



# **Success Tools - Stakeholder Involvement in The Design Process**

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# Course Description

## Design Success through Effective Stakeholder Involvement

### Why Do We Need Tools?

- Two-way understanding, communication, clarity & verification, alignment of purpose
- Building blocks, each phase dependent on getting consensus on the previous, documentation
- Changing minds gets more difficult and expensive as the project progresses
- What are we telling you (mostly architects) that you don't already know?
- What value will this session be to you in your quest to achieve success?

# Learning Objectives

- **Identifying, Establishing & Justifying Facility Needs**  
Participants will be able to structure a defensible and justifiable statement of needs in support of facility renewal.
- **Design Tools & Processes for Success**  
Participants will be able to apply tools and methodologies to improve the quality and accuracy of design requirements, when used as part of an inclusive integrated design process.
- **Design-Build v Design Bid Build Project Delivery Models**  
Participants will better understand the issues, benefits and considerations of using alternate project delivery models, and to advise actual or potential clients regarding the most appropriate approach for facility renewal strategies.

# Presenters



**John E. Pepper**, OAA, SAA, MRAIC, AIA Int'l Assoc. LEED AP  
**Rebanks Pepper Littlewood Architects** Toronto, Ontario  
35 years in police, high-security & public safety facilities



**Peter Ortved**, OAA, SAA, AAA, FRAIC  
**CS&P Architects Inc.** Toronto, Ontario  
Architect with 40 years of experience in justice, public  
safety & community facilities



**Susan Grant**, Staff Sergeant (Retired)  
**Saskatoon Police Service** Saskatoon, Saskatchewan  
Police Headquarters Project Liaison Officer

# Agenda

- **Case Study Project – Saskatoon Police Headquarters**
- **Success Tools**
  - RFP stage
  - Pursuit stage
  - Design-build & compliance stage
- **Design Initiatives**
- **Lessons Learned**
- **Discussion**







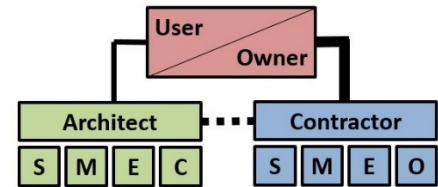
# Why are tools important to Stakeholder involvement in the design process?

- **Bridge** between user knowledge and final built product
- **Transfer** understanding & information on functions
- **Increase probability** of meeting operational needs
  
- **Opportunity** to overcome current facility challenges
- **Clean slate approach**, remove blockers and friction
- **Achieve or exceed** 'industry' current best practice
  
- **Ensure clear communication** amongst parties
- **Mutual understanding** of the importance of the Contract
  - We understand what they need & want
  - They understand what will be in the project documents

# Project Delivery Options

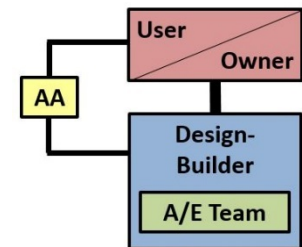
## Design-Bid-Build

- Client retains architect, iterative design process
- Completed documents issued for Contractor bids



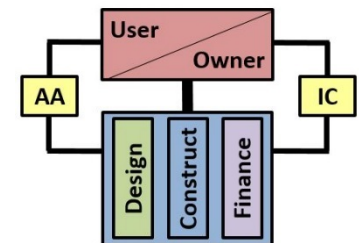
## Design-Build

- Advocate Architect prepares Owner's Requirements (OSR)
- Design specifications for RFP to D-B teams
- Design-build teams present competitive proposals



## Design-Build-Finance (DBF) or Design-Build-Finance-Maintain (DBFM)

- Design Build team incentivized to factor in maintenance & operating costs to improve performance over time



## Integrated Project Delivery

- Stakeholders work together in multi-party contract (owner, architect, engineers, constructor, subtrades)
- Shared risk & reward



# Role of the Advocate Architect in D-B

Determine (& ensure compliance with) Owner's requirements  
Establish performance v. prescriptive requirements  
Permit innovation by Design-Build proponent teams (design, construction, cost)

## **Project Phases:**

- 1. Needs assessment/programming, Indicative Design, Technical Requirements as basis for RFP**
- 2. Proposal/Pursuit stage – evaluation of proposals, selection of Preferred Proponent**
- 3. Design & Construction Compliance**

Project management & contract administration  
Issues & risk logs, project dashboard

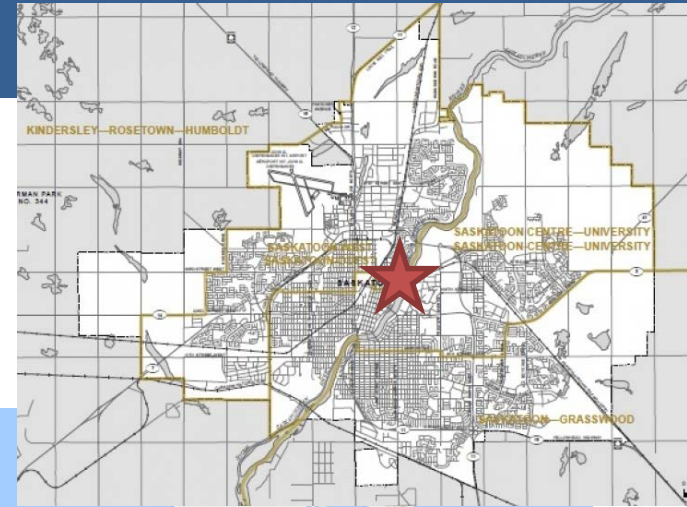


# The City of Saskatoon

**Largest city in  
Saskatchewan  
Population 260,000 &  
growing  
171 sq.km (66 sq.mi)**

**Growing, progressive  
community**

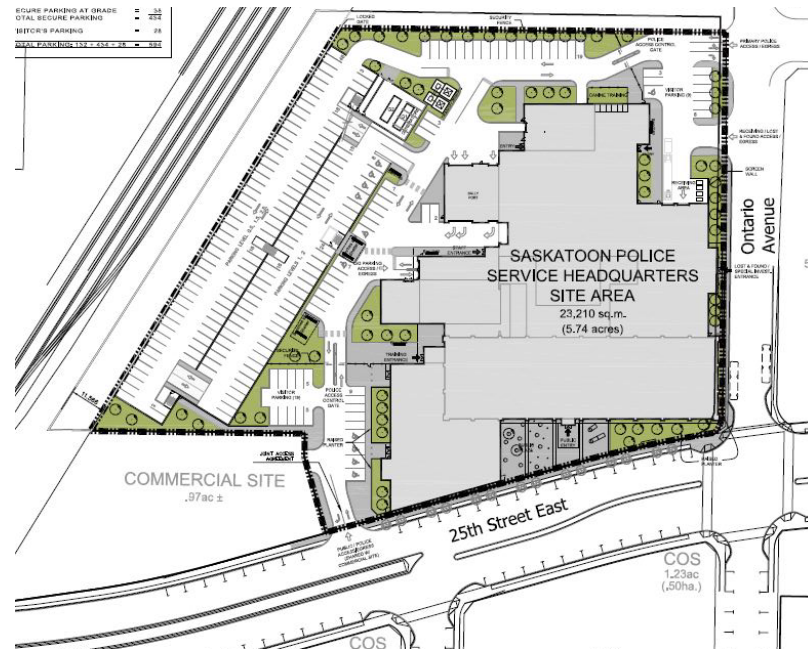
**Police service provided  
from a single facility**



# The Saskatoon Police Headquarters



## From Concept to Reality





# Project Summary



- 28,540 sqm (300,000 sq.ft) GFA
- Planned for population of 350,000, 775 total staff
- Parking for 576 vehicles
- Planned/designed for future growth & expansion
- Catalyst for 25<sup>th</sup> Street urban renewal



# Project Summary



## **Operational Opportunities:**

- Consolidate & co-locate dispersed facilities
- Improve & streamline operations
- Improve safety & security
- Allow for growth & change

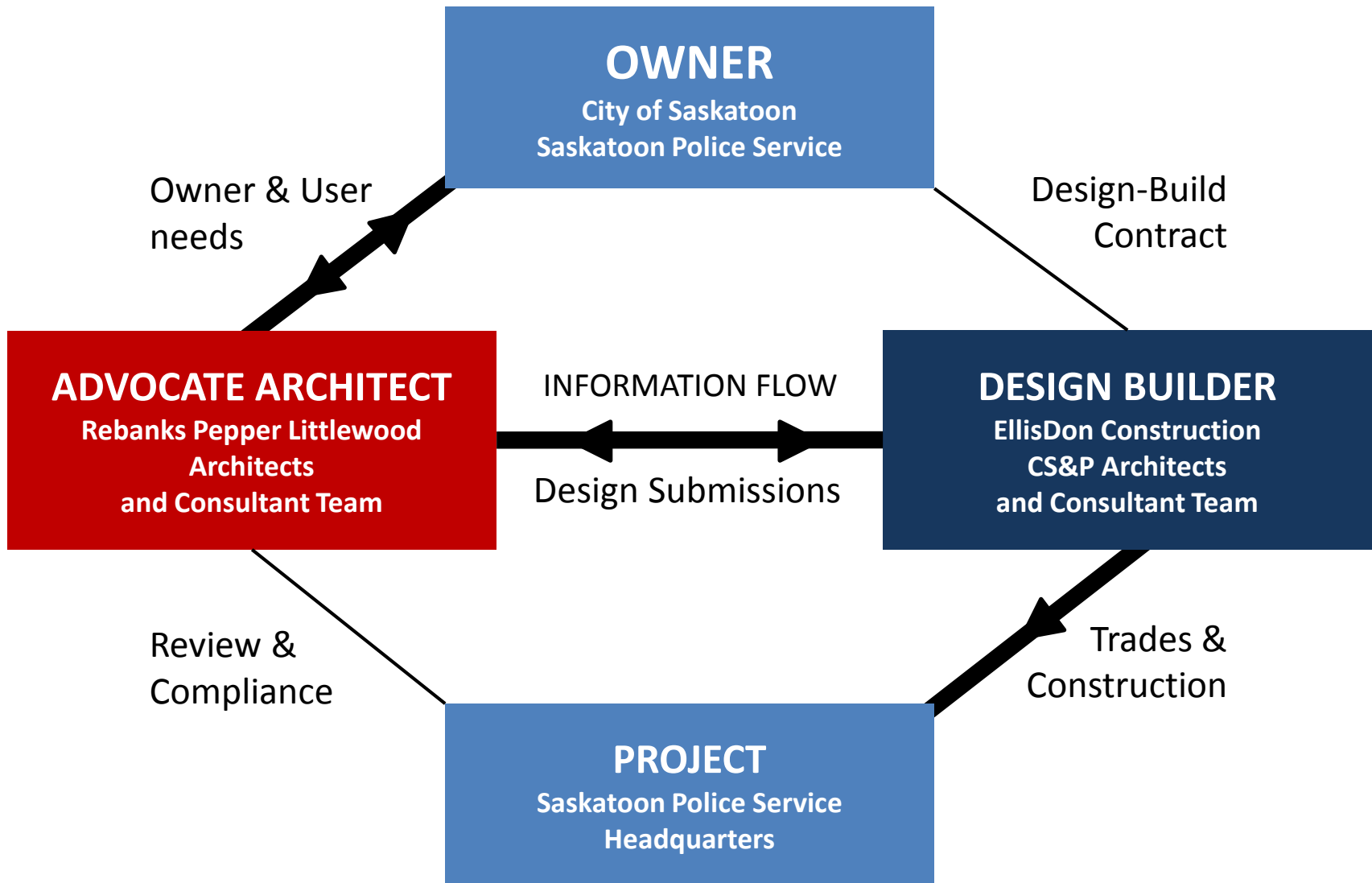
## **Urban Design Objectives:**

- Urban renewal for former works yard
- Respect & enhance historic architectural character

## **Project Parameters:**

- Approved facility program
- On-site employee parking
- Fixed budget – \$99.5M for design & construction

# Project Participants



# Project Schedule

2009-2010

**City/SPS prepare OSR with Advocate Architect**

Fall 2010

**Prequalify 3 Design-Build proponents and issue RFP**

April 2011

**3 Proponent submissions**

June 2011

**Preferred Proponent (EllisDon) selected and Saskatoon City Council contract approval**

August 2011

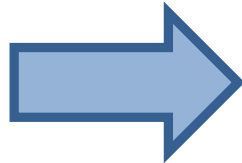
**Construction Start**

May 2014

**Substantial Completion (34 months)**

June 2014

**SPS move in**



# Part 1 – The RFP Stage

RFP

Pursuit

Compliance

**Needs Assessment,  
Programming, Technical  
Requirements**



**Developing the OSR and  
Indicative Design**

# Developing the Design-Build RFP

## Objectives:

Determining the Needs  
Balancing Scope & Budget  
Program Verification  
Technical Requirements  
Indicative Design

