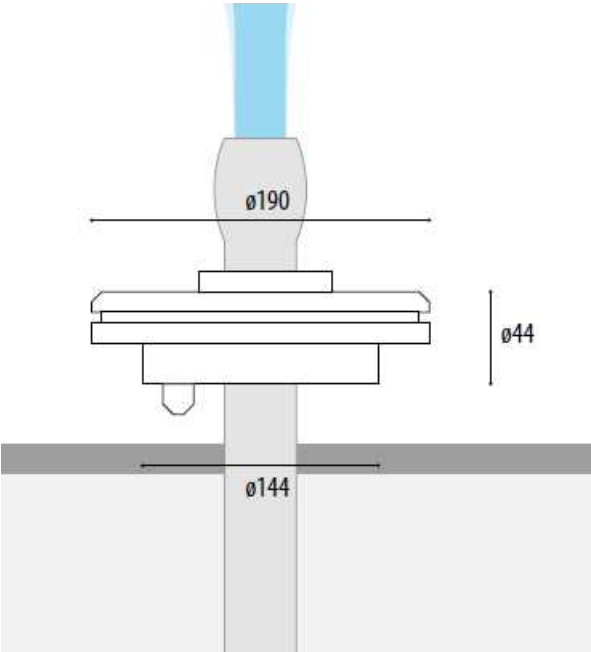
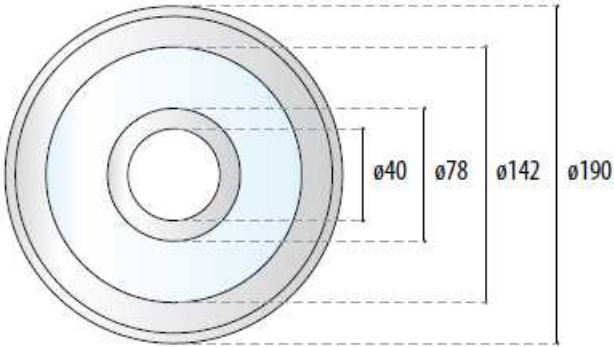


POS 8.1 - UNDERWATER UPLIGHT FOR NOZZLE / WIBRE
 Surface mounted uplights around the nozzles on bottom of pool. Provides lighting for the water sprays. Luminaires can operate only underwater so they should be taken down with the nozzles before winter. don't need to be submerged to be able to operate so they can be used also during winter. Low voltage cabling, max three luminaires behind one powersupply unit. DALI psu available on special request. Color temperature neutral white 4500K.

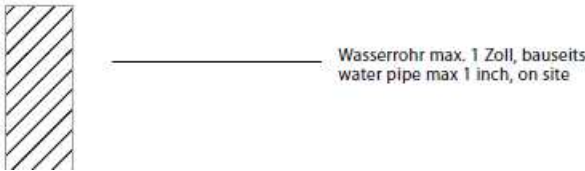
Total luminaire amount according the amount of nozzles.

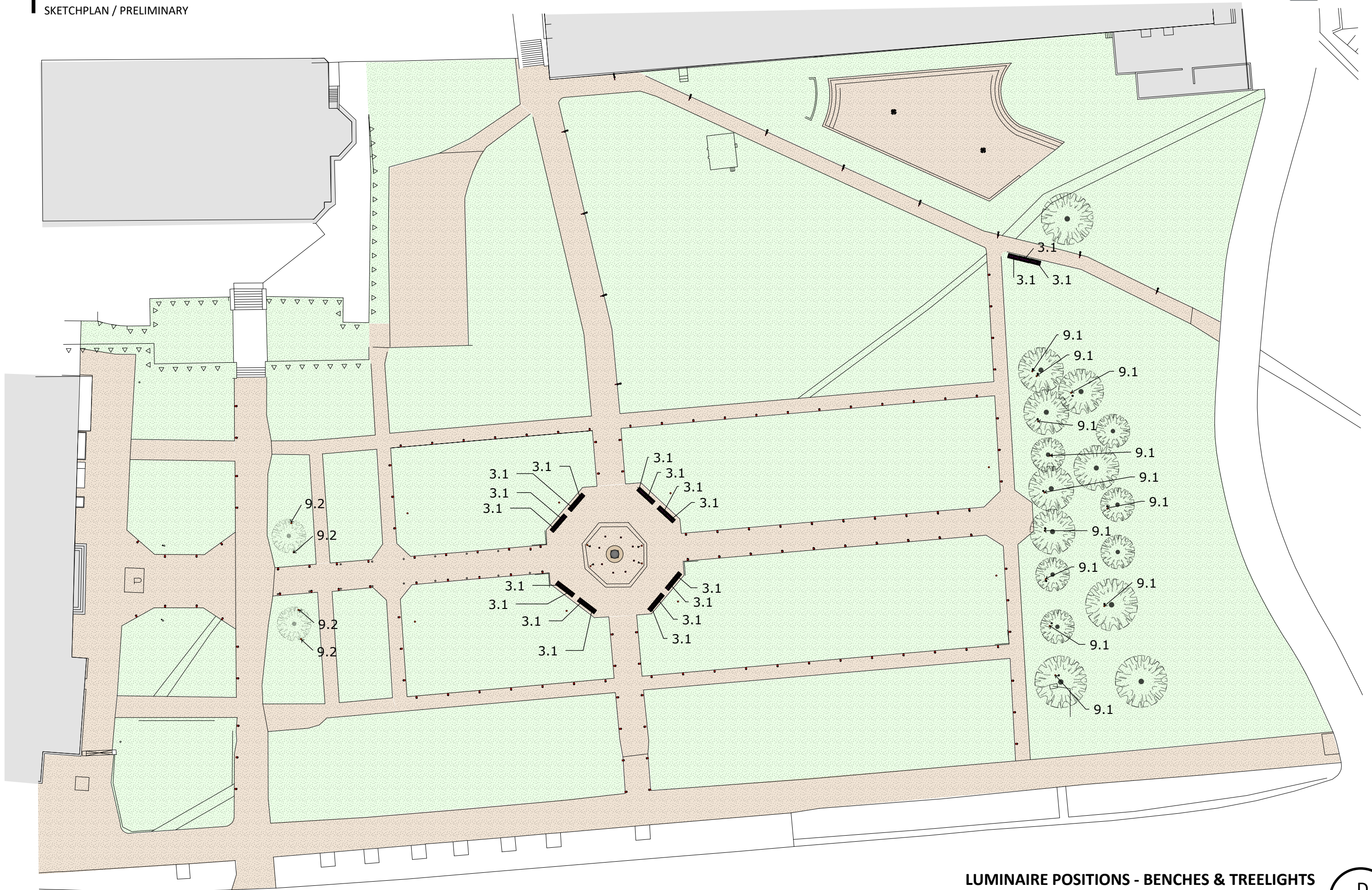
Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
8.1	8 / according nozzles	underwater uplight	Wibre	4.0240	---, 4.0240.00.13 (7)	18W	ON/OFF	underwater, around nozzle

