TESTING PROTOCOL

ASSESSMENT REPORT

Version 2.0

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2.1: To raise capacity for better management of energy in public buildings at transnational level
Work package: WP3 TESTING
Activity: 3.3 Test of transnational assessment methods and indicators
Deliverable: 3.3.1 – Testing Protocol

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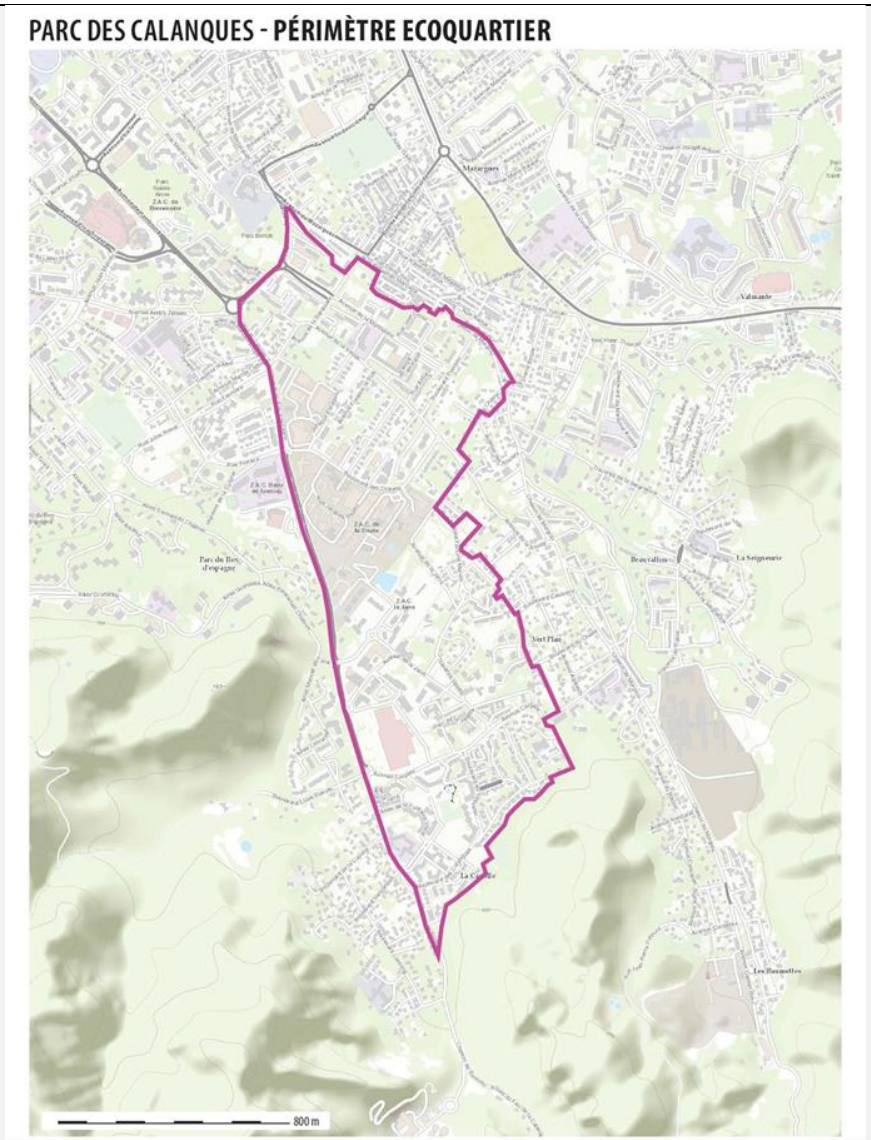
URBAN SCALE ASSESSMENT

1. INITIATION

General information on the selected urban area	
City	*Marseille*
Brief description	*The pilot neighborhood Soude, Jarre, Baou de Sormiou is located south of Marseille. The area is an urban renewal one that recently joined the Eco-neighborhood national label under the name Parc des Calanques.*
Size (ha)	*118*
Residential population	11 000 inhabitants
Average building density (total m2/land surface m2)	31

Plan of the urban area	
Significant pictures	
Description of the adjacent areas	*The neighborhood located at the boarder of the city by the hills where the national Parc of the Calanques begins. The rest of adjacent areas are also dense urban*

	fabric.
Property ownership	*Mixed, with a third of social housing*
Social and economic context	*There are complex social and economic issues that led to this area to enter a urban renewal programme.*
Legal /administrative boundary lines	*The area belongs to Marseille*
Energy supply infrastructure	*Gas and electricity grid*
Relevance of the surrounding infrastructures	-
Reference stakeholders in retrofit process	*AMP, Aix-Marseille Provence Metropolitan area* *DREAL PACA, State representation in the region* *MRU, Marseille Renouvellement Urbain, dedicated organisation to urban renewal*
Other significant information	*It is the first neighborhood in urban renewal to enter the national EcoNeighbourhood approach.*

2. PREPARATION

a. SNTool structure

In this section it is described the structure of your SNTool.
Please, enter here the list of the criteria selected from the CESBA MED Generic Framework ay Urban scale.
Please remember that KPIs are mandatory.

A- BUILT URBAN SYSTEMS	
A1	**Built urban systems**
A1.7	*Conservation of land*

B- ECONOMY	
B3	**Cost and investment**
B3.3	*Operating energy costs for public buildings*

C- ENERGY	
C1	**Non renewable energy**
C1.1	*Total final thermal energy consumption for building*
C1.4	*Total final electrical energy consumption for building operations*
C1.7	*Total primary energy demand for building operations*
C2	**Renewable and decarbonised energy**
C2.1	*Share of renewable energy on-site, relative to total final energy consumption for building operations*
C2.7	*Share of renewable energy on-site, relative to final electric energy consumption*

D- ATMOSPHERIC EMISSIONS	
D1	**Atmospheric emissions**
D1.2	*Total GHG emissions from primary energy used in building operations*

E- NON - RENEWABLE RESOURCES	
E1	**Potable water, stormwater and greywater**
E1.6	*Consumption of potable water for residential population*
E1.7	*Consumption of potable water for public non-residential building systems*

F- ENVIRONMENT	
F1	**Environmental impacts**
F1.3	*Recharge of groundwater through permeable paving or lanscaping*
F2	**Outdoor environmental quality**
F2.3	*Ambient air quality with respect to particulates <10µg (PM10) over a one-year period*

G- SOCIAL ASPECTS	
G2	**Traffic and mobility services**
G2.1	*Performance of the public transport system*
G2.4	*Quality of pedestrian and bicycle network*
G4	**Public and private facilities and services**
G4.2	Availability and proximity of key services
G6	**Management and community involvment**
G6.3	Community involvment in urban plannning activities

b. SNTool criteria selection rationale

In this section PPs must motivate the selection of the criteria that have been included in the SNTool. Why the criterion has been included? The reason could depend on regional policies, targets, specific characteristics of the territory (i.e. touristic area, agricultural area, etc.….).

A- BUILT URBAN SYSTEMS	
CRITERION	**REASON/MOTIVATION**
A1.7	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable neighborhood assessment – despite the different local approaches.*

B- ECONOMY	
CRITERION	**REASON/MOTIVATION**
B3.3	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable neighborhood assessment – despite the different local approaches.*

C- ENERGY	
CRITERION	**REASON/MOTIVATION**
C1.1 C1.4 C1.7 C2.1 C2.7	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable neighborhood assessment – despite the different local approaches.*

D- ATMOSPHERIC EMISSIONS	
CRITERION	**REASON/MOTIVATION**
D1.2	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable neighborhood assessment – despite the different local approaches.*

E- NON - RENEWABLE RESOURCES

CRITERION	REASON/MOTIVATION
E1.6 E1.7	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable neighborhood assessment – despite the different local approaches.*

F- ENVIRONMENT

CRITERION	REASON/MOTIVATION
F1.3 F2.3	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable neighborhood assessment – despite the different local approaches.*

G- SOCIAL ASPECTS

CRITERION	REASON/MOTIVATION
G2.1 G2.4 G4.2 G6.3	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable neighborhood assessment – despite the different local approaches.*

c. SNTool weights rationale

In this section PPs must motivate the value of weights assigned to issues, categories and criteria. Why the weight of a particular issue or criterion is higher (or lower)? Weights should reflect the regional political priorities.

ISSUES WEIGHTS

ISSUE	WEIGHTING FACTOR (1 to 3)	MOTIVATION
A- BUILT URBAN SYSTEMS	2	Default values from CESBA MED PP were used
B- ECONOMY	2	Default values from CESBA MED PP were used
C- ENERGY	3	Default values from CESBA MED PP were used
D- ATMOSPHERIC EMISSIONS	3	Default values from CESBA MED PP were used
E- NON - RENEWABLE RESOURCES	2	Default values from CESBA MED PP were used
F- ENVIRONMENT	2	Default values from CESBA MED PP were used
G- SOCIAL ASPECTS	1	Default values from CESBA MED PP were used

CATEGORIES WEIGHTS

Note: the categories weight results automatically from the criteria level

CATEGORIES	WEIGHT (%)
A1- Urban Structure and Form	6,3
A2- Transportation Infrastructure	12,6
SUB TOTAL	18,9
B1- Economic Structure and Value	0
B2- Economic activity	0
B3- Cost and Investment	5
SUB TOTAL	5
C1- Non-renewable energy	22
C2- Renewable and Decarbonised energy	8,5
C3- Energy recycling and storage	0
SUB TOTAL	30,5
D1- Atmospheric emissions	23,6
SUB TOTAL	23,6
E1- Potable water, stormwater and greywater	3,4
E2- Solid and Liquid Wastes	0
E3- Resource consumption, retention and maintenance	0
SUB TOTAL	3,4
F1- Environmental impacts	3,8
F2- Outdoor environmental quality	5,7

F3- Ecosystems and landscapes	0
SUB TOTAL	9.4
G1- Safety and Accessibility	0
G2- Traffic and Mobility Services	4,7
G3- Communication services	0
G4- Public and private facilities and services	1,9
G5- Local Food	0
G6- Management and community involvement	2,5
G7- Society, Culture and Heritage	0
G8- Perceptual	0
SUB TOTAL	9,1
TOTAL	100

CRITERIA WEIGHTS

CESBA MED GF-U, sheet WeightsA: B= Impact of the Potential Effect (1-3), C=Extent of potential effect (1-5), D=Duration of potential effect (1-5)

CESBA MED SNTool, sheet WeightsB: LF = Local Factor

A- BUILT URBAN SYSTEMS

A1- Urban Structure and Form

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
A1.7 Conservation of land	*6,3*	*2*	*2*	*4*	*0*	*Default values from CESBA MED PP were used*
TOTAL		6,3				

B- ECONOMY

B3-Cost and investment

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
B3.3 Running costs energy for public buildings	*5*	*1*	*2*	*3*	*1,8*	*Default values from CESBA MED PP were used*
TOTAL		5				

C- ENERGY

C1-Non-renewable energy

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
C1.1 Total final thermal energy consumption for building operations	*9,4*	*3*	*2*	*3*	*5,4*	*Default values from CESBA MED PP were used*
C1.4 Total final electrical energy consumption for building operations	*6,3*	*3*	*2*	*2*	*3,6*	*Default values from CESBA MED PP were used*
C1.7 Total primary energy demand for building operations.	*6,3*	*3*	*2*	*2*	*3.6*	*Default values from CESBA MED PP were used*

C2 Renewable and Decarbonised energy						
CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
C2.1 Share of thermal energy generation from on-site renewable sources on final thermal energy	*5,7*	*3*	*2*	*3*	*8,1*	*Default values from CESBA MED PP were used*
C2.7 Share of electric energy generation from on-site renewable sources on final electric energy	*2,8*	*1*	*3*	*3*	*2*	*Default values from CESBA MED PP were used*
TOTAL		30,5				

D- ATHMOSPHERIC EMISSIONS						
D1- Athmospheric emissions						
CRITERION	**Weight (%)**	**B**	**C**	**D**	**L.F.**	**L.F. REASON/MOTIVATION**
D1.2 Total GHG Emissions from primary energy used in building operations	*23,6*	*3*	*5*	*5*	*33,9*	*Default values from CESBA MED PP were used*
TOTAL		23,6				

E- NON-RENEWABLE RESOURCES						
E1- Potable water, stormwater and greywater						
CRITERION	**Weight (%)**	**B**	**C**	**D**	**L.F.**	**L.F. REASON/MOTIVATION**
E1.6 Consumption of potable water for residential population	*2,5*	*3*	*2*	*2*	*3.6*	*Default values from CESBA MED PP were used*
E1.7 Consumption of potable water for non-residential building systems.	*0,8*	*1*	*2*	*2*	*1.2*	
TOTAL		3,4				

F- ENVIRONMENT						
F1-Environmental impacts						
CRITERION	**Weight (%)**	**B**	**C**	**D**	**L.F.**	**L.F. REASON/MOTIVATION**
F1.3 Recharge of groundwater through permeable paving or landscaping	*3,8*	*1*	*2*	*3*	*1.8*	*Default values from CESBA MED PP were used*
F2-Outdoor environmental quality						
F2.3 Ambient air quality with respect to	*5,7*	*3*	*3*	*3*	*8.1*	*Default values from CESBA MED PP were used*

particulates <10 mu (PM10) over a one-year period.						
TOTAL		9,4				

G- SOCIAL ASPECTS						
G2- Traffic and Mobility Services						
CRITERION	**Weight (%)**	**B**	**C**	**D**	**L.F.**	**L.F. REASON/MOTIVATION**
G2.1 Performance of the public transport	*2,8*	*3*	*2*	*3*	*5.4*	*Default values from CESBA MED PP were used*
G2.4 Quality of pedestrian and bicycle network	*1,9*	*2*	*2*	*3*	*3.6*	*Default values from CESBA MED PP were used*
G4 - Public and private facilities and services						
G4.2 Availability and proximity of key public human services	*1,9*	*2*	*2*	*3*	*3.6*	*Default values from CESBA MED PP were used*
G6 - Management and community involvement						
G6.3 Community involvement in urban planning activities	*2,5*	*2*	*2*	*1*	*4.8*	*Default values from CESBA MED PP were used*
TOTAL		9,1				
TOTAL		100				

d. SNTool benchmarks rationale

In this section PPs must motivate the value of benchmarks assigned to the different criteria for score zero (minimum acceptable performance) and for score 5 (excellent and ideal performance). The value of indicators corresponding to score zero is usually depends on regulations, standards or a typical performance in the region. Please keep in mind that score 3 represents a best practice performance. Score 5 is an excellent performance.

