Managing the University Campus

Towards a maturity model for campus management

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Lab: Real Estate Management

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INTRODUCTION

- Problem statement
- Research questions
- Research design
- Theoretical framework
- Maturity model
- Expert interviews
- Operationalization maturity model
- Case study 1: TU Delft
- Case study 2: CUHK
- Conclusion
- Recommendations and discussion

INTRODUCTION

- Challenging task for institutions to **match demand with their assets**
- **Resources** put for the right use: updating portfolio to changing demand- efficient application, or it will be a drain on available funds (Musa, 2012)
- Shift from supply-driven approach to new, more customised and **demand-oriented** ways of teaching and learning (Simons et al, 2008)
- Many institutions are **not sufficiently prepared** for future needs and demands (Vries et al, 2008)
- **Adding value** by finding the match between demand and supply, now and in the future

PROBLEM STATEMENT

WHY

- Universities **lack understanding**
- Too little real estate **decision supporting information systems**
- **Lack of references and figures** from comparable situations to assess their own situation
- Maturity difficult to measure in **different context**

RESEARCH QUESTIONS

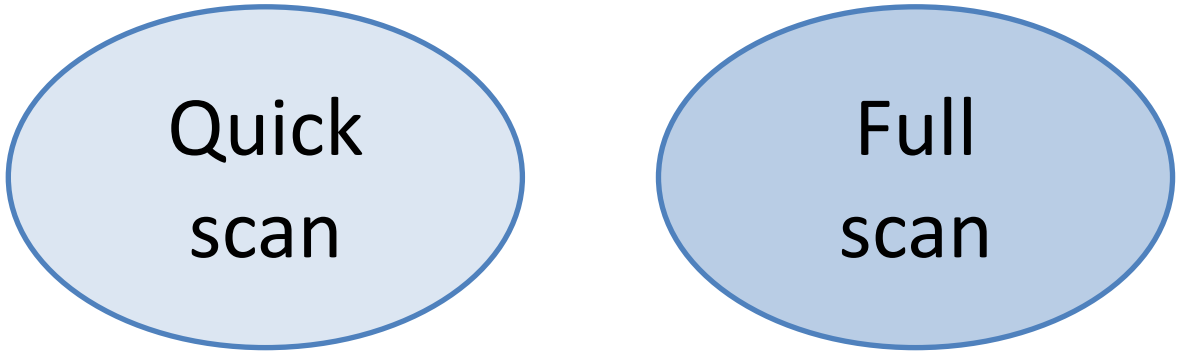
*How can the **maturity level** of campus management of a university be determined in order to create added value in terms of **performance*** , and support decision-making?*

*competitive advantage, sustainable development, profitability and productivity

RESEARCH QUESTIONS

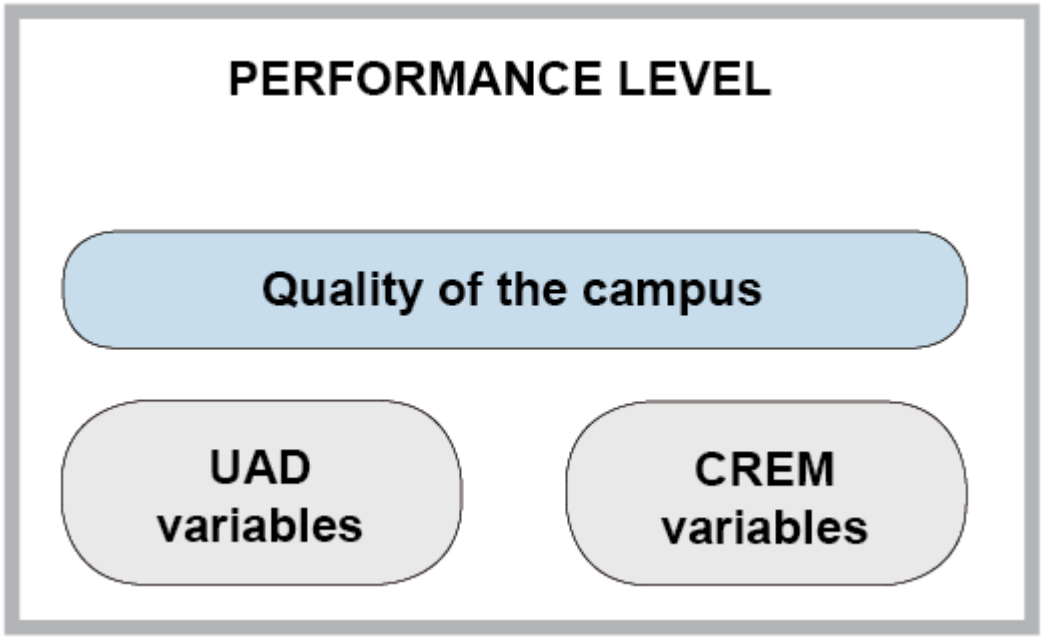
*1) How can the **maturity level** of campus management of a university be determined?*

- What **levels** in the model can be determined?
- How can the maturity model to be **operationalised**?



RESEARCH QUESTIONS

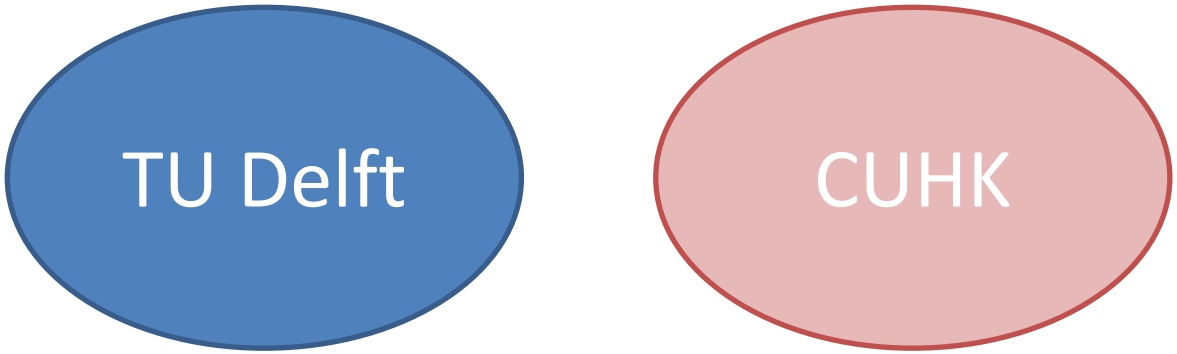
*2) How does the maturity level express in the **performance level** (evidence) of the campus?*



RESEARCH QUESTIONS

*3) What is the **applicability** of the developed model?*

Testing the model:



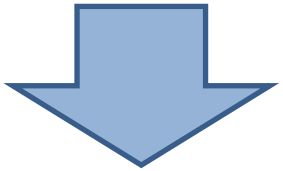
Limitations, advantages, disadvantages, differences and similarities between the quick scan and full scan model

Which model is better?

GOAL

Knowing the current state of maturity

Knowing the current performance level



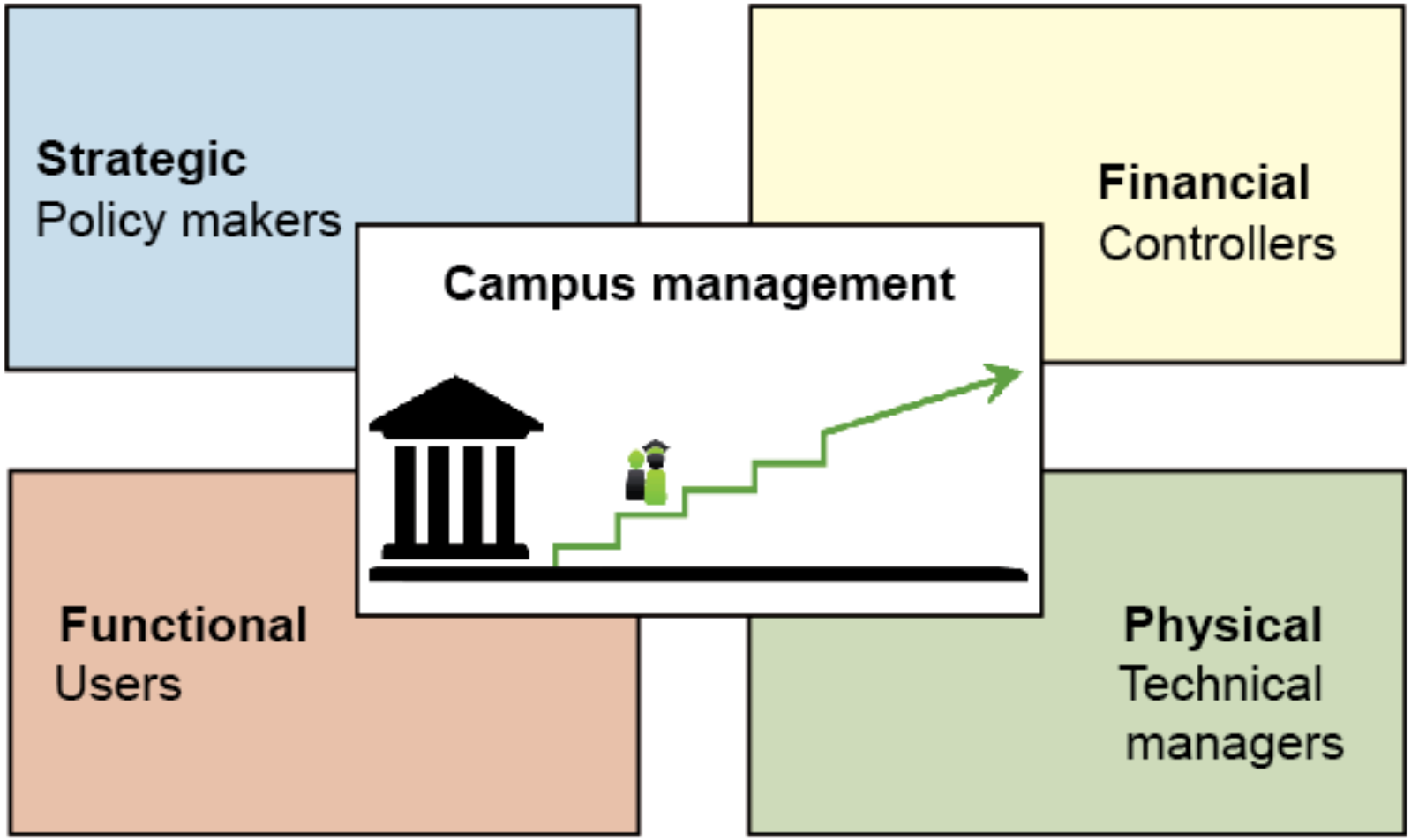
Maturity model

GOAL

Knowing what to do!!

Maturity model

TARGET GROUP



TARGET GROUP

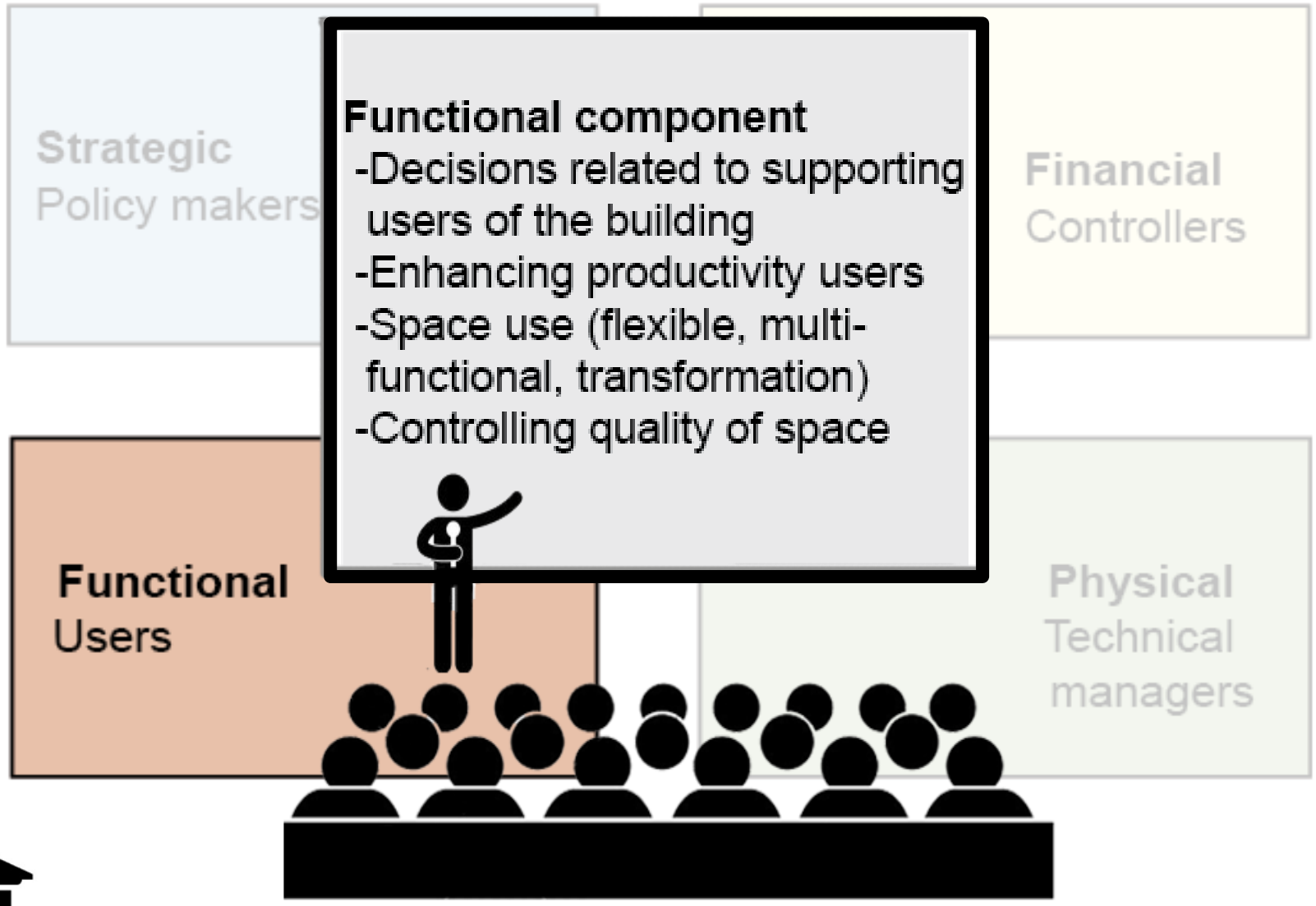
Strategic
Policy makers

Financial
Controllers

Functional
Users

Strategic component
-Goal focus
-Enhancing quality
-Enhancing user satisfaction
-Competitive advantage
-Innovation & improvement
-Internationalisation, marketing

