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## **Preveritev osončenosti**

### **OBČINSKI PODROBNI PROSTORSKI NAČRT 117** **Poslovna stavba - Križišče Celovška – Gospodinjska - Del**

Elaborat 2024/8

Izdelal: Urh Vidmar dipl. Ing. pom.

CG42 Urh Vidmar s.p.

Ljubljana 13.11.2024

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## 1- UVOD

Pri preverbi osončenja za določeno lokacijo je potrebno upoštevati občinski prostorski načrt Mestne občine Ljubljana – izvedbeni del (OPN MOL – ID), ki v 91. členu govori o zagotavljanju higienskih in zdravstvenih zahtev v zvezi z osvetlitvijo, osončenjem in kakovostjo bivanja:

- Obstoječim in novim stavbam je treba zagotoviti v naslednjih prostorih: dnevna soba, bivalni prostor s kuhinjo, bivalna kuhinja, otroška soba, v stanovanjskih stavbah za druge posebne družbene skupine tudi stanovanjske sobe, naravno osončenje v času od sončnega vzhoda do sončnega zahoda:
  - dne 21.12. – najmanj 1 uro.
  - dne 21. 3. in 21. 9. – najmanj 3 ure.
- Če so pogoji naravnega osončenja v obstoječih stavbah v prostorih iz prejšnjega odstavka manjši od pogojev, določenih v prejšnjem odstavku, se zaradi gradnje novih objektov ne smejo poslabšati.
- Določba prvega odstavka ne velja:
  - za 20 % stanovanj v novih večstanovanjskih stavbah,
  - kadar leži stavba na severnem pobočju oziroma v ozki dolini in lega stavbe ne omogoča izvedbe določbe osončenja,
  - za gradnjo stavb v vrzeli stavbnega bloka.

Za računalniško simulacijo osvetlitve je bil uporabljen program 3D Studio MAX, ki se uporablja za vizualizacijo 3D predmetov in vsebuje modul za realistično prikazovanje osvetlitve za določeno lokacijo, datum in uro. Metoda dela je bila taka, da se je računalniški model osvetljevalo v 15 minutnih razmakih od sončnega vzhoda do zahoda in se beležilo slikovni material.

Časovni okvir 21. decembra, ko je dan najkrajši traja od 7:41 do 16:19. Časovni okvir 21. marca traja od 6:03 do 18:15. Marčevski in septembrski datum sta združena, ker je takrat ekvinokcij in so rezultati osončenja podobni.

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## 2- 3D MODEL

3D model novogradnje na podlagi katerega je bila opravljena analiza je bil posredovan s strani biroja Arhitektura MJ. Okoliški objekti, na katere novogradnja vpliva so bili modelirani po podatkih iz geodetskega načrta.


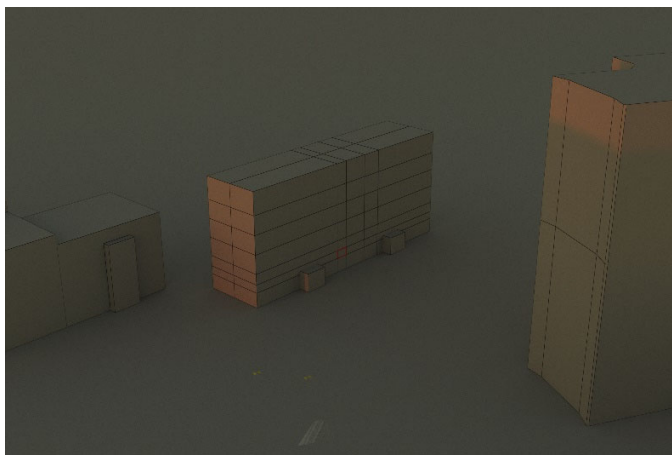
## 3- OSONČENOST OKOLIŠKIH OBJEKTOV

Novogradnja vpliva na fasade objektov vzhodno, zahodno in severno od območja gradnje. To so večstanovanjski objekti na naslovih Scopolijeva 1-3, Celovška 122, Celovška 124-130 in Celovška 143. Čas osvetlitve posamezne fasade je pogojen z najslabše osvetljenim oknom. Velika večina oken ima boljše osončenje, kot je zapisano v analizi.

### 21. December

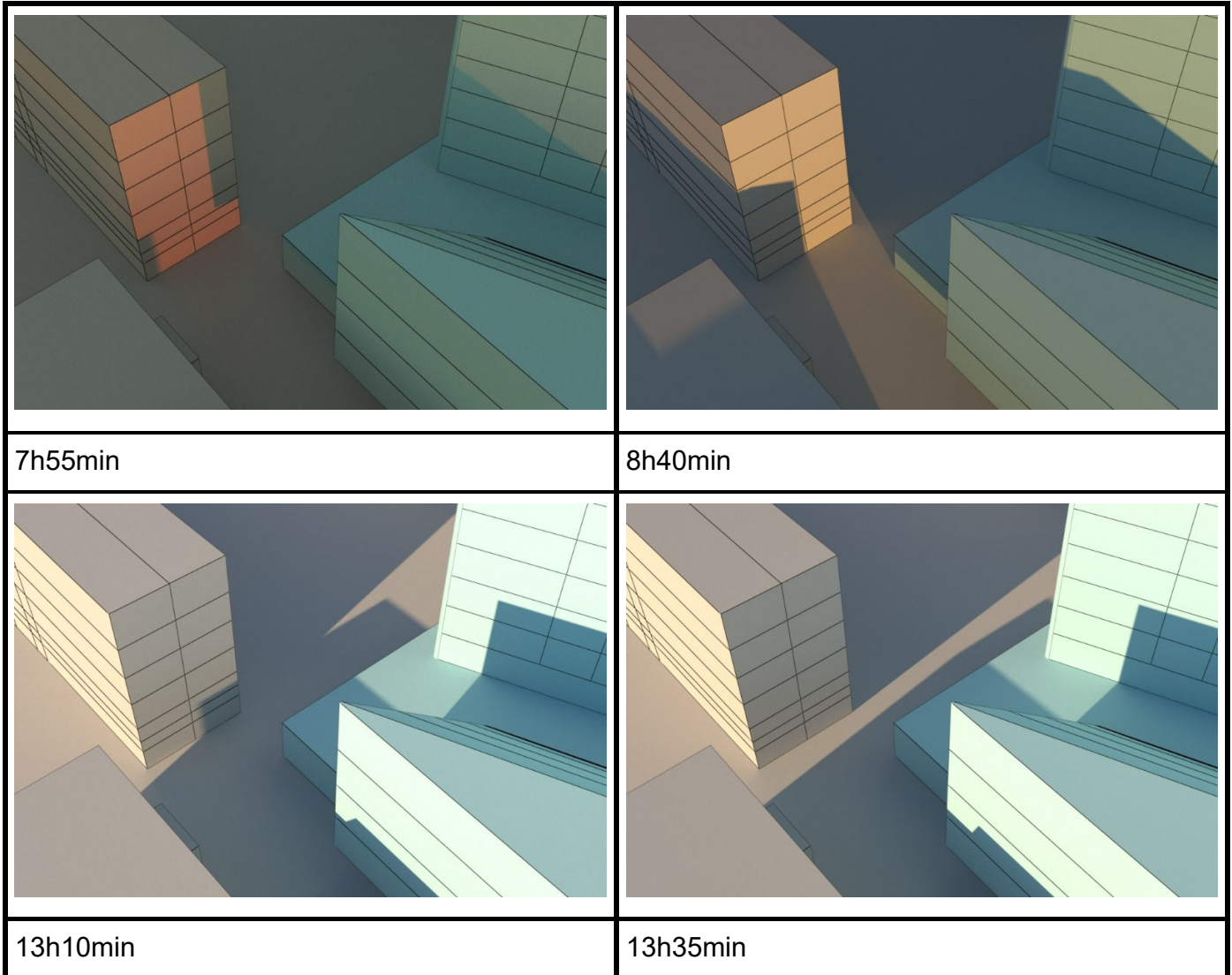
#### Scopolijeva 1-3

Vzhodna fasada decembra ni osončena že v obstoječem stanju.

|   |  |
|---|--|
|  |  |
| 7h41min   | 7h50min  |

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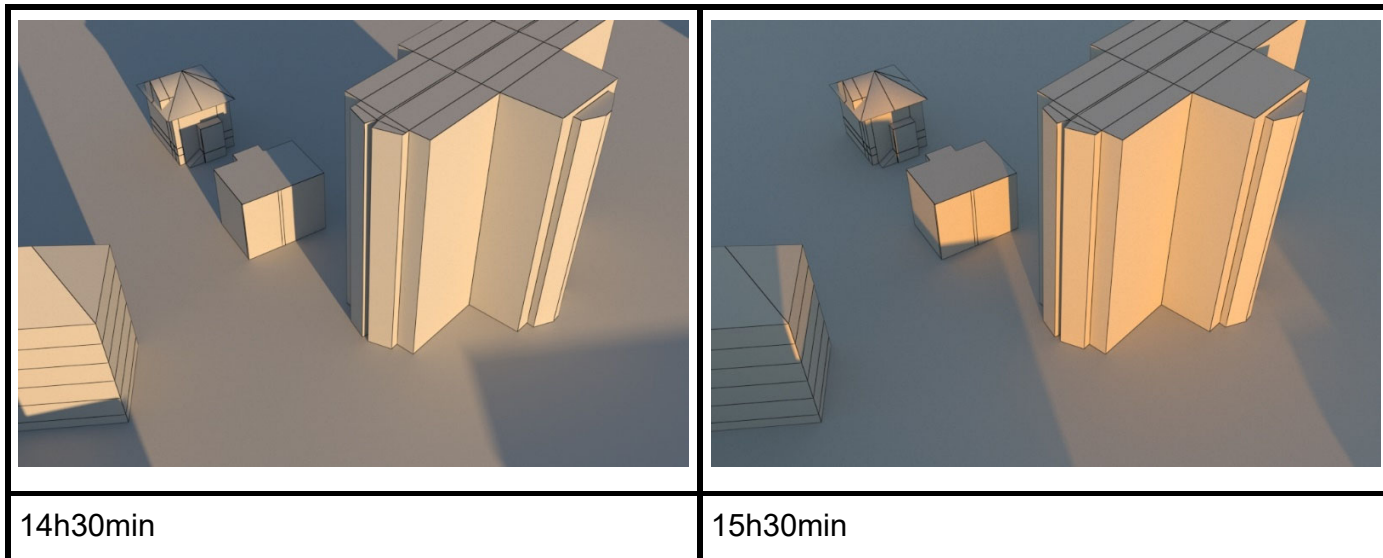
Južna fasada je osončena od 7h55min do 8h40min, ter od 13h10min do 13h35min, skupaj več kot eno uro, kar zadošča zahtevam OPN MOL – ID.



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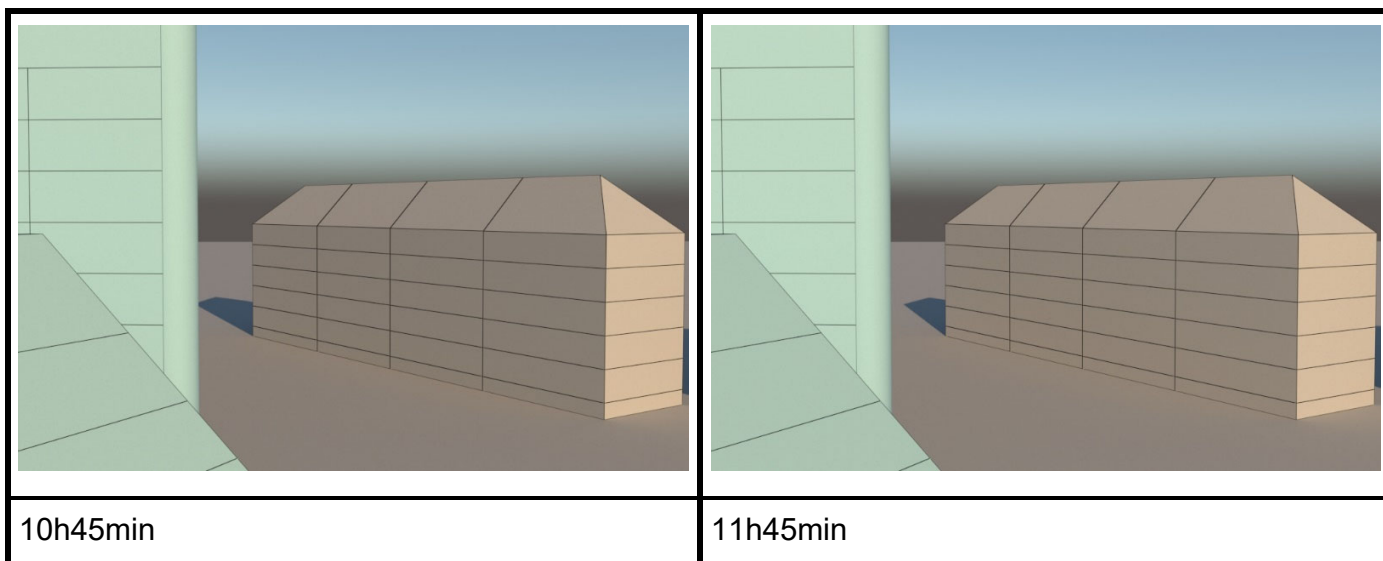
### Celovška 122

Severo-zahodna fasada je osončena vsaj od 14h30min do 15h30min, skupaj več kot eno uro, kar zadošča zahtevam OPN MOL – ID.