A- URBAN STRUCTURE AND FORM				
CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	RATIONALE
A1.7 Conservation of land	*The total area of undeveloped land considered to be of value for ecological or agricultural purposes by relevant authorities, as a percent of the total local area.*	%	*0: 15%* *3 : 20%* *5: 30%*	Results of a study by the agricultural Chamber for the local master plan + report on ecological continuities led by Marseille municipality

B- ECONOMY				
CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	RATIONALE
B3.3 Running costs energy for public buildings	Running cost of energy aggregated	Euro/m^2.year	*0: 14*	Hypothesis to establish the values of practices: a gymnasium of 2700 m² built with a high energy level, and a nursery of 900 m² new
			3 : 7 *5: 3,5*	Mid value

C- ENERGY				
CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	RATIONALE
C1.1 Total final thermal energy consumption for building operations	Aggregated annual total final thermal energy consumption / gross floor area of all buildings	kWh/m2/year	*0: 40* *3 : 15* *5: 0*	*Adret consultant return on experience*
C1.4 Total final electrical energy consumption for building operations	Aggregated annual total final electric energy consumption / Total gross floor area of all buildings	kWh/m2/year	0 : 12	*Adret consultant return on experience*

			3 : 3 5 : 0	
C1.7 Total primary energy demand for building operations.	Buildings total primary energy consumption / local minimum value	kWh/m2/year	0 : 40 3 : 15 5 : 0	Levels from the future national building regulation called E+C- (Energy+ Carbon -) The levels depend on the building typology and constraints (geographic…)
C2.1 Share of thermal energy generation from on-site renewable sources on final thermal energy	Share of renewable thermal energy in final thermal energy consumptions	%	0 : 25 3 : 80 5 : 100	*Adret consultant return on experience*
C2.7 Share of electric energy generation from on-site renewable sources on final electric energy	Share of renewable electric energy in final electric energy consumptions	%	0 : 25 3 : 100 5 : 200	Adret consultant return on experience

D- ATMOSPHERIC EMISSIONS

CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	RATIONALE
D1.2 Total GHG Emissions from primary energy used in building operations	CO2 equivalent emissions per useful internal floor area per year	kg CO2 eq./m2/yr	0 : 20 3 : 10 5 : 5	Regulation label

E- NON-RENEWABLE RESOURCES

CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	RATIONALE
E1.6 Consumption of potable water for residential population	Water consumption per occupant	m_3 per occupant *yr	0 : 40 3 : 30 5 : 20	From study of TRIBU-ADEME
E1.7 Consumption of potable water for non-residential building systems	Water consumption per m^2	m_3 per occupant *yr	0 : 5 3 : 3 5 : 2	From study of TRIBU-ADEME

F- ENVIRONMENT

CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	RATIONALE
F1.3 Recharge of groundwater through	Permeable area / total area	%	0 : 20 3 : 50	AURA Montpellier

permeable paving or landscaping			5 : 70	
F2.3 Ambient air quality with respect to particulates <10 mu (PM10) over a one-year period.	Number of days exceeding the daily limits in a year	n	0 : 30 3 : 18,6 5 : 11	ATMO Sud

G- SOCIAL ASPECTS				
CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	RATIONALE
G2.1 Performance of the public transport service	Percentage of inhabitants that are within 400 meters walking distance of at least one public transportation service stop.	%	0 : 50 3 : 90 5 : 100	Indi
G2.4 Quality of pedestrian and bicycle network	Total walkway meters of dedicated pedestrian paths and meters of bicycle path per 100 inhabitants.	m/100 inhabitants	0 : 15 3 : 30 5 : 40	Study written by Frédéric Héran-CLERSE-CNRS pour le CVTC et la FUB - January 2011 – lines dedicated to soft compared to all lines (%)
G4.2 Availability and proximity of key public human services	Percentage of inhabitants that are within 800 meters walking distance of at least 3 key services	%	0 : 30 3 : 75 5 : 100	Indi
G6.3 Community involvement in urban planning activities	Level of involvement of users in urban planning	Level	0 : Symbolic participation (Arnstein correspondence: information and consultation): consultation (public register, survey ...) 3 : Shared diagnosis (Correspondence Arnstein: Degrees of citizen power): Methodology of shared diagnosis, call to a specialized provider, survey (s), Workshops of construction and validation of the diagnosis 5 : Co-decision (Arnstein Correspondence: Degrees of Citizen Power): Methodology of the process, call for a specialized	

	service provider, dedicated workshops, existence of scenarios for discussion, evolution of the project according to citizen feedback Source : Sherry Arnstein, Jegou & Chelzen, QDM approach

e. SNTool Criteria Specifications

In this section PPs must indicate for each selected criterion:

3. *Information source: The source of the data/information that will be used to characterize the value of the indicator. Example: monitored data, measured data, statistic data, models and simulation, studies, data banks, etc.*
4. *Assessment method: Short and concise description of the assessment method used to verify the value of indicators. Example: calculation steps, data analysis process, monitoring procedure, content of a study, use of statistic data, etc.*
5. *Standards: technical documents taken as reference for the assessment method.*

A- BUILT URBAN SYSTEMS			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
A1.7 Conservation of land	The total area of undeveloped land considered	*Information source*	*Local study*
		Assessment method	*1. Determine the area of the neighborhood.* *2. Determine the undeveloped area of land that is considered by authorities to be of ecological and agricultural value.* *3. Calculate the ratio between the undeveloped area and the area of the neighborhood.*
		Standard	*Default values*

B- ECONOMY			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
B3.3 Running costs energy for public buildings	Running cost of energy aggregated	*Information source*	*Models and simulation*
		Assessment method	In the calculation it is possible to use real or estimated costs. The calculation has to take in account one full year of operation.
		Standard	Sum of the running energy costs of each building in the area up to an aggregated running costs energy value. The total cost must be normalized per the total indoor useful area of buildings.

C- ENERGY			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
C1.1 Total final thermal energy	Aggregated annual total final thermal	*Information source*	*Models and simulation*

consumption for building operations	energy consumption / gross floor area of all buildings	*Assessment method*	Estimated data: 1. Calculate the annual total final thermal energy consumption for building operations (heating, cooling, domestic hot water), in kWh, for each building in the local area. 2. Calculate the aggregated annual total final thermal energy consumption for all buildings. 3. Calculate: Aggregated annual total final thermal energy consumption / Total gross area of all buildings. Calculations are based on EN 13790 using the quasi-steady state monthly method
		Standard	*ec.europa.eu/energy/en/topics/energy-efficiency/buildings* *https://www.iea.org/publications/freepublications/.../buildings_certification.pdf* *www.theicct.org/sites/default/files/.../ICCTupdate_EU-95gram_jan2014.pdf* *NF EN ISO 52016 Performance énergétiques des bâtiments*
C1.4 Total final electrical energy consumption for building operations	Aggregated annual total final electric energy consumption / Total gross floor area of all	Information source	*Models and simulation*
		Assessment method	Use of Estimated data: 1. Calculate the annual total final electric energy consumption for building operations (heating, cooling, ventilation, auxiliaries, domestic hot water and lighting), in kWh, for each building in the local area (i.e. residential and non-residential). 2. Calculate the aggregated annual total final electric energy consumption for all buildings. 3. Calculate: aggregated annual total final electric energy consumption / total gross area of all buildings Calculations are based on EN 13790 using the quasi-steady state monthly method.
		Standard	The terminals are computable with the national thermal regulation for this final energy indicator assuming that all the energy of the building is electric (even heating and domestic hot water). Soone : the new RE2020 regulation
C1.7 Total primary energy demand for building operations.	Buildings total primary energy consumption / local minimum value	Information source	*Models and simulation*
		Assessment method	1. Calculate the annual total primary energy consumption of non-renewable energy for building operations (heating, cooling, ventilation, auxiliaries, domestic hot water and lighting), in kWh/m2 of useful internal floor area for each building in the local area (i.e. residential and non-residential). 2. Calculate urban area total primary energy consumption as the weighted mean value of total primary energy consumption over the

			floor surfaces of all buildings in the area. 3. Calculate: Buildings total primary energy consumption / local minimum value x 100
		Standard	Calculations are based on EN 13790
C2.1 Share of thermal energy generation from on-site renewable sources on final thermal energy	Share of renewable thermal energy in final thermal energy consumptions	Information source	*Models and simulation*
		Assessment method	Estimated data Calculate the annual total final thermal energy consumption for building operations (heating, cooling, domestic hot water), in kWh, for each building in the local area (i.e. residential and non-residential) including renewables, if applicable, in the existing condition. Calculate the aggregated annual total thermal final energy consumption for all buildings. Calculate the annual total final thermal energy consumption for building operations (heating, cooling, domestic hot water), in kWh, for each building in the local area (i.e. residential and non-residential) from on-site renewable energy sources. Calculate the aggregated annual total final thermal energy consumption from on-site renewable energy sources. Calculate: Aggregated annual total final thermal energy consumption from on-site renewable energy sources/ Aggregated annual total final thermal energy consumption.
		Standard	Calculations are based on EN 13790.
C2.4 Share of renewable energy on-site, on total primary energy consumptions for buildings operation	Share of renewable energy in primary energy consumptions	Information source	Models and simulation
		Assessment method	1. Calculate the annual total primary energy consumption for building operations (heating, cooling, domestic hot water and lighting), in kWh, for each building in the local area (i.e. residential and non-residential) including renewables, if applicable, in the existing condition. 2. Calculate the aggregated annual total primary energy consumption for all buildings. 3. Calculate the annual total primary energy consumption for building operations (heating, cooling, domestic hot water and lighting), in kWh, for each building in the local area (i.e. residential and non-residential) from on-site renewable energy sources, if applicable. 4. Calculate the aggregated annual total primary energy consumption from on-site renewable energy sources for all buildings. 5. Calculate: Aggregated annual total primary energy consumption / Aggregated annual total primary energy consumption without the renewables.
		Standard	Calculations are based on EN 13790

		Information source	Models and simulation
C2.7 Share of electric energy generation from on-site renewable sources on final electric energy	Share of renewable electric energy in final electric energy consumptions	Assessment method	Use of Estimated data: 1. Calculate the annual total final electric energy consumption for building operations (heating, cooling, domestic hot water, ventilation, lighting, auxiliaries), in kWh, for each building in the local area (i.e. residential and non-residential) including renewables, if applicable, in the existing condition. 2. Calculate the aggregated annual total electric final energy consumption for all buildings. 3. Calculate the annual total final electric energy consumption for building operations (heating, cooling, domestic hot water, lighting, ventilation, auxiliaries), in kWh, for each building in the local area (i.e. residential and non-residential) from on-site renewable energy sources, if applicable. 4. Calculate the aggregated annual total final electric energy consumption from on-site renewable energy sources. 5. Calculate: Aggregated annual total final electric energy consumption from on-site renewable energy sources/ Aggregated annual total final electric energy consumption. Calculations are based on EN 13790 using the quasi-steady state monthly method.
		Standard	Calculations are based on EN 13790

D- ATMOSPHERIC EMISSIONS			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
D1.2 Total GHG Emissions from primary energy used in building operations	CO2 equivalent emissions per useful internal floor area per year	*Information source*	Models and simulation
		Assessment method	*For each building in the area calculate the emissions of CO2 eq. with the following formula:* *E=[∑ (Qfuel,i x LHVi × Kem,i)+ (Qel × Kem,el)+(Qdh × Kem,dh)]* *Qfuel,I = annual quantity of i-th fuel (m3 or Kg)* *Qel = annual quantity of electric energy from the grid (kWh)* *Qdh = annual quantity of energy from district heating/cooling (kWh)* *LHVi = lower heating value of the i-th fuel (kWh/m3 or kWh/Kg)* *Kem,i = CO2 eq. emission factor of the i-th fuel (Kg CO2/kWh)* *Kem,i = CO2 eq. emission factor of the electric energy from the grid (Kg CO2/kWh)* *Kem,i = CO2 eq. emission factor of energy from district heating/cooling (Kg CO2/kWh)* *Calculate the aggregated annual total CO2*

			equivalent emissions from all buildings / total useful internal floor area of all buildings. *Aggregate GHG emissions from primary energy (including fossil fuel used to generate electricity and used directly in building equipment) for all purposes in building operations in the local area, in kg of CO2-eq per 1000 m2 of surface area per year.*
		Standard	*National Values of Emissions References Related to the Energy Mix*

E- NON-RENEWABLE RESOURCES			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
E1.6 Consumption of potable water for residential population	Water consumption per occupant	*Information source*	Models and simulation
		Assessment method	*Calculate the estimated consumption of potable water used in residential households in the local area, in Litres per person per day (Lpp*yr.)* *1. For each building calculate the total water consumption. The principle of the per occupant water consumption calculation for taps, toilets and showers.* *2. Calculate the aggregated annual total water consumptions from all residential buildings / number of residentials' buildings occupants.*
		Standard	Tool "Water calculator"
E1.7 Consumption of potable water for non-residential building systems	Water consumption per occupant	Information source	Models and simulation
		Assessment method	1) For each non-residential public building, collect the monitored annual water consumptions for building operation. The consumption data must be estimated taking the average over 3 years period (m 3). 2) Sum the annual water consumption of each building up to an aggregated annual total water consumption (m 3 /year). 3) Estimate the area of public buildings considered for the calculation. 4) Calculate the indicator's value as: aggregated annual total water consumption / area of public buildings.
		Standard	Tool "Water calculator"
E2.3 Solid waste	Volume of materials	Information	Studies, data banks

from construction and demolition projects retained in the area for re-use or recycling	that may be re-used or recycled from the local area on the total solid waste from construction and demolition of building projects	source	
		Assessment method	1. Identify the annual volume of construction/demolition waste generated over a 3-year period; 2. Sample the waste stream to identify the origin (type of building) for each sample and the approximate proportion of materials that could have been recycled or re-used; 3. Estimate the volume of material that could be re-used or recycled from future projects of the same type; 4. Aggregate the volume of materials that may be re-used or recycled per year from the local area, based on current rates of construction and demolition; 5. Calculate the volume of materials that may be re-used or recycled from the local area on the total solid waste from construction and demolition projects.
		Standard	Life cycle analysis tools, 2020 environmental regulation with carbon level assessment
E3.2 Consumption of non-renewable material resources for construction of infrastructure	Quantity of materials from non-renewable material resources for construction or renovation of infrastructures in the local area over a 5-year period	Information source	Studies, data banks
		Assessment method	Calculate the aggregate consumption of non-renewable material resources for construction or renovation of infrastructure in the local area over a 5-year period, in tonnes per 1,000 m2 of surface area (i.e roads, bridges, etc).
		Standard	Life cycle analysis tools, 2020 environmental regulation with carbon level assessment

F- ENVIRONMENT			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
F1.3 Recharge of groundwater through permeable paving or landscaping	Permeable area / total area	*Information source*	Area development plans
		Assessment method	*1. Calculate the size (Sa) of the urban area (m2).* *2. Calculate the size of the surfaces with a different paving or occupied by constructions in the urban area (i.e green areas, surfaces paved with asphalt, surfaces occupied by buildings, etc.).* *3. Calculate the real permeability of soil considering the permeability coefficient of each surface.* *4. Examples of permeability coefficients:* *Grass = 1* *Gravel = 0,9* *Permeable interlocking concrete pavement = 0,3* *Asphalt = 0* *5. Value of the indicator = (Sa,perm/Sa) ×100*