TARGET GROUP



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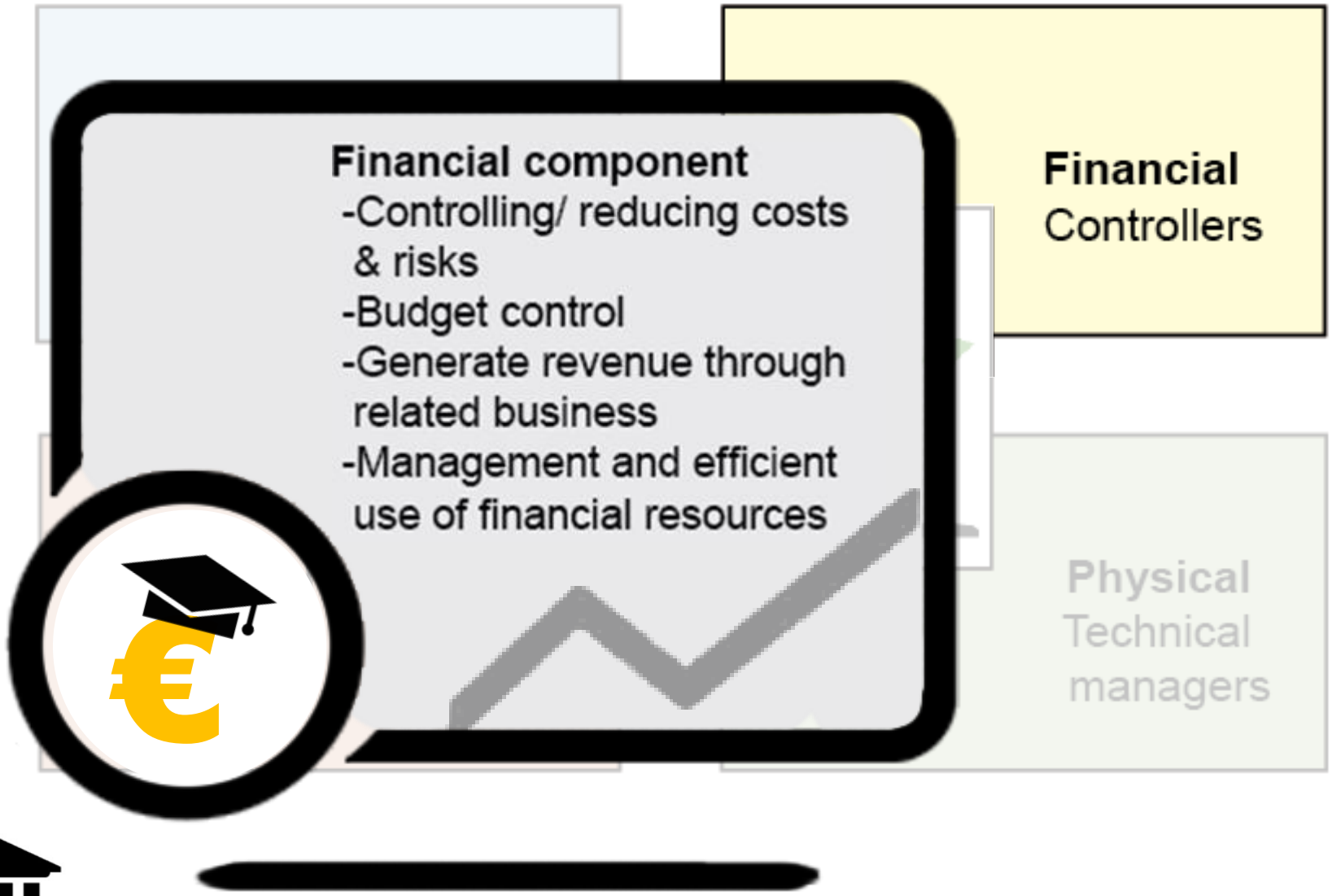

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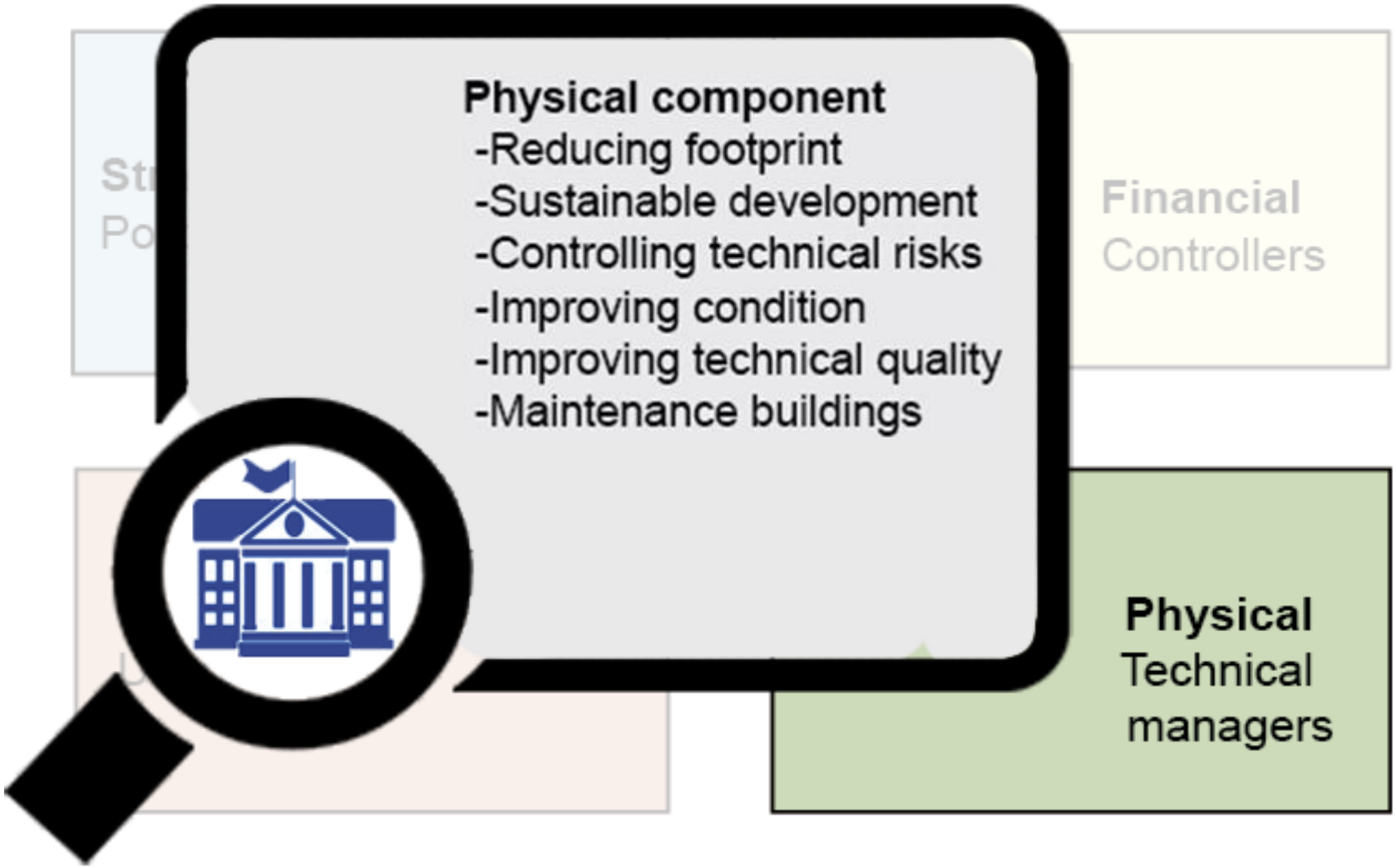
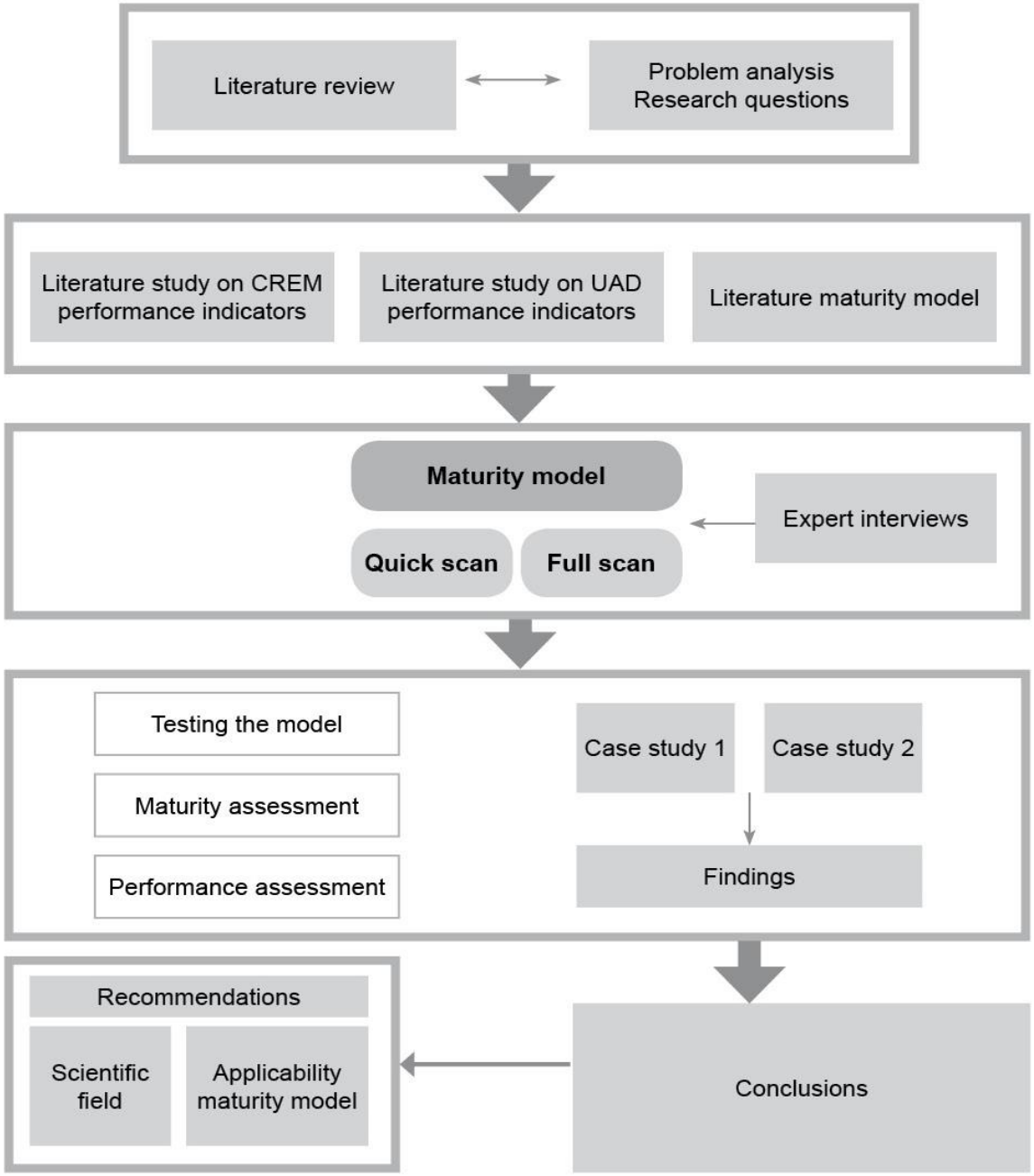