### Celovška 124-130

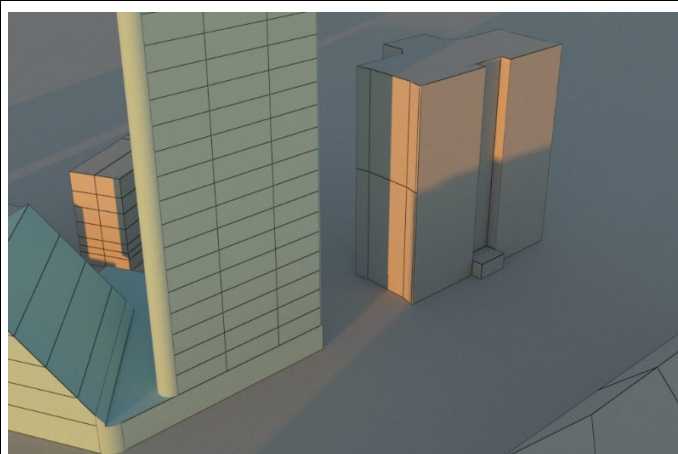
Objekt je osončen vsaj od 10h45min do 11h45min, skupaj več kot eno uro, kar zadošča zahtevam OPN MOL – ID.



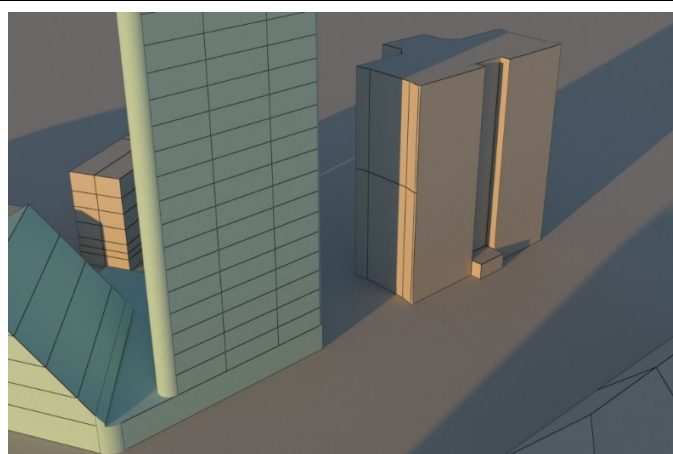
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### Celovška 143

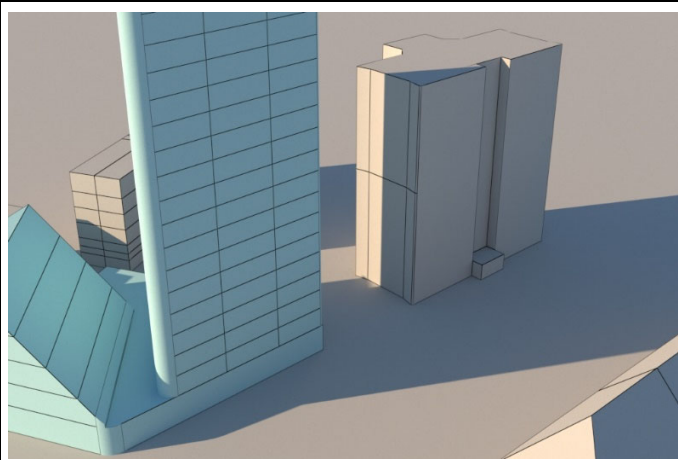
Južna fasada objekta na katero vpliva novogradnja je osončena po delih od 8h15min do 8h45min in od 11h40min do 13h15min, skupaj več kot eno uro, kar zadošča zahtevam OPN MOL – ID.



