

WTI Presents Must Have's and Current Trends in Design of Aquatic Learning & Training Centres



Facility Resource Hub Webinar Series brought to you by:





Partnership Update



- CSCA has set up a Facility resource hub powered by Myrtha Pools in partnership with WTI-<https://cscs.org/facilities.aspx>
- All CSCA Coaches, PSO's and Clubs can access this content
- PSO's are encouraged to provide a link to the resource hub and will be extended free start up consulting conversations to activate facility advocacy strategies.
- Myrtha and WTI provide 1 additional Webinars in 2025
 - June 19th Developing your Facility business plan



Ryan Nachreiner

Steve Crocker



Get and Keep a Seat at the Table

- Be the trusted, **go-to expert**...ex. “we will pass it by Mike”
- Must see/understand overall aquatic community, **can’t be selfish**.
- Be the **smartest person in the room** - understand trends, technology, and best practices
- Ideally **be ahead of city/municipal design process**...not just part of community engagement process
- **Provide vision**, facility examples, facility costs examples, etc. (not outdated). Realistic meet selection, economic impact data.





GOALS



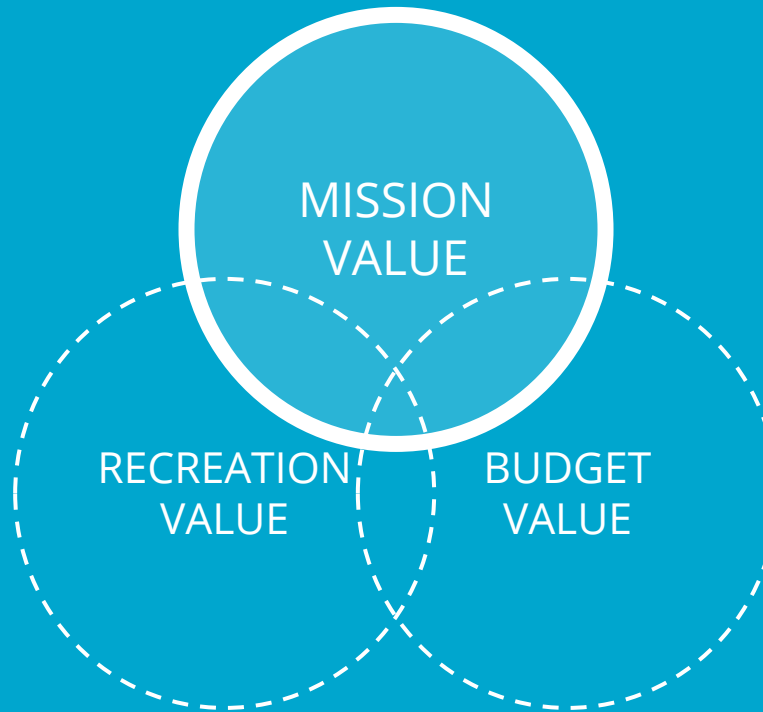




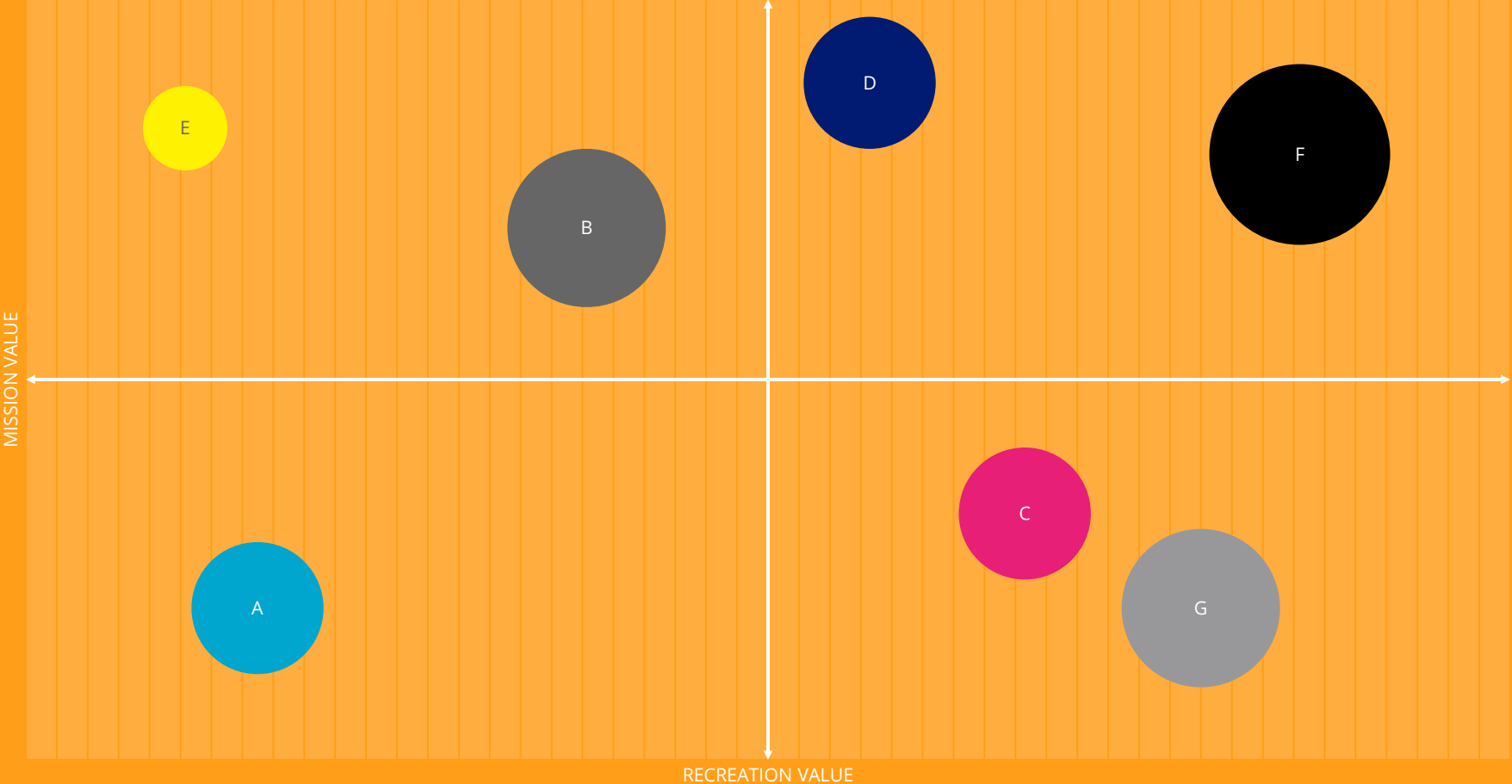
PURPOSE DRIVEN DESIGN



PROGRAM VALUE

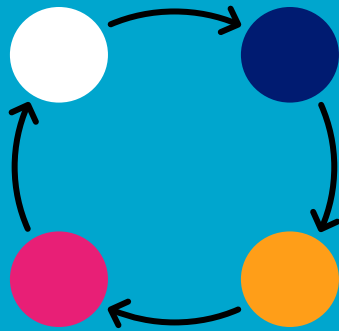


PROGRAM VALUE MATRIX

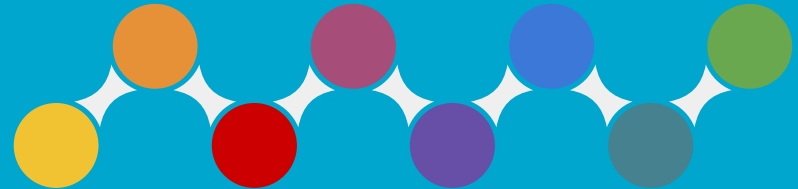


DESIGN PROCESS

Ideation

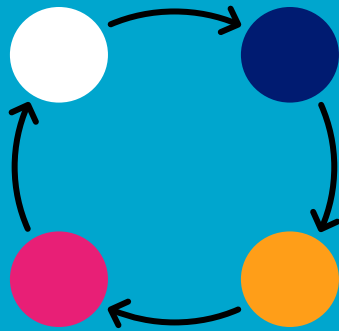


Documentation



DESIGN PROCESS

Ideation



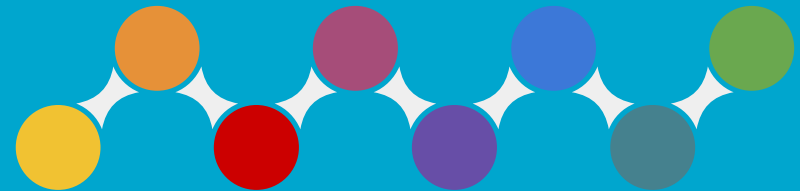
- Community Surveys
- Program Option Testing
- Operational Cost Modeling
- Public Engagement
- Concepts & Alternates
- Fundraising Campaigns
- Budget Estimation
- Graphics / Renderings