RESEARCH DESIGN



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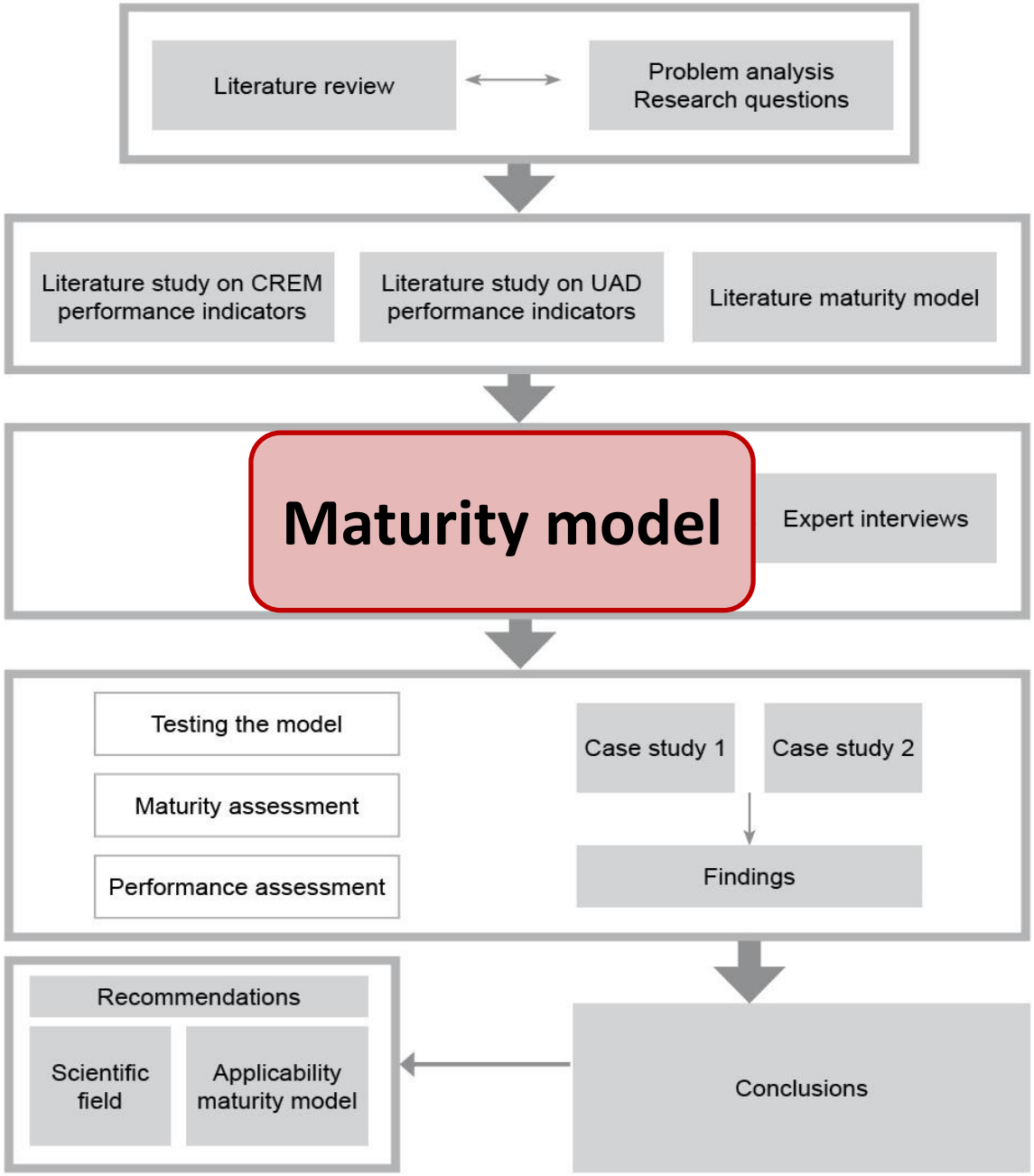

Management perspectives

Strategic component
- -Goal focus
- -Enhancing quality
- -Enhancing user satisfaction
- -Competitive advantage
- -Innovation & improvement
- -Internationalisation, marketing

Functional component
- -Decisions related to supporting users of the building
- -Enhancing productivity users
- -Space use (flexible, multi-functional, transformation)
- -Controlling quality of space

Financial component
- -Controlling/ reducing costs & risks
- -Budget control
- -Generate revenue through related business
- -Management and efficient use of financial resources

Physical component
- -Reducing footprint
- -Sustainable development
- -Controlling technical risks
- -Improving condition
- -Improving technical quality
- -Maintenance buildings

Level 1 Initial	Level 2 Repeatable	Level 3 Defined	Level 4 Managed	Level 5 Optimizing
-No evidence -No awareness -No focus on future changes	-Awareness of current state -Awareness of current mismatch -Presence of plans to improve the campus but not implemented yet	-'On their way' -Presence of manage ment -Presence of plans to improve the campus implemented	-Full implementations of plans, and pro-active in developing new plans incorporating the future -Awareness of future changes (scenario-planning)	-Performance is maxi mized in current state -Awareness + encoun tering changing demand and trends -Alternatives in their plan-making

Evidence in performance

Strategic variables	Functional variables	Financial variables	Physical variables: building level	Physical variables: urban level
-Quality of education -Quality of facilities -User satisfaction	-Students output -Staff output -Space usage -Functional mix	-Total costs -Total income -Real estate value	-Energy efficiency -Technical condition -Level of maintenance, renewal & innovation	-Quality of built environment -Amenities -Infrastructure -Relationship campus and surroundings

Management perspectives

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Quality of the campus management

Maturity levels

Level 1 Initial
-No evidence
-No awareness
-No focus on future changes

Level 2 Repeatable
-Awareness of current state
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Strategic variables
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Functional variables
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Financial variables
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Physical variables: building level
-Energy efficiency
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-Level of maintenance, renewal & innovation

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Quality of the campus management

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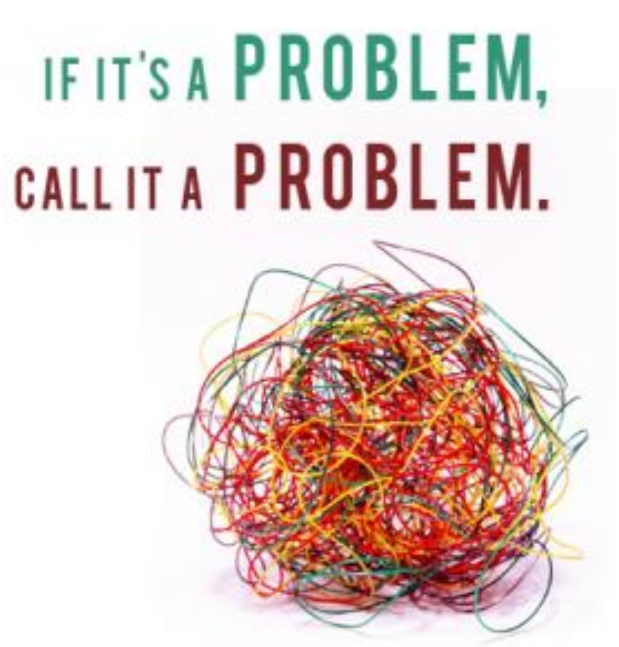

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Quality of the campus management

FUTURE

Level 5 Optimizing

-Performance is maxi mized in current state
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Quality of the campus

Evidence in performance

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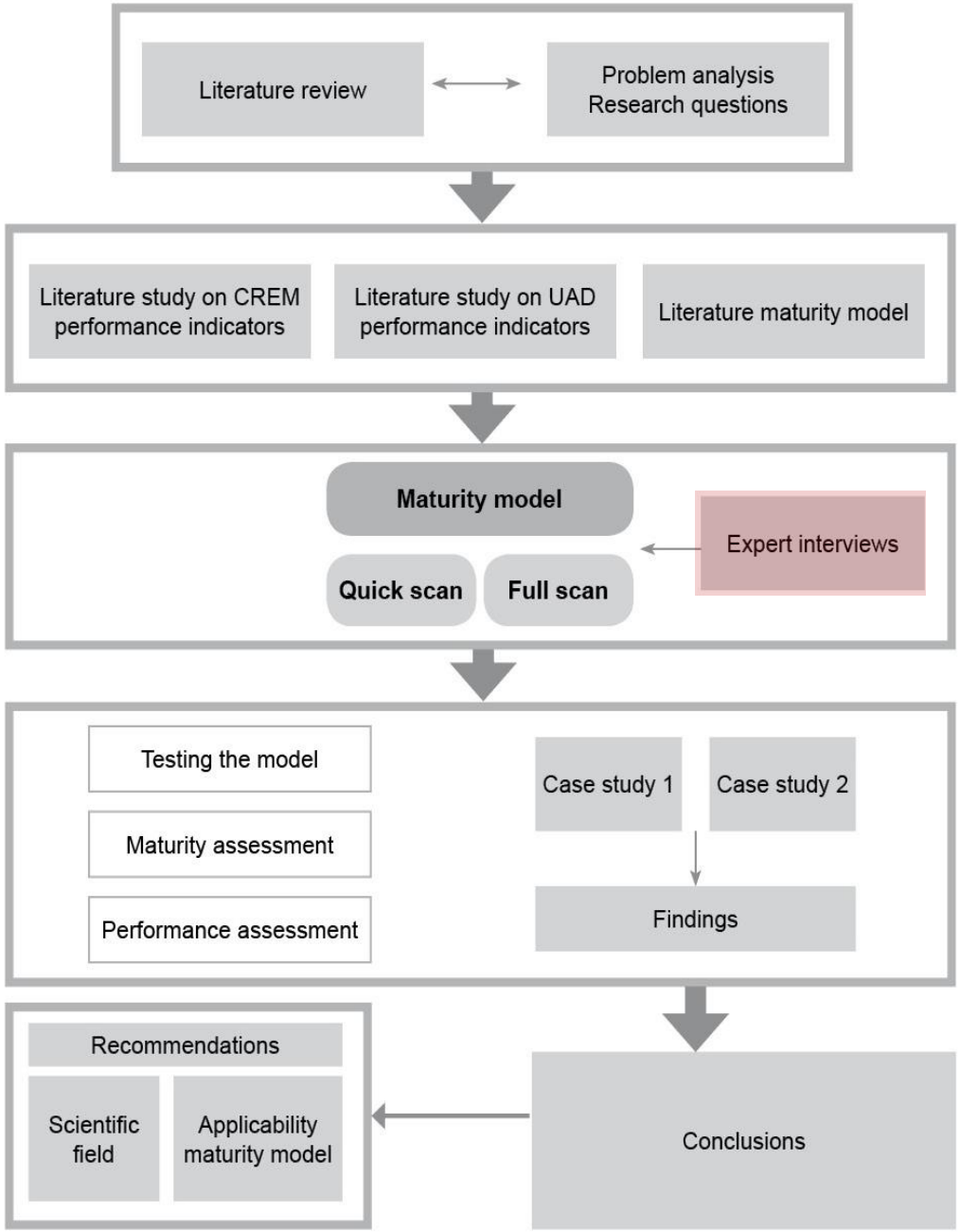
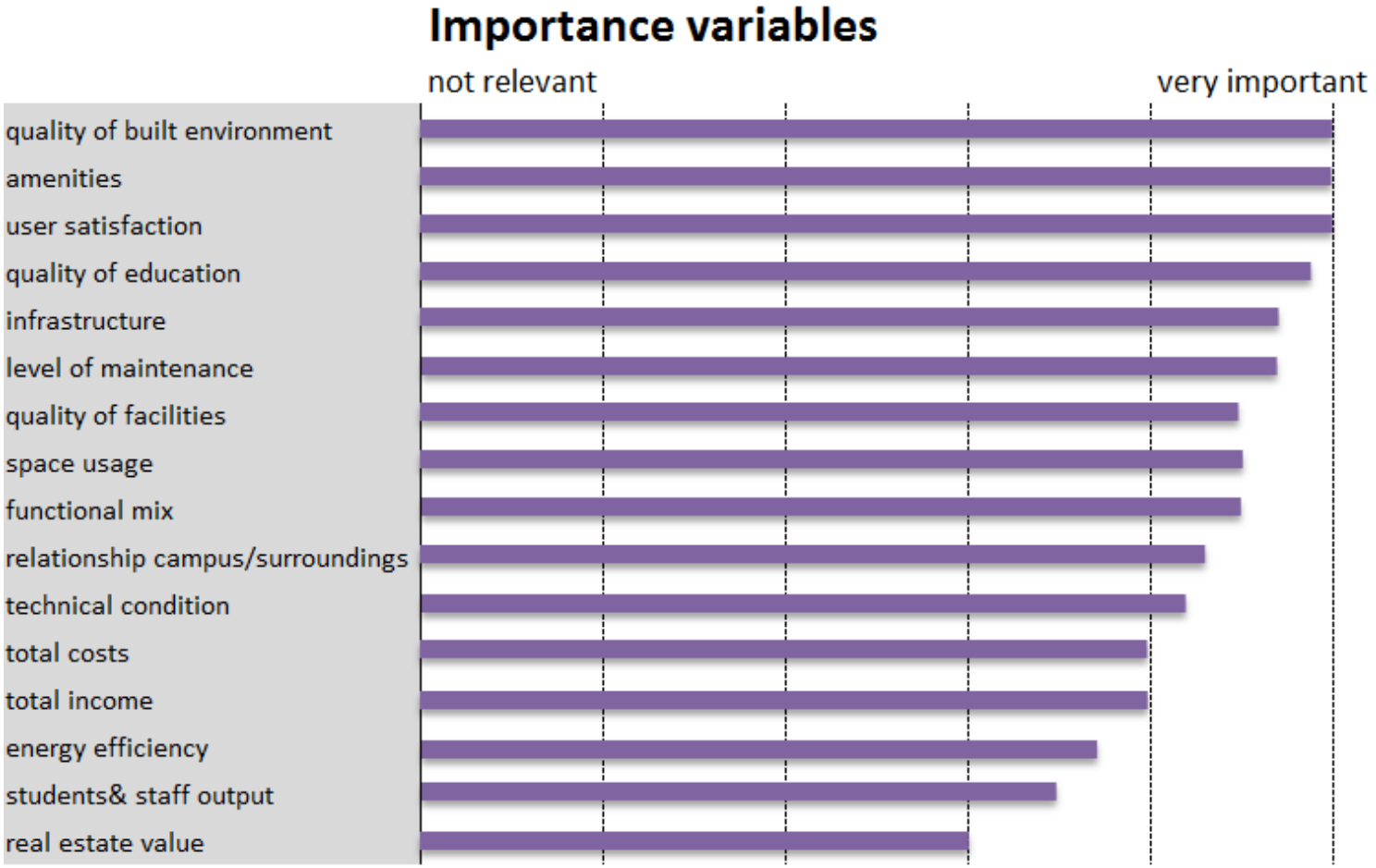
Expert interviews

