

## BELGIUM - COUNTY REPORT

### 1.1 Response on questionnaire

- Questionnaire 1 : Arcadis Belgium NV, filled in on 16/7/2010
- Questionnaire 2 : WTCB, filled in on 16/7/2010
- Comments on the draft text by OVAM, FOD Volksgezondheid en Leefmilieu, FOD Economie

### 1.2 Rule system

#### 1.2.1 Type of regulation

In Belgium, there exists legislation and some provisions that relate to buildings and construction. The clearest is the national legislation for fire safety, which is arranged in terms of risk classes related to fire-fighting equipment. Within the framework on their competences, each region has additional provisions and also the larger municipalities like Brussels and Antwerp have issued local regulations.

In addition to the regional regulation and the few national laws and building ordinances, there are the national 'rules for good workmanship', consisting of:

- NBN standards, the Belgian standards issued by the Belgian Normalisation Institute (NBN)
- 'PTV's': Prescriptions Techniques (Technical Prescriptions). These are 'normative' documents drafted by a qualified technical institute, for example Probeton, the Belgian institute for the certification of concrete products, which add to the standards in question in order to connect the Benor quality mark to it, awaiting the appearance of a standard.

There are also documents made by institutions with a normalizing activity. These 'documents with a normative character' do not connect directly nor indirectly to the working of the NBN. These are for example:

- the 'STS' (Spécifications Techniques unifiées – unified technical specifications), published by the Federal governmental office DGV.
- the technical approvals (ATG) of the BUtgb (Belgian Union for the technical approval in construction); (see hereafter)
- The 'TV' (Technische Voorlichtingsnota's, Technical Reports) and the 'Cahier général des charges pour travaux de construction privé' (general specifications for private construction projects) of the WTCB-CSTC (Belgian Building Research Institute), an organization established by law and financed by building contractors and public research funds which conducts research into construction and the components used in building. TV's are guidance documents, primarily intended for contractors, but used by everyone in the Belgian construction sector as good practice documents even used in court to judge workmanship of contractors.

All these standards and documents are not mandatory by law, but are usually referred to in construction contract documents.

#### 1.2.2 Regulated sustainability topics for new buildings

In Belgium in fact only fire resistance and energy performance are regulated. Other sustainability topics are based on voluntary systems. See also paragraphs 1.2.1. and 1.4.

### 1.2.3 Rules for existing buildings and for renovation of existing buildings

In Belgium no sustainability regulations apply to existing buildings and to renovation of existing buildings.

### 1.2.4 Level of regulation

See paragraph 1.2.1.

### 1.2.5 Background in EU-Directives

Energy performance, construction products, waste, water regulations have a background in EU-directives.

### 1.2.6 Ordering of the regulations

As far as known to Arcadis Belgium different sets of “regulations” apply to different building types.

### 1.2.7 Type of requirements and deemed-to-satisfy solutions

Fire resistance regulations are rather prescriptive. Energy is performance based. Documentation on accepted and deemed-to-satisfy solutions is available.

### 1.2.8 Process of implementation

The process of implementation of energy performance regulation was mostly a cooperative process in which governmental parties collaborate with the construction sector.

## 1.3 **Enforcement regime**

The foundation of the system of building quality control in Belgium is very similar to that in France. It is determined by the extensive responsibilities of construction partners in the building process, based on the Civil Code, the decennial liability of contractors and architects and age-old jurisprudence. The supervision of building work is a system of permanent self-inspection by the architect, his design engineer, and the contractor. Projects have to be prepared by registered architects and a building permit is required. The permit is given by the local authorities but they do not carry out checks on structural or other calculations or general technical compliance unless hazardous or unhealthy installations are proposed. They also do not inspect the work in progress. The local (or regional) fire brigade is, however, involved in the fire safety check.

Due to the liability questions, there is technical control by private insurance companies which is still voluntary (unlike in France where decennial insurance has become mandatory in some circumstances). Besides the well-known SECO, more and more private bureaux have been established which carry out these controls.

## 1.4 **Sustainable construction initiatives – including public and joint public-private initiatives**

### *Example 1: Sustainability checklist*

A successful public initiative is the ‘Sustainability checklist’ started by the Flemish Infrastructural Fund for Personal Matters (VIPA). The ‘Sustainability checklist’ has to be filled in (some points being compulsory) in the request dossier for subsidies of VIPA (for hospitals, kindergarten, elderly homes, etc.). All parties have to integrate as many elements as possible in order to obtain subsidies.