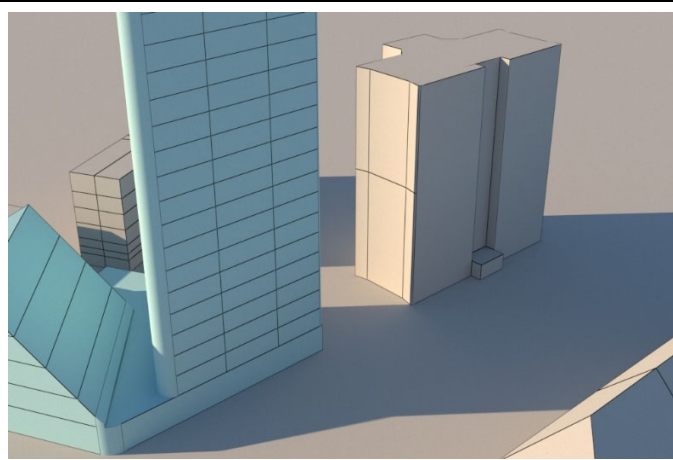
8h15min



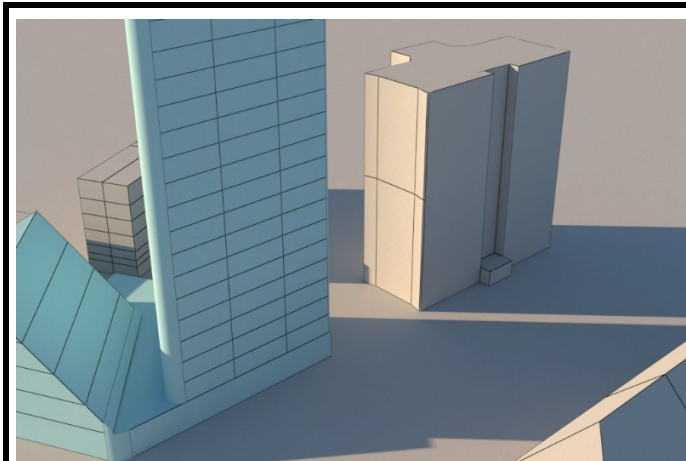
8h45min



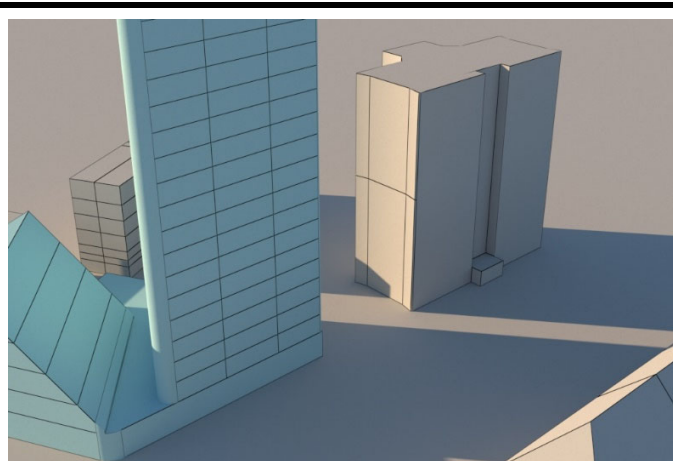
11h40min



12h25min



12h50min



13h15min

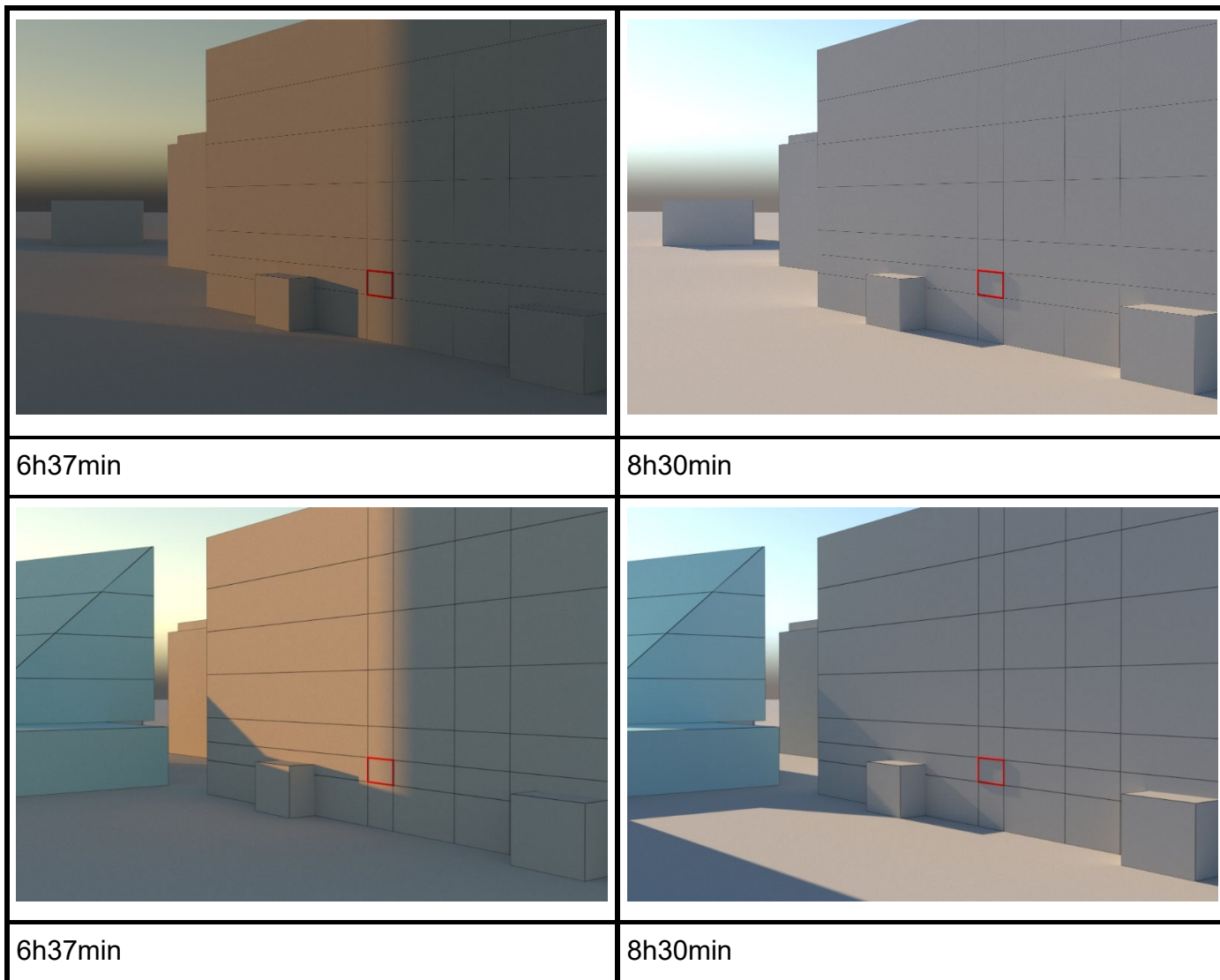


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## 21. Marec

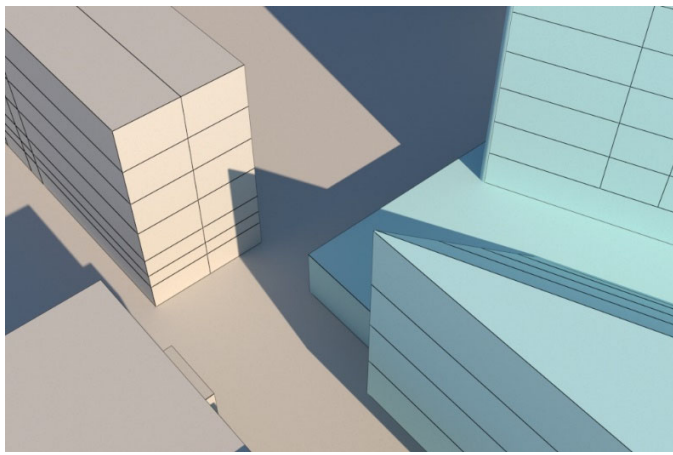
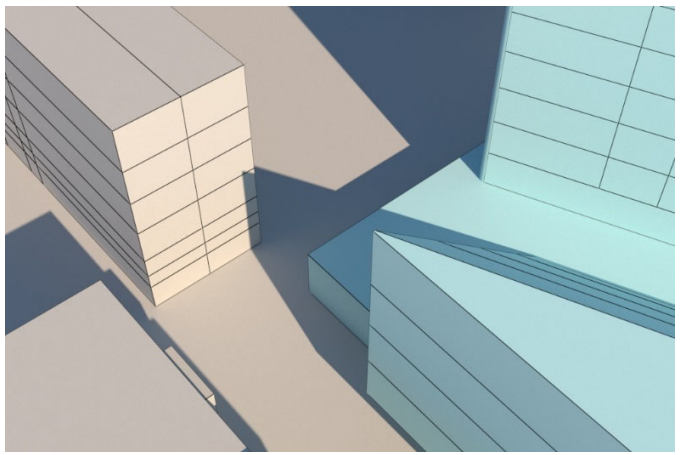
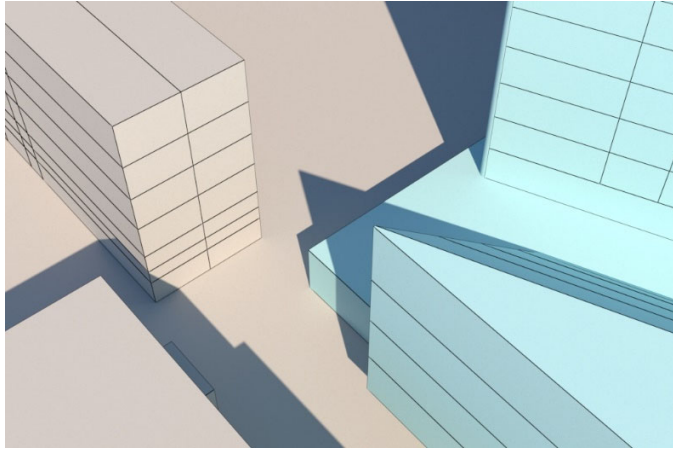
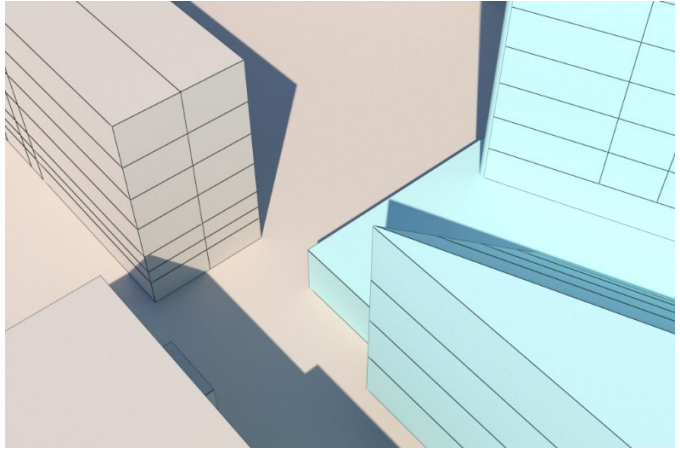
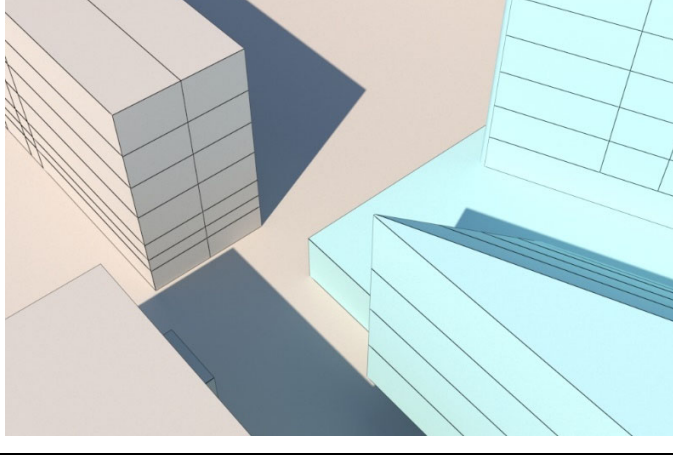
### Scopolijeva 1-3

Vzhodna fasada je v obstoječem stanju osončena od 6h37min do 8h30min, kar je manj kot 3 ure. Novogradnja te osončenosti ne spreminja.



Dodadne sence, ki se pojavijo v slikah z novogradnjo ne vplivajo na prostore, ki jih v 91 členu obravnava OPN MOL – ID.

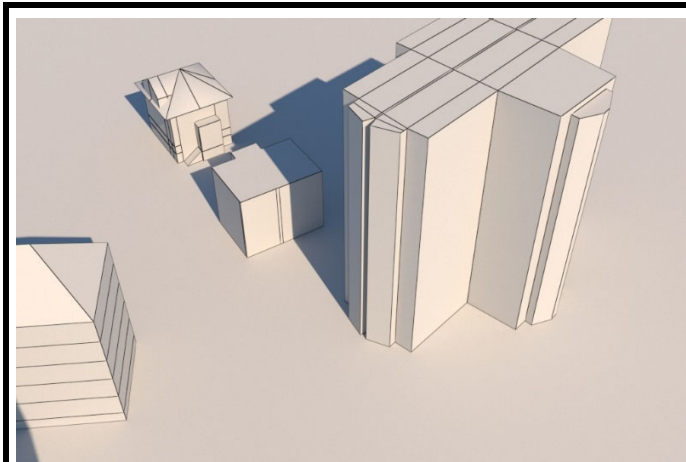
Južna fasada je osončena po delih od 9h15min do 12h30min, skupaj več kot tri ure, kar zadošča zahtevam OPN MOL – ID.

|   |   |
|---|---|
|    |   |
| 9h15min   | 9h30min   |
|   |  |
| 10h30min  | 11h30min  |
|  |   |
| 12h30min  |   |

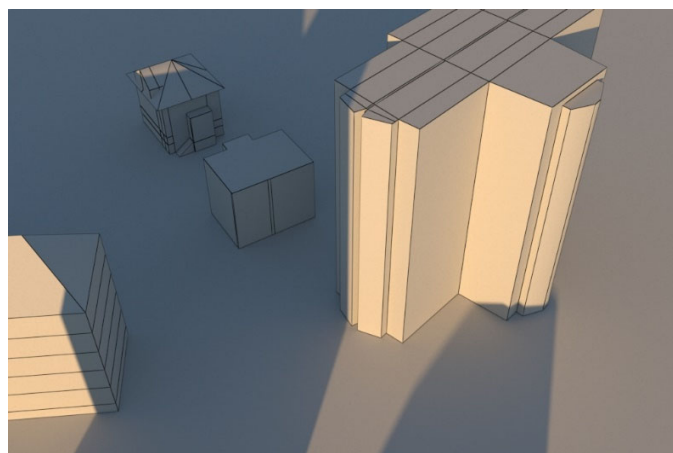
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### Celovška 122

Severo-zahodna fasada je osončena vsaj od 13h55min do 16h55min, skupaj več kot tri ure, kar zadošča zahtevam OPN MOL – ID.



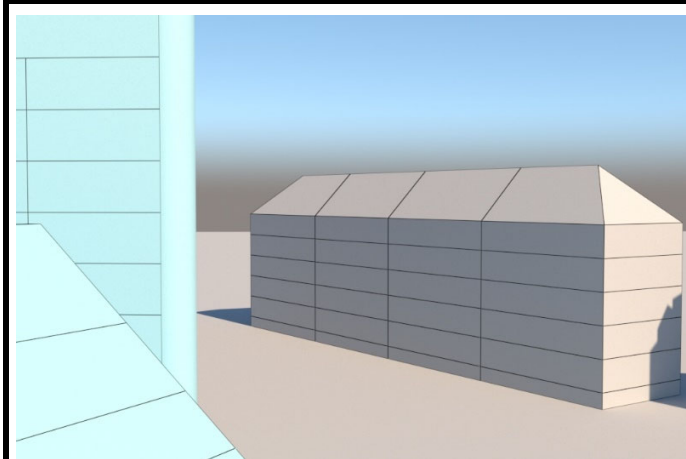
13h55min



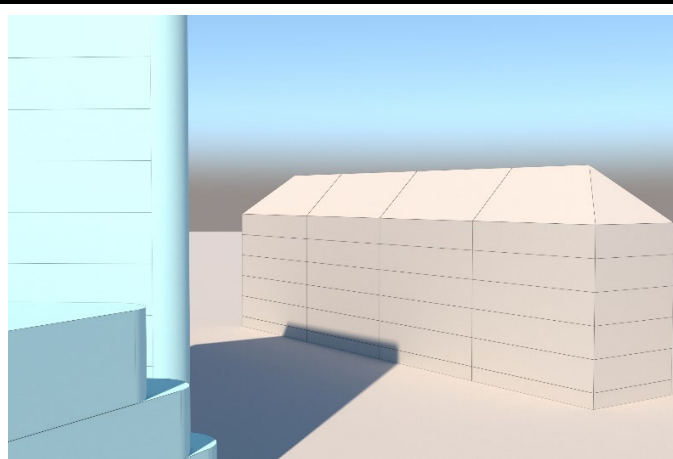
16h55min

### Celovška 124-130

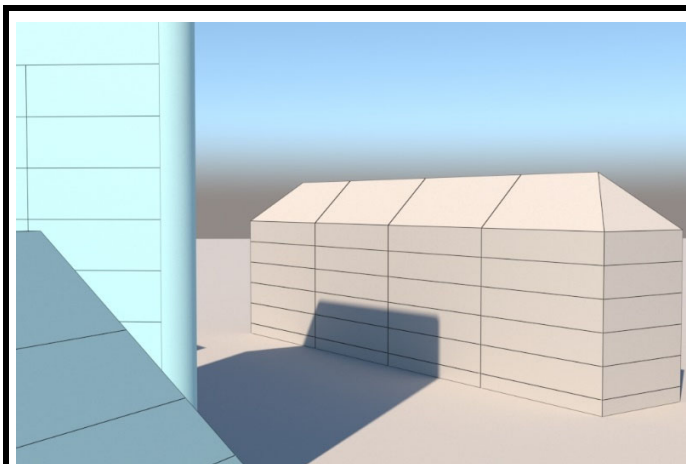
Objekt je osončen od 10h30min do 13h00min in po delih od 13h00min do 15h45min, skupaj več kot tri ure, kar zadošča zahtevam OPN MOL – ID.