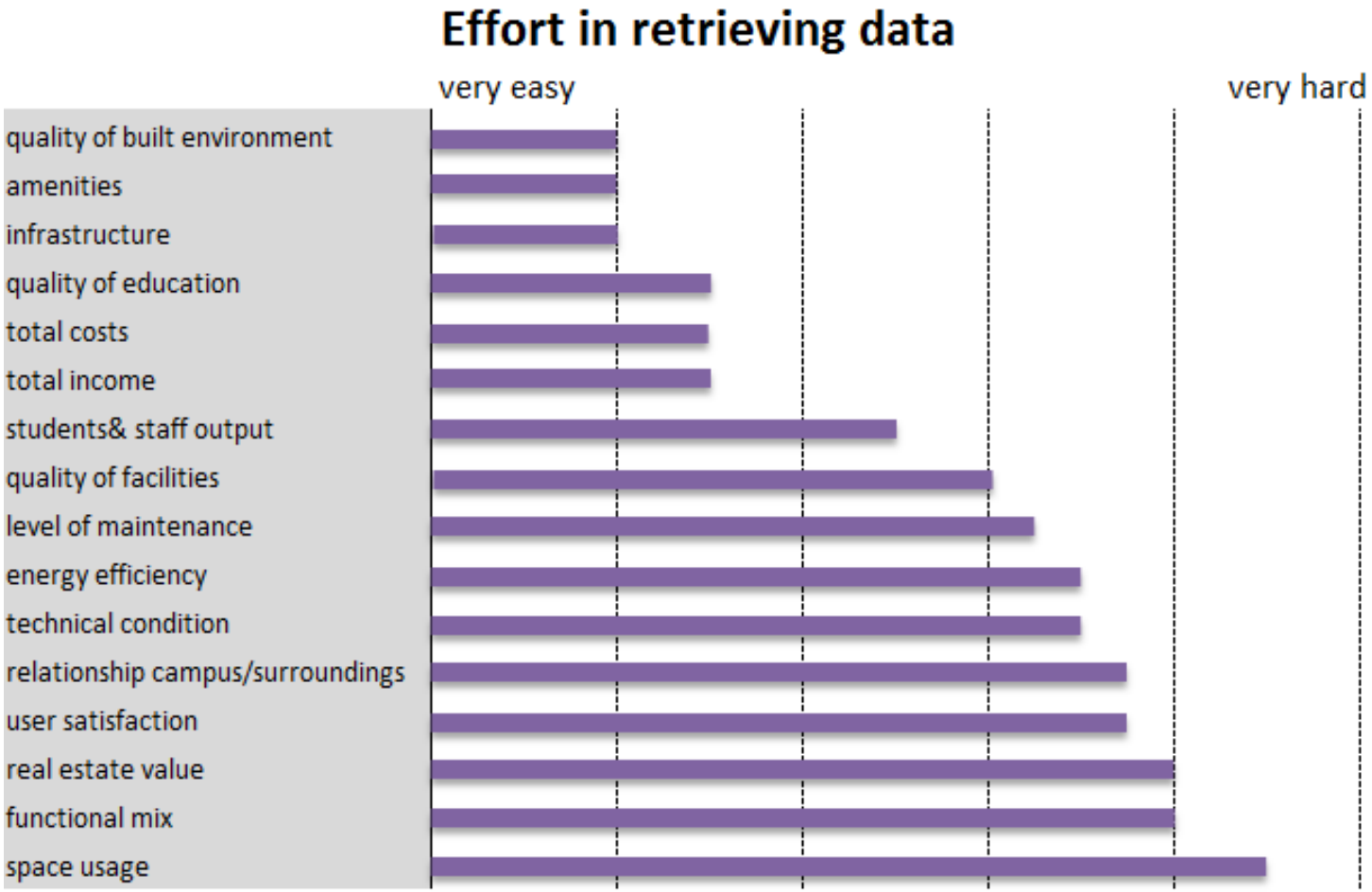
- Complementing MM with insight from experts
- Importance variables which affects the performance
- Effort (time&resources) to retrieve the data concerning the variables



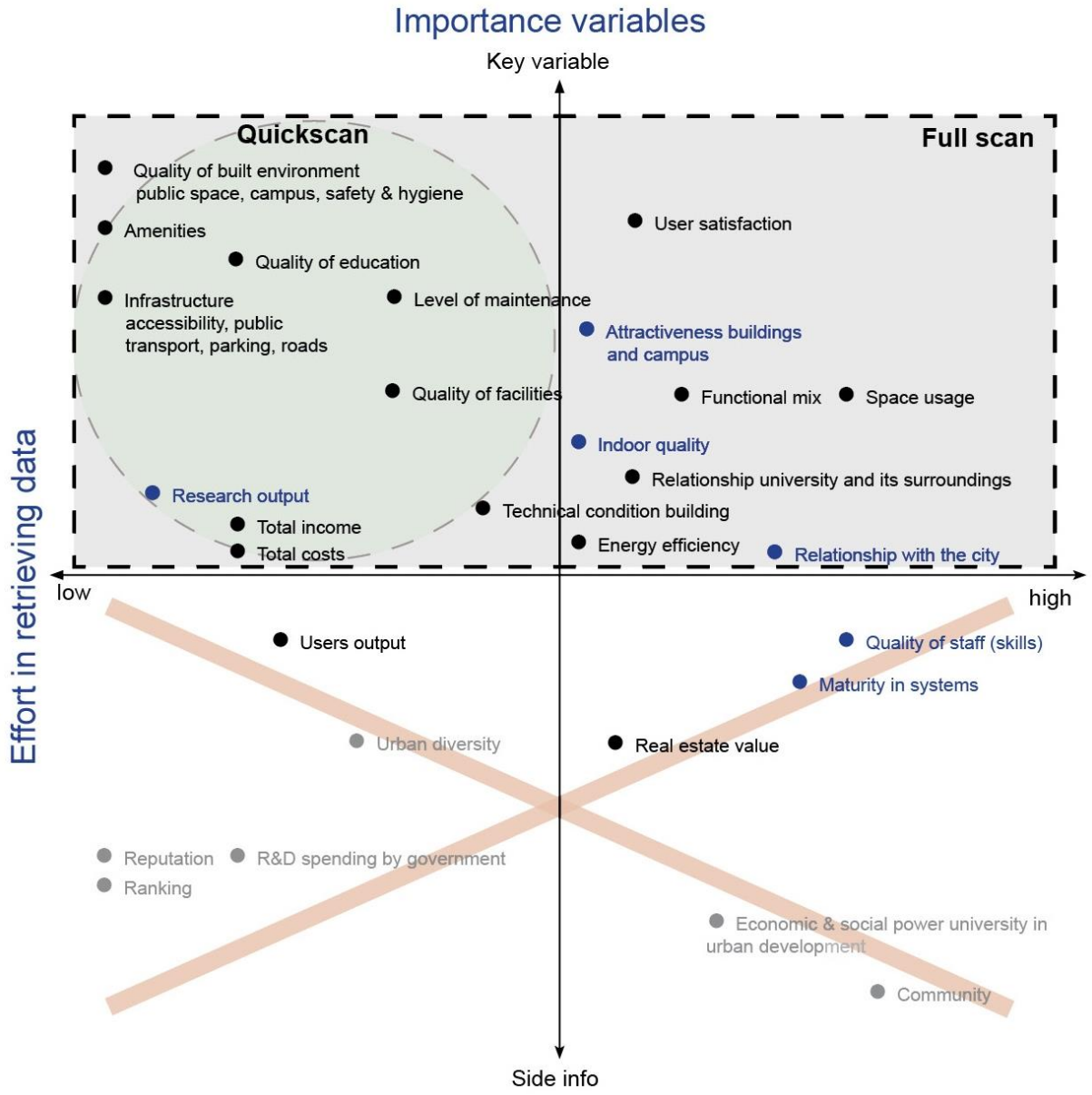
FINDINGS


Importance variables
not relevant
very important
quality of built environment
amenities
user satisfaction
quality of education
infrastructure
level of maintenance
quality of facilities
space usage
functional mix
relationship campus/surroundings
technical condition
total costs
total income
energy efficiency
students& staff output
real estate value

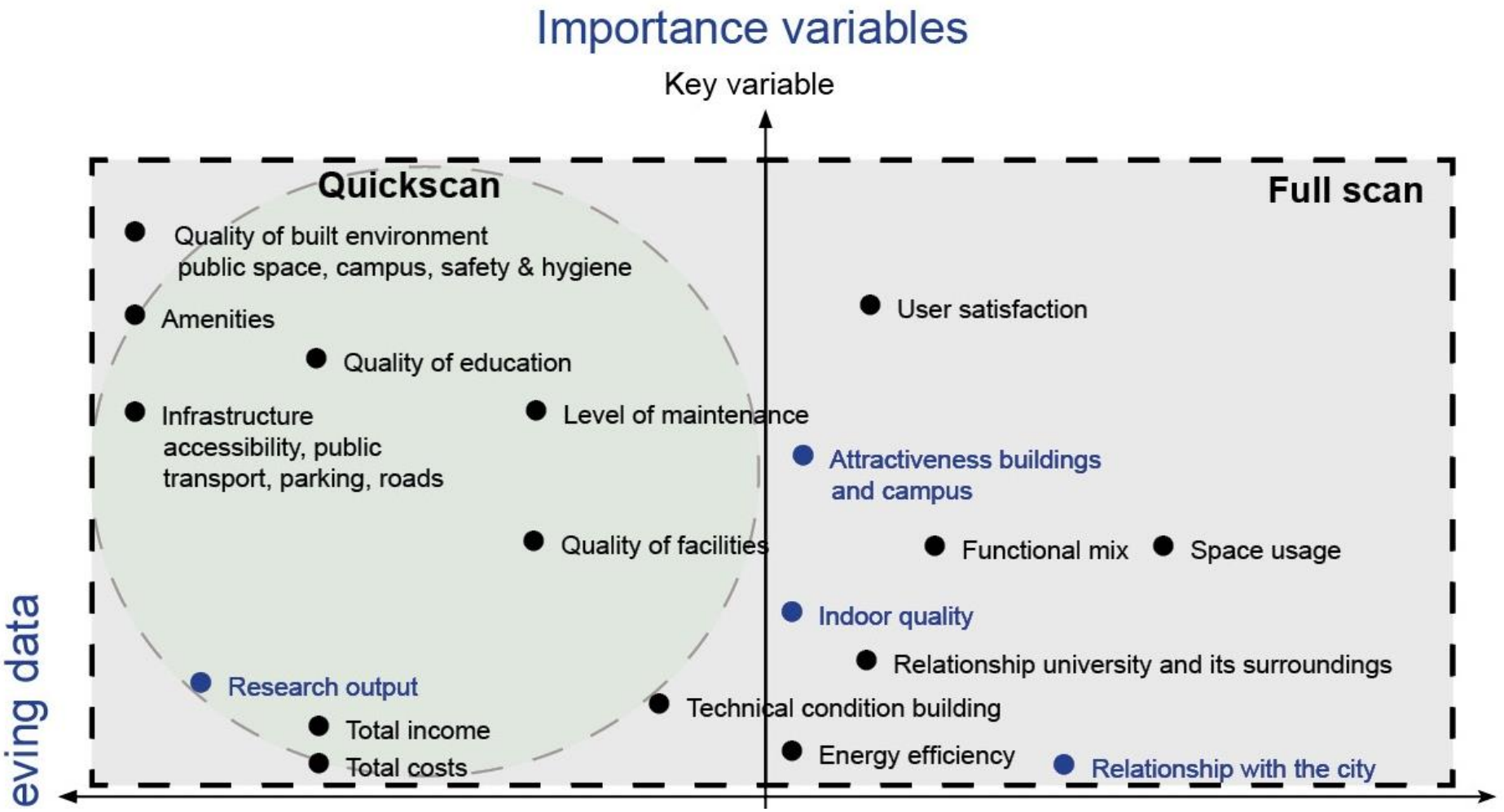
FINDINGS


Effort in retrieving data
very easy
very hard
quality of built environment
amenities
infrastructure
quality of education
total costs
total income
students& staff output
quality of facilities
level of maintenance
energy efficiency
technical condition
relationship campus/surroundings
user satisfaction
real estate value
functional mix
space usage

FINDINGS


Importance variables
Key variable
Quickscan
Full scan
Quality of built environment
public space, campus, safety & hygiene
Amenities
Quality of education
Infrastructure
accessibility, public
transport, parking, roads
Level of maintenance
Quality of facilities
User satisfaction
Attractiveness buildings
and campus
Functional mix
Space usage
Indoor quality
Relationship university and its surroundings
Technical condition building
Energy efficiency
Relationship with the city
Research output
Total income
Total costs
Effort in retrieving data
low
high
Users output
Quality of staff (skills)
Maturity in systems
Urban diversity
Real estate value
Reputation
R&D spending by government
Ranking
Economic & social power university in
urban development
Community
Side info

FINDINGS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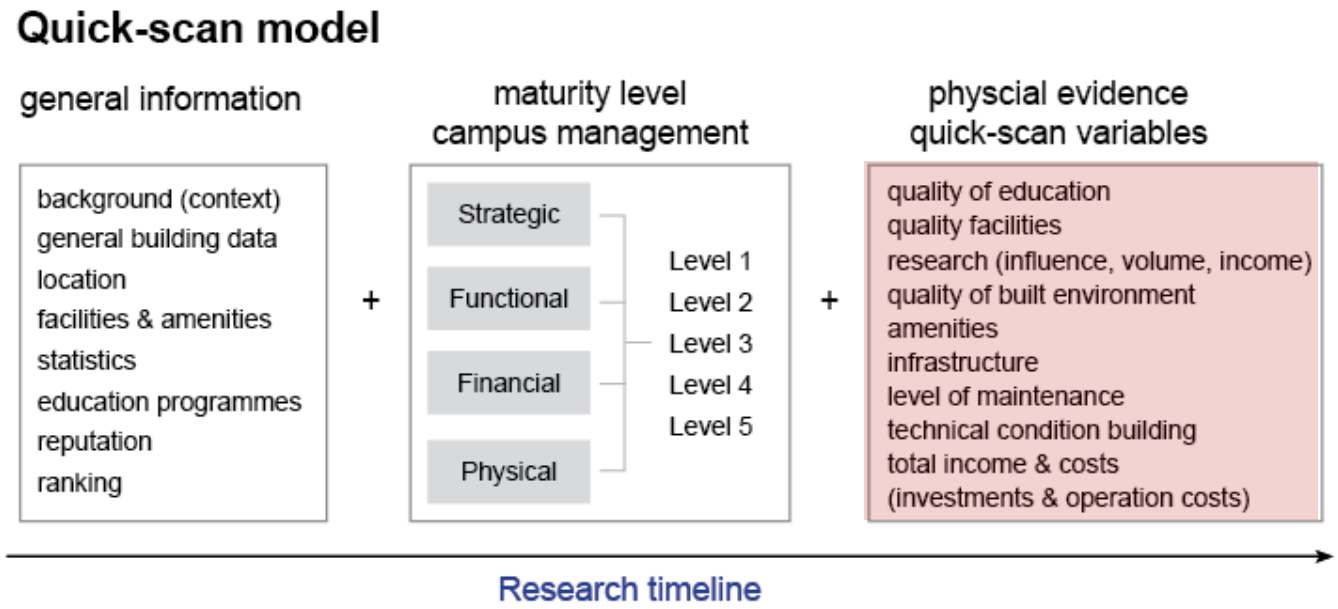
Relationship with the city
eving data