DESIGN PROCESS

- Schematic Design
- Design Development
- Construction Documents
- Permitting & Approvals
- Bidding & Negotiations
- Construction

Documentation



SUSTAINABILITY



ENVIRONMENTAL



FINANCIAL



SOCIAL



Establish Aquatic Goals
Understand User Groups
+ their Aquatic Goals

Social
Wellness/Therapeutic
Competition

Define Programs
+
User Group Size

Primary Programming
Secondary Programming

Number of Pools

Water Temperature
Water Depths

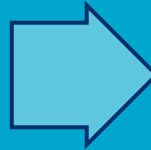
Accessibility

Access for All
Going beyond ADA

Air + Water Quality

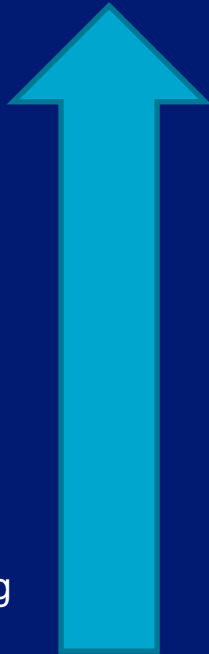
Environment

SCHEDULE / BUDGET / PROGRAM



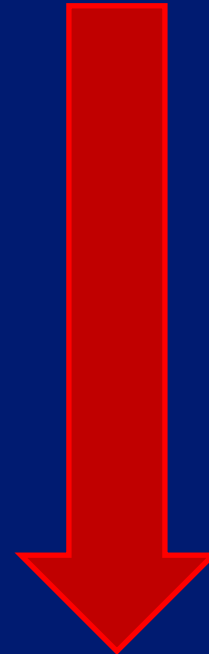
TEMPERATURE

Adult Whirlpool
Family Whirlpool
Therapy Pool
Wellness Pool
Leisure Pool
Lazy Rivers
Interactive Features
Waterslides
Diving
Water Polo
Competition Swimming



DEPTH

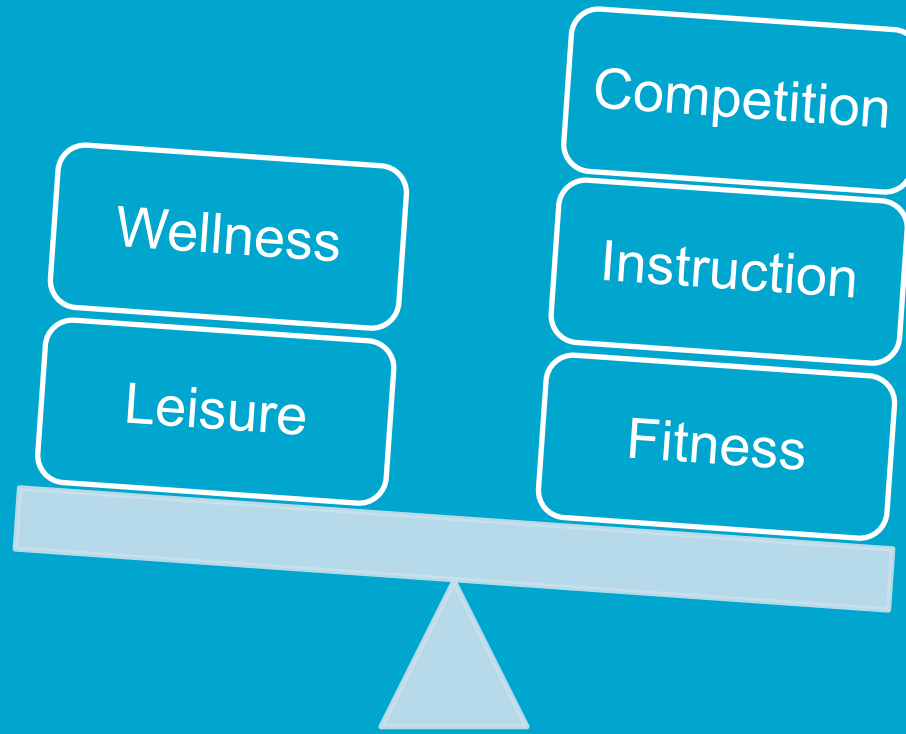
Play & Leisure
Learn to Swim
Water Fitness/Aerobics
Swimming Lessons
Starting Platforms
Lifeguard Training
1-Meter Diving
Climbing Walls
3-Meter Diving
Platform Diving
Scuba Lessons



Program Balance

Warm

Cool



WATER QUALITY



FILTRATION



Water Treatment

Carbon Dioxide



Hydrochloric Acid



Sodium Bisulfite



Acid-Red-405
For acids with a density up to 1.84 g/cm³

Sodium Hypochlorite



Chlorine Gas

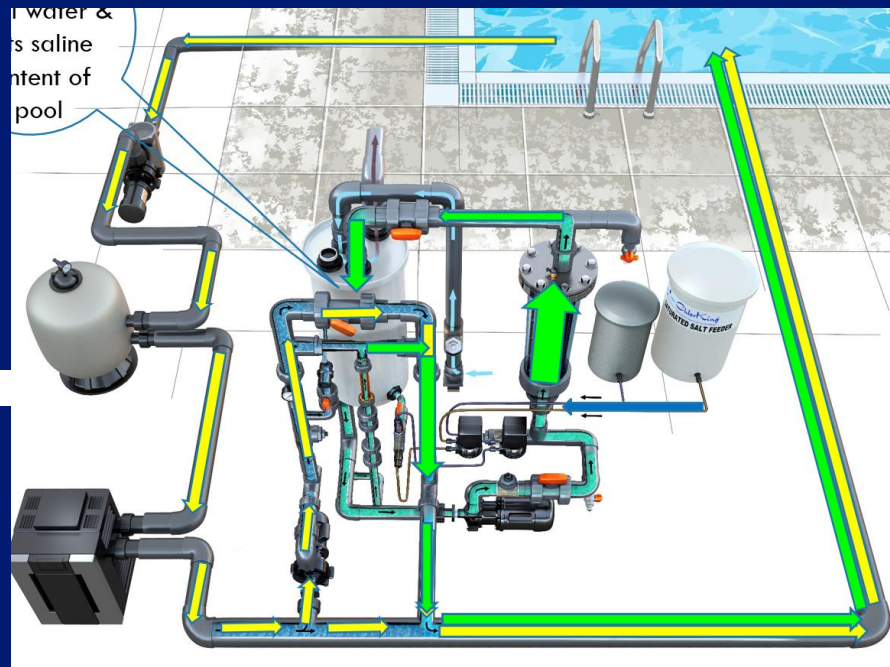
Calcium Hypochlorite



ULTRAVIOLET SUPPLEMENTAL SANITATION



SALT CHLORINE GENERATION



Water Depth

Starting Blocks, 2-Meters

Lap Swimming, 1.2-Meters

Diving, 3.4 – 5.0 meters

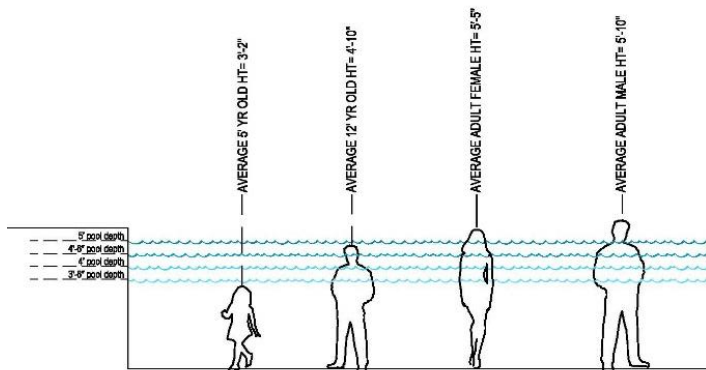
Depth Contours

3:1 Slope in Deep Areas

12:1 Slope in shallow Areas

Water Polo requires 2 meters (6'-7") and is recommended for entire course. Minimum Course dimensions are 45' x 75'.

