SPORTS PERFORMANCE – BASKETBALL CENTER

Building rendering by KPFF

Location: OSU Campus Corvallis, Oregon

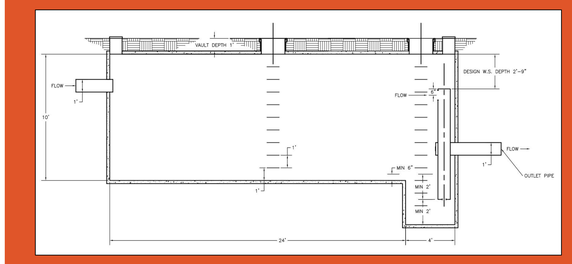
WATER RESOURCE DESIGN:

CONSTRAINTS

- *City of Corvallis Stormwater Design Manual 2015*
- 2, 5, 10, and 100 yr 24 hr design storm
- Available site space for facility

DETENTION VAULT FACILITY

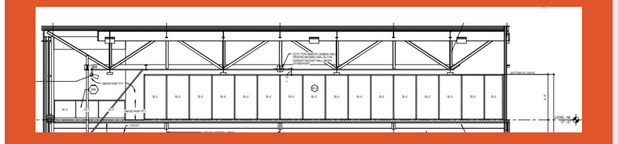
- Vault size: 28 x 12 x 10



LIGHTING DESIGN:

- LED Luminaires for performance efficiency
- Electrical lighting schematics for Basketball courts, first aid stations, and offices
- Daylight harvesting, and motion detection systems
- Footcandles and Lighting Power Densities calculated in AGi32 and Revit.

LIGHTING PLAN



Proposed lighting orientations by KPFF

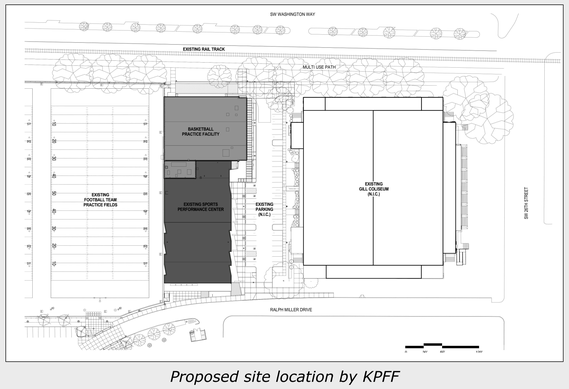
PROJECT KEYNOTES:

- This building includes two main floors with two mezzanines, totaling four distinct levels
- Mixed use building
- North building: Basketball practice facilities for both the Men's and Womens' teams, staff offices, locker rooms, film rooms
- South building: Weight training facility, wrestling room

DESIGN OBJECTIVE:

- Design a safe, sustainable, economical, functional, and aesthetic building.
- Create a gravity resisting system to meet NCAA clearance requirements, and Owner's noise isolation request.
- To provide a foundation system that effectively transfers the column axial loads to the soil without exceeding the soil bearing pressure.
- To design a lateral resisting system to meet seismic and wind load requirements.
- To design artificial lighting systems that includes daylight harvesting practices

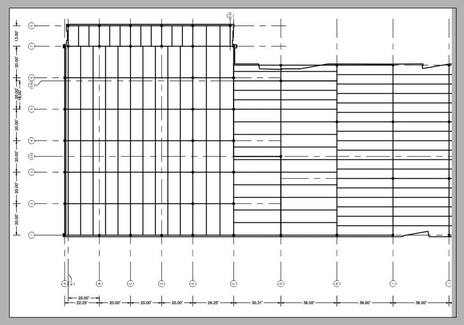
SITE LOCATION:



Proposed site location by KPFF

STRUCTURAL DESIGN:

GRAVITY RESISTING SYSTEM



Steel members:

- High strength to weight ratio
- Low environmental impact

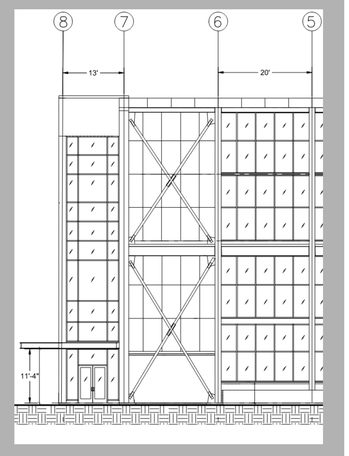
Truss:

- Long spans
- Cost effective
- High load capacity

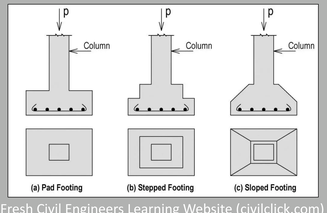
LATERAL FORCE RESISTING SYSTEM

Steel brace frames:

- Strength to support the size of the basketball courts
- Meets requirements for seismic and wind loads



FOUNDATION SYSTEM



Fresh Civil Engineers Learning Website (civilclick.com)

Shallow Foundation; Isolated Pad Footing:

- Cost effective
- Easy to construct
- Acceptable for small to medium sized facilities in regions with adequate bearing pressure.

Oregon State University