

# THE GALANTE ARCHITECTURE STUDIO

SCHEMATIC DESIGN



## TOWN OF BELMONT

# BELMONT SKATING RINK

February 6th, 2023

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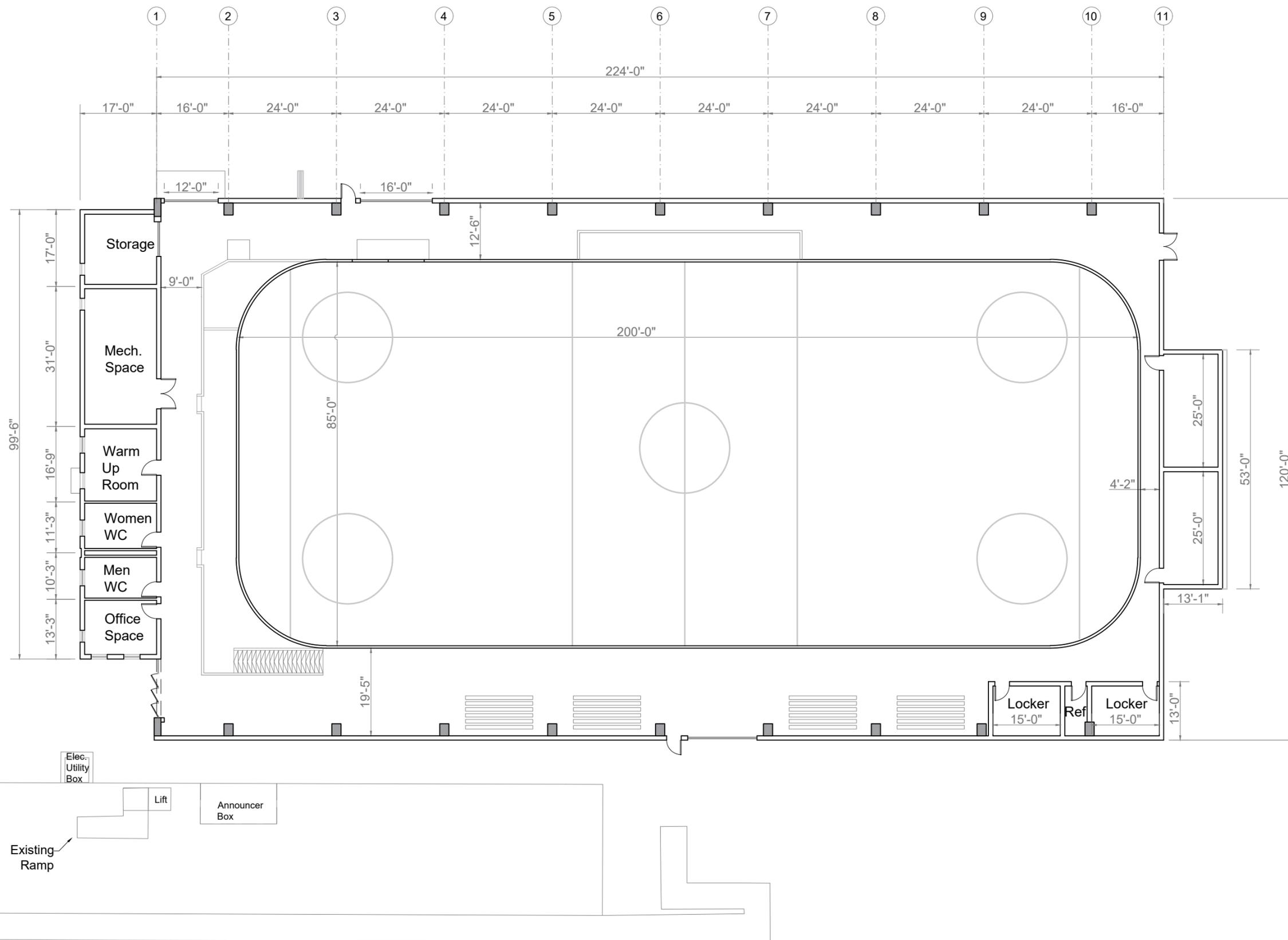
# CURRENT STATE