## Methods:

Stakeholder Involvement  
Best Practice Precedents  
Validation & Refinement  
Technical Requirements  
Indicative Design



## Final RFP

Project Agreement  
Owner's Statement of  
Requirements



# Success Tools

## #1 - Defining & Documenting Project Parameters

- **Understand police service objectives**
- **Focus on functional needs**
- **Address City & community priorities, urban renewal**
- **Forecasting, flexibility & future-proofing**
- **Budget & affordability**
- **Define project success factors**

# Project Success Factors

Objective	
<b>Functionality</b>	Support efficient execution of program tasks.
<b>Collaboration</b>	Facilitate efficient and effective collaboration amongst units
<b>Safety &amp; Security</b>	Ensure security & safety of occupants, continuity of essential operations, protection of assets. Balance with openness, communication & community accessibility.
<b>Durability</b>	Withstand hard 24-hour uses a police facility is subject to.
<b>Flexibility</b>	Accommodate on-going changes in police functions.
<b>Future-proofing</b>	Accommodating anticipated growth within the organization
<b>Value for Money</b>	Represent a high value by design, planning efficiency, and selection of systems, materials and components

# Owner/User Comments

## Owner's Quote

“

- **Communication - Get City and police information documented and into the designers' hands**
- **Ensure Needs Assessment is up to date**
- **Rely on an Architect with experience**
- **Anticipate and plan for growth and change**
- **Visit other facilities to verify needs**

”

S/Sgt Susan Grant

# Needs Assessment & Programming

## Getting the Right People – Getting the Right Information

- Clean slate mindset, forget the status quo
- Understand why things are the way they are – band-aids, legacy decisions, outdated processes
- Turn 'evolution' into 'revolution'
- Research & visits
- Best practice opportunities
- Re-examine processes (Lean)
- Test, compare approaches, evaluate, decide

# Owner/User Comments

“

- Research & evidence-based Needs Assessment
- Space standards to municipal or provincial/state guidelines
- Office size by rank decreases arguments
- Room Data Sheets require time and diligence
- Right decisions might not be the popular ones
- Have users and clients at the table
- Users – sworn, civilian, management – all have different pressures
- Client needs to see the big picture
- Inclusivity generates ownership
- Don't make promises you can't keep....

”

S/Sgt Susan Grant

# Success Tools

## #2 – Precedents & Best Practice

- **Tours of other facilities**
  - **Good, bad and new approaches**
  - **Lessons learned**
  - **Discuss processes & practices**
- 
- Kingston Police HQ
  - Waterloo Regional Police FIS & firing range
  - Toronto Police Service
  - Calgary & Edmonton
  - Halton Regional Police 2 District



# Precedents & Best Practice - 1



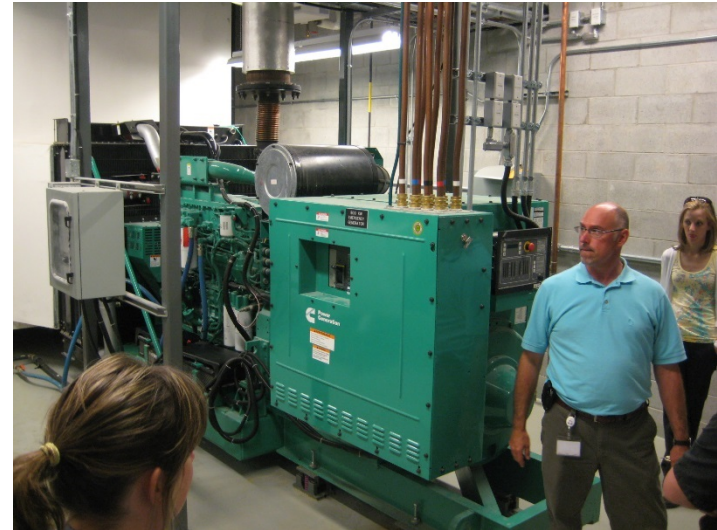


# Precedents & Best Practice - 2





# Precedents & Best Practice - 3



# Precedents & Best Practice - 4



# Success Tools

## #3 – A Day in the Life

	Exterior Street	Secure Parking	Public Areas	Semi- Public	Training	Common Areas	Operational Areas	Administrative Areas	Service Areas	Restricted Areas	Secure Receiving	Detention	Indoor Parking
Zone	E1	E2	1	2	2	3							
General Public		X		X	X	X	X	X	X	X	X	X	X
Public Users		X		A	X	X	X	X	X	X	X	X	X
Victims/Witnesses		X		E	X	E	E	X	X	X	X	X	X
External Agencies (Training)		A			A	A/E	A	X	X	X	X	X	X
Visitors		A		A/E	A/E	E	E	E	E	X	X	X	A/E
Operational Staff									A	R		R	
Administrative Staff									A	R			
Facility Maintenance		A		A	A	A	A/E	A/E		E	E	E	A
Deliveries		A									A		
Couriers		X											
Property Pickup		A									*		
Prisoners		X	X	X	X	X	X	X	X	X	X	E	X
Operational Vehicles													
Staff Vehicles													
Garbage/Recycling		A											
Service Vehicles		A											

X = Not Permitted

E = Only under Escort

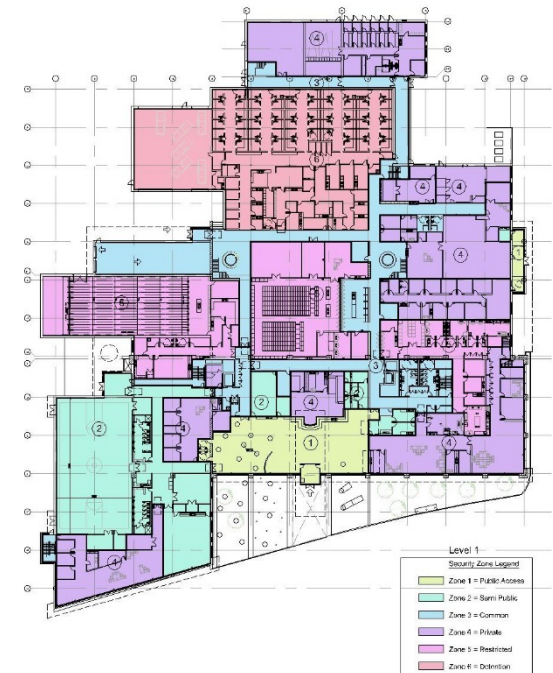
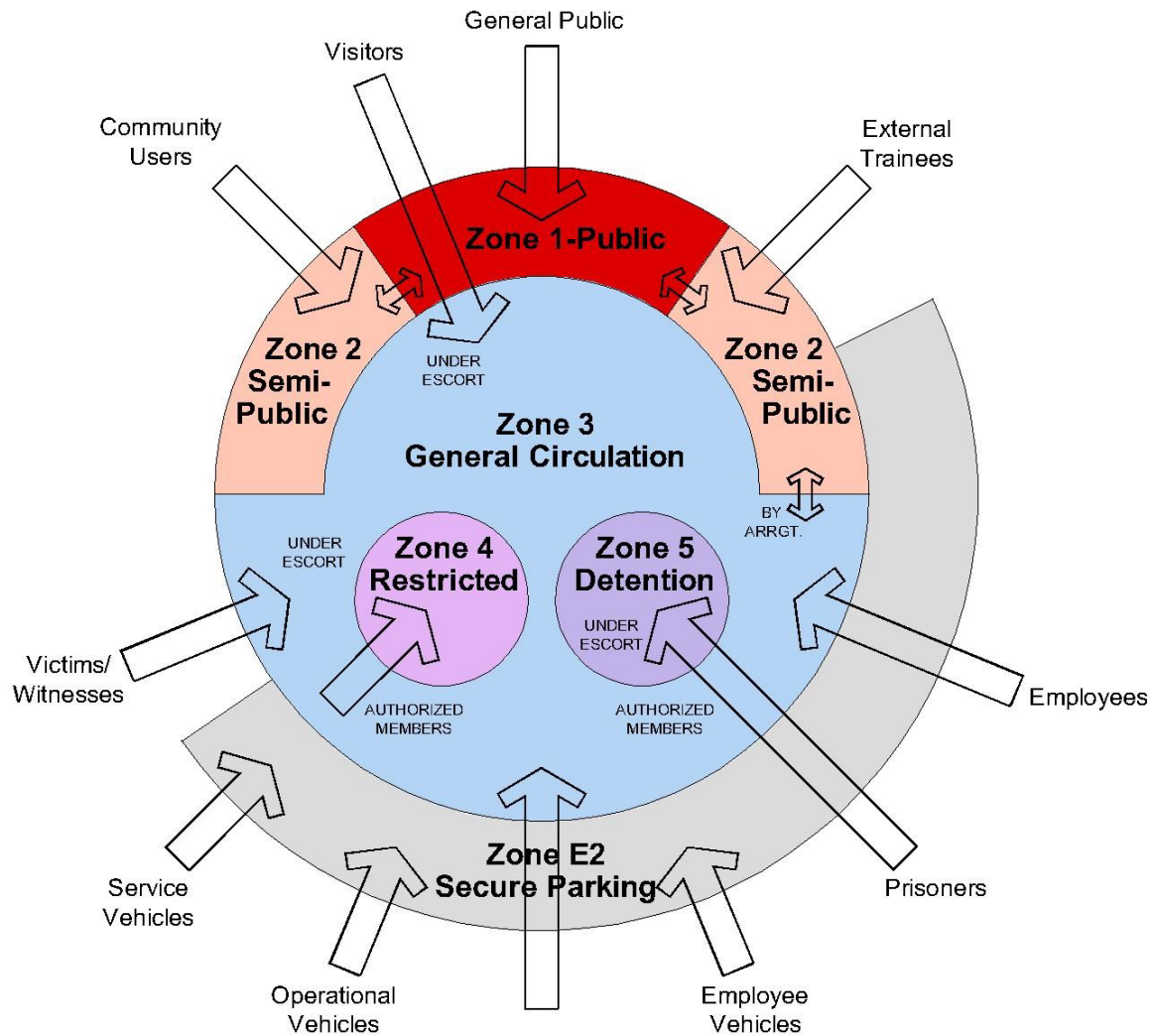
A = By arrangement only

R = Restricted to authorized personnel only

S = Special arrangement



# A Day in the Life - 2

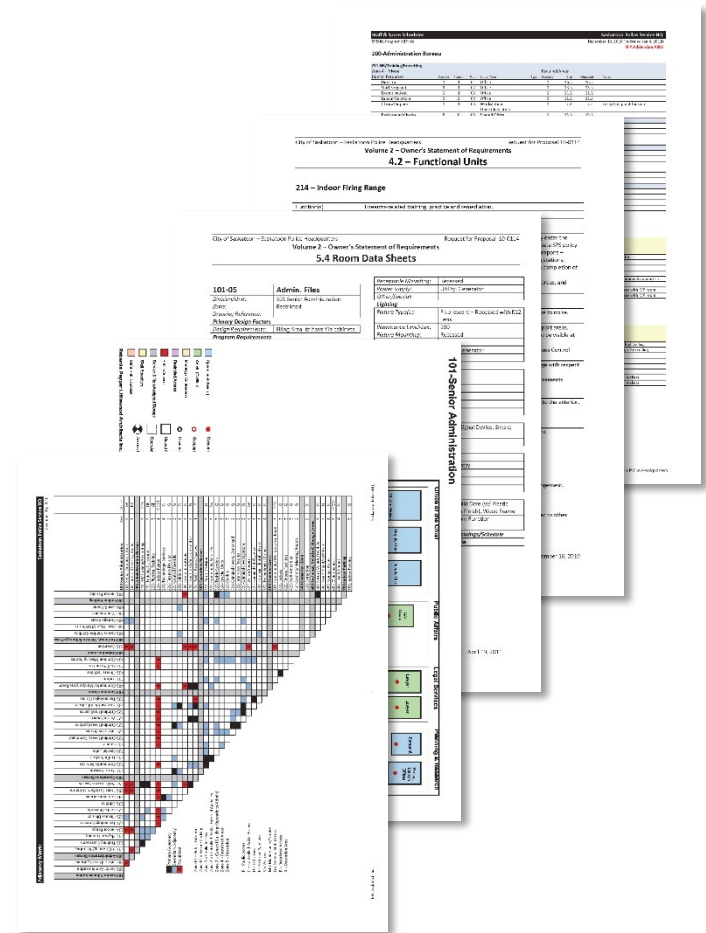


# Success Tools

## #4 – Functional Program

Brings all previous work together in a single document:

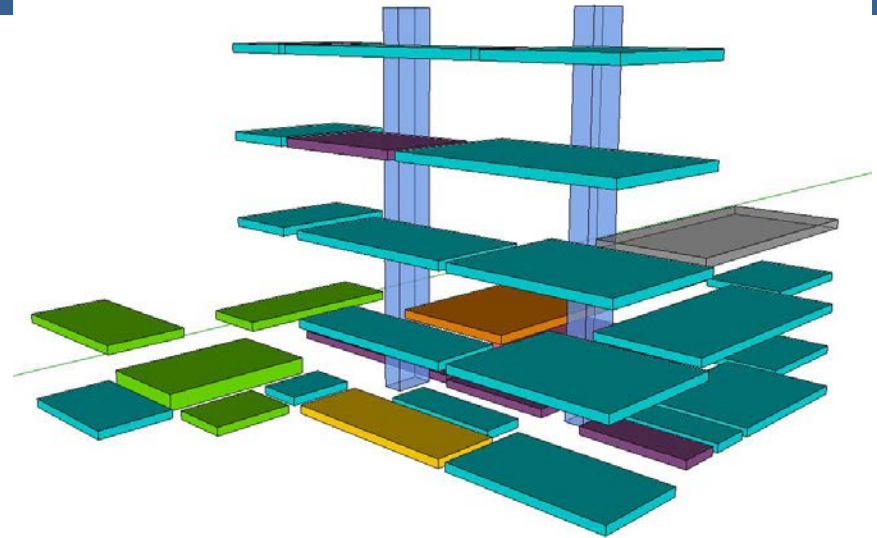
- **Functional unit narratives**
- **Space program tables**
- **Blocking diagrams**
- **Room Data Sheets**
- **Adjacency diagrams**
- **Security zoning & circulation**
- **Parking & site needs**



# Success Tools

## #5 – Blocking & Stacking

- 3-dimensional adjacencies
- Site context
- Security zoning & circulation



***“I never realized architecture could be such fun! This is fascinating – it’s like watching the project come to life...”***

S/Sgt Susan Grant

# Success Tools

## #6 – Concept/Indicative Design

Build on & validate blocking & stacking  
Explore options & alternatives

User feedback & refinement  
CPTED, security assessment & risks

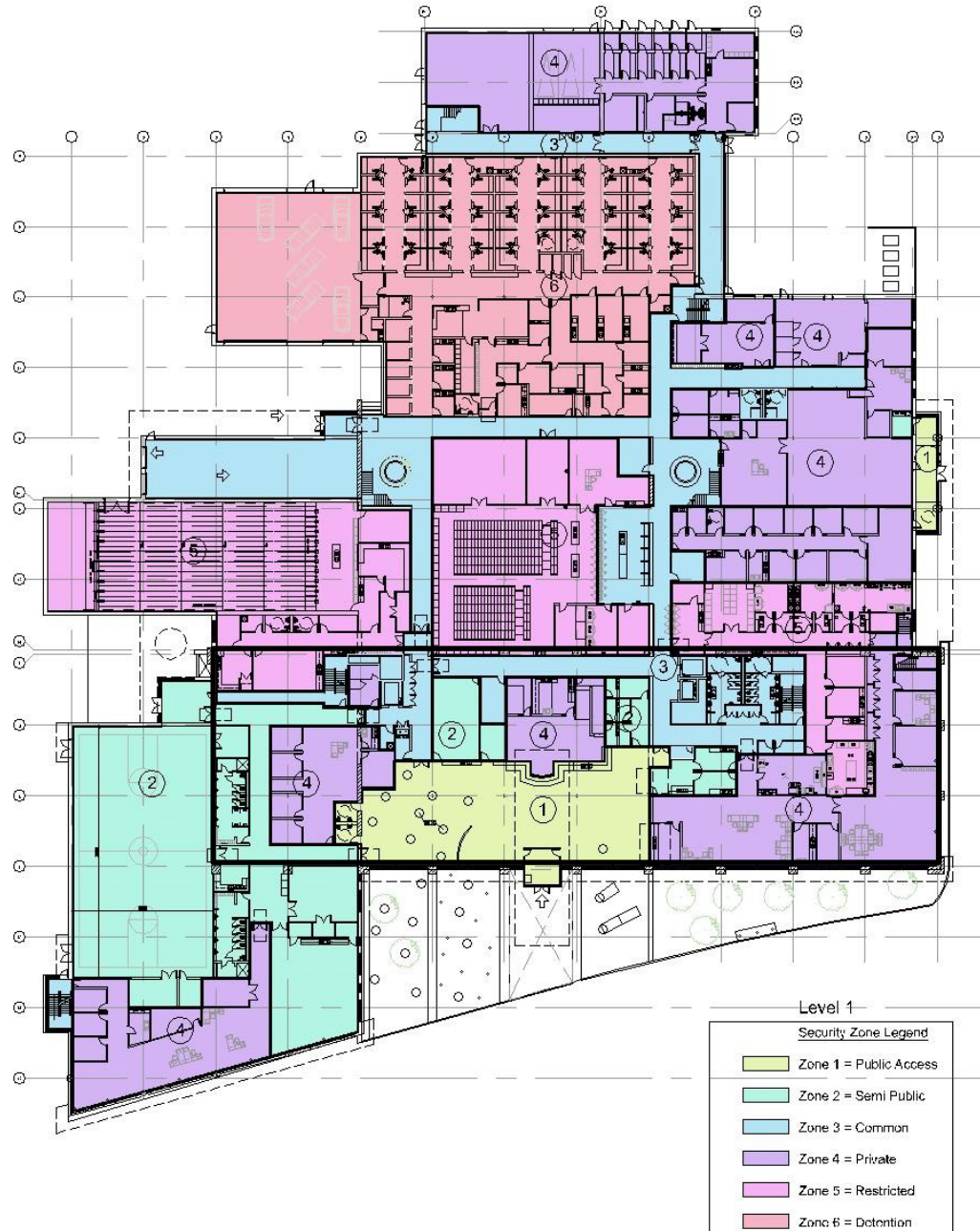
### With Users:

- Validation of previous steps, explore & evaluate options & alternate approaches
- Clear two-way understanding – this is what you'll get
- Town Hall workshops

### For Proponents:

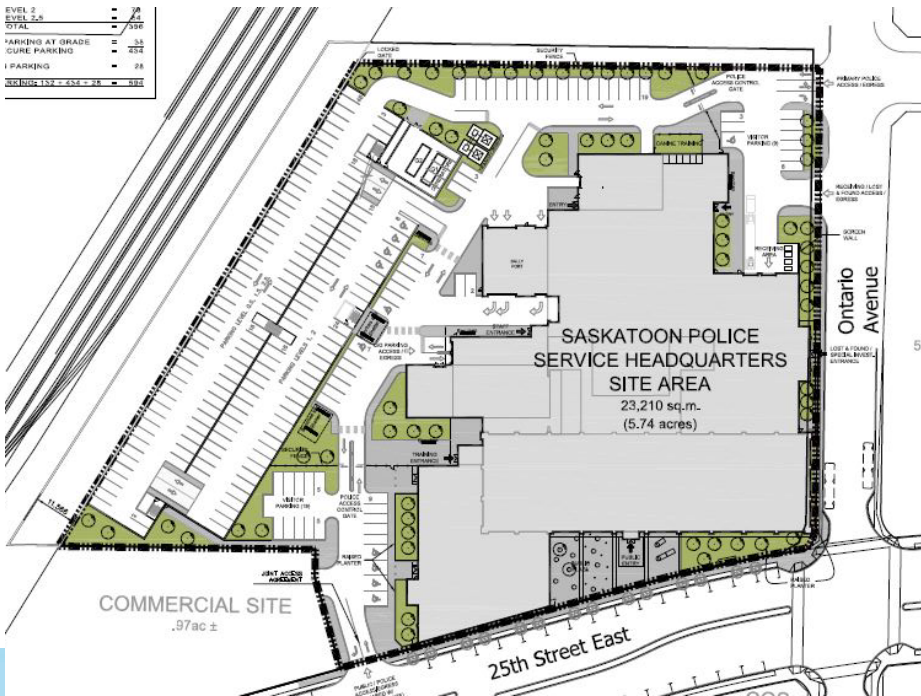
- Ensure documents clearly define needs
- Recognize value of previous work with users, operational preferences
- Challenge assumptions, encourage innovation

# Concept/Indicative Design





# Concept/Indicative Design



# Success Tools

## #7 – Technical Requirements & Performance Specs

- Prescribed processes, submissions, reviews
- Technical requirements for specialty areas
- Structural, mechanical, electrical, civil & LEED requirements
- Equipment
- Facility operation & maintenance
- Commissioning & training



## #8 – It's in the OSR!

## OSR Objectives:

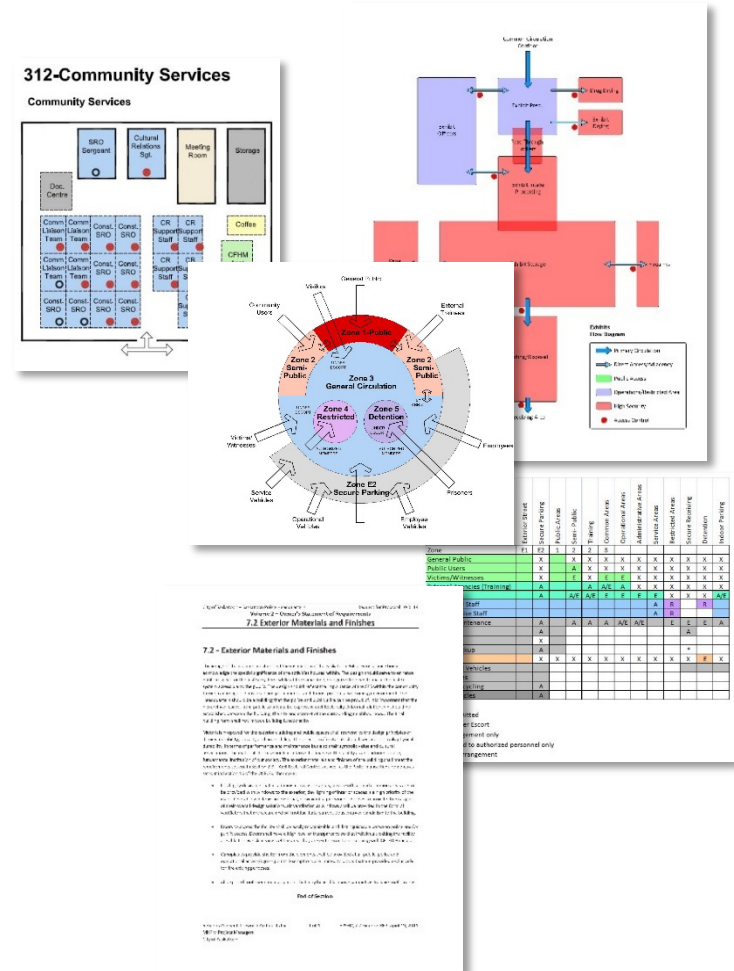
- Scope Guarantee
- Functionality & Quality Assurance
- Urban Renewal Objectives
- Prescriptive Requirements
- Innovation

## What's in the OSR?

- What's included?
- What's NOT included?

## Compliance – strict or interpretive?

- Owner's perspective
- DB team perspective



# Sustainable Design

## Mandatory LEED Credits

7	4	4	Indoor Environmental Quality		15 Points
Y			Prereq 1	<b>Minimum IAQ Performance</b>	Required
Y			Prereq 2	<b>Environmental Tobacco Smoke (ETS) Control</b>	Required
		N	Credit 1	<b>Carbon Dioxide (CO<sub>2</sub>) Monitoring</b>	1
Y			Credit 2	<b>Ventilation Effectiveness</b>	1
Y			Credit 3.1	<b>Construction IAQ Management Plan: During Construction</b>	1
	?		Credit 3.2	<b>Construction IAQ Management Plan: Testing Before Occupancy</b>	1
Y			Credit 4.1	<b>Low-Emitting Materials: Adhesives &amp; Sealants</b>	1
Y			Credit 4.2	<b>Low-Emitting Materials: Paints and Coating</b>	1
Y			Credit 4.3	<b>Low-Emitting Materials: Carpet</b>	1
	?		Credit 4.4	<b>Low-Emitting Materials: Composite Wood and Laminate Adhesives</b>	1
		N	Credit 5	<b>Indoor Chemical &amp; Pollutant Source Control</b>	1
Y			Credit 6.1	<b>Controllability of Systems: Perimeter Spaces</b>	1
		N	Credit 6.2	<b>Controllability of Systems: Non-Perimeter Spaces</b>	1
Y			Credit 7.1	<b>Thermal Comfort: Compliance</b>	1
	?		Credit 7.2	<b>Thermal Comfort: Monitoring</b>	1
		N	Credit 8.1	<b>Daylight &amp; Views: Daylight 75% of Spaces</b>	1
	?		Credit 8.2	<b>Daylight &amp; Views: Views 90% of Spaces</b>	1
Yes	?	No			



# Pre-RFP Success Tools



OK, so let's step back and look at some of the processes and tools instrumental in achieving the success we did.

