FRANCE – COUNTRY REPORT

1.1 Response on questionnaire

- Questionnaire 1 (completely filled in): Arcadis France, shortened hereafter as Arcadis.
- Questionnaire 2 (completely filled in): Socotec (construction inspection body), shortened hereafter as: Socotec;
- Questionnaire 3 (completely filled in): Agence Qualité Construction, shortened hereafter as AgQuCon;
- Questionnaire 4 (only the regulatory part filled in), International Affairs at CSTB (Centre Scientifique et Technique du Bâtiment);
- Questionnaire 5 (partly filled in): Hespul (an association for the development of renewable energy and energy efficiency);
- Questionnaire 6 (partly filled in): Min. d'Ëcologie, de l'Ënergie, du Développement durable et de la mer, shortened hereafter as MinDeDur;
- Study to evaluate the Internal Market and competitiveness effects of Council Directive 89/106/EEC (Construction Products Directive, CPD), PRC Bouwcentrum International (2007, for European Commision), appendix;
- Developpement durable et droit de la construction, 24/4/2009;
- (http://avocats.fr/space/gwenahel.thirel/content/developpement-durable-et-droit-de-la-construction_A587C83B-C5EA-43D1-A1AB-0628B2DA87CB).
- Detailed amendments by ARCADIS France on the draft country report.

1.2 Introduction of construction regulatory system in France

The construction regulatory system in France can be described as a hybrid system (authorization by public parties and control by third parties of the private sector), combined with an insured based system (decennial insurance). There is also a 'secondary' system of regulation on Hygiene, but these are obsolete texts, or are in course of centralisation by the French department.
The Housing and Building code defines the requirements in the field of safety, accessibility, acoustics and thermal insulation, and leaves the other performances to technical standards of a contractual nature. There is also the local town-planning which sets rules on sustainability. Obligatory insurance of decennial guarantee implies a technical verification of the conformity of the works with technical standards by a controller contracted by the insurance company.
Currently some of the aspects of the regime (e.g. hygiene) are undergoing a process of centralisation – yet, some French departments oppose against this centralisation.
Construction regulatory system has been mainly established by the government and is - in part - gathered in the Housing and Building Code. Standardization complements the regulatory framework. There is also a number of local regulations, applicable in the field of urban local planning, have also to be met (the local plan, the legal maximum density [of constructions], coefficient of land use, floor space ...).

A law of 4 January 1978, known as the Spinetta law, introduced obligatory insurance for major structural defects, and defects which may threaten the safety of persons (fire) or alter the performance of the building (fitness-for-purpose requirement). Three guarantees are included: the guarantee of perfect achievement (1 year), the guarantee of satisfactory functioning (2 years), and the guarantee required for the decennial responsibility (10 years). The 'responsabilité civile décennale' (civil responsibility, for a period of ten years) falls on most parties in the construction process. This guarantee must be obtained by the constructor and the project manager from an insurance company.

1.3 Broad outline of construction regulations

The Housing and Building Code (*Code de la Construction et de l'Habitation*, CCH) comprises legislative articles and regulatory articles. There is no overall statement of goals. The legislative articles allow regulations to be made by Decrees of the Council of State, identify the subject of regulations, and specify the application of requirements. Some legislative articles refer to Laws (Lois). The regulatory articles are a mixture of specifications (such as minimum floor area and volume, and sanitary provision), and performance requirements (such as acoustic insulation, and energy efficient provision of heating and hot water). Many regulations require implementing orders (arrêtés) to be made to set levels of requirements.
There are also quite a number of ministerial decrees that have the same force as laws.

The Housing and Building Code requirements mainly deal with safety, accessibility, acoustics and thermal insulation of buildings. But a major part of the technical requirements in France is not laid down in official public regulations, but in standards and practice guides that are determined by semi- or non-public organisations (standardisation institute, CSTB, private control offices and the insurance sector). The government hardly has any grip on these codes of practice.

