

THE **GALANTE** ARCHITECTURE STUDIO

SCHEMATIC DESIGN



TOWN OF BELMONT

BELMONT SKATING RINK

February 6th, 2023

The Galante Architecture Studio
146 Mount Auburn Street
Cambridge, MA 02138

P: (617) 576-2500

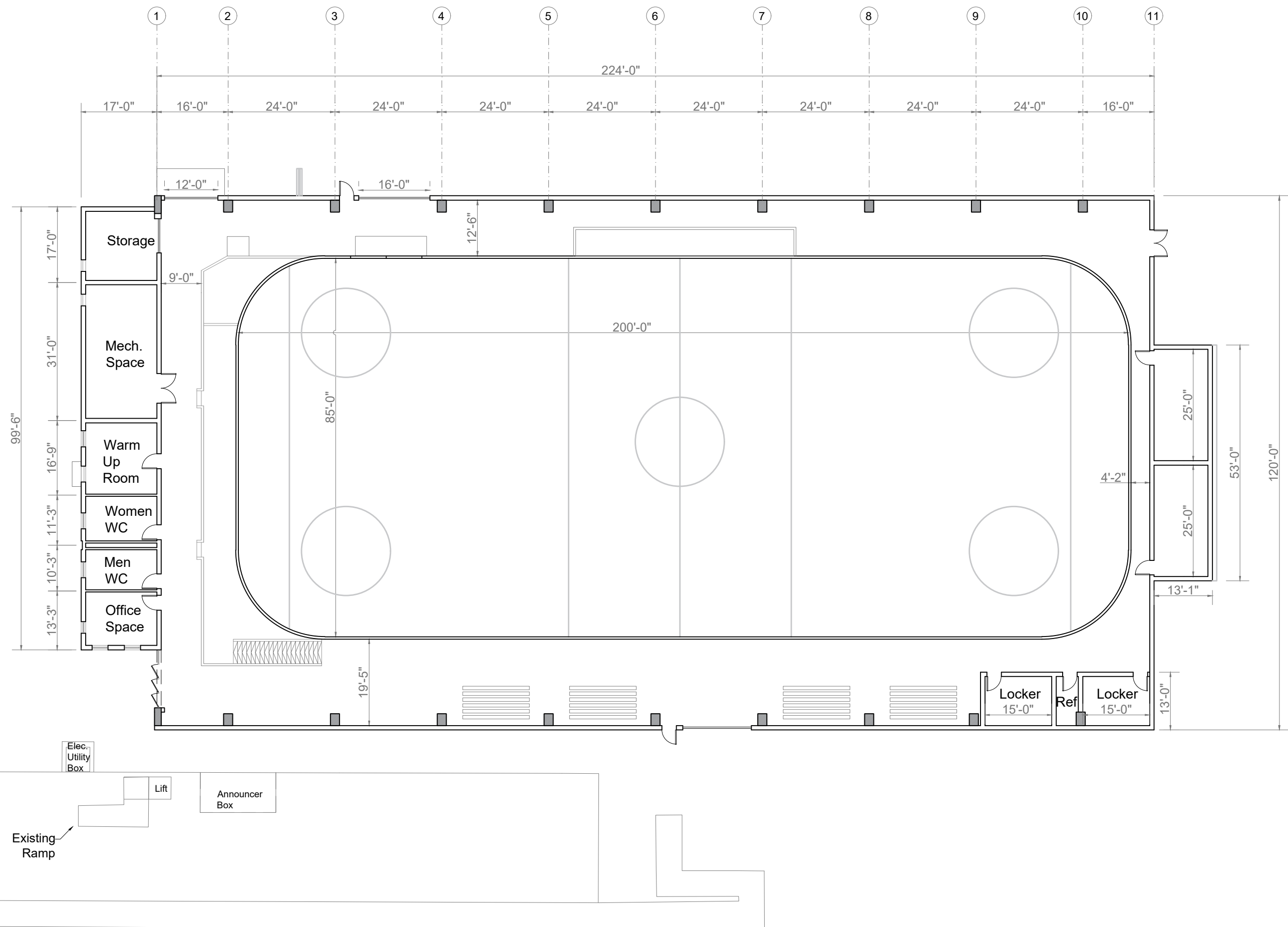
galantearchitecture.com



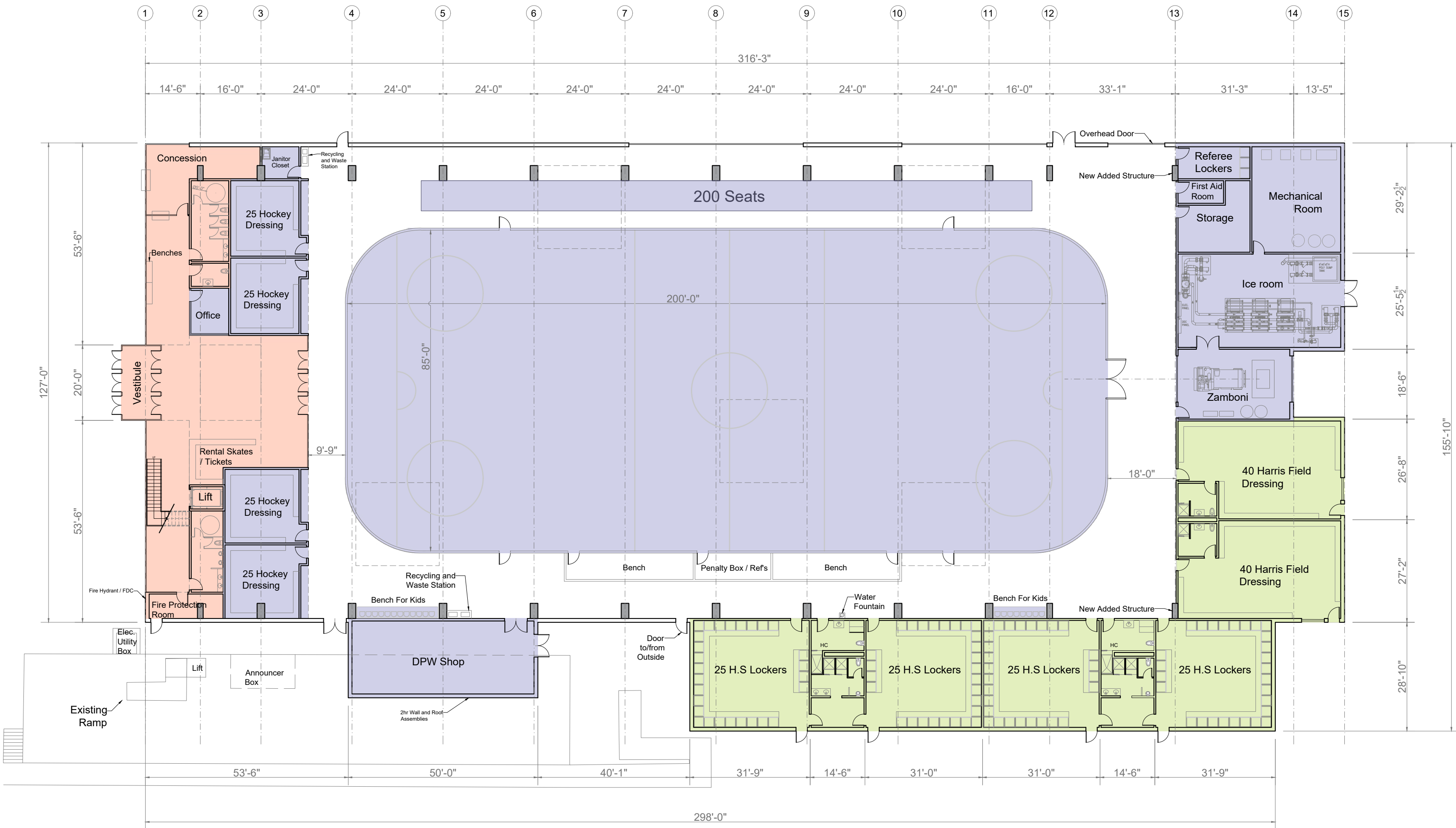
Existing Site Plan



Proposed Site Plan - Photovoltaic Panels



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