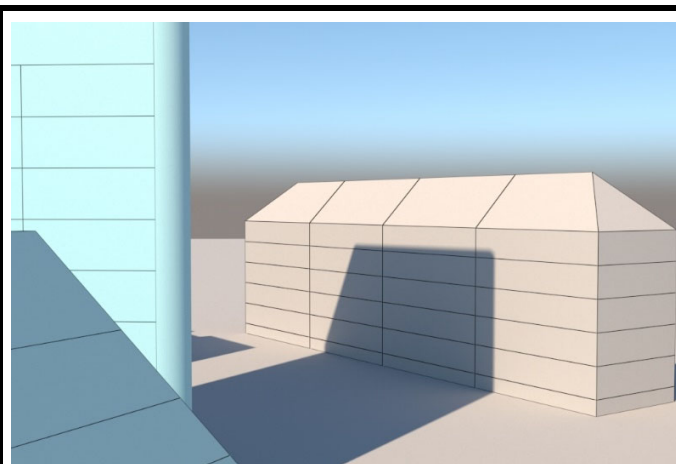
10h30min



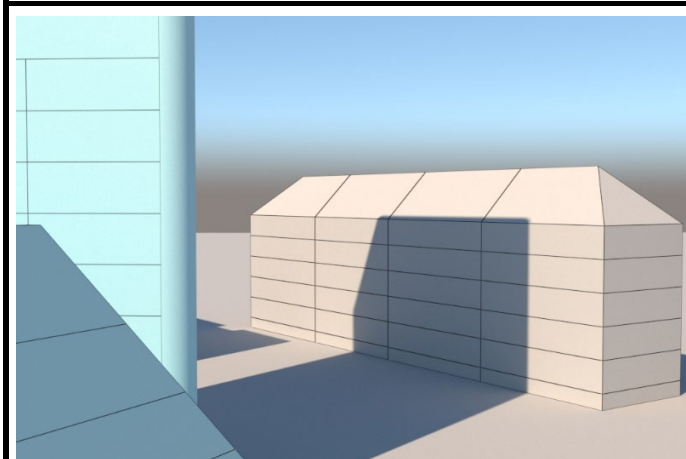
13h00min



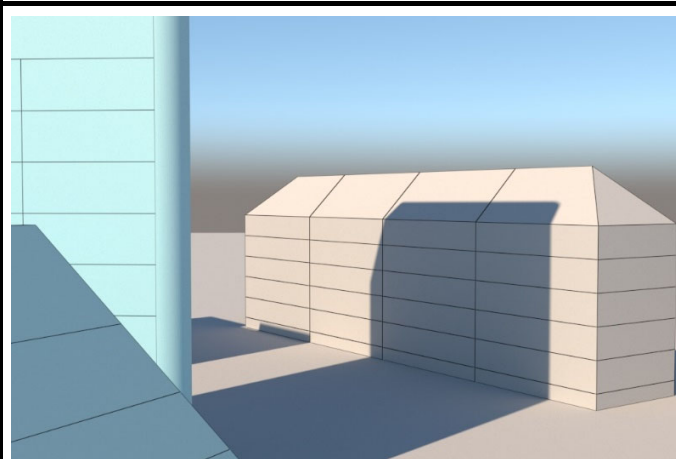
13h15min



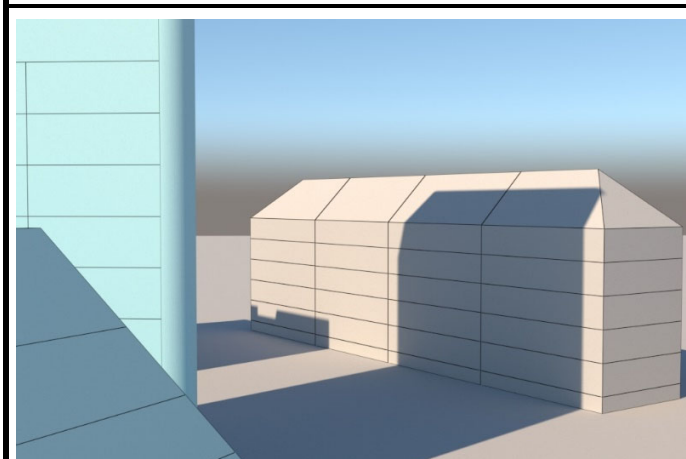
13h45min



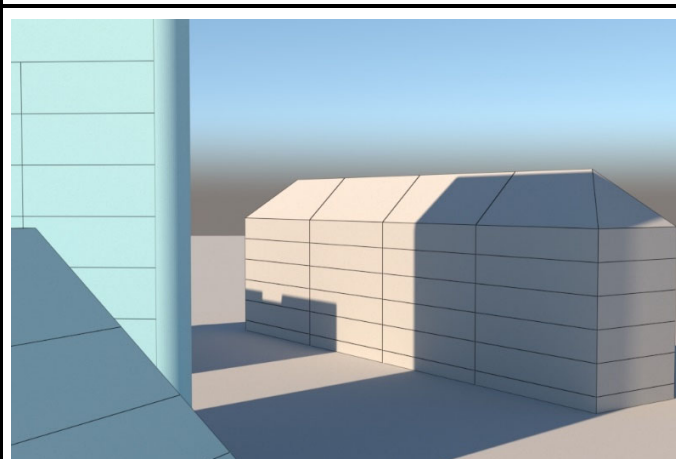
14h00min



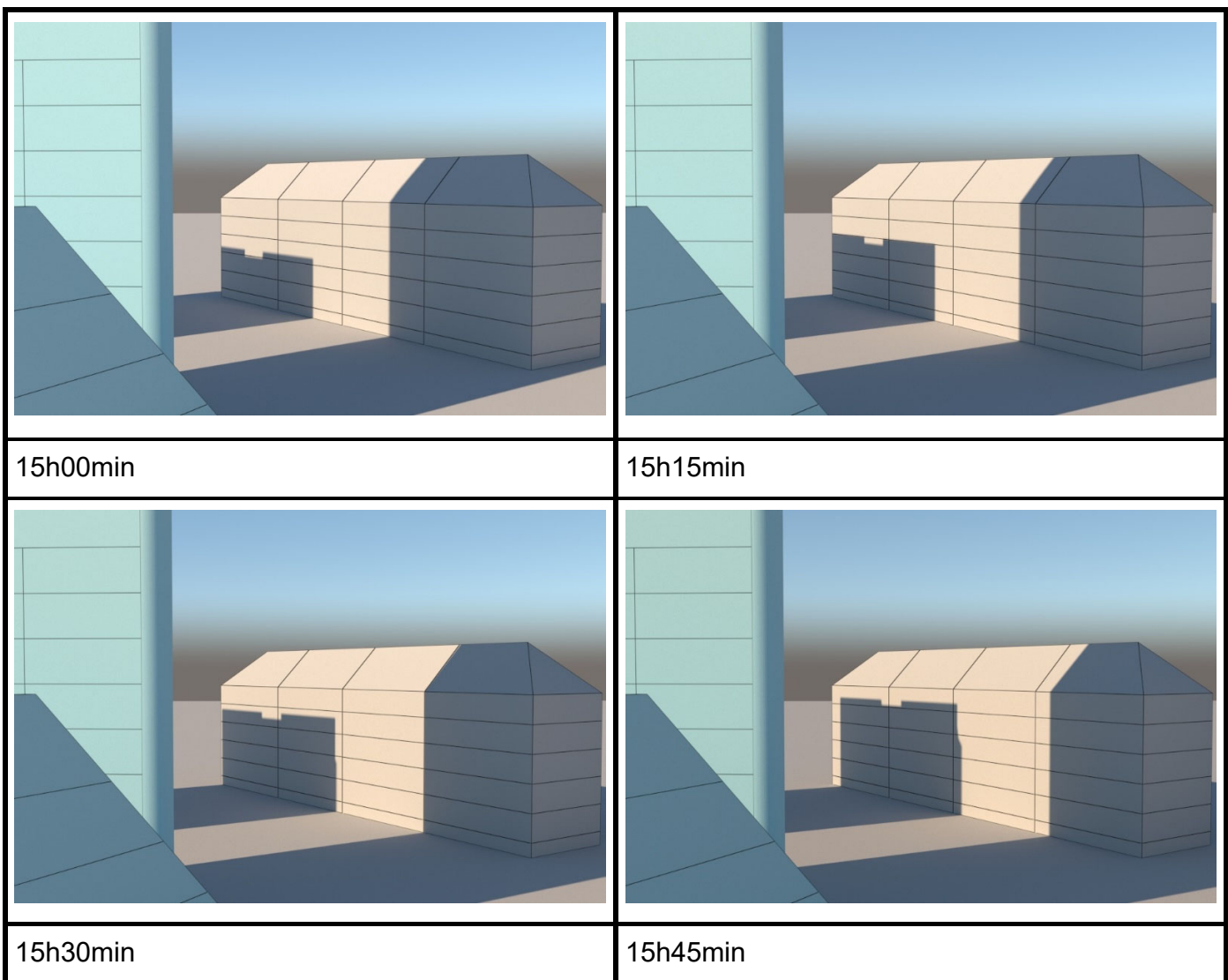
14h15min



14h30min



14h45min

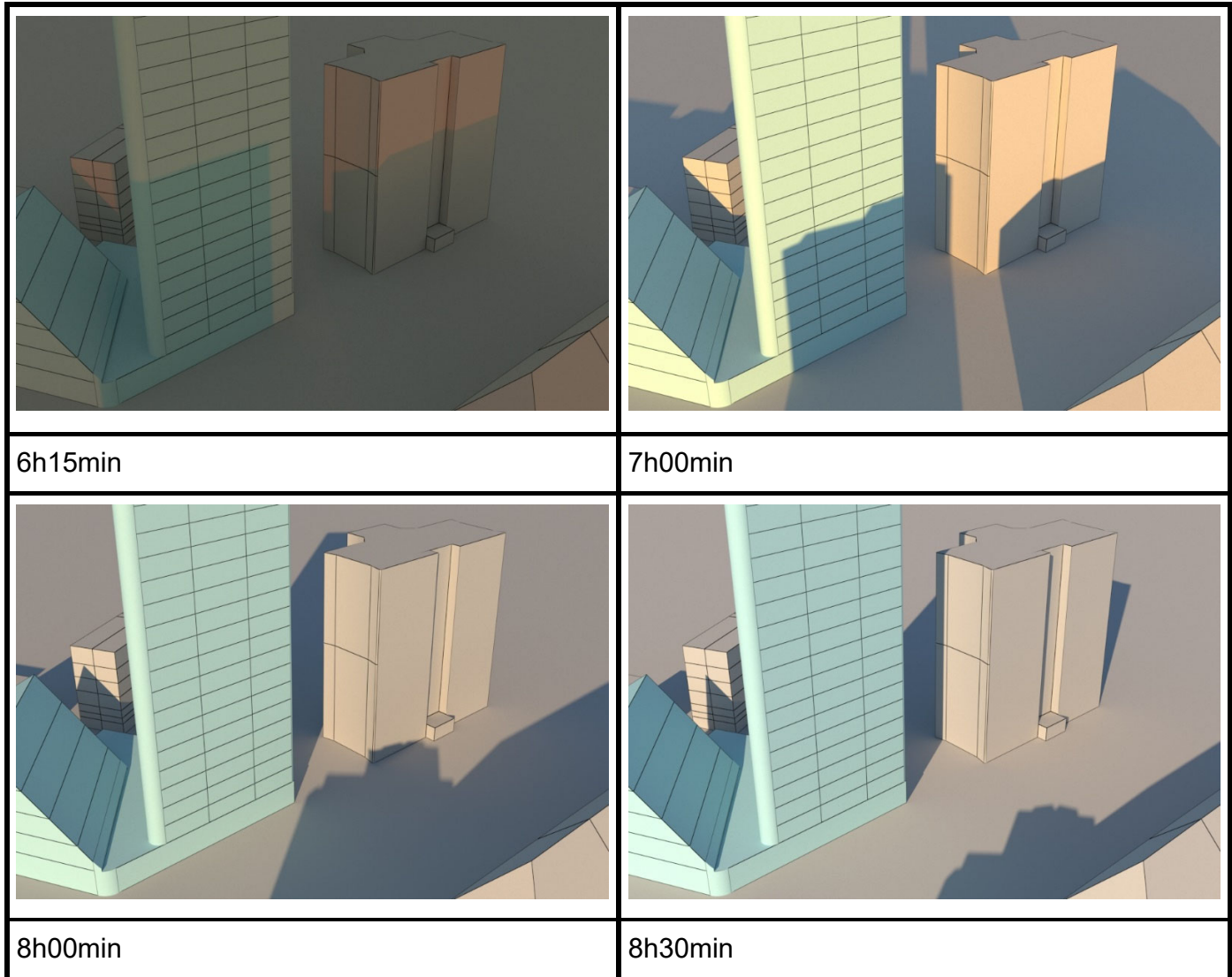


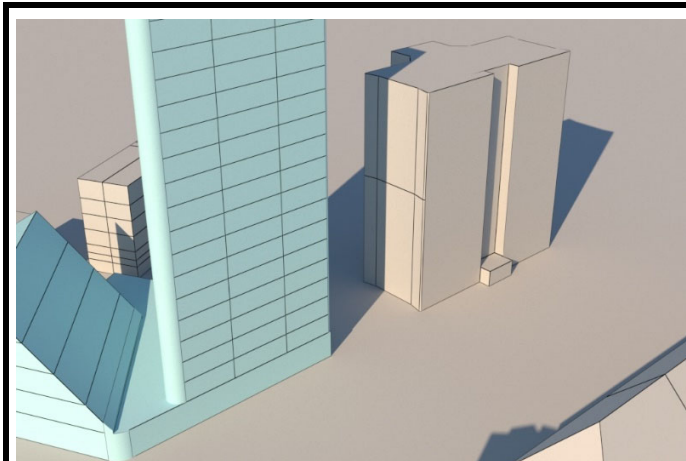


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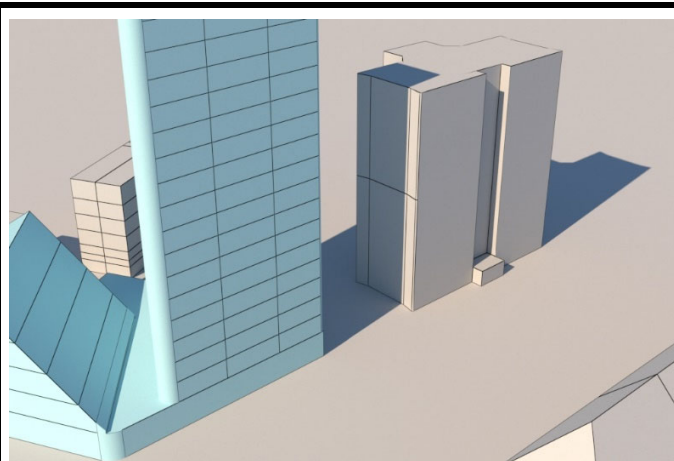
### Celovška 143

Južna fasada objekta na katero vpliva novogradnja je osončena od 12h30min do 15h00min in po delih od 6h15min do 12h15min, skupaj več kot tri ure, kar zadošča zahtevam OPN MOL – ID.

