



VA throughout the Project Management Process: Differences in Application

ANDRÉANNE MARTIN, AVS
2018 VA CANADA SYMPOSIUM
EDMONTON, OCTOBER 18-19, 2018



Overview

- ▶ Different stages of a project
- ▶ VA Methodology steps
- ▶ Applying the VA Methodology at every stage
 - ▶ Project examples
- ▶ Conclusion

Stages of a Construction Project

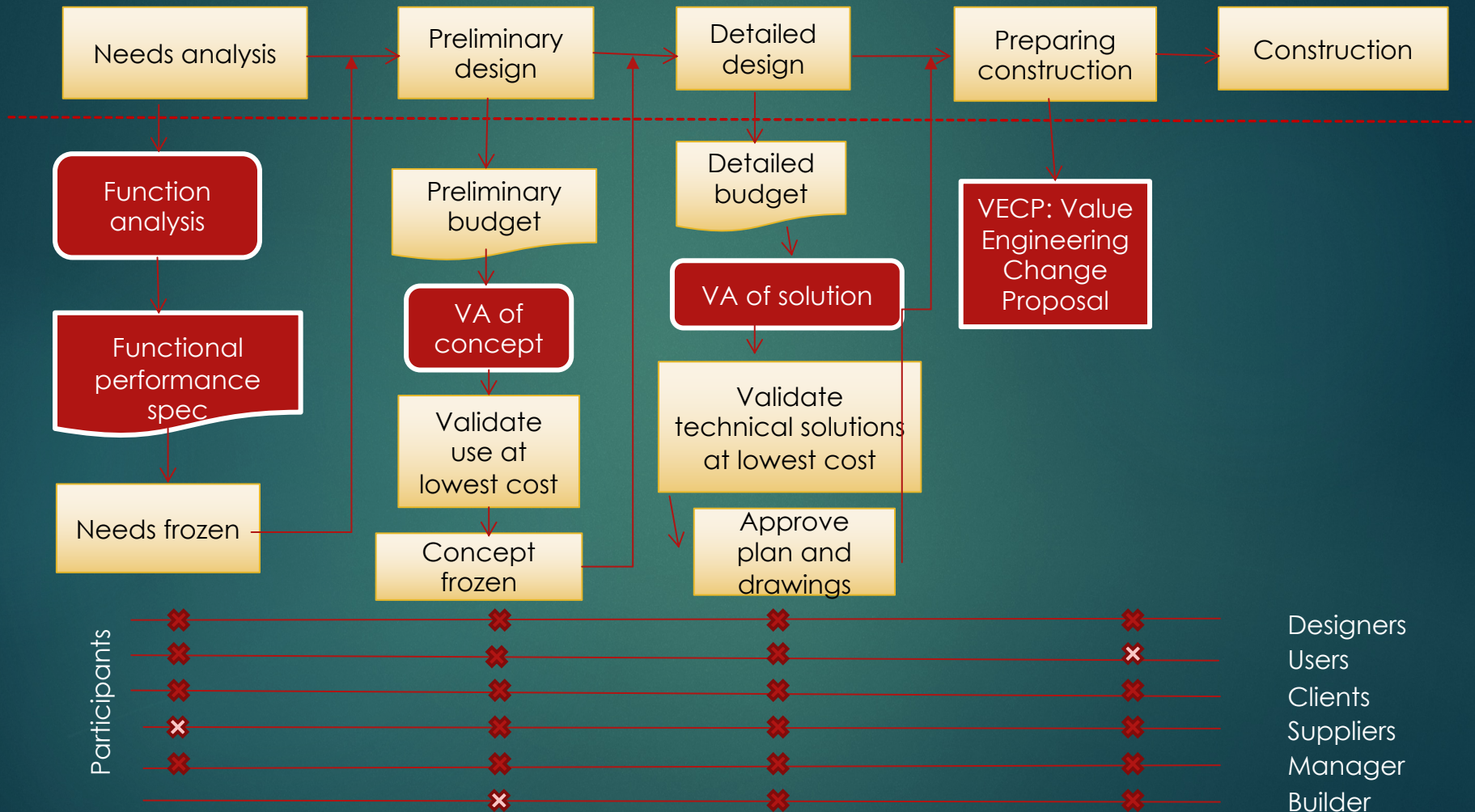
- ▶ Idea or need
- ▶ Planning/Needs Analysis
- ▶ Preliminary Design/Feasibility
- ▶ Detailed Design and Engineering
- ▶ Call for Tenders & Bids
- ▶ Execution/Construction
- ▶ Occupancy