The goal of this initiative is to implement sustainability measures in order to save running costs for the subsidized and to enhance comfort for the occupants. An organization has been set up to administer and steer the initiative.

*Example 2: Policy plans of the Belgian Environmental Federal Administration*

The Belgian Environmental Federal Administration (SPF Health, Safety of the Food Chain and Environment) has two main actions in her policy plans regarding construction products and sustainability. These plans were approved by the Minister's Council in 2009.

Action 1: Stimulate the provision of environmental information over the life cycle of construction products, this by means of the introduction of Environmental Product Declarations. The establishment of a database with EPD's is also an agreed action for the coming years.

In the long term we want to achieve that construction products shall only be put on the market when their global environmental impact over its life cycle is known. This should become a standard precondition.

Action 2: This action is on the social pillar of sustainability: the health aspect. Limit values for emissions of construction products in indoor air are being prepared in order to lower the presence of dangerous substances in the indoor air and to contribute to a healthier indoor air quality.

*Example 3: Contest of exemplary buildings'*

Another public initiative is the 'Contest exemplary buildings' started by the Brussels institute for environmental management (BIM). BIM calls for projects that implement sustainability measures on several fields. The goal of this initiative is to set the example, show the potential and demonstrate reproducibility.

*Example 4: Belgian Sustainable Building Council*

Moreover Flanders (government agency) started a feasibility study in 2009 aiming to ground a Belgian Sustainable Building Council

The mission of the Belgian Sustainable Building Council (BSBC) is to improve the sustainability of the built environment.

The activities of the BSBC are focused on the developing measurement instruments, assessment methods and certification schemes for sustainable buildings and built environments, including the related exchange of knowledge, professional training and communication activities. These activities are addressed to the building sector and government.

The BSBC believes in the force of a multi-actor platform that includes industry, non-governmental organizations, research/academic institutions and (local) government agencies, and that aims for ambitious targets towards a sustainable built environment.

This study is still going on in 2010.

*Example 5: Valideo*

A private initiative is Valideo. Valideo is a voluntary Sustainable Construction certification system, started by SECO, BCCA and WTCB-CSTC. Valideo can be compared with assessment schemes such as Breeam, HQE, Minergie and Leed. The first Valideo-certified green building was completed in May 2009.

## **1.5 Role of EU**

Both respondents see a role for the EU to stimulate sustainable construction in Belgium. Regulation



should be based on an European uniform, transparant and open source framework (e.g. developed within the sustainable building alliance). It can not be expected from the three regions in Belgium to develop a separate system (which was the case in the EPBD implementation).

