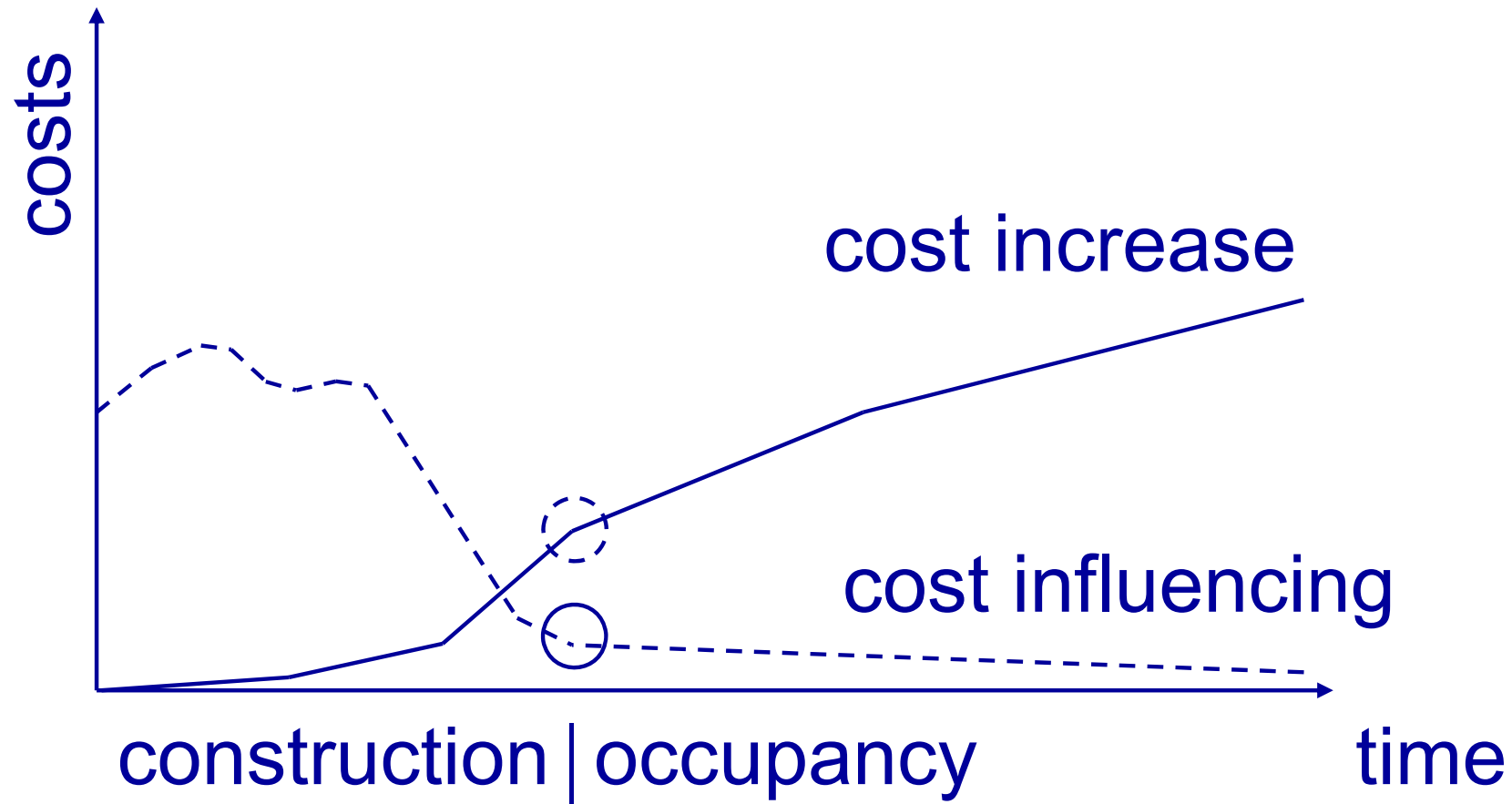


# Specifying cost-influential factors on operating costs of laboratory buildings

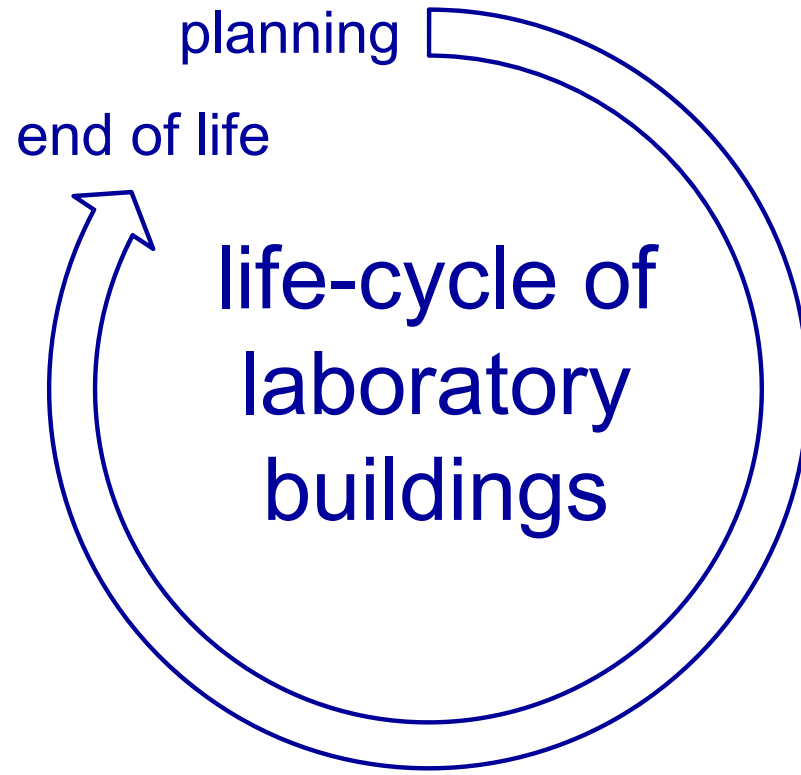
- situation