		Standard	*Local context of the local plan of urban planning and habitat (PLU-H).*
F2.3 Ambient air quality with respect to particulates <10 mu (PM10) over a one-year period.	Number of days exceeding the daily limits in a year	Information source	Measured data
		Assessment method	1. Daily test air samples in accordance with national or regional procedures over a period of one year; 2. Evaluate the number of days exceeding the daily limits in a year.
		Standard	Observatory of the quality of the air www.atmo-auvergnerhonealpes.fr

G- SOCIAL ASPECTS			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
G2.1 Performance of the public transport service	Percentage of inhabitants that are within 400 meters	*Information source*	Measured data
		Assessment method	*1. Calculate the percentage of the inhabitants in the area that are within 400 meters walking distance of at least one public transportation service stop (bus, tram, metro).* *Note: to be considered valid for the calculation, a stop must have a daily total service frequency of at least 20 trips.*
		Standard	*Global Platform for Sustainable Cities - Urban Sustainability Framework*
G2.4 Quality of pedestrian and bicycle network	Total walkway meters of dedicated	Information source	Estimated data
		Assessment method	1. Estimation of the number of inhabitants in the area 2. Calculation of the walkway meters of dedicated pedestrian paths in the area (A) 3. Calculation of the meters of bicycle paths in the area (B) 4. Calculation of the indictor's value as (A+B)/(100 inhabitants) Bicycle paths and pedestrian paths have to be safe and physically separated to traffic roads to be considered in the calculation. A walkway adjacent to a traffic road is not acceptable.
		Standard	Global Platform for Sustainable Cities - Urban Sustainability Framework
G4.2 Availability and proximity of key public human	Percentage of inhabitants that are within 800	Information source	Local implementation plans
		Assessment	1. Identify locations of key services in the local area.

services		method	2. Calculate the percentage of the inhabitants that are within 800 meters walking distance from at least 3 key services. 3. Calculate the percent of residential population located within 600 m. of the 3 key human services. Key services are: 1. Education (schools, kindergartens, education centers, etc.) 2. Health center (hospitals, medical ward, medical center, etc.) 3. Law enforcement areas (police station, etc.) 4. Sport facilities 5. Food shops 6. Bank 7. Post office 8. Pharmacy 9. Shopping center 10. Culture and leisure
		Standard	Global Platform for Sustainable Cities - Urban Sustainability Framework sustainable urban development in the Paris region: the light of participatory observation ", Development Sustainable Development and Territories [Online], Vol. 6, No. 2 | September 2015, posted on September 30, 2015 "
G6.3 Community involvement in urban planning activities	Level of involvement of users in urban planning	Information source	Local informations from owner, developer
		Assessment method	Using the Sherry Arnstein ladder on citizen participation, rate the level of users' involvement on planning. The height rungs and 3 degrees of the ladder are provided on the picture.
		Standard	"Sherry Arnstein, article original paru en 1969 ""A Ladder Of Citizen Participation"", Journal of the American Institute of Planners 35 (4), p. 216-24: http://www.participatorymethods.org/sites/participatorymethods.org/files/Arnstein%20ladder%201969.pdf"

6. DIAGNOSIS

a. Performance scores

Evaluation of the actual performance and relative level of sustainability of the urban area.
PPs have to indicate the scores reached. Evaluation of the actual performance and relative level of sustainability of the urban area.
PPs have to indicate the scores reached.

	SCORE
A – BUILT URBAN SYSTEMS	same scores as the results in the following table
A1 – Urban Structure and Form	
A1.7 – Conservation of land	-1
B – ECONOMY	
B3 – Cost and Investment	
B3.3 – Running costs energy for public buildings	No data available
C – ENERGY	
C1 – Non-renewable energy	
C1.1 – Total final thermal energy consumption for building operations	No data available
C1.4 Total final electrical energy consumption for building operations	No data available
C1.7 Total primary energy demand for building operations.	No data available
C2 –Renewable and decarbonized energy	
C2.1 Share of thermal energy generation from on-site renewable sources on final thermal energy	No data available
C2.7 Share of electric energy generation from on-site renewable sources on final electric	No data

energy	available
D – ATMOSPHERIC EMISSIONS	
D1 – Atmospheric emissions	
D1.2 – Total GHG Emissions from primary energy used in building operations	No data available
E – NON RENEWABLE SOURCES	
E1 – Potable water, stormwater and greywater	
E1.6 – Consumption of potable water for residential population	1
E1.7 Consumption of potable water for non-residential building systems.	nda
F – ENVIRONMENT	
F1 – Environmental impacts	
F1.3 – Recharge of groundwater through permeable paving or landscaping	No data available
F2 – Outdoor environmental quality	
F2.3 Ambient air quality with respect to particulates <10 mu (PM10) over a one-year period.	0
G – SOCIAL ASPECTS	
G2 – Traffic and Mobility Services	
G2.1 – Performance of the public transport service	5
G2.4 - Quality of pedestrian and bicycle network	1,5
G4 - Public and private facilities and services	
G4.2 Availability and proximity of key public human services	5
G6 - Management and community involvement	
G6.3 - Community involvement in urban planning activities	3,5

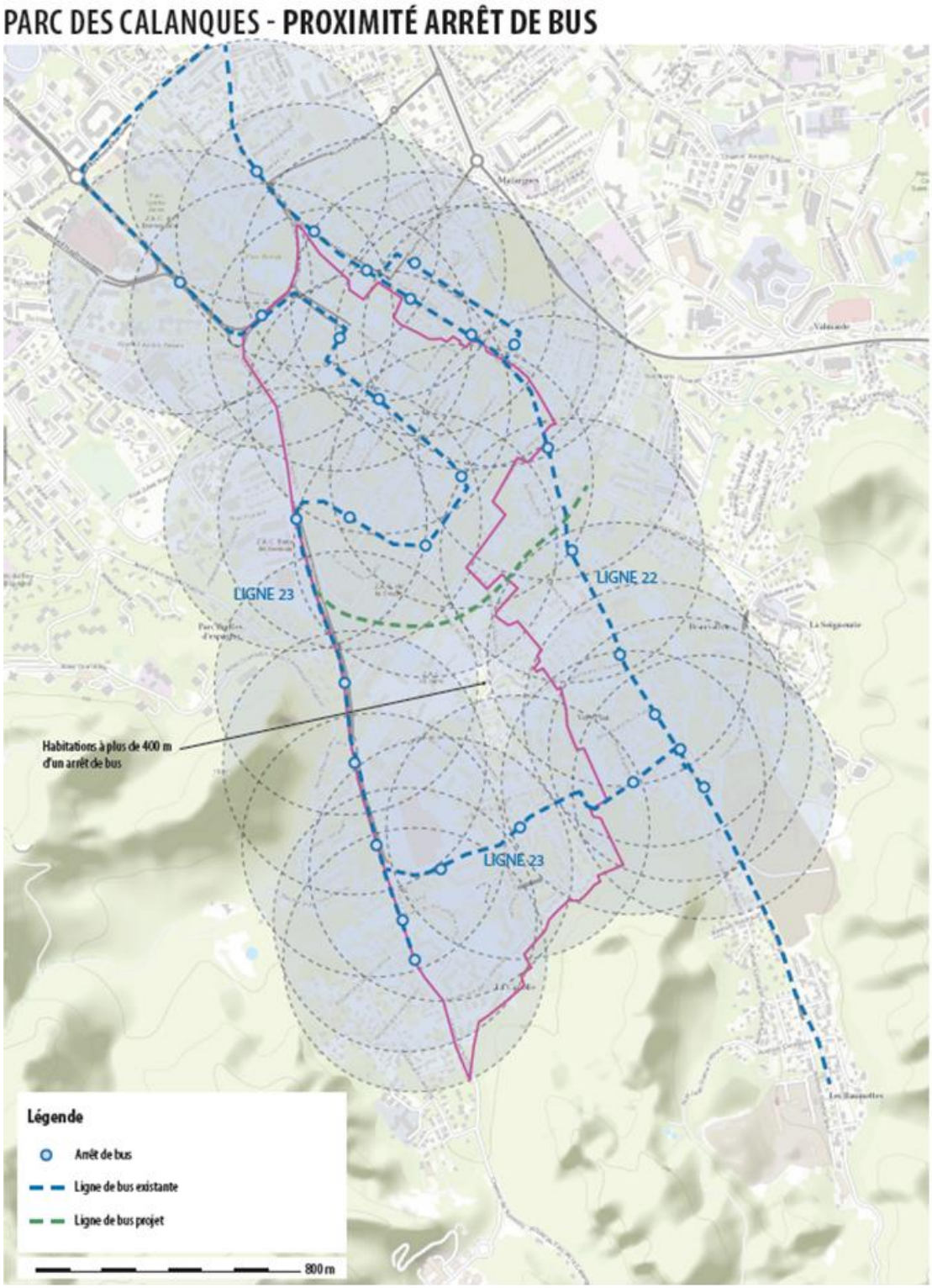
b. Key Performance Indicators value

Nota: “nda” stands for no data available
It essentially relates to buildings energy indicators. It was indeed complex at such a scale to get accurate data on such a diversity of buildings. The same issue applies to water consumption. Request to grid operators takes very long time and only provides the team with gross data.

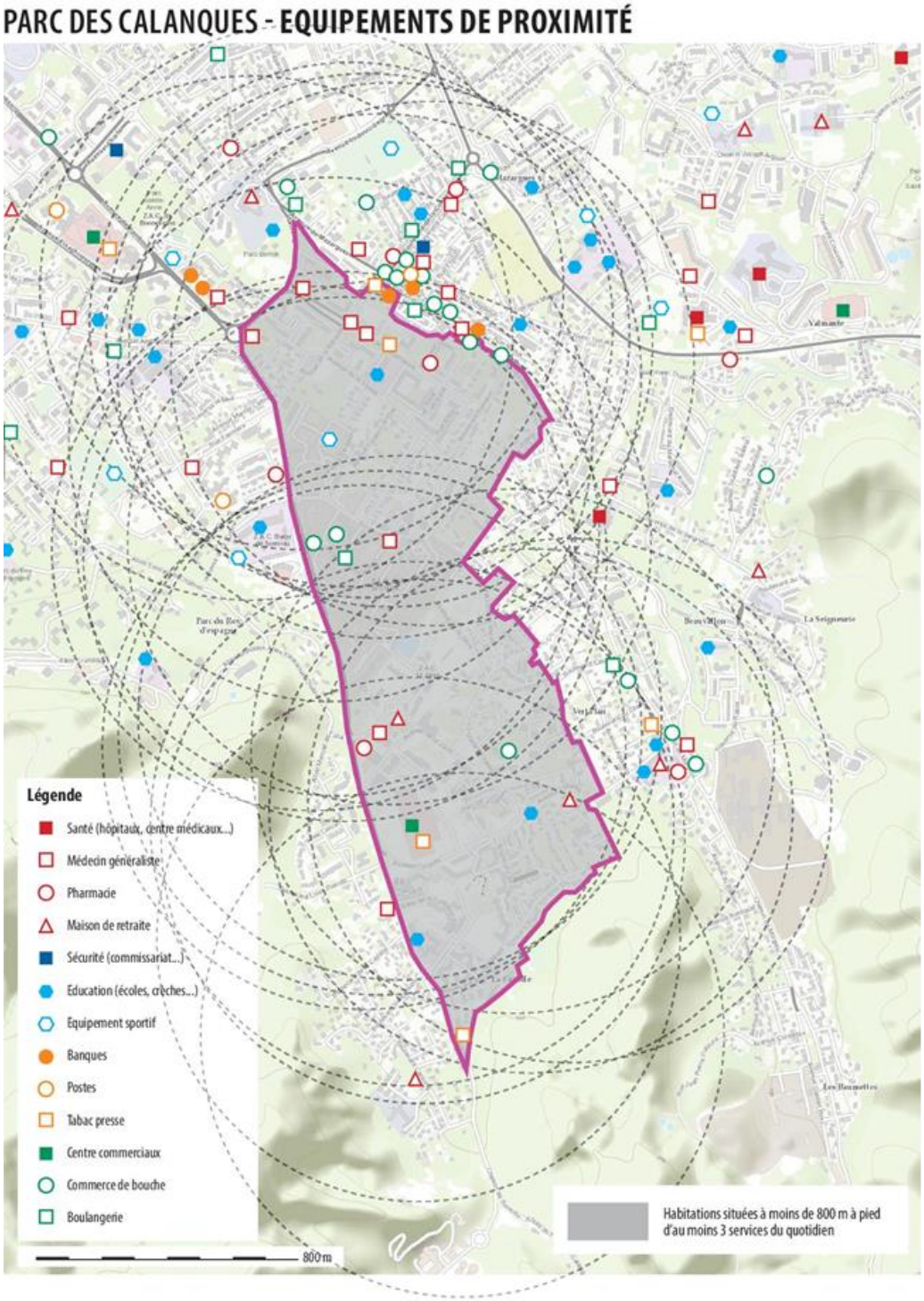
KPI	Indicator	Unit of measure	Value
A 1.7 Conservation of Land	Area of undeveloped land with ecological or agricultural value / area of the neighborhood	%	7
B.3.3 Running costs energy for public buildings	Aggregated annual operating energy cost per aggregated indoor useful floor area	Euro/m^2/year	nda
C.1.1 Total final thermal energy consumption for building operations	Aggregated annual total final thermal energy consumption per aggregated indoor useful floor area	kWh/m^2/year	nda
C.1.4 Total final electric energy consumption for building operations	Aggregated annual total final electric energy consumption per aggregated indoor useful floor area	kWh/m^2/year	nda
C.1.7 Total primary energy demand for building operations	Aggregated annual total primary energy consumption per aggregated indoor useful floor area	kWh/m2/year	nda
C.2.1 Share of thermal energy generation from on-site renewable sources on final thermal energy	Annual total thermal energy consumption from on-site renewable energy sources / annual total final thermal energy consumption	%	nda
C.2.7 Share of electric energy generation from on-site renewable sources on final electric energy	Share of renewable electric energy in final electric energy consumptions	%	nda
D.1.2 Total GHG Emissions from primary energy used in building operations	CO2 equivalent emissions per useful internal floor area per year	kg CO_2 eq./m2/yr	nda
E.1.6 Consumption of potable water for residential population	Annual potable water consumption per occupant	m^3 per occupant*yr	50
E.1.7 Consumption of potable water for non-residential building systems	Annual water consumption per occupant	m^3 /m^2	nda

F.1.3 Recharge of groundwater through permeable paving or landscaping	Area of permeable surfaces on total neighborhood area	%	nda
F.2.3 Ambient air quality with respect to particulates <10 mu (PM10) over a one year period	Number of days exceeding the daily limits in a year	days/year	8
G.2.1 Performance of the public transport	Percentage of inhabitants that are within 400 meters walking distance of at least one public transportation service stop	%	95-99
G.2.4 Quality of pedestrian and bicycle network	Total walkway meters of dedicated pedestrian paths and meters of bicycle path or “shared space” per 100 inhabitants.	m/100 inhabitants	63,43
G.4.2 Availability and proximity of key services	Percentage of inhabitants that are within 800 meters walking distance of at least 3 key services.	%	100
G.6.3 Community involvement in urban planning activities	Level of involvement of users in urban planning	Level (score)	3,5

Examples of maps of results produced by the consultancy group ADRET-IMBE is provided in the following pages.