Artistic Swimming Requires 3 meters in an area 12 meters x 12 meters and 2 meters depth in a surrounding area of 12 meters wide.



Adjustable Depth



Programming a Rectangle



What Makes a Pool Fast?



Smooth Water Surface

Deep gutter troughs

Lane dividers



Deep Pool

Recommend minimum depth of 2 meters

(2.5 meters preferred)



Uniform Circulation

Reducing filtration speed during events to lessen water disturbance

Locate inlets low in the water column



Lane Width

Wider is better

2.5 meters for national competitions



Clear, clean water

High quality filtration & UV



Air Quality

Source capture

AIR QUALITY

Weekday Member Lane Schedule 6/24/2020
6a-7a - Whole Pool
7a-2p - lanes 5&10 (50M) & 4 lanes in shallow end
2p-9p - 4 lanes in shallow end
check with lifeguards about any additional lanes (varies thru day)

POOLS

+

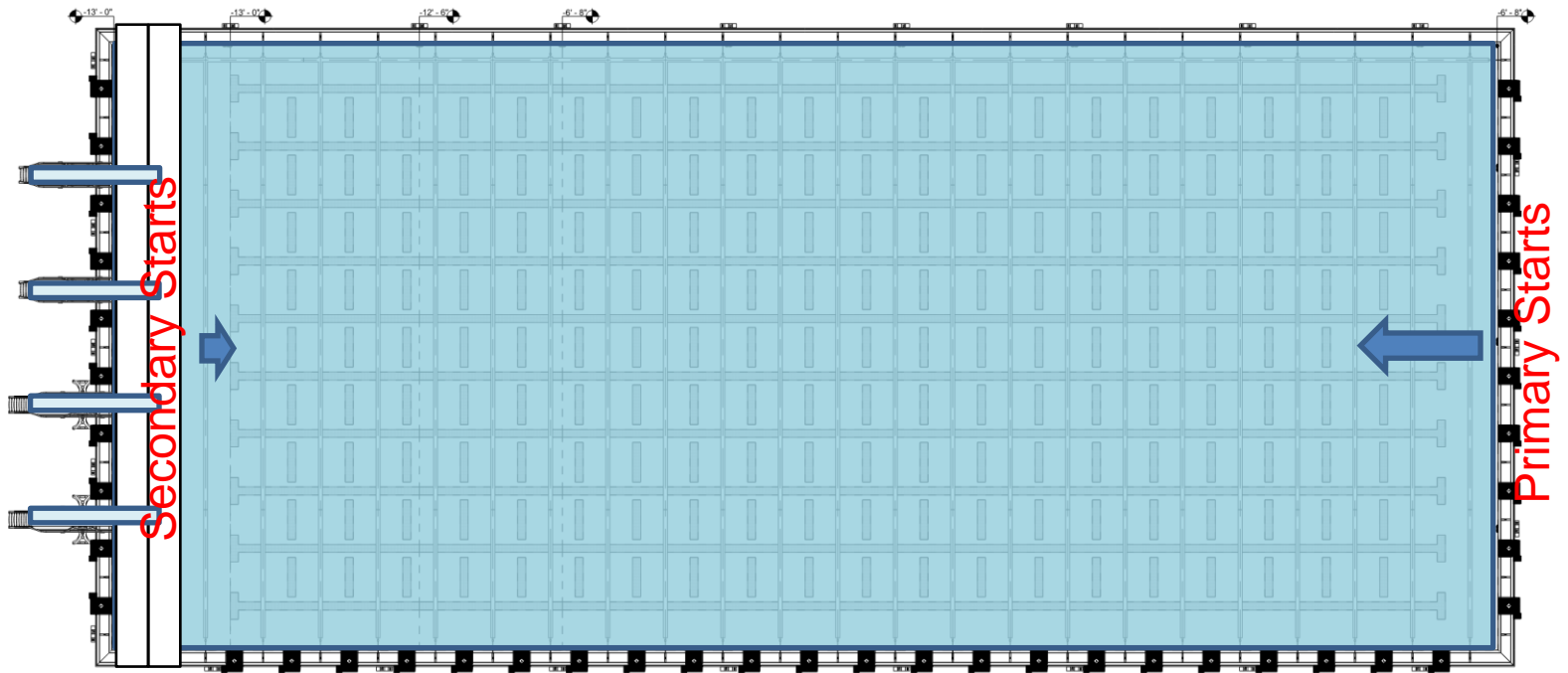
PEOPLE

=

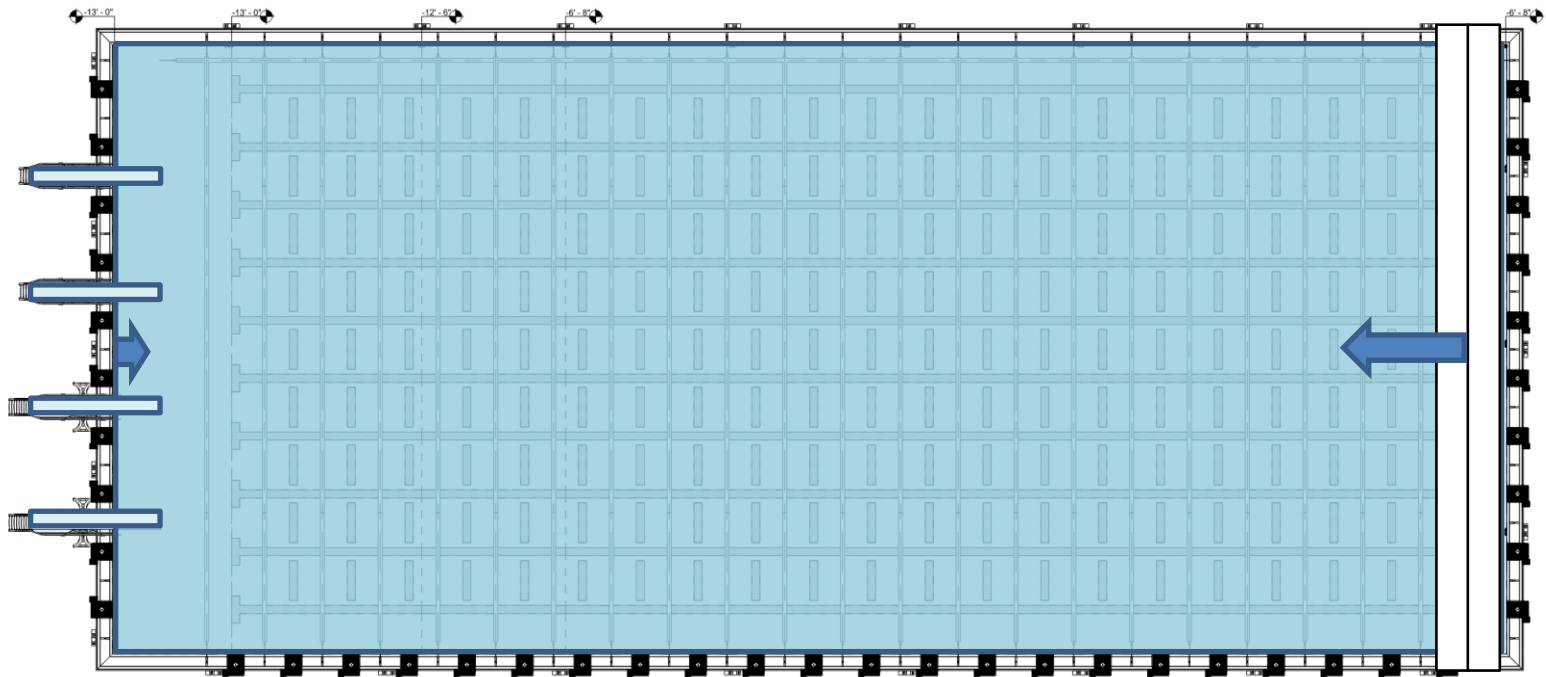
CHLORAMINES

DIRT, HAIR, SKIN, SWEAT ...

