



Multi Service Contracting

Gate 21

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Multi-service-contracting

Challenge – unilateral focus on energy

1. Priority

Energy savings that will return the investment within life cycle

Other areas 2. Priority

Indoor climate
Sustainability

Total economy



Maintenance
Operation

Functionality

Environmentally
hazardous substances

Multi service contracting

"Holistic model that, in addition to energy renovation, can also involve e.g. construction and operating costs, internal service requirements and indoor climate as possible parameters."

Typical multi-services

- ❖ Energy – achieving energy savings and energy efficiency
- ❖ Indoor climate – achieving and securing an acceptable indoor climate.
- ❖ Maintenance – improving maintenance condition
- ❖ Operation – various services connected to operation, e.g. remote operation centre with monitoring of CTS and EMS or inspection of installations

MSC – A new model

Focus on

- Collaboration between the partners
- The phases in the building project
- Following up on performance
- Not a guarantee model



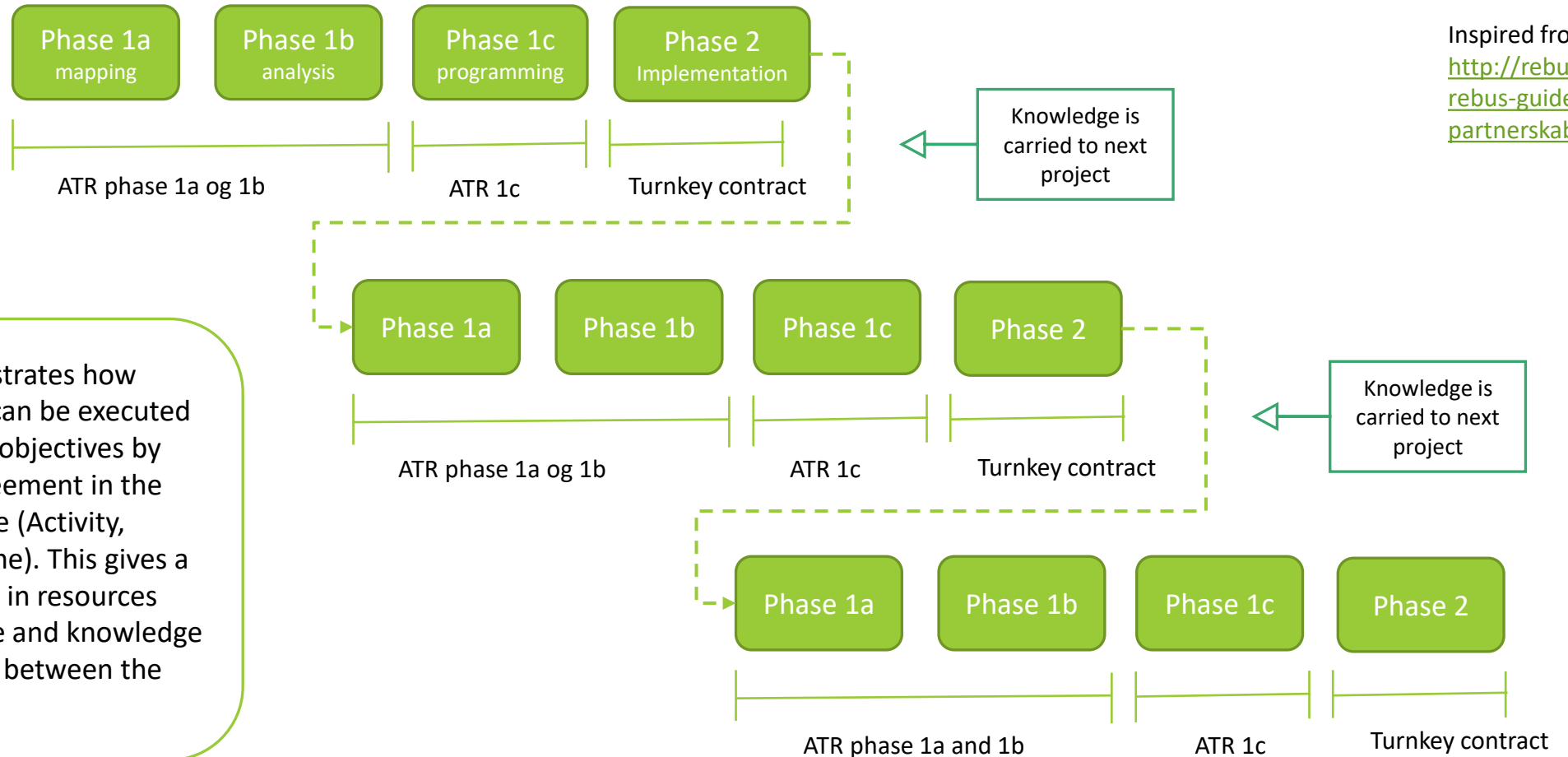
Target Group for MSC model

- ❖ The generic model is targeted on renovation of a bigger building port-folio in the existing building stock.
- ❖ The thinking in multi-services and follow up on performance can be used in all projects.
- ❖ Be aware that the size of the methods of performance evaluation fit the value of following up on performance.

