

9 Environmental

9.1 Site Overview and History

The site was previously undeveloped with no significant changes to the forest land cover noted in the available aerial mapping from 1956 to 2006. The overhead powerline had been established by 1956 and is located approximately 170m east of the site, refer to Figure 3 .

Development on the land north of the study site began in 2003 and was extended gradually southwards to the study site. The site was cleared of forestry in 2015 (Google Earth). The area east the site appears to have been used as a drainage pond for runoff from the construction compounds north of the site, refer to Figure 4 for 2009-2015. By 2018, the drainage pond appears to be infilled (Figure 4).

Figure 3 Aerial photography of the site. Source: 1956-1987 Norge Bilder; 2006 Google Earth.

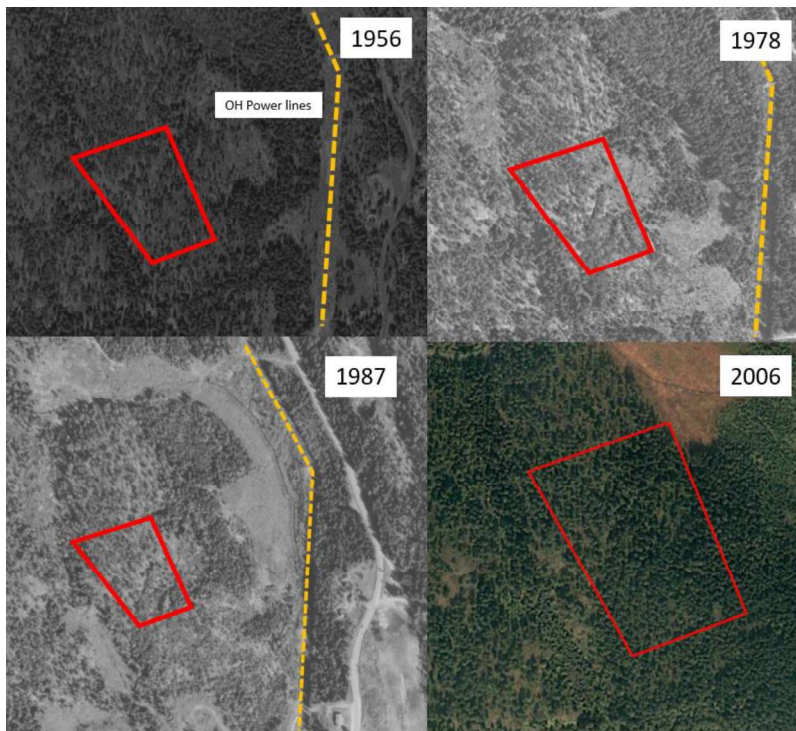
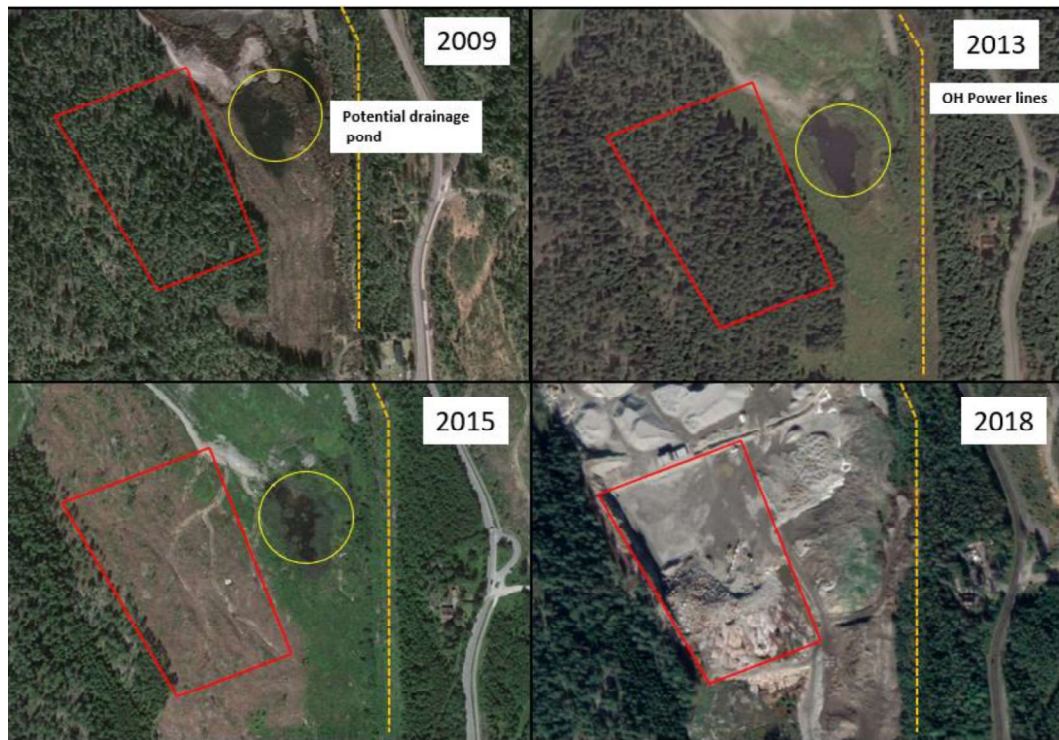


