

Appendix C – Pit Records

Appendix C - Pit Records

A PIT record is a log that documents all the decisions made by a PIT (Project Implementation Team) during the validation and design development process of an IPD project. It serves as a point of reference to how certain decisions were made and documents the outcome.

PIT records provide a record of project decisions affecting the PIT including background information, decision criteria, and where related information can be found. It is a critical tool in the IPD process for the following reasons:

- Documentation provides a historical reference to the activities within a PIT when they need to be referenced in the future. PITs may have member turnover and a robust record management process will assist with onboarding.
- Allows other team members, particularly the PMT, to check in with how a PIT is functioning.
- Provides structure for PIT activities. Creates rigour and assists with team accountability.
- PIT documentation does not need to be overly complicated. In IPD & Lean, a major focus is to remove waste in processes. Finding a solution that will be used by the team will likely be the most effective solution.
- To outline roles and responsibilities for PIT Record Management.
- The PIT documentation process captures how other affected PITs were brought into the decision.
- To ensure that PIT records provide an accurate representation of assumptions, decisions, progress, etc.



PIT RECORD- AQUATICS

	A	B	C	D	E	F	G	H	I
1	Item Number	PIT Meeting Date	Decision / Action / Assumptions / Opportunity (brief description)	Rationale (brief description)	Cost impact (increase, decrease, neutral, or \$\$)	Building 1	Who needs to know? (other PITs impacted)	Follow-up / Action / Comment / DM#	Date loop closed (everyone knows who needs to know)
2	1	2-Aug-23	Leisure pool - not classified as Spa	Confirm that number of hydrotherapy jets and water temperature in leisure pool does not trigger classification as Spa.	Increase in cost (capital and operational)	Natatorium - Leisure pool	None	Reach out to Health Unit (Kari). Dave B reviewed OBC and Health requirements. To be seen as a hydrotherapy pool the jets need to cover the "majority of the pool" which they do not in this case. Resolved.	25-Aug
3	2	2-Aug-23	Ninja cross as wish list item	Need to confirm that minimum depth of 1.067m can be met, lifeguarding impacts, impact on pool deck (flipping diving boards), impact on electrical and structural design, impact on competition.	Cost will impact whether or not this is a realistic wish list item.	Natatorium	Structural, Elec, owner	Follow up with structural and Elec	
4	3	2-Aug-23	Diving board - ability to flip up	Diving board needs to have ability to flip up so that it can be moved out of the way when needed	limited	Natatorium		David to confirm. No suitable method has been confirmed.	
5	4	2-Aug-23	Timing pads - integrated into the wall/ deck	Meet owner requirements for wall connections and minimize clutter on deck space	Increase costs	Natatorium	Electrical	David to send options for timing systems.	sept 6. colorado provided
6	5	2-Aug	Accessibility Lift Omitted	Per Karie not required with ramps. Staff burded, maintenance reduction	decrease	pool deck	pool/arch	Confirmed with Chris 2023-091-12	
7	6	9-Aug	Pool equipment area ceiling height	to allow installation of DE filters (they are tall)	Increase costs			David to confirm. Largest tank is 10'6" high. Current ceiling is 13'3-1/2". Slab shown is thicker than required per Caeleb. No issue to resolve.	6-Sep
8	7	9-Aug	Backwash/ drain down pit	to allow draining of filters and draining pool	none	tunnel	Mechanical	Communicated to Karine that a backwash basin above grade, 900 x 900 x 900 would be appropriate. Pools to build and waterproof basin. Drain plumbing by plumber.	13-Sep
9	8	25-Aug	Colorado touch pads	To meet FINA requirements, the touch pads may need to extend 300mm above the deck. This would necessitate the construction of a parapet at the deep end of the pool.	Increase capital costs	pool deck	Owner	Owner indicate if required.	This is resolved. The pads from Colorado are suitable for a 300mm headwall. Parapets are being quoted as stainless and concrete.
10	9	25-Aug	Pool scope of work	Define pool scope and delineate work by others.	none			draft is complete. Gap studies completed with Electrical and Mechanical.	
11	10	28-Aug	Surge tank venting	Capture chloramines within tanks and vent mechanically to outdoors.	small increase	pool mechanical	mech/elec/arch	forward and follow up. Confirmed with Karine spet 6 2023. Pools will leave 4" PVC stub for connection by mechanical.	6-Sep
12	11	28-Aug	Chemical Addition Area				mech/elec/arch	forward and follow up	Communicated to Achitectual. Room added.
13	12	12-Sep	Headwall required	Owner request to validate swim records	Increased captial cost	pool deck	arch/structural/mechanical		
14	13	19-Sep	revise estimates to remove profit and overhead	apples to apples comparison	none	all		spet 19	