MATURITY MODEL

Quick scan

Methods:

- Analysing reports (annual reports, technical reports, financial reports)
- Analysing plans and visions (campus vision, real estate strategy, planning)
- Online-resources (website, ranking systems, monitors, reviews)
- Area analysis (maps, drawings, floor plans, public transport maps)

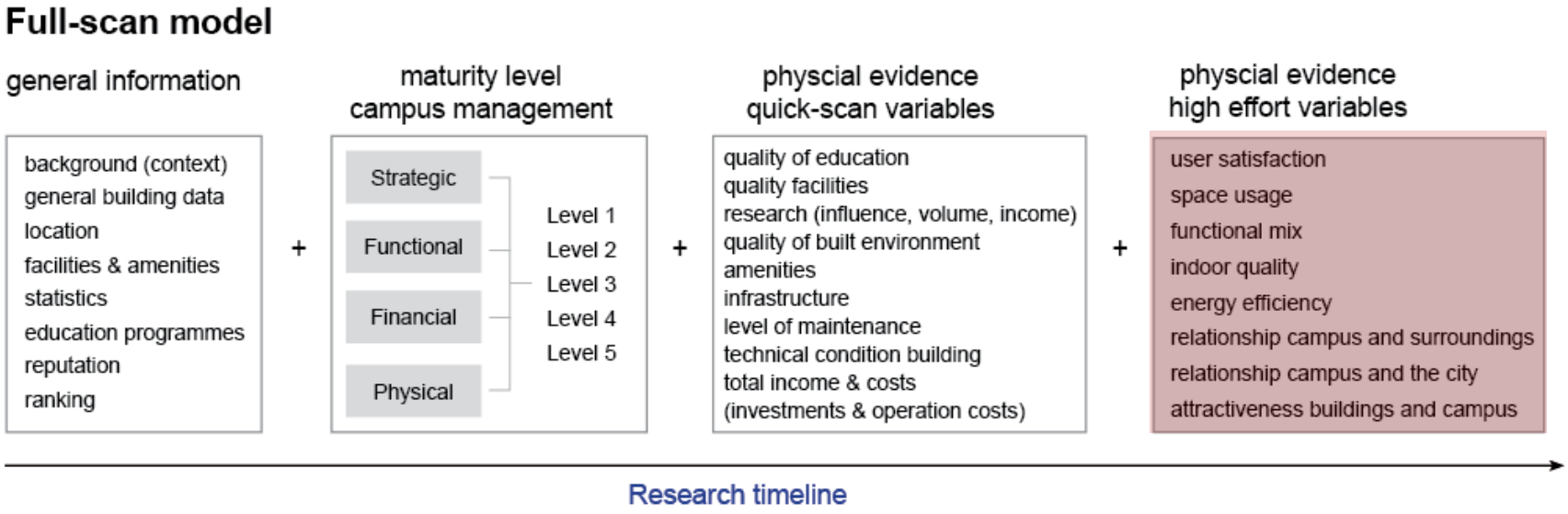


MATURITY MODEL

Full scan

Methods:

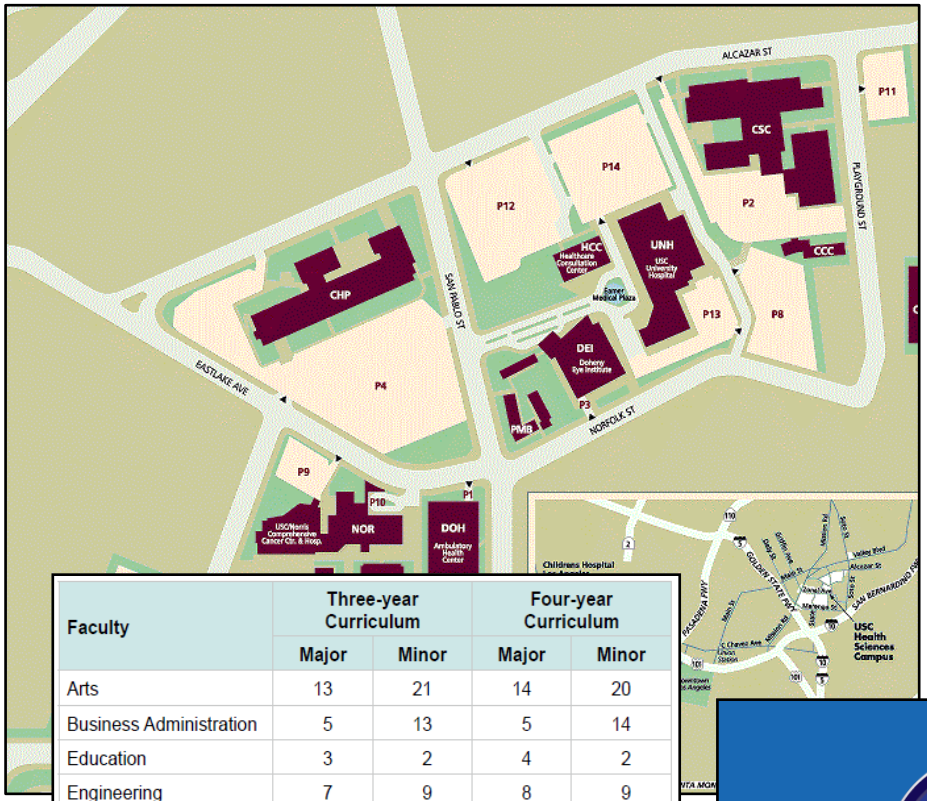
- All the methods described in the quick scan, complemented with:
- Visiting the location (observation, analysing buildings and campus, space usage)
- Conducting interviews (with experts, or people from the university)
- Conducting surveys



OPERATIONALISATION

STEP 1

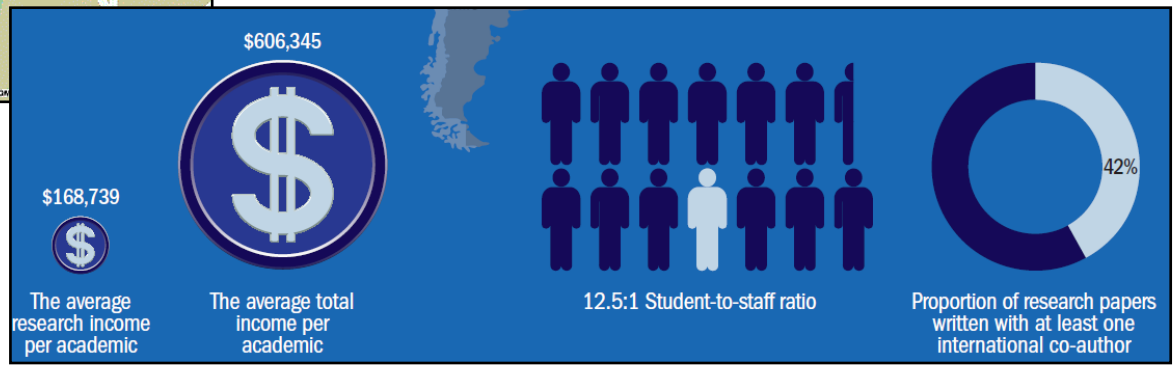
Collect background data about the case



Faculty	Three-year Curriculum		Four-year Curriculum	
	Major	Minor	Major	Minor
Arts	13	21	14	20
Business Administration	5	13	5	14
Education	3	2	4	2
Engineering	7	9	8	9
Law	1	—	1	—
Medicine	5	1	7	1
Science	11	10	13	11
Social Science	8	11	10	11
Double Degree#	3	—	2	—
Others	2	1	5	2
Total	**58**	**68**	**69**	**70**

Top 200 | THE World University Rankings 2014-15

Rank 2014-15	Rank 2013-14	Institution	Country	Teaching	Research	Citations	Industry Income	International outlook	Overall score
1	1	California Institute of Technology	US	92.2	98.1	99.7	89.1	67.0	94.3
2	=2	Harvard University	US	92.9	98.6	98.9	44.0	67.6	93.3
3	=2	University of Oxford	UK	88.6	97.7	95.5	72.9	90.7	93.2
4	4	Stanford University	US	91.5	96.7	99.1	63.1	69.0	92.9
5	7	University of Cambridge	UK	89.7	95.6	95.2	51.1	87.8	92.0
6	5	Massachusetts Institute of Technology	US	89.1	88.2	100.0	95.7	84.3	91.9
7	6	Princeton University	US	86.6	94.7	99.6	82.7	61.2	90.9
8	8	University of California, Berkeley	US	84.2	96.7	99.1	44.8	58.5	89.5
=9	10	Imperial College London	UK	84.6	88.3	89.4	72.7	92.7	87.5
=9	11	Yale University	US	88.5	90.8	94.0	42.0	59.8	87.5
11	9	University of Chicago	US	83.9	89.9	97.3	36.8	65.2	87.1
12	12	University of California, Los Angeles	US	82.4	90.5	95.3	-	49.2	85.5
13	14	ETH Zürich-Swiss Federal Institute of Technology Zurich	Switzerland	78.2	90.2	83.5	73.2	96.6	84.6
14	13	Columbia University	US	83.9	79.4	95.3	-	68.3	84.4
15	15	Johns Hopkins University	US	75.6	84.2	93.6	100.0	59.7	83.0



STEP 2

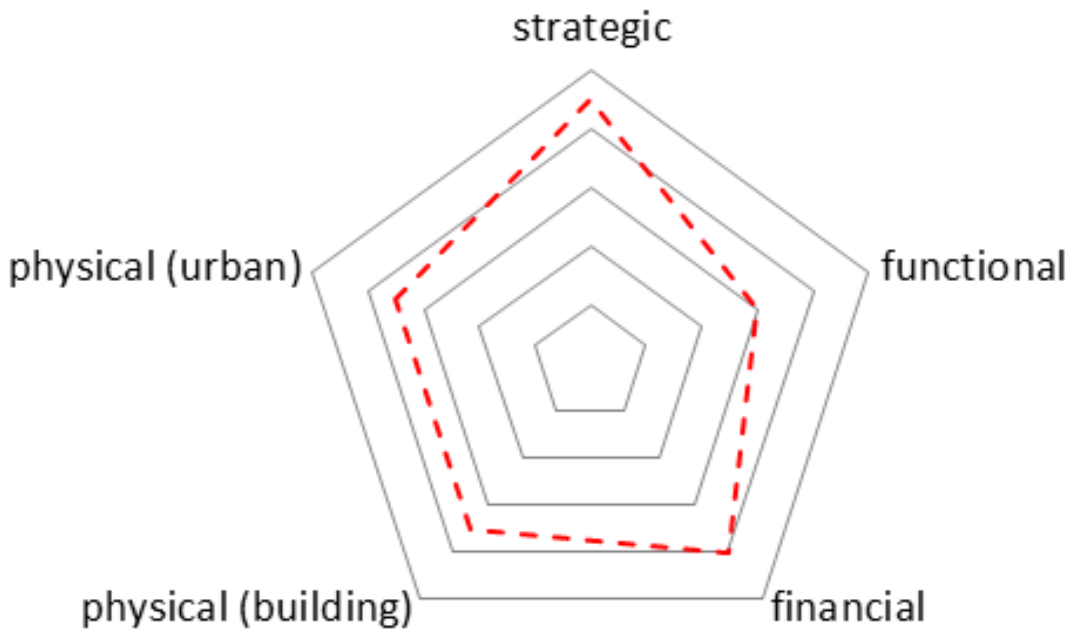
Determining the maturity level

Criteria 1	**Awareness** clueless ↕ prepared	▪ Awareness of the current condition and (mis)match ▪ Awareness of changing demand and trends involved in the higher education sector
Criteria 2	**Goal focus** aimless ↕ high ambition	The level of goal focus expresses in the presence of plans and statements in improving a certain subject (e.g. enhancing competitiveness, reducing energy costs, increasing amount of amenities etc.) ▪ Statements ▪ Plans, strategies, visions
Criteria 3	**Innovation level** old fashioned ↕ innovational	Innovation drives up the competitive advantage, which means the level is determined by renewal of systems, tools, building materials and processes.
Criteria 4	**Tools and systems** underdeveloped ↕ advanced	▪ The presence and maturity of research tools concerning a certain subject (e.g. monitor for energy usage). ▪ Systems are related to the presence and maturity of documentation systems of information.
Criteria 5	**Skills and expertise** incompetent ↕ outstanding	The skills and expertise of the staff are an important factor which influences the maturity level of campus management. When people lack the skills to make links between disciplines, the true added value will be lost
Criteria 6	**Communication** poor ↕ excellent	▪ Information share: The presence and maturity of information sharing systems ▪ The communication between stakeholders involved in the campus management.