## Regulations on sustainable construction – Arcadis Belgium

		REGULATIONS WHICH SPECIFIES SUSTAINABILITY ASPECTS OF CONSTRUCTION						REGULATIONS WHICH SPECIFIES SUSTAINABILITY ASPECTS OF CONSTRUCTION					REGULATIONS WHICH SPECIFIES SUSTAINABILITY ASPECTS			ACCEPTED OR D-T-S SOLUTIONS	PROCESS OF IMPLEMENTI	Comments										
Subject	Topic	Regulation?	Level of regulation				Back-ground in EU-Directives?	Comments	Ordering of the regulations					Do the reg's apply to existing building?	Do the reg's apply to renovation of existing building	How are the reg's drawn up?	Is there any documentation on accepted-of-deemed-to-satisfy solutions?	Type of process of implementing reg's which specifies sustainability aspects of construction ?										
	Requirements/regulations are set:		National/federal	Regional/state	Local	Quasimandatory			all reg's apply to all buildings	a set of reg's per building type of dwelling	a set of reg's per building type for commercial	a set of reg's per building type for industrial	a set of reg's per building type for infrastructure															
Ecological quality																												
Energy	For energy performance	Yes		X			Yes			X	X	X		Yes	Yes, but only for renovation of the main structure or building services	As performance based regulations (performance levels are stipulated)	Yes	Cooperative, governmental parties collaborated with the construction sector	Some questions are difficult to answer due to very large field of application or lack of definitions									
	To use renewable energy sources	Yes		X		Yes																						
	To implement energy efficiency techniques (e.g. low energy light bulbs)	Yes		X		Yes																						
	To thermal insulation	Yes		X		Yes																						
	To reduce air permeability	No																										
Water	To implement water conservation techniques	Yes		X			I dont know		X					Yes	I dont know	As prescriptive regulations (construction methods are stipulated)	Yes	I dont know										
	To implement water efficiency techniques (e.g. low-water flush toilets)	No																										
	For water metering	No																										
Minimize pollution	Waste	To minimize waste during construction	Yes		X		Yes		X					Yes	I dont know	I dont know	Yes	I dont know										
		To register waste production (e.g. in site waste management plan)	No																									
		To separate/recycle waste	Yes				X	I dont know																				
	Other aspects related to ecology	To limit emission of CO2	Yes		X		Yes							I dont know	I dont know	I dont know	I dont know	I dont know										
		To limit ozone depleting gasses	Yes	X	X		Yes																					
		To limit green house gasses	Yes	X	X		Yes																					
Protect biodiversity and natural		To conserve flora on sites	No																									
		To conserve wildlife on site	Yes		X		Yes																					
		To conserve natural habitats on site	Yes		X		Yes																					
Minimize the use of resources		To use recyclable materials	No																									
		To use renewable materials	No																									
		To refurbish and redevelop existing buildings in stead of demolition and new development	No																									
Economic quality																												
Enable businesses to be efficient and competitive	To reduce energy consumption during the construction process	No												I dont know	I dont know	I dont know	I dont know	I dont know										
	To reduce waste during the construction process	Yes		X			Yes																					
	To keep water use to a minimum during the construction process	No																										
	To construct adaptable buildings	No																										
Support local economic diversity	To the density of the development (e.g. minimal number of dwellings per area)	Yes		X	X		No																					
	To mixed land use	Yes		X	X		No																					
	To use local material/goods in construction	No																										
Provide employment opportunities	To use local labor in construction	No																										
Social quality																												
Adhere to ethical standards during development	To ensure ethical trading throughout supply chain	No							X					Yes	Yes, for all renovation	As prescriptive regulations (construction methods are stipulated)	Yes	Top-down, it was mostly a government led process										
	To provide safe and healthy work environment	Yes	X	X		Yes																						
Provide adequate local services and facilities	To provide information to local community during construction activities	Yes	X	X	X		No																					
	To provide space for training workmen	No																										
	To provide local schools, health, social facilities	No																										
Provide housing that meets needs	To develop a mix of tenure types	Yes		X	X		No																					
	To provide affordable housing	Yes	X	X	X		No																					
	To provide housing for the elderly	No																										
Integrate development in local context	To reject or discourage gated development	No																										
	To provide transport links to local context	Yes		X	X		No																					
	To provide links to adjacent neighborhoods	No																										
Conserve local heritage	To reuse locally valued buildings	Yes		X	X		No																					
Access to green space	To have green space within a certain distance	No																										
Functional quality																												
Design optimization	To the shape of the exterior	Yes		X	X		No			X	X	X	X	A lower level applies	Yes, for all renovation	As functional regulations (goals are specified)	Yes	Cooperative, governmental parties collaborated with the construction sector										
	For aesthetics	Yes		X	X		No																					
	To planned service life of structures	No																										
	To planned service life of building services	No																										
	To the demand of space per occupant and/or dwelling	No																										
Building envelope	To moisture protection of the building envelope	No																										
	To wind protection of the building envelope	No																										
	For electric-magnetic shielding	Yes	X				I dont know																					
Health, comfort and user satisfaction	For indoor air-quality	Yes		X			Yes																					
	To thermal comfort in winter	No																										
	To thermal comfort in summer	No																										
	To acoustic comfort	No																										
	To in-door daylight entry	No																										
	To the capability of conversion by a construction/building user	No																										
Usability for disabled	To accessibility for disabled	Yes	X	X			I dont know																					
Technical quality (construction process)																												
Technical execution/quality of the construction process	To limit construction time (planning)	No							X					Yes	Yes, for all renovation	As performance based regulations (performance levels are stipulated)	Yes	I dont know										
	To construction management	No																										
	To keeping records on construction progress	Yes					X	No																				
	To level of education/experience of builders	Yes	X				No																					
	To the structural safety of the construction	Yes					X	No																				
	To fire resistance of the construction	Yes	X				No																					
	To the safety of a construction during a fire	Yes	X				No																					