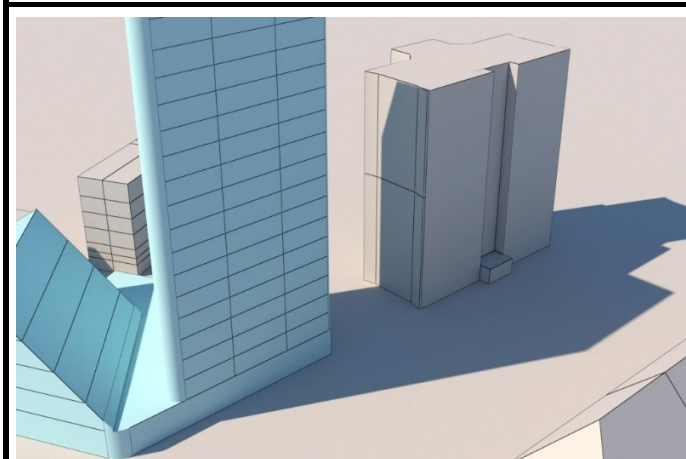




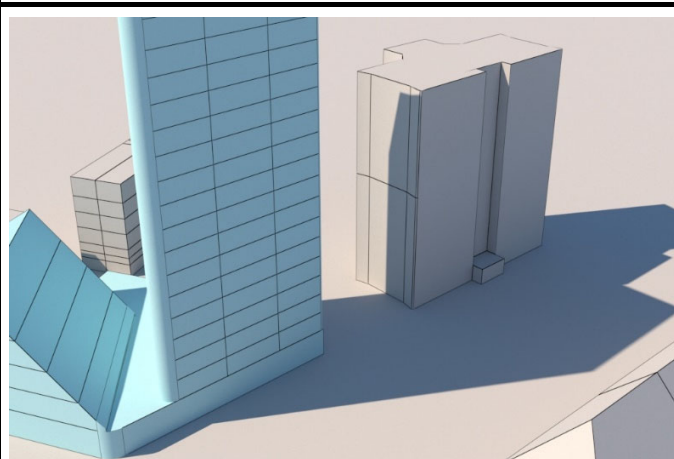
9h00min



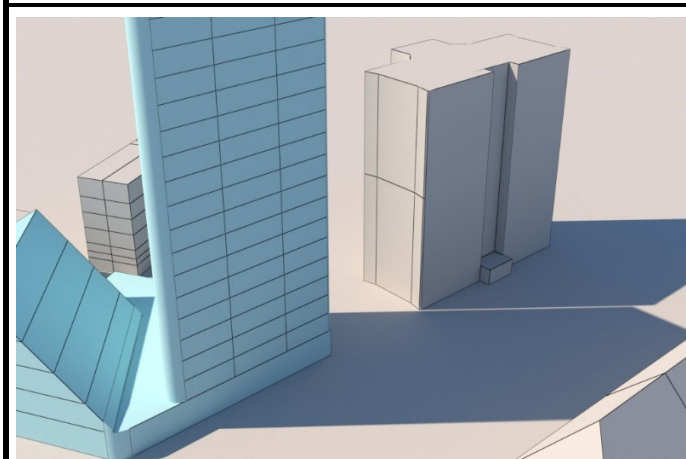
10h00min



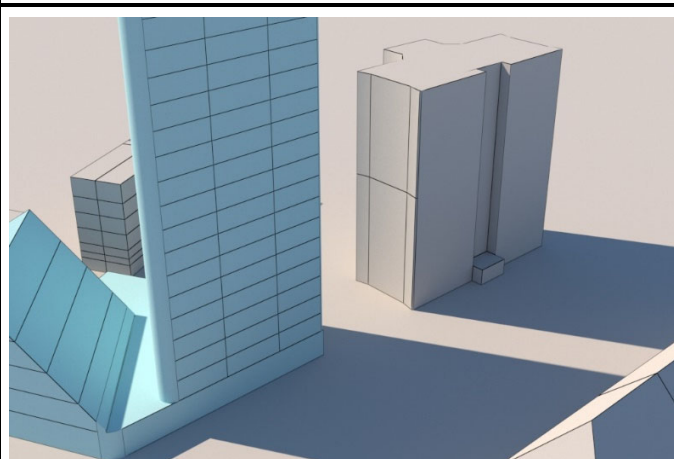
11h45min



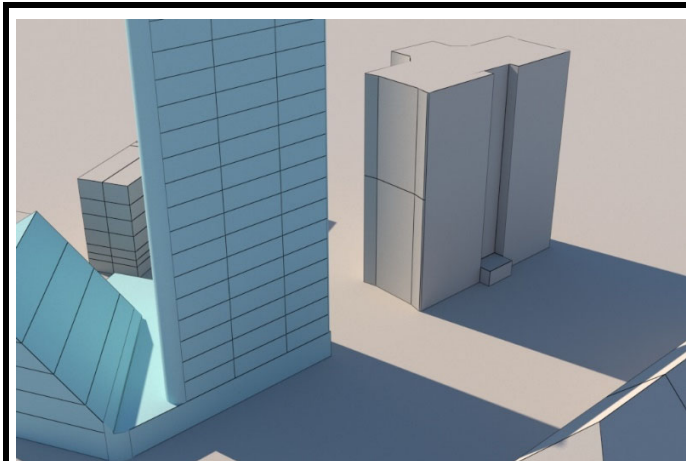
12h00min



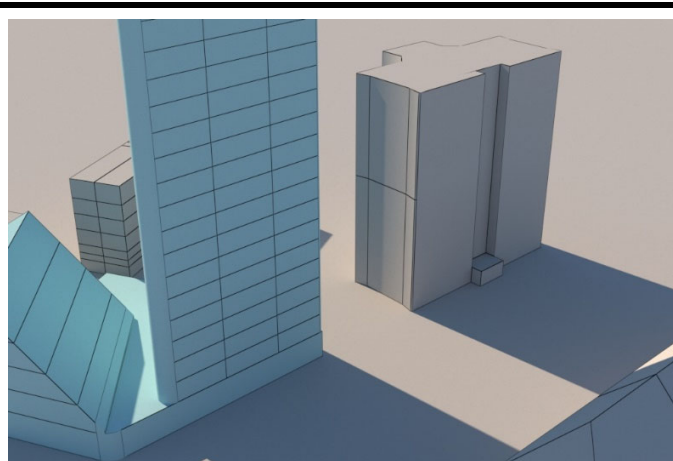
12h30min



13h30min



14h30min



15h00min



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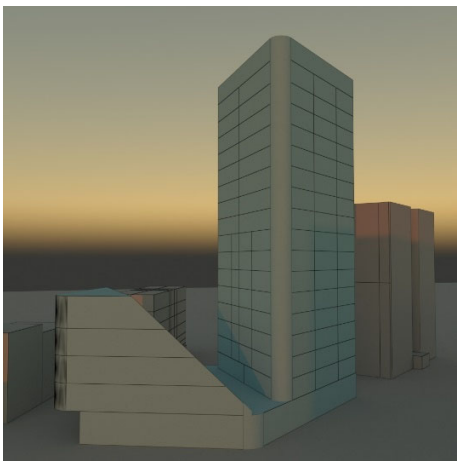
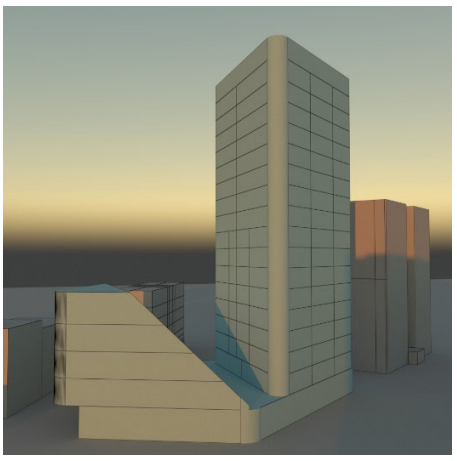
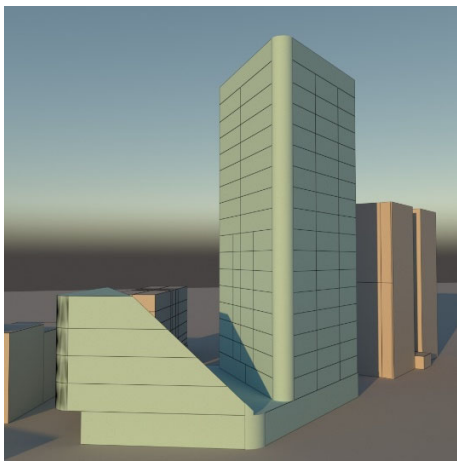
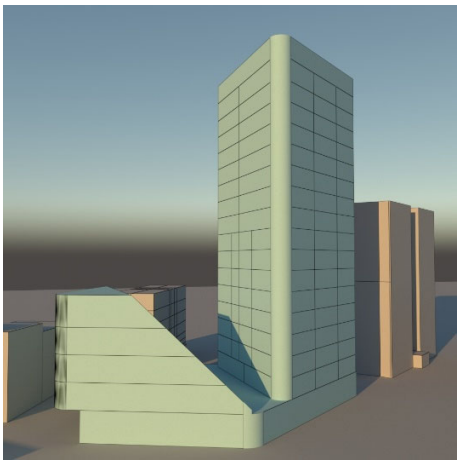
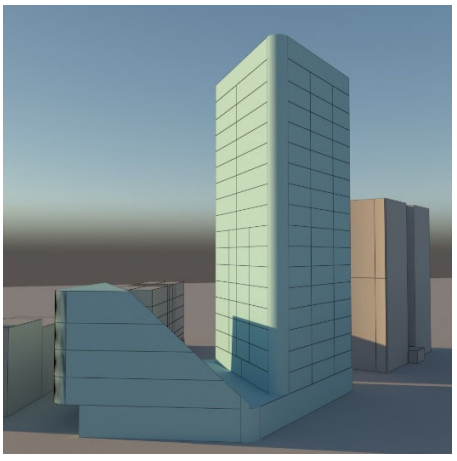
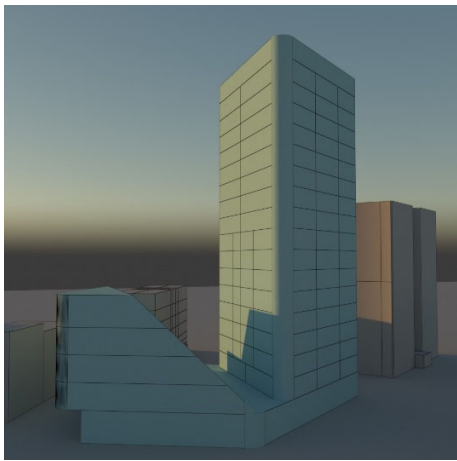
## 4) OSONČENJE NOVOGRADNJE

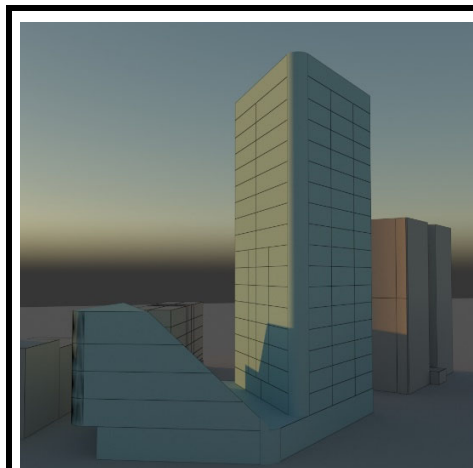
Novogradnja ima 82 stanovanj, od katerih ni zadostno osončenih 16 enot. To je manj, kot 20% vseh stanovanj, kar zadošča zahtevam OPN MOL – ID.

