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Facility Management

Part 7: Guidelines for Performance Benchmarking

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National foreword

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Foreword

This document (EN 15221-7:2012) has been prepared by Technical Committee CEN/TC 348 “Facility Management”, the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

The present standard is divided into the following parts:

— *Part 1: Terms and definitions*;

— *Part 2: Guidance on how to prepare Facility Management agreements*;

— *Part 3: Guidance on quality in Facility Management*;

— *Part 4: Taxonomy, Classification and Structures in Facility Management*;

— *Part 5: Guidance on Facility Management processes*;

— *Part 6: Area and Space Measurement in Facility Management*;

— *Part 7: Guidelines for Performance Benchmarking* (the present document).

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Effective delivery of Facility Management support is a critical component in the working of most organisations. It impacts on the organisations' own ability to deliver consistent products and services, supports the core business and can be a component in achieving competitive advantage. However, effectiveness and efficiency in Facility Management have been notoriously difficult to assess because there have been no common methodology and no standard data collection methods. This standard on Performance Benchmarking, along with others in the EN 15221 series, is a major step forward in addressing those gaps.

Benchmarking is part of a process which aims to establish the scope for, and benefits of, potential improvements in an organisation through systematic comparison of its performance with that of one or more other organisations. It is a tool in common use across industries worldwide, but has often been misused and misunderstood within Facility Management.

Benchmarking is often associated with the term 'best practice'. Comparison with the best company or process within an industry is one of the most intelligent ways to improve one's own performance. Best practice can refer to adequate outcomes at the lowest cost, but this is not always the case. It can also refer to the best possible outcome, or the speediest process, or the one with the least environmental impact. What is common to all these is that no judgement on where one's organisation stands can be made without a valid comparison.

Before starting an FM Benchmarking operation, it is highly recommended to clearly position it regarding to the four main aspects presented just below and then use the content of this standard to prepare and perform the benchmarking operation.

This standard takes as a starting point the idea that Benchmarking can take very different forms depending on four aspects:

a) **The perspective of the initiator** performing the benchmarking process:

   1) customer or consumer of FM services;

   2) internal or provider of FM services;

b) **The objectives of the benchmarking process** set by the initiator. These objectives are usually linked. They might include the following broad categories of objectives, which are set out in more detail in the standard:

   1) find new ideas;

   2) get data to prepare a main decision or to resolve disputes;

   3) to reduce costs while maintaining a similar service level received or provided;

   4) improve the service level received or provided while maintaining similar costs;

   5) improve the use of resources;

c) **The point in time** at which the organisation is considering performing an FM benchmarking operation;

d) **The benchmarking sample** used for comparison, mostly:

   1) Similar sector of primary activities, where comparisons are easier;

   2) Other sectors of primary activities where the interest is mainly to find possible improvements.

Financial comparisons can be an appropriate basis for a benchmarking process as quantitative data are often more easy to reach and more easy to relate to than qualitative data. Historically most benchmarking in Facility Management has focused on this kind of “hard” data. However, what one can learn from quantitative data may be limited. This standard therefore tries to establish Performance Benchmarking as a data comparison method to support development and learning processes through some types of qualitative knowledge sharing.

This standard seeks to simplify a notoriously complex process. Until now, benchmarking projects have often been confused, over-ambitious, and lacking in effective data analysis. By establishing a coherent and comprehensive process for benchmarking, along with useable and logical comparators, and by clarifying the many pitfalls in the comparison process, this standard provides practising facility managers with a range of key indicators to identify areas in which there might be a need to improve the performance of their own team, their supply chain, or the entire organisation in which they work. It is this coherent approach within the EN 15221 series which supports the basis of the Benchmarking standard.

It is hoped that this platform will, in a short time, lead to a demand for more commonality in reporting of a range of comparators – financial, quality, and so on – which will make the work of facility managers more easy, and more easily understood by the organisation for which they work.

1 Scope

This European Standard gives guidelines for performance benchmarking and contains clear terms and definitions as well as methods for benchmarking facility management products and services as well as facility management organisations and operations.

This European Standard establishes a common basis for benchmarking facility management costs, floor areas and environmental impacts as well as service quality, satisfaction and productivity.

This European Standard is applicable to Facility Management as defined in EN 15221-1 and detailed in EN 15221-4.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15221-1:2006, *Facility Management — Part 1: Terms and definitions*

EN 15221-4:2011, *Facility Management — Part 4: Taxonomy, Classification and Structures in Facility Management*

EN 15221-6:2011, *Facility Management — Part 6: Area and Space Measurement in Facility Management*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15221-1:2006, EN 15221-4:2011 and EN 15221-6:2011 and the following apply.

3.1.1
benchmarking
process of comparing strategies, processes, performances and/or other entities against practices of the same nature, under the same circumstances and with similar measures

Note 1 to entry: Typically the purpose of benchmarking is to improve strategies, processes, performances and/or other entities, but may also be used for different purposes such as accountability.

Note 2 to entry: Measures can be quantitative or qualitative; comparators can be internal, competitors or cross-sector; domain can be local, national or international; frequency can be one-off, periodic or continuous.

Note 3 to entry: It should be recognised that it might also be beneficial to compare entities to practices of a different nature, under different circumstances and/or with dissimilar measures.

Note 4 to entry: This definition differs from EN 15221-1:2006.

3.1.2
entity
concrete or abstract thing that exists, did exist, or might exist, including associations among these things

3.1.3
benchmark
reference point or metric against which a strategy, process, performance and/or other entity can be measured

3.1.4
reference point
measure of extremes, central tendency or dispersion

3.1.5
measure of extremes
measure that provides an indication of the extreme score in a data set

Note 1 to entry: Typical measures of extremes are: minimum – the smallest number of the sample, and maximum – the largest number of the sample.

3.1.6
measure of central tendency
measure that provides an indication of the typical score in a data set

Note 1 to entry: Typical measures of central tendency are: mean – the average of all scores in the sample (calculated from scores), median – the score that lies in the middle of the sample (calculated from ranks), and mode – the most frequently occurring score (calculated from frequencies).

3.1.7
measure of dispersion
measure that provides an indication of the typical bandwidths in a data set

Note 1 to entry: A typical measure of dispersion is: quartiles – any of the three values which divide the sorted data set into four equal parts, so that each part represents one fourth of the sampled population: first quartile (or lower quartile) cuts off lowest 25 % of data (25^{th} percentile), second quartile (or median) cuts data in half (50^{th} percentile), and third quartile (or upper quartile) cuts off highest 25 % of data (75^{th} percentile).

3.1.8
outlier
extreme score in a data set, having a disproportionate influence on determining reference points

3.1.9
unit of measurement
definite magnitude of a physical quantity, defined and adopted by convention and/or by law, that is used as a standard for measurement of the same physical quantity

Note 1 to entry: Typical units of measurement within facility management are workstation, FTE and NFA.

3.1.10
workstation
physical station - including a desk and a chair - that is specifically designed or suitable for work-related activities, such as reading, writing, telephoning and PC work, which meets legal requirements and that is adequate for permanent use

3.1.11
FTE
Full Time Equivalent that can be determined by dividing the total number of hours worked by the number of regular working hours in a working week (e.g. working 32 hours when a regular working week consists of 40 hours equals 0,8 FTE)

3.1.12
NFA
Net Floor Area as defined in EN 15221-6

3.2 Abbreviations

FTE Full Time Equivalent

NFA Net Floor Area

BREEAM Building Research Establishment Environmental Assessment Method

4 Benchmarking types

4.1 General

There are multiple aspects which affect the scope of a benchmarking exercise and impact on the selection of data. Figure 1 shows a categorisation of the major aspects classified into five main types. The purpose of this classification is to assist facility managers in understanding the different character of each element and therefore to provide a guide to selecting the most appropriate type and methodology for the benchmarking exercise when planning the process set out later in this standard.

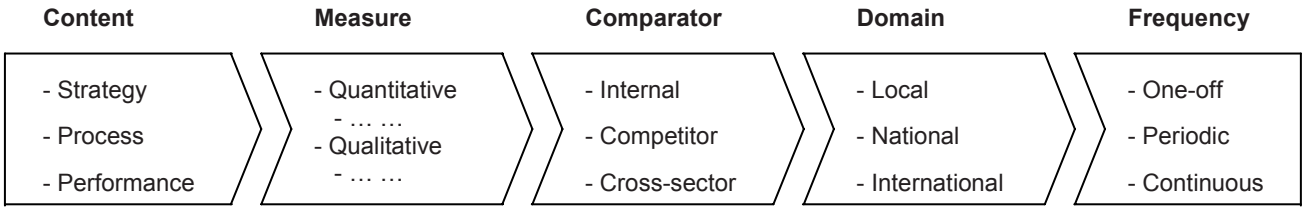

Figure 1 — Classification of benchmarking types

Depending on the purpose of a benchmarking exercise, the scope (i.e. content, measure, comparator, domain and frequency) will differ. A non-exhaustive list of purposes and their typical scope is provided in Table 1.

Table 1 — Typical benchmarking purposes

	content			**measure** *quantitative / qualitative*						**comparator**			**domain**			**frequency**		
purpose	strategy	process	performance	finance	space	environment	service quality	satisfaction	productivity	internal	competitor	cross-sector	local	national	international	one-off	periodic	continuous
Identification of improvement options	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Resource-allocation decisions	✓			✓			✓				✓	✓		✓	✓	✓		
Prioritisation of problem areas		✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			✓		
Verification legal compliance		✓			✓	✓				✓	✓		✓	✓		✓	✓	
Identification of best practices	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓		
Budget review and planning	✓			✓	✓	✓				✓	✓		✓	✓		✓	✓	✓
Alignment with corporate objectives	✓			✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
Improvementof process effectiveness		✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	
Assessment of property performance			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
- Assessment of cost effectiveness			✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓
- Evaluation of floor space usage			✓		✓					✓	✓		✓	✓		✓	✓	
- Appraisal of environmental impacts			✓			✓				✓	✓		✓	✓		✓	✓	
- Assessment of service quality shortfalls			✓				✓			✓	✓	✓	✓	✓	✓	✓	✓	✓
- Evaluation of end-user satisfaction			✓					✓		✓	✓		✓	✓		✓	✓	
- Appraisal of individual productivity			✓						✓	✓	✓		✓	✓		✓	✓	

4.2 Benchmarking content

4.2.1 General

The content of benchmarking may be: strategic, process, or performance.

4.2.2 Strategic benchmarking

Strategic benchmarking involves the assessment of strategic rather than operational matters. Typically focussing on the effectiveness of resource usage in the light of corporate objectives, strategic benchmarking can be used to establish a baseline for organisational review and to inform strategic decision-making.

Strategic benchmarking may be used for:

— alignment with corporate objectives;

— resource allocation decisions;

— budget review and planning.

4.2.3 Process benchmarking

Process benchmarking pertains to discrete work processes and/or operating systems. Typically focussing on establishing ways of improving processes within a delivery system, process benchmarking can be used to improve service delivery, reduce corporate risk, streamline processes and systems, etc.

Process benchmarking may be used for:

— Improvement of process effectiveness;

— verification of legal compliance;

— prioritisation of problem areas.

4.2.4 Performance benchmarking

Performance benchmarking concerns quantitative or qualitative inputs (such as costs, square metreage and energy usage) and outputs (such as service quality, end-user satisfaction and productivity); or a combination of inputs and outputs which are understood to be correlated.

Performance benchmarking may be used for:

a) assessment of property performance;

b) assessment of cost effectiveness;

c) evaluation of floor space usage;

d) appraisal of environmental impacts;

e) assessment of service quality shortfalls;

f) evaluation of end-user satisfaction;

g) appraisal of individual productivity.

4.3 Benchmarking measure

4.3.1 General

The measure of benchmarking may be: quantitative, qualitative, or a combination of both.

4.3.2 Quantitative benchmarking

Quantitative benchmarking concerns entities that can be distinguished as tangible. Data is measured objectively and typically captured by common processes through routine systems (such as data collection templates and management information systems).

Quantitative benchmarking may be used for:

— assessment of financial expenditure (such as operating costs or capital costs);

— assessment of floor space usage (such as space per FTE or linear metres storage);

— assessment of environmental impacts (such as energy consumption or waste production).

4.3.3 Qualitative benchmarking

Qualitative benchmarking concerns entities that can be distinguished as intangible. Data is described subjectively and typically captured by specific processes through routine systems (such as focus groups and employee surveys).

Qualitative benchmarking may be used for:

— assessment of service quality (such as reliability or responsiveness);

— assessment of satisfaction (such as end-user of customer satisfaction);

— assessment of productivity (such as repeat business or employee retention).

NOTE For benchmarking purposes qualitative data is best captured or transformed into quantitative scores (1 = very poor / strongly disagree / very unimportant, 2 = poor / disagree / unimportant, 3 = fair / neutral / average, 4 = good / agree / important, 5 = very good / strongly agree / very important).

4.3.4 Combination benchmarking

Combination benchmarking concerns two or more entities that can be distinguished as tangible and/or intangible. Subsequently, interrelations and/or trade-offs between two or more entities can be assessed.

Combination benchmarking may be used for:

— assessment of satisfaction in relation to space usage;

— assessment of service quality in relation to financial expenditure;

— assessment of productivity in relation to environmental impacts.