ACCESSORIES:
 - DALI power supply



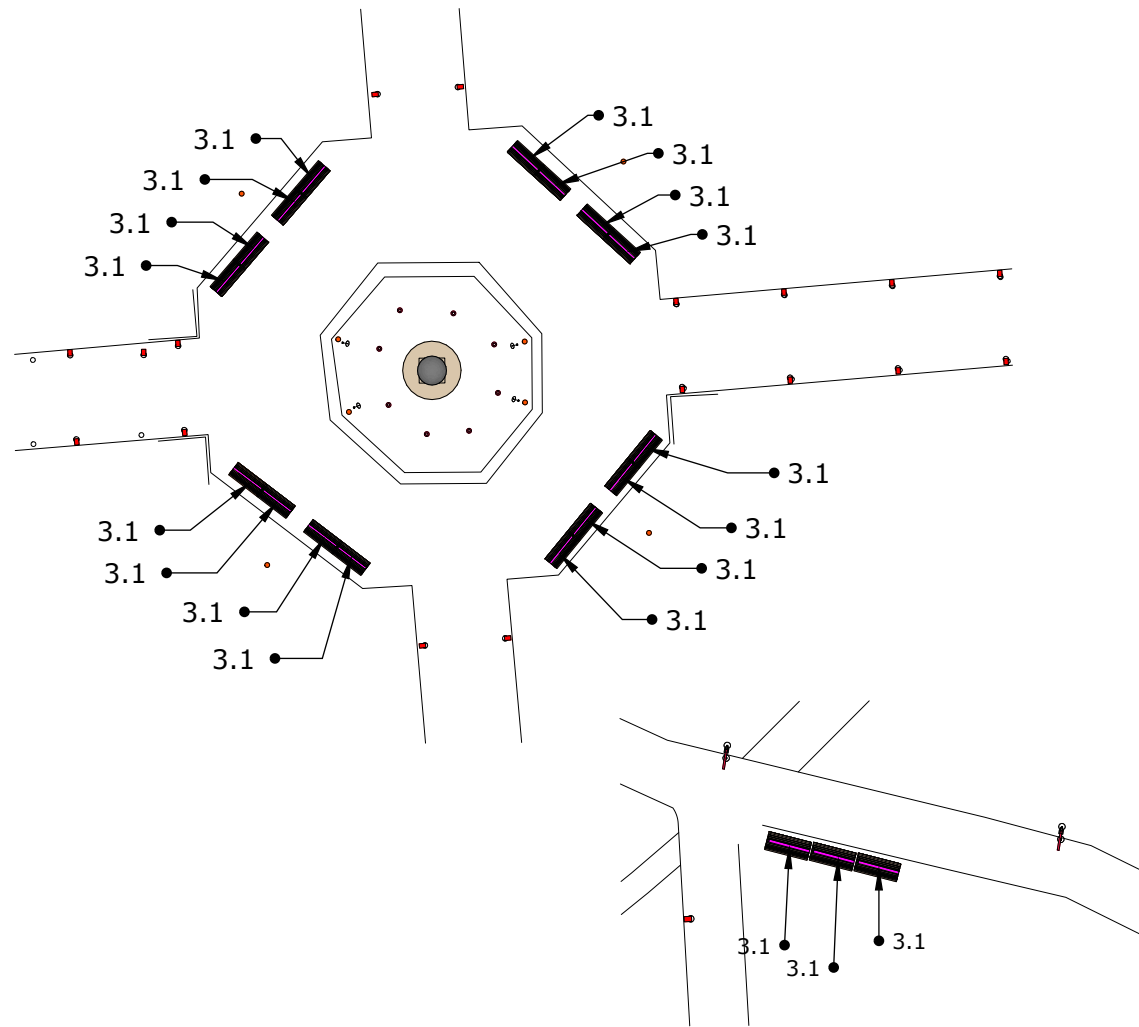
Kabel/cable 2x2.5 + 1x0.5 qmm
 rot/red: +
 schwarz/black: -
 grau/grey: dimming
 Kabel/cable 2x2.5 + 4x0.5 qmm
 braun/brown: +
 grau/grey: -
 rot/red
 grün/green
 blau/blue
 schwarz/black: 4. LED-Farbe/color