- question
- objective
- procedure
- example

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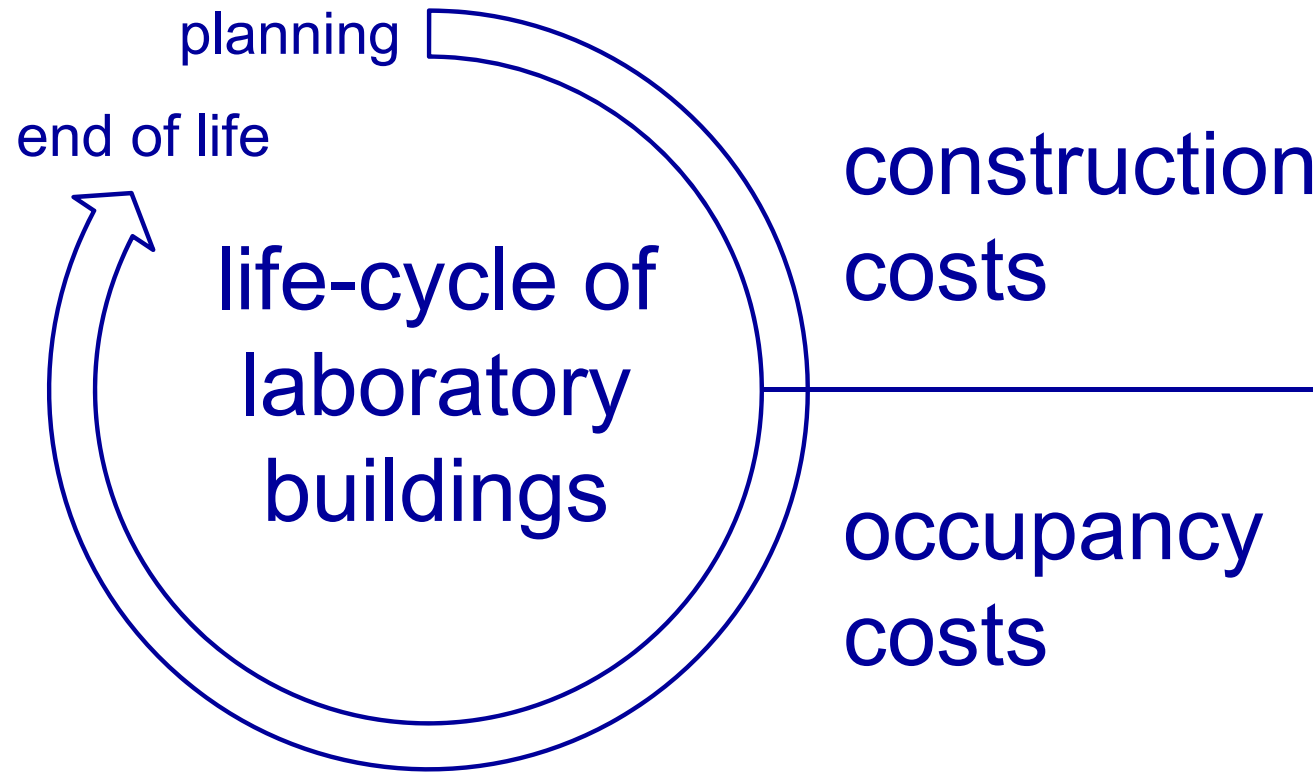
# situation – cost navigation