4.4 Benchmarking comparator

4.4.1 General

The comparator of benchmarking may be: internal, competitor, or cross-sector.

4.4.2 Internal benchmarking

Internal benchmarking pertains to comparison against internal practices and is typically used to evaluate performance between business units within an organisation.

Internal benchmarking may be used for:

— identification of best practices (internal);

— assessment of (re)location decisions;

— assessment of supplier performance.

4.4.3 Competitor benchmarking (sector benchmarking)

Competitor benchmarking pertains to comparison against competitor practices and is typically used to evaluate performance against peers within a market sector.

Competitor benchmarking may be used for:

— identification of competitive advantages;

— assessment of financial expenditure;

— assessment of service quality.

NOTE Competitor benchmarking also pertains to comparison against non-competitor practices within market sectors such as government organisations, non-profit organisations and philanthropies.

4.4.4 Cross-sector benchmarking

Cross-sector benchmarking pertains to comparison against industry practices and is typically used to evaluate performance against organisations from other market sectors.

Cross-sector benchmarking may be used for:

— identification of best practices (external);

— assessment of environmental impacts;

— assessment of productivity.

4.5 Benchmarking domain

4.5.1 General

The domain of benchmarking may be: local, national, or international.

4.5.2 Local benchmarking

Local benchmarking involves comparison at a local level and may be used for:

— assessment of local performance variations;

— verification of cost rates.

4.5.3 National benchmarking

National benchmarking involves comparison at a national level and may be used for:

— assessment of regional performance variations;

— verification of labour rates.

4.5.4 International benchmarking

International benchmarking involves comparison at an international level and may be used for:

— assessment of national performance variations;

— verification of productivity rates.

4.6 Benchmarking frequency

4.6.1 General

The frequency of benchmarking may be: one-off, periodical, or continuous.

4.6.2 One-off benchmarking

One-off benchmarking pertains to exploring a status at one moment in time and is typically a response to a threat or an opportunity.

One-off benchmarking may be used for:

— identification of best practice examples;

— identification of improvement options.

4.6.3 Periodic benchmarking

Periodic benchmarking pertains to verifying a status at set intervals and is typically a routine process, often undertaken annually to assess improvement against previous performance.

Periodic benchmarking may be used for:

— evaluation of performance against others;

— evaluation against previous performance.

4.6.4 Continuous benchmarking

Continuous benchmarking is based on continuous measurement of data and is typically used to assess trends and developments.

Continuous benchmarking may be used for:

— monitoring energy performance;

— assessment of causes and effects.

5 Benchmarking outputs

5.1 General

Because of the complexity of Facility Management and the vast range of activities covered by the discipline, it is impossible to set out all the possible comparisons which can be made. What follows therefore is considered to be an indicative list of some of the key ratio comparators which facility managers might wish to assess in understanding how effective their organisation's service are.

The six types of ratio set out are those against which facility managers and the supply chain can be measured. As there is no absolute baseline figure against which performance can be assessed (no "absolute zero degrees Kelvin"), the standard process assumes that these ratios are compared with appropriate peer buildings, organisations or operations; and that they be maintained and reported over time to allow an understanding of how the benchmarked organisation is progressing.

5.2 Financial benchmarks

5.2.1 General

In line with EN 15221-4, this subclause provides an overview of key financial benchmarks that may be used in Facility Management. For more details, see Annex C – Collecting financial data.

5.2.2 Primary financial ratios

— Facility Management Costs per FTE (currency per annum)

— Facility Management Costs per workstation (currency per annum)

— Facility Management Costs per square metre NFA (currency per annum)

5.2.3 Secondary financial ratios

— Space & Infrastructure Costs per FTE (or workstation or m^2NFA)

— People & Organisation Costs per FTE (or workstation or m^2NFA)

5.2.4 Tertiary financial ratios

— Space Costs per FTE (or workstation or m^2NFA)

— Outdoors Costs per FTE (or workstation or m^2NFA)

— Cleaning Costs per FTE (or workstation or m^2NFA)

— Workplace Costs per FTE (or workstation or m^2NFA)

— Primary activities specific Costs per FTE (or workstation or m^2NFA)

— HSSE Costs per FTE (or workstation or m^2NFA)

— Hospitality Costs per FTE (or workstation or m^2NFA)

— ICT Costs per FTE (or workstation or m^2NFA)

— Logistics Costs per FTE (or workstation or m^2NFA)

— Business support Costs per FTE (or workstation or m^2NFA)

— Organisation specific Costs per FTE (or workstation or m^2NFA)

NOTE For benchmarking purposes it is recommended to exclude 'Primary activities specific Costs' and 'Organisation specific Costs' from both primary and secondary financial ratios as these costs may skew benchmarks.

5.3 Spatial benchmarks

5.3.1 General

In line with EN 15221-6, this subclause provides an overview of key spatial benchmarks that may be used in Facility Management. For more details see Annex D, Collecting spatial data.

5.3.2 Primary spatial ratios

— Net Floor Area per FTE (m^2NFA)

— Net Floor Area per person (m^2NFA)

— Net Floor Area per workstation (m^2NFA)

5.3.3 Secondary spatial ratios

— Net Floor Area / Total Level Area (%)

— Internal Area / Total Level Area (%)

— Gross Floor Area / Total Level Area (%)

5.4 Environmental benchmarks

5.4.1 General

In line with IPD Environment Code, this subclause provides an overview of key environmental benchmarks that may be used in Facility Management. For more details see Annex E, Collecting environmental data.

5.4.2 Primary environmental ratios

— Total CO_2 emissions (tonnes per annum)

— CO_2emissions per FTE (tonnes per annum)

— CO_2emissions per m^2NFA (tonnes per annum)

5.4.3 Primary energy ratios

— Total energy consumption (kWh per annum)

— Energy consumption per FTE (kWh per annum)

— Energy consumption per m^2NFA (kWh per annum)

5.4.4 Primary water ratios

— Total water usage (m^3 per annum)

— Water usage per FTE (m^3 per annum)

— Water usage per m2 NFA (m^3 per annum)

5.4.5 Primary waste ratios

— Total waste production (tonnes per annum)

— Waste production per FTE (tonnes per annum)

— Waste production per m^2NFA (tonnes per annum)

5.4.6 Other environmental scores

— Space and Environment

— Outdoors and Environment

— Workplace and Environment

— Utilities and Environment

— Health & Safety and Environment

— Mobility and Environment

— Procurement and Environment

5.5 Service quality benchmarks

5.5.1 General

In line with EN 15221-3, this subclause provides an overview of key service quality benchmarks that may be used in Facility Management. For more details see Annex F, Collecting service quality data.

5.5.2 Primary service quality scores

— Quality of Facility Management

5.5.3 Secondary service quality scores

— Quality of Cleaning

— Quality of Workplace

— Quality of Security

— Quality Reception and Contact Centre

— Quality of Catering and Vending

— Quality of Document Management

5.6 Satisfaction benchmarks

5.6.1 General

In line with EN 15221-4, this subclause provides an overview of key satisfaction benchmarks that may be used in Facility Management. For more details see Annex G, Collecting satisfaction data.

5.6.2 Primary satisfaction scores

— Satisfaction with Facility Management

5.6.3 Secondary satisfaction scores

— Satisfaction with Space

— Satisfaction with Outdoors

— Satisfaction with Cleaning

— Satisfaction with Workplace

— Satisfaction with HSSE

— Satisfaction with Hospitality

— Satisfaction with ICT

— Satisfaction with Logistics

5.7 Productivity benchmarks

5.7.1 General

This subclause provides an overview of key productivity benchmarks that may be used in Facility Management.

5.7.2 Primary productivity scores

— Core operating hours of facility (facility management related)

— Timeliness of service provision (facility management related)

— Uptime facility (business continuity related)

— Recovery time (businesscontinuity related)

— Staff turnover (human resources related)

— Absenteeism (human resources related)

6 Benchmarking process

6.1 General

A typical benchmarking exercise can be split into three phases: the preparing phase, the comparing phase, and the improving phase.

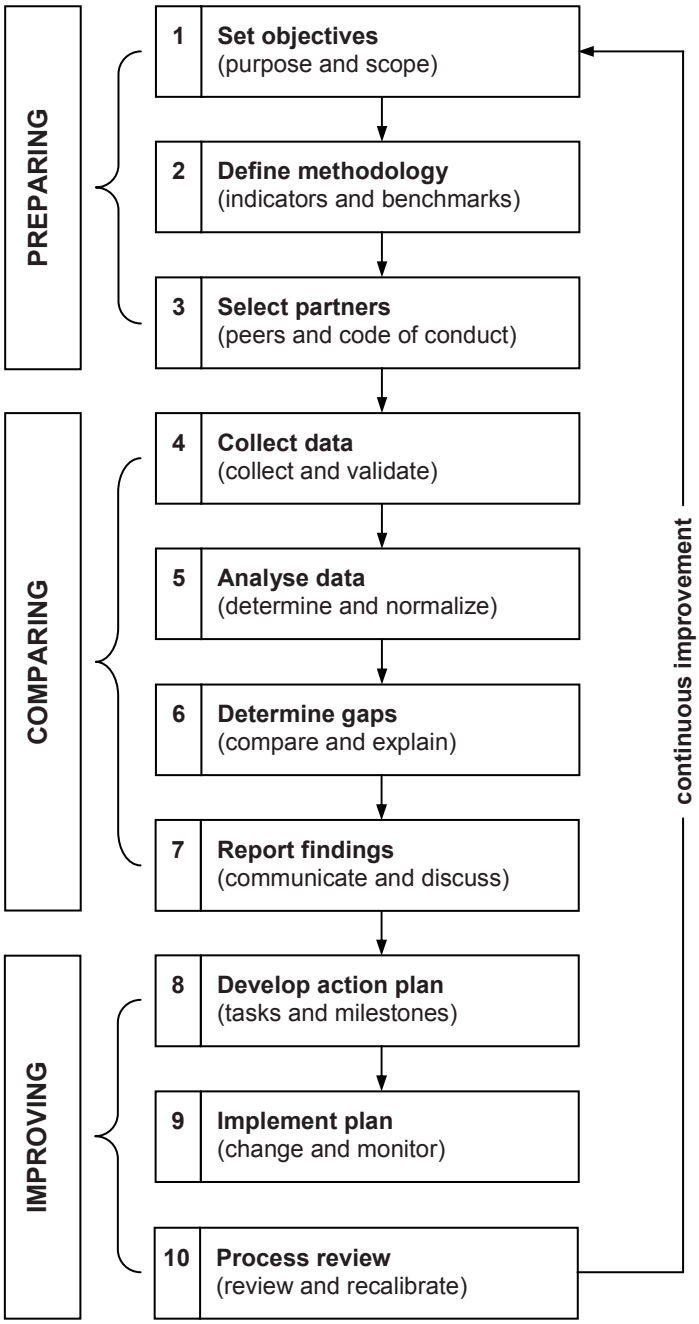

Figure 2 — Benchmarking process

6.2 Preparing phase

6.2.1 General

During the preparing phase, objectives should be set, a methodology should be defined and partners should be selected.

6.2.2 Set objectives (purpose and scope)

Typically, the objective of a benchmarking exercise is to identify, understand and adapt outstanding strategies, processes and/or performances, in short: improvement.

When starting a benchmarking exercise, it is important to clearly define its purpose, e.g. identification of improvement options, resource-allocation decisions, prioritisation of problem areas, verification of legal compliance, identification of best practice, budget review and planning, alignment with corporate objectives, verification of process effectiveness, assessment of property performance. Simple exercises might have one single objective, whereas more advanced exercises might have multiple objectives. The objectives of a benchmarking exercise could be expanded over time, e.g. to include improving asset value, measuring contributions to environmental commitment obligations, etc.

Similarly, it is important to clarify the scope of the benchmarking exercise, e.g. what measures, which comparators, what domain and which frequency. Simple exercises may compare one measure, internally and as a one-off; more advanced exercises may compare multiple measures, both internally and externally and be periodic or even continuous. The scope of a benchmarking exercise could be expanded to include e.g. more property types and numbers, national and/or global portfolios, both owner and occupier performance, more environmental performance topics for analysis, etc.

6.2.3 Define methodology (indicators and benchmarks)

Typically, the methodology of a benchmarking exercise entails comparing carefully selected indicators against wider benchmarks.

Depending on the objective of the benchmarking exercise, it is important to define clear indicators, e.g. costs per FTE, space per workstation (input oriented), CO_2 emissions per m^2, productivity scores (output oriented), service quality scores, satisfaction scores (impact oriented). Simple exercises may focus on one single indicator, whereas more advanced exercises may focus on multiple indicators.

Also, it is important to define relevant benchmarks, e.g. minimums or maximums (measures of extremes), means or medians (measures of central tendency), upper quartiles or lower quartiles (measures of dispersion). Simple exercises may focus on one single benchmark, whereas more advanced exercises may focus on multiple benchmarks.

6.2.4 Select partners (peers and code of conduct)

Typically, comparisons in a benchmarking exercise are made against practices of the same nature, under the same circumstances and with similar measures.