**#1** – Defining & Documenting Project Objectives & Parameters

**#2** – Precedents, Lessons Learned & Best Practices

**#3** – Day-in-the Life

**#4** – Functional Program & Room Data Sheets

**#5** – Blocking & Stacking

**#6** – The Indicative Design

**#7** – Technical Requirements & Performance Specifications

**#8** – The Owner's Statement of Requirements & PA



# Part 2 – The Pursuit Stage



RFP

Pursuit

Compliance

## Finding the Right Team

- Design Development Stage
- Proposal

# Selecting the Best Proposal

# Developing the Winning Design

Owner's Side:

**RFQ**

**RFP**

**Design submissions/CCM**

**Evaluation**

**Cost target**

Proponent Side:

**Strategies to Win**

**Design submissions**

**Design options & evolution**

**Winning tactics**

**Cost target**

**Final Proposal**

Compliant

Preferred

Affordable



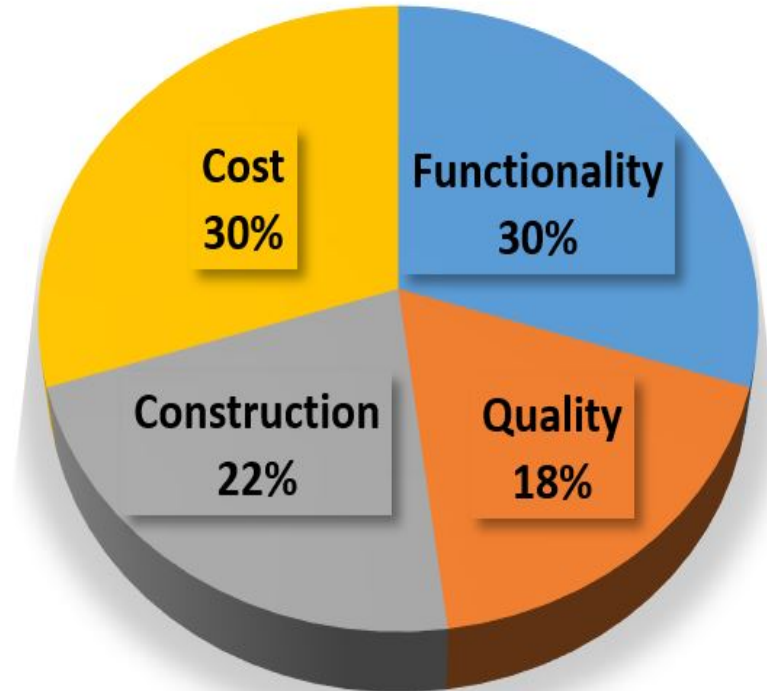
# Success Tools

## #1 – Winning Strategies

1. **Develop** a preferred design
2. **Recognize** prior input into Indicative Design
3. **Ask** questions, identify problems
4. **Innovation**, improvement, application of experience, design expertise
5. **Design** within target budget
6. **Focus** on evaluation points, these are important to the Owner
7. **Evaluation points** given if cost target was achieved
8. **Owner & AA involvement** through proposal process

# Proposal Evaluation Criteria

Site Plan		5
Building Layout & Construction		15
Police Specialties		10
Building Elevations		10
Space Quality		4
Mech., Elec. & Lighting		5
Structure		2
Outline Specs		5
LEED, Durability, LCEE		5
FM & Safety		5
Other Features/Benefits		4
Price		30
	Total	100



# Owner/User Engagement

## **Design Presentations:**

- Understanding the OSR
- Workable design
- Cost effective  
alternates & strategies

## **Interim Reviews & Feedback to Proponents**

## **Final Evaluation**

“

- **Involve the right people in each section**
- **Confirm their time availability to avoid frustration/delay**
- **Authority to make decisions - or access to those who do**
- **Identify those with knowledge in their area of expertise**
- **Focus on the best solution - not whose idea or where it came from**

”

S/Sgt Susan Grant



# Indicative v Final Design

## User engagement through proposal presentations:

- 3 commercially confidential presentations
- Built-in value of indicative design, opportunity to innovate
- Feedback evaluation – valuable responses

## DB team innovations & strategies:

- Simpler circulation
- More compact envelope
- Fewer floors



# Program Reconciliation

Saskatoon Police Service - Gross Floor Areas per floor level

Level	RFP Plans (s.m)		EllisDon Plans
	Stated	Measured	
Level 0	8273	8406	8557
Level 1	9116	8959	9348
Level 2	7383	7409	6203
range mechanical		175	
Level 3	2779	2845	4329
Level 4	2298	2317	2806
Level 5	2298	2317	1282
Level 6	1038	1112	
<b>totals</b>	<b>33185</b>	<b>33540</b>	<b>32525</b>

**2% saving = 660 sqm  
(7,100 sf)**

## Space Reconciliation Schedules

ED-Program Reconciliation.xls

Saskatoon Police Service HQ

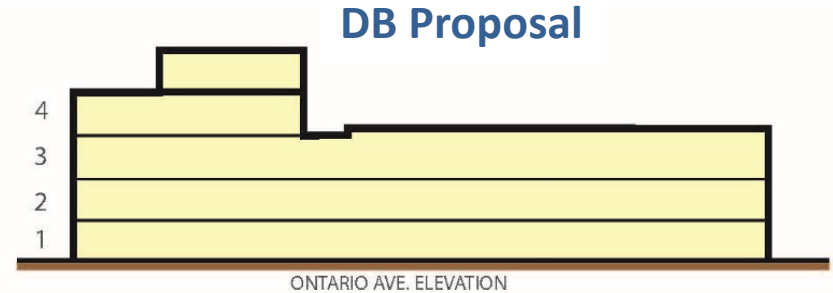
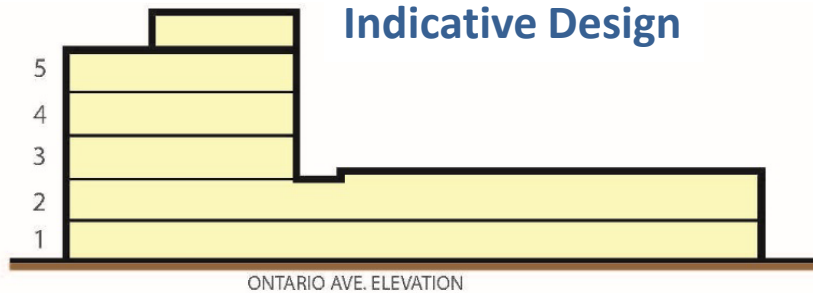
Last Updated April 18, 2011

### 100-Senior Administration

101-Senior Administration Zone 4 - Private					RFP Concept Plans Provided Areas (Areas Drawn)			EllisDon Team Plans Provided Areas (Areas Drawn)			
Office of the Chief:	Ref	Space Type	Required Areas		Allocated	Difference	Percent	Allocated	Difference	Percent	
Chief of Police:	01	Office	1	32.0	32.0	30.0	(2.0)	94%	37.0	5.0	116%
	02	Washroom/Shower	1	9.5	9.5	9.7	0.2	102%	9.5	-	100%
Deputy Chief:	03	Office	3	27.0	81.0	81.0	-	100%	81.0	-	100%
Exec. Assistant:	04	Office	3	11.0	33.0	33.0	-	100%	33.0	-	100%
	05	Admin Files	1	12.0	12.0	14.8	2.8	123%	13.7	1.7	114%
	06	Open Circulation									
Legal Services:											
Lawyer	11	Office	2	16.5	33.0	33.0	-	100%	33.0	-	100%
Legal Exec. Assistant	12	Office	1	11.1	11.1	11.1	-	100%	11.1	-	100%
	13	Legal Files	1	13.5	13.5	14.8	1.3	110%	15.9	3.4	125%
	14	Open Circulation									
Planning & Research:											
Project Liaison Officer	21	Office	1	13.5	13.5	13.5	-	100%	18.3	4.8	136%
Sergeant	22	Office	1	11.1	11.1	11.1	-	100%	18.3	7.2	165%
	23	Storage (P&R)	1	9.3	9.3	9.3	-	100%	17.6	8.3	189%
Constable	24	Workstation	1	7.2	7.2	7.2	-	100%	7.2	-	100%
Planner (chv.)		Workstation	2	7.2	14.4	14.4	-	100%	14.4	-	100%
Clerical Support		Workstation	1	7.2	7.2	7.2	-	100%	7.2	-	100%
		Layout Area	1	9.0	9.0	9.0	-	100%	9.0	-	100%
		Project Workstation	1	7.2	7.2	7.2	-	100%	7.2	-	100%
		Open Circulation									
Public Affairs:											
Manager	31	Office	1	13.5	13.5	13.5	-	100%	14.7	1.2	109%
Assistant	32	Office	1	11.1	11.1	11.1	-	100%	11.5	0.4	104%
	33	A/V Suite	1	45.0	45.0			0%	45.6	0.6	101%
	34	Media Prep/Storage	1	13.5	13.5	16.2	2.7	120%	15.7	2.2	116%
A/V Coordinator	35	Office	1	9.3	9.3	9.5	0.2	102%	12.0	2.7	129%
	36	Sound Booth	1	6.0	6.0	3.3	(2.7)	55%	6.0	-	100%
Crimestoppers:											
Constable	41	Office	1	9.3	9.3	9.3	-	100%	9.3	-	100%
Clerical Support	42	Workstation	1	7.2	7.2	7.2	-	100%	7.2	-	100%
		Storage	1	9.0	9.0			0%	9.0	-	100%
		Open Circulation									
Shared/Common:											
	51	Document Centre	1	6.0	6.0	9.6	3.6	160%	9.3	3.3	155%
	52	Meeting Room (8p)	1	18.0	18.0	19.8	1.8	110%	19.8	1.8	110%
	53	Reception/Waiting Area	1	21.0	21.0	21.0	-	100%	19.0	(3.0)	86%
	54	Board Room (20p+)	1	120.0	120.0	120.0	-	100%	120.5	0.5	100%
	55	Coffee/Resource	1	2.0	2.0	2.0	-	100%	9.0	7.0	450%
		Open Circulation									
		Nel Area		585		549	(46)	92%	642.0	47.1	108%
		Circulation		125		147			122		
		Est. U.A.		740		806	66		786.4		

# Design Initiative #1

## Consolidate 5 Storeys to 4

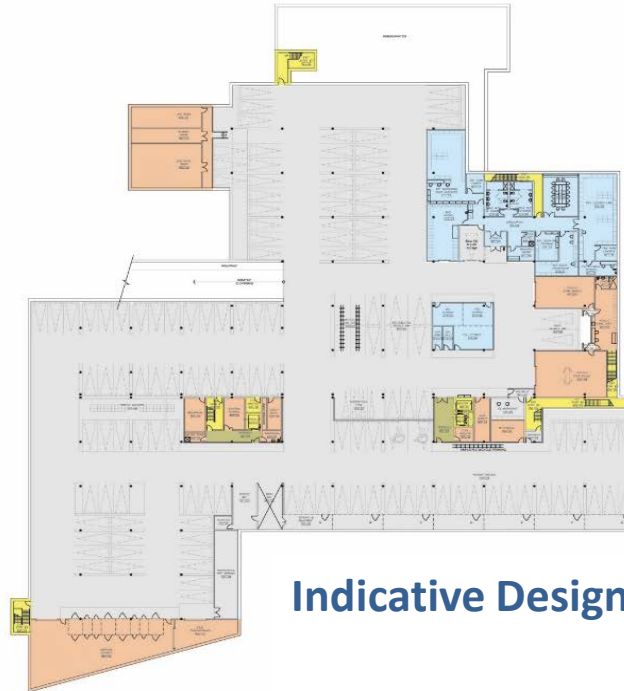


- Longer 'bar' improved massing, street presence
- Investigative units on Level 3 improved staff interaction, future flexibility
- Better constructability, lower construction cost