G.2.1 Performance of the public transport – final score 5 ; mapping of data produced by ADRET-IMBE



G.4.2 Availability and proximity of key services – final score 5 – mapping of data produced by ADRET - IMBE

c. SWOT analysis

Where are we now ?

A SWOT analysis is a study undertaken to identify its strengths, weaknesses, available opportunities, and possible threats. The analysis is based on a quadrant matrix, in which strengths and weaknesses (internal factors) are presented above the x-axis, and opportunities and threats (external factors) are presented below. Typically, strengths and opportunities (positive factors) are listed on the left of the y-axis, while weaknesses and threats (negative factors) are listed on the right.

STRENGTHS	WEAKNESSES
- Provide a framework to follow projects on the long run…… - Comparability as part of the passport…… - Basis for collective work at European level…… - …… - …… - …… - ……	- Statistical databases are not always based on the same geographical frame as the project area - Over-representation of energy issues - Over-representation of buildings related issues…… - Lack of benchmarks…… - The indicator on buildings is potentially summing consumption from very different buildings – the relevancy is therefore at stake as comparability is uncertain…… - None of the energy indicators includes an assessment at the area level i.e that would include public lighting whereas it has been proven that it represents 41% of the electricity consumption of local authority…… - Data collection from energy grid operators remains long…… - ……
OPPORTUNITIES	**THREATS**
- Developing a dedicated organization within the local authority to collect and follow the data and indicators results …… - Collect information to set up benchmarks…… - ……	- Remaining relevant and adaptation to changing regulations, including energy issues : the next regulation will include all consumption…… - Materials are a growing issue, they are not integrated at the moment…… - …… - ……

7. STRATEGIC DEFINITION

a. Performance targets

“This paragraph is not relevant because our case study focuses on a retrofitting project that ended 5 years ago. Therefore, we have no information on the strategic definition and decision making process that may have occured at the time”

The overall Environmental, Social and Economic targets have to be described

Environmental targets	*Not relevant*
Social targets	*Not relevant*
Economy targets	*Not relevant*

Each partner must establish a target value for each criterion in the SNTool reflecting the overall targets..

A –		
Ax – Category name		
A1.7 – Conservation of land		Actual value
(Indicator)	(Unit of measure)	Target value
B –		
Bx – Category name		
Bx.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value
C –		
Cx – Category name		
Cx.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value
D –		
Dx – Category name		
Dx.x – Criterion name		Actual value

(Indicator)	(Unit of measure)	Target value
E –		
Ex – Category name		
Ex.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value
F –		
Fx – Category name		
Fx.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value
G –		
Gx – Category name		
Gx.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value

b. Constraints and restrictions

CONSTRAINTS / RESTRICTIONS	
Legal constraints	*Not relevant*
Technical constraints	*Not relevant*
Financial constraints	*Not relevant*
Environmental condition constraints	*Not relevant*
Stakeholder based restrictions	*Not relevant*
Other relevant constraints	*Not relevant*

8. DECISION MAKING

a. Description of scenarios

This paragraph is not relevant because our case study focuses on a retrofitting project that ended 5 years ago. Therefore, we ahve no information on the strategic definition and decision making process that may have occured at the time

NAME OF SCENARIO	DESCRIPTION
1. (i.e. Renewable Energy Synergy grid with central storage)	*Not relevant*
2. (i.e. Local cogeneration and envelope retrofit)	*Not relevant*
3.	*Not relevant*

b. Scenarios raking

i. Performance Scores

Not relevant

Issues	Current state	Scenario 1	Scenario 2	Scenario..
TOTAL SCORE				
A – Built Urban Systems				
B – Economy				
C – Energy				
D – Atmospheric				
E – Non-renewable sources				
F - Environment				
G – Social aspects				

ii. Key Performance Indicators

Not relevant

SCENARIO A			
KPI	**Indicator**	**Unit of measure**	**Value**
A 1.7 Conservation of Land	The total area of undeveloped land considered to be of value for ecological or agricultural purposes by relevant authorities, as a percent of the total local area	%	
B.3.3 Running costs energy for public buildings	Running cost of energy aggregated	Euro/m^2/year	
C.1.1 Total final thermal energy consumption for building operations	Aggregated annual total final thermal energy consumption / gross floor area of all buildings	kWh/m^2/year	
C.1.4 Total final electric energy consumption for building operations	Aggregated annual total final electric energy consumption / Total gross floor area of all buildings	kWh/m^2/year	
C.1.7 Total primary energy demand for building operations	Buildings total primary energy consumption / local minimum value	%	
C.2.1 Share of thermal energy generation from on-site renewable sources on final thermal energy	Share of renewable thermal energy in final thermal energy consumptions	%	
C.2.X Share of electric energy generation from on-site renewable sources on final electric energy	Share of renewable electric energy in final electric energy consumptions	%	
C.2.4 Share of renewable energy on-site, on total primary energy consumptions for buildings operation	Share of renewable energy in primary energy consumptions	%	
D.1.2 Total GHG Emissions from primary energy used in building operations	CO_2 equivalent emissions per useful internal floor area per year	kg CO_2 eq./m2/yr	
E.1.6 Consumption of potable water for residential population	Water consumption per occupant	m^3 per occupant*yr	
E.1.7 Consumption of potable water for non-residential building systems	Water consumption per occupant	m^3 per occupant*yr	
E.2.3 Solid waste from construction and demolition projects retained in the area for re-	Volume of materials that may be re-used or recycled from the	%	

use or recycling	local area on the total solid waste from construction and demolition projects	
E.3.2 Consumption of non-renewable material resources for construction of infrastructure	Quantity of materials from non-renewable material resources for construction or renovation of infrastructures in the local area over a 5-year period	Tonnes/ 1000 m2
F.1.3 Recharge of groundwater through permeable paving or landscaping	Permeable area / total area	%
F.2.3 Ambient air quality with respect to particulates <10 mu (PM10) over a one year period	Number of days exceeding the daily limits in a year	n
G.2.1 Performance of the public transport	Percentage of inhabitants that are within 400 meters walking distance of at least one public transportation service stop.	%
G.2.4 Quality of pedestrian and bycicle network	Total walkway kilometers of dedicated pedestrian paths and kilometers of bicycle path per 1.000 inhabitants.	Km/1000 inhabitants
G.4.2 Availability and proximity of key services	Percentage of inhabitants that are within 800 meters walking distance of at least 3 key public services	%
G.6.3 Community involvement in urbn planning activities	Level of involvement of users in urban planning	-

SCENARIO B			
KPI	**Indicator**	**Unit of measure**	**Value**
A 1.7 Conservation of Land	The total area of undeveloped land considered to be of value for ecological or agricultural purposes by relevant authorities, as a percent of the total local area	%	
B.3.3 Running costs energy for public buildings	Running cost of energy aggregated	Euro/m^2/year	
C.1.1 Total final thermal energy consumption for building operations	Aggregated annual total final thermal energy consumption / gross floor area of all buildings	kWh/m^2/year	
C.1.4 Total final electric energy consumption for building operations	Aggregated annual total final electric energy consumption / Total gross floor area of all buildings	kWh/m^2/year	
C.1.7 Total primary energy demand for building operations	Buildings total primary energy consumption / local minimum value	%	
C.2.1 Share of thermal energy generation from on-site renewable sources on final thermal energy	Share of renewable thermal energy in final thermal energy consumptions	%	
C.2.X Share of electric energy generation from on-site renewable sources on final electric energy	Share of renewable electric energy in final electric energy consumptions	%	
C.2.4 Share of renewable energy on-site, on total primary energy consumptions for buildings operation	Share of renewable energy in primary energy consumptions	%	
D.1.2 Total GHG Emissions from primary energy used in building operations	CO_2 equivalent emissions per useful internal floor area per year	kg CO_2 eq./m2/yr	
E.1.6 Consumption of potable water for residential population	Water consumption per occupant	m^3 per occupant*yr	
E.1.7 Consumption of potable water for non-residential building systems	Water consumption per occupant	m^3 per occupant*yr	
E.2.3 Solid waste from construction and demolition projects retained in the area for re-use or recycling	Volume of materials that may be re-used or recycled from the local area on the total solid waste from construction and	%	

	demolition projects	
E.3.2 Consumption of non-renewable material resources for construction of infrastructure	Quantity of materials from non-renewable material resources for construction or renovation of infrastructures in the local area over a 5-year period	Tonnes/ 1000 m2
F.1.3 Recharge of groundwater through permeable paving or landscaping	Permeable area / total area	%
F.2.3 Ambient air quality with respect to particulates <10 mu (PM10) over a one year period	Number of days exceeding the daily limits in a year	n
G.2.1 Performance of the public transport	Percentage of inhabitants that are within 400 meters walking distance of at least one public transportation service stop.	%
G.2.4 Quality of pedestrian and bycicle network	Total walkway kilometers of dedicated pedestrian paths and kilometers of bicycle path per 1.000 inhabitants.	Km/1000 inhabitants
G.4.2 Availability and proximity of key services	Percentage of inhabitants that are within 800 meters walking distance of at least 3 key public services	%
G.6.3 Community involvement in urbn planning activities	Level of involvement of users in urban planning	-

iii. Financing mechanisms evaluation

Scenario A	*Not relevant*
Scenario B	*Not relevant*
Scenario ….	*Not relevant*

9. RETROFIT CONCEPT

This paragraph is not relevant because our case study focuses on a retrofitting project that ended 5 years ago. Therefore, we ahve no information on the strategic definition and decision making process that may have occured at the time

SELECTED SCENARIO	DESCRIPTION
A. (i.e. Renewable Energy Synergy grid with central storage)	*Not relevant*

KEY ELEMENTS OF THE CONCEPT

Retrofits Strategies	Aspect 1
	Aspect 2
	Aspect 3
Performance improvement	Environment
	Society
	Economy
Financial mechanism	Aspect 1
	Aspect 2
	Aspect 3

BUILDING SCALE ASSESSMENT – BUILDING 1

1. INITIATION

General information on the selected building	
Terra Lumina	
Address	*Allée des pêcheurs, 13009 Marseille, France*
Building use	*Housing*
Owner	*Logirem (social housing landlord), collective ownership*
Year of construction	*2017*
Building method	*Concrete structure*
Number of levels above earth	*4*
Number of levels underground	*1*
Heating system	*Electricity*
Cooling system	*none*
DHW system	*Solar thermal + gas*
Ventilation system	*individual*
Lighting system	*Low consumption light bulbs and LED*
Average U value	*0,46*
Number of occupants	*85*
Hours of occupation per year	*8760*

2. PREPARATION

a. SBTool structure

In this section it is described the structure of your CESBA MED SBTool.
Please, enter here the list of the criteria selected from the CESBA MED SBT Generic Framework.

A – SITE REGENERATION AND DEVELOPMENT, URBAN DESIGN AND INFRASTRUCTURE	

B – ENERGY AND RESOURCES CONSUMPTION	
B1	**Total life cycle non-renewable energy**
B1.1	Primary energy demand
B.1.2	Delivered thermal energy demand
B.1.3	Delivered electric energy demand
B.1.5	Energy from renewable sources in total thermal energy consumption
B.1.6	Energy from renewable sources in total electric energy consumption
B.1.11	Embodied non-renewable primary energy
B3	**Use of Material**
B3.5	Recycled materials
B4	**Use of potable water, stormwater and greywater**
B4.5	Potable water consumption for indoor uses

C- ENVIRONMENTAL LOADINGS	
C1	**Greenhouse Gas Emissions**
C1.3	Global Warming potential
C3	**Solid and Liquid Wastes**
C3.1	Construction and demolition waste
C3.2	Solid waste from building operation

D- INDOOR ENVIRONMENTAL QUALITY	
D1	**Indoor Air Quality and Ventilation**
D1.4	TVOC concentration in indoor air
D1.10	Ventilation rate
D2	**Air Temperature and Relative humidity**
D.2.2	Thermal comfort index

E- SERVICE QUALITY

F- SOCIAL, CULTURAL AND PERCEPTUAL ASPECTS

G- COST AND ECONOMIC ASPECTS	
G1	**Cost and Economics**
G.1.4	*Use stage energy cost*
G.1.5	Use stage water cost

b. SBTool criteria selection rationale

In this section PPs must motivate the selection of the criteria that have been included in the regional CESBA MED SBTool. Why the criterion has been included? The reason could depend on regional policies or targets.

A - SITE REGENERATION AND DEVELOPMENT, URBAN DESIGN AND INFRASTRUCTURE	
CRITERION	**REASON/MOTIVATION**

B – ENERGY AND RESOURCES CONSUMPTION	
CRITERION	**REASON/MOTIVATION**
B1.1 Primary energy demand	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
B1.2 Delivered thermal energy demand	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
B1.3 Delivered electric energy demand	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
B1.5 Energy from renewable sources in total thermal energy consumption	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
B1.6 Energy from renewable sources in total electric energy consumption	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues*

	related to sustainable building assessment – despite the different local approaches.
B1.11 Embodied non-renewable primary energy	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
B3.5 Recycled materials	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
B4.5 Potable water consumption for indoor uses	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*

C- ENVIRONMENTAL LOADINGS

CRITERION	REASON/MOTIVATION
C1.3 Global Warming potential	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
C3.1 Construction and demolition waste	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
C3.2 Solid waste from building operation	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*

D- INDOOR ENVIRONMENTAL QUALITY

CRITERION	REASON/MOTIVATION
D1.4 TVOC concentration in indoor air	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
D1.10 Ventilation rate	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
D2.2 Thermal comfort index	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues*

	related to sustainable building assessment – despite the different local approaches.

E- SERVICE QUALITY	
CRITERION	**REASON/MOTIVATION**
/	

F- SOCIAL, CULTURAL AND PERCEPTUAL ASPECTS	
CRITERION	**REASON/MOTIVATION**
/	

G- COST AND ECONOMIC ASPECTS	
CRITERION	**REASON/MOTIVATION**
G1.4 Use stage energy cost	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*
G1.5 Use stage water cost	*KPI are mandatory; KPI were sufficient for local purposes. The motivation is to share with partners a Passport that will allow us to discuss issues related to sustainable building assessment – despite the different local approaches.*

c. SBTool weights rationale

In this section PPs must motivate the value of weights assigned to the different issues, categories and criteria. Why the weight of a particular issue or criterion is higher (or lower)? Weights should reflect the regional political priorities.