Vsa stanovanja, ki nimajo zadostnega osončenja so z enim od prostorom, ki ga obravnava OPN MOL – ID orientirana proti severo-zahodu.

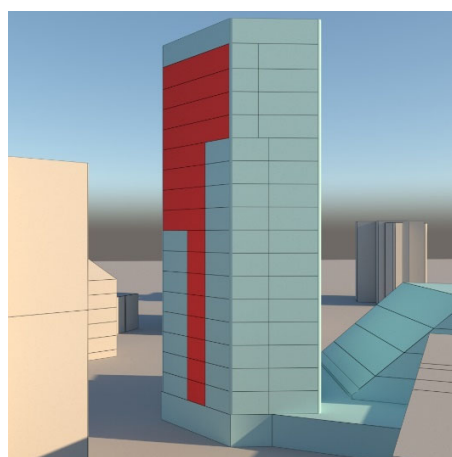
### Prikaz osončenosti stanovanj za relevantne ure

21. december

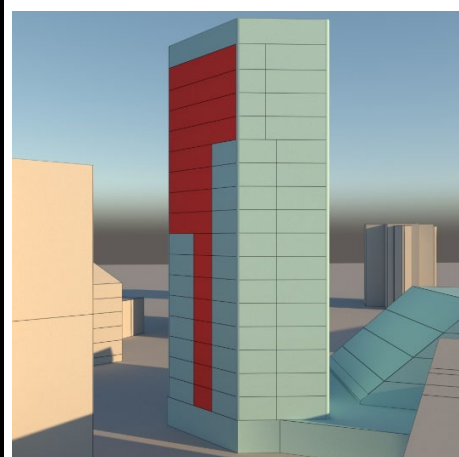
|  |  |   |
|--|--|---|
|   |   |   |
| 7h55min  | 8h05min  | 8h55min   |
|  |  |  |
| 9h05min  | 14h20min   | 15h20min  |



15h30min

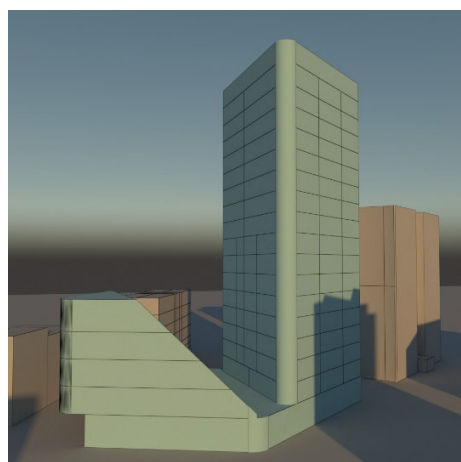


13h20min

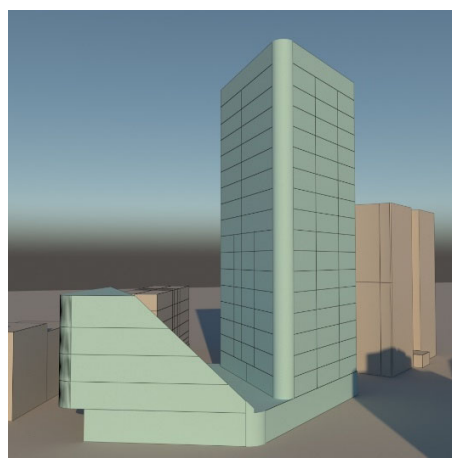


14h20min

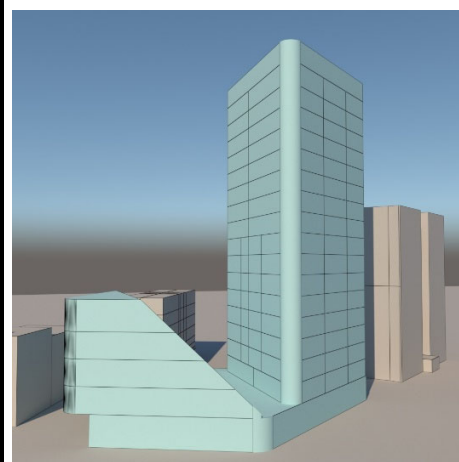
**21. marec**



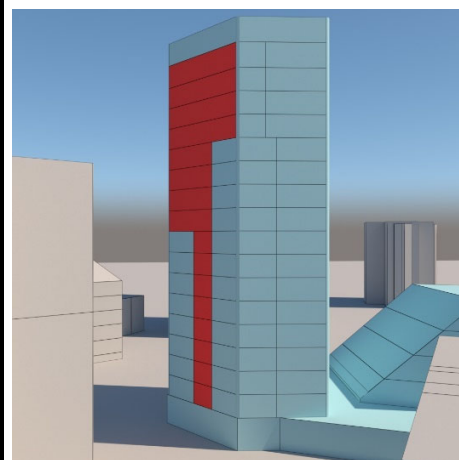
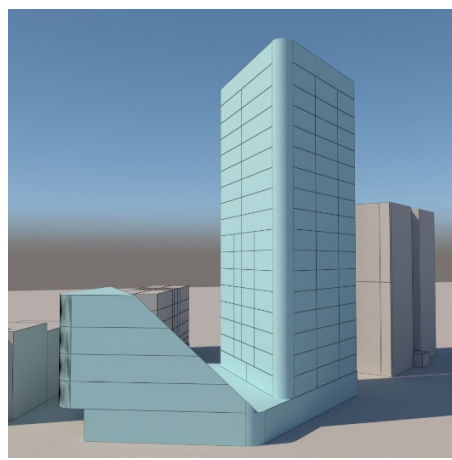
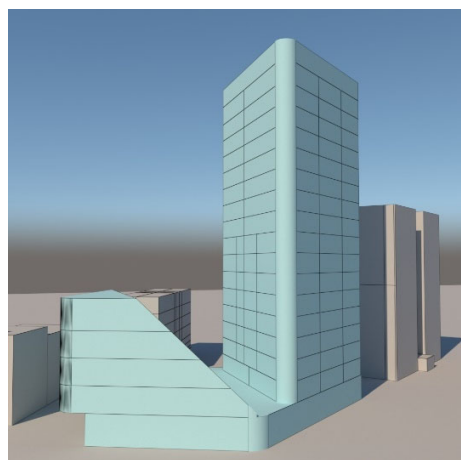
7h10min

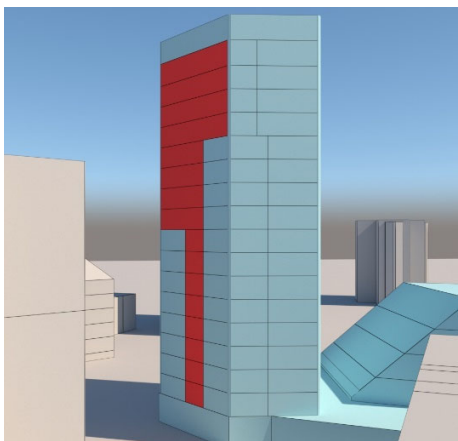
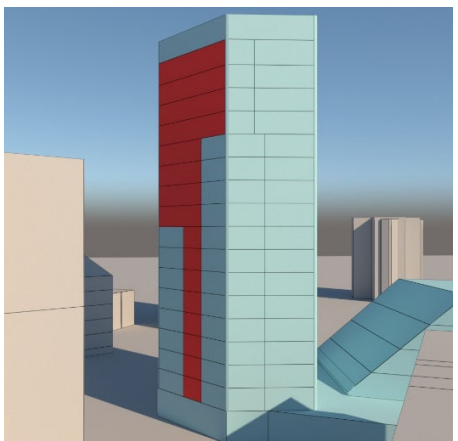
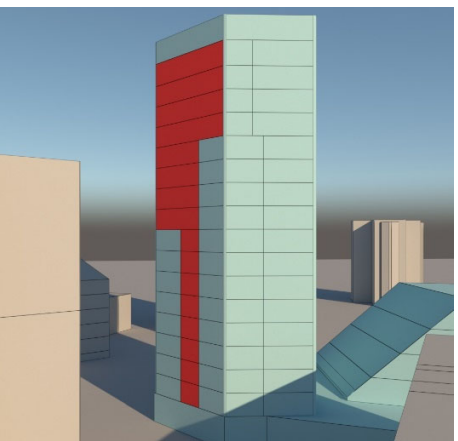
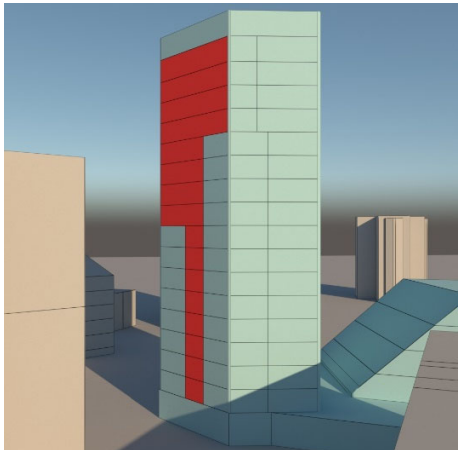
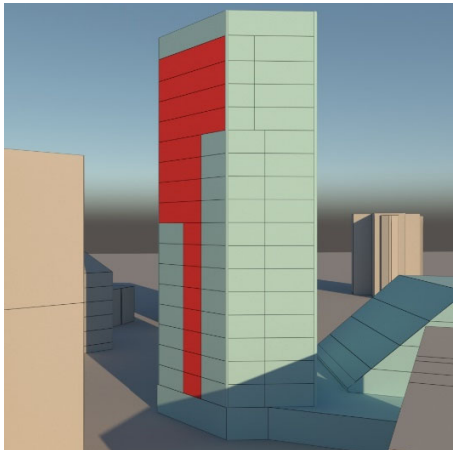
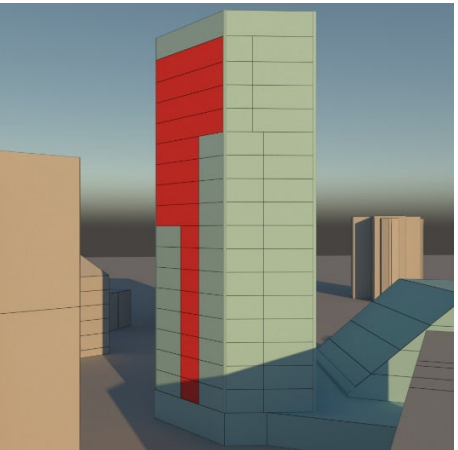


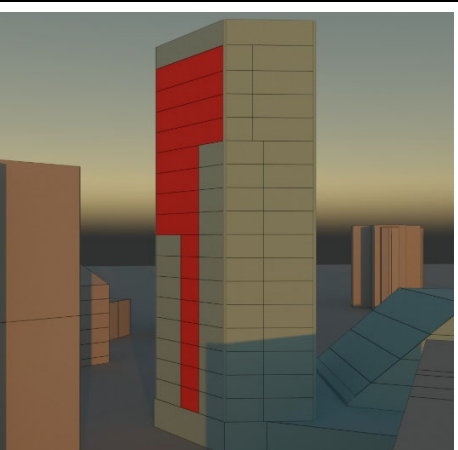
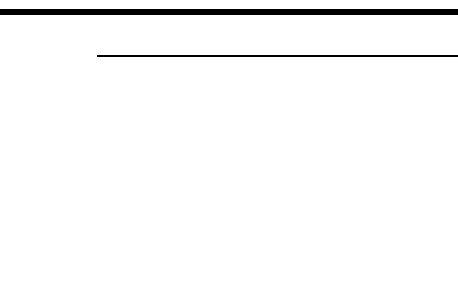
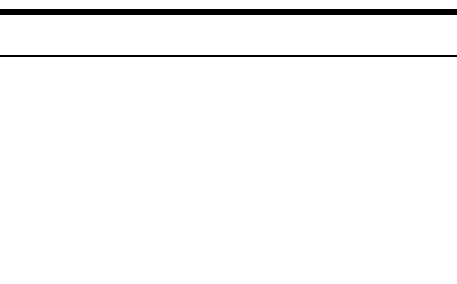
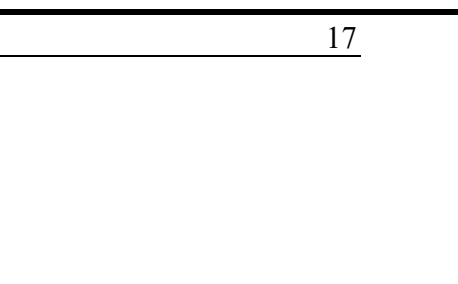