PIT RECORD- ARCHITECTURAL, STRUCTURAL , ENVELOPE

	A	B	C	D	E	F	G
2	Item Number	PIT Meeting Date	Decision / Action / Assumptions / Opportunity (brief description)	Rationale (brief description)	Cost impact (increase, decrease, neutral, or \$\$)	Who needs to know? (other PITs impacted)	Followup / Action / Comment / DM#
3	1	2/8/2023	Use a prefabricated, vulcanized, rubberized, continuous expansion joint waterproofing and air barrier membrane at expansion joint between new and existing buildings	There will be an expansion joint between the new and existing buildings, between gridlines x.L and A, which will require a waterproof and airtight flexible membrane. Situra Flamline or Soprema Soprajoint Plus can be prefabricated to form a continuous membrane at vertical wall and roof expansion joint locations, and is easily installed.	Increase	Estimating	Caleb Tsui from MJMA to review with his team and then comment on this approach.
4	2	2/8/2023	What are the duration and warranty requirements for envelope products			Entuitive/ Estimating	Caleb Tsui from MJMA to review with his team and then comment.
5	3	2/8/2023	Use of same higher level cladding (Whatever that may be) for full height of elevations instead of WM2	Potential issues with assemble and transitions	Increase	Entuitive	Caleb Tsui from MJMA to review with his team and then comment.
6	4	9/8/2023	New pool roof to be designed to support green roof. If green roof funding not achived the same design will support the future use of PV. Agreed with Rami to proceed with Green roof loading for design.	PV loading requirments less than green roof.	Increase. Greenroof or PV loading requires structural support that exceeds just roof and snow load requirements. Green roof 25% load increase. PV 10% load increase.	Estimating,	Sean L to design roof structure to support green roof. Agreed by Loyalist Township
7	5	15/8/2023	Rami provided approval to move forward with proposed lula lift system in existing arena	Lula lift requires a small pit, meaning less excavation below the existing slab-on-grade. The overrun height is also less.	Decrease compared to conventional elevator	All	Sean L to design foundations for new pit
8	6	10/8/2023	Insulation not required below slab-on-grade at swimming pool	MJMA indicated that insulation below pool shown not to have good ROI	Neutral - current design does not include insulation below pool SOG	Energy Modeling	Await energy model results to confirm that insulation below pool is not required
9	7	10/8/2023	Check if Loyalist's planned capital expenditures and their associated budgeted funds can be incorporated into the WJHRC project	-Planned capital expenditures (e.g. roofing and window replacements) will have more cost effectiveness if included in overall project (savings on mobilization and general conditions) -Roofing and window replacements may contribute to meeting project energy requirements, and facilitate reducing performance of new addition envelope assemblies -Roofing replacement will reduce risk of water leak damage to interior works	Possibly neutral if budgeted capital expenditure funds can be moved to WJHRC project	Loyalist, Estimating	Request capital expenditure budget information from Loyalist, and ask which expenditures and funds they would like included in the WJHRC project
10	8	14/08/2023	Demolition of existing pool filtration room allows access to the deep end of existing Pool as a storage area for facility	Request from Owner	Possible increase depeneding on whether the pool floor needs to be levelled	Loyalist, Estimating	Review with Loyalist regarding how this storage will be used
11	9	14/08/2023	New entrance at lower level lobby removed to limit demolition/scope. One set of existing doors to remain as new entrance/exit	Request from Owner	Possible savings	Loyalist, Estimating	
12	10	14/08/2023	Vestible removed from the pool addition, is now a double door exit. overhang to remain	Request from Owner	Savings	Loyalist, Estimating	
13	11	14/08/2023	Elec room to remain on lower lobby. Staff room layout adjusted	Coordination with elec	Neutral	Loyalist	
14	12	14/08/2023	Loadbearing wall to remain on lower lobby level. Changeroom layouts adjusted	Coordination with struct	Neutral	Loyalist	
15	13	15/08/2023	Lane rope storage location confirmed with Aquatics and Andras	Pool mech layout	Neutral	-	