Value Analysis Job Plan

▶ Phases:

1. Preparation
2. Information
3. Function Analysis & Cost Analysis
4. Creative
5. Evaluation
6. Development
7. Presentation

VA and Project Management



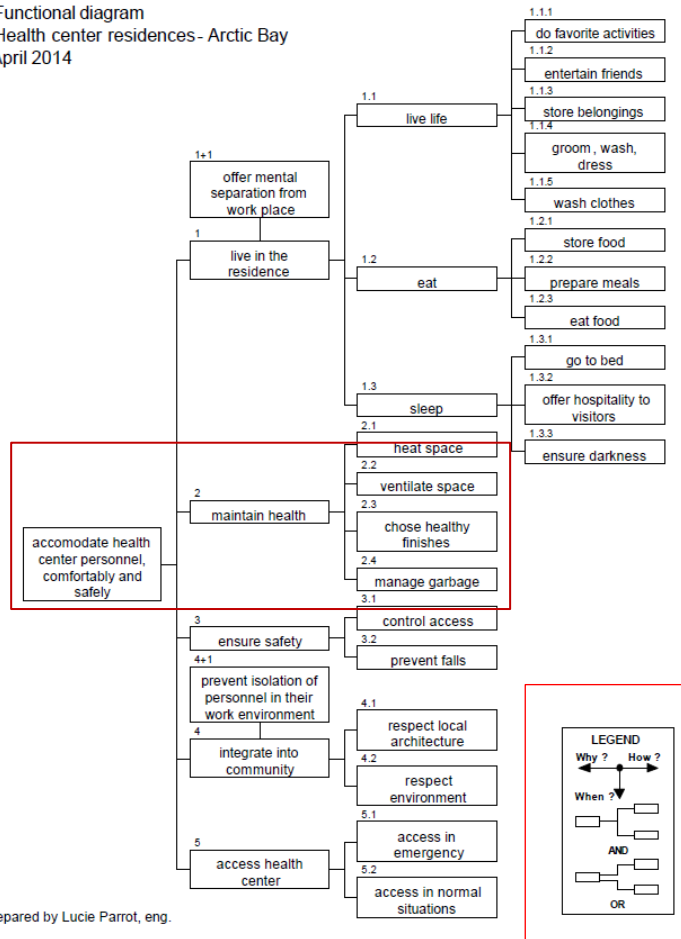
Stage: Needs Analysis

- ▶ Prepare Functional and Technical Program (FTP)
- ▶ Function Analysis: functions!
 - ▶ Function diagram:
 - ▶ Linking the functions together
 - ▶ Validating the functions
 - ▶ Characterising the functions
- ▶ Result? Functional Performance Spec.

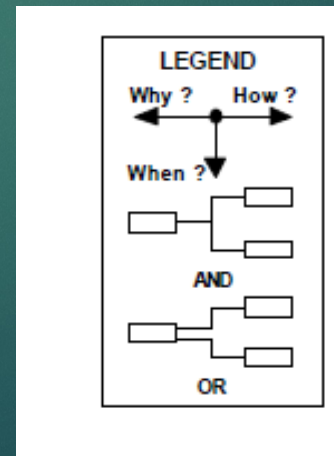
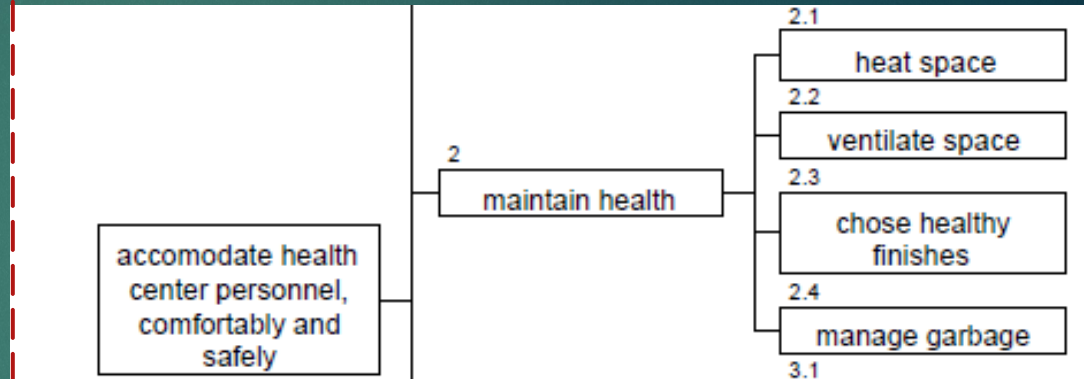
Example: Health Center Residences

Tool: Function diagram

Functional diagram
Health center residences - Arctic Bay
April 2014



Prepared by Lucie Parrot, eng.