STEP 2

Determining the maturity level

	Level 1 Initial	Level 2 Repeatable	Level 3 Defined	Level 4 Managed	Level 5 Optimizing
Strategic					
Functional					
Financial					
Physical (building level)					
Physical (urban level)					



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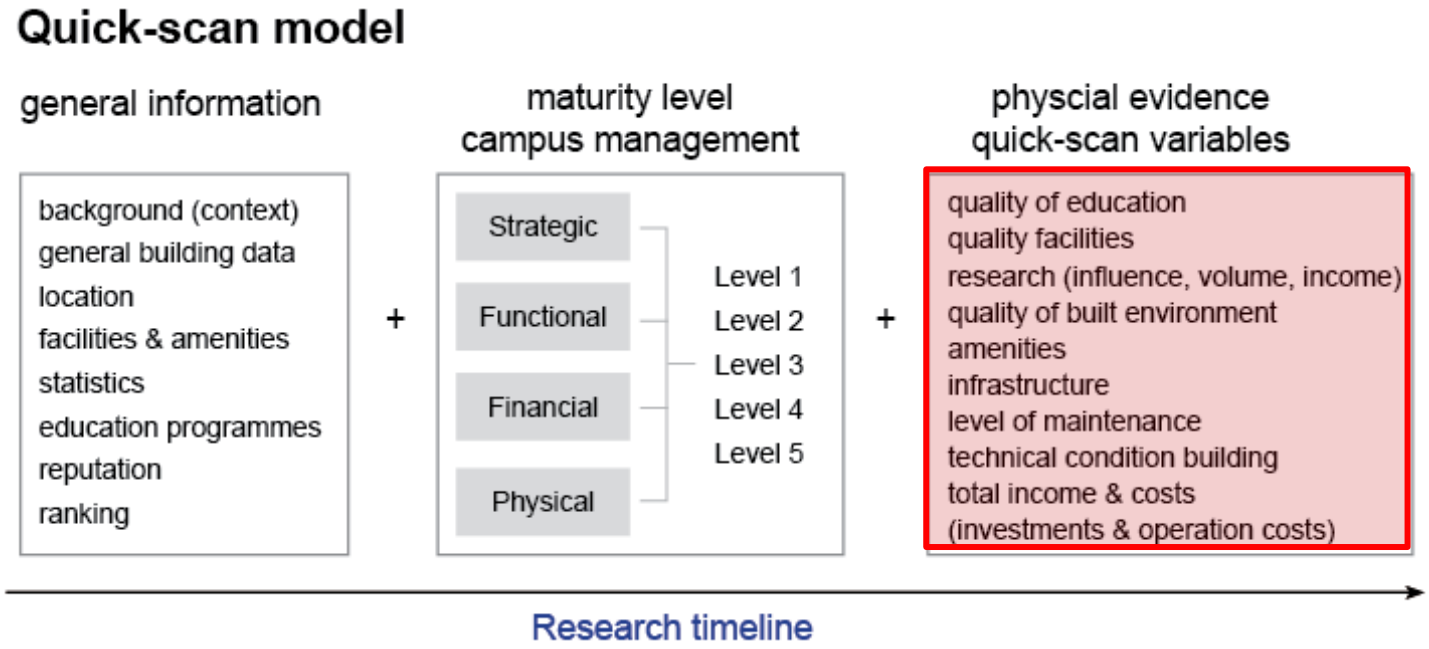
STEP 3

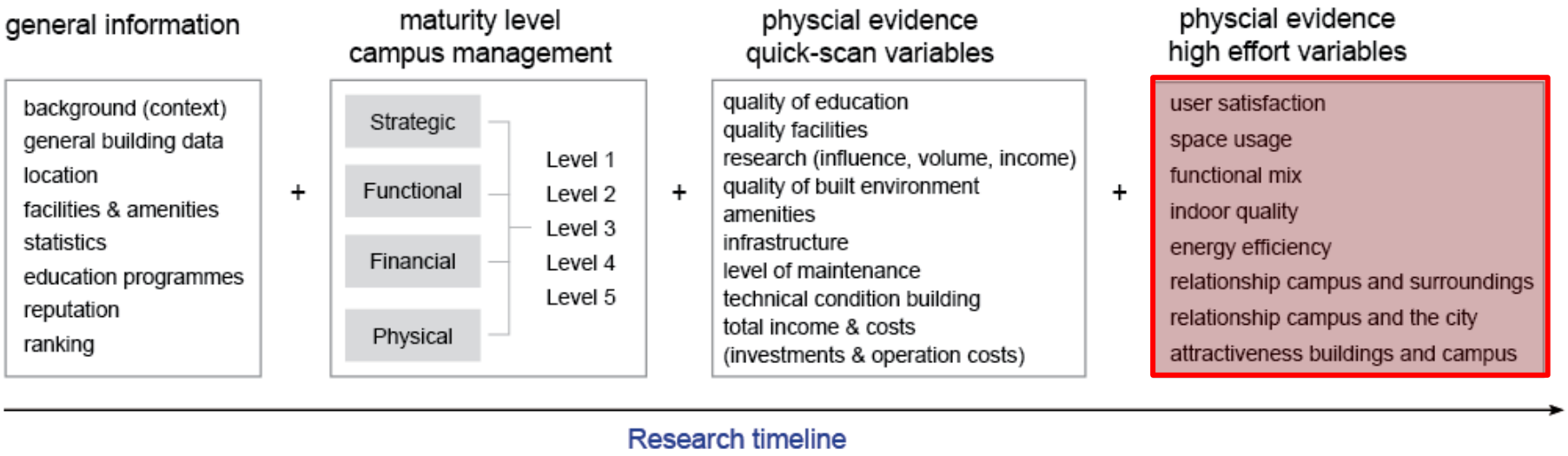
Determining the performance level



STEP 4

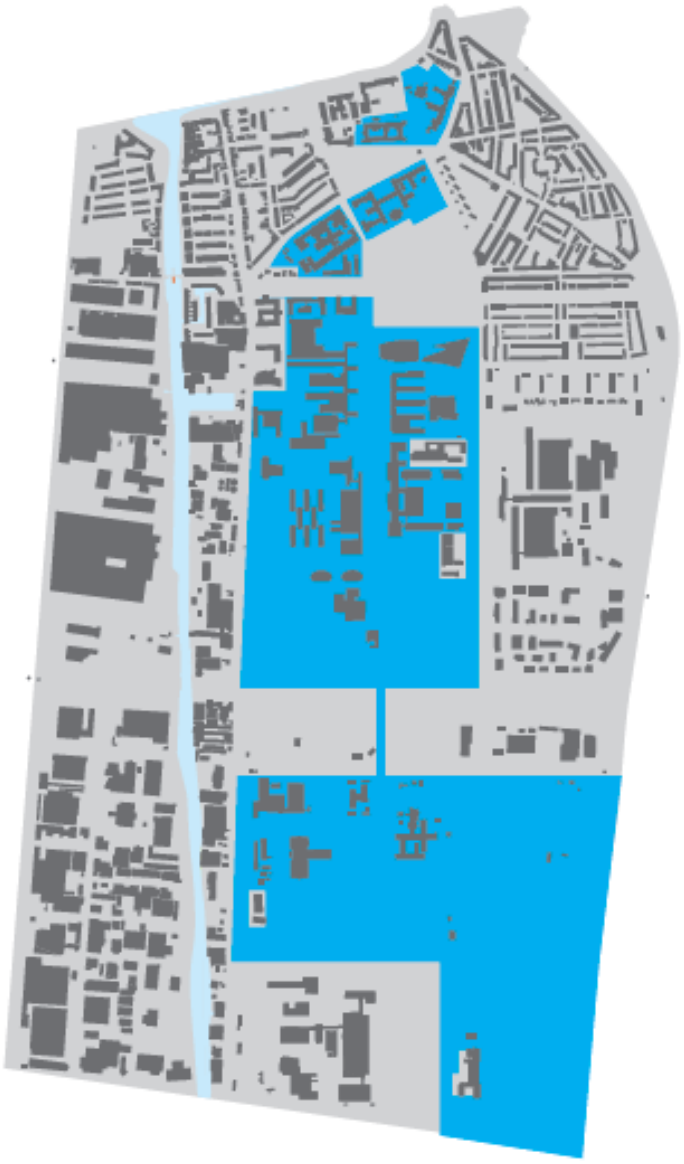
Determining the performance level

Full-scan model



CASE 1: TU DELFT

STEP 1

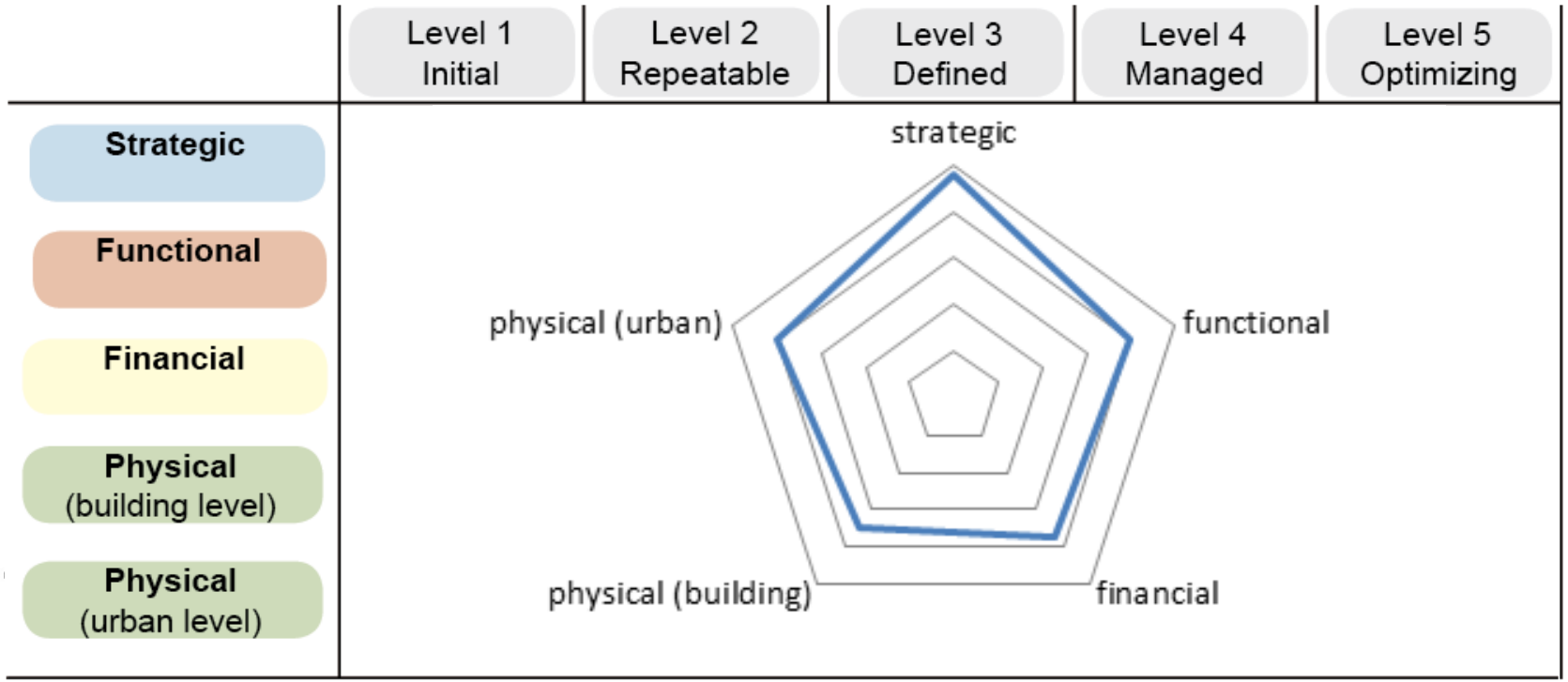


Education	
Bachelorprogrammes	15
Masterprogrammes	30
Student population	18781
PhD Students	2445
International students	2948
First year students	3914
Master degrees (2012)	2090
Research	
Professors (in fte)	226
Publications (scientific)	5432
Promotions	353
Valorisation	
Startups	17
Personnel	
Scientific staff (in fte)	2579
Scientific staff (in head-count)	2836
Professional services	1858
Ranking 2014-2015	71

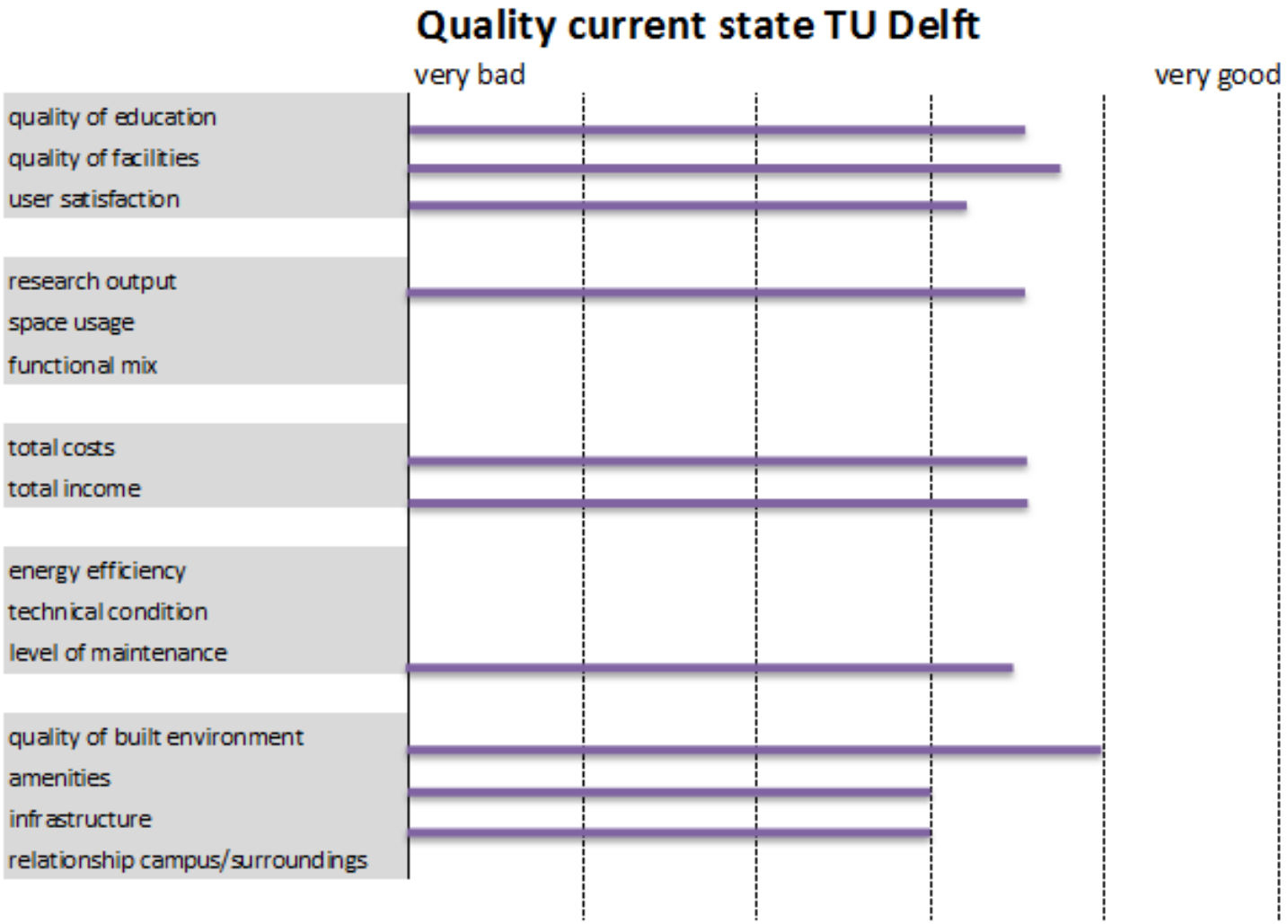
Plangebied	500 ha
Grondoppervlak TU	160 ha
TU-gebouwen bezit	535 duizend m² BVO
Parkeerplaatsen	4 duizend plaatsen = 12 ha
Studenten	15,5 duizend
Staf	5 duizend