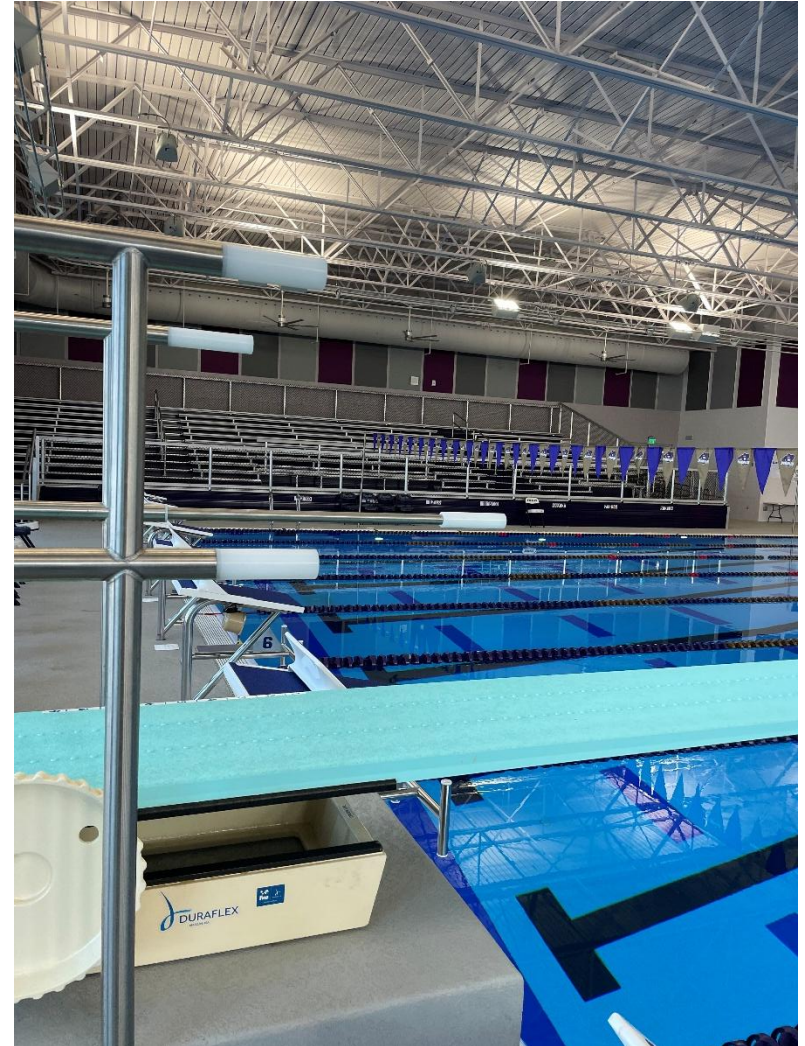
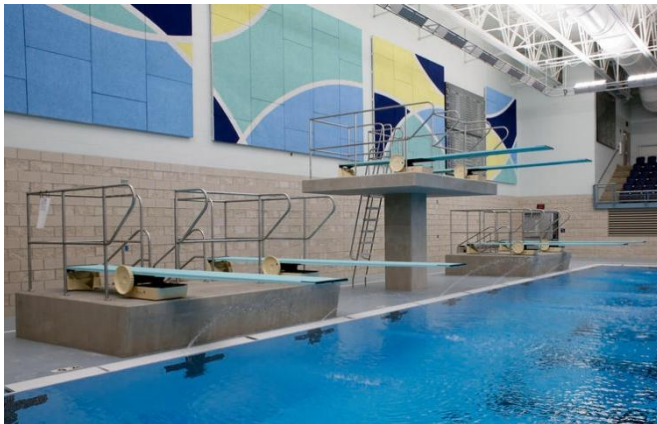
50-Meter Racecourse



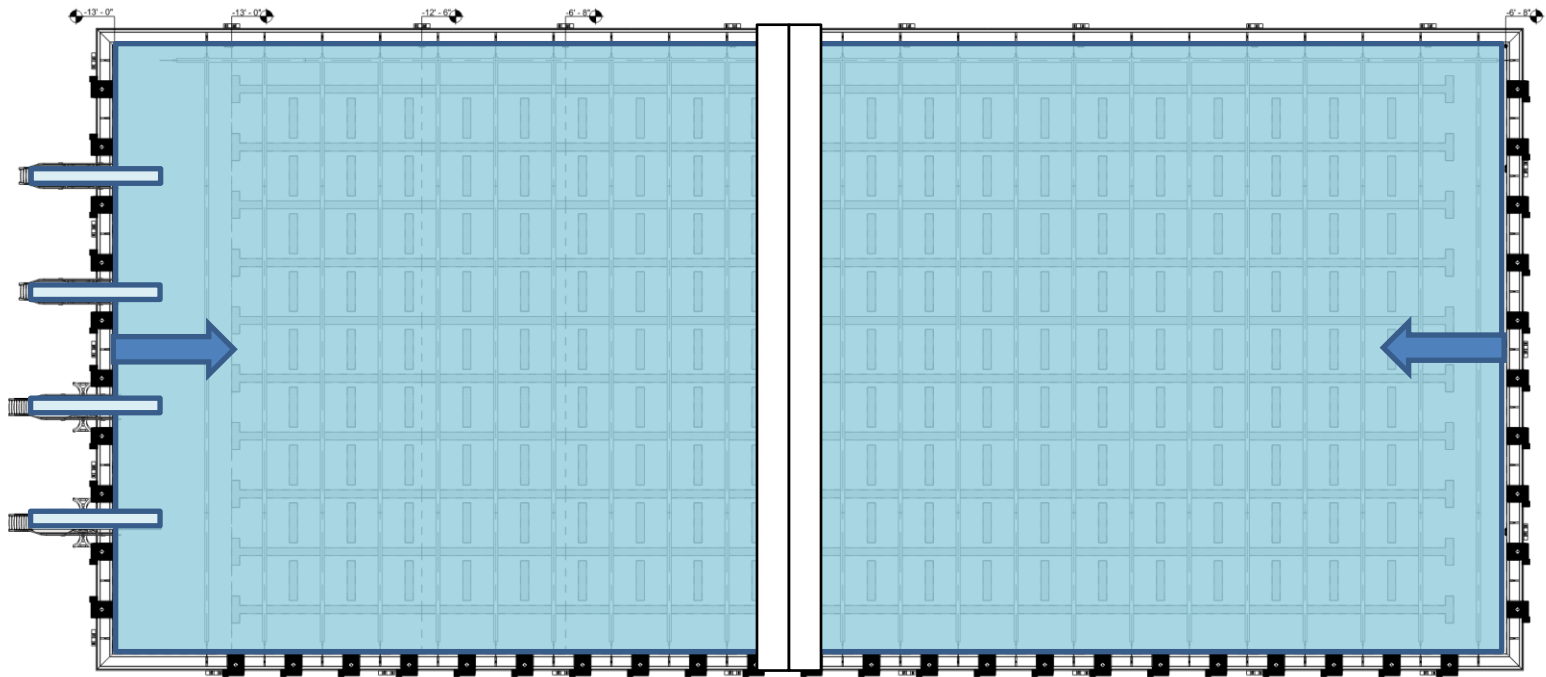
Secondary 50-Meter Racecourse (Springboards Available)