## Regulations on sustainable construction – BBRI

		REGULATIONS WHICH SPECIFIES SUSTAINABILITY ASPECTS OF CONSTRUCTION						REGULATIONS WHICH SPECIFIES SUSTAINABILITY ASPECTS OF CONSTRUCTION					REGULATIONS WHICH SPECIFIES SUSTAINABILITY ASPECTS			ACCEPTED OR D-T-S SOLUTIONS	PROCESS OF IMPLEMENTATION	Comments		
Subject	Topic	Regulation?	Level of regulation				Back-ground in EU-Directives?	Comments	Ordering of the regulations					Do the reg's apply to existing building?	Do the reg's apply to renovation of existing building	How are the reg's drawn up?	Is there any documentation on on accepted-of deemed-to-satisfy solutions?		Type of process of implementing reg's which specifies sustainability aspects of construction ?	
	Requirements/regulations are set:		National/federal	Regional/state	Local	Quasimandatory			all reg's apply to all buildings	a set of reg's per building type of dwelling	a set of reg's per building type for commercial buildings	a set of reg's per building type for industrial buildings	a set of reg's per building type for infrastructure							
Ecological quality																				
Energy	For energy performance	Yes		X			Yes	most of the extra elements which are asked are local and are using incentives to be implemented		X				No	No	As performance based regulations (performance levels are stipulated)	No	Bottom-up, it was mostly a construction sector led process	there are far too many questions in this inquiry, and also the system is not very userfriendly	
	To use renewable energy sources	No																		
	To implement energy efficiency techniques (e.g. low-energy light bulbs)	No																		
	To thermal insulation	Yes		X			Yes													
	To reduce air permeability	Yes			X		Yes													
Water	To implement water conservation techniques	No								X				No	No	As functional regulations (goals are specified)	No			Bottom-up, it was mostly a construction sector led
	To implement water efficiency techniques (e.g. low-water flush toilets)	No																		
	For water metering	Yes	X				No													
Minimize pollution	Waste	To minimize waste during construction	No							X				No	No	As performance based regulations (performance levels are specified)	Yes			Bottom-up, it was mostly a construction sector led
		To register waste production (e.g. in site waste management plan)	Yes		X		No													
		To separate/recycle waste	Yes		X		No													
Protect biodiversity and natural	Other aspects related to ecology	To limit emission of CO2	No																	
		To limit ozone depleting gasses	No																	
		To limit green house gasses	No																	
		To conserve flora on sites	No																	
		To conserve wildlife on site	No																	
Minimize the use of resources		To conserve natural habitats on site	No																	
		To use recyclable materials	No																	
		To use renewable materials	No																	
	To refurbish and redevelop existing buildings instead of demolition and new development	No																		
Economic quality																				
Enable businesses to be efficient and competitive	To reduce energy consumption during the construction process	No							X				No	No	As performance based regulations (performance levels are stipulated)	No	Bottom-up, it was mostly a construction sector led process			
	To reduce waste during the construction process	No																		
	To keep water use to a minimum during the construction process	No																		
	To construct adaptable buildings	No																		
Support local economic diversity	To the density of the development (e.g. minimal number of dwellings per area)	Yes		X	X		No													
	To mixed land use	No																		
	To use local material/goods in construction	No																		
Provide employment opportunities	To use local labor in construction	Yes		X			No													
Social quality																				
Adhere to ethical standards during development	To ensure ethical trading throughout supply chain	No							X				No	No	I dont know	I dont know	Top-down, it was mostly a government led process			
	To provide safe and healthy work environment	No																		
Provide adequate local services and facilities	To provide information to local community during construction activities	No																		
	To provide space for training workmen	No																		
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	To provide links to adjacent neighborhoods	No																		
Conserve local heritage	To reuse locally valued buildings	Yes			X		No													
Access to green space	To have green space within a certain distance	No																		
Functional quality																				
Design optimization	To the shape of the exterior	No							X				No	No	As performance based regulations (performance levels are stipulated)	No	Bottom-up, it was mostly a construction sector led process			
	For aesthetics	Yes			X		No													
	To planned service life of structures	I dont know																		
	To planned service life of building services	No																		
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Building envelope	To moisture protection of the building envelope	No																		
	To wind protection of the building envelope	No																		
	For electric-magnetic shielding	No																		
Health, comfort and user satisfaction	For indoor air-quality	No																		
	To thermal comfort in winter	Yes		X			No													
	To thermal comfort in summer	No																		
	To acoustic comfort	Yes			X		No													
	To in-door daylight entry	No																		
	To the capability of conversion by a construction/building user	No																		
Usability for disabled	To accessibility for disabled	Yes			X		I dont know													
Technical quality (construction process)																				
Technical execution/quality of the construction process	To limit construction time (planning)	No						fire is regulated since many years, this was organised on federal level	X				No	No	As prescriptive regulations (construction methods are stipulated)	No	Bottom-up, it was mostly a construction sector led process			
	To construction management	No																		
	To keeping records on construction progress	No																		
	To level of education/experience of builders	Yes	X				No													
	To the structural safety of the construction	No																		
	To fire resistance of the construction	No																		
	To the safety of a construction during a fire	Yes	X				No													