7h50min



9h30min

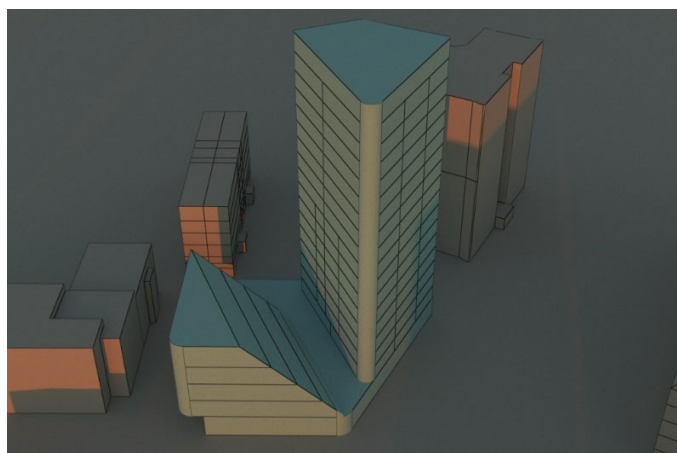


|  |  |   |
|--|--|---|
| 10h10min   | 12h30min   | 13h00min  |
|    |    |    |
| 13h15min   | 15h00min   | 16h00min  |
|   |   |   |
| 16h15min   | 16h30min   | 17h00min  |
|  |  |  |
| 17h15min   | 17h30min   | 17h50min  |
|  |  |  |

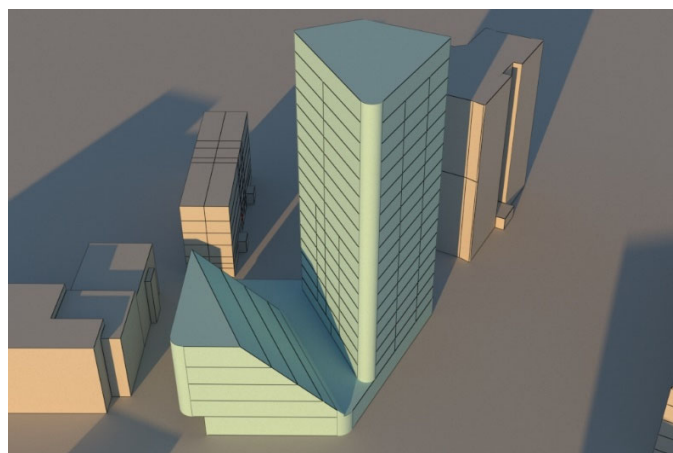
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## 5) OSONČENOST V ENOURNIH RAZMAKIH ZA OBA RELEVANTNA DATUMA

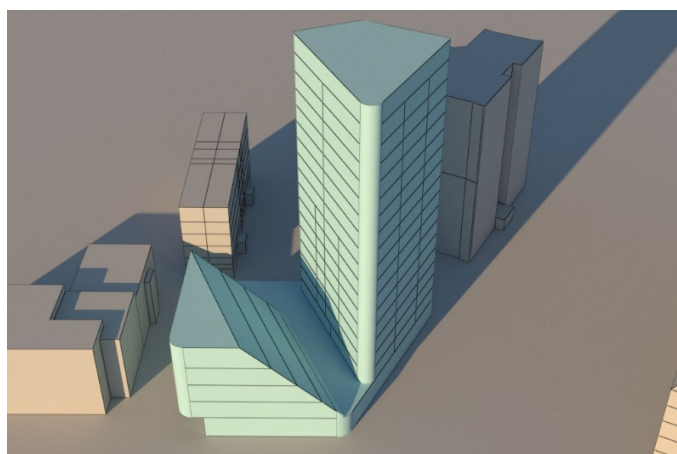
21. december



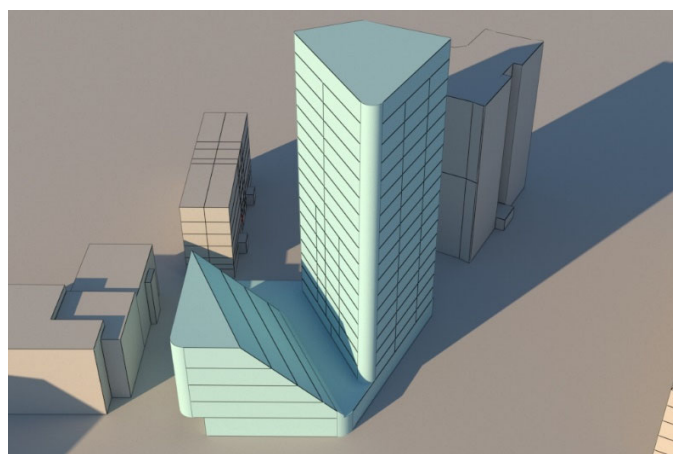
8h00min



9h00min

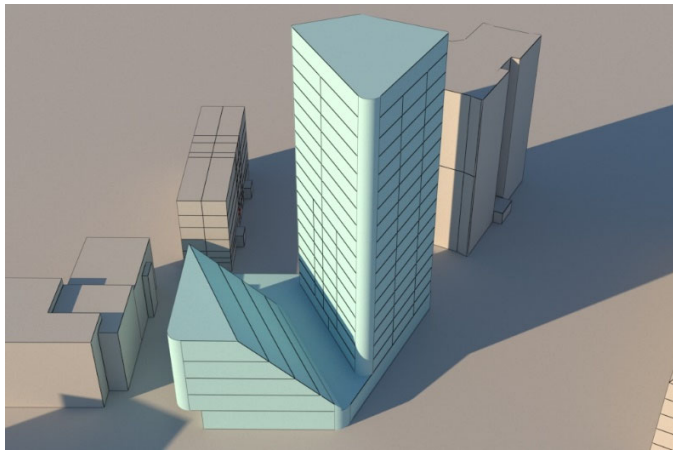


10h00min

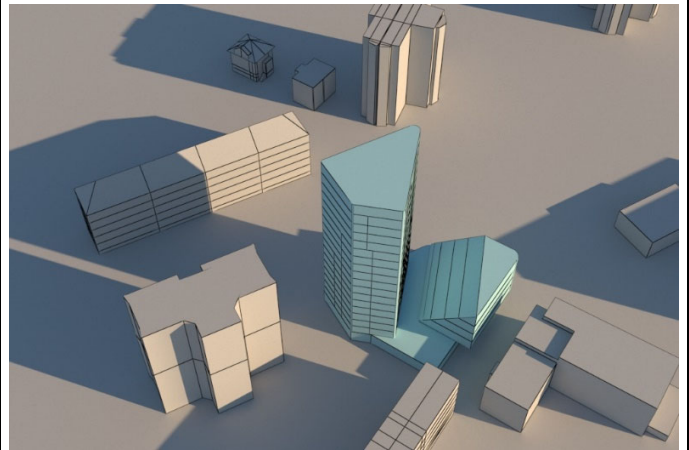


11h00min

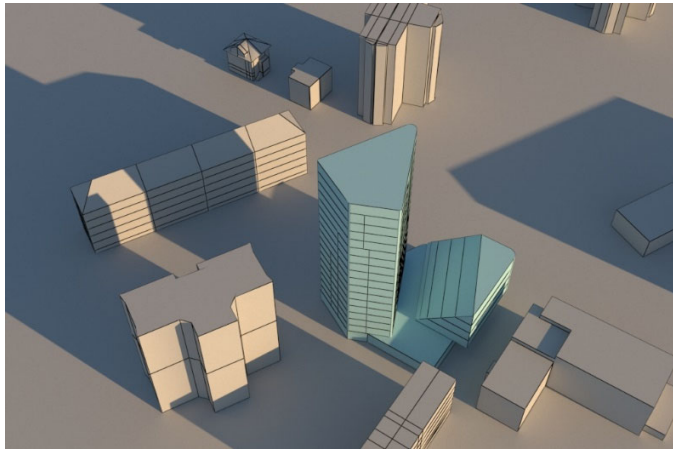




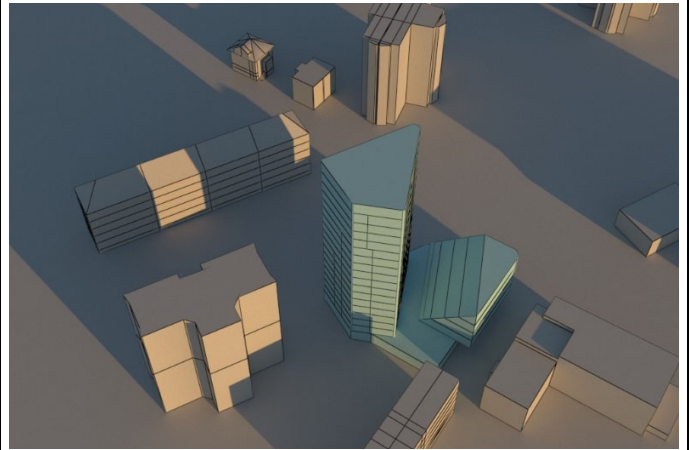
12h00min



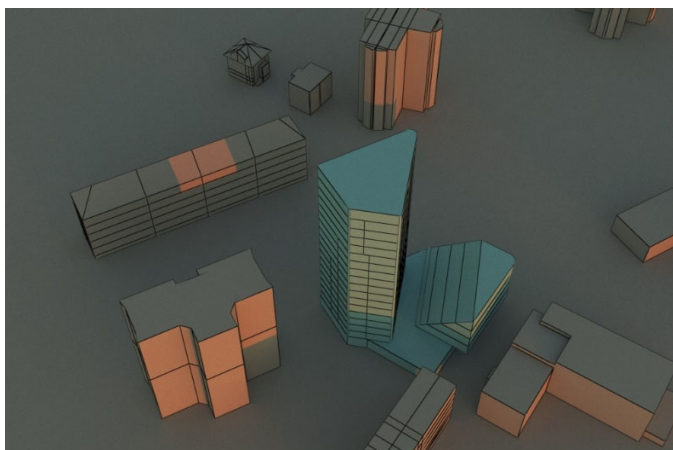
13h00min



14h00min



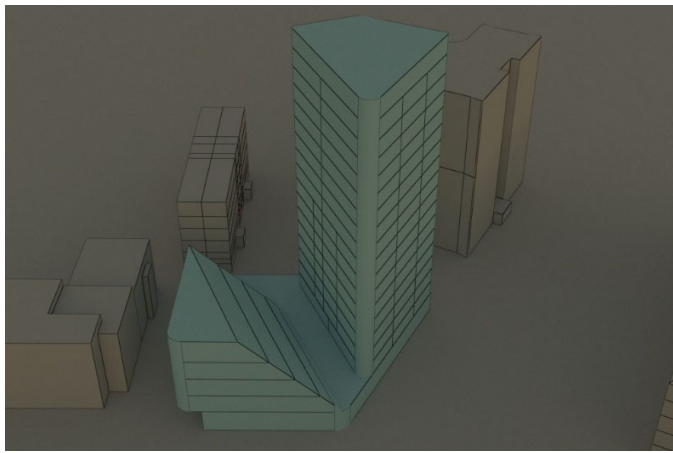
15h00min



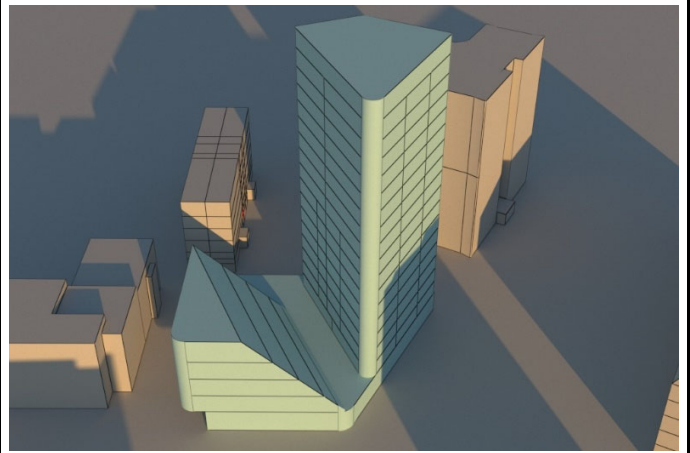
16h00min

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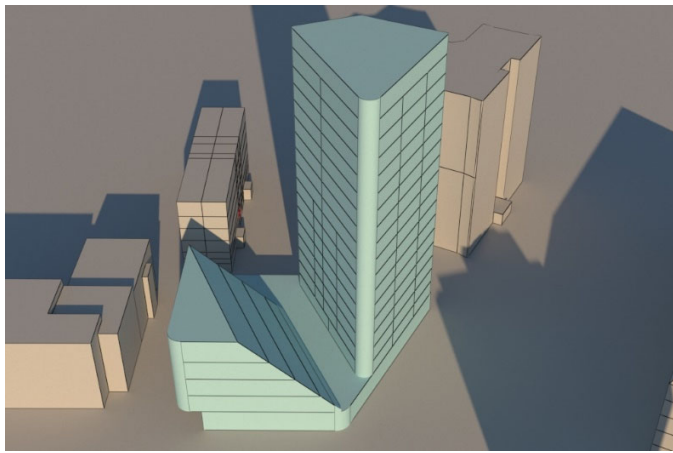
**21. marec**