Following the objective and the methodology, it is important to select partners that can be used as a comparator and that benefit from the benchmarking exercise as well. Ideally a win-win situation is created in which participation is attractive for all. Simple exercises may have an internal focus and use one comparator only; more advanced exercises may have a more external focus and use a wide variety or comparators.

Subsequently, it is important to establish a code of conduct. Such a code not only advances the professionalism and effectiveness of a benchmarking exercise, but also helps protect all partners involved. A comprehensive code of conduct includes principles concerning preparation, contact, exchange, confidentiality, use, legality, completion, and understanding. Adherence to such a code will contribute to efficient, effective and ethical benchmarking.

NOTE The European Benchmarking Code of Conduct by the European Foundation for Quality Management provides a comprehensive starting point for partners.

Once objectives are set, methodology has been defined and partners have been selected, the comparing phase may begin.

6.3 Comparing phase

6.3.1 General

During the comparing phase, data should be collected and analysed as well as the gaps determined and the findings reported.

6.3.2 Collect data (collect and validate)

Typically, data not only needs to be collected, but validated as well.

In line with the indicators defined, data should be provided by the partners selected (data might be readily available or might need to be collected). First, the data availability should be assessed and data sources identified. Depending on the indicators defined, data might come from systems or meters (quantitative data), individuals or focus groups (qualitative data), etc. Furthermore, appropriate data collection method should be selected (e.g. measurement templates; individual questionnaires; focus group discussions). Finally, data should be collected in a consistent way and within appropriate timeframes to ensure meaningful analysis.

Once data has been collected, it should be validated. Firstly, individual templates and/or questionnaires should be validated for completion – incomplete fields should be verified with the respective partner. Also, sense checks should be applied to see whether individual scores add up correctly to their sum (e.g. annual operating expenditure plus annualised capital expenditure minus annual revenue income equals total annual costs; net room area plus partition wall area equals net floor area; non-renewable energy and renewable energy equals total energy). Secondly, templates should be validated collectively concerning indicators - outliers should be verified with the respective partner. Finally, selected ratios should be validated collectively - again outliers should be verified with the respective partner.

6.3.3 Analyse data (determine and normalise)

Typically, data not only needs to be analysed, but normalised as well.

In line with the methodology, both individual indicators and collective benchmarks need to be determined. Typically, a variety of benchmarks are determined per indicator, e.g. minimum, lower quartile, mean (or median), upper quartile and maximum. Subsequently, indicators from one or more partners can be measured against the benchmark(s). Alternatively, partners can be mapped in order of relative position to each other.

Depending on the data collected, one might decide to weigh and/or normalise data. For example, when a group of benchmarking partners is proportionally not representative to general industry composition or sector make-up, one might want to use national statistics to help weigh the data accordingly. At an international level, such issues are further complicated due to differences in e.g. exchange rates, taxation and VAT and accounting rules as well as rules and regulations, average labour costs, carbon emission factors.

6.3.4 Determine gaps (compare and explain)

Typically, gaps not only need to be determined, but explained as well.

In line with the purpose of the benchmarking exercise, gaps between individual indicators and collective benchmarks need to be identified. The further an individual indicator lies away from the predefined collective benchmark (e.g. lower quartile, mean, upper quartile), the greater the gap. For example, if the goal is to have an indicator positioned in the upper quartile, but it is actually closer to the mean (or median), one can speak of a gap. If gaps are negative, one can speak of an ‘undershoot’. If gaps are positive, one can speak of an ‘overshoot’.

Once gaps have been identified, it is important to see whether they can be explained. First of all, each gap needs to be put in context. For example, industry sector, building location, year of construction, climate regime, operating hours, etc. typically have a significant impact on indicators. Furthermore, a multitude of indicators will be interrelated. For example, higher costs and/or greater environmental impact might very well be explained by larger amounts of space. Similarly, lower levels of service quality, end-user satisfaction and individual productivity might be explained by small amounts of space and/or lower spend.

6.3.5 Report findings (communicate and discuss)

Typically, analyses and gaps not only need to be reported, but communicated and discussed as well.

In line with the overall objectives of the benchmarking exercise, findings need to be reported. Subsequently, reported findings need to be communicated to and discussed with all relevant stakeholders. Communication of findings can be done through a variety of means such as dedicated reports, focus groups, internal newsletters, or the Intranet. Additional discussion of findings is important as they may help to further explain gaps identified. Once findings have been communicated and discussed, the final report can be drawn up and communicated to a broader audience.

Once data is collected, data is analysed, gaps have been determined and findings have been reported, one can continue with the improving phase.

6.4 Improving phase

6.4.1 General

During the improving phase, one may need to develop and implement an action plan as well as review and recalibrate the benchmarking process.

6.4.2 Develop action plan (tasks and milestones)

In case gaps have been identified during the comparing phase, it is recommended to develop an action plan to reduce or even eliminate those gaps. When doing so, it is important to start with establishing functional goals in projecting aspired performance levels. Subsequently, one needs to identify all tasks and milestones that work towards achieving the functional goals set. Who is doing what by when needs to be clear for each task identified.

Furthermore, it is important to identify potential trade-offs between various performance indicators. For example, reducing facility management costs in a certain area may very well have a negative impact on service quality, end-user satisfaction and/or individual productivity. Subsequently, one may want to opt for reducing certain gaps over fully eliminating them.

6.4.3 Implement plan (change and monitor)

Carefully execute all tasks identified in the action plan and monitor progress at all milestones identified. In case performances (checked at each milestone) are moving away as opposed to towards aspired performance levels, it is highly recommended to evaluate the tasks leading up to each milestone and revise the action plan. Also, it is important to carefully monitor the trade-offs between various performance indicators.

As the implementation plan will undoubtedly lead to certain changes, it is important to communicate progress and developments to all stakeholders involved and affected. Finally, as a last step of the implementation process, it is important to verify whether and to what extend functional goals have been achieved.

6.4.4 Process review (review and recalibrate)

As a last step in a benchmarking exercise, it is important to review the entire benchmarking process - not least because the exercise may not lead to the aspired results first time around. Especially with periodic and continuous benchmarking exercises it is also important to carefully review objectives, methodology and partners and recalibrate indicators and benchmarks. The latter is important as benchmarks will change over time.

Annex A
(normative)

Performance data

Table A.1 on the following pages provides an overview of performance data that may be collected when engaging in a benchmarking exercise. Ideally, each data collection template is completed by a relevant expert or specialist of the facility management team or the appropriate building manager. Data is collected on a building by building basis.

— Financial data is to be collected across the board and ideally at product level. Subsequently, data at product level can be added up to category level. Similarly, data at category level can be added up to group level.

— Spatial data is to be collected at facility level.

— Environmental data is quantitatively to be collected at product level under group ‘Utilities’. Subsequently, data at product level can be added up to category level. Qualitatively, environmental data is to be collected at category level for ‘Building Initial Performance’, ‘Property Administration’, ‘Maintenance and Operation’, ‘Land, Site, Lot’, ‘Occupier Fit out and Adaptations’, ‘Health and Safety’, ‘Environmental Protection’, ‘Mobility’ and ‘Procurement’and at product level for ‘Energy’, ‘Water’ and ‘Waste’.

— Service quality data is to be collected at group level for ‘Cleaning’ and ‘Workplace’ and at category level for ‘Security’, ‘Reception and Contact Centre’, ‘Catering and Vending’ and ‘Document Management’.

— Satisfaction data is to be collected at group level for ‘Space’, ‘Outdoors’, ‘Cleaning’, ‘Workplace’, ‘HSSE’, ‘Hospitality’, ‘ICT’ and ‘Logistics’.

Considering Table A on a row by row basis, some facility management product and/or services can be benchmarked from multiple perspectives. For example, financial ratios related to ‘Workplace’ can be plotted against service quality and/or satisfaction scores. Similarly, the facility management costs for ‘Property Administration’ can be related to environmental scores.

Table A.1 — Collecting performance data *(1 of 2)*

		collecting financial data (Annex C)	collecting spatial data (Annex D)	collecting environmental data (Annex E)	collecting service quality data (Annex F)	collecting satisfaction data (Annex G)
1000	Space & Infrastructure		facility level			
1100	**Space (accommodation)**	group level				group level
1110	Building Initial Performance	category level		category level		
1120	Asset Replacement and Refurbishment	category level				
1130	Enhancement of Initial Performance	category level				
1140	Property Administration	category level		category level		
1150	Portfolio development	category level				
1160	Maintenance and Operation	category level		category level		
1170	Utilities	category level		product level		
1200	**Outdoors**	group level				group level
1210	Land, Site, Lot	category level		category level		
1220	Additional Space on site	category level				
1230	Parking Facilities	category level				
1300	**Cleaning**	group level			group level	group level
1310	Routine Cleaning	category level				
1320	Special Cleaning	category level				
1400	**Workplace**	group level			group level	group level
1410	Occupier Fit out and Adaptations	category level		category level		
1420	Space Management	category level				
1430	Furniture	category level				
1440	Art works	category level				

Table A.1 *(2 of 2)*

		collecting financial data (Annex C)	collecting spatial data (Annex D)	collecting environmental data (Annex E)	collecting service quality data (Annex F)	collecting satisfaction data (Annex G)
2000	People & Organisation		facility level			
2100	**HSSE**	group level				group level
2110	Health & Safety	category level		category level		
2120	Security	category level			category level	
2130	Environmental Protection	category level		category level		
2200	**Hospitality**	group level				group level
2210	Reception and contact centre	category level			category level	
2220	Catering and Vending	category level			category level	
2230	Meeting rooms and Events	category level				
2240	Work wear and other Textiles	category level				
2300	**ICT**	group level				group level
2310	Service Desk IT	category level				
2320	End User Services IT	category level				
2330	Central and Distributed Services	category level				
2340	Connectivity & Telecommunications	category level				
2350	Training (ICT)	category level				
2400	**Logistics**	group level				group level
2410	Office Supplies, Stationary	category level				
2420	Document Management	category level			category level	
2430	Moves – people & furniture	category level				
2440	Mobility	category level		category level		
2500	**Business Support**	group level				
2510	Finance & Accounting	category level				
2520	HRM	category level				
2530	Legal counsel and contracts	category level				
2540	Marketing and communication	category level				
2550	Procurement	category level		category level		
2560	Secretarial services, translations	category level				

Annex B
(normative)

Collecting contextual data

Table B.1 below provides an overview of contextual data to be collected when engaging in a benchmarking exercise.

Table B.1 — Collecting contextual data

Client (open field)	… … …
Street (open field)	… … …
City (open field)	… … …
Postcode (open field)	… … …
Country (dropdown menu)	Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden or United Kingdom
Industry sector (dropdown menu)	A) Agriculture, hunting and forestry; B) Fishing, C) Mining and quarrying, D) Manufacturing, E) Electricity, gas and water supply, F) Construction, G) Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods, H) Hotels and restaurants, I) Transport, storage and communication, J) Financial intermediation, K) Real estate, renting and business activities, L) Public administration and defence; compulsory social security, M) Education, N) Health and social work, O) Other community, social and personal service activities, P) Private households with employed persons, or Q) Extra-territorial organisations and bodies
Building type (dropdown menu)	1) Agricultural building (e.g. barn, stable, silo); 2) Manufacturing building (e.g. factory, refinery, workshop); 3) Utilities building (e.g. electricity, gas, water); 4) Office building (e.g. headquarter, client-facing, administrative); 5) Commercial building (e.g. bank branch, estate agency, travel agency); 6) Leisure building (e.g. restaurant, sport facility, theatre); 7) Retail building (e.g. supermarket, department store, bookshop); 8) Residential building (e.g. house, apartment, dormitory); 9) Educational building (e.g. school, library, museum); 10) Health care building (e.g. hospital, medical centre, nursing home); 11) Public building (e.g. city hall, fire station, post office); 12) Parking and storage building (e.g. warehouse, garage, boathouse); 13) Religious building (e.g. church, mosque, temples); 14) Transit building (e.g. airport, train station, bus terminal); 15) Other building (e.g. R&D facility, stadium, etc.)
Tenure (dropdown menu)	Freehold, Leasehold, PFI, Serviced, Other
Year of construction (open field)	… … …
Building condition (dropdown menu)	As new, Minor defects, Major defects
Indoor climate (dropdown menu)	Natural ventilation, Comfort cooling, Air-conditioning
Full Time Equivalent (open field)	… … …
Operating hours (open field)	… … …

Annex C
(normative)

Collecting financial data

C.1 General

Table C.1 on the following pages provides an overview of financial data to be collected when engaging in a benchmarking exercise. Ideally, this data collection template is completed by a financial expert of the facility management team or the appropriate building manager. Data is collected on a building by building basis.

In calculating total annual facility management costs, please make sure you add annualised capital expenditure to annual operating expenditure, but subtract annual revenue income.

For more details, consult EN 15221-4.

C.2 General accounting rules

In determining annual operating expenditure, it is important to ensure costs reflect the annual cost of occupation for a complete financial year. In determining annualised capital expenditure, it is recommended to adhere to the occupier's depreciation policies. In determining annual revenue income, it is important to ensure all sublet space is accounted for.