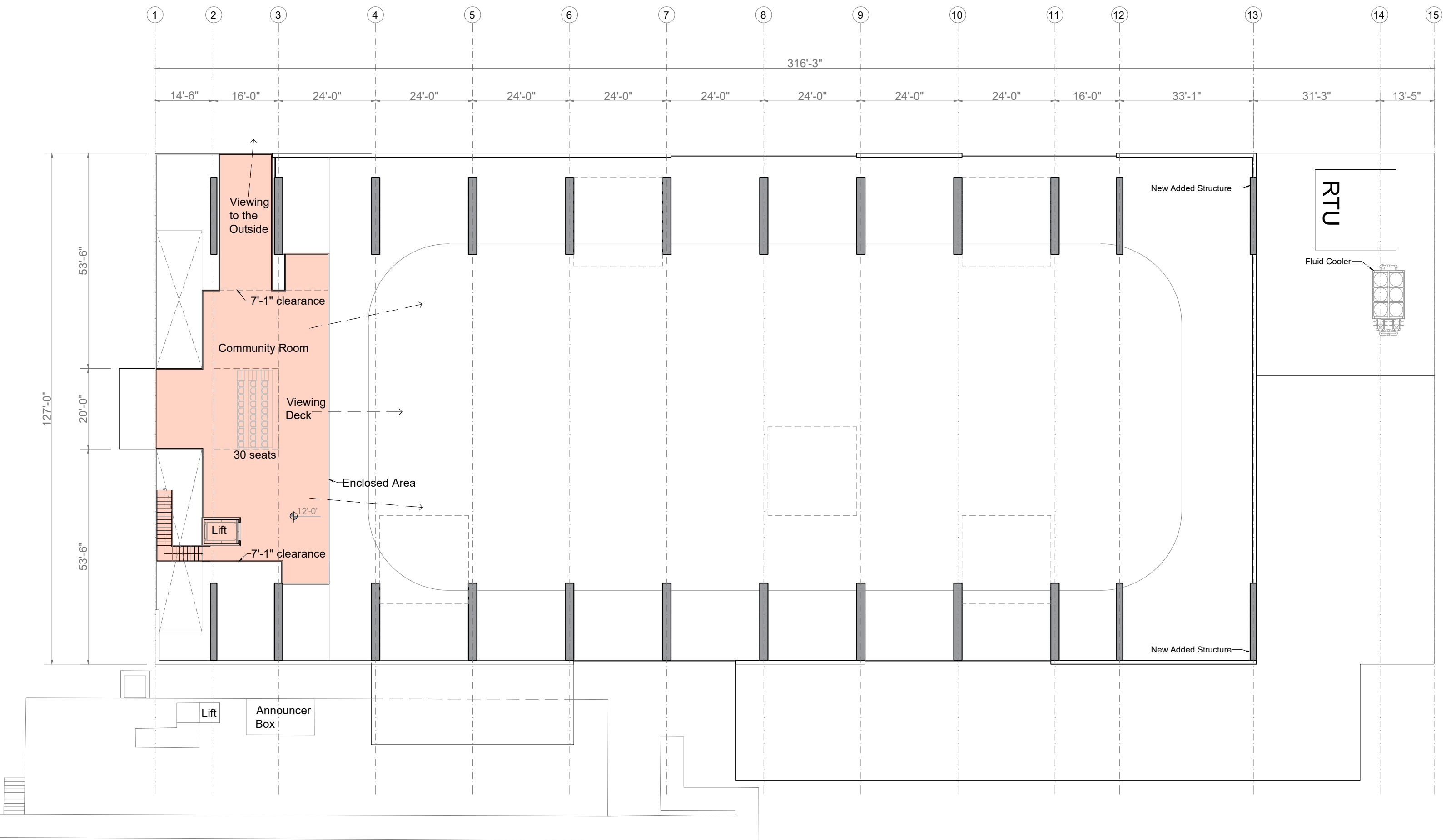
ORIGINAL

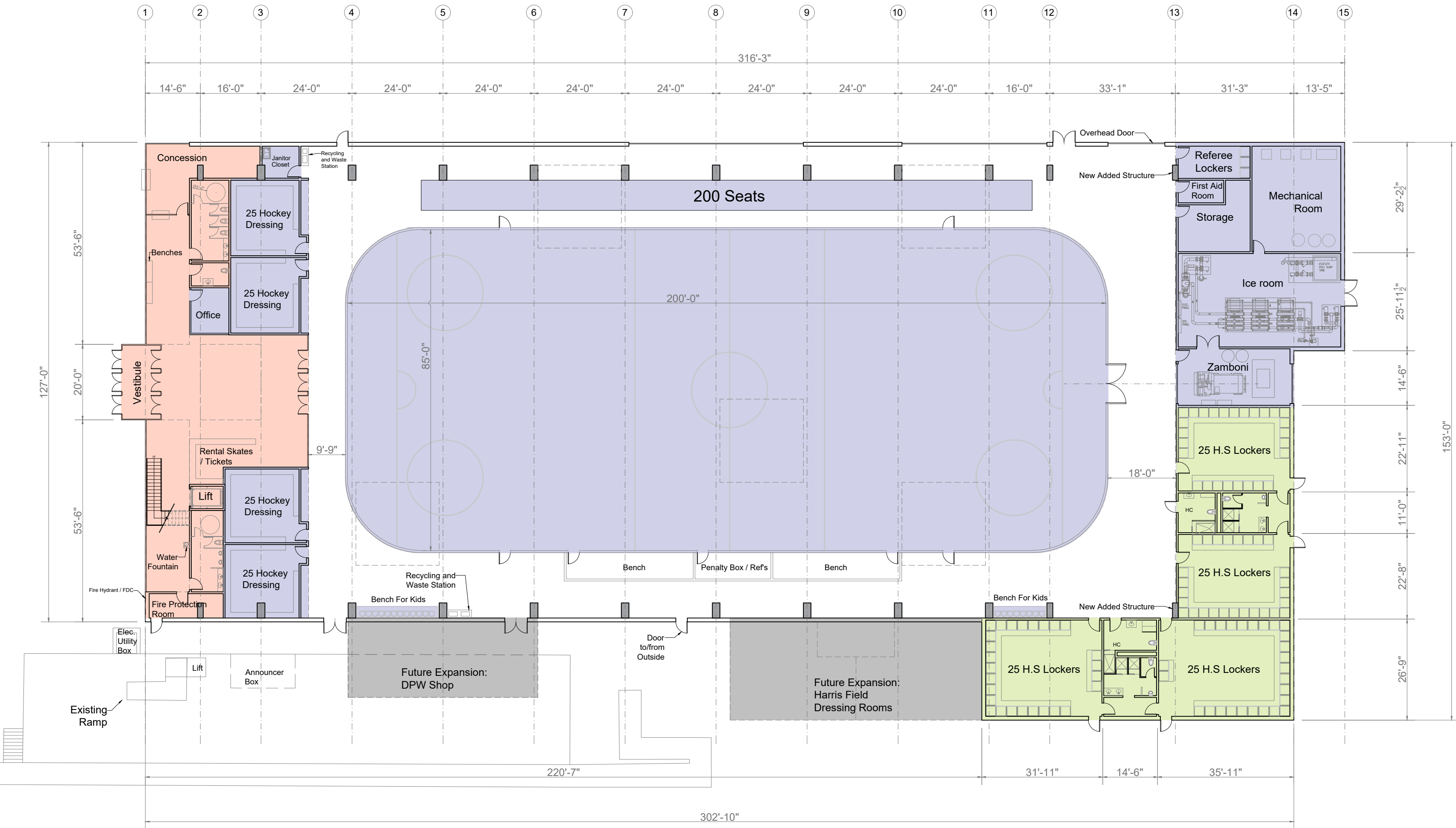
TGAS THE GALANTE ARCHITECTURE STUDIO

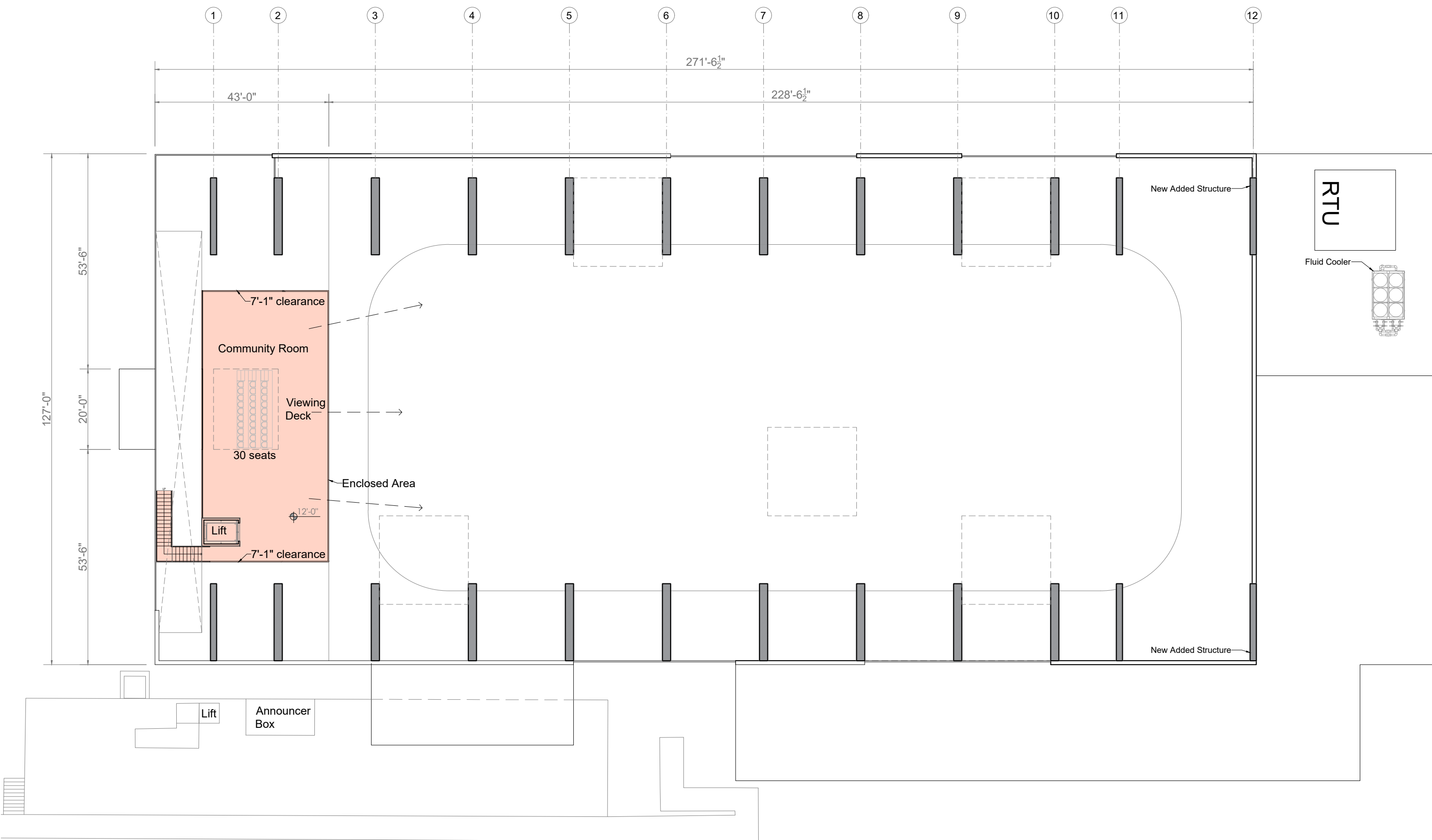
Original 2022 - Proposed Floor Plan ± 45,740 sf