The most important are:

- French standards ('Normes Francaises' = NF), published by the national standardisation organisation AFNOR. The NF norms usually define characteristics of products like performance tests and dimensions of construction methods, construction systems, construction elements, materials and construction products.
- The DTU's, 'documents techniques unifiés' (or NF DTU: the homologised French standard in European context). The DTU's are produced under the aegis of the "Centre Scientifique et Technique du Bâtiment (CSTB)" by interprofessional federative groups. The DTU's are standards of application and installation. The DTU's codify the *règles de l'art*, that define the rules either for good design or for execution of works on site.
- Other '*règles de l'art*' and other professional rules.

The REEF unites the whole set of technical building guidance, accepted solutions and some other professional rules. It is published by the CSTB.
This technical building guidance mainly deals with functionality and safety of the infrastructures.

1.4 Regulation and requirements to sustainable construction

1.4.1 Introduction

In 2007, France has set up, after a large social debate (the *Grenelle de l' Environnement*) an ambitious sustainability plan that in December of that year has been filled in. The targets with regard to energy saving and performance, and the built environment are far reaching for France.

1.4.2 Regulated sustainability topics for new buildings

Some aspects of *ecological quality* are regulated in France by legislation/regulation or norms, on different levels of government.

In the '2007 Grenelle law' the quantitative targets related to energy efficiency are about new buildings: 50 KWh/m2/year and 80 KWh/m2/year in the framework of major renovations of buildings. But for energy efficiency in general (industrial buildings) there is only an incitement policy of the government by means of subsidies from the French Environment Agency and/or the Region.

There are two major laws related to water resources protection and air pollution prevention, set up prior to the European Directive.
The New Regulation against Noise is from 2000 for new buildings. It requires precise thresholds of emergence.
The French regulation regarding the protection of flora, fauna, habitat (ZNIEFF, ZICO, NATURA 2000) was inspired by the European Directive.

Regarding construction and demolition waste, there is no specific regulation to minimize quantities or to characterize this waste. But the public finance law created a financial incitement for reusing and recycling waste (including demolition and construction waste): land filling is taxed, waste carried off to energy or resource channels are tax free.

The assessment of the carbon footprint of service and industrial activities, of municipalities over a certain size are to be an obligation in the very near future (application of the Grenelle law in 2011).

The use of renewable materials and energy will be regulated in the near future on the basis of European directives.

For *economic quality*, there is no regulation. The local use of land is a requirement of the local communities, because it is of their direct interest and concern.
The framework of 'land use and occupation' regulation is national, but the application, the targets are fixed locally through the 'local urbanism plan'. Regarding employment induced by the construction, there is no regulation, the one requests and demands are contractual with the municipalities. Some of the economic aspects could be regulated in the future.

For *social quality*, ethical and/or social practices (social inclusion, education, legal work) in the construction activities are strongly suggested inside the Housing and Building Code, and in the Code of Public Markets but they are not real obligations. These practices are clearly demanded in the terms of reference of public and private markets and very often written in the contracts. The right of information is clearly mentioned and formalized through procedures in the regulation. There is also a special national law (loi SRU, law for solidarity and urban renewal) ordering the French municipalities to provide for 20% of social apartments. This law is however unequally respected and applied by the regions.

With respect to *functional quality* all respondents agree that the planned service life of structures, and accessibility for disabled is indirectly regulated on a national level through the insurance obligations: the owner must contract a 'infrastructure damage insurance policy' and the contractor must contract a 'decennial guarantee'.
For the foreseen service life of the structures and the protection against wind of the envelope of the building, the Eurocodes are often used, but are not directly obligatory.

Regarding *technical quality*, structural safety of the construction and fire safety are regulated, but the other aspects or not regulated.

The regulations for sustainable construction topics are sometimes on a national level (mainly the Housing and Building Code and the Décrêts), for example energy performance, acoustic and thermal insulation, accessibility for disabled and nearly all functional and technical topics, sometimes on a regional level, and often also on a local level. Sometimes, as for economic aspects, there is at national level only a framework (Code de l' Urbanisme), while the requirements are defined at a local level.

Quasi-mandatory requirements exist for some topics, for example in the field of ecological quality and provision of safe/healthy work environment.