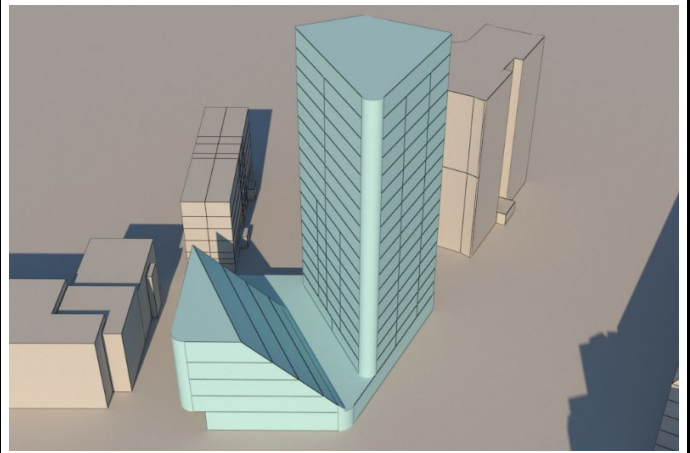
6h00min



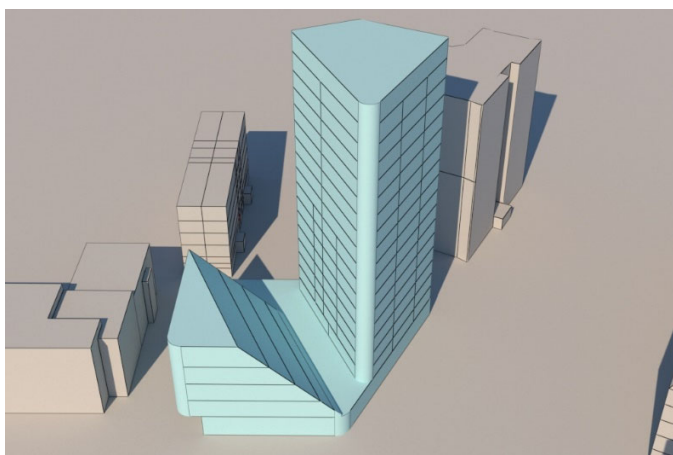
7h00min



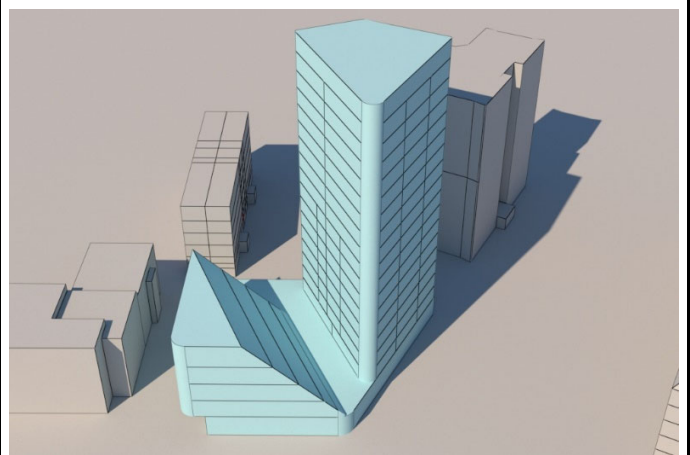
8h00min



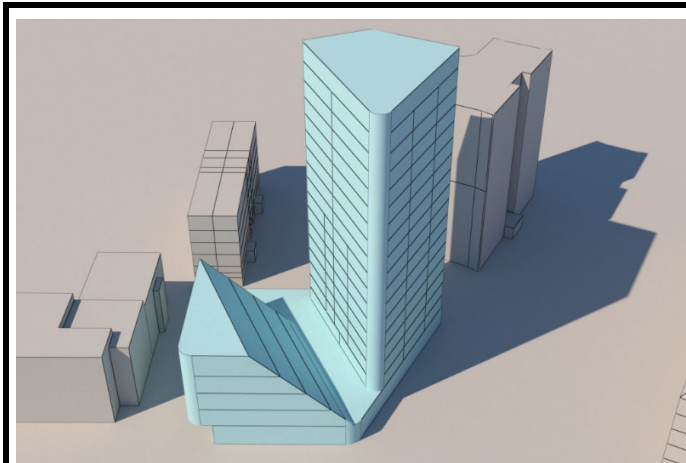
9h00min



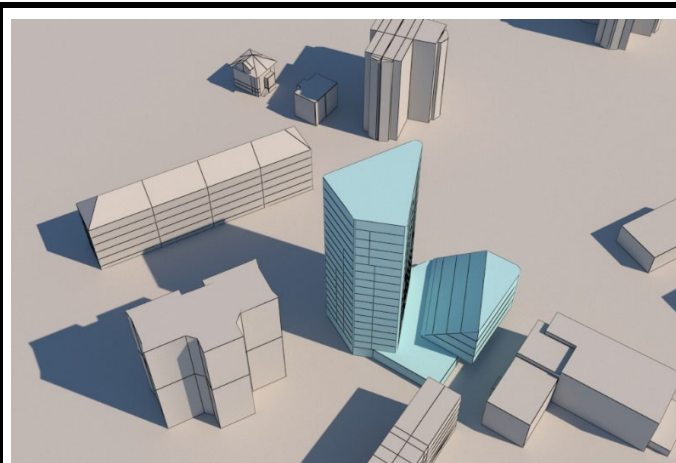
10h00min



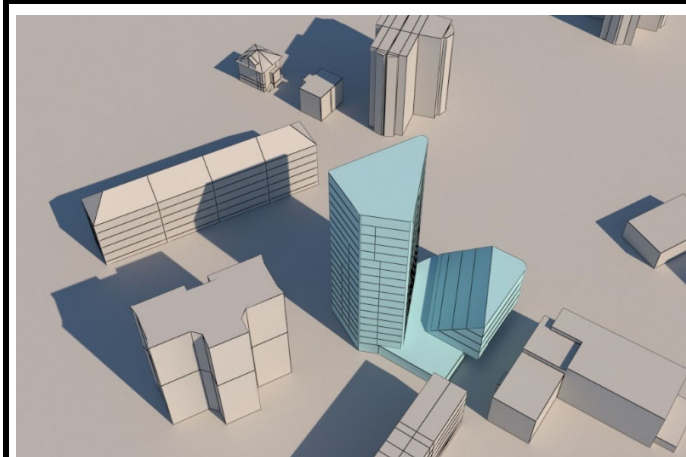
11h00min



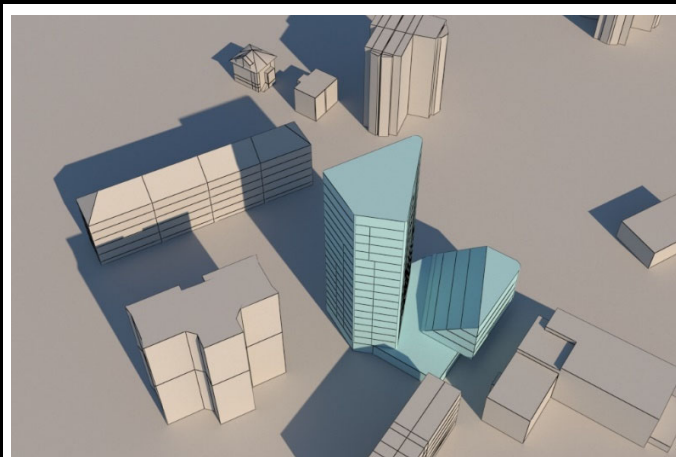
12h00min



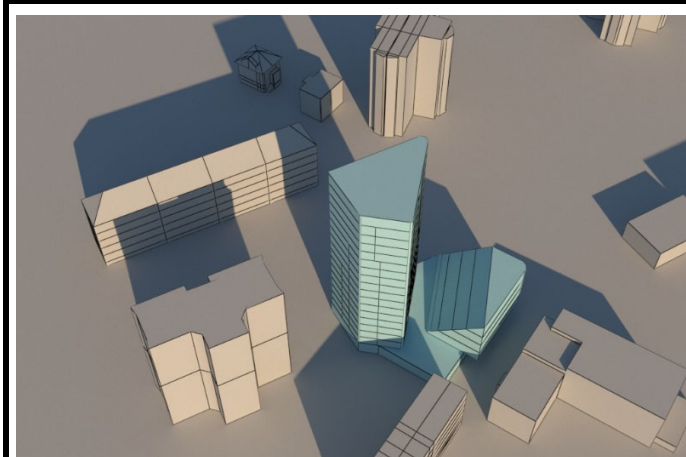
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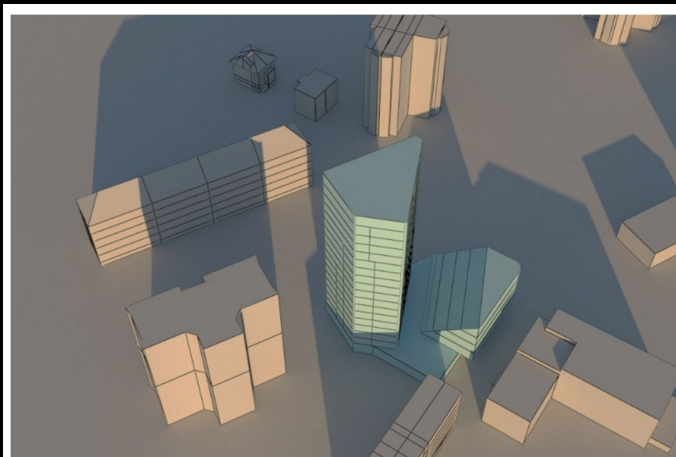
14h00min



15h00min

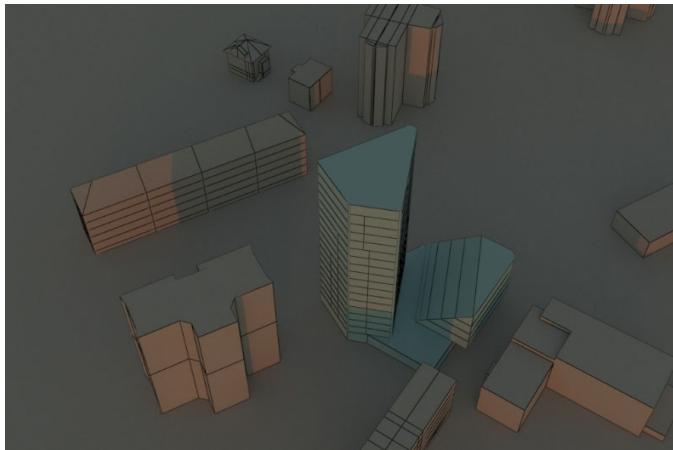


16h00min



17h00min





18h00min