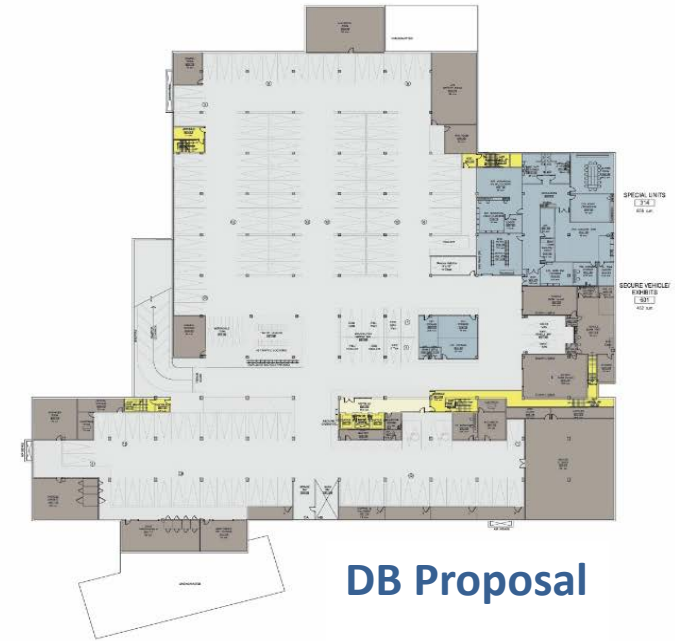


# Design Initiative #2

## Simplify Underground Garage



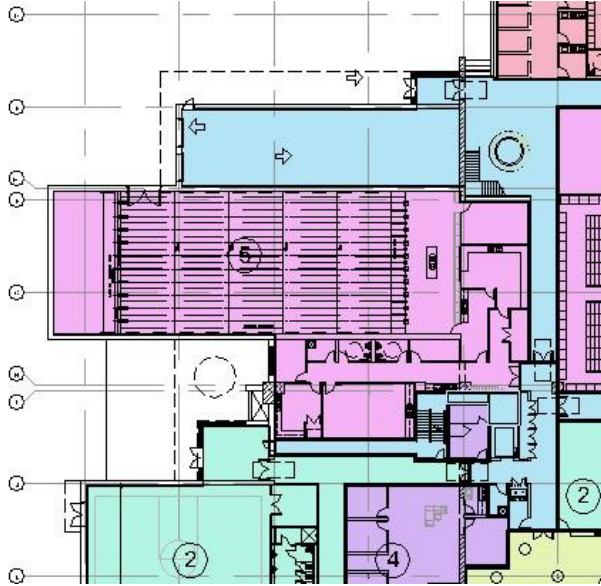
**Indicative Design**



**DB Proposal**

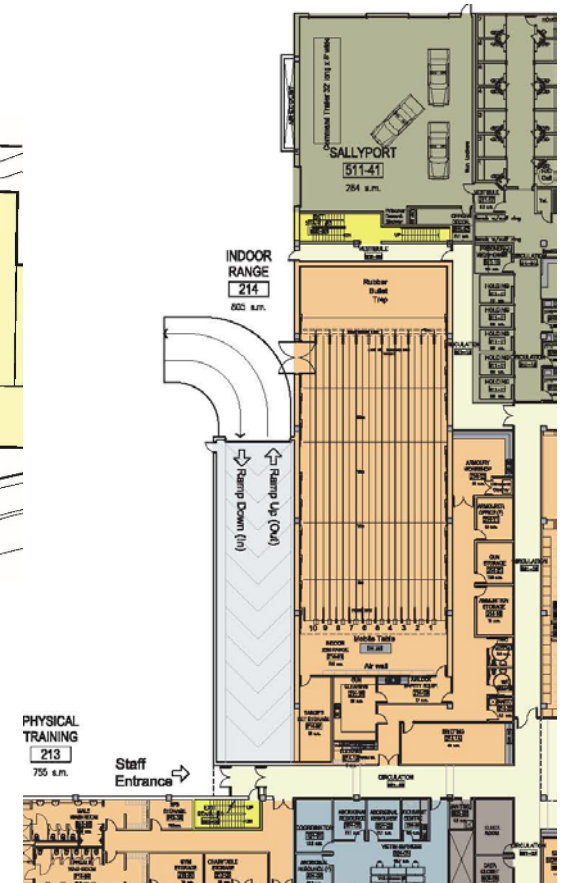
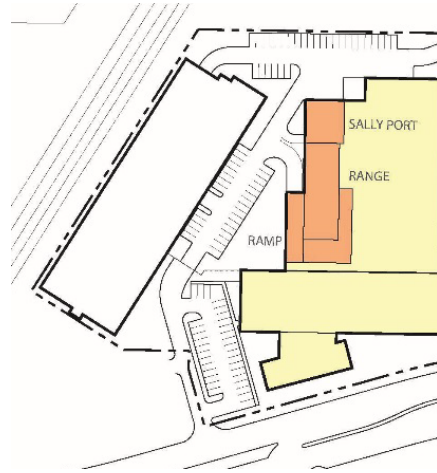
- Simplified vehicle circulation, more spaces, less area
- Excellent adjacencies for special units, vehicles, equipment
- Good access to central elevator core and stair
- Less excavation, simpler outline & lower construction cost

# Realign Range, Ramp & Sallyport



## Indicative Design

- More compact building form
- Reduce exterior wall area
- Improve vehicle & pedestrian circulation
- Reduce construction cost

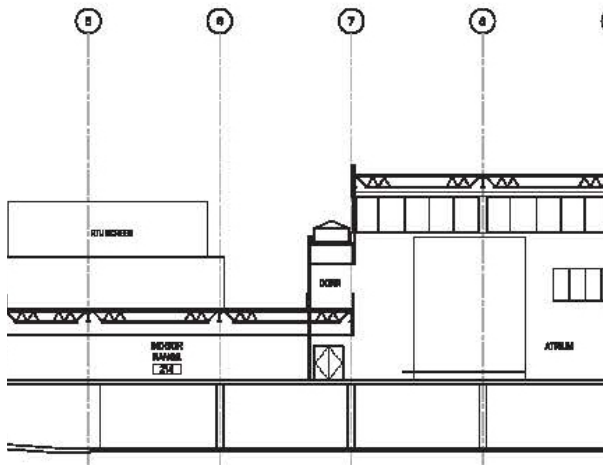
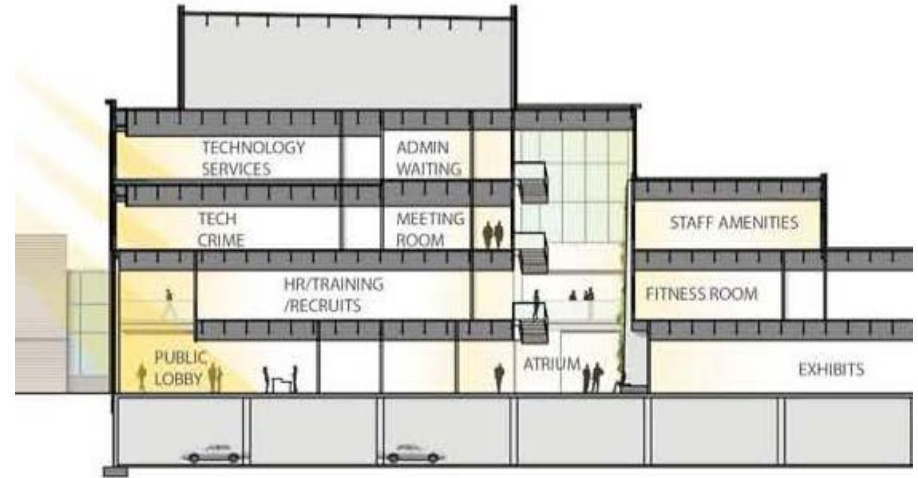
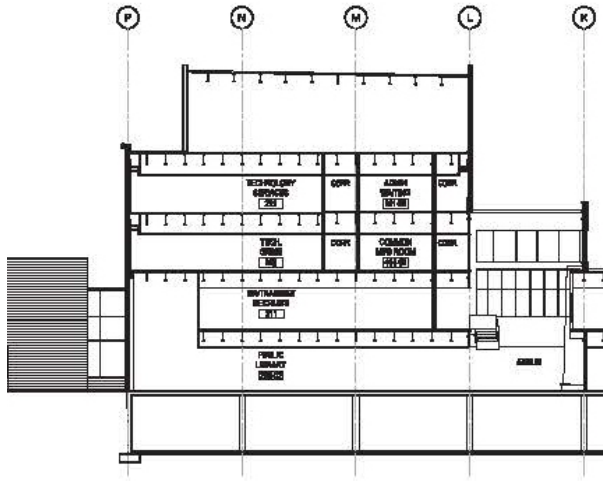


## DB Proposal



# Design Proposal

## Two-storey v Four-storey Option



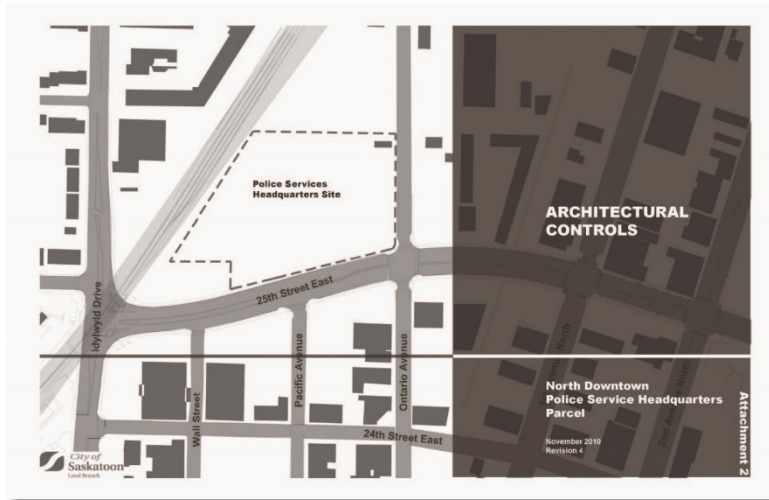
# Design Initiative

## Central Atrium

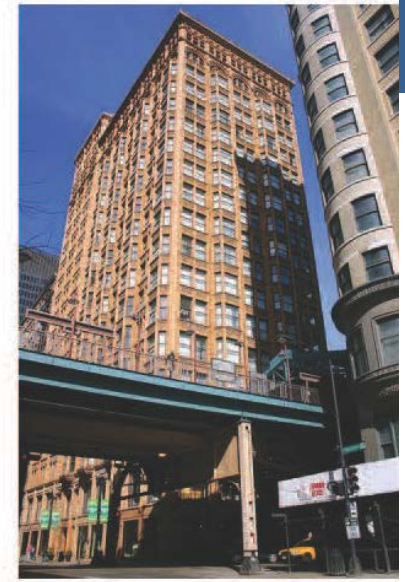
- Provide daylight to central core
- Excellent orientation device, single location for primary vertical circulation
- Create multi-level social interaction, informal activity
- Near main staff activity areas, meeting rooms, amenity areas
- Interesting views, changing daylight, green wall feature
- Create internal identity and uniqueness



# Urban Design



- Historic Architectural Context
- Proportion, Scale, Form
- Building Façade
- Relationship to the Street
- Parking Structure