In determining annual operating expenditure it is important to adhere to the following rules:

— All costs should be recorded on the basis of expenditure on an accruals basis for a complete financial year. All expenditure categories should be recorded separately and are by necessity mutually exclusive.

— The costs of multitasking staff (e.g. post room staff helping with internal moves) should be entered under the predominant nature of the job.

— In certain cases expenditure will need to be apportioned. The apportionment should be based on an appropriate denominator (e.g. internal floor area or full time equivalent).

In determining annualised capital expenditure it is important to adhere to the following rules:

— Depreciation should be included in the facility management cost calculation for both rented and owned buildings to reflect both historic investments in a building and ongoing capital investments.

— The depreciation charge included in such calculations should correspond with the occupier's depreciation policies and the depreciation charge included in its statutory accounts.

In determining annual revenue income it is important to adhere to the following rules:

— Where occupiers have rented out any of their property to other organisations, the net revenue to the occupier should be calculated.

C.3 Rented versus owned buildings

The basis of calculating cost category '1100 Space', differs between rented of leasehold buildings and owned or freehold buildings. For rented of leasehold buildings, this cost category is equivalent to rent paid. For owned or freehold buildings, this cost category is equivalent to rental value or notional rent.

Most occupier organisations value their owned buildings at least once every five years to estimate the open market rental value. This is the preferred basis for calculating a ‘1100 Space’ figure for owned buildings. Using this approach makes the treatment for owned buildings as consistent as possible with that for rented buildings.

However, if such valuations do not exist, owners should enter the cost of capital by multiplying the value of the asset as set out in the financial statement by the organisation’s weighted cost of capital to arrive at a notional rent figure. The depreciation charge incurred in connection with the land and buildings is not considered a valid measure of the notional cost of freeholds.

Table C.1 — Collecting financial data *(1 of 5)*

		annual operating expenditure	annualised capital expenditure	annual revenue income	total facility costs	
1000	Space & Infrastructure					
1100	**Space (accommodation)**					
1110	Building Initial Performance					
1111	*Owner / occupier*	… … …	… … …	… … …	… … …	EUR
1120	Asset Replacement and Refurbishment					
1121	*External structure and fabric*	… … …	… … …	… … …	… … …	EUR
1122	*Internal structure and fabric*	… … …	… … …	… … …	… … …	EUR
1123	*Technical building equipment*	… … …	… … …	… … …	… … …	EUR
1130	Enhancement of Initial Performance	… … …	… … …	… … …	… … …	EUR
1140	Property Administration					
1141	*CAFM*	… … …	… … …	… … …	… … …	EUR
1150	Portfolio development					
1151	*Real estate optimisation*	… … …	… … …	… … …	… … …	EUR
1160	Maintenance and Operation					
1161	*Help desk incl. janitor*	… … …	… … …	… … …	… … …	EUR
1162	*Structure operation*	… … …	… … …	… … …	… … …	EUR
1163	*Structure maintenance*	… … …	… … …	… … …	… … …	EUR
1164	*Technical building equipment operation*	… … …	… … …	… … …	… … …	EUR
1165	*Technical building equipment maintenance*	… … …	… … …	… … …	… … …	EUR
1170	Utilities					
1171	*Energy*	… … …	… … …	… … …	… … …	EUR
1172	*Water*	… … …	… … …	… … …	… … …	EUR
1173	*Waste*	… … …	… … …	… … …	… … …	EUR

Table C.1 *(2 of 5)*

		annual operating expenditure	annualised capital expenditure	annual revenue income	total facility costs	
1200	**Outdoors**					
1210	Land, Site, Lot	… … …	… … …	… … …	… … …	EUR
1220	Additional Space on site	… … …	… … …	… … …	… … …	EUR
1230	Parking Facilities	… … …	… … …	… … …	… … …	EUR
1300	**Cleaning**					
1310	Routine Cleaning	… … …	… … …	… … …	… … …	EUR
1320	Special Cleaning					
1321	*Pest control*	… … …	… … …	… … …	… … …	EUR
1400	**Workplace**					
1410	Occupier Fit out and Adaptations	… … …	… … …	… … …	… … …	EUR
1420	Space Management	… … …	… … …	… … …	… … …	EUR
1430	Furniture					
1431	*Plants and Flowers*	… … …	… … …	… … …	… … …	EUR
1440	Art works	… … …	… … …	… … …	… … …	EUR
1900	**Primary activities specific**					
1910	Primary process related utilities	… … …	… … …	… … …	… … …	EUR
1920	External workplaces	… … …	… … …	… … …	… … …	EUR
1990	Industry specific (e.g. Health care)					
1990.H1	*Maintenance of biomedical equipment*	… … …	… … …	… … …	… … …	EUR
1990.H2	*Sterilisation service*	… … …	… … …	… … …	… … …	EUR

Table C.1 *(3 of 5)*

		annual operating expenditure	annualised capital expenditure	annual revenue income	total facility costs	
2000	People & Organisation					
2100	**HSSE**					
2110	Health & Safety					
2111	*Workplace safety*	… … …	… … …	… … …	… … …	EUR
2112	*People occupational health*	… … …	… … …	… … …	… … …	EUR
2120	Security					
2121	*Securing people*	… … …	… … …	… … …	… … …	EUR
2122	*Securing property*	… … …	… … …	… … …	… … …	EUR
2130	Environmental Protection	… … …	… … …	… … …	… … …	EUR
2200	**Hospitality**					
2210	Reception and contact centre	… … …	… … …	… … …	… … …	EUR
2220	Catering and Vending	… … …	… … …	… … …	… … …	EUR
2230	Meeting rooms and Events	… … …	… … …	… … …	… … …	EUR
2240	Work wear and other Textiles					
2441	*Laundry*	… … …	… … …	… … …	… … …	EUR
2300	**ICT**					
2310	Service Desk IT	… … …	… … …	… … …	… … …	EUR
2320	End User Services IT					
2321	*Client Hardware Devices IT*	… … …	… … …	… … …	… … …	EUR
2322	*Client Software*	… … …	… … …	… … …	… … …	EUR
2323	*On Site Support*	… … …	… … …	… … …	… … …	EUR
2324	*Managed Client Service*	… … …	… … …	… … …	… … …	EUR
2325	*Install, Move, Add, Change*	… … …	… … …	… … …	… … …	EUR
2326	*Packaging and Distribution*	… … …	… … …	… … …	… … …	EUR
2327	*Client Hardware Special Devices*	… … …	… … …	… … …	… … …	EUR

Table C.1 *(4 of 5)*

		annual operating expenditure	annualised capital expenditure	annual revenue income	total facility costs	
2330	Central and Distributed Services					
2331	*File Services*	… … …	… … …	… … …	… … …	EUR
2332	*E-mail Services*	… … …	… … …	… … …	… … …	EUR
2333	*Print Services*	… … …	… … …	… … …	… … …	EUR
2334	*Directory Services*	… … …	… … …	… … …	… … …	EUR
2340	Connectivity & Telecommunications					
2341	*Connectivity Services IT*	… … …	… … …	… … …	… … …	EUR
2342	*Connectivity Services CT*	… … …	… … …	… … …	… … …	EUR
2343	*Client Hardware Devices CT*	… … …	… … …	… … …	… … …	EUR
2350	Training (ICT)	… … …	… … …	… … …	… … …	EUR
2400	**Logistics**					
2410	Office Supplies, Stationary	… … …	… … …	… … …	… … …	EUR
2420	Document Management					
2421	*Reprographics*	… … …	… … …	… … …	… … …	EUR
2422	*Post room and internal distribution*	… … …	… … …	… … …	… … …	EUR
2423	*Library and Archives*	… … …	… … …	… … …	… … …	EUR
2430	Moves – people & furniture	… … …	… … …	… … …	… … …	EUR
2440	Mobility					
2441	*Fleet management*	… … …	… … …	… … …	… … …	EUR
2442	*Travel services*	… … …	… … …	… … …	… … …	EUR
2443	*Transport services*	… … …	… … …	… … …	… … …	EUR

Table C.1 *(5 of 5)*

		annual operating expenditure	annualised capital expenditure	annual revenue income	total facility costs	
2500	**Business Support**					
2510	Finance & Accounting					
2511	*Accounting*	… … …	… … …	… … …	… … …	EUR
2512	*Assets, property*	… … …	… … …	… … …	… … …	EUR
2513	*Controlling, reporting*	… … …	… … …	… … …	… … …	EUR
2520	HRM					
2521	*Salaries and Pensions*	… … …	… … …	… … …	… … …	EUR
2522	*Recruiting*	… … …	… … …	… … …	… … …	EUR
2523	*Training & Development*	… … …	… … …	… … …	… … …	EUR
2530	Legal counsel and contracts					
2531	*Legal advice*	… … …	… … …	… … …	… … …	EUR
2532	*Patents and copyrights*	… … …	… … …	… … …	… … …	EUR
2533	*Insurance*	… … …	… … …	… … …	… … …	EUR
2534	*Contracts*	… … …	… … …	… … …	… … …	EUR
2540	Marketing and communication	… … …	… … …	… … …	… … …	EUR
2550	Procurement	… … …	… … …	… … …	… … …	EUR
2560	Secretarial services, translations	… … …	… … …	… … …	… … …	EUR
2900	**Organisation specific**					
2910	Business Application Providing	… … …	… … …	… … …	… … …	EUR
2990	Industry specific (e.g. Health care)					
2990.H1	*Patient transport*	… … …	… … …	… … …	… … …	EUR
2990.H2	*Bed sterilisation*	… … …	… … …	… … …	… … …	EUR
2990.H3	*Broadcasting services*	… … …	… … …	… … …	… … …	EUR

Annex D
(normative)

Collecting spatial data

D.1 General

Table D.1 on the following page provides an overview of spatial data to be collected when engaging in a benchmarking exercise. Ideally, this data collection template is completed by a spatial specialist of the facility management team or the appropriate building manager. Data is collected on a building by building basis.

In calculating total space, please make sure you add vacant space to occupied space, but subtract sublet space.

For more details, consult EN 15221-6.

D.2 General spatial rules

In determining occupied space, vacant space and sublet space, it is important to adhere to the following definitions:

— Occupied space is space owned or leased by the organisation performing a benchmarking exercise, and occupied by that same organisation.

— Vacant space is space owned or leased by the organisation performing a benchmarking exercise, but not occupied by any organisation.

— Sublet space is space owned or leased by the organisation performing a benchmarking exercise, but sublet to another organisation.

Table D.1 — Collecting spatial data

		occupied space	vacant space	sublet space	total space	
TLA	**Total Level Area**	… … …	… … …	… … …	… … …	**m^2**
NLA	Non-functional Level Area	… … …	… … …	… … …	… … …	m^2
GFA	**Gross Floor Area**	… … …	… … …	… … …	… … …	**m^2**
ECA	Exterior Construction Area	… … …	… … …	… … …	… … …	m^2
IFA	**Internal Floor Area**	… … …	… … …	… … …	… … …	**m^2**
ICA	Interior Construction Area	… … …	… … …	… … …	… … …	m^2
NFA	**Net Floor Area**	… … …	… … …	… … …	… … …	**m^2**

Annex E
(normative)

Collecting environmental data

Table E.1 on the following pages provides an overview of quantitative environmental data to be collected when engaging in a benchmarking exercise. Ideally, this data collection template is completed by an environmental expert of the facility management team or the appropriate building manager. Data is collected on a building by building basis.

In calculating CO_2 emissions from energy related data, please ensure you use the right CO_2 conversion factors. The attention of the user of this standard is drawn to local legislation for CO_2 emission factors which differs from country to country, especially for electricity. Therefore, it is important to verify the CO_2 conversion factor provided with the relevant authorities or your energy provider.

Table E.2 on the pages thereafter provides an overview of qualitative environmental data to be collected when engaging in a benchmarking exercise. Ideally, this data collection template is completed by a representative focus group which includes the environmental expert of the facility management team and/or the appropriate building manager. Data is collected on a building by building basis.

Constructively aligned to existing accreditation standards such as BREEAM-in-use, this data collection template also provides an off-the-shelf starting point towards official accreditation. In adding up scores for all questions and dividing the total by 50, one can allocate stars on the following basis: 20-35 % = 1 star, 35-50 % = 2 stars, 50-65 % = 3 stars, 65-80 % = 4 stars, and 80-100 % = 5 stars.