MARTIN
PARROT

Example: Municipal indoor pool

Tool: Functional Performance Spec

Item	Function	Performance criteria	Level	Comments
Family locker	Change clothes of children	Number of places	According to FTP	
M/W locker	Change clothes	Number of places	According to FTP	
Pool deck	Circulate around the pool	5 meters	Unknown	
	Clear the pool			
	Accommodate upcoming swimmers			
Pool	Hold national competitions	Attendance	1,000 people	To validate
	Ensure comfort of users	Float free		
Removable floor	Adjust depth	Desired depth	Reduce to 1m depth	



Excerpt from FTP

1.0 Local

Désignation du local: Vestiaire
Catégorie et type d'espace: Espaces publics (8)
Description des activités: Vestiaires pour hommes (2), femmes (2) et famille (1)

Local: fermé aire ouverte

Nombre d'occupant :** (280) *** pour fin de calculs mécanique*

Nombre de poste de travail (place bureau): (0) *uniquement*

Adjacence : Hall principal (8.1) - Salle pour retrait des chaussures et bottes (8.9) - Plages (1.2, 2.2 et 3.2) - Conciergerie (4.7.4)

Proximité : Bassin 50m (1.1) - Bassin de plongeon (2.1) - Bassin récréatif (3.1.1) - Billetterie (8.2) - Salle de conditionnement physique (5.3.3)

Particularités: 5 vestiaires similaires pour 280 baigneurs par vestiaire afin de permettre une vocation différente en cours d'exploitation.

Horaire typique d'utilisation:

8h à 23h / 7 jours 24h/24h / 7 jours

Autre: _____

Accès spécial requis: n/a

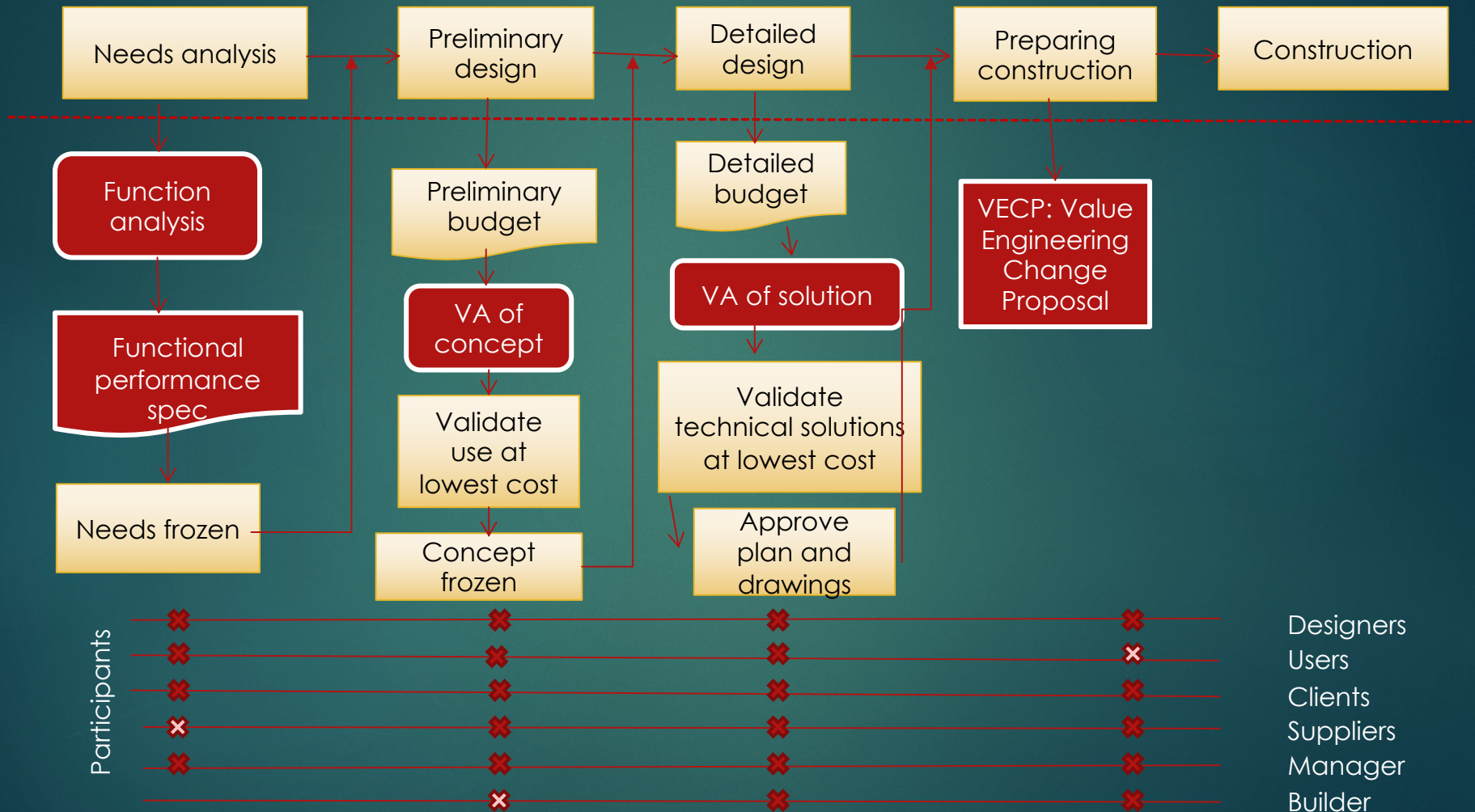
Accessibilité de l'extérieur

Accessibilité via corridor de service

Accessibilité contrôlée

Autre: Accès suite au passage dans salle de retrait

VA and Project Management



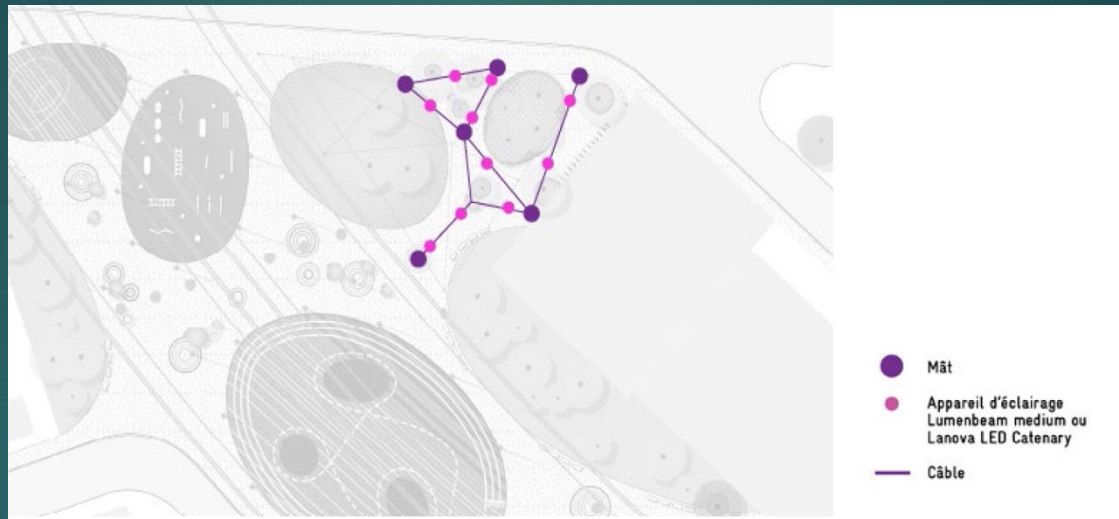
Stage: Preliminary Design

- ▶ Use typical VA tools - VA of concept
- ▶ Stay at a high level
 - ▶ Workshop attendees
 - ▶ Functions
- ▶ Ensure strategic directions of project are agreed upon by all stakeholders
- ▶ Result? Concept frozen