**'Chicago School' Precedents**



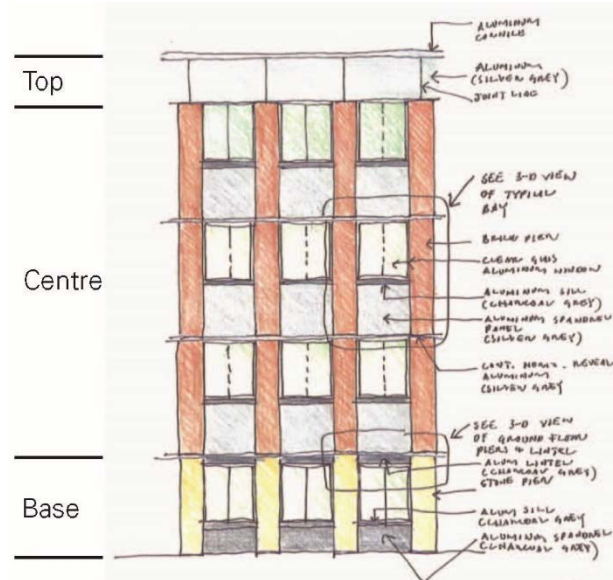
**'Buckwold Building**



# Urban Design Response



Tees and Persse Building



Elevation Design Study



Part South Elevation



# Success Tools

## #2 – Proposal Design Feedback & Evaluation

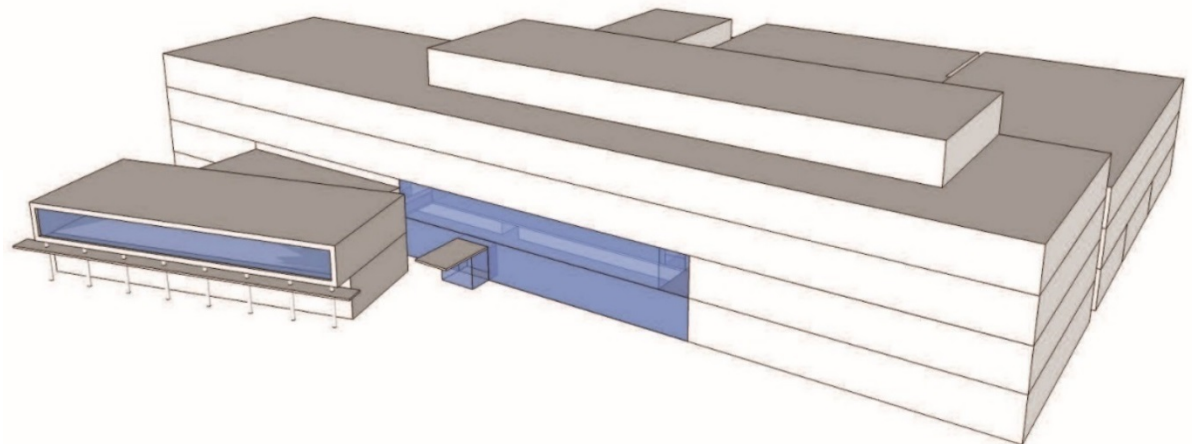
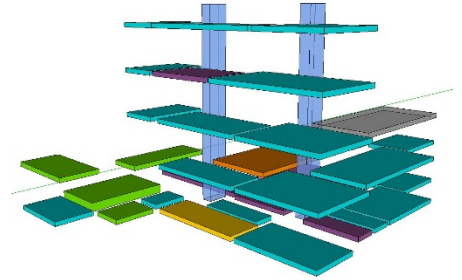
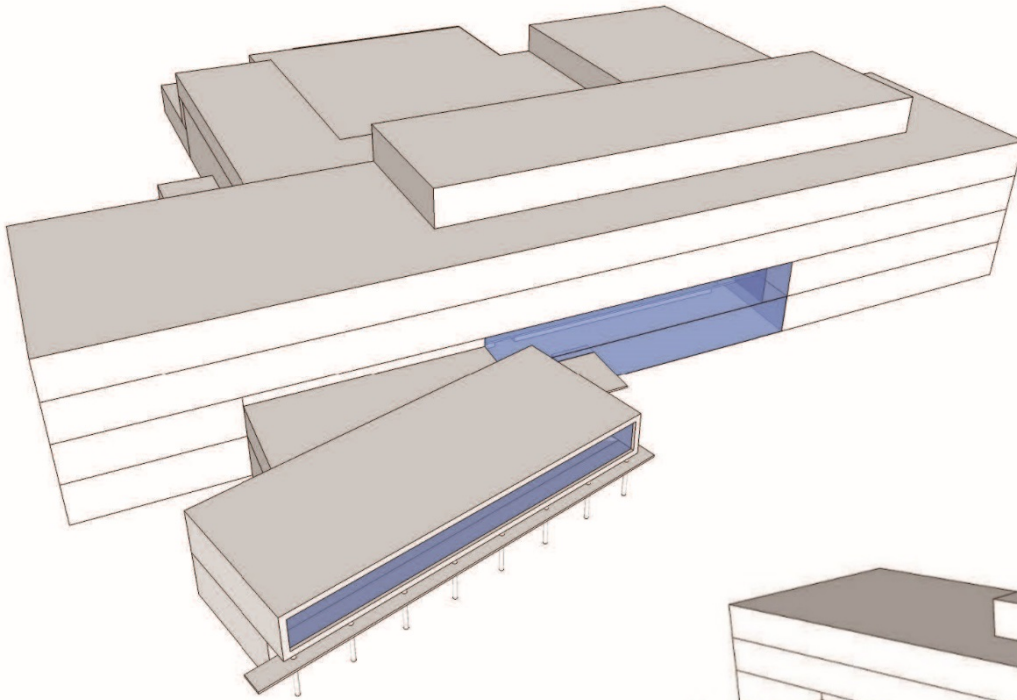
Obtaining Owner & Advocate Team Feedback & Response:

- **Approval** of blocking & stacking, or preferred alternatives
- **Circulation** concept (improve or rationalise)
- **Urban design** strategies & solutions
- **Floor plan** & process diagrams
- **Confirm** 'Day in the Life' for all user groups



# Schematic Design Tools

## Concept Design Blocking & Stacking



# Schematic Design Tools

## 3-D Models – Urban Design Concept



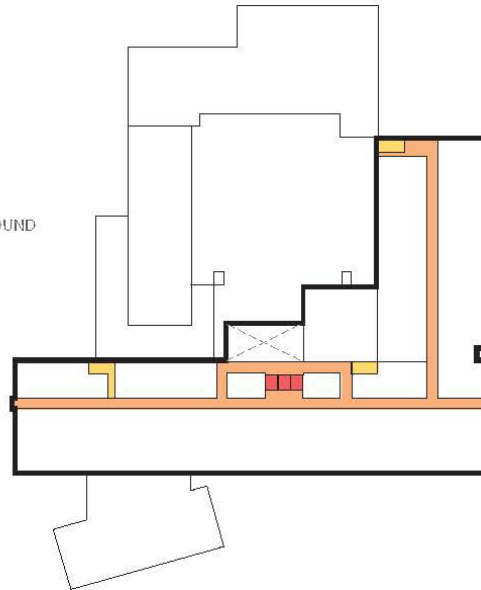
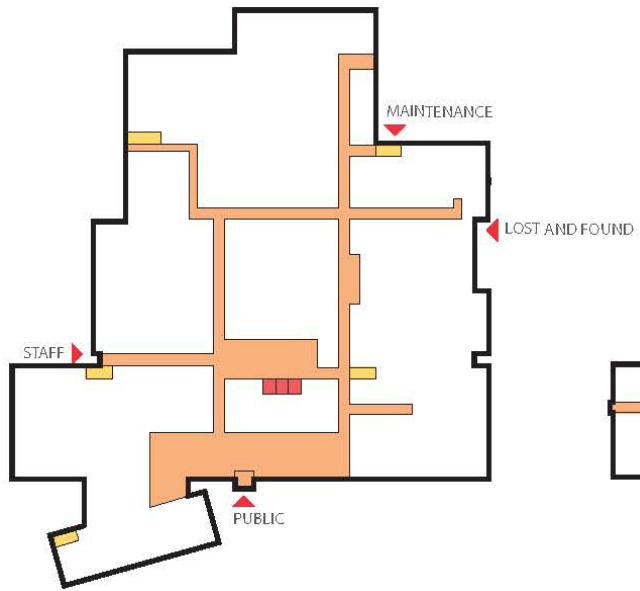


# Urban Design Concept – 25<sup>th</sup> Street Extension



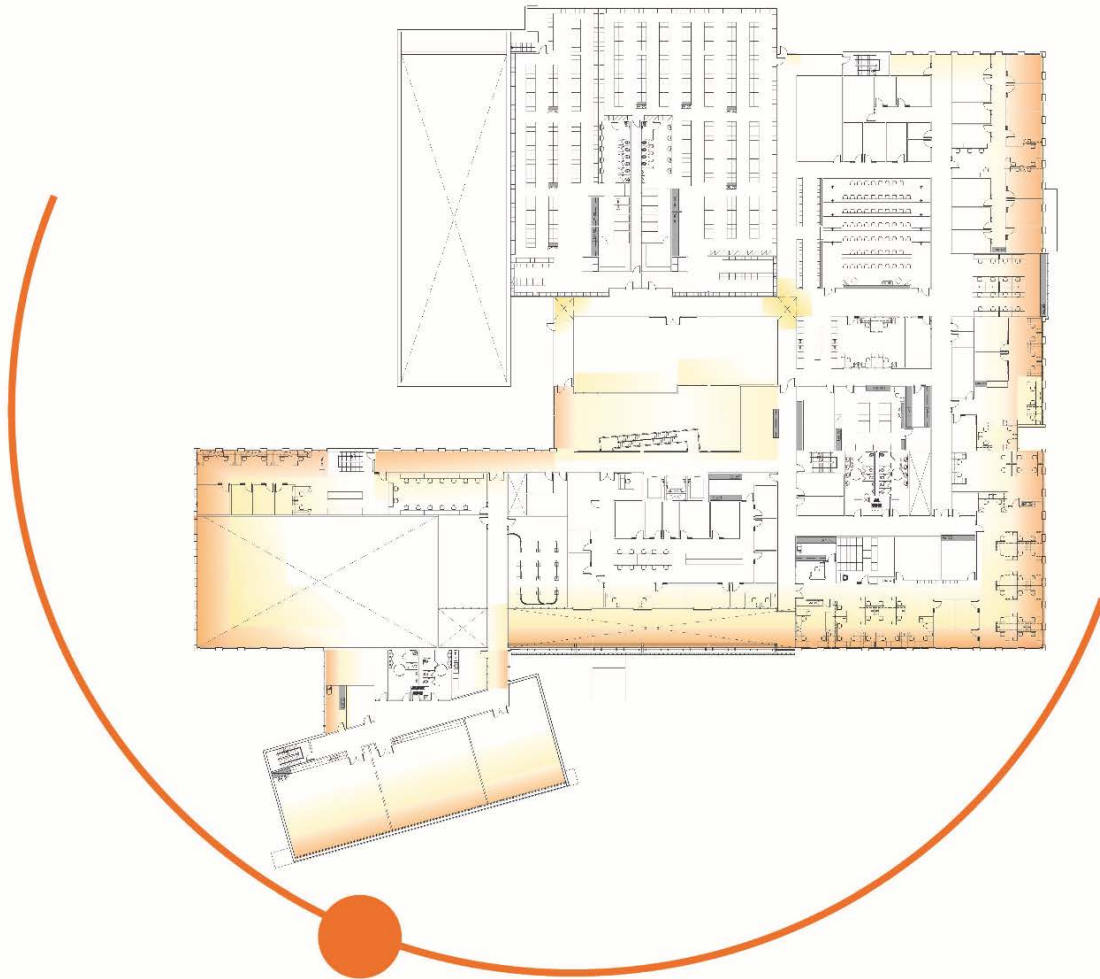
# Schematic Design Tools

## Concept Design Circulation



# Schematic Design Tools

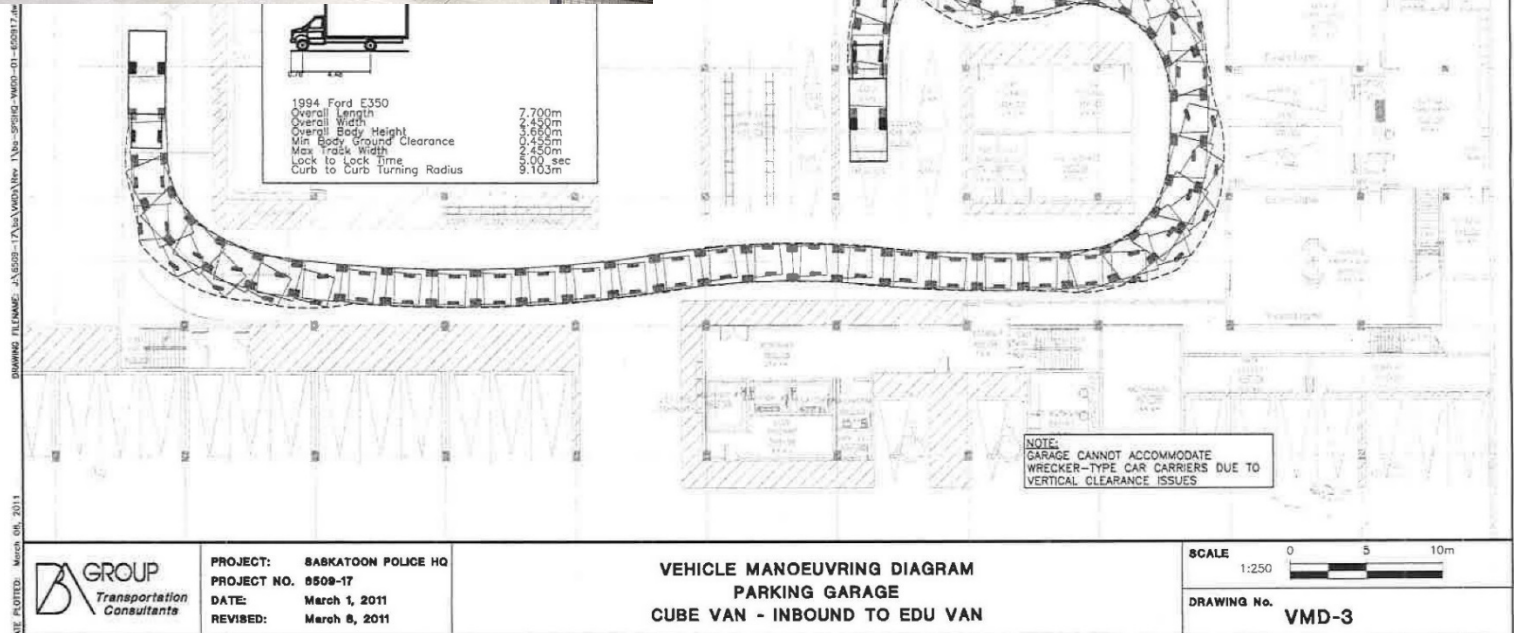
## Demonstrating Daylight & Views





# Schematic Design Tools

## Vehicle Garage & Circulation Analysis



# Part 3 – Designing & Building



RFP

Pursuit

Compliance

## The Compliance Stage

- Meeting the OSR
- Collaboration for Success

# Success Tools

## #1– It's in the OSR!

What's in the OSR?