Table E.1 — Collecting quantitative environmental data *(1 of 3)*

		environmental impact measure		CO_2 conversion factor		total CO_2 emissions
1170	**Utilities**					
1171	Energy					
1171.1	*Electricity*					
1171.11	*Non-renewable electricity*					
	a Mains electricity from grid	… … …	kWh	0,354	kg CO_2 / kWh	… … …
	b Communal electricity	… … …	kWh	depending	kg CO_2 / kWh	… … …
	c Owned electricity	… … …	kWh	depending	kg CO_2 / kWh	… … …
1171.12	*Renewable electricity*					
	a Zero carbon electricity from grid	… … …	kWh	NA		
	b Photovoltaic electricity	… … …	kWh	NA		
	c Turbine electricity	… … …	kWh	NA		
1171.2	*Gasses*					
1171.21	*Non-renewable gasses*					
	a Natural gas	… … …	m^3	0,205	kg CO_2 / kWh	… … …
	b LPG (liquid petroleum gas)	… … …	m^3	0,230	kg CO_2 / kWh	… … …
1171.22	*Renewable gasses*					
	a Biogas	… … …	m^3	0,000 38	kg CO_2 / kWh	… … …
	b Biomethane	… … …	m^3	0,000 38	kg CO_2 / kWh	… … …
1171.3	*Liquids*					
1171.31	*Non-renewable lquids*					
	a Gas oil	… … …	litre	0,275	kg CO_2 / kWh	… … …
	b Diesel	… … …	litre	0,253	kg CO_2 / kWh	… … …
	c Gasoline	… … …	litre	0,242	kg CO_2 / kWh	… … …
	d Petroleum	… … …	litre	0,329	kg CO_2 / kWh	… … …
1171.32	*Renewable liquids*					
	a Vegetable oil	… … …	litre	0,311 00	kg CO_2 / kWh	… … …
	b Biodiesel (B20)	… … …	litre	0,207 77	kg CO_2 / kWh	… … …
	c Biogasoline	… … …	litre	0,002 10	kg CO_2 / kWh	… … …
	d Biopetroleum	… … …	litre	???	kg CO_2 / kWh	… … …

Table E.1 — Collecting quantitative environmental data *(2 of 3)*

		environmental impact measure		CO_2 conversion factor		total CO_2 emissions
1171.4	*Solids*					
1171.41	*Non-renewable liquids*					
	a Domestic coal	… … …	tonne	0,340	kg CO_2 / kWh	… … …
	b Industrial coal	… … …	tonne	0,322	kg CO_2 / kWh	… … …
	c Anthracite	… … …	tonne	0,354	kg CO_2 / kWh	… … …
1171.42	*Renewable liquids*					
	a Wood pellets	… … …	tonne	0,026 00	kg CO_2 / kWh	… … …
	b Black liquor	… … …	tonne	???	kg CO_2 / kWh	… … …
	c Charcoal	… … …	tonne	???	kg CO_2 / kWh	… … …
1171.5	*Other energy*					
1171.51	*Non-renewable other energy*					
	a District heating	… … …	kWh	depending	kg CO_2 / kWh	… … …
	b District cooling	… … …	kWh	depending	kg CO_2 / kWh	… … …
1171.52	*Renewable other energy*					
	a Solar energy	… … …	kWh	NA		
	b Geothermal energy	… … …	kWh	NA		

Table E.1 — Collecting quantitative environmental data *(3 of 3)*

		environmental impact measure	
1172	Water		
1172.1	*Sourced water*		
	a Mains water	… … …	litre
	b Extracted water	… … …	litre
1172.2	*Non-sourced water*		
	a Harvested water	… … …	litre
	b Recycled water	… … …	litre
1173	Waste		
1173.1	*Regular waste*		
	a Landfill waste	… … …	tonne
	b Incinerated waste	… … …	tonne
1173.2	*Recycled waste*		
	a Recycled paper	… … …	tonne
	b Recycled plastic	… … …	tonne
	c Recycled metal	… … …	tonne
	d Recycled glass	… … …	tonne
1173.3	*Biodegradable waste*		
	a Biodegradable green waste	… … …	tonne
	b Biodegradable food waste	… … …	tonne
	c Biodegradable paper waste	… … …	tonne
	d Biodegradable plastic waste	… … …	tonne

Table E.2 — Collecting qualitative environmental data *(1 of 9)*

		0% very poor	25% poor	50% average	75% good	100% very good
1110	Building Initial Performance	(3 measures divided by 3 minimum score = 0%, maximum score = 100%)				
ENE 1	- What main type of indoor climate system used in the building?	air conditioning (e.g. VAV-system/4-pipe induction/4-pipe fan-coil)		comfort cooling (e.g. CAV-system/2-pipe induction/2-pipe fan-coil)		natural ventilation (e.g. heating + natural ventilation/mechanical extraction)
ENE 2	- What is the dominant type of glazing in the exterior façade?	single glazing (u-value of 5.7-6.2)	standard double glazing (u-value of 2.4-3.2)	HR double glazing (u-value of 1.8-2.0)	HR+ double glazing (u-value of 1.4-1.6)	HR++ double glazing (u-value of 1.0-1.2)
ENE 3	- What is the dominant type of internal lamps in the building?	don't know	incandescent	halogen	fluorescent	LED
1140	Property Administration	(6 measures divided by 6 minimum score = 0%, maximum score = 100%)				
MAN 1	- Is there a formal Environmental Management System in place?	no		yes, but not certified		yes, and ISO certified (or equivalent)
MAN 2	- Is there an annual sustainability report with property related environmental impacts?	no		yes, but published internally only		yes, and published internally and publicly
MAN 3	- To what extent is there an energy management plan for the building?	none of: management policy in place, energy consumption is recorded, targets are set and monitored, and reduction initiatives are undertaken	one of: management policy in place, energy consumption is recorded, targets are set and monitored, and reduction initiatives are undertaken	two of: management policy in place, energy consumption is recorded, targets are set and monitored, and reduction initiatives are undertaken	three of: management policy in place, energy consumption is recorded, targets are set and monitored, and reduction initiatives are undertaken	all of: management policy in place, energy consumption is recorded, targets are set and monitored, and reduction initiatives are undertaken

Table E.2 — Collecting qualitative environmental data *(2 of 9)*

		0% very poor	25% poor	50% average	75% good	100% very good
MAN 4	- To what extent is there a water management plan for the building?	none of: management policy in place, water usage is recorded, targets are set and monitored, and reduction initiatives are undertaken	one of: management policy in place, water usage is recorded, targets are set and monitored, and reduction initiatives are undertaken	two of: management policy in place, water usage is recorded, targets are set and monitored, and reduction initiatives are undertaken	three of: management policy in place, water usage is recorded, targets are set and monitored, and reduction initiatives are undertaken	all of: management policy in place, water usage is recorded, targets are set and monitored, and reduction initiatives are undertaken
MAN 5	- To what extent is there a waste management plan for the building?	none of: management policy in place, waste production is recorded, targets are set and monitored, and reduction initiatives are undertaken	one of: management policy in place, waste production is recorded, targets are set and monitored, and reduction initiatives are undertaken	two of: management policy in place, waste production is recorded, targets are set and monitored, and reduction initiatives are undertaken	three of: management policy in place, waste production is recorded, targets are set and monitored, and reduction initiatives are undertaken	all of: management policy in place, waste production is recorded, targets are set and monitored, and reduction initiatives are undertaken
MAN 6	- To what extent are there other management plans for the building?	none of: travel and transport management plan; pollution and equipment management plan; health and well-being management plan; procurement and materials management plan	one of: travel and transport management plan; pollution and equipment management plan; health and well-being management plan; procurement and materials management plan	two of: travel and transport management plan; pollution and equipment management plan; health and well-being management plan; procurement and materials management plan	three of: travel and transport management plan; pollution and equipment management plan; health and well-being management plan; procurement and materials management plan	all of: travel and transport management plan; pollution and equipment management plan; health and well-being management plan; procurement and materials management plan

Table E.2 — Collecting qualitative environmental data *(3 of 9)*

		0% very poor	25% poor	50% average	75% good	100% very good
1160	Maintenance and Operation	(2 measures divided by 2 minimum score = 0%, maximum score = 100%)				
ENE 4	- When was the building services plant installed or last renewed?	>20 years ago	15-20 years ago	10-15 years ago	5-10 years ago	<5 years ago
ENE 5	- For what building services is there a periodic maintenance plan in place?	none of: heating/cooling, ventilation, lighting, and hot water	one of: heating/cooling, ventilation, lighting, and hot water	two of: heating/cooling, ventilation, lighting, and hot water	three of: heating/cooling, ventilation, lighting, and hot water	all of: heating/cooling, ventilation, lighting, and hot water
1171	Energy	(5 measures divided by 5 minimum score = 0%, maximum score = 100%)				
ENE 6	- What is the scope of the energy management plan for the building?	none of: source reduction, energy efficiency, storage and/or recovery, and sustainable sourcing	one of: source reduction, energy efficiency, storage and/or recovery, and sustainable sourcing	two of: source reduction, energy efficiency, storage and/or recovery, and sustainable sourcing	three of: source reduction, energy efficiency, storage and/or recovery, and sustainable sourcing	all of: source reduction, energy efficiency, storage and/or recovery and sustainable sourcing
ENE 7	- Do time settings for heating/cooling controls match seasons and occupancy hours?	neither seasons nor occupancy hours		either seasons or occupancy hours		both seasons and occupancy hours
ENE 8	- Do time settings for lighting controls match seasons and occupancy hours?	neither seasons nor occupancy hours		either seasons or occupancy hours		both seasons and occupancy hours
ENE 9	- What is done with information on energy consumption?	NA	filed away	compared against target	compared against target and reported internally	compared against target, reported internally and reported publicly
ENE 10	- What proportion of energy used by the building is renewable?	<20%	20-40%	40-60%	60-80%	>80%

Table E.2 — Collecting qualitative environmental data *(4 of 9)*

		0% very poor	25% poor	50% average	75% good	100% very good
1172	Water	(3 measures divided by 3 minimum score = 0%, maximum score = 100%)				
WAT 1	- What is the scope of the water management plan for the building?	none of: source reduction, avoid bottled water, recycling and reuse, and sustainable sourcing	one of: source reduction, avoid bottled water, recycling and reuse, and sustainable sourcing	two of: source reduction, avoid bottled water, recycling and reuse, and sustainable sourcing	three of: source reduction, avoid bottled water, recycling and reuse, and sustainable sourcing	all of: source reduction, avoid bottled water, recycling and reuse, and sustainable sourcing
WAT 2	- To what extent does the building have water efficient fittings?	none of: toilets, taps, showers, and white goods	one of: toilets, taps, showers, and white goods	two of: toilets, taps, showers, and white goods	three of: toilets, taps, showers, and white goods	all of: toilets, taps, showers, and white goods
WAT 3	- What is done with information on water usage?	NA	filed away	compared against target	compared against target and reported internally	compared against target, reported internally and reported publicly
1173	Waste	(4 measures divided by 4 minimum score = 0%, maximum score = 100%)				
WAS 1	- What is the scope of the waste management plan for the building?	none of: source reduction, waste segregation, recycling and reuse, and sustainable sourcing	one of: source reduction, waste segregation, recycling and reuse, and sustainable sourcing	two of: source reduction, waste segregation, recycling and reuse, and sustainable sourcing	three of: source reduction, waste segregation, recycling and reuse, and sustainable sourcing	all of: source reduction, waste segregation, recycling and reuse, and sustainable sourcing
WAS 2	- To what extent is general waste separated in the building?	apart from general waste, none of: paper, plastic, metal, and glass	apart from general waste, one of: paper, plastic, metal, and glass	apart from general waste, two of: paper, plastic, metal, and glass	apart from general waste, three of: paper, plastic, metal, and glass	apart from general waste, all of: paper, plastic, metal, and glass
WAS 3	- To what extend is other waste separately collected in the building?	none of: cartridges, batteries, lamps, and biodegradable (compost)	one of: cartridges, batteries, lamps, and biodegradable (compost)	two of: cartridges, batteries, lamps, and biodegradable (compost)	three of: cartridges, batteries, lamps, and biodegradable (compost)	all of: cartridges, batteries, lamps, and biodegradable (compost)

Table E.2 — Collecting qualitative environmental data *(5 of 9)*

		0% very poor	25% poor	50% average	75% good	100% very good
WAS 4	- What is done with information on waste production usage?	NA	filed away	compared against target	compared against target and reported internally	compared against target, reported internally and reported publicly
1210	Land, Site, Lot	(3 measures divided by 3 minimum score = 0%, maximum score = 100%)				
LUE 1	- What is the location of the building?	out of town	business park	within city boundaries	town centre	business district
LUE 2	- What is the make up of the building site?	no landscape (building only)	< 0.5m2 per person and predominant hard landscaping	0.5-1.0 m2 per person and a balanced mix of hard and soft	> 1.0 m2 per person and predominant soft landscaping	diverse landscape with two or more types of habitat
LUE 3	- What local amenities are within 1km walking distance?	none of: ATM/bank, coffee shop, lunch facility, supermarket	one of: ATM/bank, coffee shop, lunch facility, supermarket	two of: ATM/bank, coffee shop, lunch facility, supermarket	three of: ATM/bank, coffee shop, lunch facility, supermarket	all of: ATM/bank, coffee shop, lunch facility, supermarket
1410	Occupier Fit out and Adaptations	(3 measures divided by 3 minimum score = 0%, maximum score = 100%)				
LUE 4	- What is the dominant office concept?	cellular office		combi office		open plan office
LUE 5	- What is the desk per person ratio?	>1.3	1.1-1.3	0.9-1.1	0.7-0.9	<0.7
MAT 1	- To what extend is furniture certified?	furniture is not labeled or certified	<50% of furniture is labeled with environmental product declaration	>50% of furniture is labeled with environmental product declaration	<50% of furniture is cradle-to-cradle certifed	>50% of furniture is cradle-to-cradle certifed