Existing Site Plan

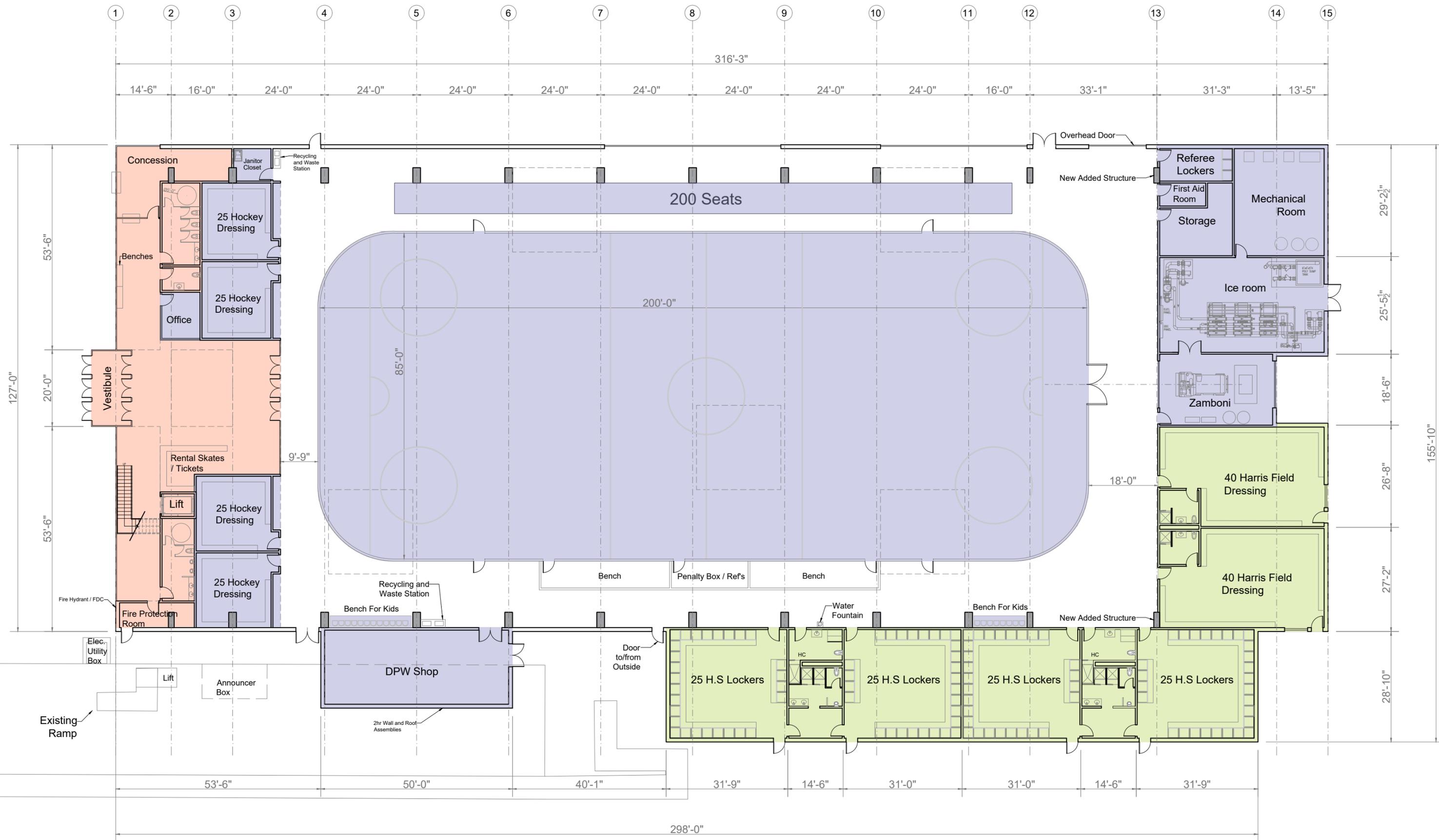


Proposed Site Plan - Photovoltaic Panels





Existing Floor Plan ± 29,600 sf  
 Building occupied for 4 months

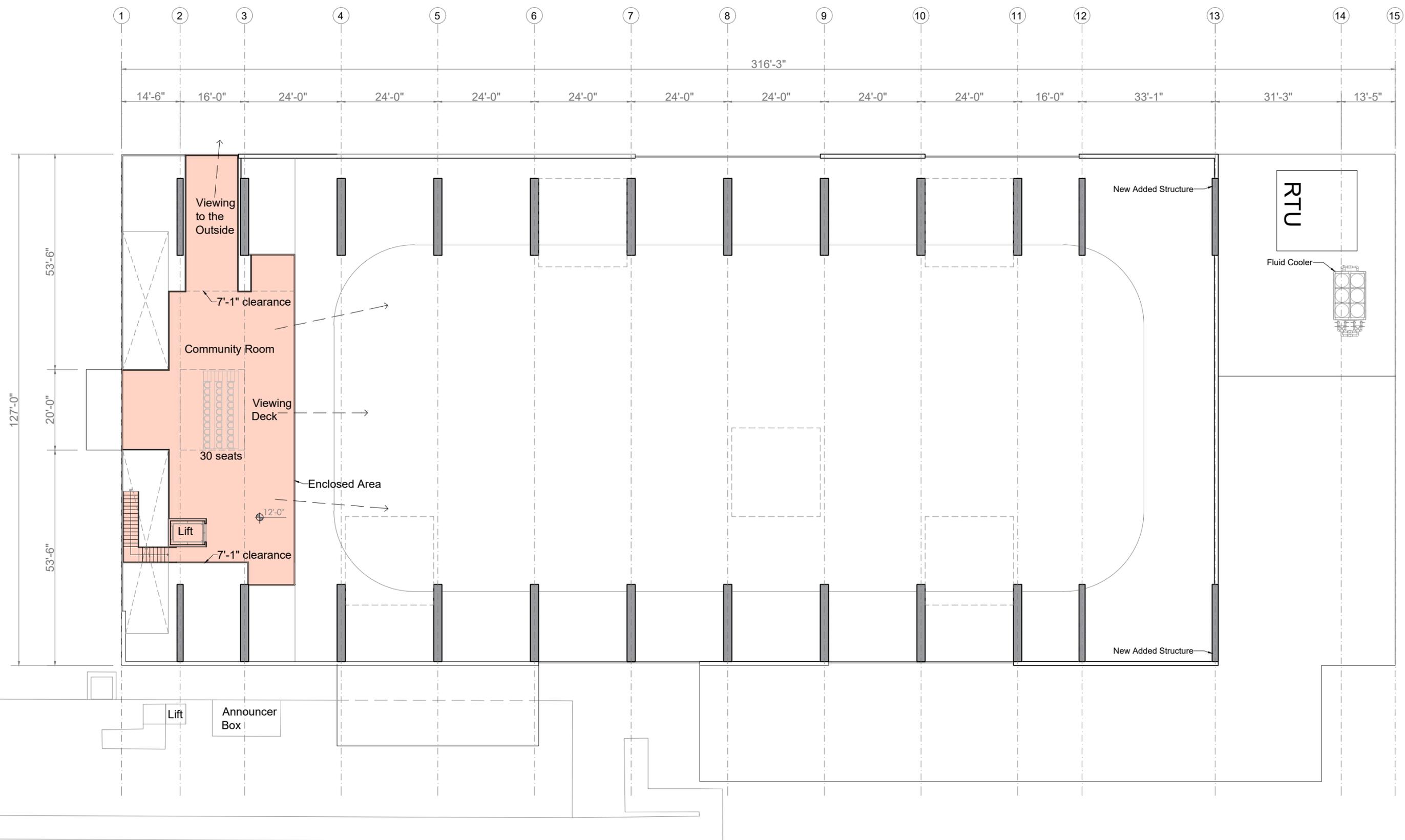


**TGAS** ORIGINAL PLAN

Original 2022 - Proposed Floor Plan ± 45,740 sf

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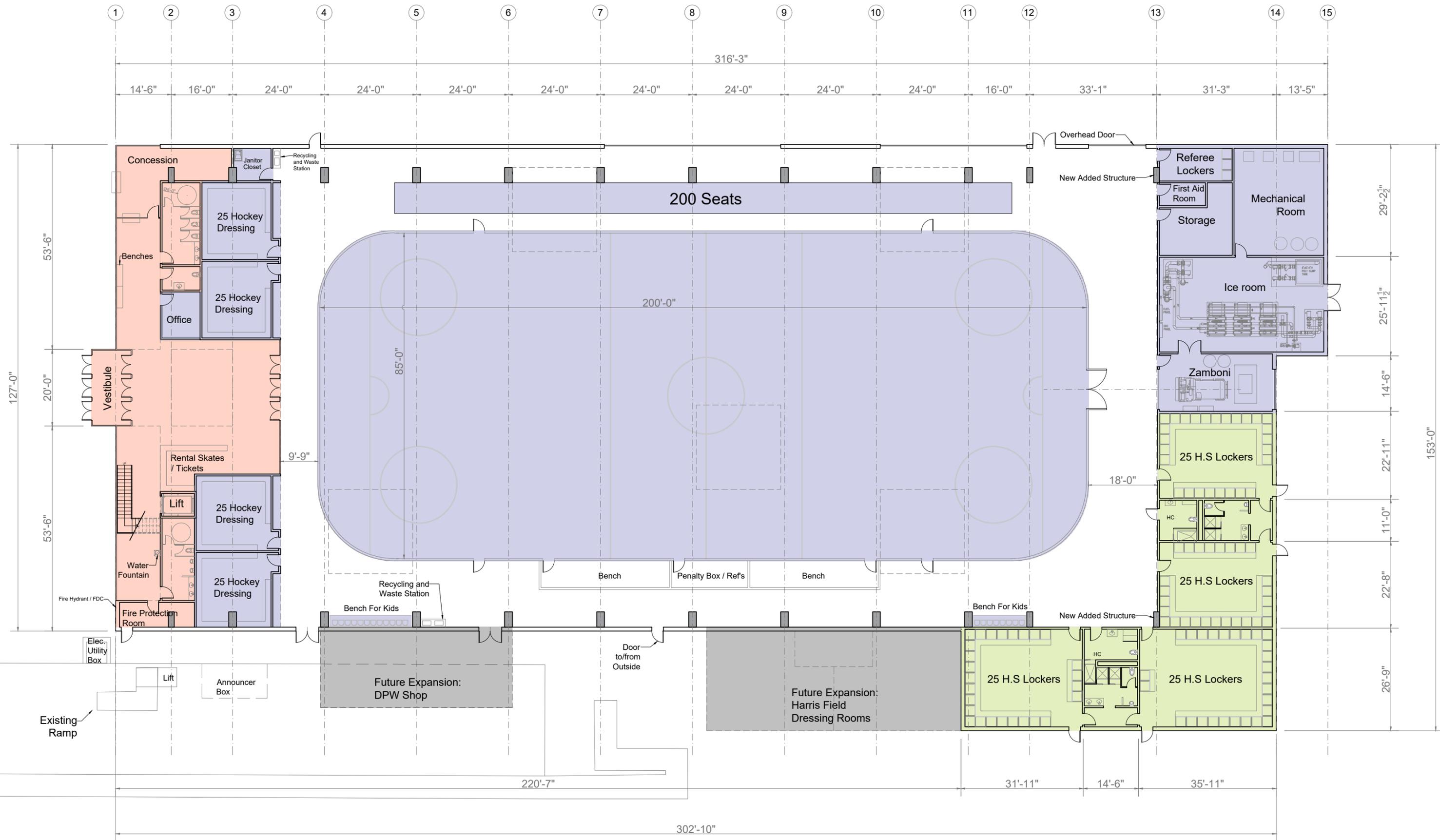