Preliminary Design

Example: Municipal Park

Plan



Suggested

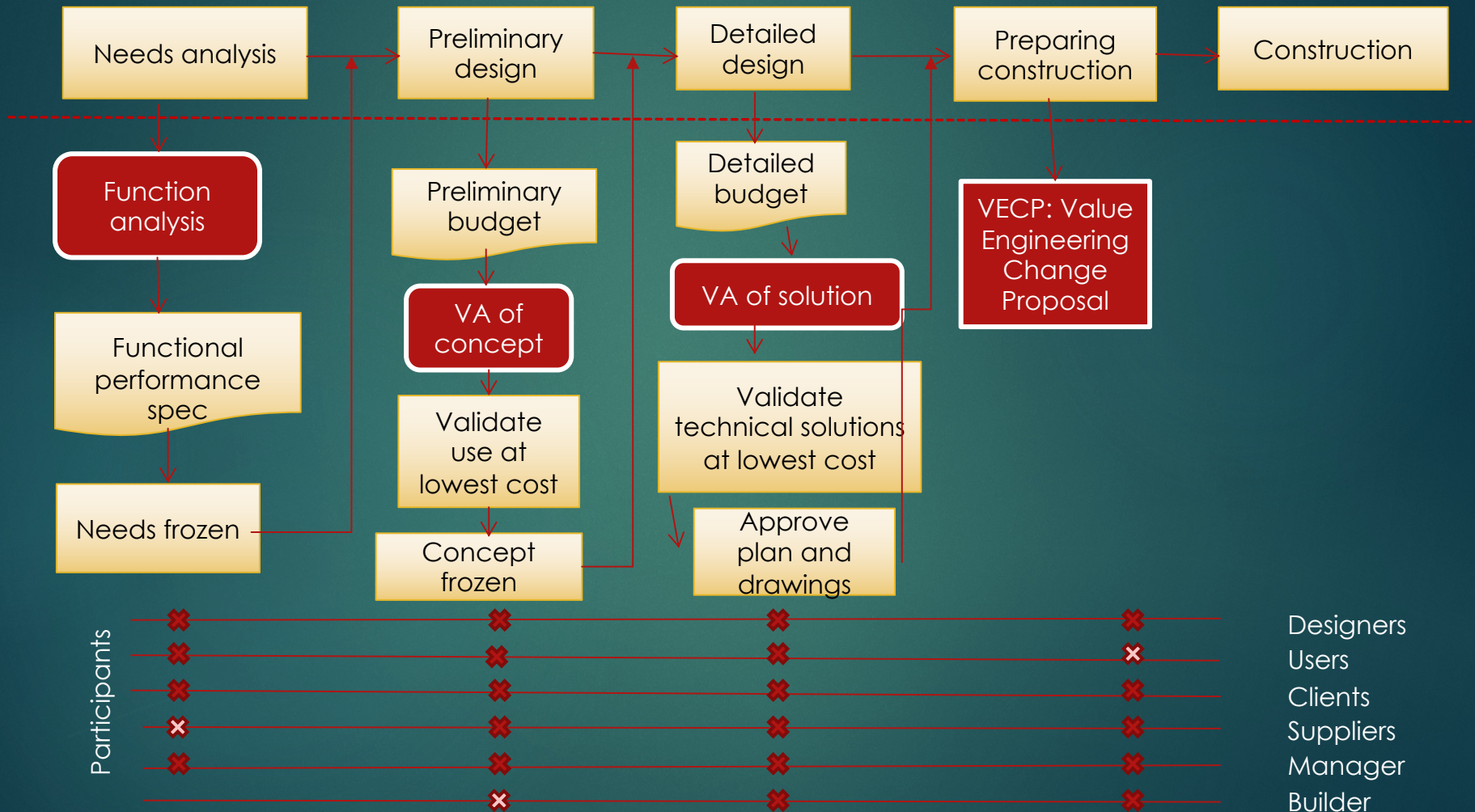


Example: Municipal Park

Tool: Function-based brainstorming

- ▶ Proposals that reduce the cost
 - ▶ Lighting
 - ▶ Plan: catenary
 - ▶ Suggested: columns
 - ▶ Ground Rehabilitation
 - ▶ Plan elevation at 16.65 m
 - ▶ Suggested elevation: 17.65 m
 - ▶ Type of pipes
 - ▶ Plan: concrete
 - ▶ Suggested: HDPE
- ▶ Proposals that increase the cost
 - ▶ Painting parking lot

VA and Project Management



Stage: Detailed Design

- ▶ Use typical VA tools - VA of plans and specs
- ▶ Reach detail level
 - ▶ Workshop attendees – not necessarily the same
 - ▶ Functions – more technical
- ▶ Ensure chosen solutions are agreed upon by all stakeholders
- ▶ Result? Accepted plans and specs