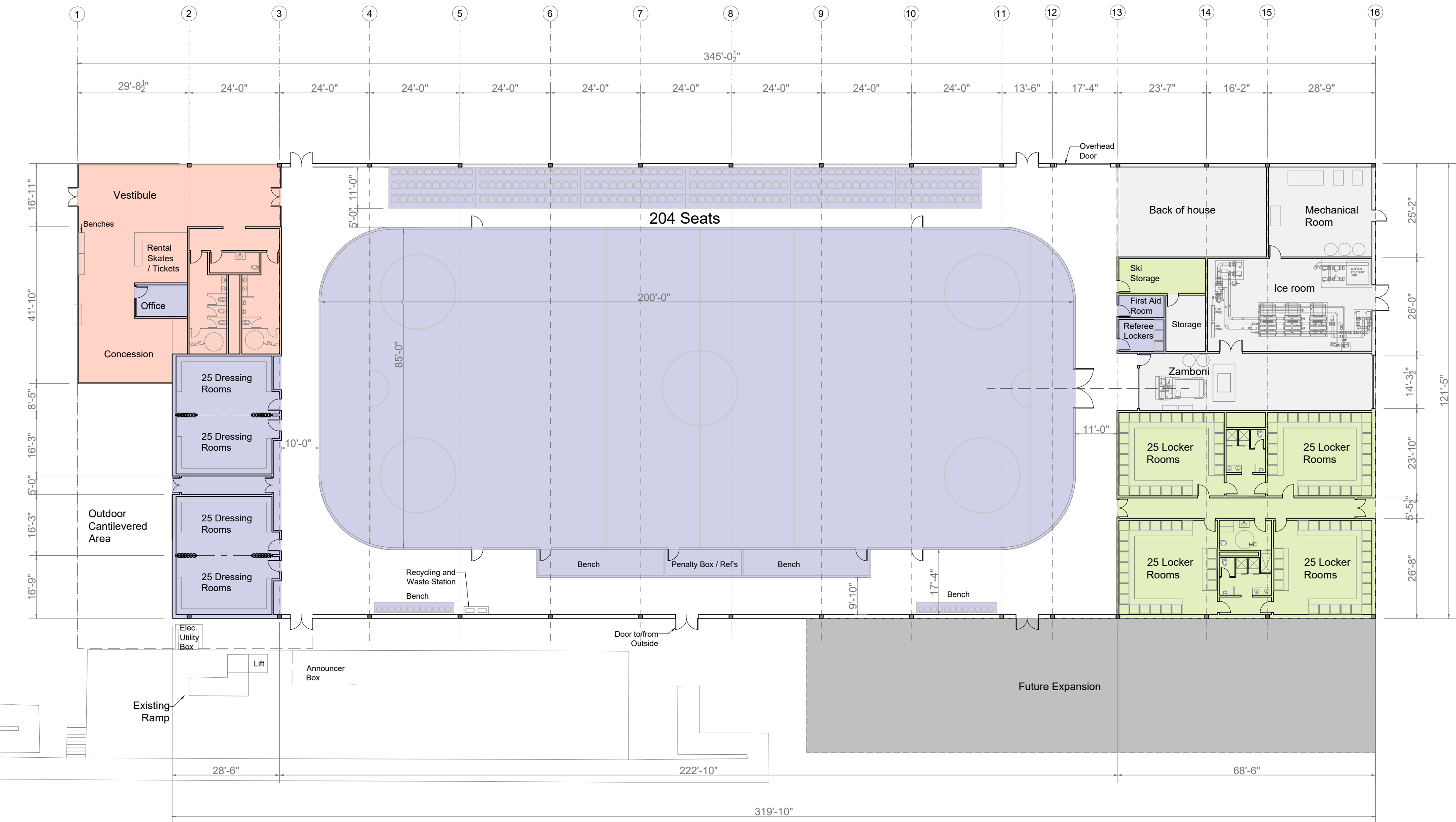
PLAN





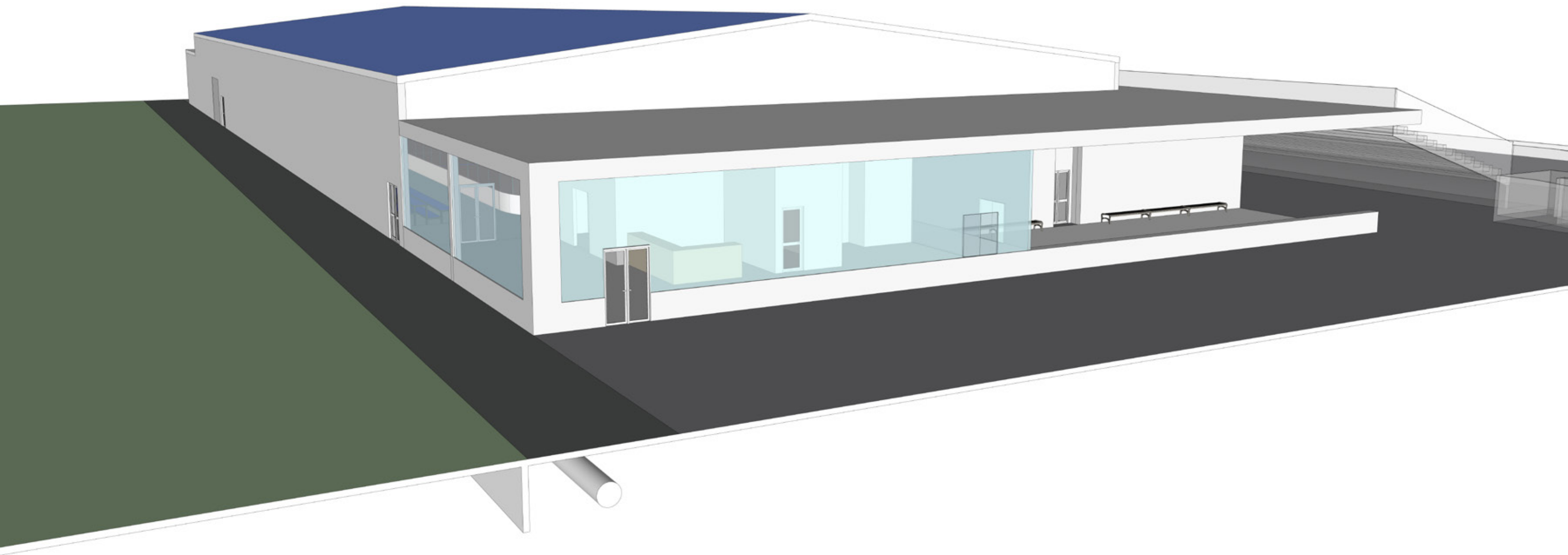






Spring 2023 - Proposed Floor Plan ± 40,313 sf
 Building occupied for 12 months for Athletic and Recreation programs

PROPOSED



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
Sub-total	\$	18,985,207
Projected Cost Escalation of 11%	\$	2,088,373
Sub-total	\$	21,073,580
Design Contingency - 16%	\$	3,371,773
Owners Contingency - 5%	\$	1,053,679
Sub-total	\$	25,499,032
Allowances		
Hazardous Materials - Rink	\$	400,000
Sub-total	\$	400,000