Portfolio-project can be split into sub-projects

Tender

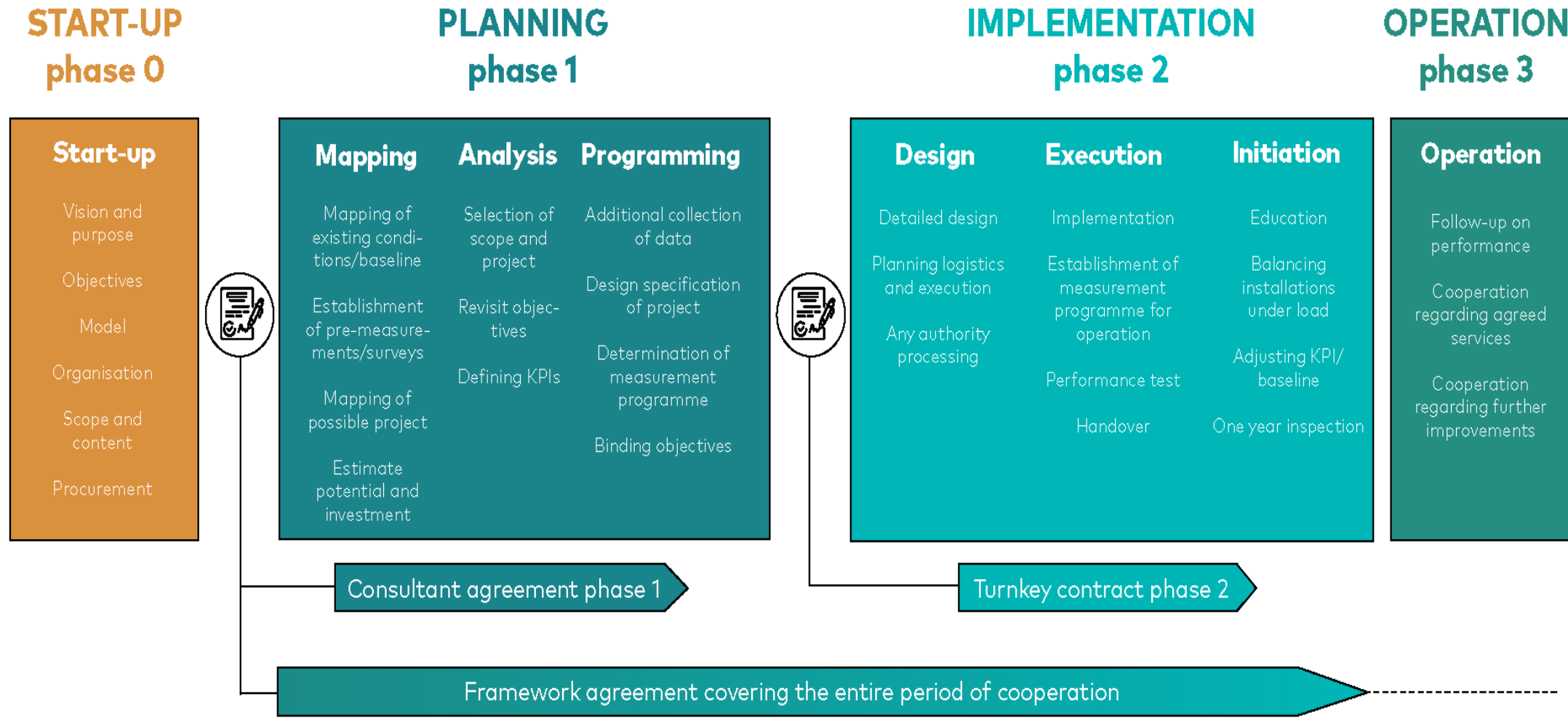
Framework agreement



Inspired from <http://rebus.nu/media/1211/rebus-guide-til-strategiske-partnerskaber.pdf>

The figure illustrates how more project can be executed with different objectives by using ATR agreement in the planning phase (Activity, Resources, Time). This gives a flexibility both in resources and timeframe and knowledge can be carried between the projects.

The MSC model



Overview of tools

Guide to Multi Service Contracting (MSC)			
MSC toolbox – tools and instruments for implementing MSC			
Phase 0 Start-up	Phase 1 Planning	Phase 2 Implementation	Phase 3 Operation
1. Guideline for MSC phases and toolbox			
2. Guideline for MSC decision process	4. Mapping and analysis tools for different services	7. Introduction to performance verification during implementation	