Detailed Design Proposals

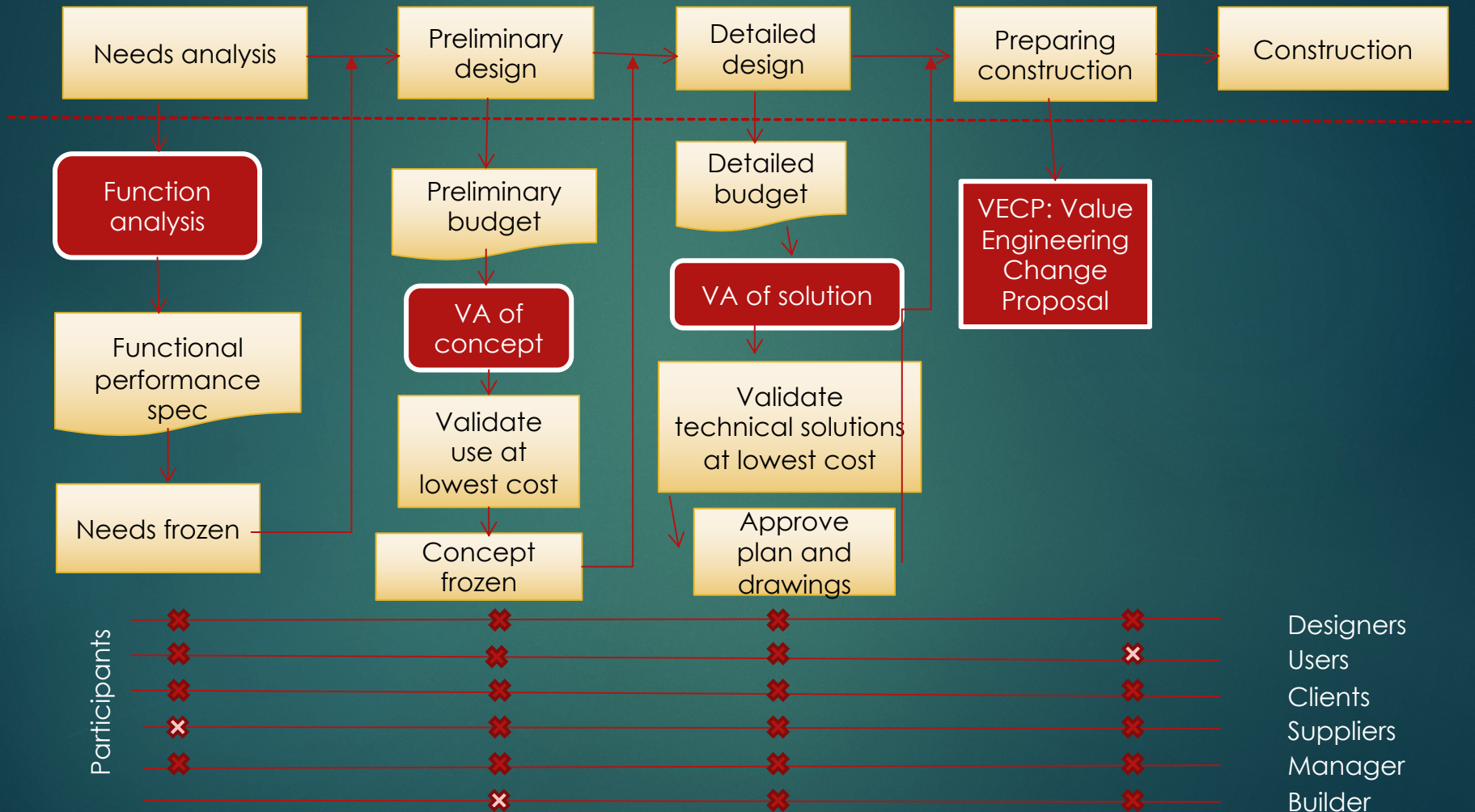
Example: Notre-Dame Church (Granby, QC)

- ▶ The level of detail is more precise to optimize solutions
- ▶ Proposal examples:
 - ▶ Change the composition of exterior walls of extension
 - ▶ Reorganize layout of teachers' office space and avoid construction of mezzanine for meetings
 - ▶ Choose another type of heating radiator

Notre-Dame Church



VA and Project Management



Special case

- ▶ Construction context in Quebec: every contractor is fully booked!
- ▶ Construction cost being way too high generated demand for another Value Study
- ▶ Goal: reduce cost of project without affecting *too much* satisfaction of needs, while respecting architectural competition defining elements (in certain cases)

Conclusion

- ▶ VA can be used at all stages of a project
- ▶ The Value Study objective, tools and focus must be adjusted according to the stage
- ▶ The appropriate attendees must be selected



Thank you!

Andréanne Martin, B. Sc., AVS

andreanne@martin-parrot.com

www.martin-parrot.com