LUMINAIRE POSITIONS - BENCHES & TREELIGHTS

1:500

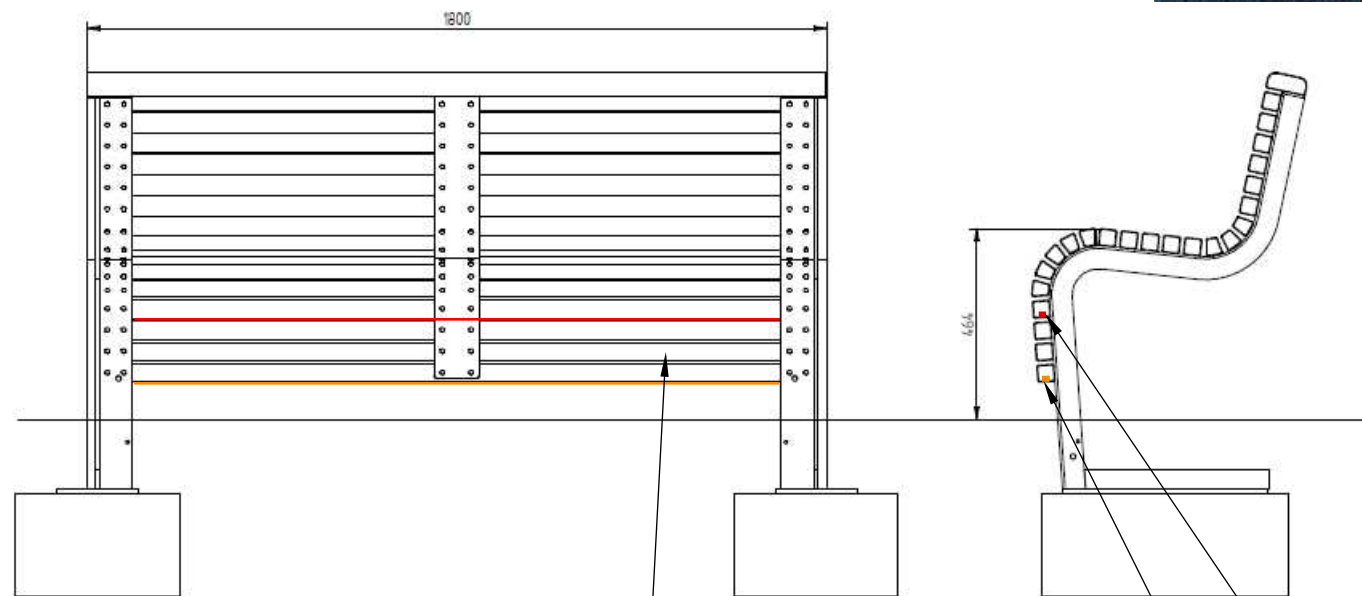


POS 3.1 - ILLUMINATING BENCH / EXTERY VOOG1800

Wooden bench with integrated light underneath the seating. Creates cozy human scale lighting feature in seating areas. LED-strip is integrated under the bench so that it will light up the ground and also shines through front lamellas. Color temperature warm white 3000K. Dimming with DALI.

Bench color: wooden parts same as in lighting pole. Metal parts RAL7016

Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
3.1	19	bench with integrated light		Voog1800	---	15W	DALI	integrated under the bench, light integrated under the bench (15)