Table E.2 — Collecting qualitative environmental data *(6 of 9)*

		0% very poor	25% poor	50% average	75% good	100% very good
2110	Health & Safety	(7 measures divided by 7 minimum score = 0%, maximum score = 100%)				
HEA 1	- What is the scope of the health and well-being management plan for the building?	none of: staff satisfaction, indoor climate, pollution, and leaks	one of: staff satisfaction, indoor climate, pollution, and leaks	two of: staff satisfaction, indoor climate, pollution, and leaks	three of: staff satisfaction, indoor climate, pollution, and leaks	all of: staff satisfaction, indoor climate, pollution, and leaks
HEA 2	- How frequently are staff satisfaction exercises carried out?	less than every 3 year or not at all	every 3 years	every 2 years	annually	bi-annually
HEA 3	- How frequently are checks made to the indoor climate (temperature, humidity, air quality, noise levels) within the building?	>annually/don't know	annually	bi-annually	quarterly	monthly
HEA 4	- How frequently are checks made to heating/cooling systems within the building?	>annually/don't know	annually	bi-annually	quarterly	monthly
HEA 5	- How frequently are checks made to ventilation systems within the building?	>annually/don't know	annually	bi-annually	quarterly	monthly
HEA 6	- What percentage of workstations have access to daylight and an outside view?	<80%	80-85%	85-90%	90-95%	>95%
HEA 7	- To what extent is there personal control over the indoor climate in their work area?	neither over temperature nor lighting		either over temperature or lighting		both over temperature and lighting
2130	Environmental Protection	(5 measures divided by 5 minimum score = 0%, maximum score = 100%)				
POL 1	- What is the scope of the pollution and equipment management plan for the building?	none of: equipment, products, leaks, and CFCs/HCFCs	one of: equipment, products, leaks, and CFCs/HCFCs	two of: equipment, products, leaks, and CFCs/HCFCs	three of: equipment, products, leaks, and CFCs/HCFCs	all of: equipment, products, leaks, and CFCs/HCFCs

Table E.2 — Collecting qualitative environmental data *(7 of 9)*

		0% very poor	25% poor	50% average	75% good	100% very good
POL 2	- To what extent are sustainable products used within the building?	none of: cleaning products, catering products, stationery, and paper where possible	one of: cleaning products, catering products, stationery, and paper where possible	two of: cleaning products, catering products, stationery, and paper where possible	three of: cleaning products, catering products, stationery, and paper where possible	all of: cleaning products, catering products, stationery, and paper where possible
POL 3	- To what extent are pollutants from equipment extracted within the building?	none of: toilets, print-copiers, combustion appliances, and specialist equipment	one of: toilets, print-copiers, combustion appliances, and specialist equipment	two of: toilets, print-copiers, combustion appliances, and specialist equipment	three of: toilets, print-copiers, combustion appliances, and specialist equipment	all of: toilets, print-copiers, combustion appliances, and specialist equipment
POL 4	- Does the building have operable leak detection systems?	for neither refrigerant leaks nor water leaks		for either refrigerant leaks or water leaks		for both refrigerant leaks and water leaks
POL 5	- Is there a plan in place to phase out CFC/HCFCs?	for neither CFCs (and other ozone-depleting agents) nor HCFCs (and other refrigerants)		for either CFCs (and other ozone-depleting agents) or HCFCs (and other refrigerants)		for both CFCs (and other ozone-depleting agents) and HCFCs (and other refrigerants)
2440	Mobility	(4 measures divided by 4 minimum score = 0%, maximum score = 100%)				
TRA 1	- What is the scope of the travel and transport management plan for the building?	none of: business travel, staff commuting, food miles, and off-setting	one of: business travel, staff commuting, food miles, and off-setting	two of: business travel, staff commuting, food miles, and off-setting	three of: business travel, staff commuting, food miles, and off-setting	all of: business travel, staff commuting, food miles, and off-setting
TRA 2	- To what extent is there a 'green travel' plan for the building?	none of: public transport, cyclist facilities, alternative vehicles, and car pooling	one of: public transport, cyclist facilities, alternative vehicles, and car pooling	two of: public transport, cyclist facilities, alternative vehicles, and car pooling	three of: public transport, cyclist facilities, alternative vehicles, and car pooling	all of: public transport, cyclist facilities, alternative vehicles, and car pooling
TRA 3	- What public transport facilities are available?	no public transport facilities available within 1km of the building	one of bus, subway, or rail facilities within 1km of the building	two of bus, subway, or rail facilities within 1km of the building	one of bus, subway, or rail facilities within 500m of the building	two of bus, subway, or rail facilities within 500m of the building

Table E.2 — Collecting qualitative environmental data *(8 of 9)*

		0% very poor	25% poor	50% average	75% good	100% very good
TRA 4	- What cyclist facilities are available?	no cyclist facilities available	cycle racks	cycle racks and changing rooms	cycle racks, changing rooms and shower facilities	cycle racks, changing rooms, shower facilities and drying area
2550	Procurement	(5 measures divided by 5 minimum score = 0%, maximum score = 100%)				
MAT 2	- What is the scope of the procurement an materials management plan for the building?	none of: reduce demand of relevant consumables (products, materials, equipment); assess embodied impact of consumables; reduce packaging of consumables, and require suppliers to source responsibly	one of: reduce demand of relevant consumables (products, materials, equipment); assess embodied impact of consumables; reduce packaging of consumables, and require suppliers to source responsibly	two of: reduce demand of relevant consumables (products, materials, equipment); assess embodied impact of consumables; reduce packaging of consumables, and require suppliers to source responsibly	three of: reduce demand of relevant consumables (products, materials, equipment); assess embodied impact of consumables; reduce packaging of consumables, and require suppliers to source responsibly	all of: reduce demand of relevant consumables (products, materials, equipment); assess embodied impact of consumables; reduce packaging of consumables, and require suppliers to source responsibly
MAT 3	- Sustainable cleaning products, materials, equipment	none of: trained personnel, sustainable cleaning products (liquids, detergents), sustainable cleaning materials (toilet paper, paper towels), and sustainable cleaning equipment (swiffers, mops)	one of: trained personnel, sustainable cleaning products (liquids, detergents), sustainable cleaning materials (toilet paper, paper towels), and sustainable cleaning equipment (swiffers, mops)	two of: trained personnel, sustainable cleaning products (liquids, detergents), sustainable cleaning materials (toilet paper, paper towels), and sustainable cleaning equipment (swiffers, mops)	three of: trained personnel, sustainable cleaning products (liquids, detergents), sustainable cleaning materials (toilet paper, paper towels), and sustainable cleaning equipment (swiffers, mops)	all of: trained personnel, sustainable cleaning products (liquids, detergents), sustainable cleaning materials (toilet paper, paper towels), and sustainable cleaning equipment (swiffers, mops)

Table E.2 — Collecting qualitative environmental data *(9 of 9)*

		0% very poor	25% poor	50% average	75% good	100% very good
MAT 4	- Sustainable catering products, materials, equipment	none of: trained personnel, biological catering products, locally sourced catering products, and energy efficient catering equipment	one of: trained personnel, biological catering products, locally sourced catering products, and energy efficient catering equipment	two of: trained personnel, biological catering products, locally sourced catering products, and energy efficient catering equipment	three of: trained personnel, biological catering products, locally sourced catering products, and energy efficient catering equipment	all of: trained personnel, biological catering products, locally sourced catering products, and energy efficient catering equipment
MAT 5	- Sustainable document management products, materials, equipment	none of: recylced paper, double-sided printing, secure printing, and MFDs (as opposed to seperate printer, copier, fax)	one of: recylced paper, double-sided printing, secure printing, and MFDs (as opposed to seperate printer, copier, fax)	two of: recylced paper, double-sided printing, secure printing, and MFDs (as opposed to seperate printer, copier, fax)	three of: recylced paper, double-sided printing, secure printing, and MFDs (as opposed to seperate printer, copier, fax)	all of: recylced paper, double-sided printing, secure printing, and MFDs (as opposed to seperate printer, copier, fax)
MAT 6	- To what extent are suppliers environment conscious?	none of: environmental policy in place, EMS in place, responsible sourcing policy in place, and …	one of: environmental policy in place, EMS in place, responsible sourcing policy in place, and …	two of: environmental policy in place, EMS in place, responsible sourcing policy in place, and …	three of: environmental policy in place, EMS in place, responsible sourcing policy in place, and …	all of: environmental policy in place, EMS in place, responsible sourcing policy in place, and …

Annex F
(normative)

Collecting service quality data

Table F.1 on the following pages provides an overview of service quality data to be collected when engaging in a benchmarking exercise. Ideally, this data collection template is completed by a representative focus group which includes the appropriate building manager. Data is collected on a building by building basis.

To arrive at an average score for each category, it is important to add scores from each sub-category and divide by the total number of sub-categories.

Table F.1 — Collecting service quality data *(1 of 6)*

		0% very poor	25% poor	50% average	75% good	100% very good
1300	**Cleaning**	(10 measures divided by 10: minimum score = 0%, maximum score = 100%)				
1310	Routine Cleaning					
	- workspace frequency	once a week	2 times a week	3 times a week	4 times a week	every day
	- toilets frequency	< twice a week	2-3 times a week	every day	twice a day	> twice a day
	- staff supervision	poor supervision by area managers		acceptable supervision by area managers		expert supervision by area managers
	- cleaning standard	very inconsistent and of poor standard (noticeably unclean on inspection)	usually inconsistent and below standard (numerous issues to action on inspection)	consistently to an acceptable standard (issues to action on inspection)	usually consistent of a high standard (few issues to action on inspection)	always consistent and of high standard (very clean on inspection)
	- customer service	cleaning staff are impolite and not very helpful	cleaning staff are polite, but not very helpful	cleaning staff are polite and helpful	cleaning staff are proactive in offering service	cleaning staff go above and beyond the call of duty
	- staff presentation	cleaning staff look untidy and are often out of uniform		cleaning staff look acceptable and occasional exceptions are promptly rectified		cleaning staff look tidy and are always in uniform
	- user complaints	monthly complaints / staff base >20%	monthly complaints / staff base = 15-20%	monthly complaints / staff base = 10-15%	monthly complaints / staff base = 5-10%	monthly complaints / staff base <5%
1320	Special Cleaning					
	- flooring frequency (deep cleaning)	<2x per annum	2x per annum	3x per annum	4x per annum	>4x per annum
	- partitions frequency	<2x per annum	2x per annum	3x per annum	4x per annum	>4x per annum
	- windows frequency	<2x per annum	2x per annum	3x per annum	4x per annum	>4x per annum

Table F.1 *(2 of 6)*

		0% very poor	25% poor	50% average	75% good	100% very good
1400	**Workplace**	(10 measures divided by 10: minimum score = 0%, maximum score = 100%)				
1410	Occupier Fit out and Adaptations					
	- office concept	open plan office		combi office		cellular office
	- workstations	bookable stations		informal stations		allocated stations
	- flex-factor	<0,7	0,7-0,9	0,9-1,1	1,1-1,3	>1,3
1420	Space Management					
	- churn rate	<20%	20-40%	40-60%	60-80%	churn >100%
	- FM staffing	no staff on-site		part-time staff on-site		sufficient staff on-site
1430	Furniture					
	- quality	basic furniture (bottom-end)		standard furniture (mid-range)		luxury furniture (top-end)
	- adjustability	non-adjustable		manually adjustable		electrical adjustable
	- standardisation	80-100%	60-80%	40-60%	20-40%	0-20%
1440	Art works					
	- quality	locally recognised art works		nationally recognised art works		internationally recognised art works
	- quantity	<1 work / 100 FTE		1 work / 50-100		>1 work / 50 FTE

Table F.1 *(3 of 6)*

		0% very poor	25% poor	50% average	75% good	100% very good
2120	Security	(5 measures divided by 5: minimum score = 0%, maximum score = 100%)				
	- operating times	<9 h a day	9-12 h a day	12-15 h a day	15-18 h a day	>18 h a day
	- staff functions	securing the building		securing the building and its contents		securing the building and its as well as staff and visitors
	- customer service	security staff are impolite and not very helpful	security staff are polite, but not very helpful	security staff are polite and helpful	security staff are proactive in offering service	security staff go above and beyond the call of duty
	- staff presentation	security staff look untidy and are often out of uniform		security staff look acceptable and occasional exceptions are promptly rectified		security staff look tidy and are always in uniform
	- user complaints	annual complaints / staff base >20%	annual complaints / staff base = 15-20%	annual complaints / staff base = 10-15%	annual complaints / staff base = 5-10%	annual complaints / staff base <5%

Table F.1 *(4 of 6)*

		0% very poor	25% poor	50% average	75% good	100% very good
2210	Reception and contact centre	(5 measures divided by 5: minimum score = 0%, maximum score = 100%)				
	- number of desks	no reception desks		one reception desk		multiple reception desk
	- operating times	<9 h a day	9-10 h a day	10-11 h a day	11-12 h a day	>12 h a day
	- staff functions	visitor intake only		visitor intake and customer helpdesk		visitor intake, customer helpdesk and hostess function
	- customer service	receptionist staff are impolite and not very helpful	receptionist staff are polite, but not very helpful	receptionist staff are polite and helpful	receptionist staff are proactive in offering service	receptionist staff go above and beyond the call of duty
	- staff presentation	receptionist staff look untidy and are often out of uniform		receptionist staff look acceptable and occasional exceptions are promptly rectified		receptionist staff look tidy and are always in uniform