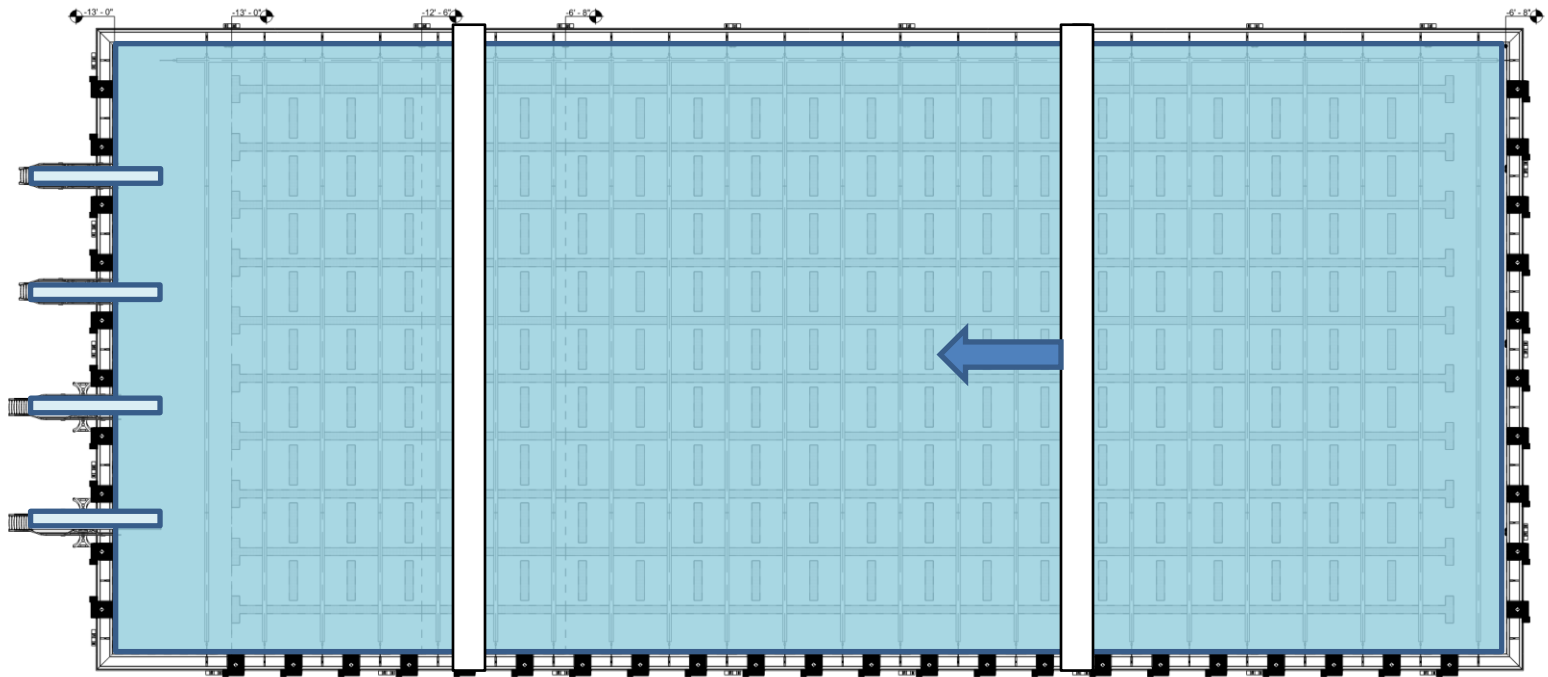
Diving Railings and Starting Blocks



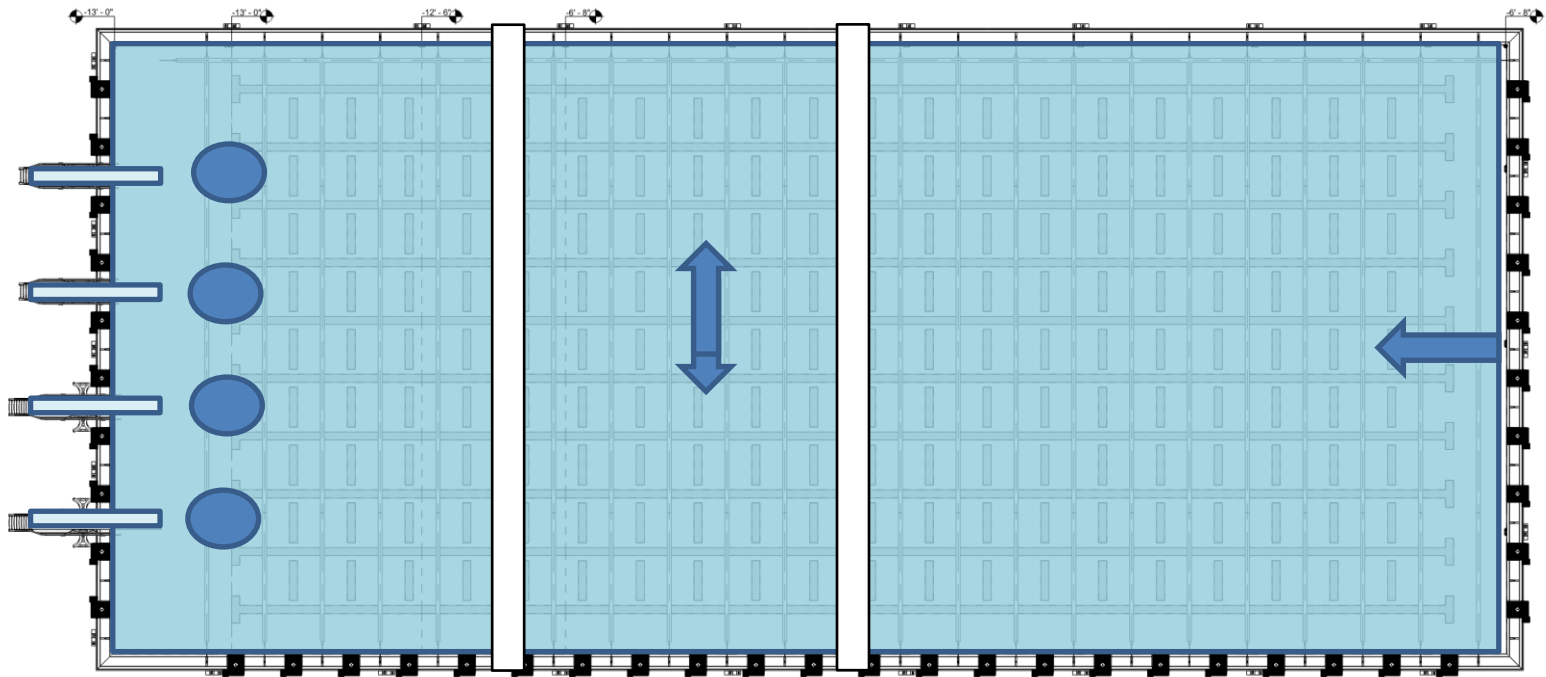
Two 25-Meter Racecourses



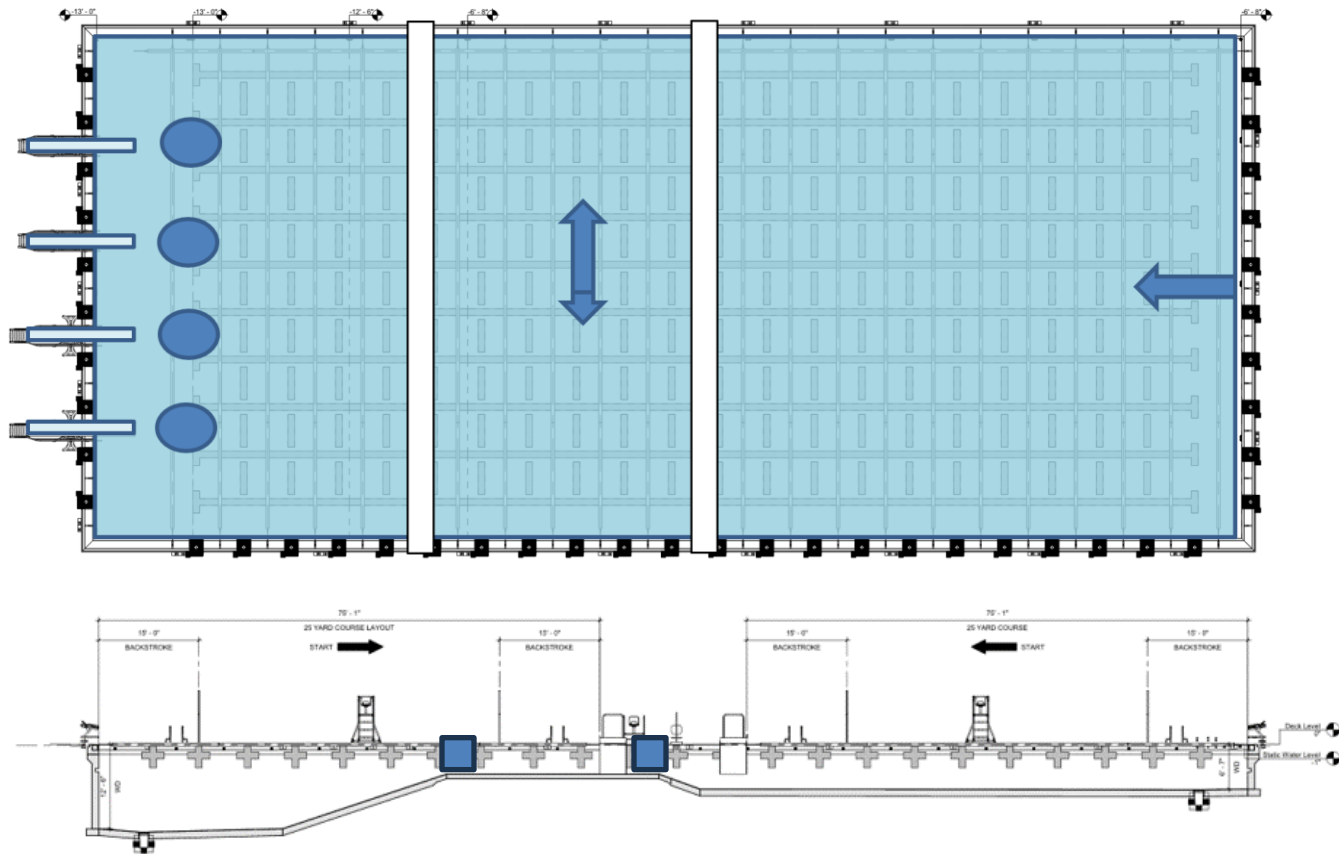
Centered 25-Meter Racecourse