ISSUE	WEIGHT (1 to 3)	MOTIVATION
A - SITE REGENERATION AND DEVELOPMENT, URBAN DESIGN AND INFRASTRUCTURE	**1**	Default values from CESBA MED PP were used
B – ENERGY AND RESOURCES CONSUMPTION	3	Default values from CESBA MED PP were used

C- ENVIRONMENTAL LOADINGS	3	Default values from CESBA MED PP were used
D- INDOOR ENVIRONMENTAL QUALITY	2	Default values from CESBA MED PP were used
E- SERVICE QUALITY	1	Default values from CESBA MED PP were used
F- SOCIAL CULTURAL AND PERCEPTUAL ASPECTS	1	Default values from CESBA MED PP were used
G- COST AND ECONOMIC ASPECTS	2	Default values from CESBA MED PP were used

CATEGORIES	WEIGHT (%)
A1- Site regeneration and Development	0
A2- Urban design	0
A3- Project Infrastructure and Services	0
SUB TOTAL- SITE REGENERATION AND DEVELOPMENT, URBAN DESIGN AND INFRASTRUCTURE	0
B1- Total life cycle non renewable energy	60
B2- Embodied energy	0
B3- Use of materials	5
B4 – Use of water, stormwater and greywater	7
SUB TOTAL ENERGY AND RESOURCES CONSUMPTION	72
C1- Greenhouse gas emissions	15
C2- Other atmospheric emissions	0
C3- Solid and liquid waste	10
C4- Impact on project site	0
C5- Other local and regional impacts	0
SUB TOTAL- ENVIRONMENTAL LOADINGS	25
D1- Indoor air quality and ventilation	1
D2- Thermal comfort	1
D3– Visual comfort	0
D4– Acoustic comfort	0
SUB TOTAL- INDOOR ENVIRONMENTAL QUALITY	2
E1- Safety and Security	0
E2- Functionality and efficiency	0
E3- Controllability	
E4– Flexibility and adaptability	0
E5- Optimization and maintenance of operating performance	
SUB TOTAL - SERVICE QUALITY	0
F1- Social aspects	0
F2- Culture and heritage	0
F3- Perceptual	0
SUB TOTAL - SOCIAL CULTURAL AND PERCEPTUAL ASPECTS	0
G1- Cost and economics	2
SUB TOTAL - COST AND ECONOMIC ASPECTS	2
TOTAL	100

CRITERIA WEIGHTS

sheet WeightsA: B= Intensity of the Potential Effect (1-3), C=Extent of potential effect (1-5), D=Duration of potential effect (1-5)
CESBA MED SNTool, sheet WeightsB: LF = Local Factor

Not relevant

B- ENERGY AND RESOURCES CONSUMPTION

B1- Total life cycle non-renewable energy

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
B1.1 Primary energy demand	*10%*	*2*	*5*	*5*	*10%*	*Default values from CESBA MED PP were used*
B1.2 Delivered thermal energy demand	*10%*	*2*	*5*	*5*	*10%*	*Default values from CESBA MED PP were used*
B1.3 Delivered electric energy demand	*10%*	*2*	*5*	*5*	*10%*	*Default values from CESBA MED PP were used*
B1.5 Energy from renewable sources in total thermal energy consumption	*10%*	*2*	*5*	*5*	*10%*	*Default values from CESBA MED PP were used*
B1.6 Energy from renewable sources in total electric energy consumption	*10%*	*2*	*5*	*5*	*10%*	*Default values from CESBA MED PP were used*
B1.11 Embodied non-renewable primary energy	*10%*	*2*	*5*	*5*	*10%*	*Default values from CESBA MED PP were used*

B2- Electrical peak demand

B3- Use of Material

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
B3.5 Recycled materials	*5%*	*2*	*4*	*3*	*5%*	*Default values from CESBA MED PP were used*

B4- Use of potable water, stormwater and greywater

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
B4.5 Potable water consumption for indoor uses	7%	3	4	3		

C- ENVIRONMENTAL LOADINGS

C1- Greenhouse Gas Emissions

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
C1.3 Global Warming potential	*15%*	*3*	*5*	*5*	*15%*	*Default values from CESBA MED PP were used*

C3 - Solid and Liquid Wastes

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
C3.1 Construction and	5%	2	4	3	5%	*Default values from CESBA MED PP*

demolition waste						*were used*
C3.2 Solid waste from building operation	5%	2	4	3	5%	*Default values from CESBA MED PP were used*

D- INDOOR ENVIRONMENTAL QUALITY

D1- Indoor Air Quality and Ventilation

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
D1.4 TVOC concentration in indoor air	*0,5%*	3	*1*	*3*	*1%*	*Default values from CESBA MED PP were used*

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
D1.10 Ventilation rate	*0,5%*	3	*3*	*3*	*1%*	*Default values from CESBA MED PP were used*

D2 - Air Temperature and Relative humidity

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
D2.2 Thermal comfort index	*1%*	3	*1*	*3*	*1%*	*Default values from CESBA MED PP were used*

G- COST AND ECONOMIC ASPECTS

G1- Cost and Economics

CRITERION	Weight (%)	B	C	D	L.F.	L.F. REASON/MOTIVATION
G1.4 Use stage energy cost	1%	3	2	3	1%	*Default values from CESBA MED PP were used*
G1.5 Use stage water cost	*0.4%*	1	*2*	*3*	*0.4%*	*Default values from CESBA MED PP were used*

d. SBTool benchmarks rationale

In this section PPs must motivate the value of benchmarks assigned to the different criteria for score zero (minimum acceptable performance) and for score 5 (excellent and ideal performance). The value of indicators corresponding to score zero is usually depends on regulations, standards or a typical performance in the region. Please keep in mind that score 3 represents a best practice performance. Score 5 is an excellent performance.

B- ENERGY AND RESOURCES CONSUMPTION				
CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	DERIVATIONS
B1.1 Primary energy demand	Primary energy demand per area per year	*kWh/m2/y*	*0: 48* *3: 15* 5 : 0	Building regulation (2020)
B1.2 Delivered thermal energy demand	*Delivered thermal energy demand per area per year*	*kWh/m2/y*	*0: 40* *3: 15* 5 : 0	Adret consultant feedback
B1.3 Delivered electric energy demand	Delivered electric energy demand per area per year	*kWh/m2/y*	*0: 40* *3:15* *5 : 0*	Adret consultant feedback
B1.5 Energy from renewable sources in total thermal energy consumption	Share of renewable energy in final thermal energy consumptions	*%*	*0: 25* *3: 80* 5 : 100	Adret consultant feedback
B1.6 Energy from renewable sources in total electric energy consumption	*Share of renewable energy in final electric energy consumption*	*%*	*0: 10* *3: 100* 5 : 200	Adret consultant feedback
B1.11 Embodied non-renewable primary energy	*Embodied primary non-renewable energy*	*MJ/m2*	*0: 180* *3: 108* 5 : 90	values A1 to A3 on future building regulation E+C- or calcul on Elodie. Other sources from HQE performance 2011 and the guide_bio_tech_l_energie_grise_des_materiaux_et_des_ouvrages
B3.5 Recycled materials	Weight of recycled materials on total	*%*	*0: 5* *3: 45*	*Aura and Indi*

	weight of materials		5 : 75	
B4.5 Potable water consumption for indoor uses	*Water consumption per occupant per year*	*m3/occupant/year*	*0: 40* *3: 25* 5 : 20	Study Tribu/Ademe

C- ENVIRONMENTAL LOADINGS

CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	DERIVATIONS
C1.3 Global Warming potential	*CO2 equivalent emissions per area per year*	*kg CO2 eq./m2/yr*	*0: 20* *3: 10* *5: 5*	Regulatory labels
C3.1 Construction and demolition waste	Weight of waste and materials generated per 1 m2 of useful floor area demolished or constructed	*kg/m2/life cycle stage*	*0: 1400* 3: 1000 *5: 600*	Figures given in the CESBA protocol
C3.2 Solid waste from building operation	*Ratio of the number of collectable solid waste types within a 100 m distance from the building's entrance to the reference solid waste categories*	%	*0: 0,4* *3: 0,7* *5: 1*	Criteria based on local practices in dense urban areas

D- INDOOR ENVIRONMENTAL QUALITY

CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	DERIVATIONS
D1.4 TVOC concentration in indoor air	TVOC concentration in indoor air	µg/ m_3	*0: 300* *3: >200* *5 : <200*	HQE Performance
D1.10 Ventilation rate	Ventilation rate normalized per useful floor area	*l/s.m2*	*0 : 0,5* *3 : 0,7* *5 : 0,9*	*Annex B of EN15251*
D2.2 Thermal comfort index	Predicted Percentage Dissatisfied	*%*	0: 10 3: 7 5 : 5	Annex A of ISO 7730

G- COST AND ECONOMIC ASPECTS				
CRITERION	INDICATOR	UNIT OF MEASURE	BENCHMARK	DERIVATIONS
G1.4 Use stage energy cost	Energy annual cost per usable floor area	€/m2.yr	*0: 15* *3: 7* *5: 5*	*Adret consultant feedback*
G1.5 Use stage water cost	Water annual cost per usable floor area	€/m2.yr	*0: 10* *3: 5* *5: 3*	*Adret consultant feedback*

e. SBTool Criteria Specifications

In this section PPs must indicate for each selected criterion:

- *Information source: The source of the data/information that will be used to characterize the value of the indicator. Example: monitored data, measured data, statistic data, models and simulation, studies, data banks, etc.*
- *Assessment method: Short and concise description of the assessment method used to verify the value of indicators. Example: calculation steps, data analysis process, monitoring procedure, content of a study, use of statistic data, etc.*
- *Standards: technical documents taken as reference for the assessment method.*
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B- ENERGY AND RESOURCES CONSUMPTION			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
B1.1 Primary energy demand	Primary energy demand per area per year	*Information source*	*Models and simulation*
		Assessment method	*The calculation methods for each sub-indicator are given by the CEN standards that support the implementation of the Directive on the Energy Performance of Buildings (EPBD) in the European Union. The CEN standards that form the basis of the calculation methods of most national regulations are: EN 15603 (Energy performance of buildings. Overall energy consumption and definition of energy assessments) and EN ISO 52000 (Energy performance of buildings - Calculation of energy requirements for space heating and cooling). In fact, the national calculation methods used to produce the energy performance certificates can be used here. Interior lighting is not always covered by national regulations. As a result, the evaluator must clearly mention in his report that the consumptions were discarded or detail the specific method used. The reference standard for the evaluation of lighting consumption must be EN 15193. References and standards Level (s) EN 52000 (Energy performance of buildings: overall energy consumption and definition of energy assessments).*
		Standard	*The reference standard for the evaluation of lighting consumption must be EN 15193. References and standards Level (s) EN 52000 (Energy performance of buildings: overall energy consumption and definition of energy assessments). EN 52016-1*
B1.2 Delivered thermal energy demand	Delivered thermal energy demand per year	*Information source*	*Models and simulation*
		Assessment	*The calculation method for this indicator is given by the CEN standards that support the*

		method	*implementation of the Directive on the energy performance of buildings (EPBD) in the European Union.* *The CEN standards that form the basis of the calculation methods of most national regulations are: EN 52000 (Energy performance of buildings.* *Overall energy consumption and definition of energy assessments) and EN ISO 56001 (Energy performance of buildings - Calculation of energy requirements for space heating and cooling). In fact, the national calculation methods used to produce the energy performance certificates can be used here.*
		Standard	*Level (s)* *EN 52000 (Energy performance of buildings.* *Overall energy consumption and definition of energy assessments) and EN ISO 56001 (Energy performance of buildings - Calculation of energy requirements for space heating and cooling). In fact, the national calculation methods used to produce the energy performance certificates can be used here.*
B1.3 Delivered electric energy demand	Delivered electric energy demand per area per year	*Information source*	*Models and simulation*
		Assessment method	*The calculation method for this indicator is given by the CEN standards that support the implementation of the Directive on the energy performance of buildings (EPBD) in the European Union.* *The CEN standards which form the basis of the calculation methods of most national regulations are: EN 52000 (Energy performance of buildings. Overall energy consumption and definition of energy assessments) and EN ISO 56001 (Energy performance of buildings - Calculation of energy requirements for space heating and cooling). In fact, the national calculation methods used to produce the energy performance certificates can be used here.* *In the case of existing buildings, the electrical energy delivered must be evaluated preferentially from the data collected.*
		Standard	*EN 52000 (Energy performance of buildings.* *Overall energy consumption and definition of energy assessments) and EN ISO 56001 (Energy performance of buildings - Calculation of energy requirements for space heating and cooling)*
B1.5 Energy from renewable sources in total thermal energy consumption	Share of renewable energy in final thermal energy consumptions	*Information source*	*Models and simulation*
		Assessment method	*The calculation method for this indicator is given by the CEN standards which support the implementation of the Directive on the energy performance of buildings.*
		Standard	*EN 52000 (Energy performance of buildings: overall energy consumption and definition of energy assessments*

B1.6 Energy from renewable sources in total electric energy consumption	*Share of renewable energy in final electric energy consumption*	*Information source*	*Models and simulation*
		Assessment method	*The calculation method for this indicator is given by the CEN standards which support the implementation of the Directive on the energy performance of buildings.* *In the case of existing buildings, the share of renewable energy in total electricity consumption should be assessed from measurements.* *References and standards*
		Standard	*EN 52000 (Energy performance of buildings: overall energy consumption and definition of energy assessments*

B1.11 Embodied non-renewable primary energy	*Embodied primary non-renewable energy*	*Information source*	*Models and simulation*
		Assessment method	*The main reference standards for this indicator are ISO 14040/44, EN 15804 (Contribution of construction works to sustainable development - Environmental product declarations - Rules governing categories of construction products) and EN 1578 (Contribution of construction works to sustainable development - Evaluation of the environmental performance of buildings - Calculation method). The calculation of this indicator is based on the inventory of the different materials that make up the building (enkg), the nomenclature of material surveys. The document lists the quantities of different materials by type of constructive elements. The starting point is the DQE, estimated quantitative detail, which details the various elements of the project (foundations, columns ...). The nomenclature of material records describes the different materials that make up the elements of the building. Once the material survey has been completed, the indicator can be calculated. The different stages of the calculation are the following:* *-Compiling the masses of different materials; this compilation work must be at least 99% of the total mass of the building;* *-Identify the different elements of the buildings. A decomposition by material must be carried out. And the mass of each of the materials estimated:* *- Aggregate by material: the masses by type of elements must be added so as to obtain the total mass per material.Once the nomenclature of the material surveys carried out, it is possible to calculate the indicator by associating each material (in kg) with the corresponding gray energy factor (in MJ / kg).* *The total value of gray energy of non-renewable origin is then reported to the surface.*
		Standard	*EN 15978 (Contribution of construction works to sustainable development - Evaluation of the environmental performance of buildings - Calculation method)*