PIT RECORD- ARCHITECTURAL, STRUCTURAL , ENVELOPE

16	14	9/8/2023	Skybox length required to meet FADs acesssibility standards	Per LFADS the rink has a total of 980 seats (per our updated life safety drawings), 3% of that means 30 Accessible seats required for the Rink. With our current proposed of 1 line of warmside seating and 2 coldside seats we currently have 15 seats	Neutral- What is shown in the original drawing set is confirmed as below minimum	-
17	15	15/08/2023	Pool Basement to be fully excavated. Area under the new pool will now be an occupiable mechanical space.	Coordination with Mech	Increase	Loyalist, Estimating
18	16	16/08/2023	New storage in deep end of existing pool basin. Concrete topping required for leveling of existing sloped slab. Anticipated clear height is 2.5m+ considering new floor infill above. M&E teams confirmed they are not proposing to use the existing pool basin for new equipment 23/08/2023 Update: Loyalist confirmed storage room in existing pool basin does not require concrete topping to level slopes. They can work with a sloped room.	Arch + Struct coordination	Neutral	Loyalist, Estimating
19	17	23/08/2023	3 door storage on south pool deck	Owner request	Neutral	Loyalist, Estimating
20	18	23/08/2023	Meeting room access from new lobby to remain	Owner request	Neutral	Loyalist, Estimating
21	19	23/08/2023	Universal WC removed from lower lobby. BF washroom added to west end of building. Existing doors on lower lobby to be removed and new double door exit remains in the project to accomodate layout	Estimating and owner request to reduce cost	Decrease	Loyalist, Estimating
22	20	23/08/2023	Two structural framing options to accommodate new skylights in existing roof precast double tees. New beam above the tees or new beam below. MJMA-Chris and Chandos-Randy advised they prefer to have the beam on top of the roof	Arch + estimating preference		
23			Underground drainage around perimeter of basement and under slab			
24	21	6/9/2023	Prefab aluminum bleachers instead of concrete bleachers at new pool. Rami (Loyalist) okay			
25	22	6/9/2023	Mechanical is considering to increase existing snow melt pit for operations benefit. Structural provided some guidance on limits to increase in plan area without undermining existing foundations. Structural noted that the cost would include demolition of existing concrete pit walls, slab-on-grade and new walls and slab. Cost is likely considerable and Loyalist should review the cost / value of this scope. Rami (Loyalist) noted that this may be added to the wishlist.			
26	23	7/9/2023	Sean (ENT) and Randy (Chandos) reviewed options for reinforcement or replacement of the existing garage roof (south-east corner of existing facility) due to the additional snow accumulation resulting from the new pool addition. It was agreed that reinforcing the existing structure was more economical. New steel beams will be added mid-way between each existing roof joist. The beams will bear on the existing loadbearing masonry wall.			