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ORIGINAL PLAN

Original 2022 - Proposed Mezzanine ± 2,960 sf



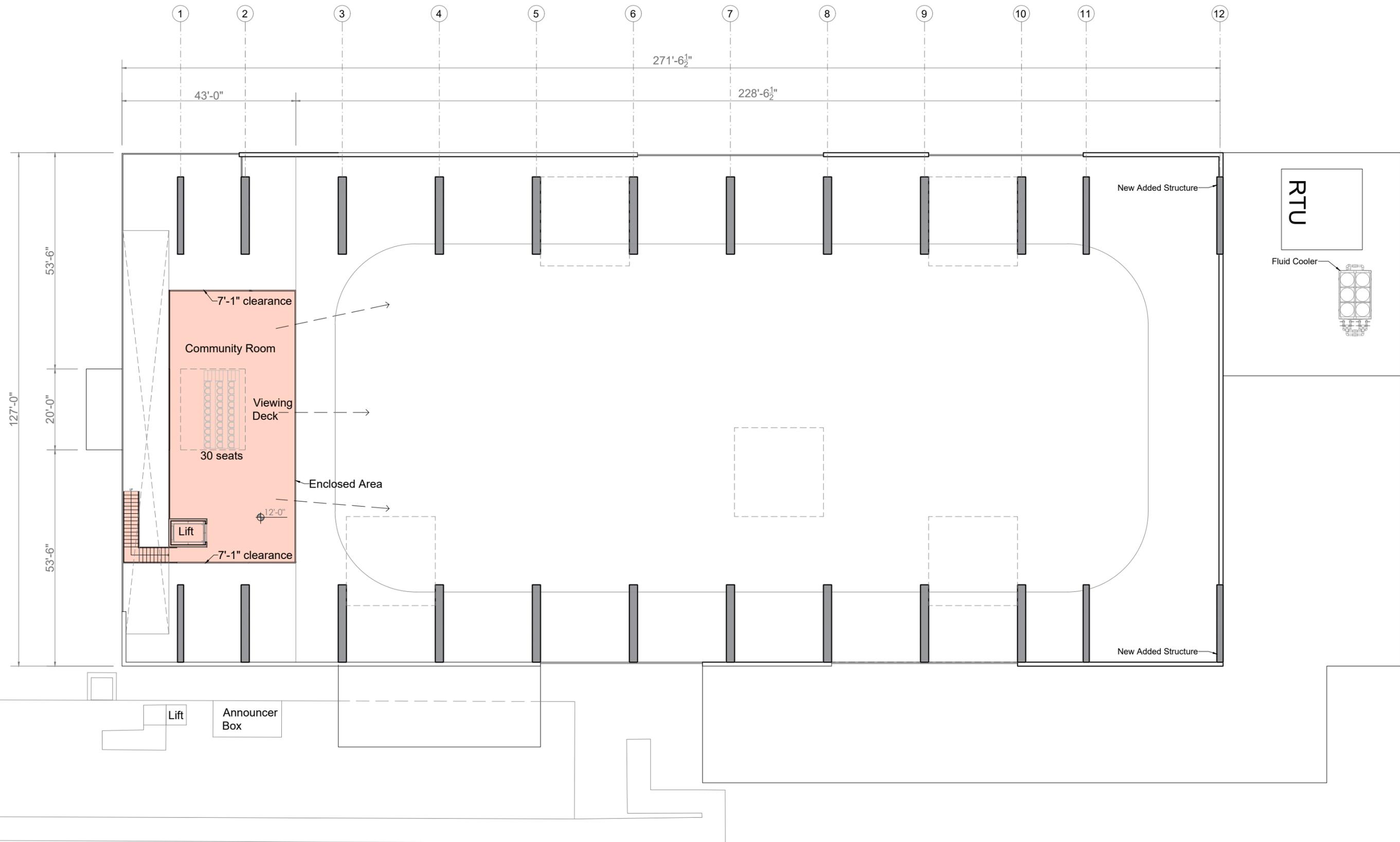


# TGAS OCTOBER PLAN

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October 2022 - Proposed Floor Plan ± 41,464 sf