B3.5 Recycled materials	Weight of recycled materials on total weight of materials	*Information source*	*Models and simulation or material documents*
		Assessment method	*To calculate the value of the indicator it is necessary to compile a Bill of Materials (BoM) that is a mass-based inventory of the different materials (kg) that compose a building. The BoM is organised according to main elements that a building is composed of.* *The starting point is the Bill of Quantities (BoQ) that specifies the elements of a building (e.g. foundations, columns). The BoQ comprises different categories of elements, which can have different functional performance characteristics. A BoM differs from a BoQ in that it describes the different materials (e.g. wood, steel, aluminium) that are contained in the various building elements. Once the BoM has been compiled, it is possible to calculate the value of the indicator. The following steps should be followed in order to characterize the indicator:* *- Compile the Bill of Quantities: A BoQ is compiled which comprises the building elements accounting for at least 99% of the mass of the building.* *- Identify the basic composition of each building element. A breakdown of its constituent materials has to elaborated. The mass of each constituent material has to be estimated;* *- Aggregation by material: the mass of all constituent material should thereafter be aggregated to obtain the total mass of materials used in the building (A);* *- Identify the recycled content of each constituent material (in mass);* *- Aggregation by material: the recycled mass of all constituent materials should thereafter be aggregated to obtain the total recycled mass of materials (B) used in the building;* *- The indicator's value is calculated as B/A (total mass of recycled materials on the total mass of materials).*
		Standard	*/*
B4.5 Potable water consumption for indoor uses	*Water consumption per occupant per year*	*Information source*	*Models and simulation*
		Assessment method	*The evaluator should include sanitary equipment (ie toilets, taps and showers) that consume water (ie dishwashers, washing machines). The unit consumptions of the different devices are determined from the industrial data. The specific factors of use must be established, as well as the number of days of occupation per year.* *The principle of calculating the consumption per occupant for faucets and showers is as follows: Total consumption (L / n of day of occ.) =? Unit consumption (L / min) x utilization factor x (min / nb of day of occ.)* *The calculation is the same for the consumptions related to the use of the toilets (the flushes replace the minutes).* *For hygiene, the bases of calculation are as follows:*

		Total consumption (L / year) = unit consumption (L / m²) area (m2) × annual washing number (year - 1) *Total consumption (m3 / occupant.year) = total consumption (L / year) x 0.001 (m3 / L) + occupancy time (occupant) Non-potable water consumption must be specified (eg reclaimed water used for In the case of existing buildings, the indicator should be calculated from measured data. The measured consumption must be averaged over a period of 3 years.*
	Standard	Tool "Water calculator"

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C- ENVIRONMENTAL LOADINGS			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
C1.3 Global Warming potential	*CO2 equivalent emissions per area per year*	*Information source*	*Models and simulation*
		Assessment method	*Calculation of CO2eq emissions. for each building can be realized thanks to this formula: E = [Σ (Qfuel, i x LHVi × Kem, i) + (Qel × Kem, el) + (Qdh × Kem, dh)] / SuQfuel, I = annual quantity of i-th fuel (m3 or kg)* *Qel = annual quantity of electricity from the grid (kWh)* *Qdh = annual amount of energy from the district heating or cooling network (kWh)* *LHVi = lower calorific value of i-th fuel (kWh / m3 or kWh / kg)* *Kem, i = CO2 emission factor eq. i-th fuel (kg CO2 / kWh)* *Kem, el = CO2 emission factor eq. electrical energy from the grid (kg CO2 / kWh)* *Kem, dh = CO2 emission factor eq. of the urban heat or cold network (kg CO2 / kWh)* *Su = total usable area of buildings*
		Standard	*EN 52000 (Energy performance of buildings: overall energy consumption and definition of energy assessments)*
C3.1 Construction and demolition waste	Weight of waste and materials generated per 1 m2 of useful floor area demolished or constructed	*Information source*	*Models and simulation*
		Assessment method	*1. Design phase (based on estimates): Estimates based on surveys of existing buildings that will undergo a major renovation or whose structure will be reused (life cycle stage B5). Estimates based on building deconstruction and demolition scenarios beyond the end of building use (life cycle stages C1 / 3, D).* *2. Construction (based on data collected on site): Data of deconstruction and demolition of a building to make room for a new construction (as part of the life cycle stages) .Data of partial deconstruction of a building for on-site reuse. On-site construction data for a new building and / or prefabrication / construction of some off-site*

			elements (Life Cycle Steps A3 / 5) *3. Completion (based on estimates supported by compliant plans): Estimates based on deconstruction and demolition scenarios of the building beyond the end of use of the building (life cycle stages C1 / 3, D)* *4 Post-delivery (based on commissioning and testing)* *5. Occupation (based on measured performance)* *6.End of life (based on the envisaged performance): Details the measures taken in the design phase to facilitate the construction, reuse and recycling (stages of the C1 / 3, D life cycle).*
		Standard	*/*
C3.2 Solid waste from building operation	*Ratio of the number of collectable solid waste types within a 100 m distance from the building's entrance to the reference solid waste categories*	*Information source*	*Plans of the area with the location of containers*
		Assessment method	*The seven solid waste reference categories are:* *-Paper* *-Plastic* *-Metal* *-Glass* *-Wet waste* *-Textiles* *-Dangerous* *Identify the availability and location of dedicated containers for each of the 7 categories of solid waste. Calculate the walking distance (m) of the main building door for each sorting equipment. Evaluate which of the 7 categories of solid waste can be collected within a 50m perimeter from the main entrance of the building (A) .The value of the indicator is given by the ratio: A / 7*
		Standard	*/*

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D- INDOOR ENVIRONMENTAL QUALITY			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
D1.4 TVOC concentration in indoor air	TVOC concentration in indoor air	*Information source*	*Measured data*
		Assessment method	*The value of the indicator must be given by measurements in situ in occupancy (and after delivery). Measurements must be carried out on at least 10% of the apartments. These must be representative of the different types of housing, configurations and materials used. The samples must be taken from the living room and the smallest room of each apartment. The measuring equipment must be placed in the center of the room so as not to be too much influenced by the doors and windows and the air inlets.* *The sampling method shall be in accordance*

			with ISO 16000-6 (Indoor Air - Part 6: Determination of Volatile Organic Compounds in Indoor Air and Active Sampling Chambers on Tenax TA (R) Sorbent, Desorption thermal and gas chromatographic using MS or MS / FID) or equivalent. *In the design phase, product testing can be used as a simplified data source. These emissions must be evaluated over a period of 28 days. They must be established in accordance with standard NF EN 16516 (Construction products - evaluation of the emission of dangerous substances - Determination of indoor air emissions).* *Test data is then required from the manufacturers and suppliers of the products concerned. All tests must be on compliant finished products.* *References and Standards EN 15251 (Indoor Environment Criteria for the Design and Evaluation of the Energy Performance of Buildings covering Indoor Air Quality, Thermal, Lighting and Acoustics)* *Resources:* *VOC and housing (up to 35 substances): "In the gas phase, the chemical compounds present are mainly Volatile Organic Compounds (VOCs) containing a multitude of substances of different chemical families, and are thus detected in the indoor environments in a more significant way than some aldehydes (including formaldehyde mainly and almost systematically), certain aromatic hydrocarbons including benzene, toluene, ethylbenzene and xylenes commonly called BTEX, but also VOCs belonging to the families of terpenes, ketones, alcohols, ethers of Glycol ... "For information, the United States recommends a total VOC concentration of less than 200 µg / m3 as the comfort threshold and Germany recommends a target value of 300 µg / m3. measures of_19 "Air Atmo Alsacehttp: //www.atmo-alsace.net/medias/products/Campagne_de_measures_de_19.pdf*
		Standard	*ISO 16000-6 (Indoor Air - Part 6: Determination of Volatile Organic Compounds in Indoor Air and Active Sampling Chambers on Tenax TA (R) Sorbent, Desorption thermal and gas chromatographic using MS or MS / FID) or equivalent.* *NF EN 16516 (Construction products - evaluation of the emission of dangerous substances - Determination of indoor air emissions).*
D1.10 Ventilation rate	Ventilation rate normalized per useful floor area	*Information source*	*Estimation or measured method*
		Assessment method	*Project stage: design* *A design simulation of the building's ventilation strategy in accordance with EN 16798-7 (Energy performance of buildings - Ventilation for*

			buildings - Part 7: Calculation methods for the determination of air flow rates in buildings including infiltration) shall be used to calculate the ventilation rate. According to Directive 2010/31/EU for the Energy Performance of buildings, a ventilation system is part of the technical building system. The simulation shall therefore always form part of the performance assessment for the typical use of a building as a whole. *The ventilation rate (l/s/m2) must be calculated in all the main rooms, excluding circulation spaces and service rooms (i.e. toilets).* *The indicator must be calculated as weighted sum all the calculated ventilation rates:* *Indicator= (∑▒〖V_i×S_(u,i) 〗)/(∑▒S_(u,i))* *Vi = Ventilation rate calculated in the i-th room (l/s/m2)* *Su,i = useful floor area of the i-th room (m2)* *Project stage: post completion* *The ventilation rate shall be tested as part of the commissioning process on site according to the methods described in Annex D of EN 12599.* *The average ventilation rate shall be reported.* *Measurements can be taken at a number of points in a system. The measurements shall be made for the related ducts and/or air terminals that supply air to the internal spaces as identified according to the guidance in section 2.1.2.2 of the reference standard.*
		Standard	*EN 16798-7 - Energy performance of buildings - Ventilation for buildings - Part 7: Calculation methods for the determination of air flow rates in buildings including infiltration.* *EN 12599 - Ventilation for buildings - Test procedures and measurement methods to hand over air conditioning and ventilation systems.*
D2.2 Thermal comfort index	Predicted Percentage Dissatisfied	*Information source*	*Models and simulation or measured method*
		Assessment method	*In the design phase, PPD estimation can be done using simulation software. In the operation phase, the PPD can be measured.* *The value of the PPD shall be calculated or measured in accordance with EN 7730 (Ergonomics of the thermal environment - Analytical determination and interpretation of thermal comfort by calculation of the PMV and PPD indices and by local thermal comfort criteria) for the seasonal and winter conditions.* *The PDP must be evaluated in all main living rooms and bedrooms. In the case of a collective dwelling, each configuration and orientation must be evaluated.* *The measuring point should be placed one meter from the center of the main window of each room. The following parameters must be used to characterize the value of the PDP:*

			-clothing thermal resistance (clo) = 0.5-metabolic energy (met) = 1.2 *To evaluate the value of the PDP on a building as a whole, the PPD values estimated or measured in each room must be aggregated by a weighted average: PPDm = Sum PPDi x Au, i / Sum Au, where:* *PPDi = PPD for the coin-th* *Au, i = useful area of the i-th room*
		Standard	*EN 7730 (Ergonomics of the thermal environment - Analytical determination and interpretation of thermal comfort by calculation of the PMV and PPD indices and by local thermal comfort criteria*

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G- COST AND ECONOMIC ASPECTS			
CRITERION	**INDICATOR**	**SPECIFICATIONS**	
G1.4 Use stage energy cost	Energy annual cost per usable floor area	*Information source*	*Models and simulation*
		Assessment method	*The calculation can be based on estimates in the design phase. It must be based on consumption monitoring during the exploitation phase. The indicator can be used by different actors for different purposes. In the design phase, it can be used to estimate future operating costs. In the operating phase, it can be used to compare the real performance of the building with the estimated estimates. For existing buildings, the total annual cost of thermal and electrical consumption from energy bills must be realized over an average of 3 years.*
		Standard	*/*
G1.5 Use stage water cost	Water annual cost per usable floor area	*Information source*	*Models and simulation*
		Assessment method	*The calculation can be based on estimates in the design phase. It must be based on consumption monitoring during the operation phase. The indicator can be used by different actors for different purposes. In the design phase, it can be used to estimate future operating costs. In the operation phase, it can be used to compare the real performance of the building with the estimated estimates.* *For existing buildings, the total annual cost of water consumption from the invoices must be realized over an average of 3 years.*
		Standard	*/*

2. DIAGNOSIS

a. Performance scores

Evaluation of the actual performance and relative level of sustainability of the Building. PPs have to indicate the scores reached.

Same scores as the results in the following table

	SCORE
A - SITE REGENERATION AND DEVELOPMENT, URBAN DESIGN AND INFRASTRUCTURE	
B – ENERGY AND RESOURCES CONSUMPTION	
B1 – Total life cycle non-renewable energy	
B1.1 – Primary energy demand	1
B1.2 - Delivered thermal energy demand	2
B1.3 - Delivered electric energy demand	0,5
B1.5 - Energy from renewable sources in total thermal energy consumption	1
B1.6 - Energy from renewable sources in total electric energy consumption	-1
B1.11 – Embodied non-renewable primary energy	No data available
B3 - Use of Material	
B3.5 – Recycled materials	No data available
B4.5 – Potable water consumption for indoor uses	No data available
C- ENVIRONMENTAL LOADINGS	
C1 – Greenhouse Gas Emissions	
C1.3 – Global Warming potential	5
C3 - Solid and Liquid Wastes	
C3.1 - Construction and demolition waste	No data available
C3.2 - Solid waste from building operation	3
D- INDOOR ENVIRONMENTAL QUALITY	

D1 – Indoor Air Quality and Ventilation	
D1.4 - TVOC concentration in indoor air	No data available
D1.10 – Ventilation rate	No data available
D2 – Air Temperature and Relative humidity	
D2.2 - Thermal comfort index	Not applicable – no cooling system implemented
G- COST AND ECONOMIC ASPECTS	
G1 – Cost and Economics	
G1.4 – Use stage energy cost	No data available
G1.5 - Use stage water cost	No data available

b. Key Performance Indicators value

KPI	Indicator	Unit of measure	Value
B.1.1 Primary energy demand	Primary energy demand per internal useful floor area per year	kWh/m2/yr	48,9
B.1.2 Delivered thermal energy demand	Delivered thermal energy demand per internal useful floor area per year	kWh/m2/yr	27,6
B.1.3 Delivered electric energy demand	Delivered electric energy demand per internal useful floor area per year	kWh/m2/yr	15,1
B.1.5 Energy from renewable sources in total final thermal energy consumption	Share of renewable energy in final thermal energy consumptions	%	44
B.1.6 Energy from renewable sources in total final electric energy consumption	Share of renewable energy in final electric energy consumption	%	0

B.1.11 Embodied non-renewable primary energy	Embodied primary non-renewable energy	MJ/m^2	No data available
B.3.5 Recycled materials	Weight of recycled materials on total weight of materials	%	No data available
B.4.5 Potable water consumption for indoor uses	Potable water consumption per occupant per year	m^3/occupant/year	No data available
C.1.3 Global Warming potential	CO_2 equivalent emissions per internal useful floor area per year	kg CO_2 eq./m^2/yr	4
C.3.1 Construction and demolition waste	Weight of waste and materials generated per 1 m^2 of useful floor area demolished or constructed	kg/m^2/life cycle stage	No data available
C.3.2 Solid waste from building operation	Ratio of the number of collectable solid waste categories within a 100 m distance from the building's entrance to the reference solid waste categories	%	70
D.1.4 TVOC concentration in indoor air	TVOC concentration in indoor air	µg/ m^3	No data available
D.1.10 Ventilation rate	Ventilation rate normalized per useful floor area	l/s/m2	No data available
D.2.2 Thermal comfort index	Predicted Percentage Dissatisfied (PPD)	%	n.a – no cooling
G.1.4 Use stage energy cost	Energy annual cost per usable floor area	€/m2/yr	No data available
G.1.5 Use stage water cost	Water annual cost per usable floor area	€/m2/yr	No data available

c. Actual performance analysis

WEAKNESSES ASPECTS	*Benchmark remain linked to the typology of the building and whether it is new built or renovation – there should be one for each* *Watering use should be included – especially in Med area – in water consumption* *B3.5 : volume is more relevant than percentage*
STRENGHT ASPECTS	*Incentive for following the building performance* *Integrate the test of Level(s) tool*
POTENTIAL FOR PERFORMANCE IMPROVEMENT	*Integrating the changing in building regulations – especially regarding the integration of all energy uses* *For embodied energy : it could integrate the life cycle from cradle to grave* *D2.2 : the method is relevant for building with cooling systems*

	C3.2 : the distance could go from 100m to 50m *G indicators : precise if subscription are integrated in the calculation* *In general : improvement of consistency between urban and building indicators*

3. STRATEGIC DEFINITION

a. Performance targets

Each partner must establish a target value for each criterion in the SBTool.