Design & OPM Fees		
Architecture & Engineering Fees - 10%	\$	2,550,000
Solar Design (allowance)	\$	125,000
OPM Fees	\$	906,000
Sub-total	\$	3,581,000
Project Related Costs		
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
Sub-total	\$	473,000
Total Project Cost	\$	29,953,032



Current rink repair needed

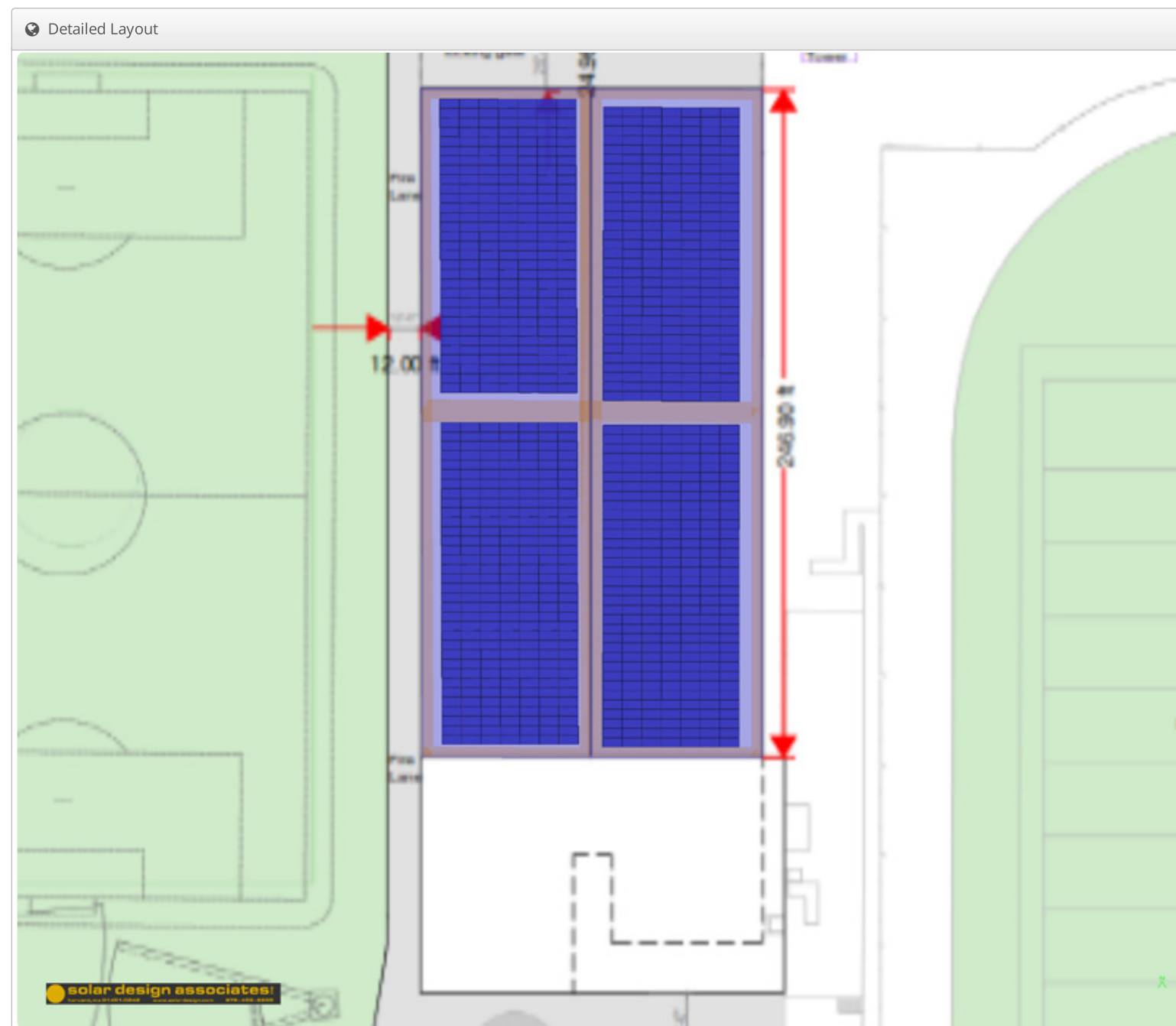
- Rink cannot operate next year without significant investment
 - Condensers leaking - unrepairable
 - R-22 refrigerant has been banned for environmental reasons
 - Existing chiller about to fail