3. Content in an MSC procurement and performance requirements	5. Guideline for planning of indoor climate in schools	8. Performance operation test	
	6. Introduction to measurement and verification		
9. Example of MSC training			

Guiding objectives – phase 0

Approach to defining guiding objectives of the project's Phase 0



Step 1: Vision – Why the project is being launched

Step 2: Purpose – What specific challenges need to be addressed

Step 3: Objectives – Formulate SMART objectives and group them

Step 4: Goal hierarchy – Break objectives into milestones and result targets

Step 5: Identify conflicting objectives – Negative impacts on each other

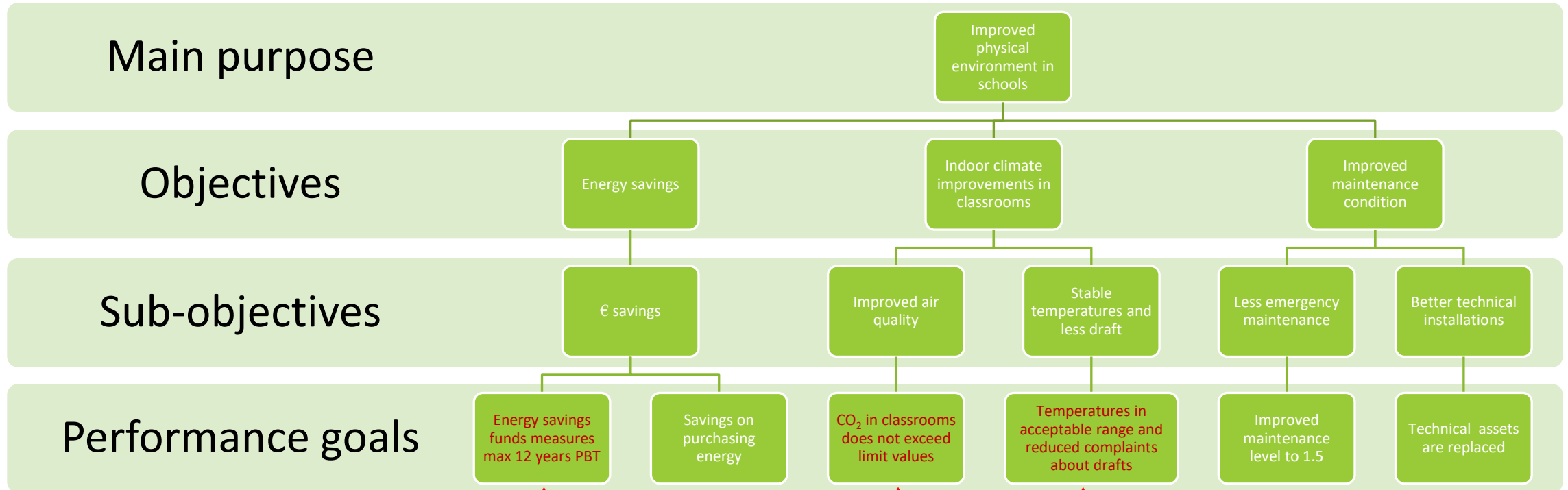
Step 6: Prioritising objectives – What weighs the most?