The target values have to reflect the global Environmental, Social and Economic targets established at urban level.

This paragraph is not relevant as the operation took place before the project. It was delivered in 2017. Fragmentary data is available, especially there is little detailed information available on strategic definition and the related decision making process.

A - SITE REGENERATION AND DEVELOPMENT, URBAN DESIGN AND INFRASTRUCTURE		
Ax – Category name		
Ax.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value
B – ENERGY AND RESOURCES CONSUMPTION		
Bx – Category name		
Bx.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value
C- ENVIRONMENTAL LOADINGS		
Cx – Category name		
Cx.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value
D- INDOOR ENVIRONMENTAL QUALITY		
Dx – Category name		
Dx.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value
E- SERVICE QUALITY		
Ex – Category name		
Ex.x – Criterion name		Actual value

(Indicator)	(Unit of measure)	Target value
F- SOCIAL CULTURAL AND PERCEPTUAL ASPECTS		
Fx – Category name		
Fx.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value
G- COST AND ECONOMIC ASPECTS		
Gx – Category name		
Gx.x – Criterion name		Actual value
(Indicator)	(Unit of measure)	Target value

b. Constraints and restrictions

CONSTRAINTS / RESTRICTIONS	
Legal constraints	*n.a*
Technical constraints	*n.a*
Financial constraints	*n.a*
Environmental condition constraints	*n.a*
Stakeholder based restrictions	*n.a*
Other relevant constraints	*n.a*

c. Potential strategies at building scale

Synergy zones	
Energetic synergies	*n.a*
Water synergies	*n.a*
Waste synergies	*n.a*
Mobility synergies	*n.a*
Other synergies	*n.a*

4. DECISION MAKING

This paragraph is not relevant as the operation took place before the project. It was delivered in 2017. Fragmentary data is available, especially there is little detailed information available on strategic definition and the related decision making process.

a. Description of scenarios

NAME OF SCENARIO	DESCRIPTION
1. (i.e. Windows replacement, outdoor thermal insulation)	*n.a*
2. (i.e. Heat pump and solar panels)	*n.a*
3.	*n.a*

b. Scenarios raking

i. Performance Scores

Issues	Current state	Scenario 1	Scenario 2	Scenario..
TOTAL SCORE				
A – Site regeneration				
B – Energy and Resources C.				
C – Environmental Loadings				
D – Indoor Env. Quality				
E – Service Quality				
F – Social Aspects				
G – Cost and Economic Asp.				

ii. Key Performance Indicators

SCENARIO A			
KPI	**Indicator**	**Unit of measure**	**Value**
B.1.1 Primary energy demand	Primary energy demand per internal useful floor area per year	kWh/m2/yr	
B.1.2 Delivered thermal energy demand	Delivered thermal energy demand per internal useful floor area per year	kWh/m2/yr	
B.1.3 Delivered electric energy demand	Delivered electric energy demand per internal useful floor area per year	kWh/m2/yr	
B.1.5 Energy from renewable sources in total final thermal energy consumption	Share of renewable energy in final thermal energy consumptions	%	
B.1.6 Energy from renewable sources in total final electric energy consumption	Share of renewable energy in final electric energy consumption	%	
B.1.11 Embodied non-renewable primary energy	Embodied primary non-renewable energy	MJ/m^2	
B.3.5 Recycled materials	Weight of recycled materials on total weight of materials	%	
B.4.5 Potable water consumption for indoor uses	Potable water consumption per occupant per year	m^3/occupant/year	
C.1.3 Global Warming potential	CO_2 equivalent emissions per internal useful floor area per year	kg CO_2 eq./m^2/yr	
C.3.1 Construction and demolition waste	Weight of waste and materials generated per 1 m^2 of useful floor area demolished or constructed	kg/m^2/life cycle stage	
C.3.2 Solid waste from building operation	Ratio of the number of collectable solid waste categories within a 100 m distance from the building's entrance to the reference solid waste categories	%	
D.1.4 TVOC concentration in indoor air	TVOC concentration in indoor air	µg/ m^3	

D.1.10 Ventilation rate	Ventilation rate normalized per useful floor area	l/s/m2
D.2.2 Thermal comfort index	Predicted Percentage Dissatisfied (PPD)	%
G.1.4 Use stage energy cost	Energy annual cost per usable floor area	€/m2/yr
G.1.5 Use stage water cost	Water annual cost per usable floor area	€/m2/yr

SCENARIO B			
KPI	**Indicator**	**Unit of measure**	**Value**
B.1.1 Primary energy demand	Primary energy demand per internal useful floor area per year	kWh/m2/yr	
B.1.2 Delivered thermal energy demand	Delivered thermal energy demand per internal useful floor area per year	kWh/m2/yr	
B.1.3 Delivered electric energy demand	Delivered electric energy demand per internal useful floor area per year	kWh/m2/yr	
B.1.5 Energy from renewable sources in total final thermal energy consumption	Share of renewable energy in final thermal energy consumptions	%	
B.1.6 Energy from renewable sources in total final electric energy consumption	Share of renewable energy in final electric energy consumption	%	
B.1.11 Embodied non-renewable primary energy	Embodied primary non-renewable energy	MJ/m^2	
B.3.5 Recycled materials	Weight of recycled materials on total weight of materials	%	
B.4.5 Potable water consumption for indoor uses	Potable water consumption per occupant per year	m^3/occupant/year	
C.1.3 Global Warming potential	CO_2 equivalent emissions per internal useful floor area per year	kg CO_2 eq./m^2/yr	
C.3.1 Construction and demolition waste	Weight of waste and materials generated per 1 m^2 of useful floor area demolished or	kg/m^2/life cycle stage	

	constructed	
C.3.2 Solid waste from building operation	Ratio of the number of collectable solid waste categories within a 100 m distance from the building's entrance to the reference solid waste categories	%
D.1.4 TVOC concentration in indoor air	TVOC concentration in indoor air	µg/ m^3
D.1.10 Ventilation rate	Ventilation rate normalized per useful floor area	l/s/m2
D.2.2 Thermal comfort index	Predicted Percentage Dissatisfied (PPD)	%
G.1.4 Use stage energy cost	Energy annual cost per usable floor area	€/m2/yr
G.1.5 Use stage water cost	Water annual cost per usable floor area	€/m2/yr

iii. Financing mechanisms evaluation

Scenario A	*n.a*
Scenario B	*n.a*
Scenario ….	*n.a*

iv. Synergies at building level

Scenario A	*n.a*

Scenario B	*n.a*
Scenario ….	*n.a*

5. RETROFIT CONCEPT

This paragraph is not relevant as the operation took place before the project. It was delivered in 2017. Fragmentary data is available, especially there is little detailed information available on strategic definition and the related decision making process.

SELECTED SCENARIO	DESCRIPTION
A. (i.e. Heat pump and solar panels)	*n.a*

KEY ELEMENTS OF THE CONCEPT

Retrofits Strategies	Aspect 1
	Aspect 2
	Aspect 3
Performance improvement	Environment
	Society
	Economy
Financial mechanism	Aspect 1
	Aspect 2
	Aspect 3

KPIs EVALUATION

Please complete a table for each KPIs you calculated. Put a "X" on the selected score.
For each calculated KPIs please calculate the affordability and operativity score summing the score reached for each item (Level of data availability, data quality, ecc…). If you want to propose modifications (i.e. calculation procedure, unit of measure, etc.) please fill the "Proposed modification" box deleting the title "Reasons to eliminate the KPI". If you don't want to keep a KPIs, you should motivate your choice in the "Reasons to eliminate the KPI" box deleting the title "Proposed modifications".

1. URBAN SCALE KPIs

envirobatBDM with the support of the consultancy group ADRET-IMBE realized an analysis of the set of KPIs as well as individually.

Regarding the complete set of KPIs at urban scale, the conclusion is :
-Themes from sustainable development are unevenly represented : environmental aspects and in particular energy are overrepresented.
-Heat island effect, biodiversity and materials are major issues that could be integrated.
Biodiversity is a major issue in the Med area as it has been recognized as one of the 20 world "hot spot". It has also been pointed as particularly at stake because of human activities and climate change.
-56% of the indicators are related to buildings only for issues that are important nonetheless like water or energy. It would be relevant to integrate public lighting or watering at urban scale.
-CESBA Med allowed envirobatBDM to integrate GHG emissions in its assessment approach.
-CESBA Med allowed envirobatBDM to integrate local authority spendings in its assessment approach.
-For the consistency between the 2 approaches "building" and "urban", the methodology for indicators at use stage should be clarified and unified. Indeed sometimes it is asked for one year data after 3 years, and sometimes for average figures on 3 years follow-up.
-There is a need for contextualization regarding benchmarks as it is not relevant to assess the same way dense urban area or rural ones, nor it is to compare new and renewal.

Consequently, ten of the KPIs proposed where chosen - providing adaptation - for the integration to the local PACA approach *Quartiers Durables Méditerranéens*, QDM.

	KPI	Indicator			Unit of measure
x	**A.1.7 Conservation of Land**	**The total area of undeveloped land considered to be of value for ecological or agricultural purposes by relevant authorities, as a percent of the total local area**			**%**
	Level of data availability	0	1	2X	3
		Not available	Scarce	Sufficient	Easy
	Data quality	0	1	2X	3
		Poor	Sufficient	Good	Very Good
	Professional skill	0	1	2	3 X
		Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
	Time for evaluation	0	1	2 X	3
		More than one week	Less than one week	Less than one day	Less than 4 hours
	Estimated cost	0	1 X	2	3
		Low	Acceptable	High	Very Expensive
	Reliability of results	0	1	2 X	3
		Poor	Sufficient	Good	Very Good
	AFFORDABILITY AND OPERATIVITY SCORE				13
	DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Need for contextualisation : the result depends whether rural or urban

It should be open to all natural life, not only “native” ones.

KPI	Indicator			Unit of measure
B.3.3 Running costs energy for public buildings	**Running cost of energy aggregated**			**Euro/m2/year**
Level of data availability	0X	1	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0X	1	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0	1 **X**	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1	2 **X**	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0X	1	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				5
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

In use stage, only measured data should be used

Only big consumption buildings (swimming pools, hospitals) should be excluded

If the subscription is included, it should be mentioned

In education buildings, a ratio of cost per pupil is relevant – in use in BDM approach

KPI	Indicator			Unit of measure
C.1.1 Total final thermal energy consumption for building operations	**Aggregated annual total final thermal energy consumption / gross floor area of all buildings**			**kWh/m2/year**
Level of data availability	0	1 **X**	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1X	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0	1X	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good

AFFORDABILITY AND OPERATIVITY SCORE	5
DO YOU WANT TO KEEP THIS INDICATOR?	N

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

If thermal uses are considered, ventilation should be taken off

It is an interesting indicator but for buildings assessment – not consistent for a neighbourhood KPI

KPI	Indicator			Unit of measure
C.1.4 Total final electric energy consumption for building operations	**Aggregated annual total final electric energy consumption / Total gross floor area of all buildings**			**kWh/m2/year**
Level of data availability	0	1 **X**	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2 **X**	3
	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3

	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				5
DO YOU WANT TO KEEP THIS INDICATOR?				N

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

It is an interesting indicator but for buildings assessment – not consistent for a neighbourhood KPI

All electrical uses should be integrated

KPI	Indicator			Unit of measure
C.1.7 Total primary energy demand for building operations	**Buildings total primary energy consumption / gross floor area of all buildings**			**kWh/m2/year**
Level of data availability	0	1 **X**	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0X	1	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0	1X	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience

Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				5
DO YOU WANT TO KEEP THIS INDICATOR?				N

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

It is an interesting indicator but for buildings assessment – not consistent for a neighbourhood KPI

All energy uses should be integrated – in line with future building regulations

KPI	Indicator			Unit of measure
C.2.1 Share of thermal energy generation from on-site renewable sources on final thermal energy	**Share of renewable thermal energy in final thermal energy consumptions**			**%**
Level of data availability	0	1	2 **X**	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2 **X**	3
	Poor	Sufficient	Good	Very Good

Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good

AFFORDABILITY AND OPERATIVITY SCORE	5
DO YOU WANT TO KEEP THIS INDICATOR?	N

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

It is an interesting indicator but for buildings assessment – not consistent for a neighbourhood KPI

Particularly as exportations are excluded i.e the methodology can work against district heating networks

KPI	Indicator	Unit of measure
C.2.7 Share of electric energy generation from on-site renewable sources on final	**Share of renewable electric energy in final electric energy consumptions**	**%**

electric energy				
Level of data availability	0	1	2 **X**	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2X	3
	Poor	Sufficient	Good	Very Good
Professional skill	0	1	2	3X
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1	2 **X**	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				5
DO YOU WANT TO KEEP THIS INDICATOR?				N