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

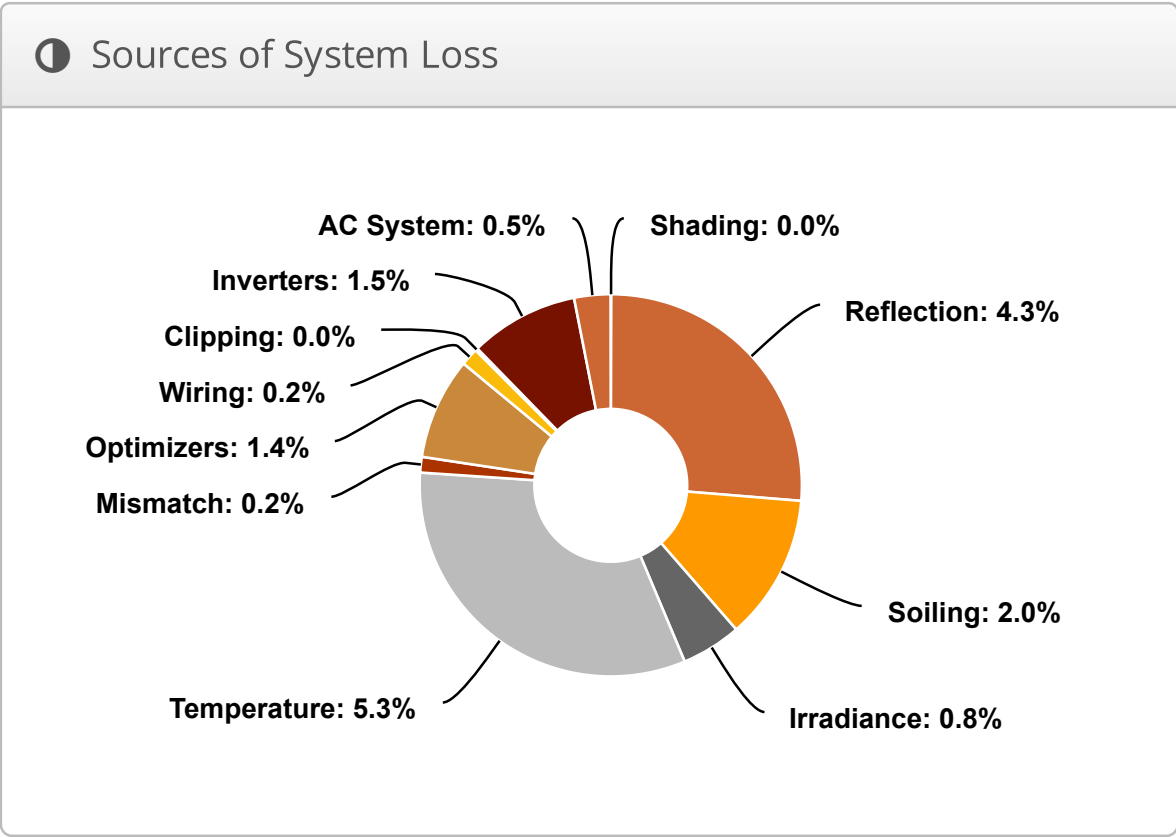