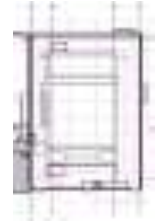
PIT RECORD- ARCHITECTURAL, STRUCTURAL , ENVELOPE

27	24	13/9/2023	<p>Structural review of the proposed ninja cross system as a wish list. The team obtained structural drawings from Ninja cross for previous projects which provides connection details and loading. The team is showing a 43' ninja cross frame system. Based on Ninja cross system this requires additional dead load capacity of 1260 lbs and live load capacity of 3280 lbs. Assuming that this will be evenly supported by two roof beams, the calculated increase in flexural load is approximately 2%. Therefore it is concluded that the proposed roof framing structure can safely support the addition of a ninja cross system.</p>				
28	25	20/9/2023	<p>existing pool shows evidence of degradation. There is likely a requirement for partial removal of the existing masonry veneer. There is also a requirement to cut new openings through this same wall for connections into the new pool space. The team decided to carry in-scope the complete removal of the masonry veneer on the east wall to</p> <ol style="list-style-type: none"> 1. reduce risk of collapse 2. remove requirement for new lintels above openings 3. simplify the construction process/schedule 				

PIT RECORD- ELECTRICAL

	A	B	C	D	E	F	G	H	I	J
1	Item Number	PIT Meeting Date	Decision / Action / Assumptions / Opportunity (brief description)	Rationale (brief description)	Cost impact (increase, decrease, neutral, or \$\$)	Rink	Common Area	Pool	Who needs to know? (other PITs impacted)	Followup / Action / Comment / DM#
2	1	8/8/2023	Fire Alarm System Upgrade	The complete demolition of all devices, conduit and wiring in areas of set for full demolition. Option to re-use the existing devices (bells, detectors, EOL Resistors) with multiple manufacturers or complete demolition of the devices and exposed conduit		Applicable	Applicable	Applicable	none	https://chandosconstruction.sharepoint.com/:x:/r/sites/WJHRCValidation/Shared%20Documents/Electrical/Decision%20Matrix/Template%20-%20Decision%20Matrix%20Log%20v1%20(2).xlsx?d=w5cff5fc32c1e475790ef6f7bfd5
3	2	8/9/2023	PA System and AV speakers	IT (owners) confirmed they are ok with the current system and would rather building on top rather than a complete demolition		Applicable	Applicable	Applicable	Owner PIT	
4	3	8/9/2023	IT room to be relocated	Confirmed with IT team that the current main telecommunication room is being planned to be relocated to the adjacent Electrical room beneath the bleachers - This would required to remove and re-run any category cables that would need to be legthened to meet the new termination point/rack		Applicable	Applicable	Applicable	Owner PIT	
5	4	8/9/2023	Removal of Power distribution equipment under bleachers	Majority of the Panels, located under the bleachers, serve the areas set for demolition as well as the changerooms on level 01. The following panels are set for full demolition compelte with all conduit and wiring - 'MAINS - Panel 'A' - Panel 'B' - Panel 'D' The following Panels are located on Level 02, for full demolition - Panel 'A' - Panel 'P' the following panel will be demolished but the circuits shall remain as they service the level 01 changerooms (no scope for demo) - Panel 'C'					Construction	
6	5	8/29/2023	Removal of the existing Lighting "Controls" for Rink	At the moment the rink uses manual swtiching for the lighting controls over the rink area - this is highly inefficient and should be competely replaced with a networked based system, the zoning can remain as is to avoid extra costs to run additional control cabling.		Applicable	Not Applicable	Not Applicable	none	
7	6	9/6/2023	Emergency Power plan for Atrium revised from a life safety 2 hour threshold to a 4day window, as per request	The building designation as "high importance" and it was requested to provide a cost breakdown (as part of the wishlist items) to back up the new atrium for period of 4 days. The area in question was evaluted and in order to provide back up power to the lighting and heating/cooling certain systems and equipment were designated to be backed up by a new "emergency panel"		Not Applicable	Applicable	Not Applicable	none	