## Checking of building plans – Arcadis Belgium

CHECKING OF BUILDING PLANS																				
Subject	Are building plans monitored to check compliance with sustainability criteria in construction regulation?	Who is monitoring sustainability criteria?										Is the monitoring process regulated in law?	How are building plans normally monitored to check compliance with sustainability criteria in construction regulation?					How thoroughly are building plans normally monitored to check compliance with sustainability criteria in construction regulation?	If from this monitoring non-compliance is found, how is this disciplined?	If the monitoring shows compliance with sustainability regulation, is this reported to the future owner of the building and/or the builder?
		Municipal authority	Other public auth.	Architect	(Tech.) advisor on behalf of auth's	Techn. adv. on behalf of insurers	Techn. adv. On behalf of (future) owner	Utility company	Private Inspector	Building owner	Other		A visual check, to find if/how criteria have been integrated in the building design	A check based on a paper checklist, to find if/how criteria on the list have been integrated in the building design	A computer aided check based on a digital checklist, to find if/how criteria on the list have been integrated in the building design	Check on registration of the architect/engineer who approves the design	Other			
Ecological quality - Energy	No																			
Ecological quality - Water	Yes	X										Yes, on regional/state level					Superficial, mostly a check only assesses if criteria have been integrated	The building permit will not be issued	Yes, a proof on paper is issued (e.g. a report, a letter, a permit or certificate)	
Ecological quality - Waste	No																			
Ecological quality - Other	No																			
Economic quality	No																			
Social quality	Yes	X										Yes, on regional/state level					Superficial, mostly a check only assesses if criteria have been integrated	The building permit will not be issued	Yes, a proof on paper is issued (e.g. a report, a letter, a permit or certificate)	
Functional quality	No																			
Technical quality (construction process)	No																			

## Checking of building plans – BBRI

CHECKING OF BUILDING PLANS																				
Subject	Are building plans monitored to check compliance with sustainability criteria in construction regulation?	Who is monitoring sustainability criteria?										Is the monitoring process regulated in law?	How are building plans normally monitored to check compliance with sustainability criteria in construction regulation?					How thoroughly are building plans normally monitored to check compliance with sustainability criteria in construction regulation?	If from this monitoring non-compliance is found, how is this disciplined?	If the monitoring shows compliance with sustainability regulation, is this reported to the future owner of the building and/or the builder?
		Municipal authority	Other public auth.	Architect	(Tech.) advisor on behalf of auth's	Techn. adv. on behalf of insurers	Techn. adv. On behalf of (future) owner	Utility company	Private Inspector	Building owner	Other		A visual check, to find if/how criteria have been integrated in the building design	A check based on a paper checklist, to find if/how criteria on the list have been integrated in the building design	A computer aided check based on a digital checklist, to find if/how criteria on the list have been integrated in the building design	Check on registration of the architect/engineer who approves the design	Other			
Ecological quality - Energy	No																			
Ecological quality - Water	No																			
Ecological quality - Waste	No																			
Ecological quality - Other																				
Economic quality	No																			
Social quality	No																			
Functional quality	Yes	X										Yes, on regional/state level	X				Thorough, mostly a check assesses if and how criteria have been integrated	The building permit will not be issued	I dont know	
Technical quality (construction process)	No																			