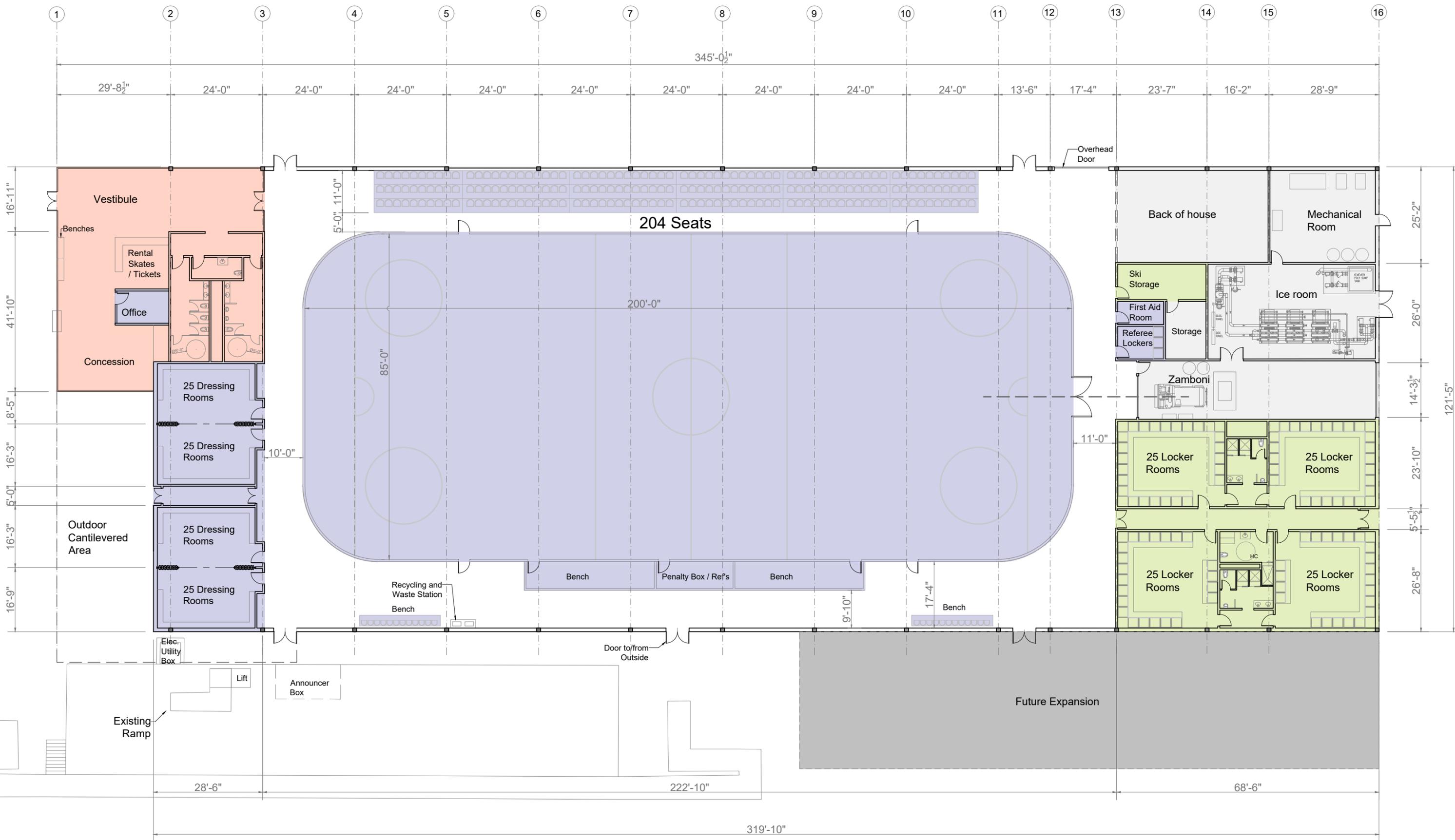


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# OCTOBER PLAN

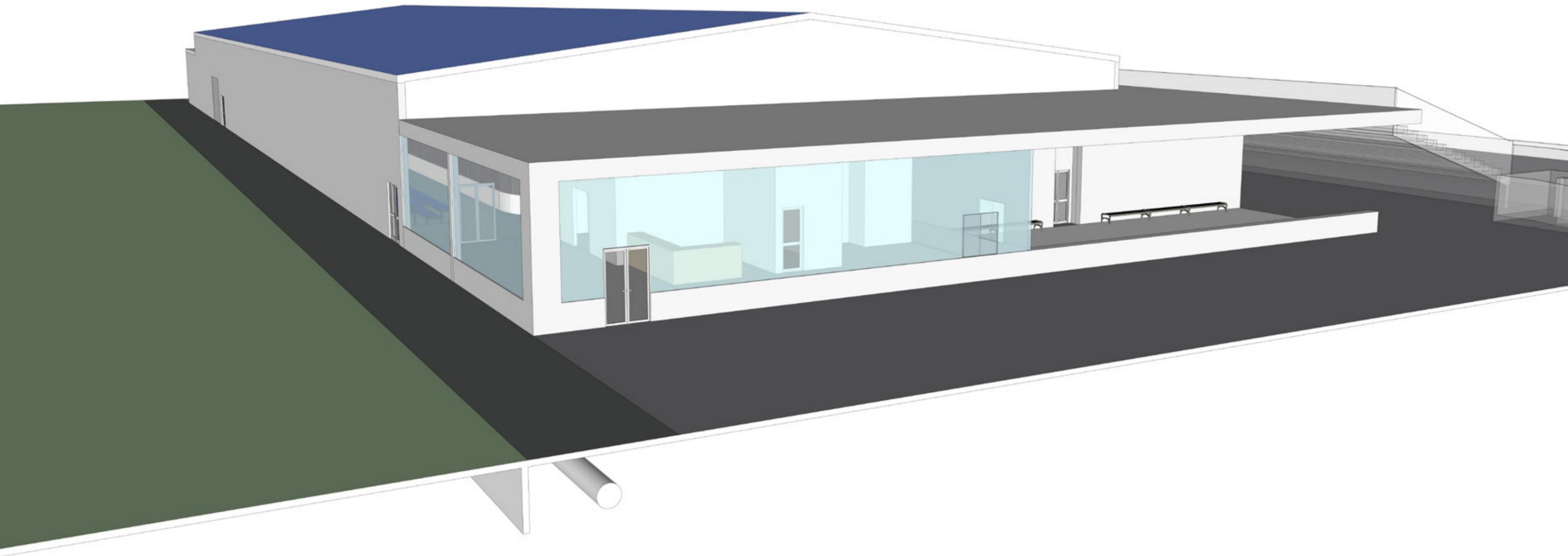
October 2022 - Proposed Mezzanine ± 2,121 sf





Spring 2023 - Proposed Floor Plan ± 40,313 sf  
 Building occupied for 12 months for Athletic and Recreation programs





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PROPOSED

South West Conceptual Facade View



## New Belmont Municipal Skating Rink at 40,313 sf

Trade Costs	\$	15,163,735
Solar PV	\$	1,092,000
GCs and Fee	\$	2,729,472
<b>Sub-total</b>	<b>\$</b>	<b>18,985,207</b>
Projected Cost Escalation of 11%	\$	2,088,373
<b>Sub-total</b>	<b>\$</b>	<b>21,073,580</b>
Design Contingency - 16%	\$	3,371,773
Owners Contingency - 5%	\$	1,053,679
<b>Sub-total</b>	<b>\$</b>	<b>25,499,032</b>
<b>Allowances</b>		
Hazardous Materials - Rink	\$	400,000
<b>Sub-total</b>	<b>\$</b>	<b>400,000</b>
<b>Design &amp; OPM Fees</b>		
Architecture & Engineering Fees - 10%	\$	2,550,000
Solar Design (allowance)	\$	125,000
OPM Fees	\$	906,000
<b>Sub-total</b>	<b>\$</b>	<b>3,581,000</b>
<b>Project Related Costs</b>		
Legal Fees & Advertising	\$	30,000
Owners Insurance	\$	100,000
Geotech & GeoEnvironmental	\$	50,000
Site Survey	\$	18,000
Utility Company Fees	\$	25,000
Testing Services	\$	100,000
Furniture Fixtures & Equipment	\$	100,000
Technology	\$	50,000
<b>Sub-total</b>	<b>\$</b>	<b>473,000</b>
<b>Total Project Cost</b>	<b>\$</b>	<b>29,953,032</b>