PIT RECORD- MECHANICAL + SUSTAINABILITY

	A	B	C	D	E	F	G	H	I	J	K
2	Item Number	PIT Meeting Date	Decision / Action / Assumptions / Opportunity (brief description)	Rationale (brief description)	Cost impact (increase, decrease, neutral, or \$\$)	Rink	Common Area	Pool	Who needs to know? (other PITs impacted)	Followup / Action / Comment / DM#	Date loop closed (everyone knows who needs to know)
3	1	8/10/2023	No cover for swimming pool	not an option for client / maintenance	neutral			Applicable	Sust/Mech	none	8/10/2023
4	2	8/10/2023	Use cold water flooding for water surfacing	save a lot of energy not heating up huge quantity of water for the	decrease	Applicable			Mech	none	8/10/2023
5	3	8/10/2023	72 hour recovery time for pool heating	how long it takes for the pools to warm up after being filled	neutral			Applicable	Aquatics/Mech	none	8/10/2023
6	4	8/10/2023	Aquatic Temperatures Space: 85F, Lane: 83F, Leisure: 90F, Changerooms: 80F	temperatures assumed for design	neutral			Applicable	Aquatics/Mech	none	8/10/2023
7	5	8/10/2023	Schedule Multipurpose Spaces	assume 50% booking, programming + rented by outside users, playgroups, yoga, youth. week: 3hours during the day, 3 hours in the evening. Weekend: 4 hours on saturday and sunday, birthday parties, both summer and winter, paired with skates or activities on dry floor	neutral		Applicable		Sust/Mech	none	8/10/2023
8	6	8/10/2023	Zamboni charger needs to be relocated - currently in the chiller room	on pool side, multipurpose room can also be rented out	neutral				Elec/Mech	none	8/10/2023
9	7	8/10/2023	Schedule Rink Area	not in good location	increase	Applicable					
10	8	8/10/2023	Schedule Rink in Summer	week: rentals first thing in the morning, senior skate, drop in during the day, 4pm heavy load starts - ice sits idle during the day	neutral				Sust/Mech	none	8/10/2023
11	9	8/10/2023	Schedule Pool Area	1 day a week, Thursdays 9-3 shut down for ice maintenance. during the week during free time = edging	neutral			Applicable	Sust/Mech	none	8/10/2023
12	10	8/10/2023	Mechanical Systems Options: Select Option 2 1. decentralized 2. WSHP 3. ASHP	weekend = completely full	neutral				Sust/Mech	none	8/10/2023
13	11	8/10/2023	Location for ERVs	pickleball, ball hockey, lacross, camps, drop in	neutral		Applicable	Applicable	Mech/Arch/Struct	none	8/10/2023
14	12	8/10/2023	Location for Pool DHU	week: swim teams, seniors in the morning. aquafit, school groups mid day, swim teams and lessons, public swim	neutral	Applicable		Applicable	Mech/Arch/Struct/Aqua	none	8/10/2023
15	13	8/24/2023	Arena Specator Heating - not a wish list item	1. Option 1: small savings, but overall the NPV for each individual equipment offsets the savings for the main WSHP. only \$ savings come from eliminating the need for 2nd WSHP for higher temp hot water (domestic/radiant). come at expense of not sharing the heat recovery. not a worthwhile savings	neutral	Applicable	Applicable	Applicable	Owner/Mech	none	9/8/2023
16	14	8/24/2023	Arena + arena locker room ductwork to be demolished or abandoned in place - not re-used	2. WSHP	neutral	Applicable			Mech	none	8/23/2023
17	15	8/24/2023	Two existing DX,gas-fired RTUs serving lobby + Admin areas to be demolishd and not re-sued	3. ASHP - there is space for WSHP so equipment can be relocated indoors. ASHP would be a good alternate if equipment had to go out	neutral		Applicable		Owner/Mech		follow up with Rami with cost
18	16	8/24/2023	Sprinkler coverage area: reduced to not include the L2 admin area - 2hr fire rated door relocated to include the egress path from the pool changerooms	limit structural work	neutral			Applicable	Arch/Mech	none	8/23/2023
19	17	8/25/2023	Fire protection: FHC (fire hose cabinet) vs. FVC (fire valve cabinet) vs. not required	admin area: gas fired equipment, layout and capacities do not meet requirements.	increase		Applicable	Applicable	Arch/Mech/Owner	DM Created	
20	18	8/24/2023	Hydrogeological Report - not needed to finish off validation	lobby area: gas fired equipment, ductwork/diffusers running through areas being demolished	neutral				Arch/Mech/Owner	none	8/24/2023