Figure 4 Aerial photography of the site 2009 -2019. Source: Google Earth.



9.2 Surrounding Site Use

The site is currently under construction for the Green Mountain data centre. The land south of the site will be used for the Phase 2 development.

There are two clusters of dwellings east and south of the site approximately 170m and 200m respectively, refer to Figure 5 Surrounding site use. Source Norge Bilder (2020).below. These are relevant with regard to sensitive receptors in terms of noise and air quality emissions.

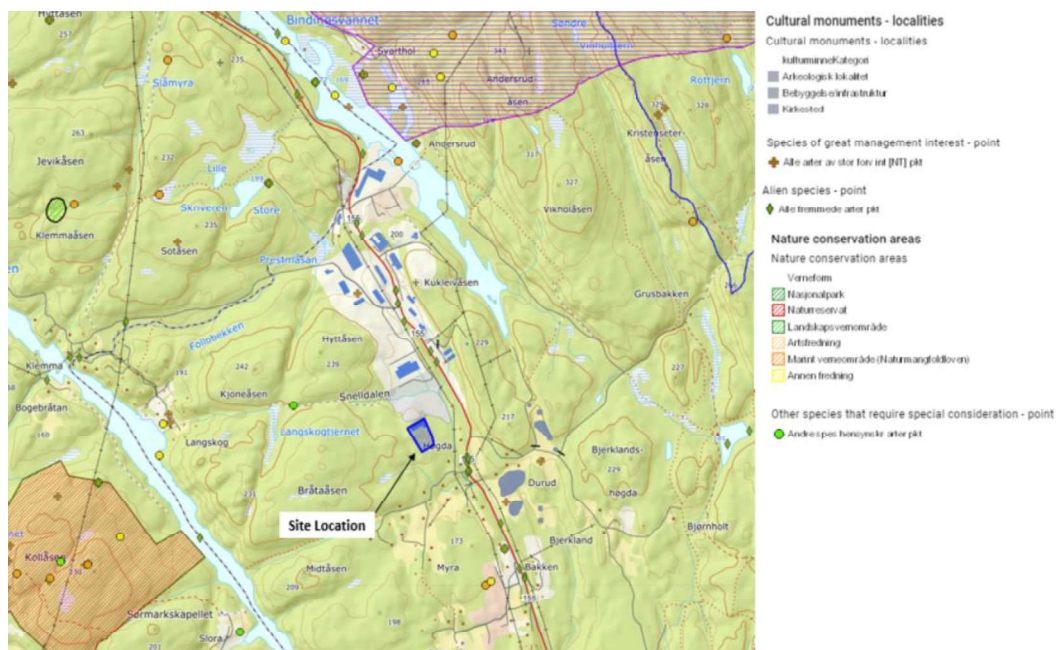
Figure 5 Surrounding site use. Source Norge Bilder (2020).



9.3 Protected Natural Areas

The Miljødirektoratet mapping database was used to identify protected natural areas. There are no protected natural areas, nature conservation areas nor proposed nature conservation areas within or in proximity to the study site.

Figure 6 Protected areas and areas of note Source Miljødirektoratet Ecological Basemap.



9.4 Habitats

The Miljødirektoratet mapping database was reviewed for habitats of importance. There are no habitats of importance within or in proximity to the site.

9.5 Cultural Heritage Sites

The Kulturminnesøk online mapping was reviewed for cultural sites in proximity to the site. There are no protected cultural sites within or in proximity to the study site. The nearest sites are approximately 700m east and south east of the study site, refer to Figure 7 below. The cultural sites are described as cultivation tracks and settlement areas.