Step 7: Selection criteria – Shared image of prioritisation between objectives

Step 8: Key Performance Indicators (KPI) – Set up indicators on performance

Step 9: Evaluation – Set requirements for methods for verifying KPIs

Sub-objectives and conflicting objectives

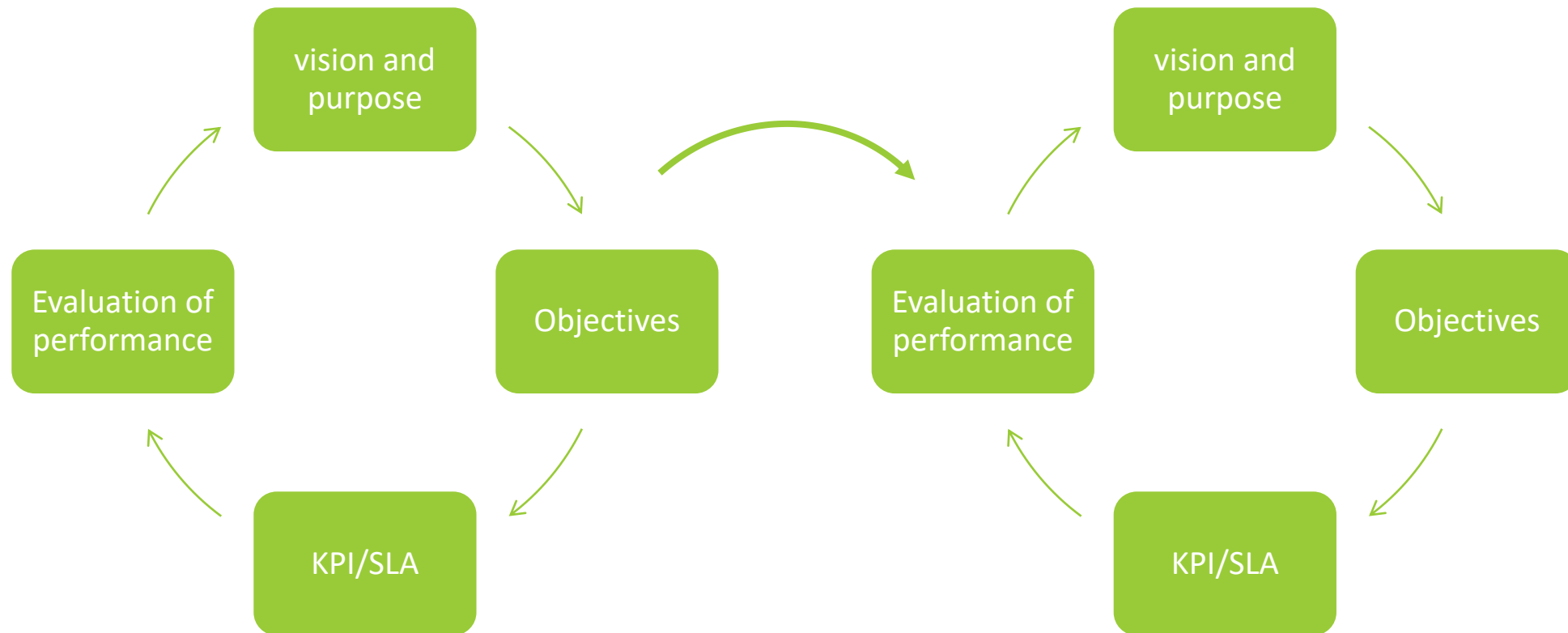


By using an objective hierarchy, goals that conflict with one another will become more evident. For example, improved air quality and removal of draught will require more energy than is currently being used, which is why there are no energy savings to finance the improvements.

KPI and methods of evaluation

	<u>Energy</u>	<u>Indoor climate</u>	<u>Maintenance</u>	<u>Operation</u>
Performance goal	Energy savings funds measures an average of max 12 years PBT	CO2 in classrooms do not exceed limit values Temperatures in acceptable range and reduced complaints about drafts	Improved maintenance level with reduced back log	Technical staff use BMS in daily work.
Example of method of performance evaluation	IMPVA, consumption monitoring in EMS solution	Measurements from sensors	In FM program registration of maintenance level on assets and cost on emergency maintenance.	Alarms in BMS, registration of helpdesk inquiries.
Example of KPI's	Xx reduction in KWh, CO2 emission	Temperature range, CO2 range	Condition level to 1,5, cost on emergency reduced with xx %	Xx reduction in critical alarms and inquiries

Re-visit criteria during planning



2. Guideline for MSC decision proces

Support to the start up phase

1. MSC project characteristics
2. Framework establishment
3. Objectives
4. Competences and organisation

3. Content in an MSC procurement and performance requirements

- ❖ Present the contractual basis in an MSC project
- ❖ Presents the overall content in the procurement's documents
- ❖ Introduces performance requirements which enables the building owner to:
 - ❖ Cooperated with a supplier on the development of the content and the building owner gets access to the supplier's expertise and experiences.
 - ❖ Application of responsibility and risk lies with the supplier