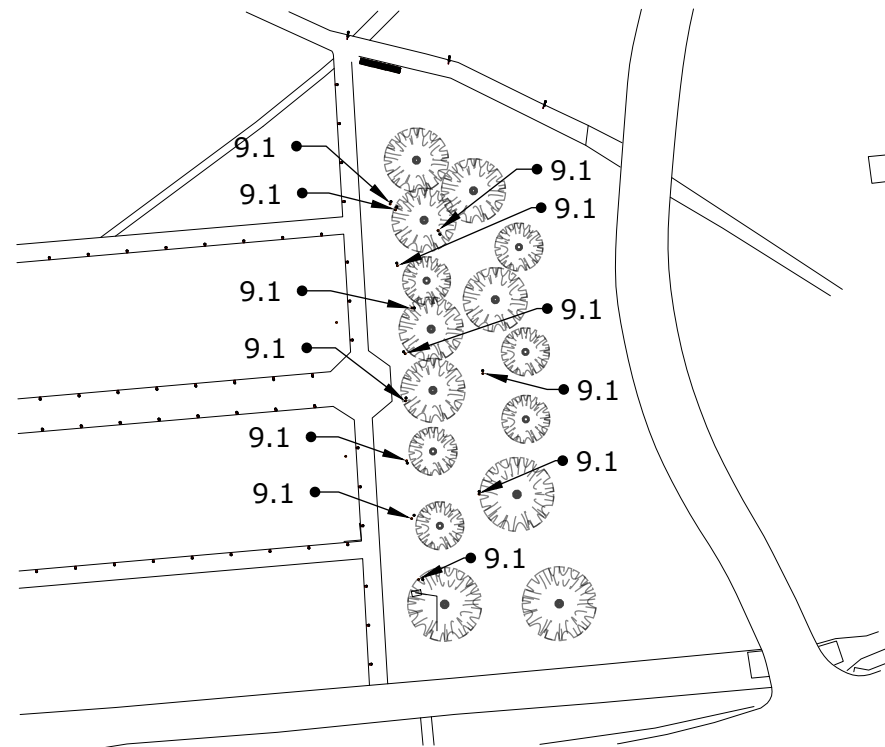
THREE LOWEST RIBS WOULD BE LEFT OFF

SUGGESTED LUMINAIRE POSITION

CURRENT LUMINAIRE POSITION

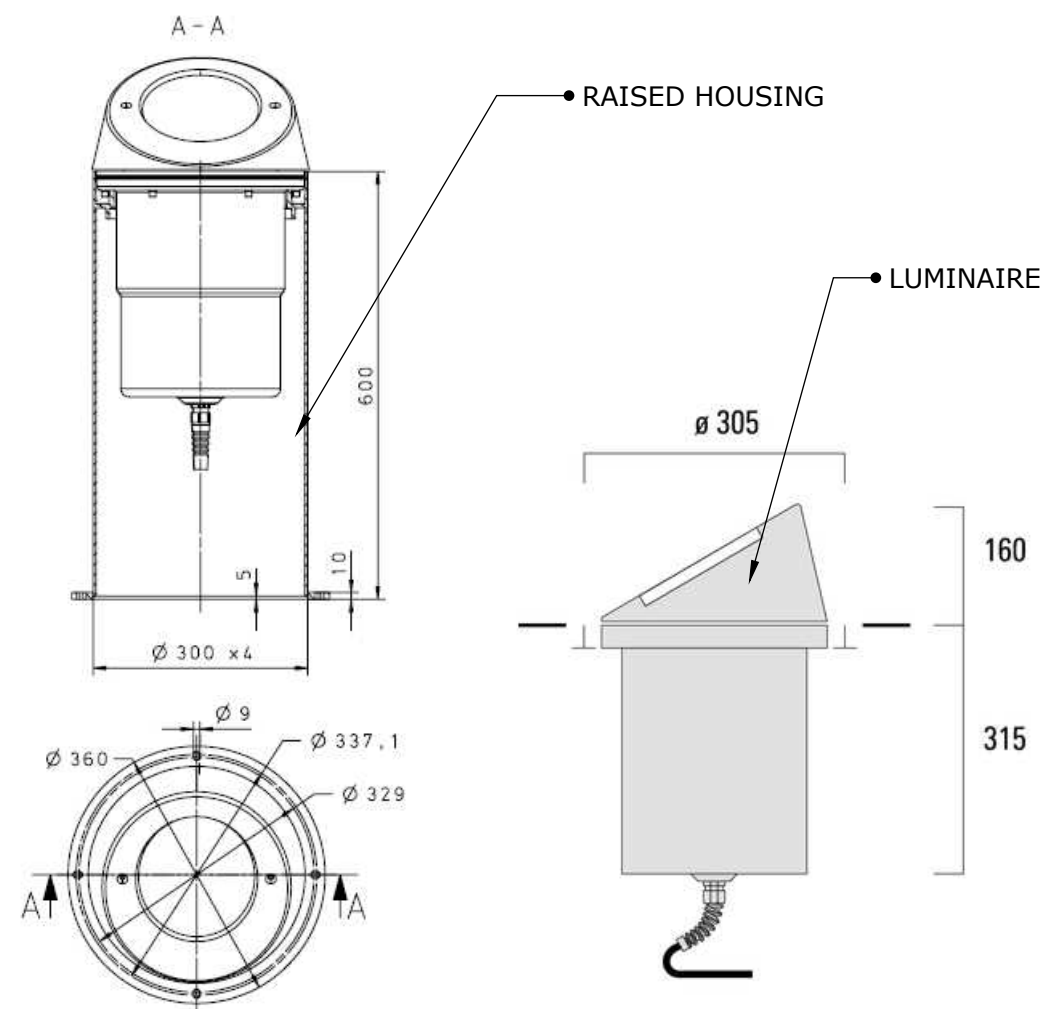
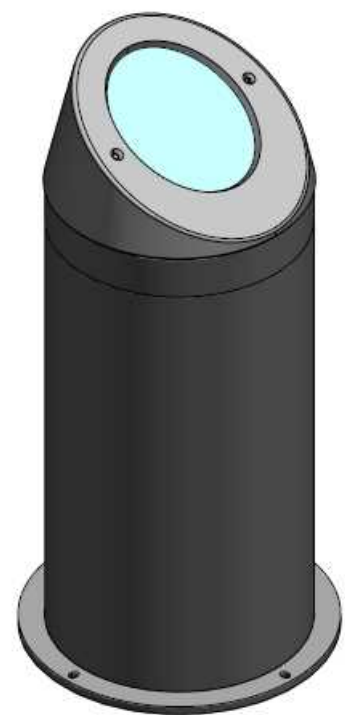


LIGHTING BENCH - PRINCIPLE

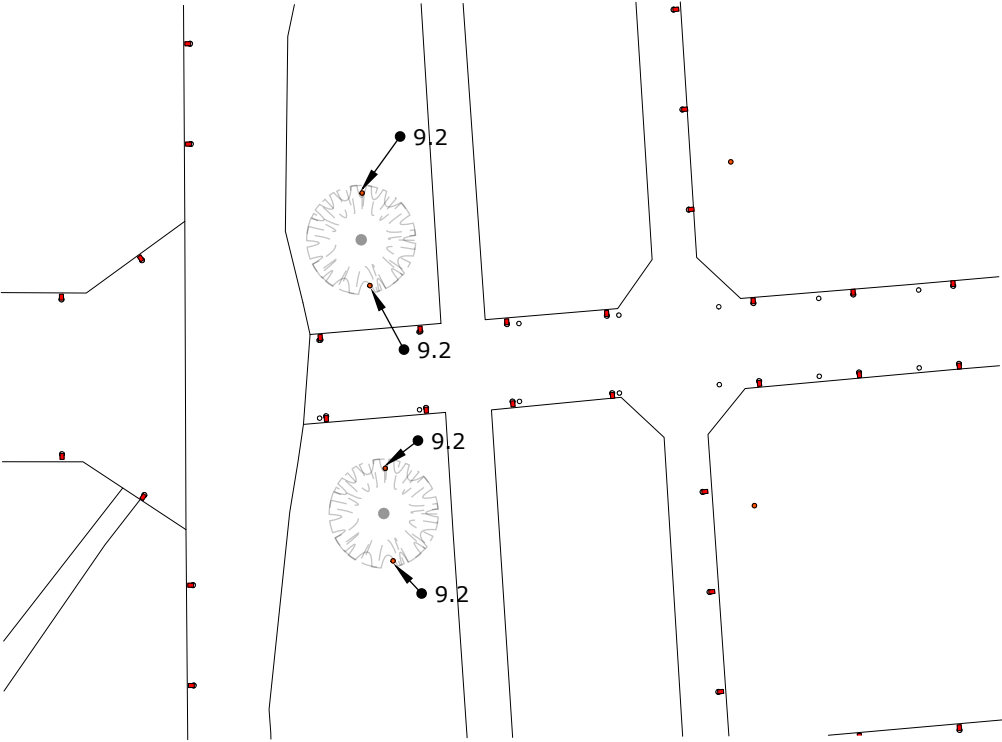


POS 9.1 - TREE LIGHTS / WE-EF ESC140
Onground uplights for lighting up trees. Luminaires are mounted on raised housings for safer and easier maintenance. **Specific luminaire positions must be made/marked on site.** Basic principle is that distance from luminaire to tree trunk should be approximately 1500mm. Color temperature warm white 3000K. Dimming with DALI. Luminaire colour RAL7016. Luminaires should be placed on side of the pathway.

Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
9.1	12	onground uplighter	We-ef	ESC140	185-3003	24W	DALI	onground/inground



TREE LIGHTS - PRINCIPLE

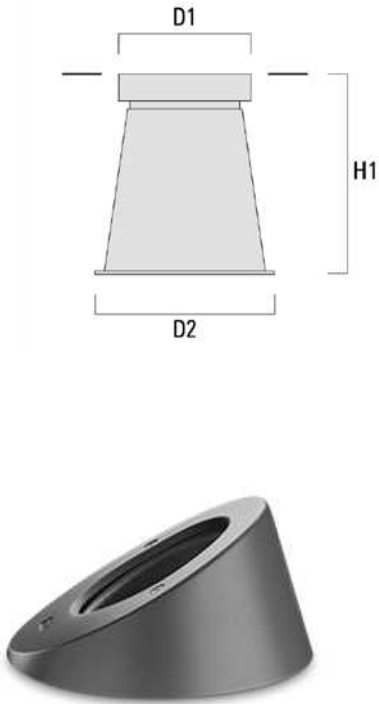
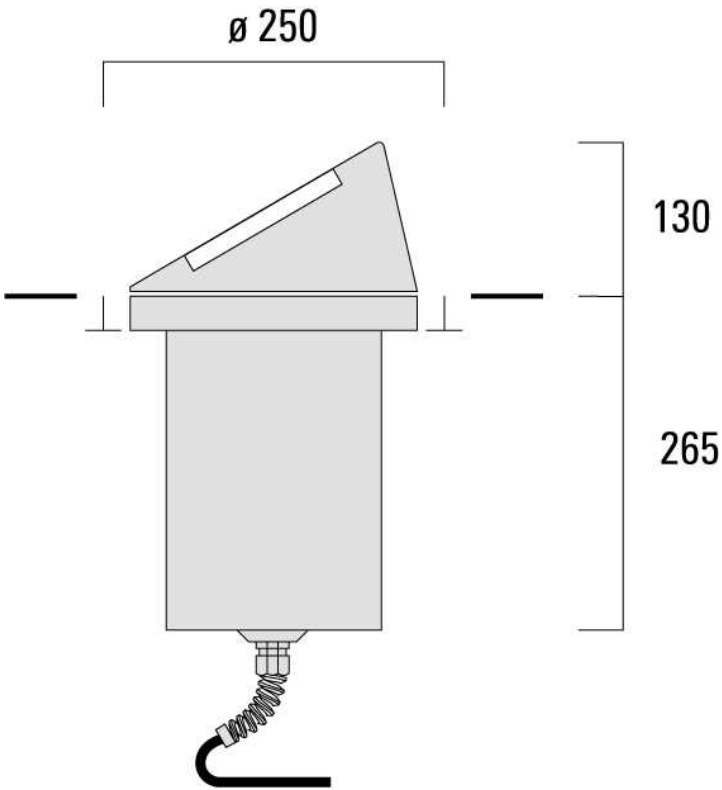


POS 9.2 - TREE LIGHTS / WE-EF ESC130
Small inground uplights for lighting up trees. Luminaires are mounted on both sides of tree. **Specific luminaire positions must be made/marked on site.** Basic principle is that distance from luminaire to tree trunk should be approximately 1500mm. Color temperature warm white 3000K. Dimming with DALI. Luminaire colour RAL7016.

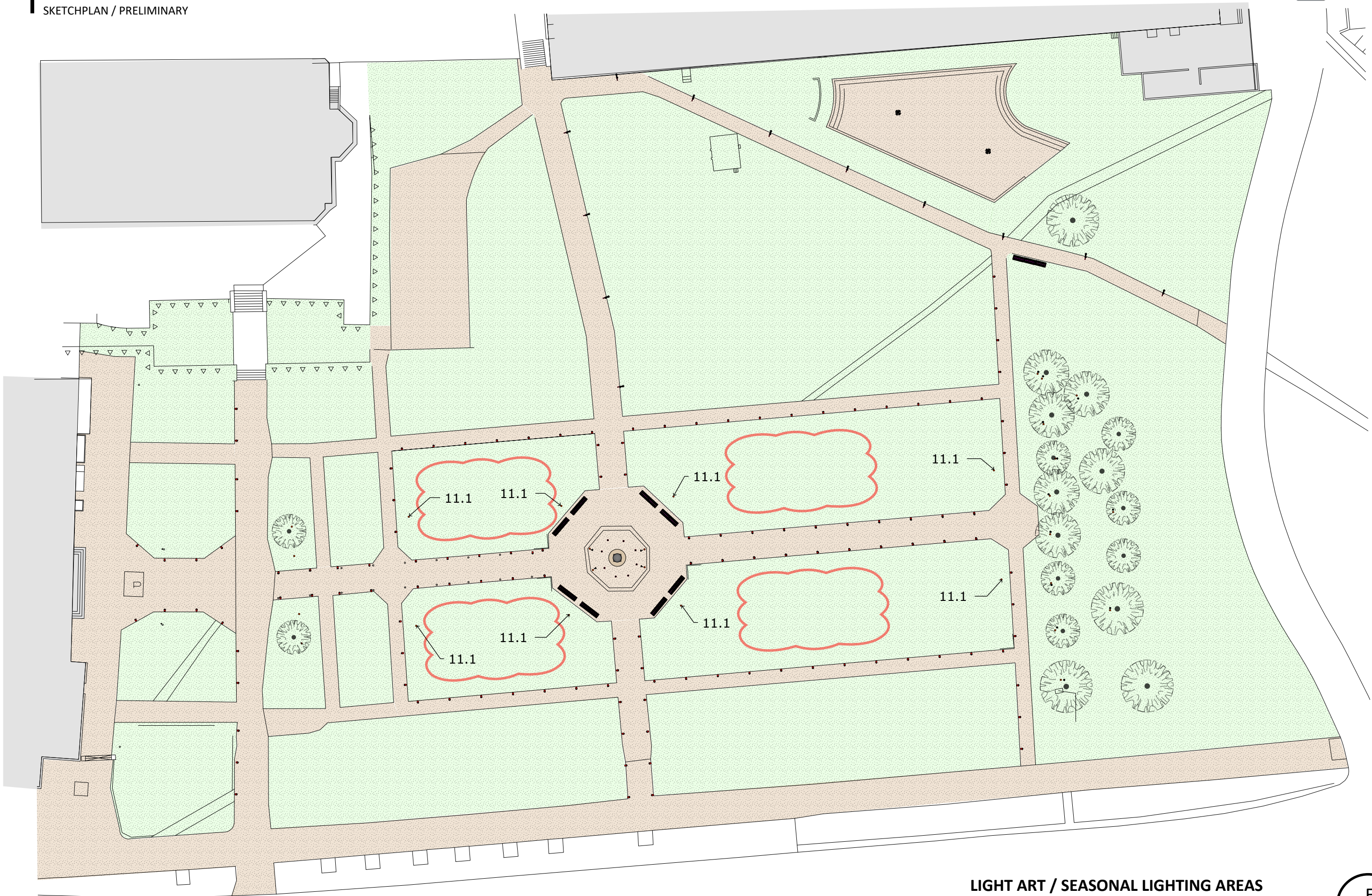
Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
9.2	4	inground uplighter	We-ef	ESC130	185-3077	18W	DALI	inground