Figure 7 Protected cultural sites. Source Kulturminnesøk.



9.6 Land Zoning

The local zoning for the site was reviewed on the Enebakk municipality mapping. The site is zoned⁶ for 'Industry/warehouse' and located in a sub-area A3, refer to Figure 8 Zoning plan for the Enebakk municipality. Source Enebakk commune/Geonorge SePlan.below.

For buildings and facilities within 'industrial/warehousing' zoned areas they must comply with the regulatory provisions⁷ for the area. The regulatory provisions relevant to sub-area A3 and 'Industry/warehouse' zoning are set out below (as translated):

Section 2.1.1:

- Only buildings for industry and warehousing may be built within the construction area.
- Production areas must be of the dry type i.e. without process wastewater.
- Offices must be associated with the local industry and warehousing
- Sales from the facilities own production are permitted.

Section 2.3 Terrain heights and the heights of buildings

⁶ Enebak commune, available at:

http://webhotel2.gisline.no/GisLinePlanarkiv/3028/AndreDokumenter/3028430_plankartendring.pdf

⁷ Reguleringsbestemmelser I Tilknytning til Plan for GRAN NY4SYD (2019), available at:

http://webhotel2.gisline.no/GisLinePlanarkiv/3028/GjeldendeBestemmelser/3028430_bestemmels er.pdf

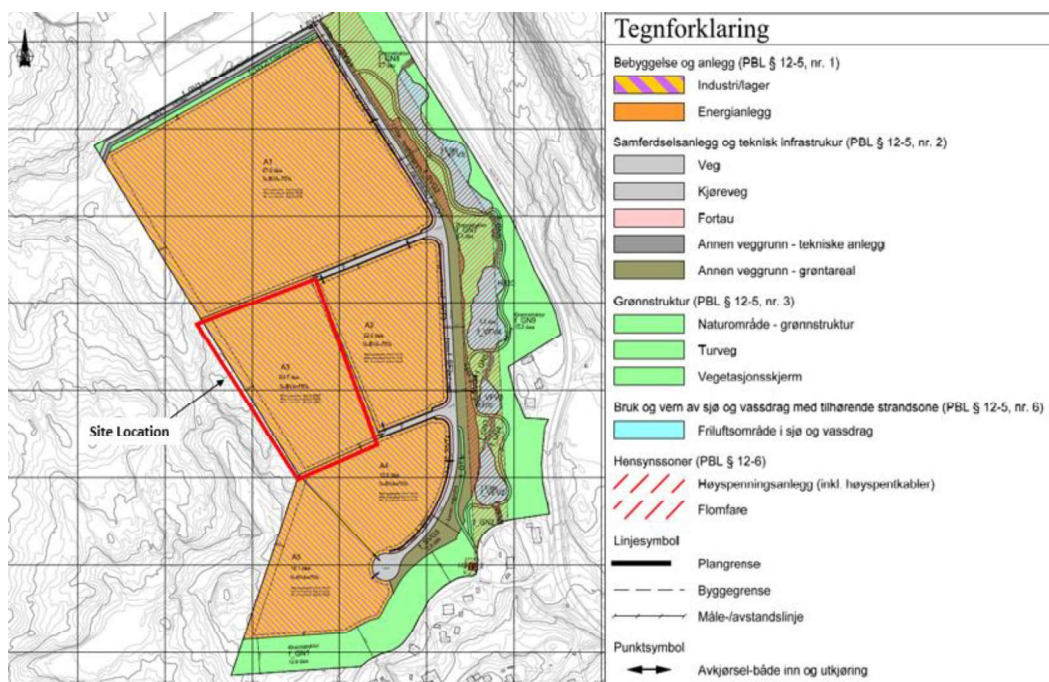
Section 2.3.3:

- Sub-area A3 shall be developed with elevations for finished terrain between +172.5m and +176m. Maximum construction height (ridge height) cannot exceed elevation +200m or exceed 25m above the finished level terrain.

Section 2.8 Temporary Crushing Plant

- Temporary crushing plant can be established in the area north of A3. It is not permitted to add material from outside for crushing. The Pollution Control Regulations must be complied with, including Chapter 30 and 30-11 on.

Figure 8 Zoning plan for the Enebakk municipality. Source Enebakk commune/Geonorge SePlan.