Diving plus Warmup plus 25-Meter Racecourse

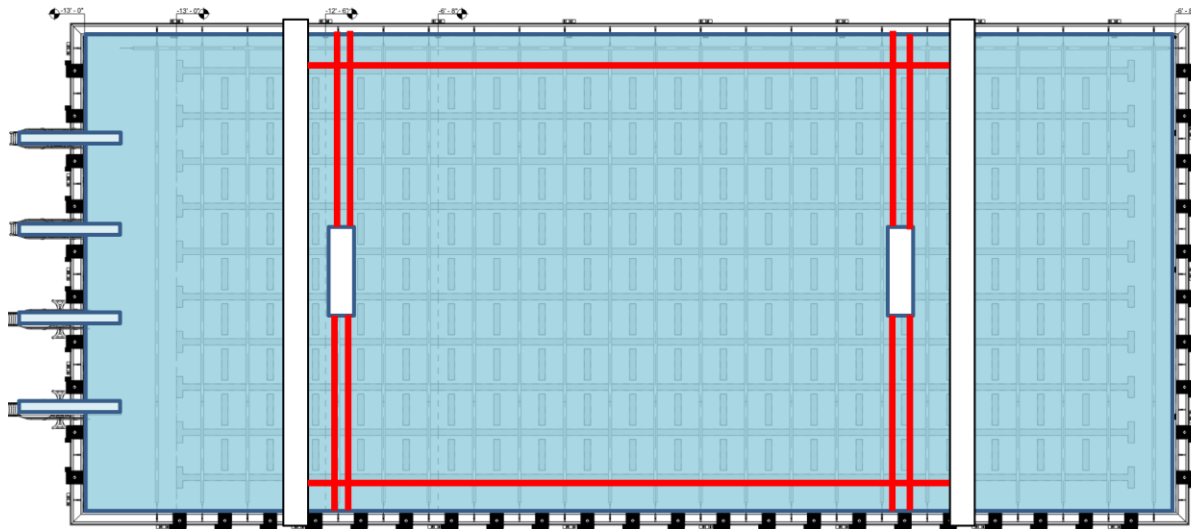


Alternative Depth Contour

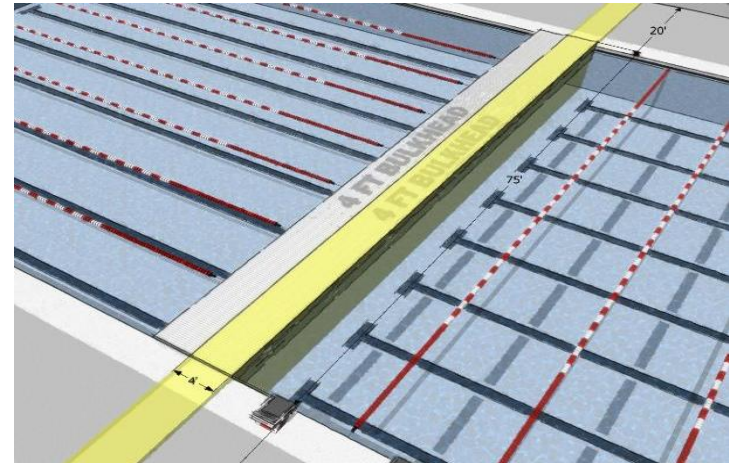


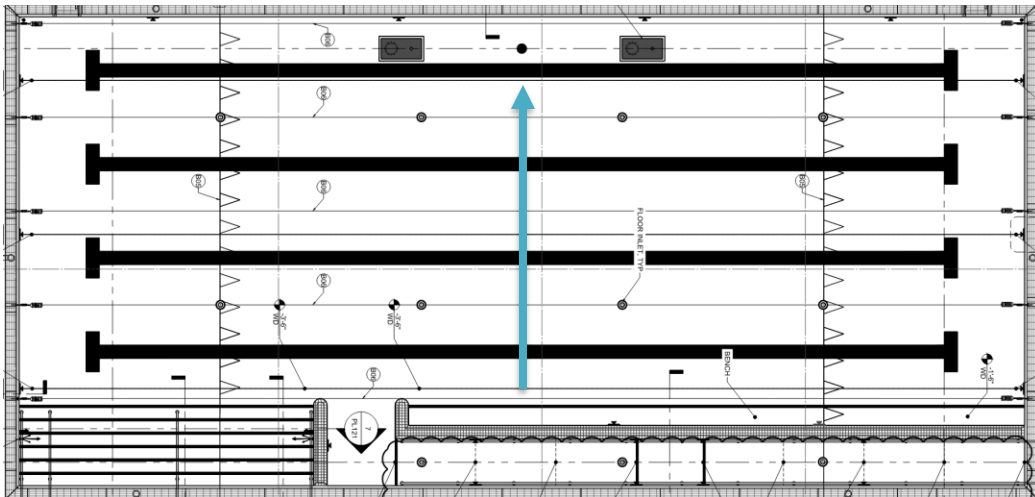
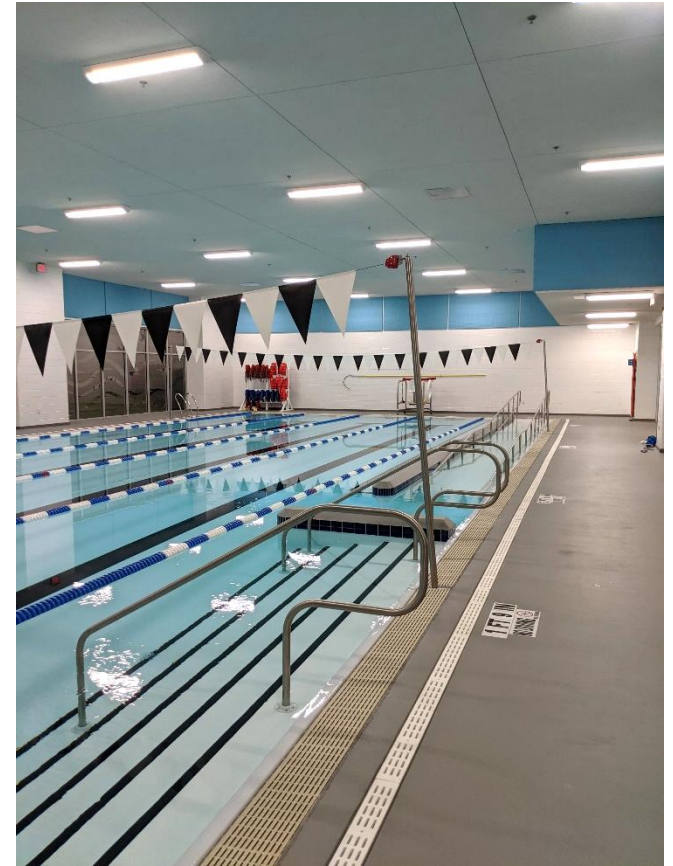