# Current rink repair needed

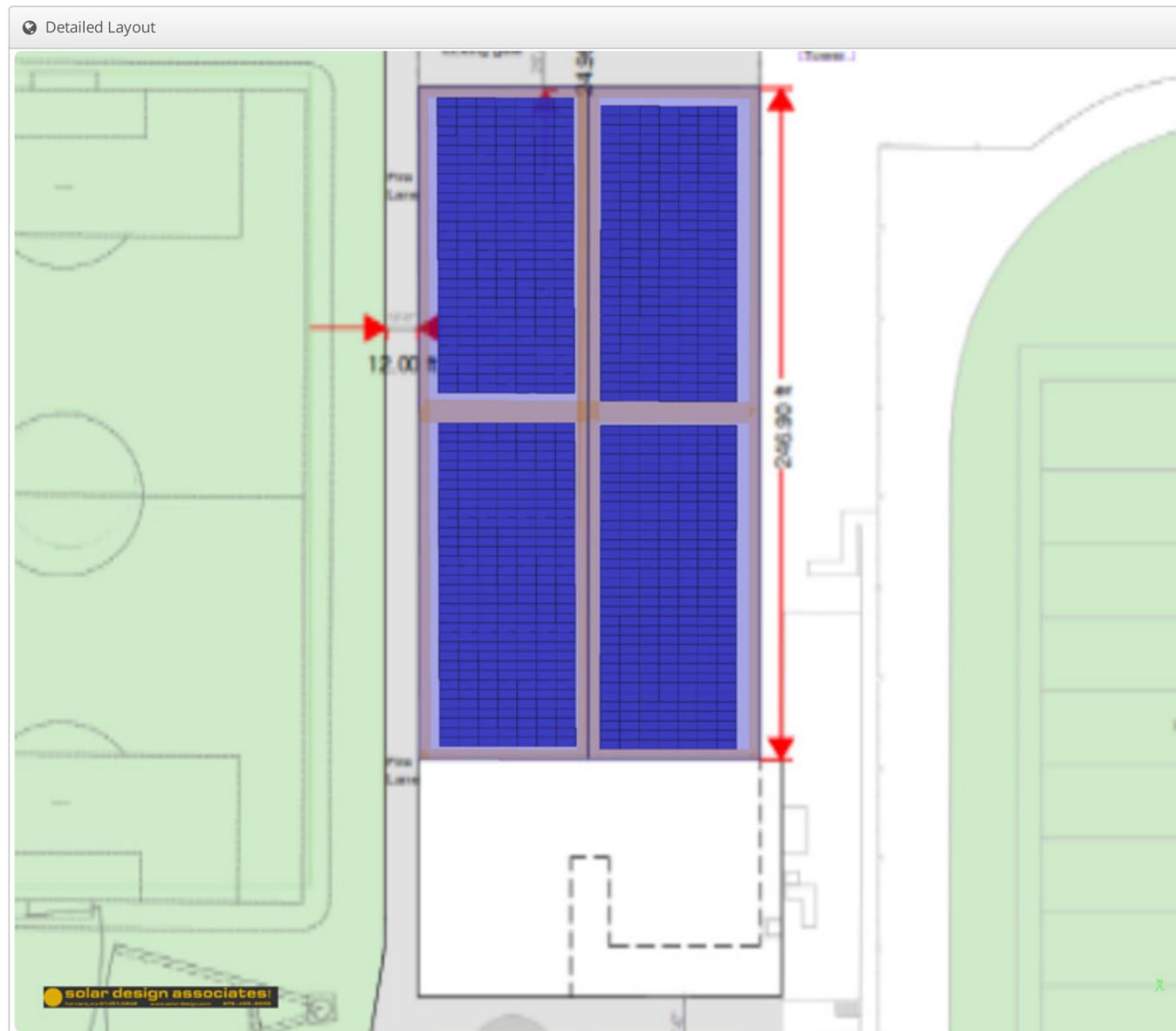
- Rink cannot operate next year without significant investment
  - Condensers leaking - unreparable
  - R-22 refrigerant has been banned for environmental reasons
  - Existing chiller about to fail

# Substantial year over year spending

- Plumbing - leaking
- Plumbing - weak spot potential for pipe break
- 2 hot water heaters need replacement
- Partial HVAC Loss
- Electrical system compromised
- Outdated / Failing mechanical systems
- Significantly failing building envelope
- Lack of energy efficiency or energy savings