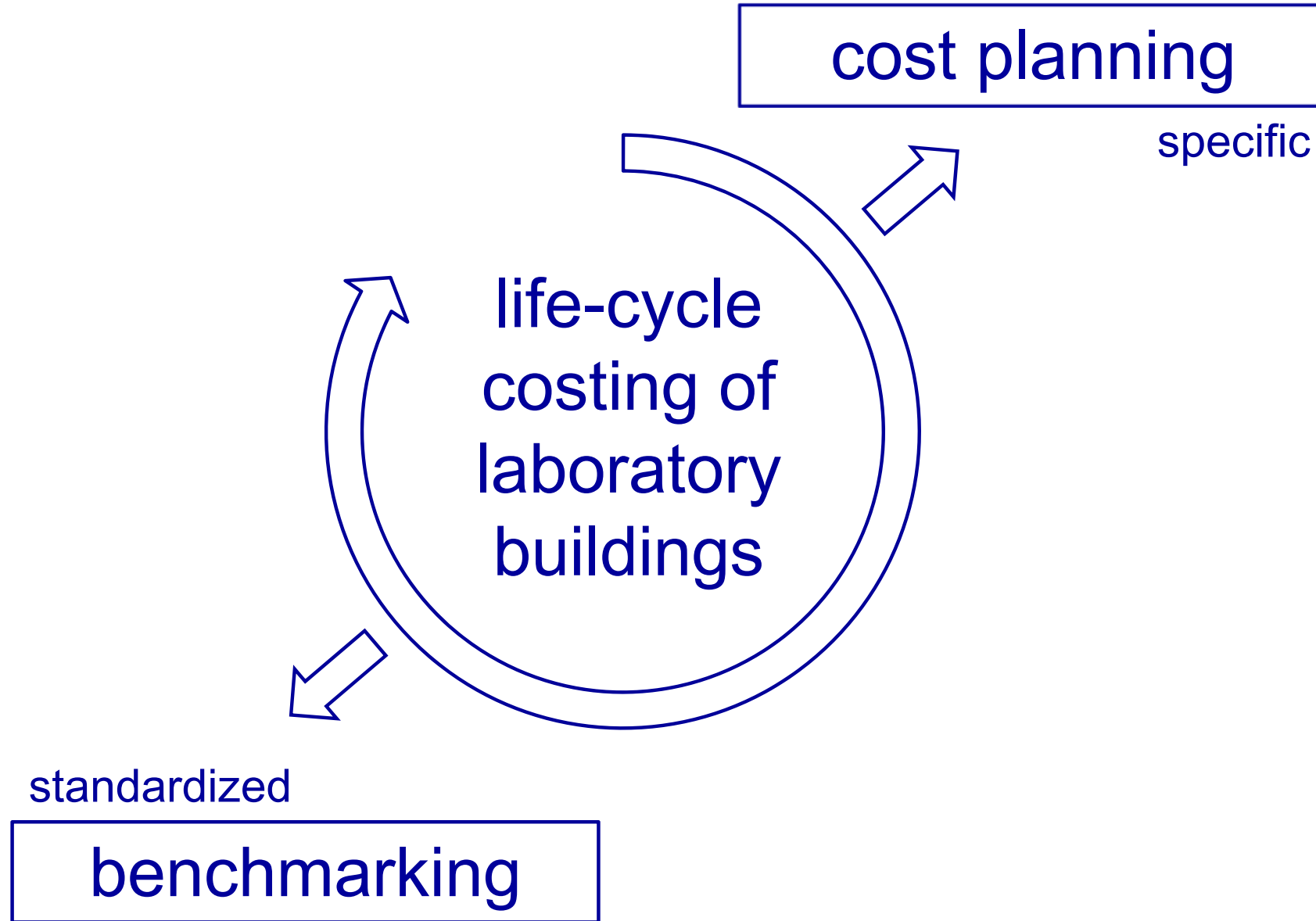
# situation – life-cycle



# situation – life-cycle

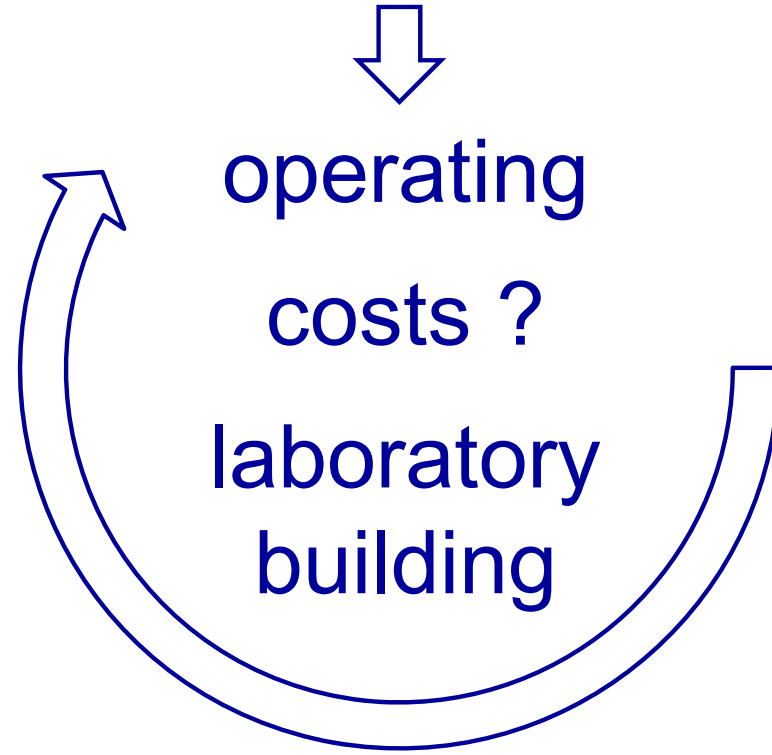


# situation – life-cycle costing

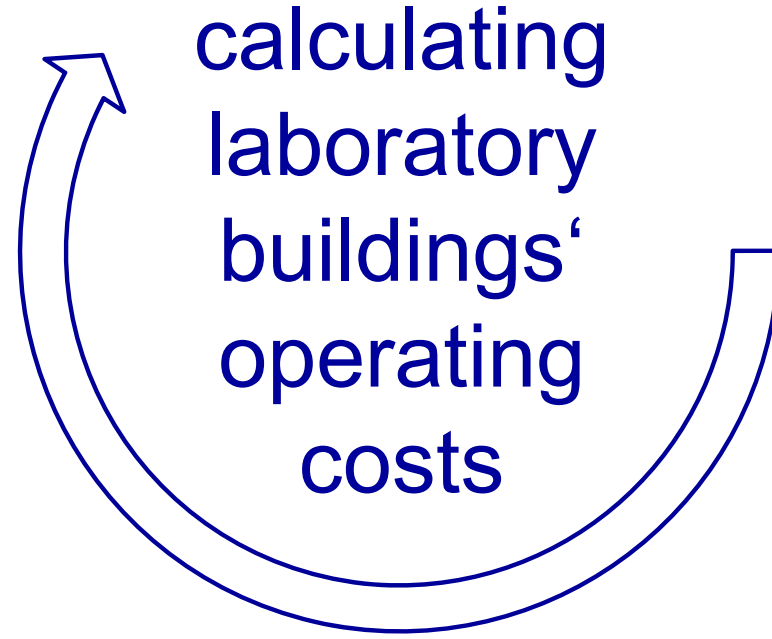


# question

## cost drivers/ cost-influential factors?



# objective



## practical cost planning !

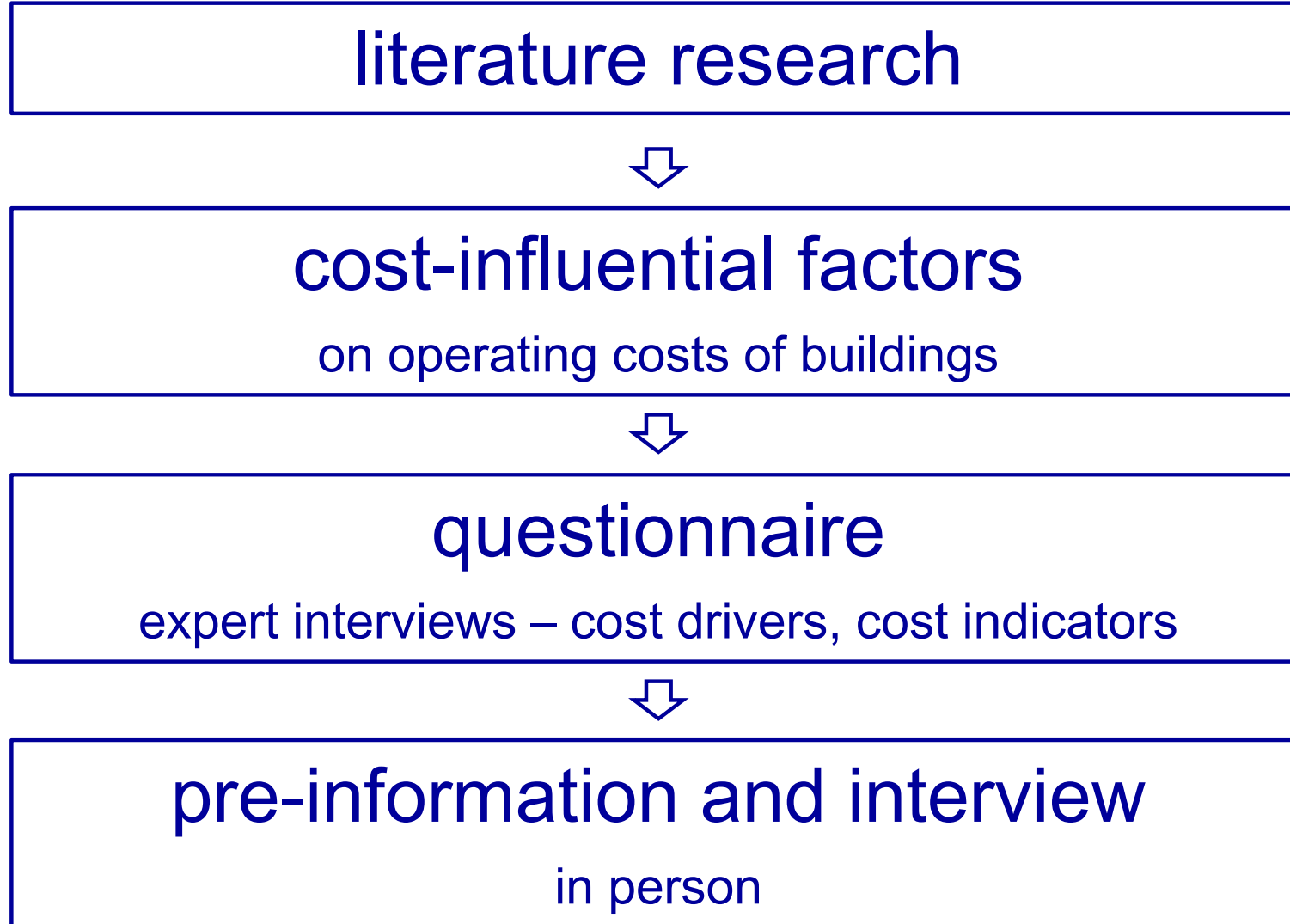
# scope

- condition of the building **new**
- since construction year **1996**
- air exchange rate **4 - 8 times\***
  
- no special use (i.e. animal farming)

\* from 12,5 - 25 m<sup>3</sup>/ m<sup>2</sup> UFA (Usable Floor Area) p.h., due to DIN 1946-7:2007-07 ERES Conference 2017



# procedure



# structure of cost-influential factors

cost-influential factors structure	i.e.
strategy (performance-related/social)	<ul style="list-style-type: none"> <li>- level of outsourcing for services</li> <li>- owner's objective</li> </ul>