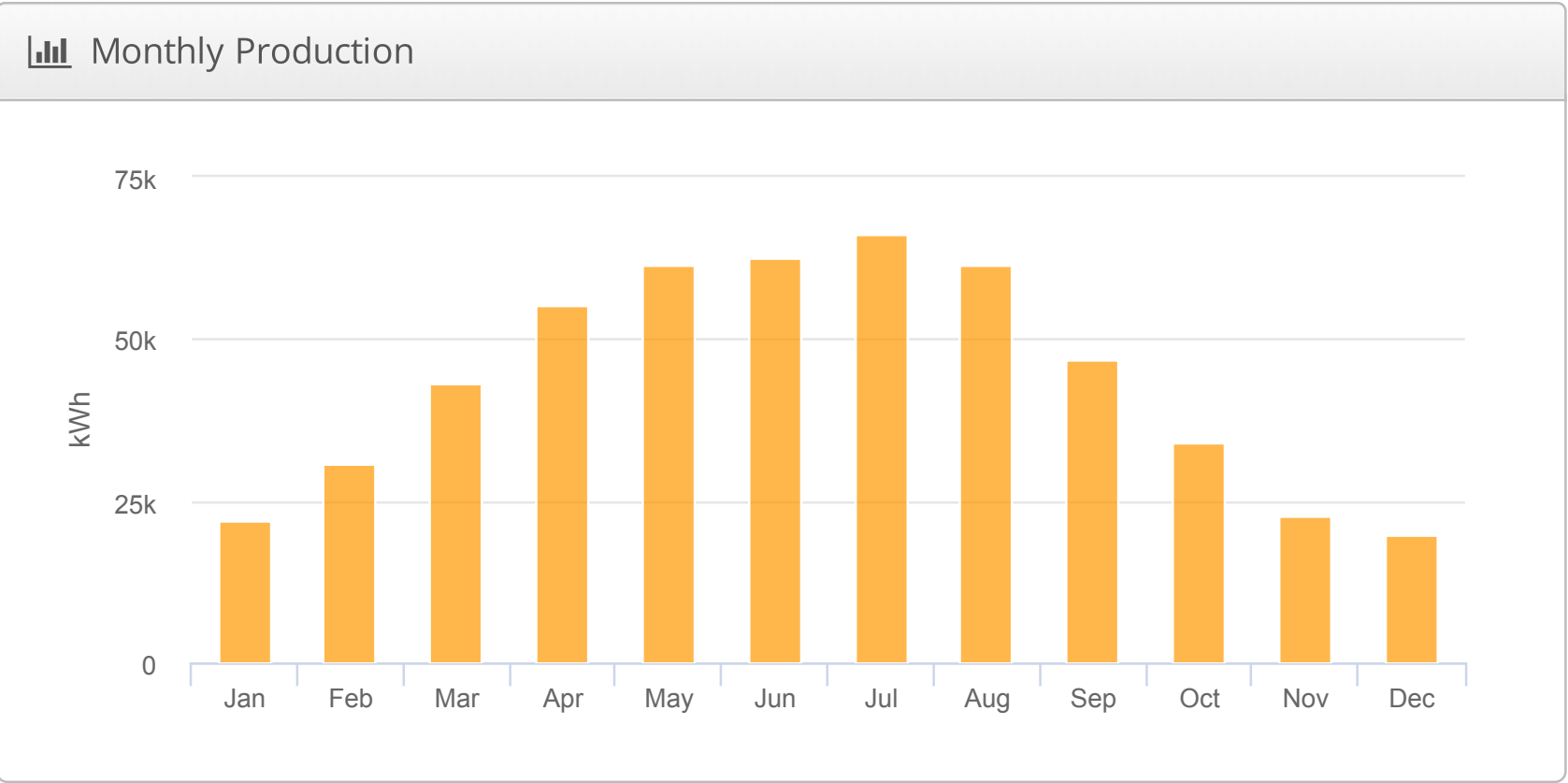
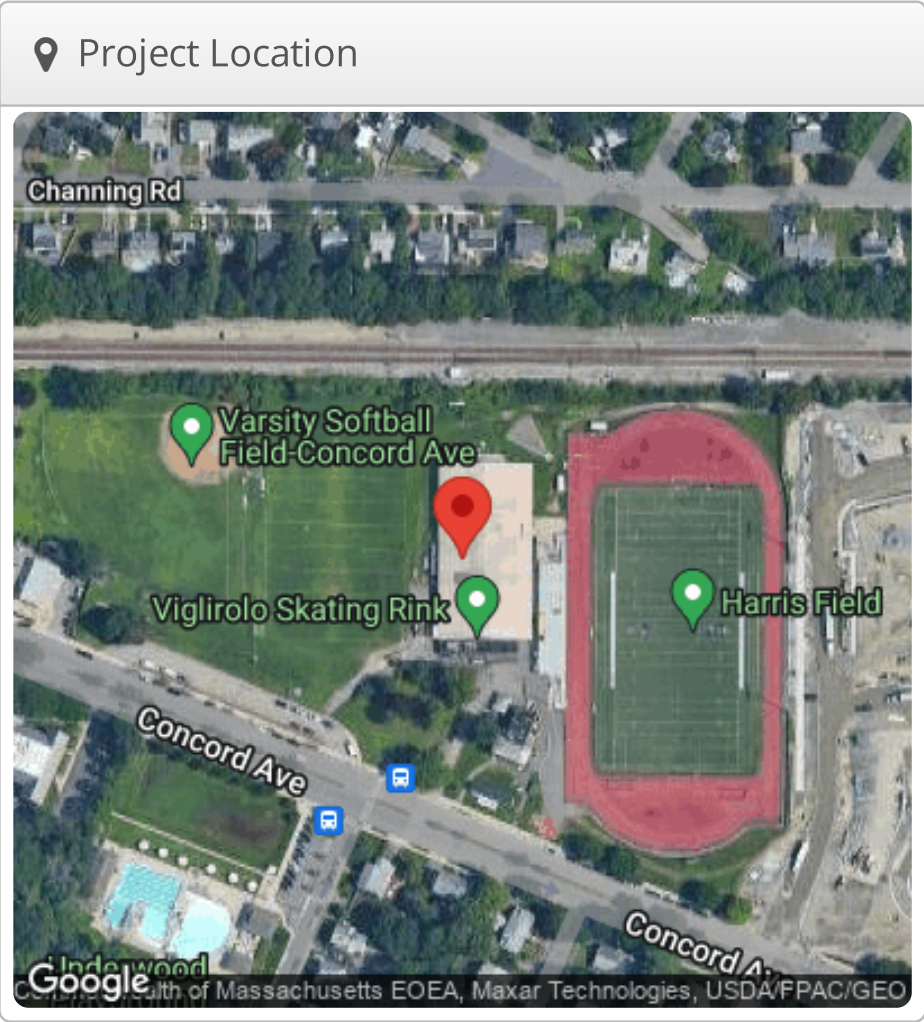