STEP 2

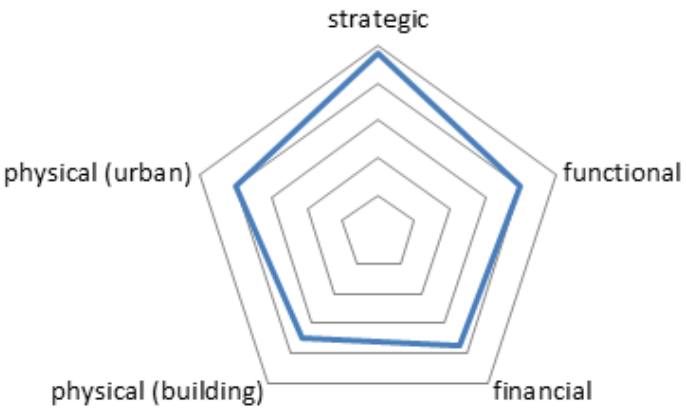
- Anticipating on trends, collaborations, maturity in systems and tools
- Investing in enhancing the skills of staff: providing courses
- Anticipating on future amounts of students
- Enhancing quality of working environment; enhancing productivity
- Anticipating on changing demand of working environment
- Risk analysis, feasibility analysis, investments demand focused
- Disposing bad m2, reducing energy use, maintenance strategy
- Plans to improve accessibility

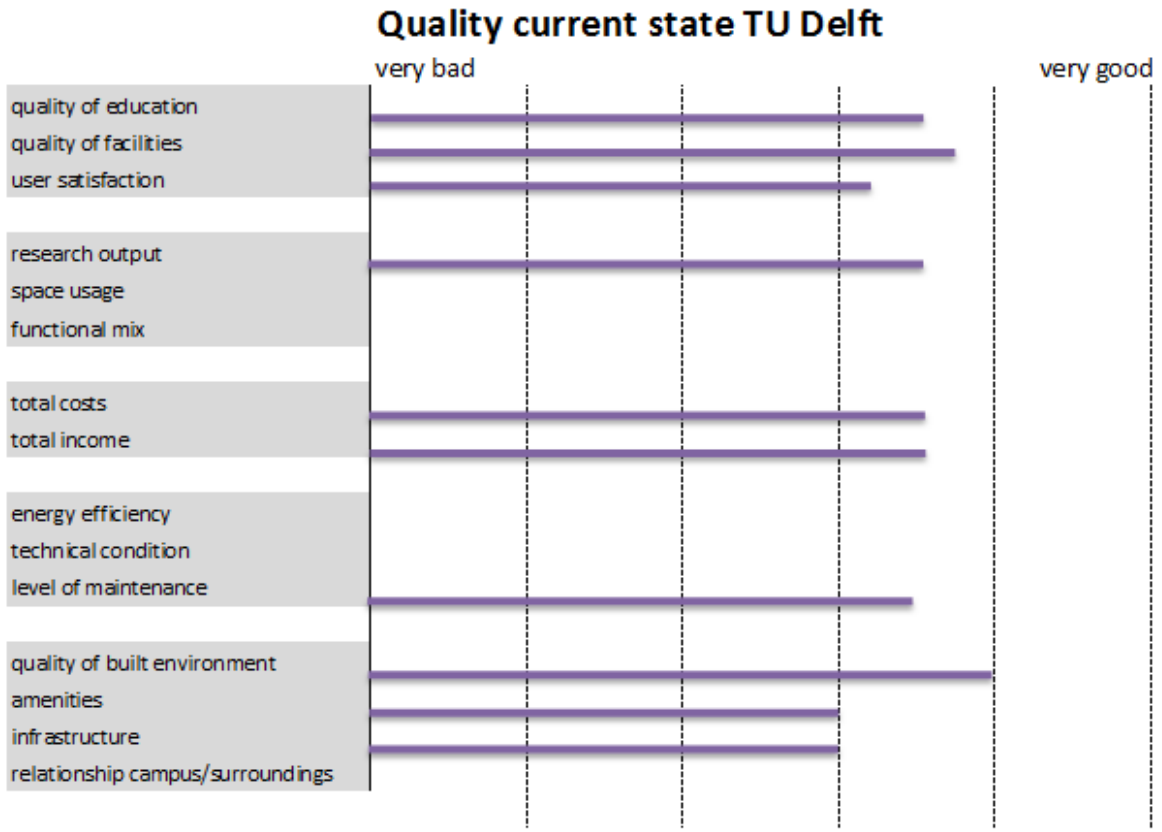


STEP 3

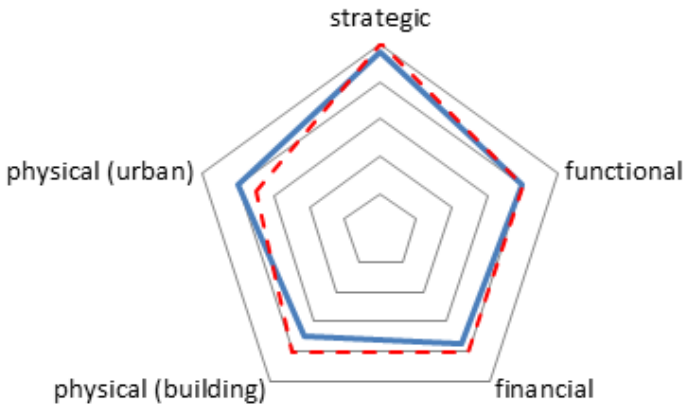

Quality current state TU Delft
very bad
very good
quality of education
quality of facilities
user satisfaction
research output
space usage
functional mix
total costs
total income
energy efficiency
technical condition
level of maintenance
quality of built environment
amenities
infrastructure
relationship campus/surroundings

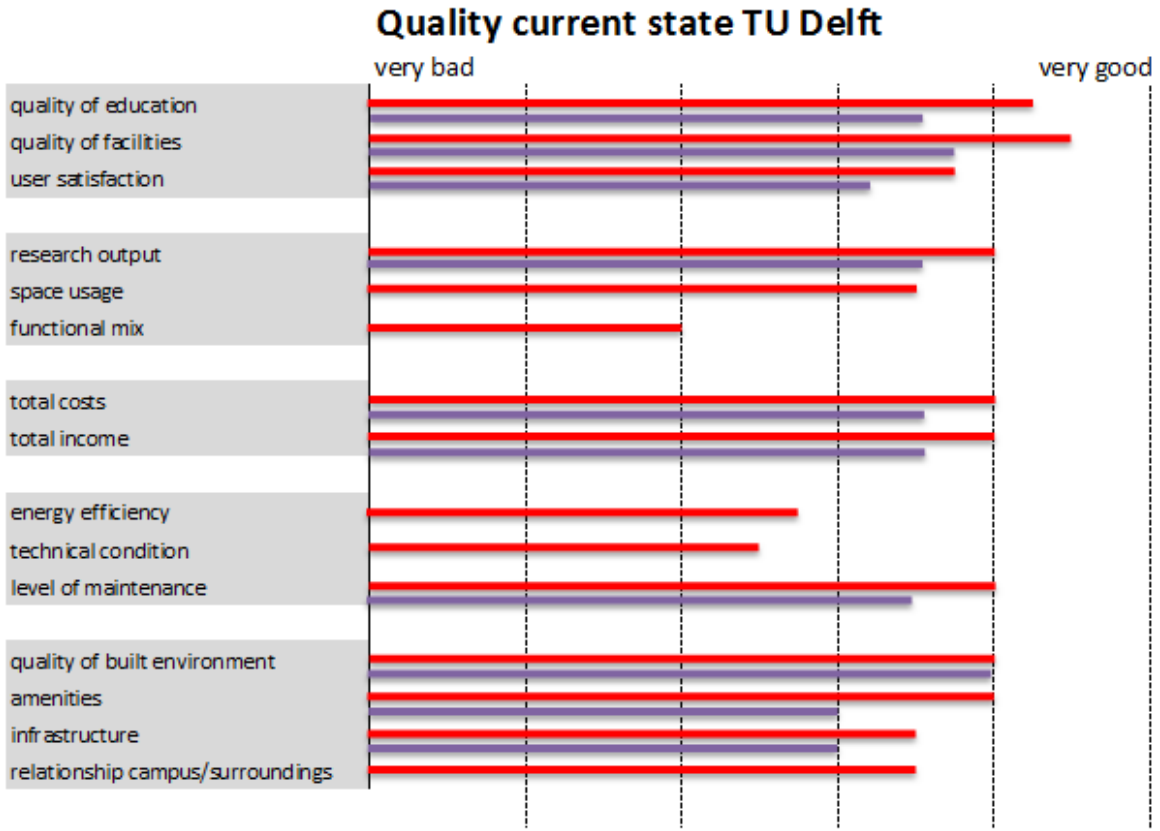
QUICK SCAN


strategic
functional
financial
physical (building)
physical (urban)


Quality current state TU Delft
very bad
very good
quality of education
quality of facilities
user satisfaction
research output
space usage
functional mix
total costs
total income
energy efficiency
technical condition
level of maintenance
quality of built environment
amenities
infrastructure
relationship campus/surroundings