Championship Water Polo



Bulkheads





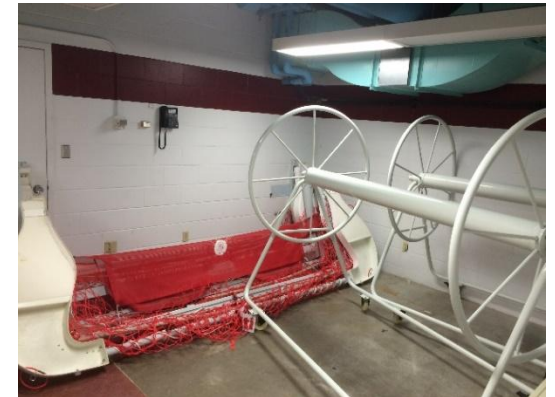
Warmup pool (Same Room)



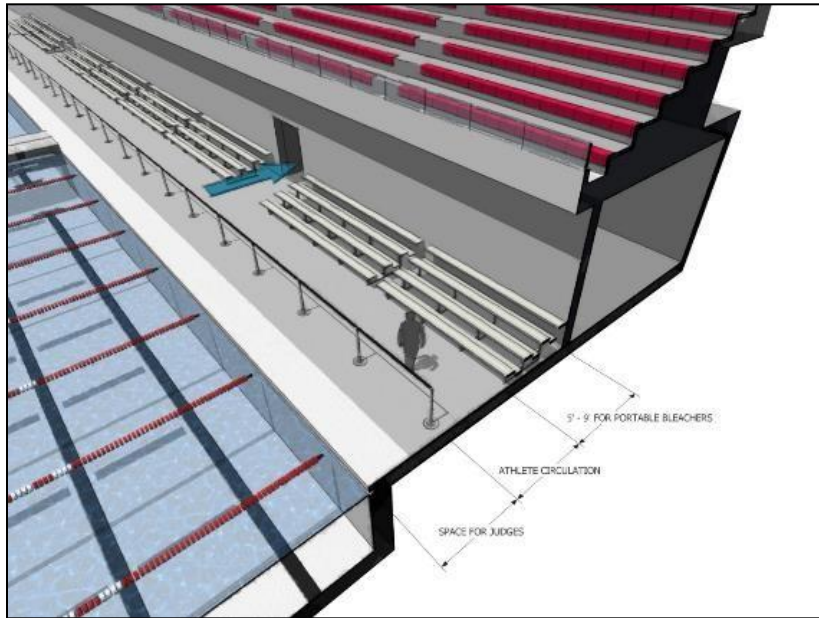




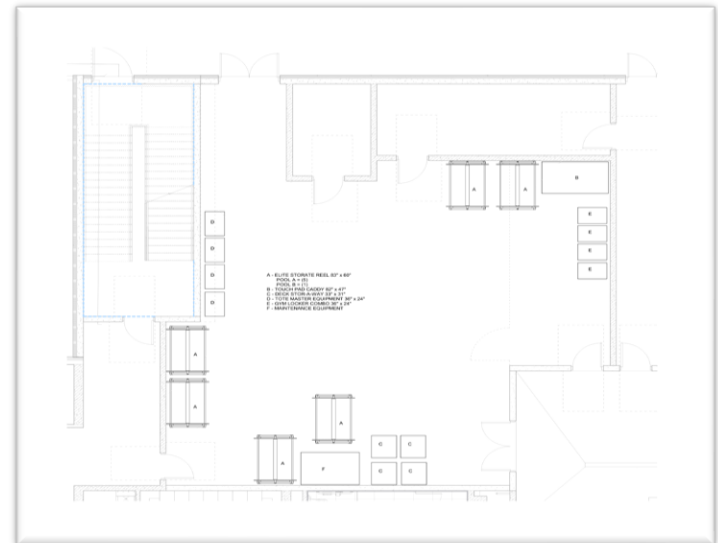
Aquatic Support Spaces



Deck Pathways



Storage Room



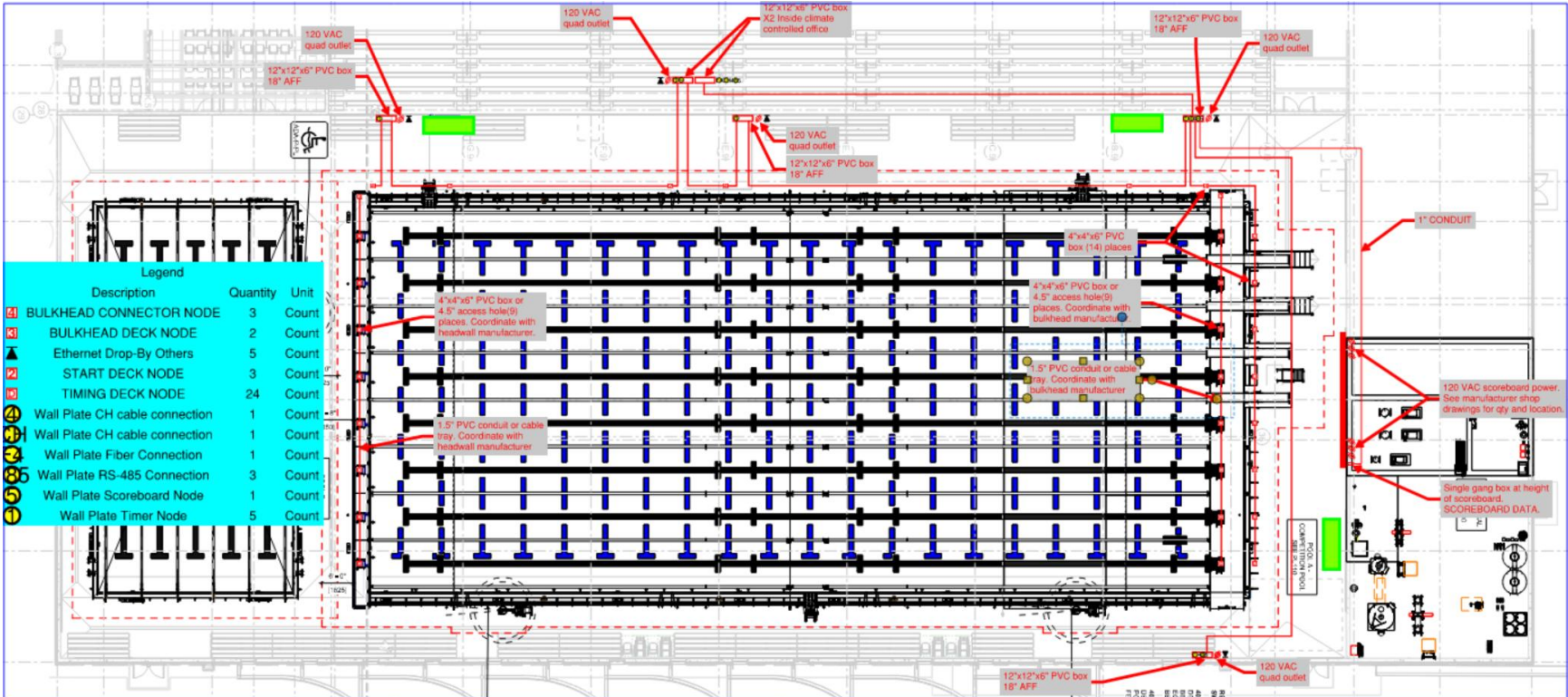
Meet Management



Timing, Scoreboard, Video

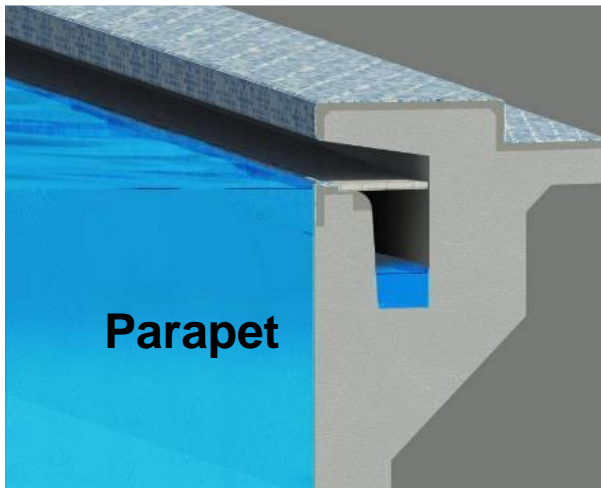
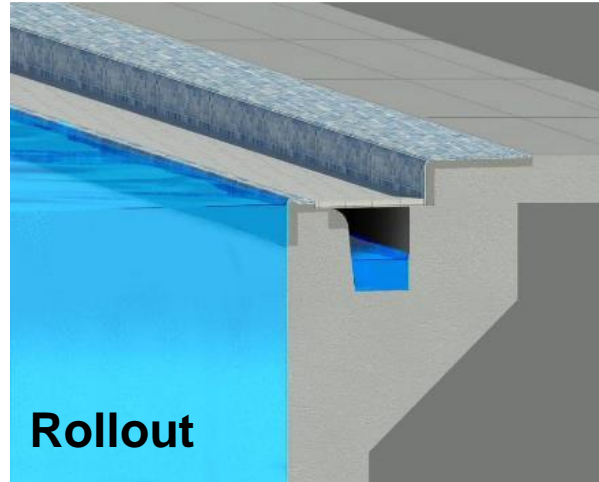
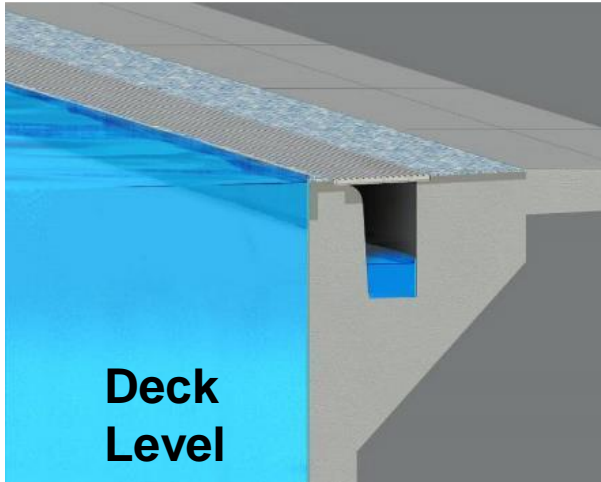


Timing Layout

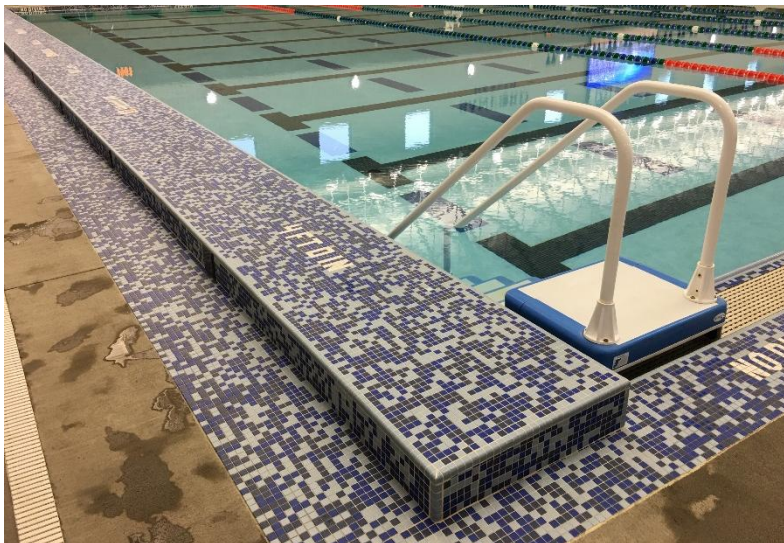




Gutter Configurations



Gutter Configurations



Event Considerations

	Local/Regional Competitions	Provincial	National
Water Depth for start (diving) from starting platform (max height 0.75m from water surface)	2.0m (extending from 1.0 metre to at least 6.0 metres from the end wall)		
Water Depth elsewhere	1.25m	2.0m	
Starting Platforms	Per II.16.1.8		
Backstroke Ledges	Per II.16.1.11 preferred	Per II.16.1.11	
Length of Course	Per II.16.1.1		
Number of Lanes	6	8	10
Warm-up/Warm down pool available	n/a	Additional 25m pool required; 50m pool preferred	
Number of lanes in Warm-up pool	n/a	5	8
Lane Width	2.0 minimum and 2.5 preferred	2.5 preferred	2.5 required
Lane Rope Colour	Colour of lane ropes does not matter		
Deck Space	200	Minimum 700 people	
Deck Seating	100	Minimum 500 people	
Spectator Seating	200	Minimum 750 people	
Meeting Space	2-4 rooms varying size	4 rooms varying size	5 rooms varying size
Electronics/Timing Equipment	Electronic timing system (OMEGA) preferred	Electronic timing system required. Video back-up system with electronics (OMEGA) preferred	
	Local/Regional Competitions	Provincial	National
Scoreboard	Electronic Scoreboard preferred	Electronic Scoreboard required	Electronic Scoreboard required; Video board preferred
Change rooms	Male, Female, Family/Universal	Male, Female, Family, Officials, Universal	
On-deck equipment room	Preferred	Required	
Minimum lighting	Minimum 600 lux	Minimum 1000 lux	Minimum 1500 lux

Event Considerations

1. Facility level required is as follows:
 - a. **2 x 50m pools +** : The facility has two 50 meter pools (8 lane minimum) available for competition, plus additional warm-up lanes available.
 - b. **2 x 50m pools** : The facility has two 50 ^{Recreation} meter pools (8 lane minimum) available for competition.
 - c. **1 x 50m Pool +** : The facility has a 50 meter pool (8 lane minimum) available for competition, plus a minimum of 6 additional 25 meter warm-up lanes available.
 - d. **2 x 25m Pool +** : The facility has two 25 meter pools (8 lane minimum) available for competition, plus a minimum of 6 additional 25 meter warm- up lanes available.