PIT RECORD- MECHANICAL + SUSTAINABILITY

21	19	9/5/2023	Rink Spectator heating to be electric option	<ul style="list-style-type: none"> • cost of hydronic options too high • low hours of usage in a year • confirmed spare capacity with electrical 	decrease	Applicable			Arch/Owner/Elec	none	9/5/2023
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PIT RECORD- OWNER

	A	B	C	D	E	F	G	H	I	J	K
1	Item Number	PIT Meeting Date	Decision / Action / Assumptions / Opportunity (brief description)	Rationale (brief description)	Cost impact (increase, decrease, neutral, or \$\$)	Aquatic Hall	Rink+Changerooms	Commom spaces + MP+Library	Who needs to know? (other PITs impacted)	Followup / Action / Comment / DM#	Date loop closed (everyone knows who needs to)
							Building Impacted				
3	1	23.08.29	Fold-up diving board, decide on spec	Required for competition events, getting board out of the way of starting blocks	neutral	YES				Aquatics, Owner	Dive UK has hydraulic version, very safe but expensive and requires maintenance. SR smith to comment on bespoke solutions for simple recreational 16' board and holding hardware
4	2	23.08.29	Parking count discussion with authorities	Establish requirements with authorities, current zoning requires many more spaces at big cost increase	increase if not mitigated			YES		Owner, costing, civil	Send summary parking chart to planning, submit for SPA pre-con meeting and follow up with variance application and parking needs study if necessary. Use A2 use counts to determine parking spaces for office and subsidiary uses.
5	3	23.08.30	Outline specs received from Covertite for cladding materials	Working with trade in informal design assist arrangement to accelerate cladding and roofing choices	neutral	YES	YES	YES		Owner, costing	Review updated rendering studies, perhaps after validation, update outline specs for validation and costing
6	4	23.08.29	Life Safety approach	A3 occupant load with subsidiary A2 office spaces. No separations of major occupancies in this scenario except at Library which is a grandfathered condition	neutral	YES	YES	YES		All for code report	Share current occupant load and proposed occupant load to indicate amount and location of increased occupant loads in the building, send to building plans examiner

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1	23.08.22	Delete basement Universal WC, revise to barrier-free WC at west end of arena changerooms	underpinning of old pool basin for small area	decrease		YES		Structural, costing, M+E, Owner	Update drawings	2023.08.23
2	23.08.23	Add patching of old mech piping penetrations in slab,	Exposed openings in slab and wall will compromise fire separations and acoustic integrity of walls and floors	increase		YES	YES	Structural, costing, construction, Owner	Include scope on structural, architectural, quantified from mech demo drawings	2023.09.30
3	23.08.23	Consider mould abatement in DSS study	mould observed in existing changerooms	depends on findings		YES	YES	Owner, costing, construction	Review DSS Scope of Work	2023.09.30
4	23.08.22	work in validation and likely commodity partner in construction	with Chandos, need for trade input on envelope	neutral				Envelope, construction, owner	Design Assist agreement after validation	2023.08.25

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1	23.08.09	Review and decide on CLT deck	CLT not costed in current estimate, complexity and supply chain concerns	decrease if removed	Yes	Structural, costing	Decision matrix	TBD
2	23.08.09	Assume metal cladding envelope	Metal Cladding in current estimate	N/A product carried in estimate	Yes	Envelope	Study types, meet with cladding trade	2023.08.16
3	23.08.09	Remove green roof in project	Funding stream not successful	decrease	Yes	Envelope		2023.08.16
4	23.08.09	Utility costing outside of IPD budget	No Utility connections in costing	increase - account for in total budget		Costing, owner		2023.08.16