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

It is rather an indicator for buildings assessment – not consistent for a neighbourhood KPI

Particularly as exportations are excluded i.e the methodology can work against bigger plant that would exploit the potential of the neighbourhood

KPI	Indicator			Unit of measure
D.1.2 Total GHG Emissions from energy used in building operations	**CO2 equivalent emissions per useful internal floor area per year**			**kg CO2 eq./m2/yr**
Level of data availability	0X	1	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0X	1	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0X	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0X	1	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1	2X	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				5
DO YOU WANT TO KEEP THIS INDICATOR?				N

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

It is a building indicator – not consistent with a neighbourhood approach

It would be interesting to have an analysis of energy consumption and GHG emissions related to public spaces : public lighting… (NB: public lighting represents in average 40% of a city electrical consumption)

KPI	Indicator			Unit of measure
E.1.6 Consumption of potable water for residential population	**Water consumption per occupant**			**m3 per occupant*yr**
Level of data availability	0X Not available	1 Scarce	2 Sufficient	3 Easy
Data quality	0X Poor	1 Sufficient	2 Good	3 Very Good
Professional skill	0X Formal training and significant experience	1 Formal training and applied experience	2 Formal training	3 Limited experience
Time for evaluation	0X More than one week	1 Less than one week	2 Less than one day	3 Less than 4 hours
Estimated cost	0 Low	1 Acceptable	2X High	3 Very Expensive
Reliability of results	0X Poor	1 Sufficient	2 Good	3 Very Good
AFFORDABILITY AND OPERATIVITY SCORE				5
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Interesting indicator that should include watering

KPI	Indicator			Unit of measure
E.1.7 Consumption of potable water for non-residential building systems	**Water consumption per occupant**			**m3 per occupant*yr**
Level of data availability	0X	1	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0X	1	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0X	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0X	1	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1	2X	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0X	1	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				5
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Interesting indicator that should include watering and streets cleaning

KPI	Indicator			Unit of measure
F.1.3 Recharge of groundwater through permeable paving or landscaping	**Permeable area**			**%**
Level of data availability	0 Not available	1X Scarce	2 Sufficient	3 Easy
Data quality	0X Poor	1 Sufficient	2 Good	3 Very Good
Professional skill	0 Formal training and significant experience	1X Formal training and applied experience	2 Formal training	3 Limited experience
Time for evaluation	0X More than one week	1 Less than one week	2 Less than one day	3 Less than 4 hours
Estimated cost	0 Low	1 Acceptable	2X High	3 Very Expensive
Reliability of results	0X Poor	1 Sufficient	2 Good	3 Very Good

AFFORDABILITY AND OPERATIVITY SCORE	15
DO YOU WANT TO KEEP THIS INDICATOR?	Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Data is very hard to collect for private parcels

The benchmark could be contextualised to have different figures depending on the density

KPI	Indicator			Unit of measure
F.2.3 Ambient air quality with respect to particulates <10 mu (PM10) over a one year period	**Number of days exceeding the daily limits in a year**			**n**
Level of data availability	0	1 **X**	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1 X	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0 X	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0 X	1	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1	2 X	3
	Low	Acceptable	High	Very

				Expensive
Reliability of results	0	1	2 **X**	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				13
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

The answers are given for the proposed methodology i.e dedicated measures.

Alternatively air quality agencies can provide figures from modelisation

Interviews of experts highlighted the danger of PM2,5 ; it might be relevant to consider those in the future of the Passport

KPI	Indicator			Unit of measure
G.2.1 Performance of the public transport	**Percentage of inhabitants that are within 400 meters walking distance of at least one public transportation service stop**			**%**
Level of data availability	0	1	2X	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2X	3
	Poor	Sufficient	Good	Very Good
Professional skill	0	1	2X	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience

Time for evaluation	0	1	2X	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1X	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1	2X	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				15
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Talking about occupants i.e to include workers would interesting

An alternative can be to make a ratio by buildings if getting inhabitants figures is too complicated

The daily total service frequency of at least 20 trips appears good in a rural environment but not so good in a dense urban area.

Regarding rural area, the indicator could include alternative transport like “transport on demand”…

300m or 500m are more usual figures regarding such indicators

KPI	Indicator	Unit of measure
G.2.4 Quality of pedestrian and bicycle network	**Total walkway meters of dedicated pedestrian paths and meters of bicycle path per 100 inhabitants**	**m/100 inhabitants**

Level of data availability	0	1	2X	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2X	3
	Poor	Sufficient	Good	Very Good
Professional skill	0	1	2	3 **X**
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1	2	3 **X**
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1X	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1	2X	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				13
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Regarding the unit of mesure, some benchmarks have been found in percentage of road dedicated to soft modes.

KPI	Indicator	Unit of

				measure
G.4.2 Availability and proximity of key services	**Percentage of inhabitants that are within 800 meters walking distance of at least 3 key services**			**%**
Level of data availability	0	1	2	3 **X**
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2 **X**	3
	Poor	Sufficient	Good	Very Good
Professional skill	0	1	2	3 **X**
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1	2	3 **X**
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0 **X**	1	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1	2 **X**	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				14
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Possible alternative to use the number of buildings rather than the number of inhabitants when the data is too complicated to get.

A hierarchy could set up and vary depending on the context.

KPI	Indicator			Unit of measure
G.6.3 Community involvement in urban planning activities	**Level of involvement of users in urban planning**			**Level**
Level of data availability	0	1	2 X	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2 X	3
	Poor	Sufficient	Good	Very Good
Professional skill	0	1X	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1	2	3 X
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 X	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 X	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				16
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

2. BUILDING SCALE KPIs

envirobatBDM with the support of the consultancy group ADRET-IMBE realized an analysis of the set of KPIs as well as individually.

Regarding the complete set of KPIs at building scale, the conclusion is :
-Themes from sustainable development are unevenly represented : environmental aspects and in particular energy are overrepresented.
-Territorial aspect should be integrated for contextualization
Biodiversity is a major issue in the Med area as it has been recognized as one of the 20 world “hot spot”. It has also been pointed as particularly at stake because of human activities and climate change.
-CESBA Med allowed BDM to integrate domestic waste in its approach
-For the consistency between the 2 approaches “building” and “urban”, the methodology for indicators at use stage should be clarified and unified. Indeed sometimes it is asked for one year data after 3 years, and sometimes for average figures on 3 years follow-up.
-There is a need for contextualization regarding benchmarks as it is not relevant to assess the same way new and renovation.

Consequently, thirteen of the KPIs proposed where chosen - providing adaptation - for the integration to the local PACA approach *Bâtiments Durables Méditerranéens*, BDM.

KPI	Indicator			Unit of measure
B.1.1 Primary energy demand (in use stage)	**Annual primary energy demand per useful internal floor area**			**kWh/m2/yr**
Level of data availability	0	1X	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0X	1	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours

Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0X	1	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				14
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

The scope should integrate all energy uses to be compliant with future building regulation

KPI	Indicator			Unit of measure
B.1.2 Delivered thermal energy demand (in use stage)	**Annual delivered thermal energy demand per useful internal floor area**			**kWh/m2/yr**
Level of data availability	0	1X	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1X	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one	Less than one	Less than one	Less than 4

	week	week	day	hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0X	1	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				10
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Ventilation should be excluded from thermal uses

The methodology of an “average value over 3 years” can be questioned. The representativity of the 3 ars is not ensured. Showing two years figures to highlight the stabilisation after works may be sufficient for the purpose.

KPI	Indicator			Unit of measure
B.1.3 Delivered electric energy demand (in use stage)	**Annual delivered electric demand per useful internal floor area**			**kWh/m2/yr**
Level of data availability	0	1X	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1X	2	3
	Poor	Sufficient	Good	Very Good

Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0X	1	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				12
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Sub-metering is necessary

The methodology of an “average value over 3 years” can be questioned. The representativity of the 3 ars is not ensured. Showing two years figures to highlight the stabilisation after works may be sufficient for the purpose.

KPI	Indicator	Unit of measure
B.1.5 Energy from renewable sources in total thermal	**Share of renewable energy in final thermal**	**%**

energy consumption	energy consumptions			
Level of data availability	0	1	2X	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1X	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1X	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				12
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Ventilation should be excluded from thermal use

KPI	Indicator	Unit of measure

B.1.6 Energy from renewable sources in total electric energy consumption	Share of renewable energy in final electric energy consumption			%
Level of data availability	0	1	2	3 **X**
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2	3X
	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1	2 **X**	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				12
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Electricity consumption should integrate all use

KPI	Indicator			Unit of measure
B.1.11 Embodied non-renewable primary energy	**Embodied primary non-renewable energy (MJ) per gross area of the building**			**MJ/m²**
Level of data availability	0	1 **X**	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0X	1	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0X	1	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0X	1	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0X	1	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				6
DO YOU WANT TO KEEP THIS INDICATOR?				N

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

To be compliant with future building regulation, the scope should be cradle to cradle and not cradle to gate.

Also, there is too much uncertainty at the moment regarding the data bases.

To keep in mind for the future – providing adaptation on the scope.

KPI	Indicator			Unit of measure
B.3.5 Recycled materials	**Weight of recycled materials on total weight of materials**			**%**
Level of data availability	0	1 **X**	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0X	1	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0X	1	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0X	1	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				5
DO YOU WANT TO KEEP THIS INDICATOR?				N

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Integration of materials is a complex issue that gain to be address by building lot. The percentage unit dies not allow to reflect the efforts : volume is more relevant than weight with respect to the diversity of materials. Surface unit is also sometime used, for flooring for instance.

KPI	Indicator			Unit of measure
B.4.5 Water consumption for indoor uses (in use stage)	**Water consumption per occupant per year**			**m3 of water r occupant per year**
Level of data availability	0	1X	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0X	1	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0	1	2 **X**	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1	2	3 **X**
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good

AFFORDABILITY AND OPERATIVITY SCORE	13
DO YOU WANT TO KEEP THIS INDICATOR?	Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Watering use should be integrated.

The methodology of an “average value over 3 years” can be questioned. The representativity of the 3 ars is not ensured. Showing two years figures to highlight the stabilisation after works may be sufficient for the purpose.

KPI	Indicator			Unit of measure
C.1.3 Global warming potential	**CO2 equivalent emissions per useful internal floor area per year**			**kg CO2 eq./m2/yr**
Level of data availability	0	1	2 **X**	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2 **X**	3
	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours

Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1	2 **X**	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				11
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Change for a more appropriate name like GHG from energy consumption.

KPI	Indicator			Unit of measure
C.3.1 Construction and demolition waste	**Weight of waste and materials generated per 1 m2 of useful floor area demolished or constructed**			**kg/m2/life cycle stage**
Level of data availability	0	1 **X**	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0X	1	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0X	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0X	1	2	3
	More than one	Less than one	Less than one	Less than 4

	week	week	day	hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				9
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

KPI	Indicator			Unit of measure
C.3.2 Solid waste from building operation	**Ratio of the number of collectable solid waste types within a 100 m distance from the building's entrance to the reference solid waste categories**			**%**
Level of data availability	0	1	2	3 **X**
	Not available	Scarce	Sufficient	Easy
Data quality	0	1	2	3 **X**
	Poor	Sufficient	Good	Very Good
Professional skill	0	1	2	3 **X**
	Formal training and significant	Formal training and applied	Formal training	Limited

	experience	experience		experience
Time for evaluation	0	1	2	3 **X**
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0 **X**	1	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1	2	3 **X**
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				13
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

Distance to be reduced from 100m to 50m

KPI	Indicator			Unit of measure
D.1.4 TVOC concentration in indoor air	**VOC concentration in indoor air**			**µg/m3**
Level of data availability	0	1 **X**	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training	Formal training	Formal training	Limited

	and significant experience	and applied experience		experience
Time for evaluation	0 **X**	1	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1	2 **X**	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good
AFFORDABILITY AND OPERATIVITY SCORE				7
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

According to the method, the sample can be influenced by exceptional conditions happening at the measurement moment.

NB: it is not possible to get the detail for each VOC from the total.

KPI	Indicator			Unit of measure
D.2.2 Thermal comfort index	**PMV**			**-**
Level of data availability	0	1 **X**	2	3
	Not available	Scarce	Sufficient	Easy
Data quality	0	1 **X**	2	3

	Poor	Sufficient	Good	Very Good
Professional skill	0 **X**	1	2	3
	Formal training and significant experience	Formal training and applied experience	Formal training	Limited experience
Time for evaluation	0	1 **X**	2	3
	More than one week	Less than one week	Less than one day	Less than 4 hours
Estimated cost	0	1 **X**	2	3
	Low	Acceptable	High	Very Expensive
Reliability of results	0	1 **X**	2	3
	Poor	Sufficient	Good	Very Good

AFFORDABILITY AND OPERATIVITY SCORE	5
DO YOU WANT TO KEEP THIS INDICATOR?	N

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

An envirobatBDM dedicated work group is studying the best method to assess the issue. Still at the moment it appears that this method is relevant only for buildings integrating cooling systems.

KPI	Indicator	Unit of measure
G.1.4 Use stage energy cost	**Energy annual cost per usable floor area**	**€/m2/yr**

Level of data availability	0 Not available	1 **X** Scarce	2 Sufficient	3 Easy
Data quality	0 Poor	1 Sufficient	2 **X** Good	3 Very Good
Professional skill	0 Formal training and significant experience	1 **X** Formal training and applied experience	2 Formal training	3 Limited experience
Time for evaluation	0 More than one week	1 Less than one week	2 **X** Less than one day	3 Less than 4 hours
Estimated cost	0 Low	1 **X** Acceptable	2 High	3 Very Expensive
Reliability of results	0 Poor	1 **X** Sufficient	2 Good	3 Very Good
AFFORDABILITY AND OPERATIVITY SCORE				11
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

The integration of subscription tariff needs to be mentioned

KPI	Indicator	Unit of measure
G.1.5 Use stage water cost	**Water annual cost per usable floor are**	**€/m2/yr**

Level of data availability	0 Not available	1 **X** Scarce	2 Sufficient	3 Easy
Data quality	0 Poor	1 Sufficient	2 **X** Good	3 Very Good
Professional skill	0 Formal training and significant experience	1 **X** Formal training and applied experience	2 Formal training	3 Limited experience
Time for evaluation	0 More than one week	1 Less than one week	2 **X** Less than one day	3 Less than 4 hours
Estimated cost	0 Low	1 **X** Acceptable	2 High	3 Very Expensive
Reliability of results	0 Poor	1 **X** Sufficient	2 Good	3 Very Good
AFFORDABILITY AND OPERATIVITY SCORE				11
DO YOU WANT TO KEEP THIS INDICATOR?				Y

PROPOSED MODIFICATIONS or REASON TO ELIMINATE THE KPI

(calculation method, indicator, unit of measure, etc...)

The integration of subscription tariff needs to be mentioned