ACCESSORIES:
- inground housing
- DALI interface

	D1	D2	H1
■ 185-0322 Blockout, Plastic	250	270	375

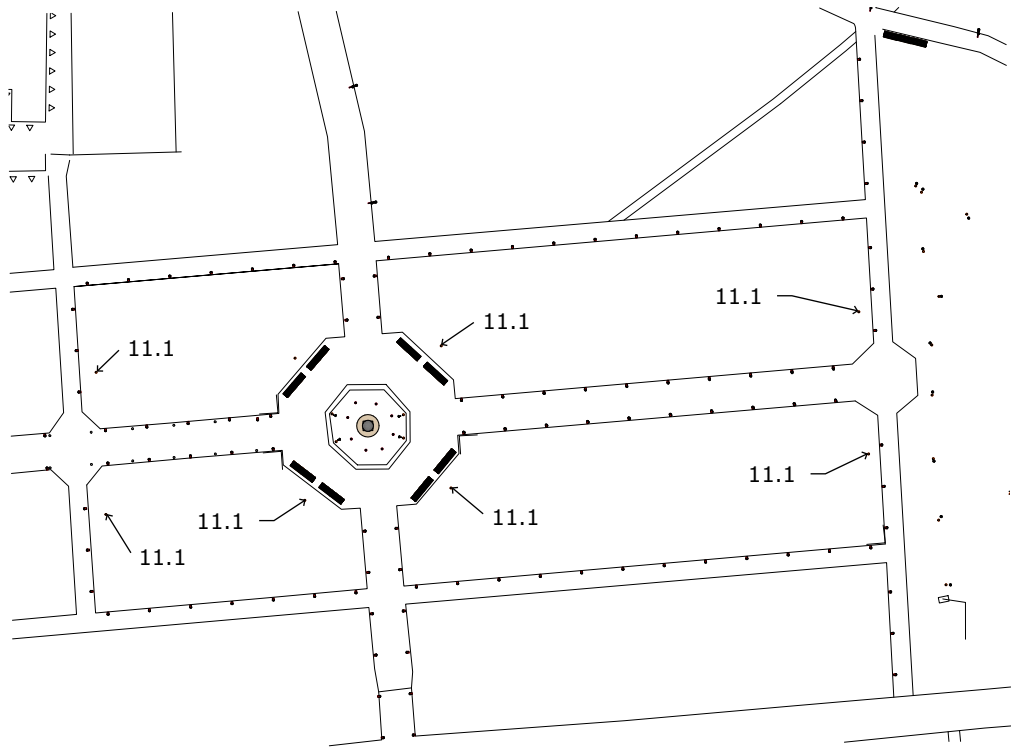


TREE LIGHTS - PRINCIPLE



LIGHT ART / SEASONAL LIGHTING AREAS

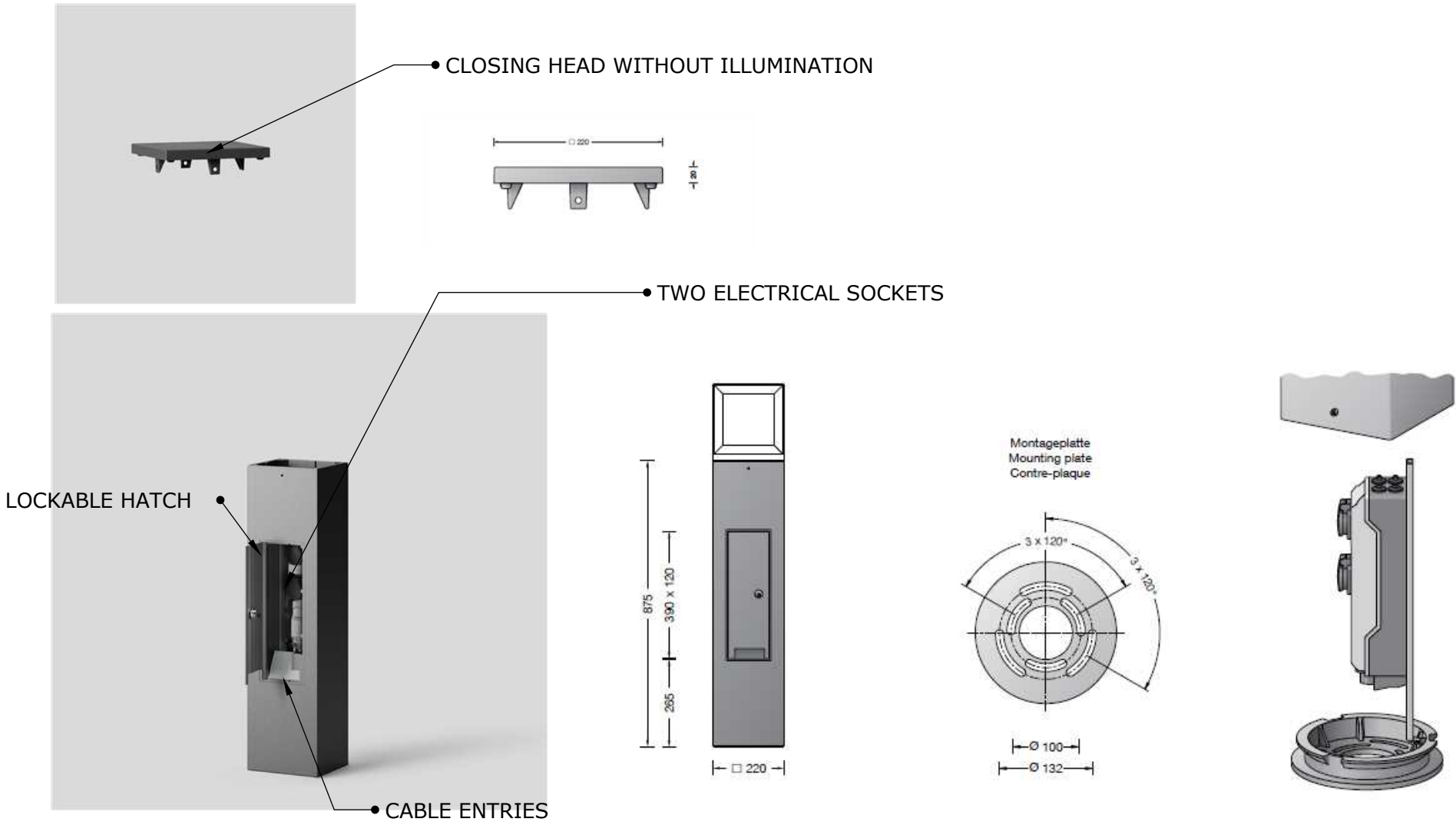
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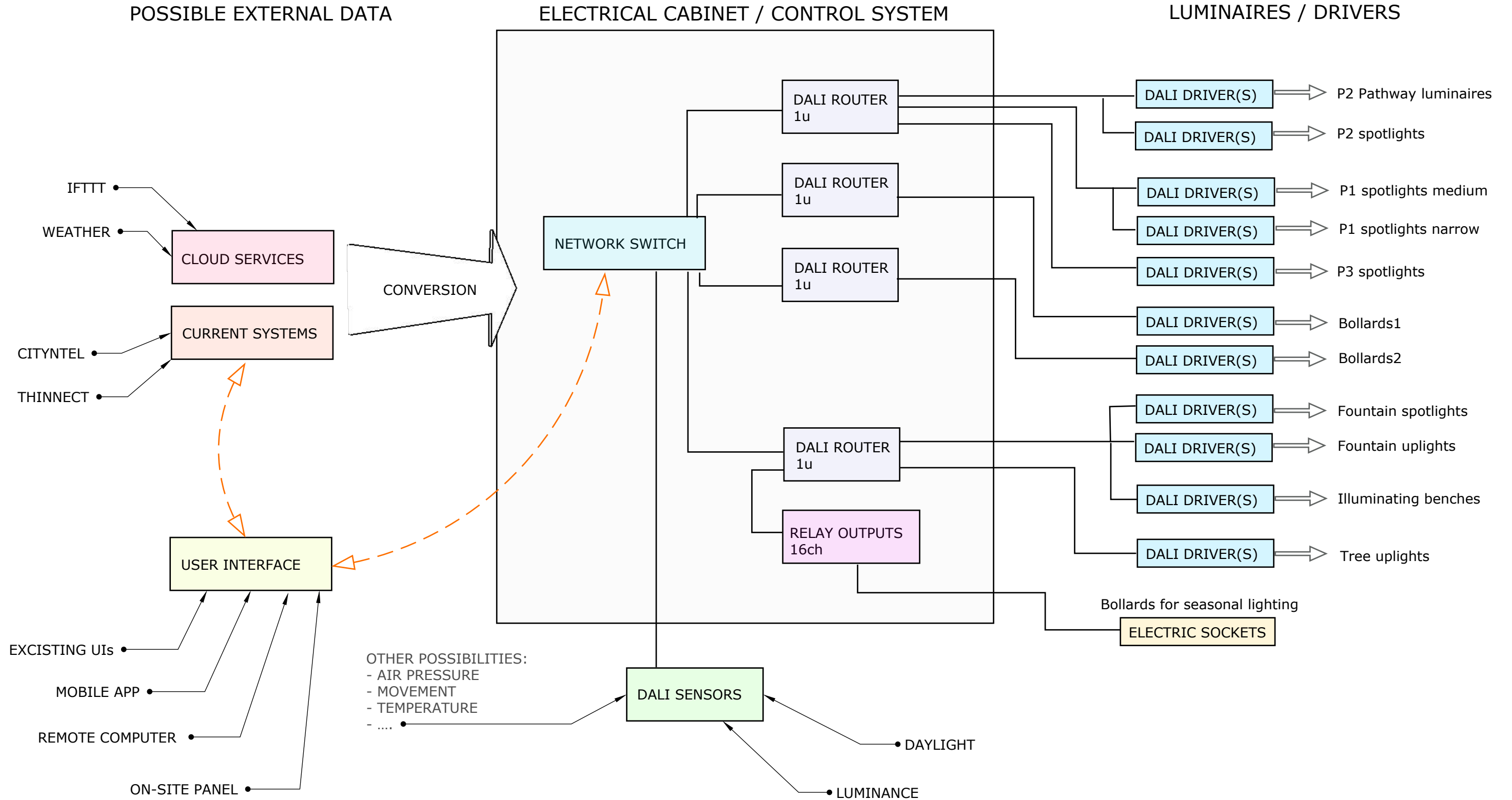
POS 11.1 - BOLLARDS FOR SEASONAL AND ART LIGHTING / BEGA 84004
Bollards with electrical sockets for seasonal lighting and possible light art installations. Both electrical sockets are 16A. Individual relay control for each output. Bollards are equipped with lockable hatches with cable entries. Top of the bollard is covered with closing head.
Material color Graphite grey.

Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	mounting
11.1	8	bollard with electric sockets	Bega	84004	84004	---	relay	ground base

ACCESSORIES:
- Anchorage unit
- Closing head without illumination



LIGHT ART / SEASONAL LIGHTING - PRINCIPLE

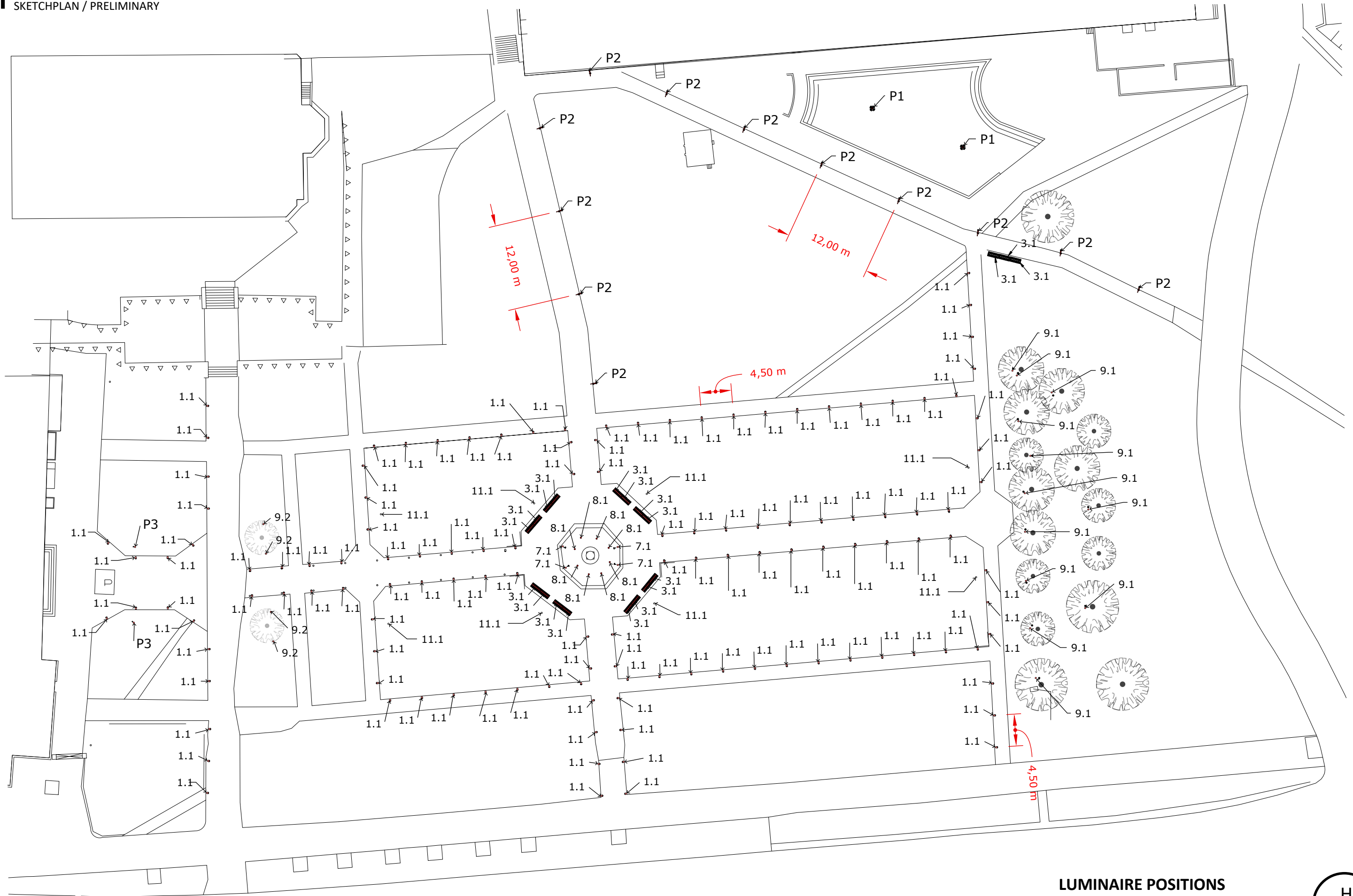


In case of using external cloud based data/triggers for lighting control the system provider must specify hardware needed inside control cabinet.

CONTROL PRINCIPLE

CHART IS ONLY FOR ILLUSTRATIVE PURPOSES

Definition Name	Quantity	type	Manufacturer	model	ItemCode	power	control	triggers / adjustment	mounting
8.1	8 / according nozzles	underwater uplight	Wibre	4.0240	4.0240.00.13	18W	ON/OFF	daylight	underwater, around nozzle
7.1	4	underwater spotlight	Wibre	4.0100	4.0100.00.12	15W	DALI	daylight	pool/underwater
P3	2	spotlight pole	TEHOMET	---	---	---	---		ground base
10.1	8	spotlight	Targetti	Dart small	1E2988	13W	DALI	daylight, snow	pole mounted
10.2	8	spotlight	Targetti	Dart small	1E2990	14W	DALI	daylight, snow	pole mounted
10.3	12	spotlight	Targetti	Dart small	1E2988	13W	DALI	daylight, snow	pole mounted
10.4	2	spotlight	Targetti	Dart small	1E2988	13W	DALI	daylight	pole mounted
2.1	12	recessed downlight	iGuzzini	LaserBlade inout	BX75	15W	DALI	daylight, snow	recessed to pole arm
9.1	12	onground uplighter	We-ef	ESC140	185-3003	24W	DALI	daylight, bats / season	onground/inground
9.2	4	inground uplighter	We-ef	ESC130	185-3077	18W	DALI	daylight	inground
P2	12	custom pole	TEHOMET	New Hansa pole / Custom	custom	---	---		ground base
P1	2	custom playground pole	TEHOMET	New Hansa pole / custom	custom	---	---		ground base
1.1	129	bollard	We-ef	PSY424	114-0134	12W	DALI	daylight, snow	ground base
3.1	19	bench with integrated light		Voog1800	---	15W	DALI	daylight, snow	light integrated under the bench
11.1	8	Bollard with electric sockets	Bega	84 004	84 004		RELAY	user	ground base



LUMINAIRE POSITIONS

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