9.7 Geological and hydrogeological conditions

The site is located in an area with outcropping bedrock / thin soil cover, see Figure 9 and Figure 10. Areas east of the site have thin covers of marine sediment <0.5 m thick.

The bedrock in the area primarily comprises gneiss, see Figure 11. Groundwater wells in the area indicate that groundwater is found in the bedrock fracture system, often at shallow depths.

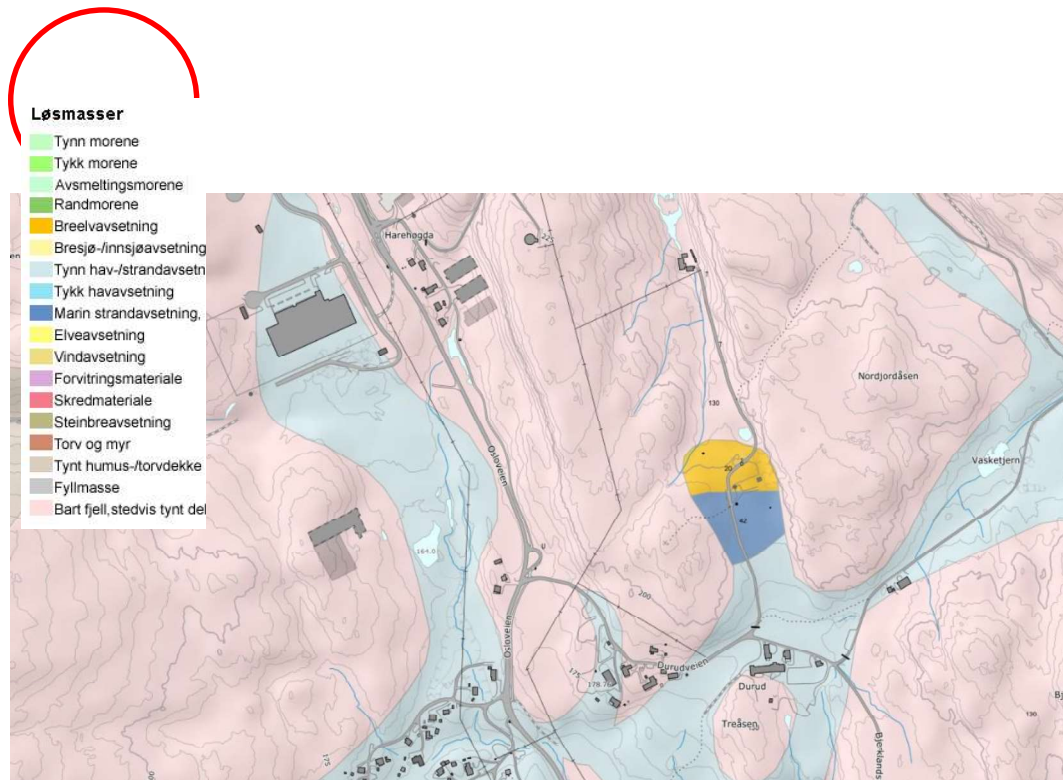


Figure 9 Subsoil geology from NGU [2], legend: pale pink - rock outcrops / thin soil cover, pale blue – thin marine/beach deposits.