Table F.1 *(5 of 6)*

		0% very poor	25% poor	50% average	75% good	100% very good
2220	Catering and Vending	(10 measures divided by 10: minimum score = 0%, maximum score = 100%)				
	- catering offering	cold sandwiches, beverages and snacks only	choice of soup, cold sandwiches, beverages and snacks	set hot meal, cold sandwiches, beverages and snacks	2-course hot meals with multiple options per course as well as cold sandwiches, beverages and snacks	3-course hot meals with multiple options per course as well as cold sandwiches, beverages and snacks
	- restaurant capacity	<20% of staff can be seated at any one time	20-40% of staff can be seated at any one time	40-60% of staff can be seated at any one time	60-80% of staff can be seated at any one time	>80% of staff can be seated at any one time
	- operating times	<2 hours a day	2-4 hours a day	4-6 hours a day	6-8 hours a day	>8 h a day
	- general uptake	<20% of personnel	20-40% of personnel	40-60% of personnel	60-80% of personnel	>80% of personnel
	- catering standard	very inconsistent and of poor standard (poor quality on inspection)	usually inconsistent and below standard (numerous issues to action on inspection)	consistently to an acceptable standard (issues to action on inspection)	usually consistent of a high standard (few issues to action on inspection)	always consistent and of high standard (good quality on inspection)
	- customer service	catering staff are impolite and not very helpful	catering staff are polite, but not very helpful	catering staff are polite and helpful	catering staff are proactive in offering service	catering staff go above and beyond the call of duty
	- staff presentation	catering staff look untidy and are often out of uniform		catering staff look acceptable and occasional exceptions are promptly rectified		catering staff look tidy and are always in uniform
	- vending offering	hot beverages only	hot and cold beverages	hot and cold beverages as well as snacks	hot and cold beverages as well as snacks and sandwiches	hot and cold beverages, snacks and sandwiches as well as fresh fruits
	- service points	<1 per 500 FTE	1 per 200-500 FTE	1 per 100-200 FTE	1 per 50-100 FTE	>1 per 50 FTE
	- user complaints	quarterly complaints / staff base >20%	quarterly complaints / staff base = 15-20%	quarterly complaints / staff base = 10-15%	quarterly complaints / staff base = 5-10%	quarterly complaints / staff base <5%

Table F.1 *(6 of 6)*

		0% very poor	25% poor	50% average	75% good	100% very good
2420	Document Management	(10 measures divided by 10: minimum score = 0%, maximum score = 100%)				
	- MFDs	one-sided printing and copying	double-sided printing and copying	double-sided printing and copying as well as sorting and stapling	double-sided printing and copying, sorting and stapling as well as scanning and faxing	double-sided printing and copying, sorting and stapling, scanning and faxing as well as folding and binding
	- service points	<1 per 100 FTE	1 per 75-100 FTE	1 per 50-75 FTE	1 per 25-50 FTE	>1 per 25 FTE
	- trouble shooting	malfunctions and problems generally not fixed within a week	malfunctions and problems generally fixed within a week	malfunctions and problems generally fixed within 48 h	malfunctions and problems generally fixed within 24 h	malfunctions and problems generally fixed within 12 h
	- reproduction offering	printing, copying, laminating and binding	plus wide-format printing and specialist binding	plus desktop publishing and document imaging	plus design services	plus booklet making and mailing/enclosing
	- customer service	reproduction and archive staff are impolite and not very helpful	reproduction and archive staff are polite, but not very helpful	reproduction and archive staff are polite and helpful	reproduction and archive staff are proactive in offering service	reproduction and archive staff go above and beyond the call of duty
	- post room	sorting of mail	plus distribution of mail	plus collection of mail	plus courier collections and deliveries	pus special delivery services
	- service points	<1 per 500 FTE	1 per 200-500 FTE	1 per 100-200 FTE	1 per 50-100 FTE	>1 per 50 FTE
	- distribution and collection	as and when needed during the week	every other day	once a day	twice a day	as and when needed during the day
	- customer service	post room staff are impolite and not very helpful	post room staff are polite, but not very helpful	post room staff are polite and helpful	post room staff are proactive in offering service	post room staff go above and beyond the call of duty
	- user complaints	quarterly complaints / staff base >20%	quarterly complaints / staff base = 15-20%	quarterly complaints / staff base = 10-15%	quarterly complaints / staff base = 5-10%	quarterly complaints / staff base <5%

Annex G
(normative)

Collecting satisfaction data

Table G.1 on the following pages provides an overview of satisfaction data to be collected when engaging in a benchmarking exercise. Ideally, this data collection template is completed by a representative sample of individual end-users. Data is collected on a building by building basis.

To arrive at an average score for each category, it is important to add scores from each sub-category and divide by the total number of sub-categories.

Table G.2 on the pages thereafter provides an overview of satisfaction data that can be collected as part of a wider employee satisfaction survey.

Table G.1 — Collecting satisfaction data *(1 of 5)*

	To what extent are you satisfied with:	0% very poor	25% poor	50% average	75% good	100% very good
1100	**Space (accommodation)**	(10 measures divided by 10: minimum score = 0%, maximum score = 100%)				
	the functional performance of the building you are working in (e.g. no holes, leaks, drafts)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the technical condition of the building you are working in (e.g. no crooked elements, condensation, dry rot)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the finishings of the building you are working in (e.g. no damagings, impairments, discolourations)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the temperature in your building during summer?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the temperature in your building during winter?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the air quality in your building?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the lighting in your building?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the speed at which complaints/reported faults are dealt with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the availability of the service desk?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the response to service requests?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied

Table G.1 *(2 of 5)*

To what extent are you satisfied with:		**0% very poor**	**25% poor**	**50% average**	**75% good**	**100% very good**
1200	**Outdoors**	(5 measures divided by 5: minimum score = 0%, maximum score = 100%)				
	the location of the building you are working in?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the amenities in the immediate surrounding (e.g. public transport, coffee shop, lunch facility)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the parking facilities on-site (or in the immediate surrounding)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the cyclist facilities on-site (or in the immediate surrounding)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the additional space on-site (e.g. landscaping, facilities)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
1300	**Cleaning**	(5 measures divided by 5: minimum score = 0%, maximum score = 100%)				
	the cleanliness of your workspace?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the cleanliness of communal areas?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the cleanliness of toilets in your building?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the cleaning staff approach to service provision (and staff representation)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the speed at which reported cleaning complaints/faults are dealt with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied

Table G.1 *(3 of 5)*

To what extent are you satisfied with:		**0% very poor**	**25% poor**	**50% average**	**75% good**	**100% very good**
1400	**Workplace**	(5 measures divided by 5: minimum score = 0%, maximum score = 100%)				
	the layout of your work environment?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the fit out of your work environment?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the furniture in your work environment?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the plants/flowers in your work environment?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the art works in your work environment?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
2100	**HSSE**	(5 measures divided by 5: minimum score = 0%, maximum score = 100%)				
	the presence of health and safety instructions?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the clarity of health and safety instructions?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the alertness of security personnel?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the security staff approach to service provision (and staff representation)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the speed at which reported health and safety complaints/faults are dealt with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied

Table G.1 *(4 of 5)*

To what extent are you satisfied with:		**0% very poor**	**25% poor**	**50% average**	**75% good**	**100% very good**
2200	**Hospitality**	(10 measures divided by 10: minimum score = 0%, maximum score = 100%)				
	the reception staff approach to service provision (and staff representation)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the range of catering products provided in your building?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the quality of catering products provided in your building?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the pricing of catering products provided in your building?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the catering staff approach to service provision (and staff representation)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the speed at which reported catering complaints/faults are dealt with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the range of vending products provided in your building?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the quality of vending products provided in your building?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the pricing of vending products provided in your building?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the speed at which reported vending complaints/faults are dealt with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied

Table G.1 *(5 of 5)*

To what extent are you satisfied with:		**0% very poor**	**25% poor**	**50% average**	**75% good**	**100% very good**
2300	**ICT**	(5 measures divided by 5: minimum score = 0%, maximum score = 100%)				
	the hardware you are provided with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the software you are provided with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the connectivity you are provided with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the ICT staff approach to service provision (and staff representation)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the speed at which reported ICT complaints/faults are dealt with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
2400	**Logistics**	(5 measures divided by 5: minimum score = 0%, maximum score = 100%)				
	the office supplies you are provided with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the reprographics services you are provided with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the post room services you are provided with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the logistics staff approach to service provision (and staff representation)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
	the speed at which reported logistics complaints/faults are dealt with?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied

Table G.2 — Collecting satisfaction data (compact alternative)

To what extent are you satisfied with:		**0% very poor**	**25% poor**	**50% average**	**75% good**	**100% very good**
		(8 measures divided by 8: minimum score = 0%, maximum score = 100%)				
1100	**Space (accommodation)**					
	the building you are working in and its indoor climate?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
1200	**Outdoors**					
	the location of the building you are working in and its immediate surrounding?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
1300	**Cleaning**					
	the cleaning services and the cleanliness of your work environment?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
1400	**Workplace**					
	your physical work environment (layout, work spaces, furniture)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
2100	**HSSE**					
	the health and safety in your building and the security services?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
2200	**Hospitality**					
	the reception in your building and the catering and vending services?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
2300	**ICT**					
	the ICT services (connectivity, hardware, software and support)?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
2400	**Logistics**					
	the office supplies in your building and the document management services?	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied

Annex H
(informative)

Inherent complications and risks

To achieve meaningful comparison between services in different geographical locations, and especially in different jurisdictions or countries, it is important to understand that each of the factors set out below may have an impact. Additionally, there may be other risk factors such as a too ambitious or complex benchmarking operation, no clear responsibilities of the team, not enough resources for the task, or too short planning considering the difficult to involve third parties.

This impact cannot be ignored, but needs to be understood when deciding whether to use benchmarking, or which factors to benchmark, and how to assess data sources to ensure a valid comparison:

a) **National rules and regulations** (take into account: impact on labour utilisation rates; costs of labour due to minimum wage legislation; space utilisation per employee or space layout; cost of building or refurbishment; planning restrictions on building design, access or build quality; restrictions on supply chain; restrictions on materials usage)

b) **Currency exchange rates** (take into account: short term marginal difference in exchange rates; which exchange rate [e.g. buy or sell rate] is being quoted; cost of currency transactions [commission charges and so on])

c) **Taxation and VAT/TVA** (take into account: non-recoverable taxes; property taxes; transaction taxes; customs duties; risk of change in taxation rates affecting decisions; impact on organisation’s output tax position and competitiveness)

d) **Accounting rules** (take into account: different treatments of capital and operational expenditure; treatment of deferred expenditure; procedures for allocating costs across business units and locations)

e) **Rental basis and service charges** (take into account: different national practices in calculating rentablefloor area; inclusion or exclusion of costs for services in 'common parts'; inclusion or exclusion of costs for services within the tenant demise; treatment of accrual for long term capital expenditure by the landlord; inclusion or exclusion of building insurances and property taxes; if property is single-tenant or multi-tenant; costs of dilapidations or other reinstatement on ease termination)

f) **Labour costs** (take into account: minimum wage legislation; compulsory pension or other on-costs; other HR costs [for example, cost of supporting works’ councils]; calibre of staff qualifications and experience]; labour efficiency; constraints on change to work force through redundancy or other costs)

g) **Level of outsourcing** (take into account: whether services are wholly in-house, out-sourced to many suppliers, or outsourced to a single main contractor; client management resources and costs; scope of outsourcing; duration of contract(s); any capital investment by the contractor [for example, in PPP situations]; responsibility for costs on termination [for example, mobilisation, redundancy payments, cost of equipment removal])

h) **Sub-letting** (take into account: responsibilities of each tenant as with rental basis and service charges above)

i) **Spare capacity** (take into account: the effect of temporarily / short-term vacant space on fixed costs; costs of sub-letting or disposal; impact on property taxes; impact on heat and light usage and costs)

j) **Effect of internal recharging** (need to ensure use the actual costs of service provision rather than the net cost to achieve comparability)

k) **Building characteristics:**

1) **footprint** (scale and shape) (take into account: impact of poor building shape or design on service costs and resource usage; impact of shape on occupancy; amount of circulation or otherwise non-usable space);

2) **age** (take into account: need to major expenditure on fabric and infrastructure; costs of updating infrastructure; costs of maintaining older fabric types and designs; impact on insulation, heating costs and so on);

3) **condition** (take into account: last refurbishment date and long term capital requirements; design impacts on energy usage and sustainability; impact on building occupiers' perceptions and end-user satisfaction);

4) **use of occupancy** (take into account: type of activity undertaken in the buildings; effect of potential alternative use; costs of adaptation for different use; any impact/inefficiency in core business resulting from the building design; provision of any non-standard services [for example health club / gymnasium / sports facilities; social facilities; restaurants; data centres or mission critical activities; specialist storage facilities; very high levels of security provision]);

5) **local environment** (take into account: impact of high concentrations of pollutants on building systems [for example, in city centres]; impact of distance on welfare services required for staff [for example, transport provision, restaurant/catering]; local climate effect on heating/cooling requirements);

6) **location** (take into account: impact on operating costs [for example, of being in Central Business District]; effect of location on support staff availability [for example, problems of recruiting low-skilled staff in middle class areas; costs of staff getting to the location; competition for labour from other industries or businesses; labour pool demographics]);

7) **scope of facility management activity** (take into account: scope of services should be comparable; service quality requirement should be comparable).