## Checking of work under construction – Arcadis Belgium

CHECKING OF WORK UNDER CONSTRUCTION																
Subject	Is work under construction monitored to check compliance with sustainability criteria in construction regulation?	Who is monitoring <u>work under construction</u> ?										Is the monitoring process of <u>work under construction</u> regulated in law?	How is work under construction normally monitored to check compliance with sustainability criteria in construction regulation?	How thoroughly is work under construction normally monitored to check compliance with sustainability criteria in construction regulation?	If from this monitoring non-compliance is found, how is this disciplined?	If this monitoring shows compliance with sustainability regulation, is this reported to the future owner of the building and/or the builder?
		Municipal authority	Other public auth.	Architect	(Tech.)advisor on behalf of auth's	Techn. adv. on behalf of insurers	Techn. adv. On behalf of (future) owner	Utility company	Private Inspector	Building owner	Other					
Ecological quality - Energy	Yes		X									Yes, on regional/state	A visual check, to find if/how	Superficial, mostly a check	Other	No
Ecological quality - Water	No															
Ecological quality - Waste	No															
Ecological quality - Other	No															
Economic quality	No															
Social quality	No															
Functional quality	No															
Technical execution /quality of the construction process	Yes			X		X						Yes, on national/federal	A visual check, to find if/how	Thorough, mostly a check	The contractor is requested to	Yes, a proof on paper is issued

## Checking of work under construction – BBRI

CHECKING OF WORK UNDER CONSTRUCTION																
Subject	Is work under construction monitored to check compliance with sustainability criteria in construction regulation?	Who is monitoring <u>work under construction</u> ?										Is the monitoring process of <u>work under construction</u> regulated in law?	How is work under construction normally monitored to check compliance with sustainability criteria in construction regulation?	How thoroughly is work under construction normally monitored to check compliance with sustainability criteria in construction regulation?	If from this monitoring non-compliance is found, how is this disciplined?	If this monitoring shows compliance with sustainability regulation, is this reported to the future owner of the building and/or the builder?
		Municipal authority	Other public auth.	Architect	(Tech.) advisor on behalf of auth's	Techn. adv. on behalf of insurers	Techn. adv. On behalf of (future) owner	Utility company	Private Inspector	Building owner	Other					
Ecological quality - Energy	Yes								X			Yes, on national/federal	A check based on a paper	I dont know	The contractor is requested to	Yes, by word of mouth (e.g. a
Ecological quality - Water	No															
Ecological quality - Waste	No															
Ecological quality - Other																
Economic quality	No															
Social quality	No															
Functional quality	No															
Technical execution /quality of the construction process	Yes										X	Yes, on national/federal	A check based on a paper	Thorough, mostly a check	The work is halted until the	No



## Checking of the finished work, prior to occupation – Arcadis Belgium

CHECKING OF FINISHED CONSTRUCTION WORK PRIOR TO OCCUPATION																
Subject	Is the finished construction (a finished building) monitored to check compliance with sustainability criteria prior to occupation?	Who is monitoring sustainability criteria prior to occupation of the building?										Is the monitoring process of sustainability criteria of finished construction work regulated in law?	How is finished construction work normally monitored to check compliance with sustainability criteria in construction regulation prior to occupation of the building?	How thoroughly are building plans normally monitored to check compliance with sustainability criteria in construction regulation?	If from this monitoring non-compliance is found, how is this disciplined?	If this monitoring shows compliance with sustainability regulation, is this reported to the future owner of the building and/or the builder?
		Municipal authority	Other public auth.	Architect	(Tech.) advisor on behalf of auth's	Techn. adv. on behalf of insurers	Techn. adv. On behalf of (future) owner	Utility company	Private Inspector	Building owner	Other					
Ecological quality - Energy	Yes		X								X	Yes, on regional/state level	A computer aided check, based on a digital checklist, to find if/how criteria on the list have been integrated during co	Thorough, mostly a check assesses if and how criteria have been integrated	Other	Yes, a proof on paper is issued (e.g. a report, a letter, a permit or certificate)
Ecological quality - Water	No															
Ecological quality - Waste	No															
Ecological quality - Other	No															
Economic quality	No															
Social quality	No															
Functional quality	Yes		X								X	Yes, on regional/state level	A computer aided check, based on a digital checklist, to find if/how criteria on the list have been integrated during co	Thorough, mostly a check assesses if and how criteria have been integrated	Other	Yes, a proof on paper is issued (e.g. a report, a letter, a permit or certificate)
Technical execution / quality of the construction process	Yes			X								Yes, on national/federal level	A visual check, to find if/how criteria have been integrated during construction work	Thorough, mostly a check assesses if and how criteria have been integrated	The building may not be occupied	Yes, a proof on paper is issued (e.g. a report, a letter, a permit or certificate)