Preliminary estimate at system sizing and cost:

- 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

BHS

BYHA

Belmont Rec
Programs & Events

Rec Community
Use

Figure Skating

Leagues

Belmont Hill

Field Hockey (2)

Soccer (6)

Football (3)

Youth Hockey (25)

Hockey Skills Programs

S.P.O.R.T Skate

Skating Lessons
Public Skate
Stick and Puck

Events/Private Rentals
Community Room
PTO / School Events

Figure Skating Clubs

League Hockey
Men
Women
First Responders

Ice Hockey

(#) Number of Teams

Shared Space

Service Space

Future Expansion

Ice Sheet (Sept-Apr) TBD

Fall

Aug
Sep
Oct
Nov

Winter











Dec
Jan
Feb
Mar

Spring

Apr
May
Jun

Summer

Jul
Aug

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

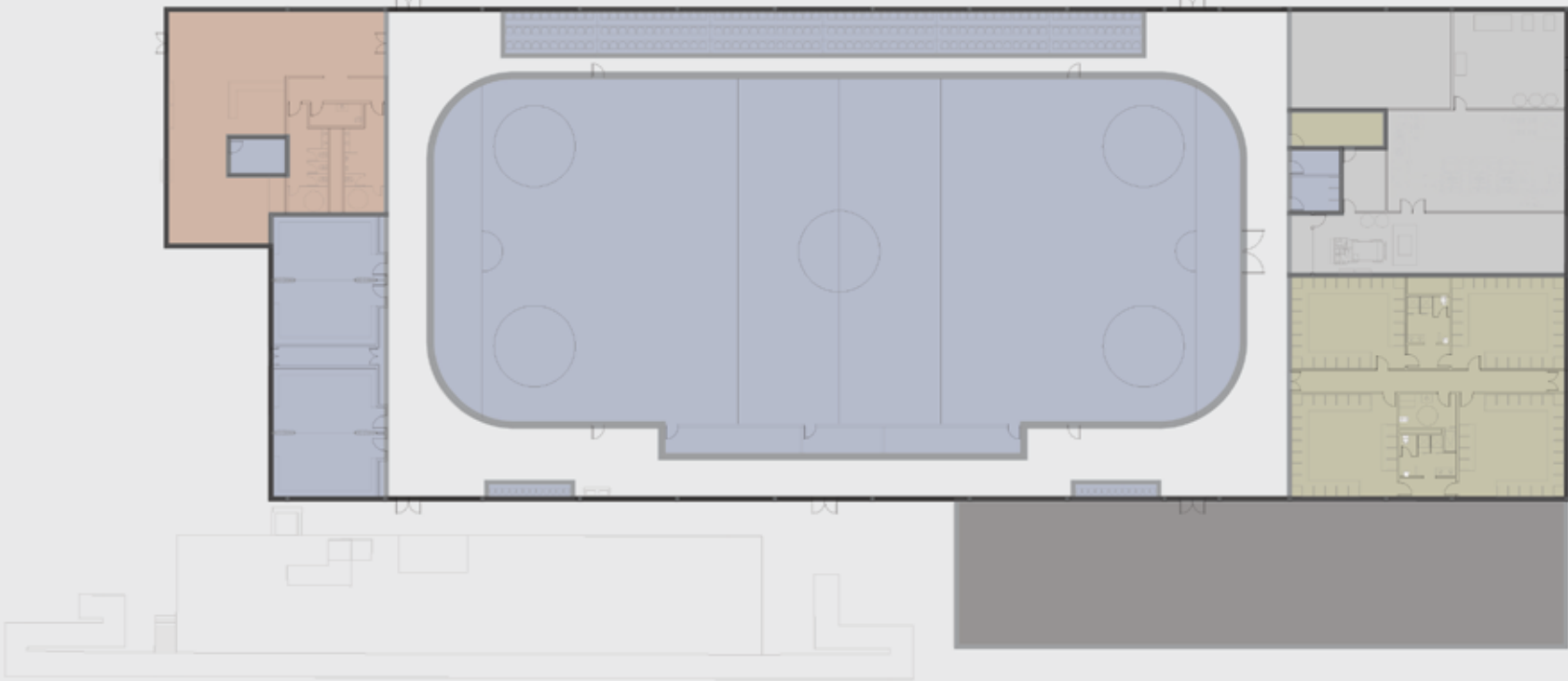
(#) Number of Teams

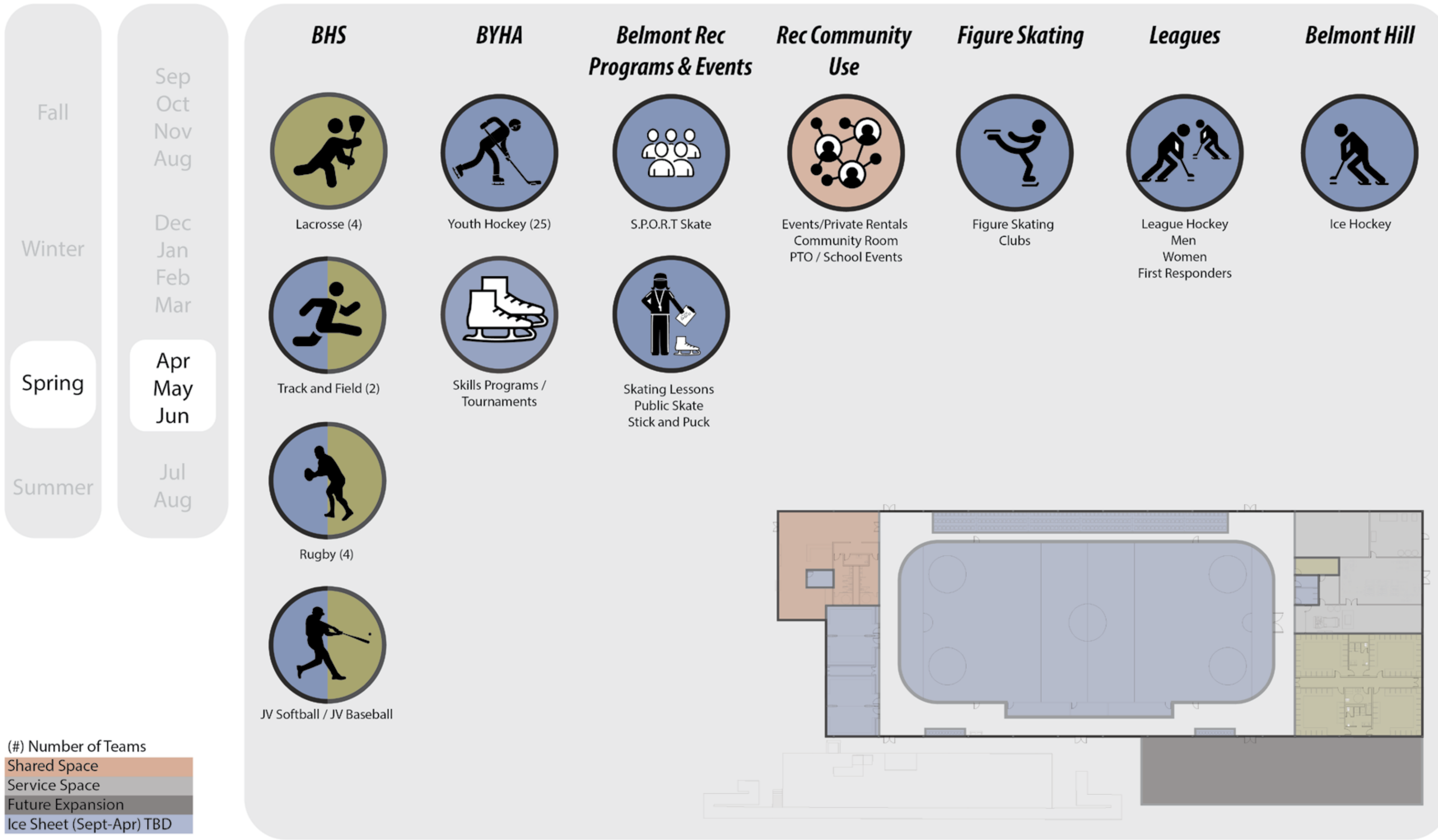
Shared Space

Service Space

Future Expansion

Ice Sheet (Sept-Apr) TBD





Fall
Winter
Spring
Summer

Aug
Sep
Oct
Nov

Dec
Jan
Feb
Mar

Apr
May
Jun

Jul
Aug

BHS

Summer Recess

BYHA

Skills Programs /
Camps

Belmont Rec
Programs & Events

Summer Programs

Camps
Tennis
Pickle ball
Events

Rec Community
Use

Events/Private Rentals
Community Room

Figure Skating

Figure Skating
Clubs

Leagues

League Hockey
Men
Women
First Responders

Belmont Hill

Ice Hockey

(#) Number of Teams

Shared Space

Service Space

Future Expansion

No Ice (Programming TBD)

TGAS

THE GALANTE ARCHITECTURE STUDIO

PROPOSED

Summer: Jul, Aug

TGAS
THE GALANTE ARCHITECTURE STUDIO

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