FULL SCAN





Quick scan assessment

Assessment involving interviews

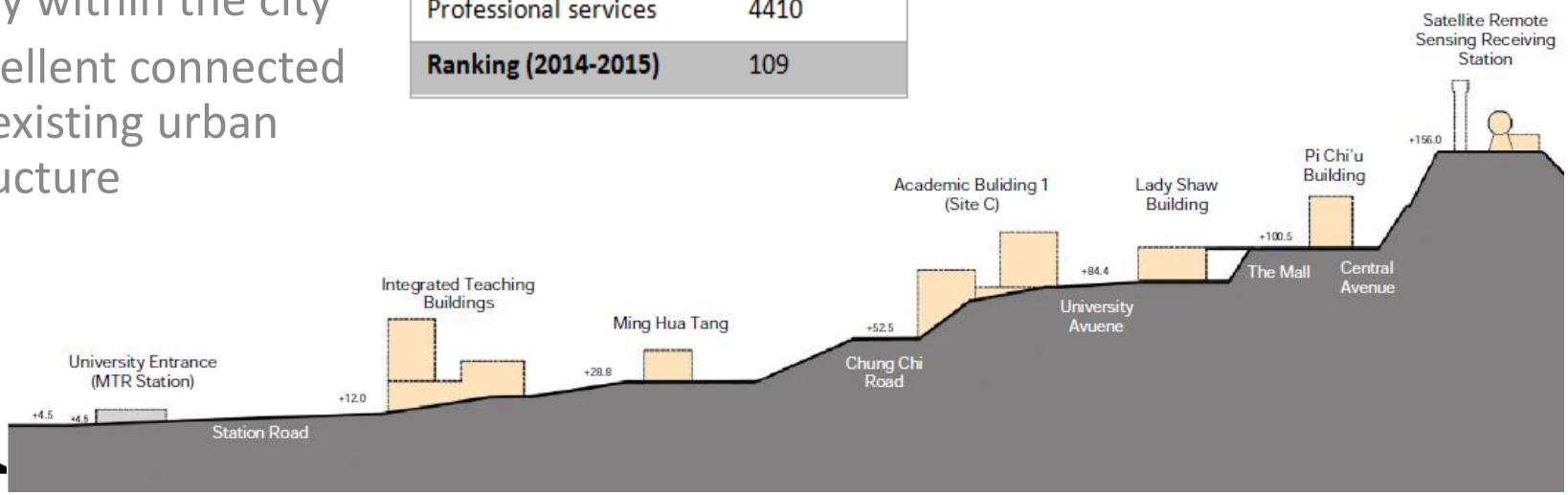
CASE 2: CUHK

STEP 1

The Chinese University of Hong Kong

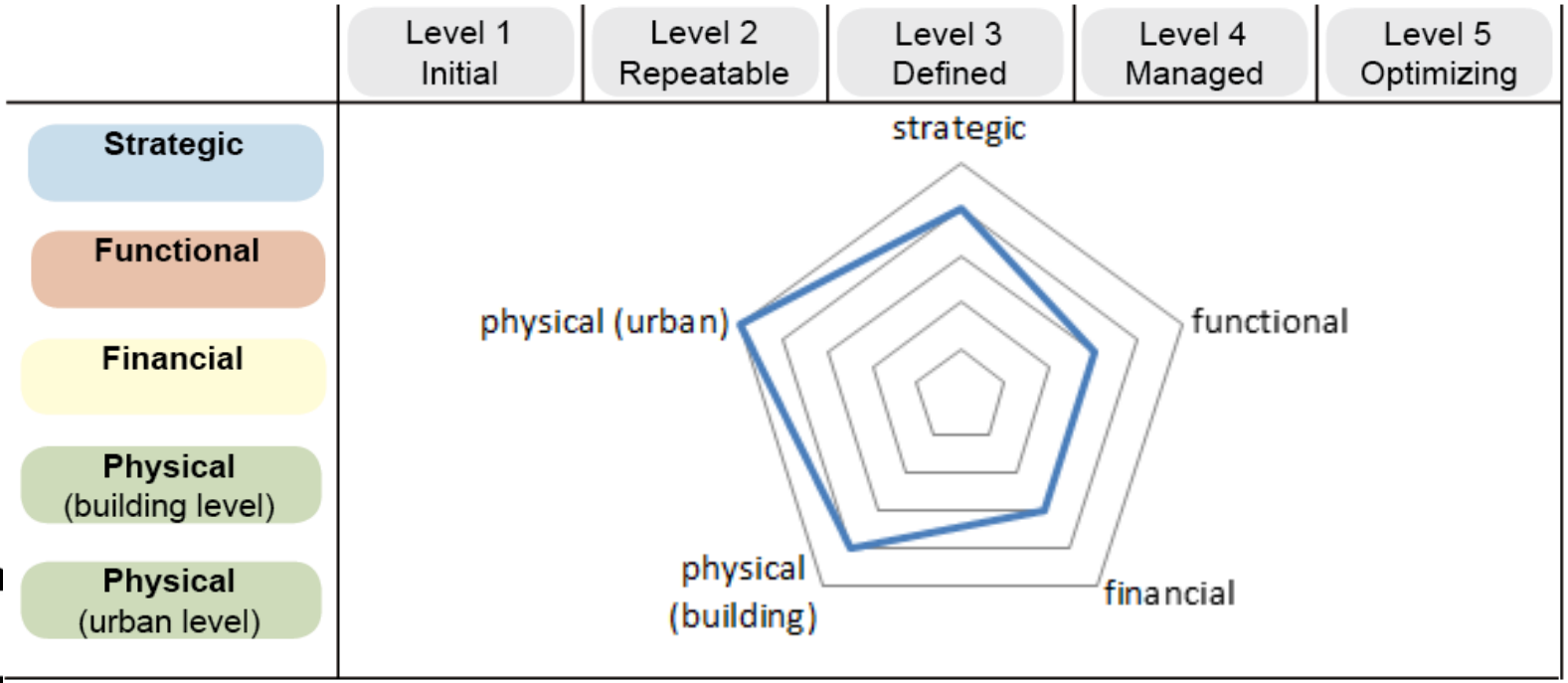
- Established in 1963
- 8 Academic faculties
- 1,37 km2 campus area
- Located on the mountain range of Hong Kong
- ‘City within the city’
- Excellent connected to existing urban structure

Education	
Bachelorprogrammes	58
Masterprogrammes	36
Student population	18781
PhD Students	1768
International students	3419
Student enrollment	19.263
Student admission	5236
Master degrees (2013)	5782
Research	
Research output	7778
Personnel	
Teaching staff	1647
Research staff	1339
Professional services	4410
Ranking (2014-2015)	109

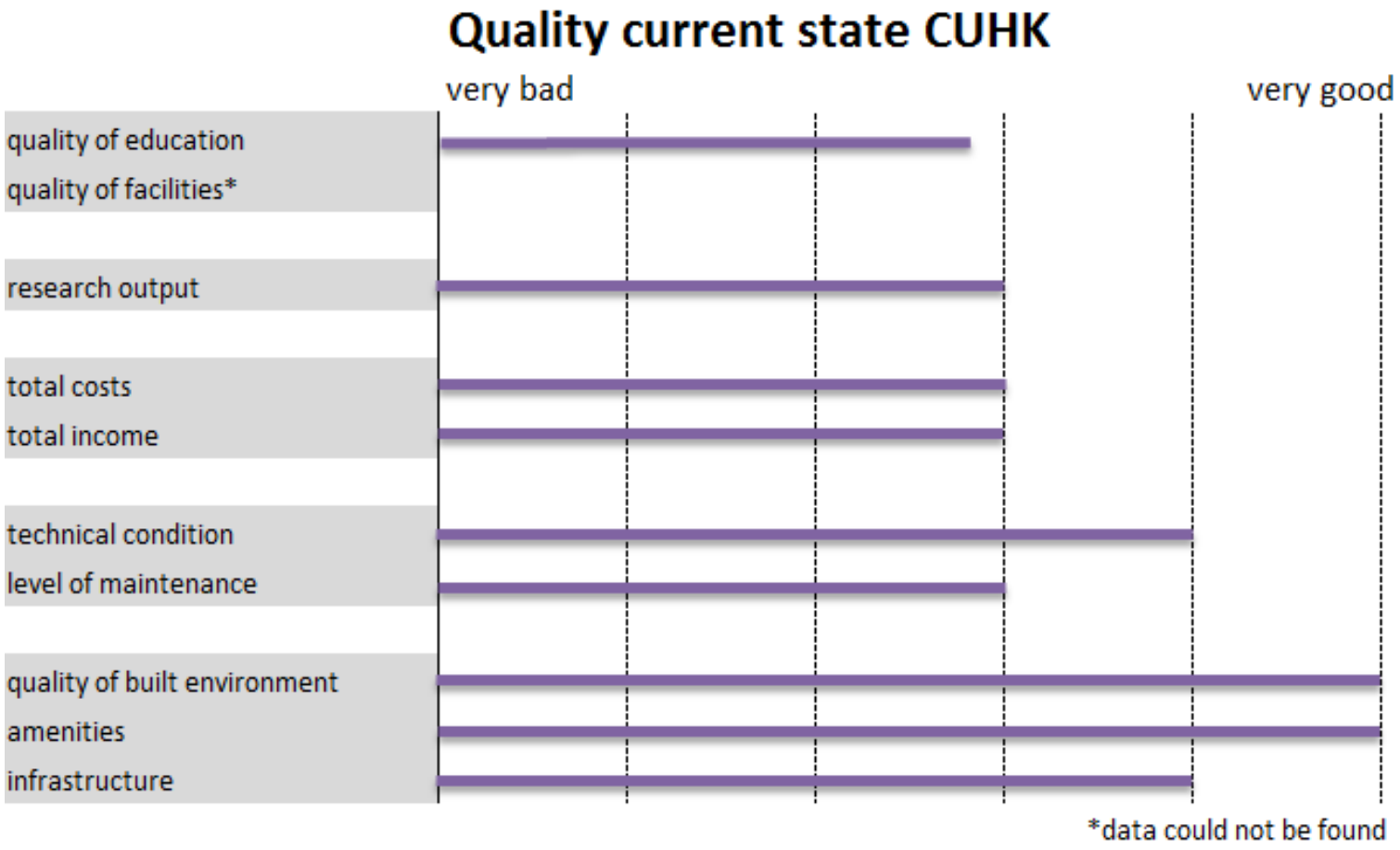


STEP 2

- Attract (international) students, teachers and scientists
- To be acknowledged locally, nationally and internationally
- Class schedule improvements; using the right space to the right amount of students
- Reducing energy use, reducing carbon emissions
- Enhancing quality of life on campus
- Campus master plan: improving connectivity, optimize transport facilities, road improvement



STEP 3

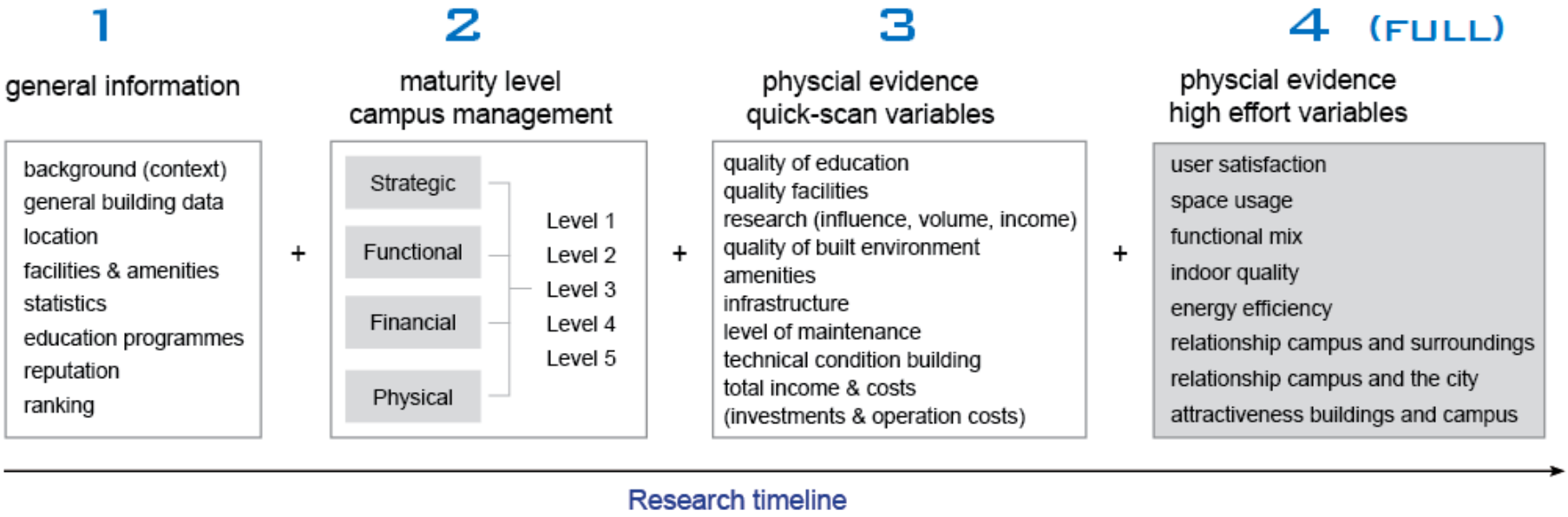

Quality current state CUHK
very bad
very good
quality of education
quality of facilities*
research output
total costs
total income
technical condition
level of maintenance
quality of built environment
amenities
infrastructure
*data could not be found

CONCLUSION

ANSWERS

*1) How can the **maturity level** of campus management of a university be determined?*

- What **levels** in the model can be determined?
- How can the maturity model to be **operationalised**?



ANSWERS

*2) How does the maturity level express in the **performance level** (evidence) of the campus?*

physcial evidence quick-scan variables		physcial evidence high effort variables
quality of education quality facilities research (influence, volume, income) quality of built environment amenities infrastructure level of maintenance technical condition building total income & costs (investments & operation costs)	+	user satisfaction space usage functional mix indoor quality energy efficiency relationship campus and surroundings relationship campus and the city attractiveness buildings and campus

ANSWERS

*3) What is the **applicability** of the developed model?*

Quick scan

Advantages

- Limited resources needed
- Clear view about a case which is not inferior compared to the full scan

Disadvantages

- Some key variables are left out
- Possibility of missing some important aspects which can only derived from personal contact/ observation/ visits
- Sometimes subjective view of researcher

Full scan

Advantages

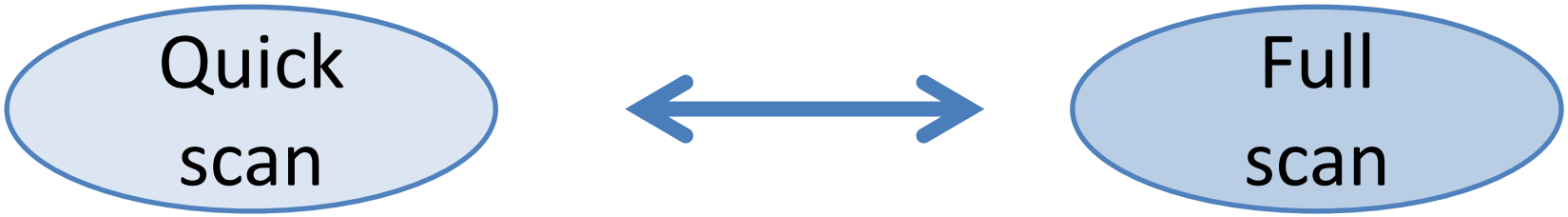
- Complete view
- Triangulation of data
- Confidential data

Disadvantages

- Possibility of biased view of interviewees due to commitment to university
- Difference in findings when talking to experts from different fields
- Risk of spending resources

ANSWERS

*3) What is the **applicability** of the developed model?*



Similarities

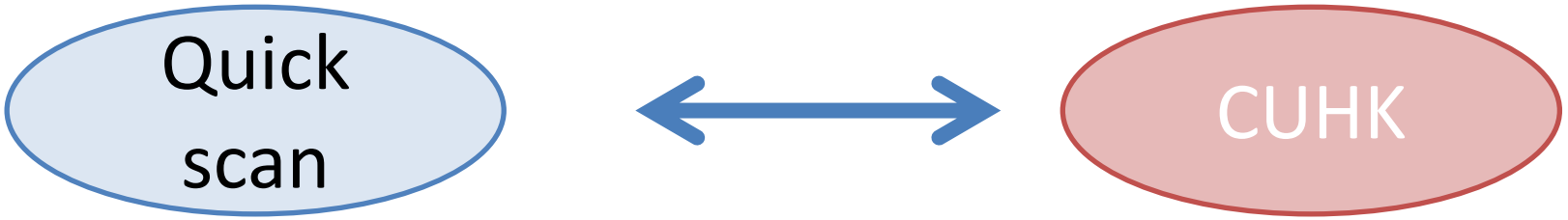
- The data derived from the quick scan and the full scan were quite in accordance.
- Answers given by interviewees are similar with data that could be found in (annual) reports, visions, technical reports, monitors, and drawings

Differences

- The answers given by the interviewees tend to be more honest, but it also depends on the character of the person
- The ratings derived from the interviews tend to higher than the assessment made by the quick scan (0,5 points on a 5-points scale)

ANSWERS

*3) What is the **applicability** of the developed model?*



Applicability in a different context

- Some variables were difficult to find
- Data tend to be glorifying
- Data and statements sometimes seems vague, while Delft is very specific in what they want to reach
- Masterplan very ambitious
- Quick scan gives overall a good view about the case
- The reliability of the quick scan is dependent of the case

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ARE THERE ANY QUESTIONS?