- **Design objectives**
- **Specific technical requirements to support functions**
- **Performance requirements**

What's not in the OSR?

- **Architectural & engineering details**
- **Overly prescriptive requirements if not necessary**

Compliance – strict or interpretive?

- **Owner's perspective**
- **DB team perspective**

# Design & Construction Compliance

## Owner/User Priorities:

- **Functionality**
- **Compliance with general and specific requirements**
- **Durability**
- **Maintainability**
- **Safety**
- **Schedule**
- **Cost control**

## Design-Build Team Priorities:

- **Cost-effectiveness**
- **Compliance (design and construction phases)**
- **Timely review of submissions**
- **Fairness**

# Design & Construction Compliance

“

- OSR is detailed, clear and concise
- Design Development phase allows Design-Build team to utilize creativity to improve final design
- Design options were offered with costing included
- OSR can be a “reliable” document and tool
- Owner begins to understand the ‘look’ of the building

”

S/Sgt Susan Grant



# Team Building





# Success Tools

## #1 – Design Development Submissions & Review

Design-Build Team Deliverables:

- **Drawings**
- **Equipment (photos, specs)**
- **Schedules & specs**
- **Colours & finishes**

All reviewed in detail through iterative process by owners, users and compliance team

Process allowed user input and involvement

# Success Tools

## The OSR – Owner's Perspective

- **Design-Build process needs a full time Project Manager representing the user**
- **Must have decision making authority and/or quick access to those who do**
- **Involve specialized systems staff – Forensics, IT systems, building maintenance**
- **Ensure the needs are clear and the Design Builder knows what they are responsible for**
- **Information flow is critical to progress and avoiding delays**
- **SITOSR – “It’s somewhere in the OSR.....”**

S/Sgt Susan Grant

# Success Tools

## #2 – Diagrams & 3-D Renderings



**Public Access Areas**

**Entrance Lobby Studies**

# Success Tools

## #3 – Functional & Ergonomic Models





# Success Tools

## #4 – Materials & Colours – Function, Durability, Preference



Brick



Tyndall Rough



Tyndall Smooth



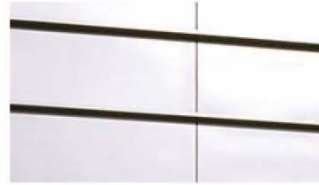
Block. Dark Grey



Aluminum Windows



Transparency



Metal Panel



Hardware



Pavers



Sunscreens



Greenery



Wood Soffit



# Success Tools

## #5 – Building Operations & Maintenance

### **Occupational Health & Safety:**

- Service stairs, roof anchors
- Equipment access

### **Building Operations:**

- Involvement in the Commissioning process
- Training & O&M documents
- Spare parts & materials

### **Maintenance:**

- Materials, consistency (no isolated pockets)
- Access to equipment
- Equipment selection

# LEED® & Sustainable Design

7	4	4	Indoor Environmental Quality		15 Points
Y			Prereq 1	<b>Minimum IAQ Performance</b>	Required
Y			Prereq 2	<b>Environmental Tobacco Smoke (ETS) Control</b>	Required
		N	Credit 1	<b>Carbon Dioxide (CO<sub>2</sub>) Monitoring</b>	1
Y			Credit 2	<b>Ventilation Effectiveness</b>	1
Y			Credit 3.1	<b>Construction IAQ Management Plan: During Construction</b>	1
	?		Credit 3.2	<b>Construction IAQ Management Plan: Testing Before Occupancy</b>	1
Y			Credit 4.1	<b>Low-Emitting Materials: Adhesives &amp; Sealants</b>	1
Y			Credit 4.2	<b>Low-Emitting Materials: Paints and Coating</b>	1
Y			Credit 4.3	<b>Low-Emitting Materials: Carpet</b>	1
	?		Credit 4.4	<b>Low-Emitting Materials: Composite Wood and Laminate Adhesives</b>	1
		N	Credit 5	<b>Indoor Chemical &amp; Pollutant Source Control</b>	1
Y			Credit 6.1	<b>Controllability of Systems: Perimeter Spaces</b>	1
		N	Credit 6.2	<b>Controllability of Systems: Non-Perimeter Spaces</b>	1
Y			Credit 7.1	<b>Thermal Comfort: Compliance</b>	1
	?		Credit 7.2	<b>Thermal Comfort: Monitoring</b>	1
		N	Credit 8.1	<b>Daylight &amp; Views: Daylight 75% of Spaces</b>	1
	?		Credit 8.2	<b>Daylight &amp; Views: Views 90% of Spaces</b>	1
Yes	?	No			

# The Final Result

## All Success Factors Achieved





# The Final Result

## Critical Success Factors

The Process:

- **Whole team approach, collaboration**
- **Facilitated innovation**

Technical & Design Requirements:

- **Functional & pleasant**
- **Technically competent**
- **Flexible & future-proof**

The Final Design:

- **Cost effective, value-for-money**
- **Quality assured**

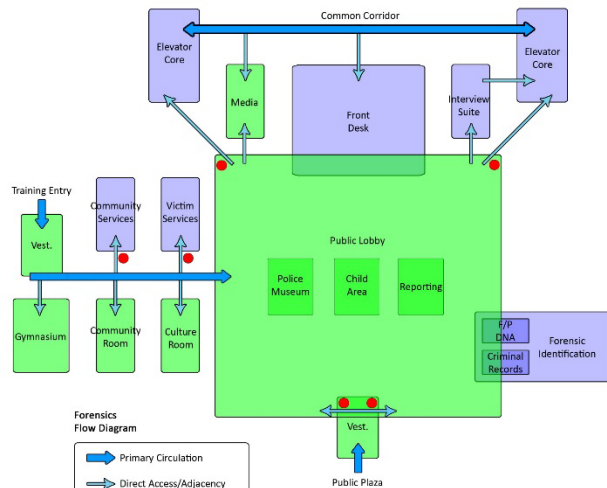




# The Final Result

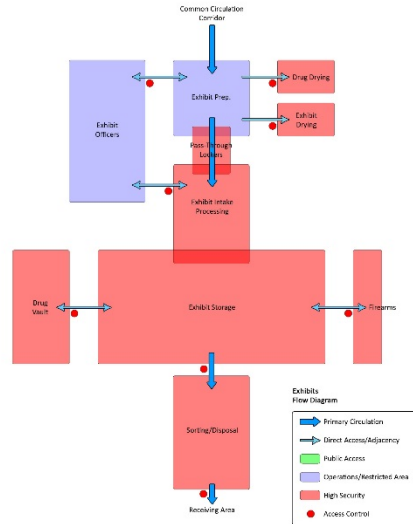
[illegible]

# The Final Result

[illegible]



# The Final Result



4.2 – Functional Units

## 214 – Indoor Firing Range

[illegible]

Special Eq. (p. 10)	Eq. (10) and (11) are used to find the value of $\alpha$ and $\beta$ for the given values of $\alpha$ and $\beta$ .
Example	Find the value of $\alpha$ and $\beta$ for the given values of $\alpha$ and $\beta$ .

**Space Diagram** – This is a space diagram for a unit.

**Planning Diagram**

Before the start of planning for the following year, the Council will all members informed separately.

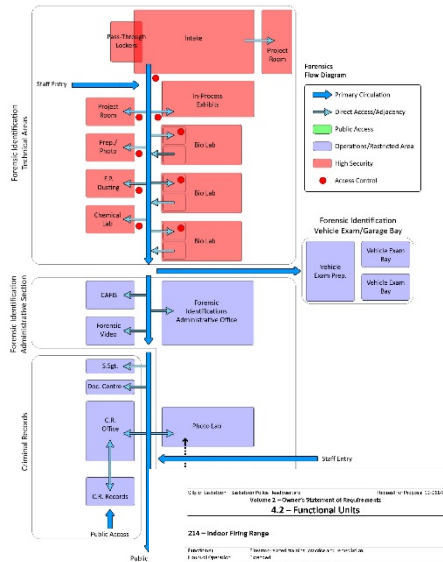
**Other Information & Special Requests**

Revised: December 16, 2009; Author's name: Zoltan B. Kocsis

$\mathcal{H}^1(\mathbb{R}^n) \cap \mathcal{H}^1(\mathbb{R}^n) = \mathcal{H}^1(\mathbb{R}^n)$   
 $\mathcal{H}^1(\mathbb{R}^n) \cap \mathcal{H}^1(\mathbb{R}^n) = \mathcal{H}^1(\mathbb{R}^n)$

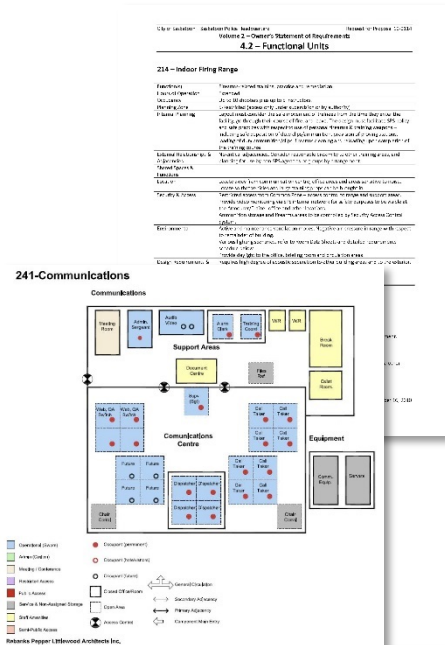


# The Final Result





# The Final Result



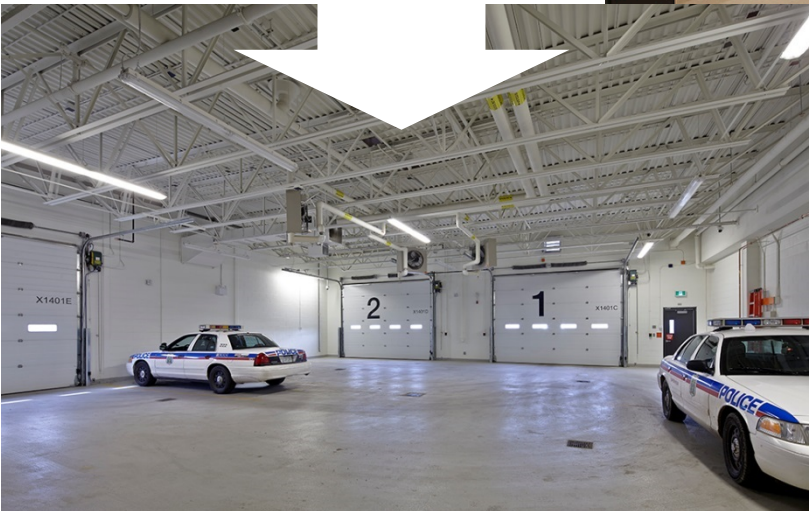
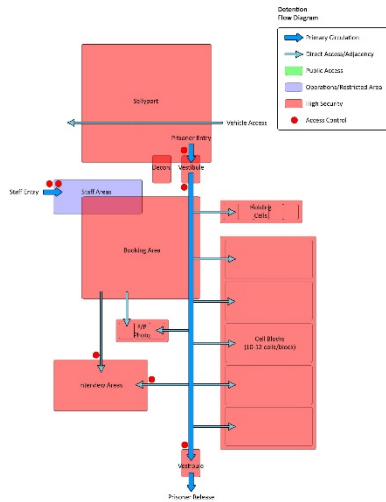
### 3.0 DESIGN AND PERFORMANCE REQUIREMENTS

- |     |  |
|-----|--|
| 3.1 | Consoles are required to have a high level of design, quality for future changes.  |
| 3.2 | Consoles must be designed for use in a 24/7 communal cycle in excess of ten (10) years. Vendor must be capable of environment.   |
| 3.3 | Throughout the life cycle of the console, technology changes. In order to provide the maximum return on investment, future moves/adds and changes easily. Technologies supported by the consoles, increasing or decreasing the console in order to meet future space planning. |
| 3.4 | Each console must be modular in construction and downtime, inconvenience or cost. Consoles must be   |

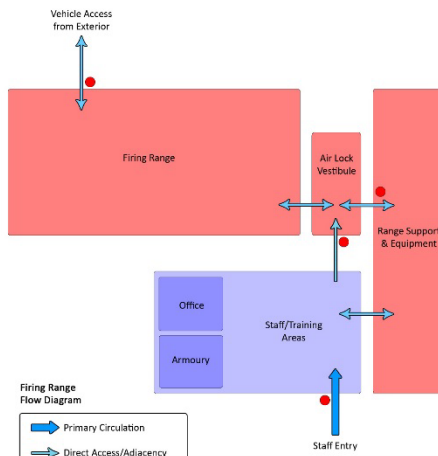




# The Final Result



# The Final Result



## 4.2 – Functional Units

## 214 – Indoor Firing Range

[illegible]

**Space Diagram** There is no space diagram for this unit.

**Planning Diagram**

Refer to the [Planning Diagram](#) on the following page. The [Common Plan](#) includes the proposed improvements.