## Checking of the finished work, prior to occupation – BBRI

CHECKING OF FINISHED CONSTRUCTION WORK PRIOR TO OCCUPATION																
Subject	Is the finished construction (a finished building) monitored to check compliance with sustainability criteria prior to occupation?	Who is monitoring sustainability criteria prior to occupation of the building?										Is the monitoring process of sustainability criteria of finished construction work regulated in law?	How is finished construction work normally monitored to check compliance with sustainability criteria in construction regulation prior to occupation of the building?	How thoroughly are building plans normally monitored to check compliance with sustainability criteria in construction regulation?	If from this monitoring non-compliance is found, how is this disciplined?	If this monitoring shows compliance with sustainability regulation, is this reported to the future owner of the building and/or the builder?
		Municipal authority	Other public auth.	Architect	(Tech.)advisor on behalf of auth's	Techn. adv. on behalf of insurers	Techn. adv. On behalf of (future) owner	Utility company	Private Inspector	Building owner	Other					
Ecological quality - Energy	Yes			X						X		No	I dont know	I dont know	The building may be occupied under the condition that this non-compliance is solved within a certain time-frame	I dont know
Ecological quality - Water	I dont know															
Ecological quality - Waste	I dont know															
Ecological quality - Other	I dont know															
Economic quality	I dont know															
Social quality	No															
Functional quality	No															
Technical execution / quality of the construction process	Yes				X				X			No	A computer aided check, based on a digital checklist, to find if/how criteria on the list have been integrated during co	Thorough, mostly a check assesses if and how criteria have been integrated	Other	Yes, by word of mouth (e.g. a phone call or a short talk after the inspection)

## Checking of existing buildings in use –Arcadis Belgium

		CHECKING OF EXISTING CONSTRUCTIONS IN USE													
Subject	Are existing construction s monitored to check compliance with sustainability criteria when in use?	Who is monitoring sustainability criteria of constructions in use?										Is the monitoring process of construction s in use regulated in law?	How are construction s in use normally monitored to check compliance with sustainability criteria in construction regulation?	How thoroughly are construction s in use normally monitored to check compliance with sustainability criteria in	If from this monitoring non-compliance is found, how is this disciplined?
		Municipal authority	Other public auth.	Architect	(Tech.)advisor on behalf of auth's	Techn.adv. on behalf of insurers	Techn.adv. On behalf of (future) owner	Utility company	Private Inspector	Building owner	Other				
Ecological quality - Energy	Yes								X			Yes, on regional/state level	A computer aided check, based on a digital checklist, to find if/how criteria on the list have been integrated during co	Superficial, mostly a check only assesses if criteria have been integrated	No disciplining measures are taken
Ecological quality - Water	No														
Ecological quality - Waste	No														
Ecological quality - Other	No														
Economic quality	No														
Social quality	No														
Functional quality	No														
Technical execution /quality of the construction process	Yes				X							I dont know	I dont know	I dont know	I dont know

## Checking of existing buildings in use –BBRI

CHECKING OF EXISTING CONSTRUCTIONS IN USE															
Subject	Are existing constructions monitored to check compliance with sustainability criteria when in use?	Who is monitoring sustainability criteria of constructions in use?										Is the monitoring process of constructions in use regulated in law?	How are constructions in use normally monitored to check compliance with sustainability criteria in construction regulation?	How thoroughly are constructions in use normally monitored to check compliance with sustainability criteria in	If from this monitoring non-compliance is found, how is this disciplined?
		Municipal authority	Other public auth.	Architect	(Tech.)advisor on behalf of auth's	Techn.adv. on behalf of insurers	Techn.adv. On behalf of (future) owner	Utility company	Private Inspector	Building owner	Other				
Ecological quality - Energy	No														
Ecological quality - Water	No														
Ecological quality - Waste	No														
Ecological quality - Other															
Economic quality	No														
Social quality	No														
Functional quality	No														
Technical execution /quality of the construction process	No														