The following regulated topics are inspired by EU-directives:

- Energy performance and thermal isolation: The RT 2005 (Réglementation thermique 2005) does not fix the same targets as the EPBD. In that sense, it is not inspired by the EPBD. But the 'Arrêté du 03/05/2007' and 'Arrêté du 18/12/2007'(concerning the EP of new buildings and the renovation of existing) are clearly inspired by the EPBD. The updated future RT 2012 will comply with the EPBD.
- Many ecological aspects related to limitation of emission of CO_2/green house gas (very near future), conservation flora/wildlife/natural habitats on sites.
- Structural safety of the construction and fire safety (Eurocodes, European harmonized standards)

The following topics are not inspired by the European regulation:

- Water conservation techniques;
- Safe and healthy work environment

1.4.3 Regulated sustainability topics for existing buildings and for renovation of existing buildings

There exist only few regulations on sustainability for existing buildings, namely regarding

- water conservation/efficiency;
- energy performance, but a lower level applies.[1]

In case of renovation of existing buildings many sustainability regulations exist, but sometimes only applicable to the main structure or building services, or for the renovation of existing buildings larger than 1000m^2.

1.4.4 Ordering of the regulations

The regulations sometimes apply to all buildings, and sometimes to a specific set of buildings or building-types.

1.4.5 Type of requirements and deemed-to-satisfy solutions

Regulation on sustainability topics can be formulated both as functional requirements, performance based requirements or prescriptive requirements.

French decrees sometimes are of descriptive nature. An example of this is the 'Decree on the use of wooden materials in certain buildings' (Décret no.2010-273 of 15 March 2010), launched by the Ministry of Ecology, Energy, Sustainable Development and the Sea, as part of a program to encourage sustainable construction materials, and increase the use of wood in construction building and the construction industry (and thus bring the issue of CO_2 emissions into the attention of customers), which prescribes minimum quantities of wooden materials to be used in certain types of buildings. This regulation will be implemented in two stages. The deadline for the first stage is 1 December 2010. The second deadline is 1 January 2011, when constructions will have to use up to 75% wood.

[1] The implementation of the EPBD for existing buildings has been introduced through the Housing and Building Code. On May 2007, the French Government adopted the minimum requirements for existing buildings, which came into force on 1st of November 2007. Generally, the minimum requirements are the same as those for the new buildings Moreover, from April 2008, buildings over 1000 m², undergoing major renovation, will have to meet global performance requirements (DG Energy and transport– Implementation of the EPBD, country report 2008).

1.5 Process of implementation

The process for implementing regulation on sustainability topics was mostly a cooperative process (a uniform process of consultations with the construction sector, followed by decision making), but sometimes a top-down process.

1.6 Role of EU

On the question “Do you see any role for the EU to stimulate sustainable construction in your country?”, the answer of most respondents is: “Yes, the European directives constitute an important incitement for the national regulation on the sustainable construction”.

1.7 **Enforcement of regulation and requirements to sustainable construction**

1.8 General

In France, the planning rules are codified in the ‘Code de l’Urbanisme’. A ‘Certificat d’Urbanisme’(CDU) is required to get the right for building on land in a specific area. The CDU is not a building permit, but it is an ‘approval in principal’. For minor works(<20 m2) only a ‘Déclaration de travaux’ (declaration of works) is required. For bigger works a ‘Permis de Construire’ (building permit) is needed. It is essential that the building work is executed in compliance with work described in the building permit, otherwise an amendment to the existing building permit is demanded. In general the Mayor or the municipal planning office (DDE) decides on the building permit.
An architect is compulsory for applying the building permit for buildings larger than 170m². The building permit mostly deals with planning and architectural issues, based on an outline design of the architect. The contractor makes the detailed construction drawings. The project developer (maitre de l'ouvrage) is responsible for conformity to the technical requirements of the Housing and Building code. The decennial liability and the associated requirements of the insurance providers act as a mechanism to ensure conformity with the technical requirements. Verification of safety subjects is often by reference to DTUs. If a national standard or DTU is cited in a construction contract, it must be in compliance with.

More information on the organisation of construction control in France (in the context of ‘construction durable’) can be found in the brochure ‘Le Contrôle du respect des Règles de Construction (CRC)’, April 2009, from the Ministère de l’Écologie, de l’Énergie, du Développement durable et de la Mer[2].