# Photovoltaic Panels

## Solar Design

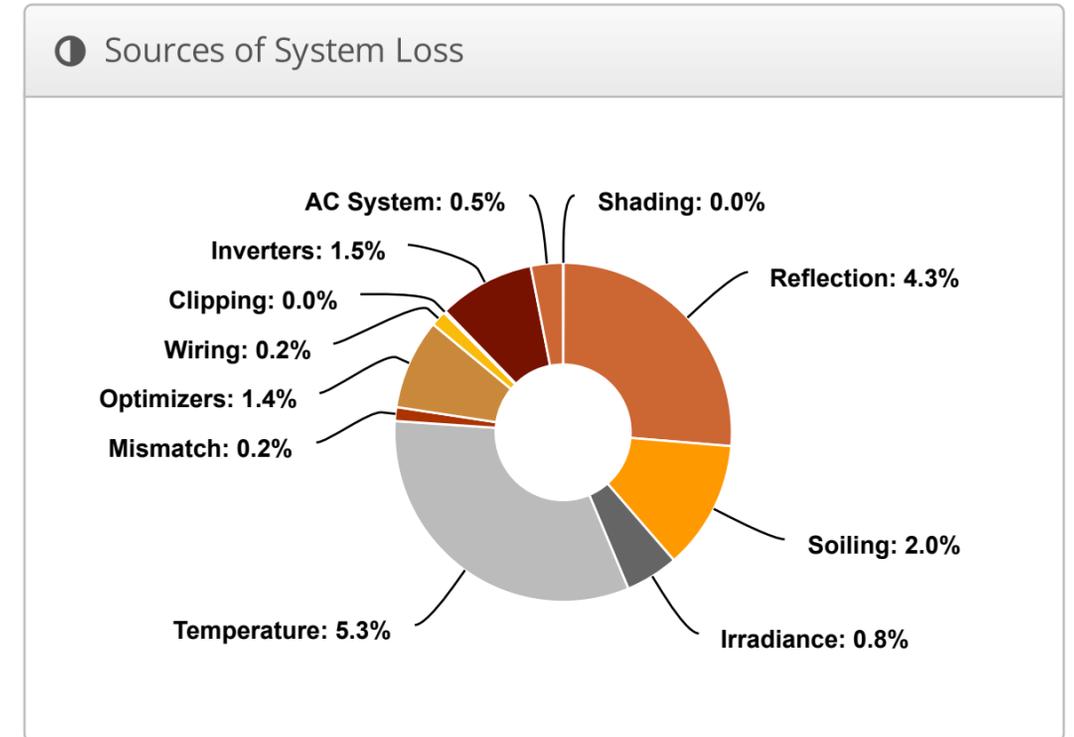
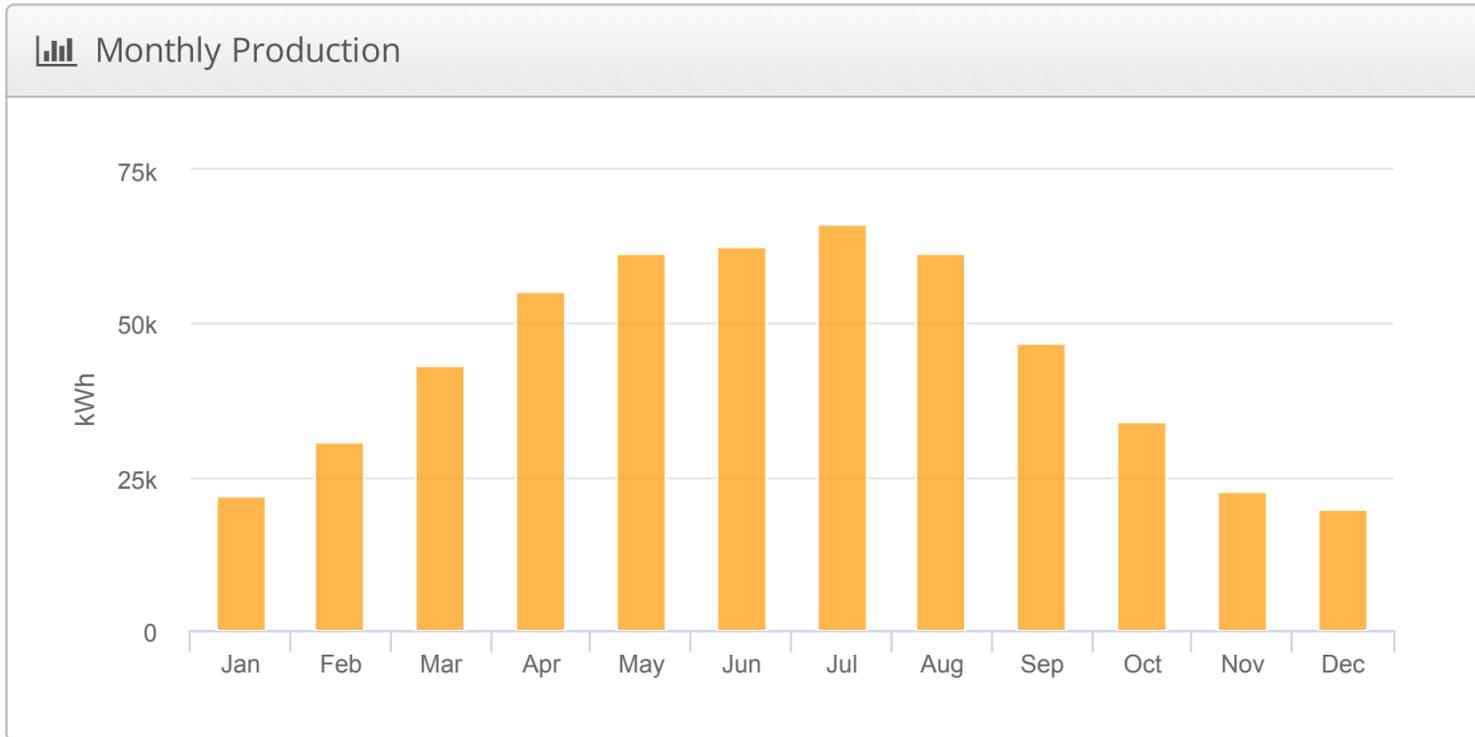
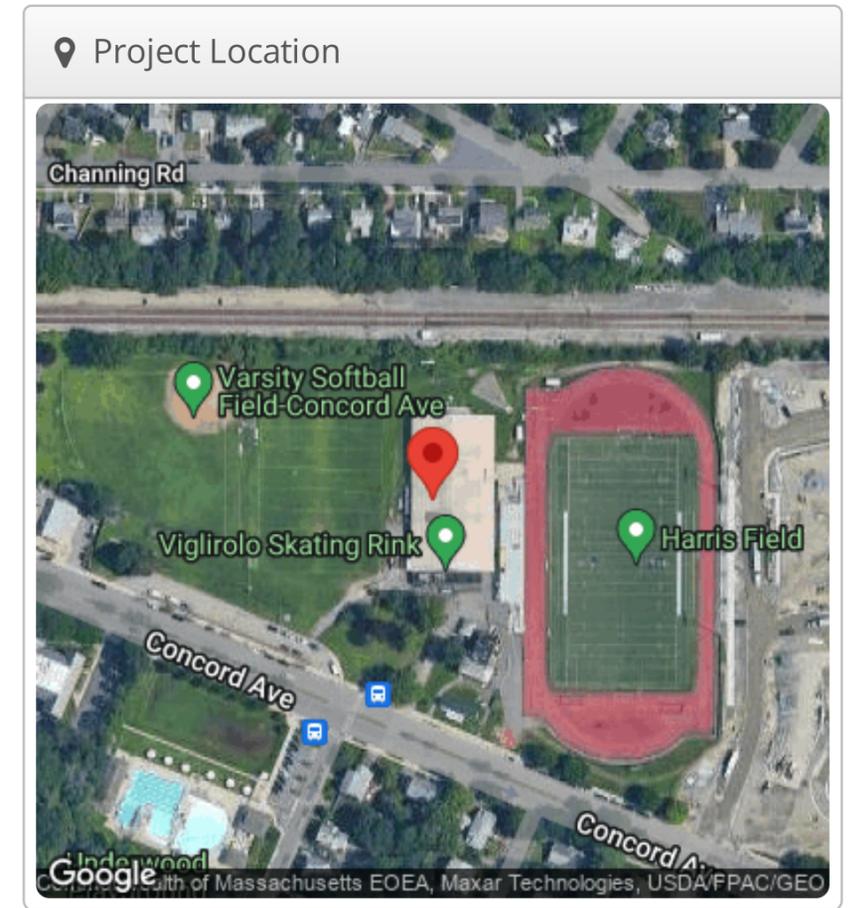


Preliminary estimate at system sizing and cost:

- 436.8 kWdc
- 400.0 kWac
- 526,070 kWhr/year
- \$1,092,000 total system cost, assuming \$2.50/Wdc
- o As a note: under the IRA, municipal projects now qualify for an ITC direct payment of ~26.5% of the total system cost, or ~\$289,380. This should be vetted by town officials and lawyers.