 - ❖ Supplier's ownership increases when given freedom to organise the work and use own methods and solutions

4. Mapping and analysis tools for different services

4.1 Financial benefits of improved indoor environmental quality

4.2. Introduction to mapping and evaluation of building performance

4.3. Template example - Questionnaire for users on energy and indoor climate

4.4. Template example - Mapping of indoor environmental quality in schools by students

6. Introduction to measurement and verification

Introducing terms, examples and tasks related to M&V in an MSC project:

- ❖ “*baseline*” - the performance situation before implementing any measures
- ❖ “*performance goal*” - the objectives in the project
- ❖ “*key performance indicator*” (KPI) - the expected performance of the measures and services
- ❖ “*method of performance verification*” - how the verification is being done

7. Introduction to performance verification during implementation

- ❖ Performance test - a way to isolate the building's performance from the use
- ❖ Commissioning – international standard

8. Performance operation test

Case from Egedal Municipality

- ❖ Development of the method "Performance Operation Test"
- ❖ A concept where the current operating status of a technical system is monitored between handover and one year inspection
- ❖ Continuous measurement over a given operating period using simple data sets.

Distinguish of MSC model

- ❖ An early cooperation model where the MSC supplier has a delivery team with all the necessary expertise
- ❖ In cooperation the MSC supplier and building owner develop and plan the project which is customised to the building owner needs – project to project
- ❖ Model which gain benefit of the effect of repetition to gain a higher efficiency and quality
- ❖ Based on open economy with incentives to solve the project in a way where objectives are met by systematic follow-up on key performance indicators
- ❖ From beginning the model focus on securing performance by designing key performance indicators and methods for follow-up and evaluation for each service.



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