1.9 Sustainability topics

Building executive plans are checked on functional and technical quality and compliance, but not on economic quality and social quality. This checking is done by a technical external and independent advisor on behalf of the project developer. This external ‘audit of the design’ is a legal obligation written in the Housing and Construction Code. The insurance company may mandate its own technical advisor. This monitoring process is regulated in national law.
Classified installations (e.g. industrial building) are controlled on environmental aspects in a pragmatic way, but other types of buildings (residential, commercial) are not controlled on environmental aspects.

During the *construction of the work*, the control is done by a technical external and independent advisor on behalf of the project developer. This external ‘audit’ is a legal obligation written in the Housing and Con-

[2] http://www.developpement-durable.gouv.fr/IMG/pdf/DGALN_plaquette_controle_respect_regles_construction_avril2009.pdf

struction Code. The insurance company may mandate its own technical advisor. This monitoring process is regulated in national law. The field of the control during the construction works is : functionality, safety, technical quality.

Existing buildings are not monitored, except perhaps for some aspects:

- for energy performance and functional quality in case of renovation, checked by a private technical advisor on behalf of the project developer, or the owner
- for health and safety: asbestos, termite, moisture, lead, checked by a private technical advisor on behalf of the project developer or the owner (obligation in case of commercial transaction of the building)

1.10 Complementary sustainable construction initiatives – including public and joint public-private initiatives

In general, the voluntary initiatives anticipate the future regulatory requirements and allow the private construction sector to progress in the implementation of sustainable development objectives and particularly in the field of energy efficiency.

Example 1: Local initiatives for renewable energy[3].
In France there is no specific national policy to encourage the use of Renewable Energy Sources (RES) in the urban planning process. In response to this lack of national policy, some local authorities have implanted local policies. For instance, Greater Lyon, drew up on a voluntary basis a local policy to enforce the Rational Use of Energy (RUE) and the use of RES in new buildings
This local policy is based on two tools, complementary to the typical urban planning process:

- An Urban Environmental Analysis, which is carried out by a subcontractor to the Local Authority, generally an architect specialising in Sustainable Development. The environmental analysis is used by the selected City Planner as an input to the feasibility study for the development. This Urban Environmental Analysis may include planning requirements to increase RUE and the use of RES.
- A Sustainable Development Guideline which sets targets for RUE and RES and which is used by the City Planning Company to select developers that will purchase the land and construct buildings. This guideline sets a maximum heating need of 60 kWh/m²/year, which is about 40% less than the National Thermal Regulation (RT2005).

Example 2: 'Haute Qualité Environnementale' (HQE) certification process
This is a certification method for buildings, comparable with BREEAM. Launched in 2001 by public sector organisation PUCA under the program 'Ecologie et Habitat' in 1992. Further information on www.certivea.fr/documentations.php.

Example 3: Labels 'Haute Performance Energétique' et 'Bâtiment Basse Consommation'
This is a label with which the energetic efficiency with respect to heating, cooling, sanitary hot water, airiness, auxiliary and lighting are measured. The label consists of several levels of requirements. The highest level in dwellings is equivalent to 50 KWH/m².year of primary energy consumed. In 2007 there has been an elevation of the thresholds in the requirements. The thresholds are elevated again before 2012.
The objective is to incite the building professionals to attain energy performance levels superior to those imposed by the regulations (under certain conditions and financial stimuli). These prefigure the future

[3] See www.pvupscale.org/spip.php?article17#codesbuildings, www.rt-batiment.fr and www.observatoirebbc.org

regulatory levels. The initiative wanted to reproduce in France the success of the Swiss initiatives 'Minergie' and German 'Passiv house', but adapting it to the French context (constructive methods, regulation, norms, climate).
It was started in 2005 by a public sector organization 'Collectif Effinergie, association HQE'. It is a statutory label managed by the authorities, supported by certifications of works, created and managed by private organisms having passed convention with the State.
Only certification bodies accredited by COFRAC (= 'labels' police office) can issue the labels. There is strong regulation for the processes and procedures.
The initiative is now widely used in a large number of projects. Several tens of thousands of dwellings and several hundreds of buildings are labelled at the level of the highest performance.
Further information on www.effinergie.org/site/Effinergie/80_Guide
There are two levels of approach for reaching the sustainable development targets :

- The first step for the project developer is to use on a voluntary basis the guidelines of the HQE, HPE, or BBC requirement, without any external advisor,
- The second step is to enter in a certification process: that means the compliance with the guidelines and sustainable targets will be controlled by an external advisor throughout the life cycle of the building. This technical advisor must be accredited by the COFRAC.