🔧 Report	
Project Name	Belmont Skating Rink
Project Address	221 Concord Ave, Belmont, MA 02478
Prepared By	Nicholas Lawrence nlawrence@solar design.com

📊 System Metrics	
Design	Parametric design 1
Module DC Nameplate	436.8 kW
Inverter AC Nameplate	400.0 kW Load Ratio: 1.09
Annual Production	526.1 MWh
Performance Ratio	84.8%
kWh/kWp	1,204.4
Weather Dataset	TMY, 10km grid (42.35,-71.15), NREL (prospector)
Simulator Version	42f17df9d2-29fbd7cae3-be39569fd0-3d3015eac0



# Building Use

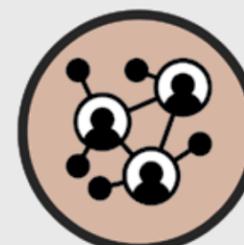
## Program Matrix

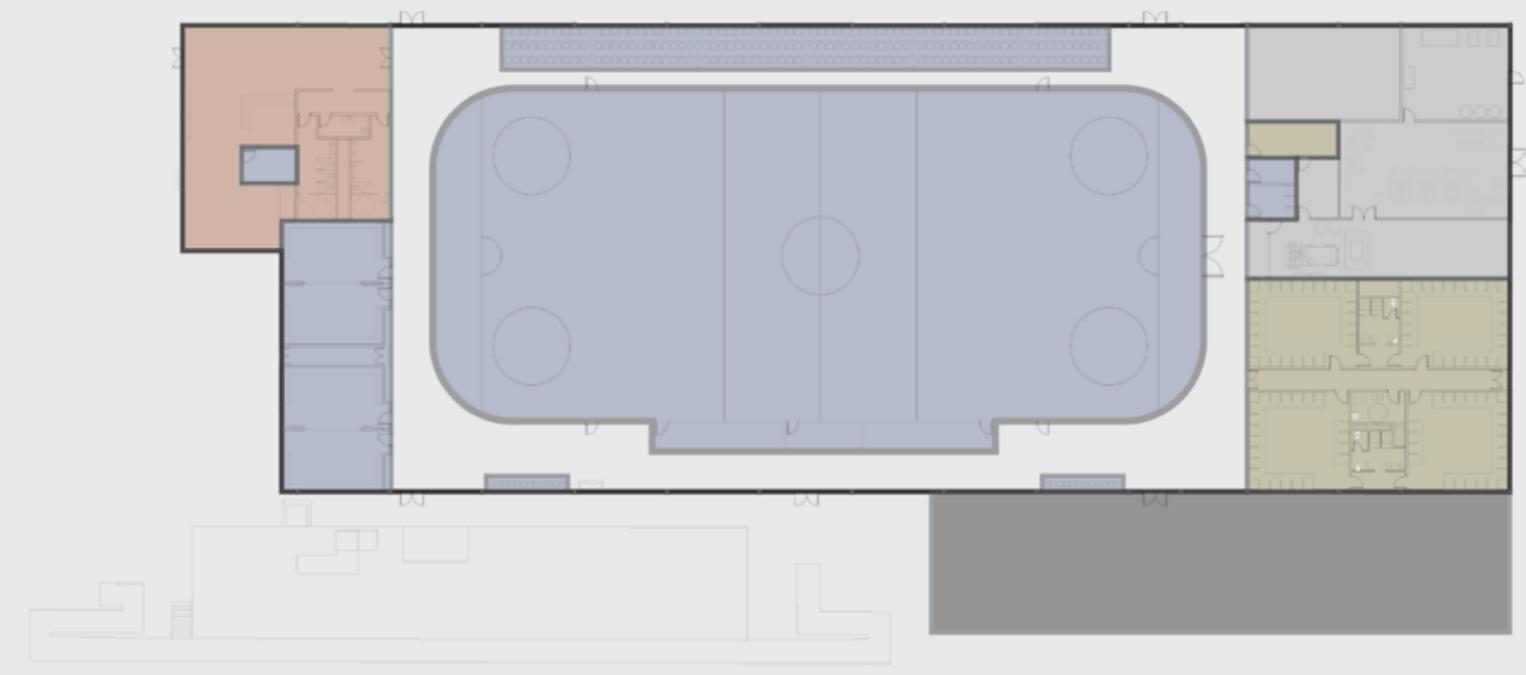
Fall  
Aug  
Sep  
Oct  
Nov

Winter  
Dec  
Jan  
Feb  
Mar

Spring  
Apr  
May  
Jun

Summer  
Jul  
Aug

	<b>BHS</b>	<b>BYHA</b>	<b>Belmont Rec Programs &amp; Events</b>	<b>Rec Community Use</b>	<b>Figure Skating</b>	<b>Leagues</b>	<b>Belmont Hill</b>
	 Field Hockey (2)	 Youth Hockey (25)	 S.P.O.R.T Skate	 Events/Private Rentals Community Room PTO / School Events	 Figure Skating Clubs	 League Hockey Men Women First Responders	 Ice Hockey
	 Soccer (6)	 Hockey Skills Programs	 Skating Lessons Public Skate Stick and Puck				
	 Football (3)						



(#) Number of Teams  
 Shared Space  
 Service Space  
 Future Expansion  
 Ice Sheet (Sept-Apr) TBD

