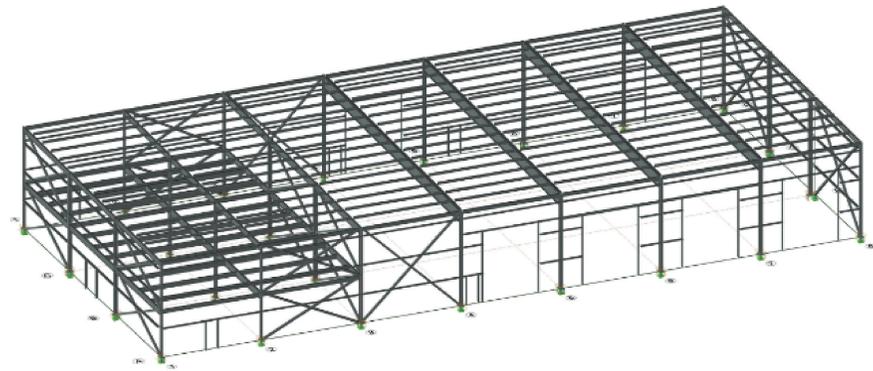


Andersen Asphalt Building Design and Site Plan

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Gravity Load Information for ASCE 7-16

Level	Load Type	Magnitude	
Roof	Dead	18.0	psf
Ground	Snow	36.0	psf
Roof	Snow	27.7	psf
Roof	Live	20.0	psf
Floor	Dead	65.0	psf
Floor	Live	80.0	psf

Figure 1 – Isometric View and Loading Information

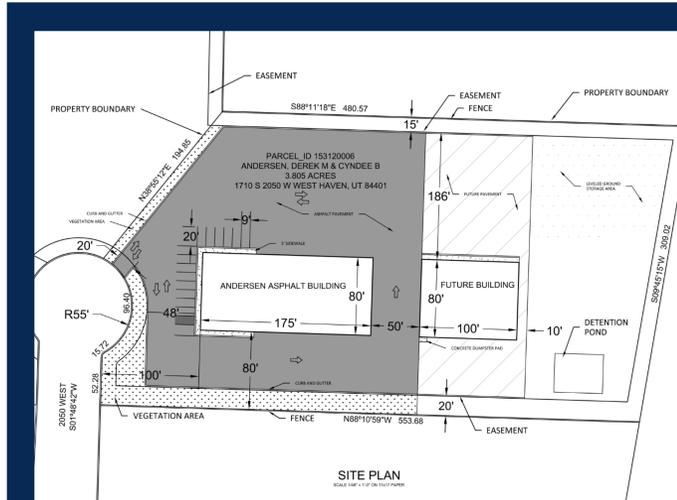


Figure 3 – Site Layout and Drainage

Site plan showing building location relative to property lines, as well as parking, drainage and projected future development

Overview

Andersen Asphalt is a growing asphalt repair company located in Ogden, Utah. They have outgrown the capacity of their current office and have requested a new building design to better accommodate their current and future business needs. The purpose of this project is to provide a new building design with adequate office and storage space for their current needs, as well as room for future expansion.

Requirements

- **10,000 ft² Shop** – Workshop will be used for maintenance of heavy asphalt trucks and equipment, as well as to house weather-sensitive equipment and materials. Shop area must be clear span with no interior columns
- **Office Space** – The office needs to have enough square footage for offices, a reception area, lobby, breakroom, bathrooms, and a maintenance closet

Alternatives

Five alternatives were considered:

- No Build
- New Lease
- New Steel Building
- New Concrete Tilt-up Building
- New Insulated Concrete Form Building

After evaluating the alternatives with consideration to cost, highway accessibility, functionality, and environmental impact, the New Steel Building was selected as the preferred alternative.

Building Design

The building was designed with steel x-braced frames acting as the lateral force resisting system. Steel girders and columns support the gravity loading on the building, and the outside envelope consists of steel deck on the roof with insulated metal panels for the walls. The shop area is 10,000 ft² ft with 6 overhead garage doors to allow convenient access for large trucks and equipment. The office area is nearly 8000 ft² split between the ground floor and a mezzanine.



Figure 2 – Plan View

Architectural layout of the first floor (left) and mezzanine (right) This layout includes space for the workshop, 7 offices, a break room, conference rooms and a reception area

Site Description

The site for this project is a 3.8-acre parcel of land in West Haven, UT. The designed site layout includes:

- Specified areas for building placement, pavement, landscaping, and utility easements relative to existing property lines.
- Parking stalls, parking lot area, drainage layout, and detention basin that meet AASHTO minimum standards.
- Potential placement for additional development to accommodate future expansion.

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