use (type/standard/intensity)	<ul style="list-style-type: none"> <li>- type of use (chemical/biological)</li> <li>- cleaning intervals per week</li> <li>- number of operating days</li> </ul>
construction characteristics	<ul style="list-style-type: none"> <li>- porosity of flooring</li> </ul>
technological characteristics	<ul style="list-style-type: none"> <li>- type of room heating radiators</li> </ul>
location (macro/micro location)	<ul style="list-style-type: none"> <li>- number of days of sunshine</li> <li>- air/noise/light pollution</li> </ul>
miscellaneous	<ul style="list-style-type: none"> <li>- directive/norms</li> </ul>

# interview – pre-information

---

cost group (DIN 18960:2008-12)      Please mark here with x !

---

---

supply

---

---

disposal

---

---

cleaning

---

---

inspection

---

---

monitoring/security

---

---

statutory charges/contributions

---

Please mark the subject areas where you have expertise!

# interview – pre-information

cost group (DIN 18960:2008-12)	Please mark here with x !
supply	
disposal	
cleaning	X
inspection	
monitoring/security	
statutory charges/contributions	

Please mark the subject areas where you have expertise!

# interview guide – i.e. cleaning

---

**cost-influential factors (literature)**      **assessing (0-10)**      **manifestation**

---

...

---

**use / type- main type of use**

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---

**use / intensity– operating days p.a.**

---

---

**use / intensity - number of research groups per week**

---

...

---

# interview guide – i.e. cleaning

cost-influential factors (literature)	assessing (0-10)	manifestation
...		
use / type- main type of use	6	
use / intensity– operating days p.a.	0	
use / intensity - number of research groups per week	6	
...		

# interview guide – i.e. cleaning

cost-influential factors (literature)	assessing (0-10)	manifestation
...		
use / type- main type of use	6	physical/ technological = 100% chemical/ biological = 170 %
use / intensity– operating days p.a.	0	-
use / intensity - number of research groups per week	6	5 = 100% 15 = 150%
...		

# example – i.e. cleaning

chemical laboratory building and 5 research groups per week!

area [m <sup>2</sup> ]	50 m <sup>2</sup>
x cleaning interval p.a.	52 p.a.
x hourly rate [€/h]	21 €/h (value added tax included)
x corrective factor	1,35 = $[(1,7*6+1*6)/(6+6)]$
/ area output [m <sup>2</sup> /h]	140 m <sup>2</sup> /h
=	=
cleaning costs [€ p.a.]	526,5 € p.a.



# Specifying cost-influential factors on operating costs of laboratory buildings

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