Event	Event Timing	Minimum Facility Level Required
Canadian Swimming Open	April 2025, 2026, 2027, 2028	a, b preferred or c
Canadian Swimming Trials	June 2025, July 2026, June 2027	a or b
Canadian Olympic & Paralympic Swimming Trials	June 2028	a or b
Speedo Canadian Masters Swimming Championships	May 2025, 2026, 2027, 2028	a, b, c or d
Speedo Canadian Swimming Championships	August 2025, 2026, 2027, 2028	a, b, c or d
Canadian Open Water Festival	August 2025, 2026, 2027, 2028	open water venue
Ken Demchuk International	November or December 2024, 2025, 2026, 2027, 2028	a, b or c

Swim Training Facilities

Considerations

- Capacity of swimmers # Lanes
- Water depth? Are starts required?
- Lane width – depends on groups
- Short course or long course (or both)
- Diving can share the end of the pool



Must haves

- Adequate lanes based on schedule
- Space for Dry Training?
- Water temperature for training
- Starting blocks?
- Headwall?
- Pace clocks
- Storage for their gear
- Air quality/water quality
- Good acoustics for teaching
- Locker/changing facility

Competition Swimming Venue

Considerations

- What type and quantity of meets
- Competition requirements?
- Spectator and athlete seating requirements
- Parking requirements
- Special pool features?
- Additional support spaces
- Higher operational cost
- Diving is disruptive in swimming pool
- Programming deep water



Must haves

- Fast Pool
- 2.5 meter lane width
- Headwall
- Bulkhead for spectator orientation (50m & 25M)
- 2-meter depth throughout
- Warm-up space
- Support spaces for hospitality, etc.
- Spectators/bathrooms
- Locker/changing facility meeting Safe Sport
- HVAC for event mode
- Deck space and proper pathways for officials, etc
- Athlete seating and support
- Timing system and scoreboard
- Audio and acoustics for public address
- Video for streaming
- Competition-level lighting

Maximize User Participation



Resistance Walking



Wibit



Climbing Wall



Water Aerobics



Water Tables



Water Basketball &
Volleyball



Log Rolling



Ninja Cross



Competitive
Swimming



Canoe / Kayak
Classes

Maximize User Participation



Paddleboard Yoga



Floatables



Learn to Swim



Scuba



Underwater Hockey



Surf Machines



Entertainment
Screens



Slacklines

Minimize Operational Costs

- Staffing
- Utilities
- Equipment and Material Lifecycle Costs
- Service and Replacements

CONCLUSIONS

- “Right-Size” by Design
- Multi-Purpose, Multi-Generations
- Prioritization and Balance of Community Needs
- User Experience Drives Success
 - Expectations vs Reality
- Plan for Success

Who to Contact regarding today's Webinar

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