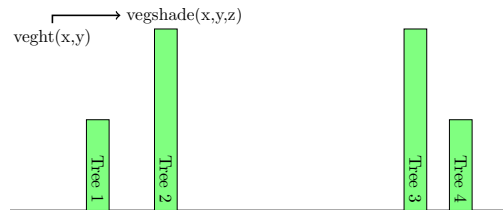
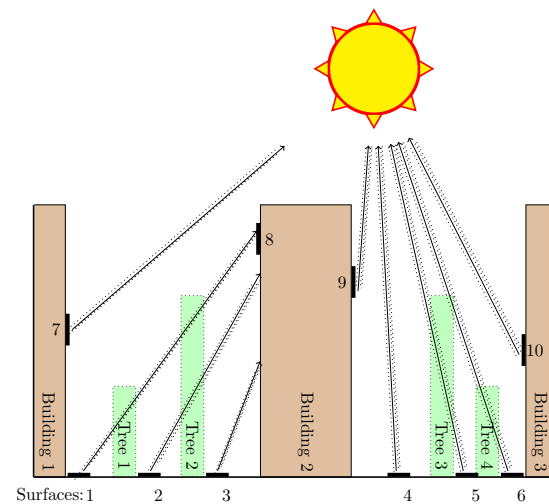


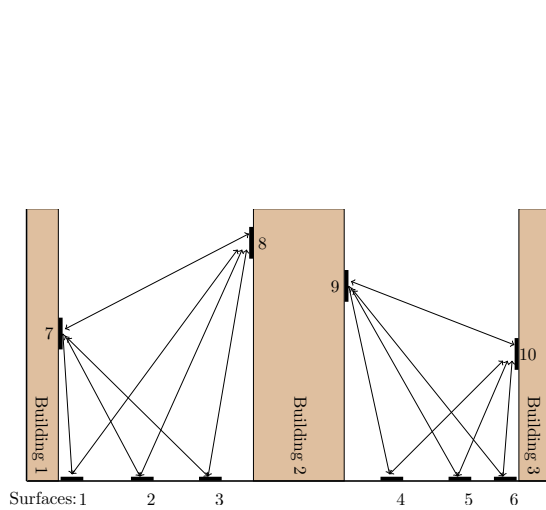
(a) Building height arrays.



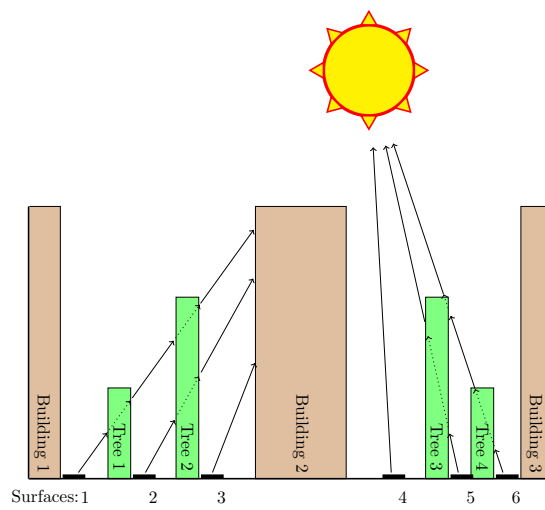
(b) Vegetation height arrays.



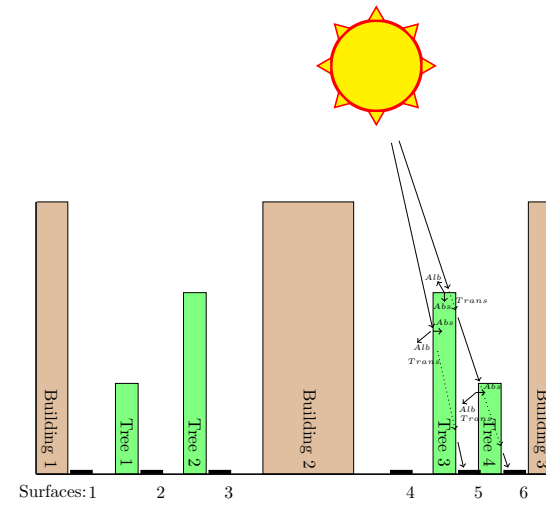
(c) Initial view angles ray tracing.



(d) TUF-3D unmodified shading.



(e) VTUF-3D modified shading.



(f) VTUF-3D reverse ray tracing.