**Other Information & Special Requirements**

Refer to the [Other Information & Special Requirements](#) page for further information on special considerations for other water features on the site. Refer to the [Other Information & Special Requirements](#) page for further information on special considerations for other water features on the site.

Beattie, J. *Upper Limb and Ankle*, 2nd ed., 1995, 194 pp., £12.95 (pb), £24.95 (hbk), ISBN 0 7020 2040 9.





# The Final Result

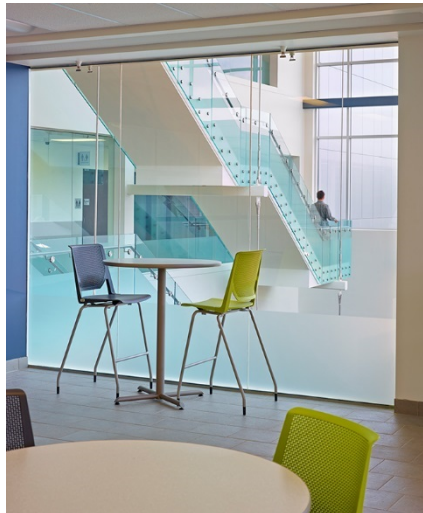
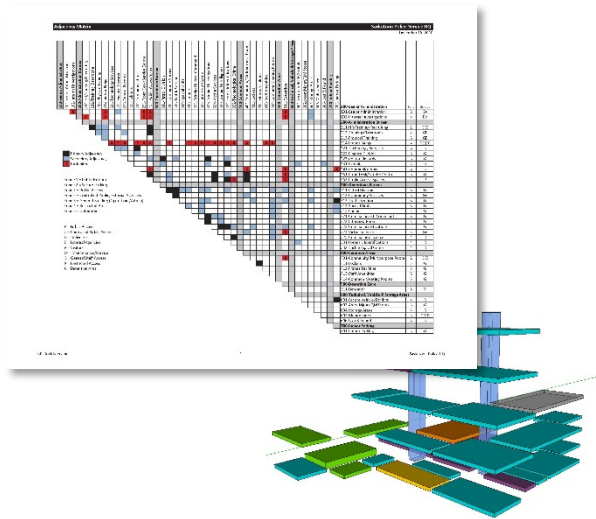
[illegible]

### 3.0 DESIGN AND PERFORMANCE REQUIREMENTS

- |     |   |
|-----|---|
| 3.1 | Consoles are required to have a high level of design, quality and flexibility to allow for future changes.  |
| 3.2 | Consoles must be designed for use in a 24/7 communal cycle in excess of ten (10) years. Vendor must be capable of supporting the console in a high density environment.   |
| 3.3 | Throughout the life cycle of the console, technology change. In order to provide the maximum return on investment, the console must be able to accommodate future moves/adds and changes easily. The console must support the technologies supported by the consoles, increasing or decreasing the number of consoles, or relocating the console in order to meet future space planning requirements. |
| 3.4 | Each console must be modular in construction and installation, and easy to maintain, downtime, inconvenience or cost. Consoles must be able to be replaced or upgraded without the need to replace the entire console.  |



# The Final Result





# The Final Result



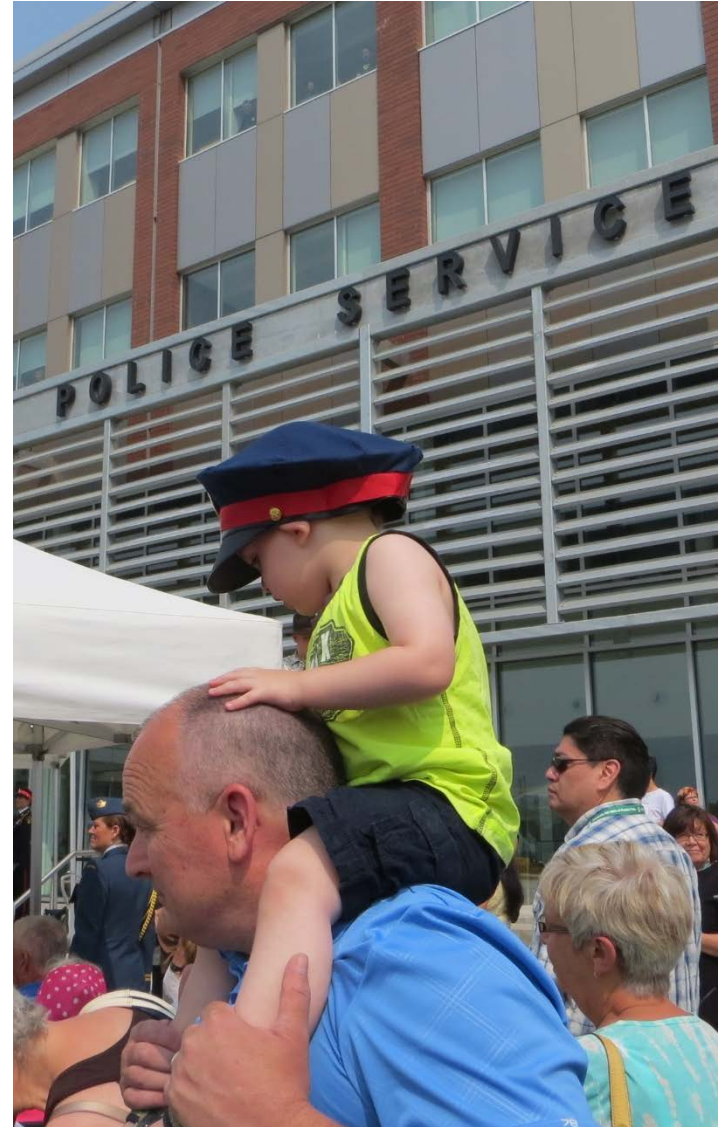


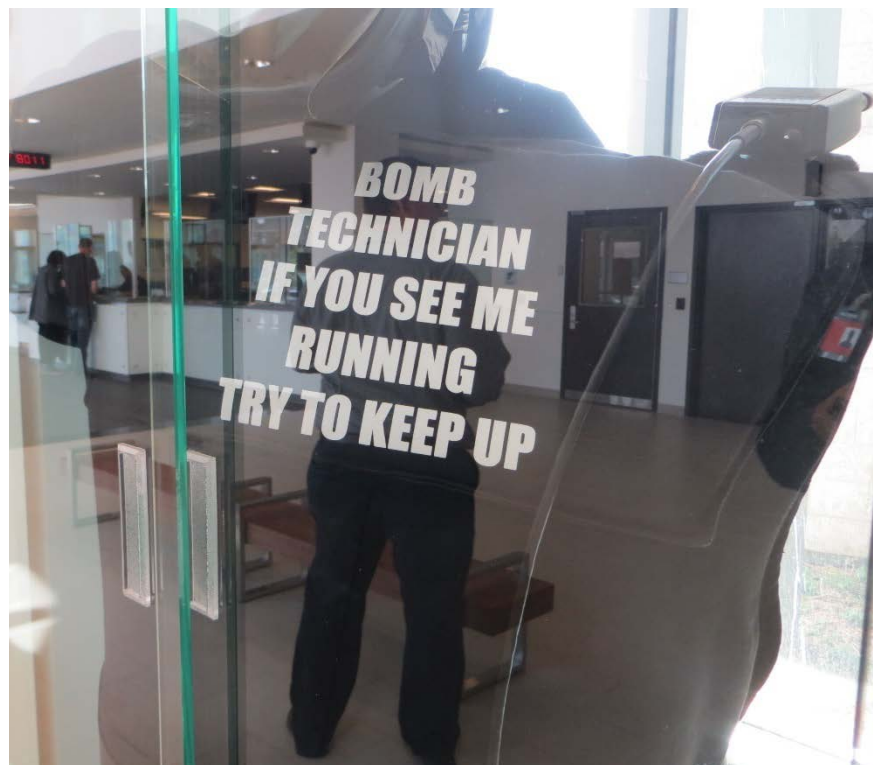
# The Final Result

**“Communication and information sharing between units is much easier in the new building, which increases productivity. The centre atrium contributes greatly to informal information sharing, as members meet each other on the stairs.”**

**“Saskatoon embraced the community policing model more than 20 years ago, now this new building is a better reflection of our policing philosophy”**

Deputy Chief Bernie Pannell







# Pride





# Pride





# Lessons Learned

## **The Process:**

- Success depended on full-team partnering approach & attitude
- Success was helped by having consistent personal commitment from beginning to end
- DB process demands quick decisions

## **Technical & Design Requirements:**

- Value in prior research & investigation
- Look for the best solution – not necessarily in the OSR or proposal
- Attention to detail ensured

## **The Final Design/Product:**

- Cost certainty was obtained
- Quality was assured through the whole team understanding
- The value of an enlightened client can't be overstated









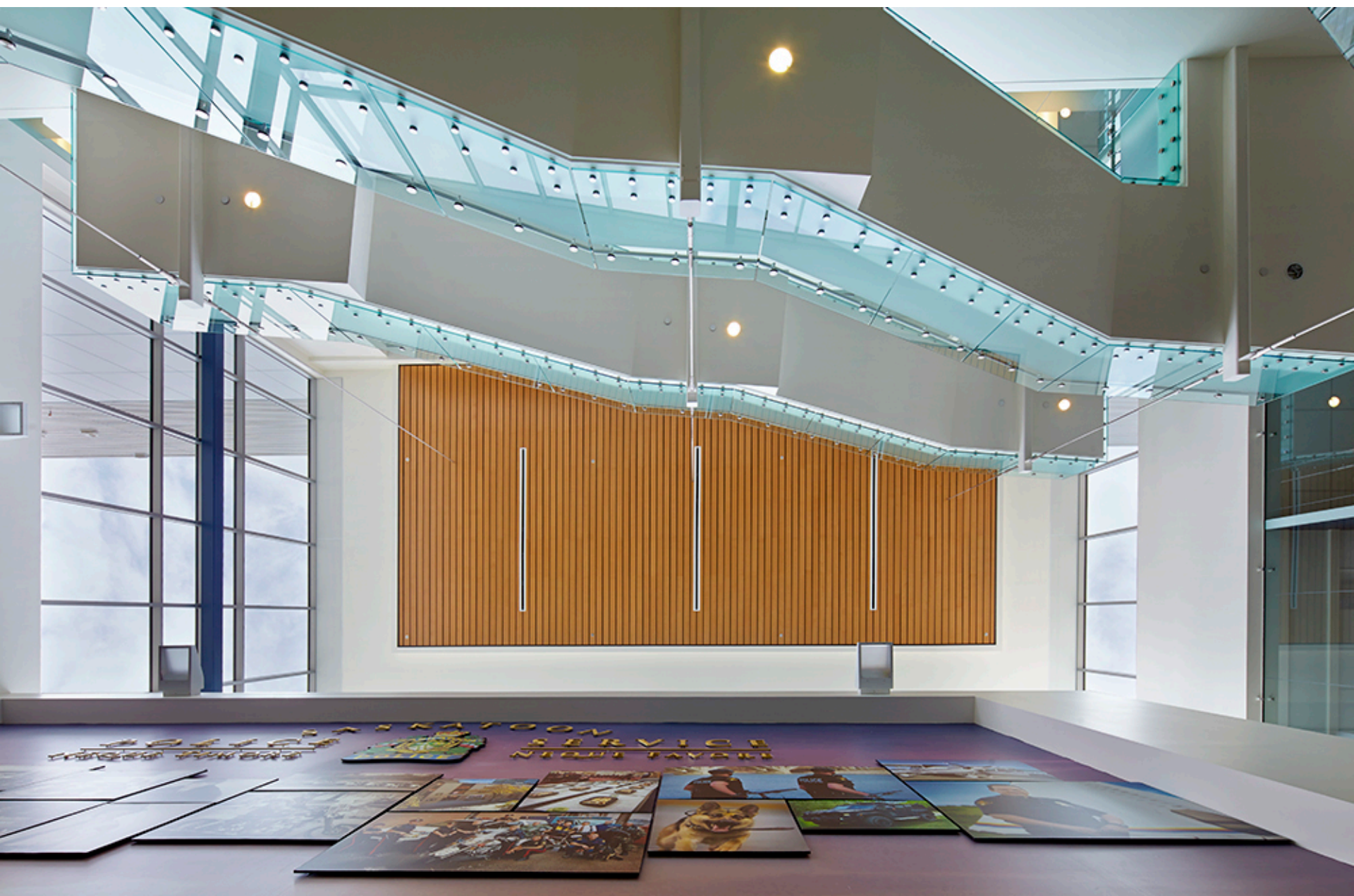






















# Discussion, Questions