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**PROPOSED**

Fall: Aug, Sept, Oct, Nov

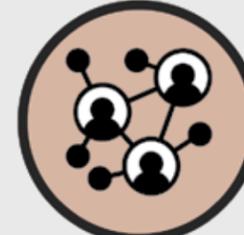


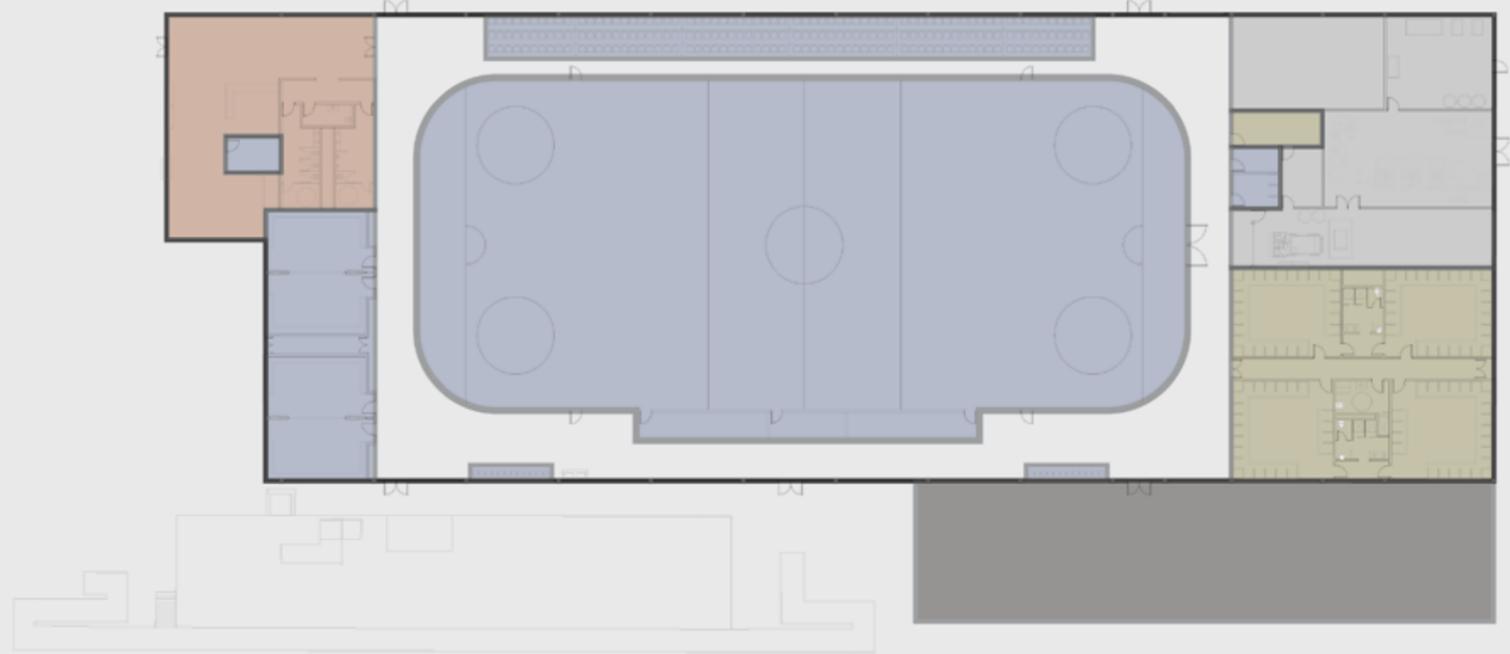
Fall  
 Aug  
 Sep  
 Oct  
 Nov

**Winter**  
 Dec  
 Jan  
 Feb  
 Mar

Spring  
 Apr  
 May  
 Jun

Summer  
 Jul  
 Aug

	<b>BHS</b>	<b>BYHA</b>	<b>Belmont Rec Programs &amp; Events</b>	<b>Rec Community Use</b>	<b>Figure Skating</b>	<b>Leagues</b>	<b>Belmont Hill</b>
	 Ice Hockey (4)	 Youth Hockey (25)	 S.P.O.R.T Skate	 Events/Private Rentals Community Room PTO / School Events	 Figure Skating Clubs	 League Hockey Men Women First Responders	 Ice Hockey
	 Ski Team Storage	 Hockey Skills Programs	 Skating Lessons Public Skate Stick and Puck				



(#) Number of Teams

Shared Space

Service Space

Future Expansion

Ice Sheet (Sept-Apr) TBD

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**PROPOSED**

Winter: Dec, Jan, Feb, Mar

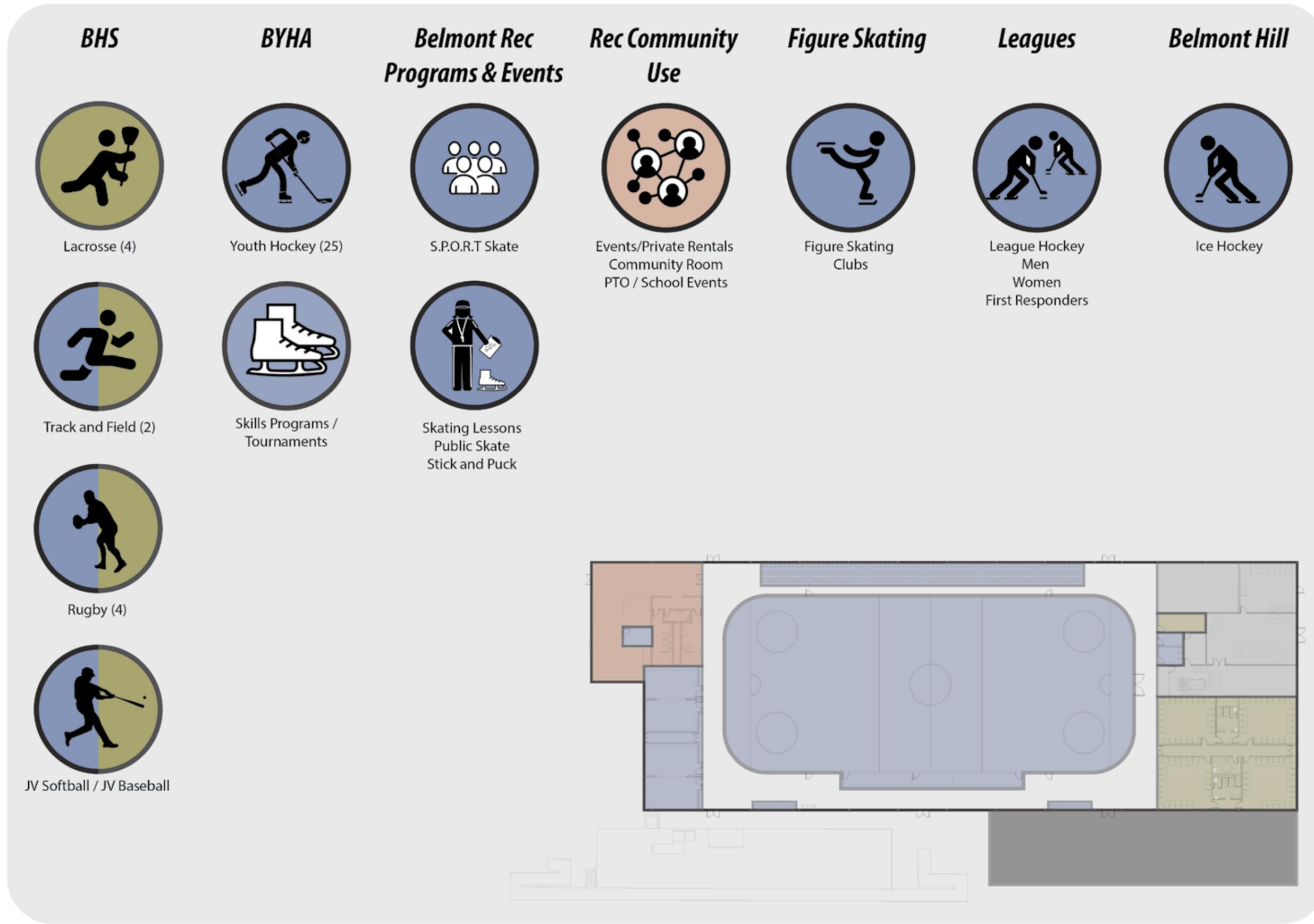


Fall  
 Sep  
 Oct  
 Nov  
 Aug

Winter  
 Dec  
 Jan  
 Feb  
 Mar

Spring  
 Apr  
 May  
 Jun

Summer  
 Jul  
 Aug



(#) Number of Teams

Shared Space

Service Space

Future Expansion

Ice Sheet (Sept-Apr) TBD

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**PROPOSED**

Spring: Apr, May, Jun





(#) Number of Teams

Shared Space

Service Space

Future Expansion

No Ice (Programming TBD)

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**PROPOSED**

Summer: Jul, Aug



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