Annex I
(informative)

Benchmarking examples

As highlighted in Clause 4 there are many benchmarking forms possible. The content of benchmarking may be: strategic, process, or performance. The measure of benchmarking may be: quantitative, qualitative, or a combination of both. The comparator of benchmarking may be: internal, competitor, or cross-sector. The domain of benchmarking may be: local, national, or international. The frequency of benchmarking may be: one-off, periodical, or continuous

Focussing on performance benchmarking this annex provides a number of benchmarking examples in which measure, comparator, domain, and frequency differ from one example to another.

The following example highlights a financial (measure), internal (comparator), national (domain), and periodic (frequency) benchmark. As can be seen in Figure I.1, Facility Management Costs per workstation are decreasing from 2008 onwards. Considering the data in more detail, Space & Infrastructure Costs have gone up by 9 % from 2006 to 2010 whilst People & Organisation Costs have gone down by 11 %. The former is predominantly caused by an increase in Space Costs of 11,6 % over the last five years. The latter is predominantly caused by a decrease in ICT Costs of 16,6 % over the same period.

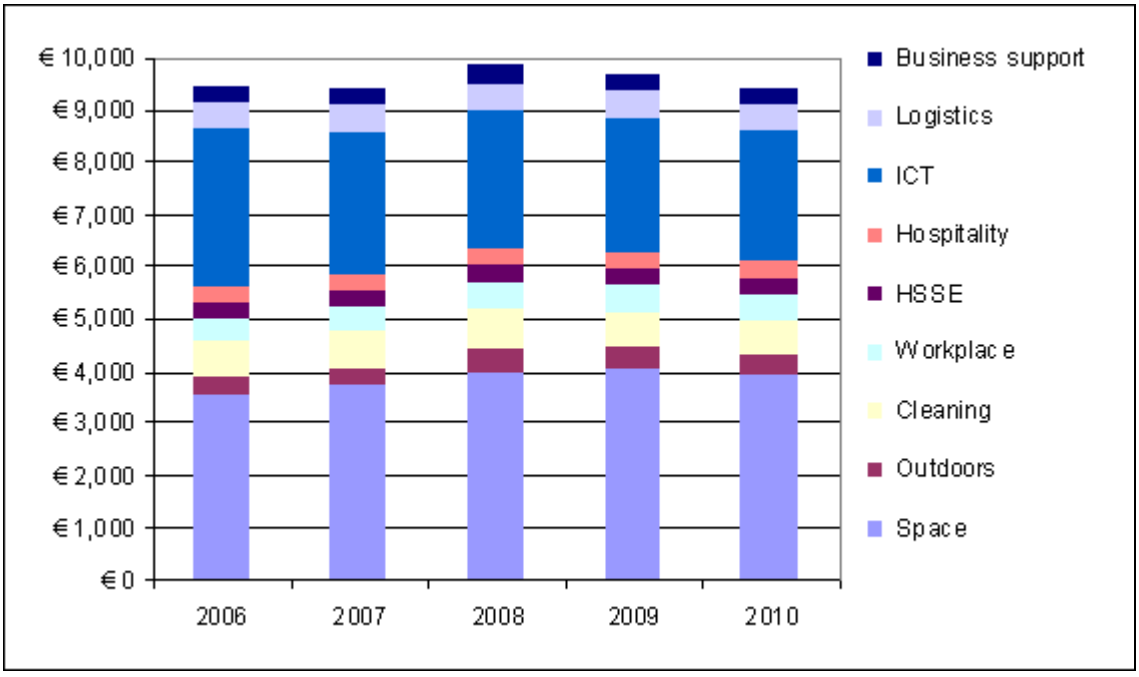

Figure I.1 — Benchmarking financial performance (example)

Such information can serve a variety of purposes, such as:

— Budget review and planning;

— Alignment with corporate objectives;

— Assessment of cost effectiveness.

The following example highlights a spatial (measure), competitor (comparator), international (domain), and one-off (frequency) benchmark. As can be seen in Figure I.2, space per workstation is lowest in the United Kingdom (16,2 m^2 on average for the three organisations) and highest in Austria (21,2 m^2 on average). Also, our organisation uses more space per workstation compared to the competitors in the United Kingdom and the Netherlands.

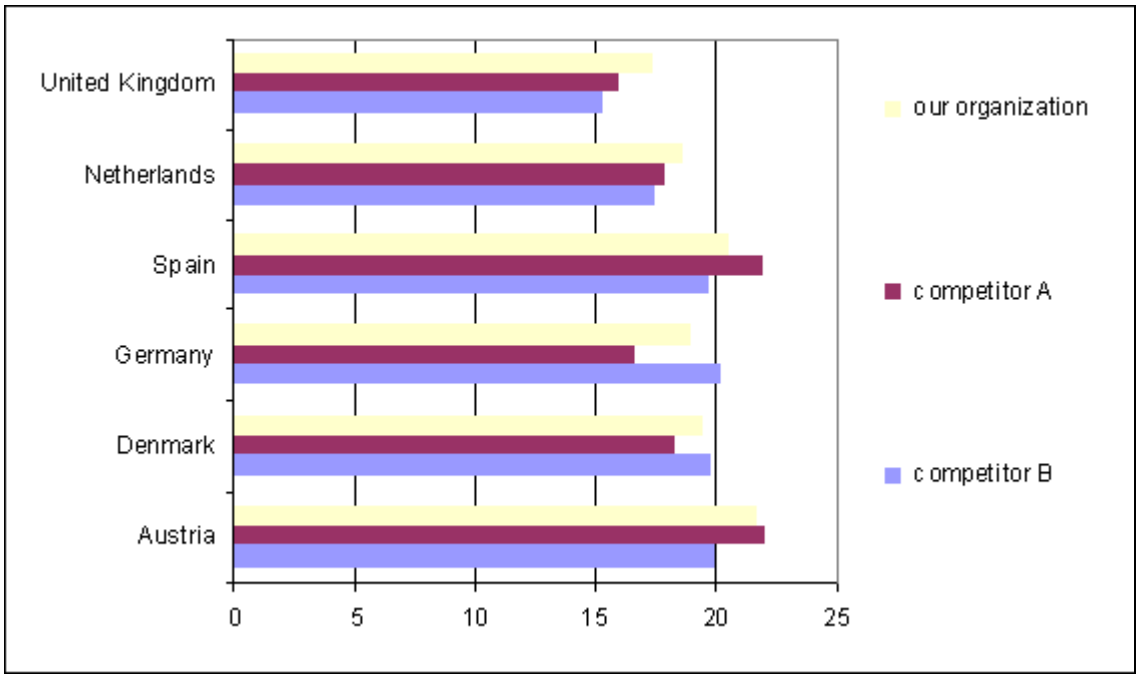

Figure I.2 — Benchmarking spatial performance (example)

Such information can serve a variety of purposes, such as:

— Identification of improvement options;

— Identification of best practices;

— Evaluation of floor space usage.

The following example highlights an environmental (measure), internal (comparator), national (domain), and one-off (frequency) benchmark. As can be seen in Figure I.3, the building scores pretty good in terms of materials and waste, but significantly less good in terms of water and pollution.

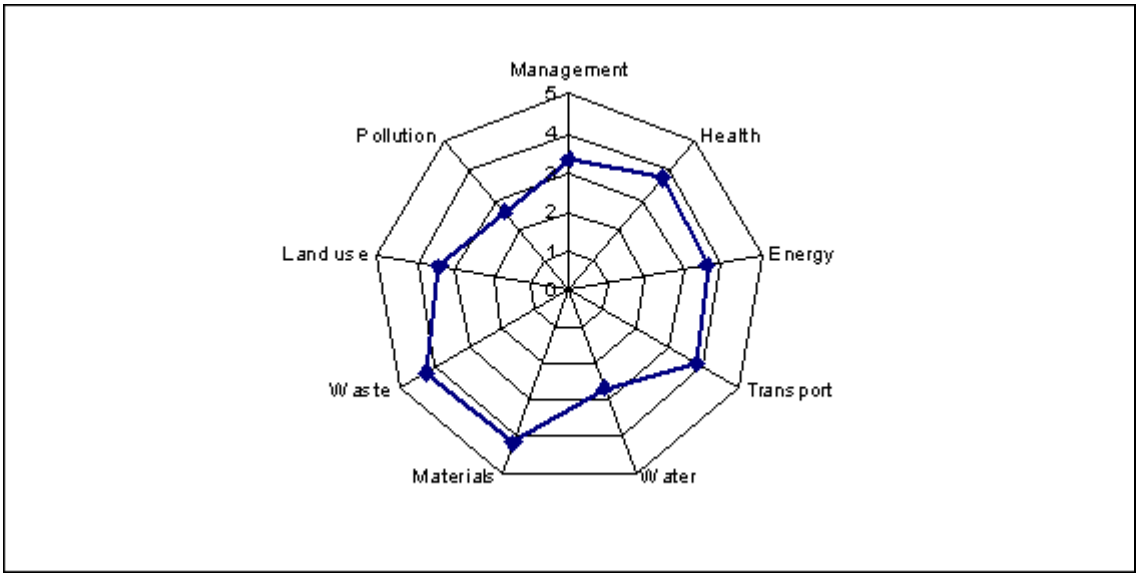

Figure I.3 — Benchmarking environmental performance (example)

Such information can serve a variety of purposes, such as:

— Prioritisation of problem areas;

— Verification of legal compliance;

— Appraisal of environmental impacts.

The following example highlights a satisfaction (measure), cross-sector (comparator), regional (domain), and one-off (frequency) benchmark. As can be seen in Figure I.4, our organisation outperforms the benchmark in terms of space, workplace, and logistics, but underperforms in terms of outdoors, cleaning, and ICT.

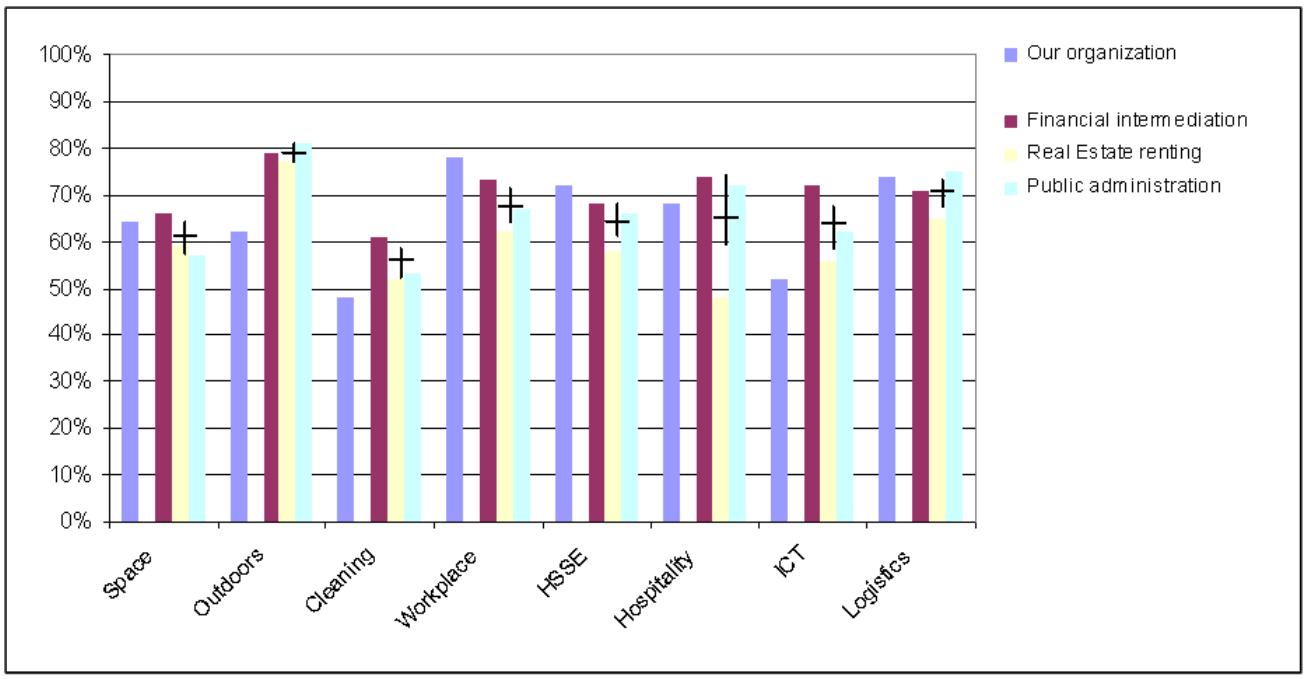

Figure I.4 — Benchmarking satisfaction performance (example)

Such information can serve a variety of purposes, such as:

— Prioritisation of problem areas;

— Identification of best practices;

— Evaluation of end-user satisfaction.

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