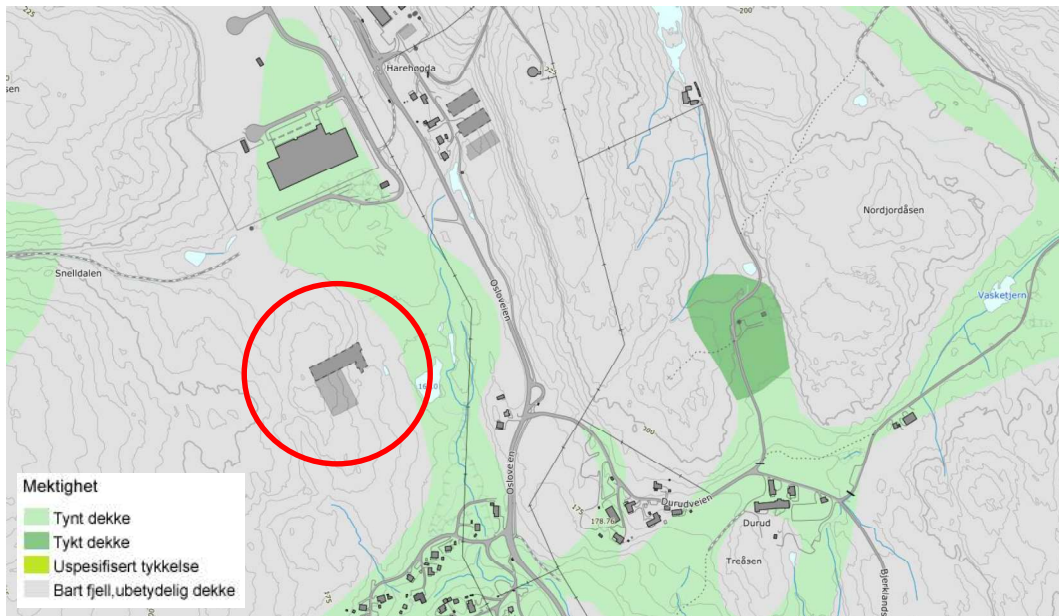


Figure 10 Subsoil thickness [2], legend: darker green – thick cover, pale green – thin cover, bright green – unspecified cover, white – rock outcrops / insignificant cover.

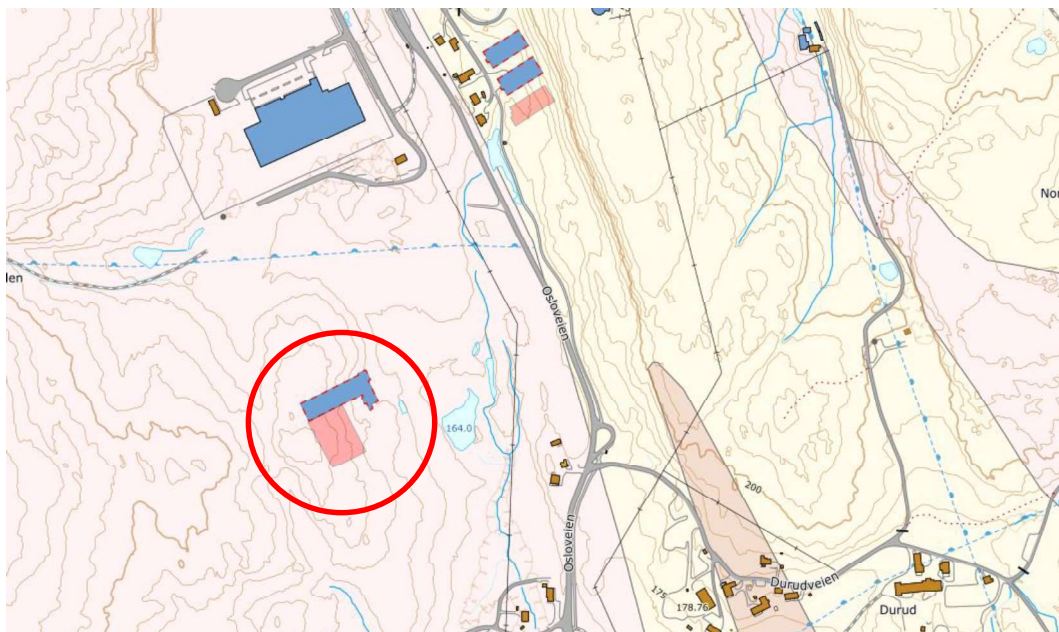


Figure 11 Bedrock map from NGU [4], legend: pale pink – granodiorite augen gneiss.

10 Geotechnical conditions

An assessment of the geotechnical conditions by Procon [5] for the phase 2 construction stage has been made available for this review. The report describes seismic conditions, settlement and bearing capacity assessments and foundation solutions.

Based on the Procon report, it is understood that the phase 2 building is in a flat area of a previous quarry where the blasted rock surface is encountered at terrain. The building is founded directly on bedrock, which is considered to be of high quality and well suited for the intended construction. Foundations are to be secured with rock bolts where pull and/or shear forces exceeding gravitational / frictional resistance are expected.

It is noted that the depth to bedrock is between 0.3 to 4 mbgl. The soil conditions at the site is described as a thin layer of crushed rock, and it is not clear if other sediments are found below this layer.

Detailed design documentation, e.g. calculation reports, and as-built drawings has not been reviewed as part of the present due diligence review.

10.1 Ground contamination

In the contaminated land register, there is a mapped landfill with registered contamination related to alum shale runoff in vicinity of the site. It is not clear if and how this runoff might have influenced the GM site.