1.11 Stimuli for innovation or barriers to trade for sustainable construction?

Decennial insurance
One element of an insurance based system is that it is a risk driven approval and certification system for construction methods and construction products. The obligatory insurance has led to a situation where the insurers have a considerable influence on the formulation of building contracts and the acceptance of techniques, works and products falling within a certain insurance cover. The insurance companies link the cover of the liability risk or the size of the insurance premium to the level of risk, which the works entail.
The construction insurers distinguish between 'works of current insurance technique' *(traeaux de technique courante*), normally guaranteed by the contracts with contractors, and 'works of not-current technique' (*travaux de technique non courante*) which need a preceding declaration by the contractor.
The insurance contract is established and tariffed by the insurer on the basis of the risk presented by the 'work of current technique'. The insured private construction party has to declare the works that do not correspond to these criteria. The contractor or developer who wants to benefit from the guarantees of his contract, has to verify that the works he intends to realize, are in conformity with the rules defined by his insurer as being of current technique. For traditional products and construction, conformity with established standards and 'documents techniques unifiés' (DTU's) is conditional for insurance cover.
As soon as not-current techniques are involved in the work, the private construction party has to get the permission of his insurer, and the insurer will study the possibility for extension of the guarantees and the financial conditions. To assess the risk involved in using new products and non-traditional construction, a technical assessment is needed (by means of 'Avis Techniques', ATec, 'Appréciations Techniques d'Expérimentation', ATEx, or 'Enquêtes de Technique nouvelle', ETN). In the private sector some avis techniques in effect become mandatory because of the insurance requirements.
Not declaring that the works are of not-current technique could lead to sanctions for the insured, namely a reduction of the indemnity in case of disasters or damages, or in the worst case a refusal for any guarantee.
These quasi-mandatory technical assessment and certification requirements for innovative products could lead to barriers to trade for foreign product manufacturers who don't have an ATec, ATEx or ETN.

Decennial liability and litigation issues on the other hand could promote sustainable construction, because contractors and developers are forced to deliver buildings to their clients that are fit for use, taking sus-

tainability issues into account. As far as decennial liability is concerned, the environmental legal framework and its legal precedents already exist: For example: for acoustics, the Court of Cassation decided in a 'arrete' (20 February 1991) that a lack of soundproofing makes the building unfit for use, and should be covered by the ten-year guarantee. A similar legal precedent for thermal insulation deficiency: The integration of sustainable development in construction contracts could lead to questions about the inappropriateness of the work from its ecological destination. The litigation concerning the failure to achieve energy conservation is being developed in France.

Prescriptive regulations

According to CEPMC (the European confederation of product manufacturers) the above mentioned 'Decree on the use of wooden materials in certain buildings' is a typical example of French prescriptive regulations, which could lead to barriers to trade (threat for free market in design and for free circulation of construction products). Also indoor air emissions are an example of prescriptive regulations. CEPMC favours performance based regulations.

Regulations on sustainable construction (combined response by Arcadis from the answers of Arcadis, MinDeDur, AgQuCon, CSTB, Socotec, Hespul)

		REGULATIONS WHICH SPECIFIES SUSTAINABILITY ASPECTS OF CONSTRUCTION							
Subject		**Topic**	**Regulation ?**	**Level of regulation**					**Back-ground in EU-Direc-tives?**
		Requirements/regulations are set:		National/ federa	Regional/ state	Local	Quasi mand a-tory		
Ecological quality									
Energy		For energy performance	Yes	X					Yes
		To use renewable energy sources	Future						Yes
		To implement energy efficiency techniques (e.g. low-energy light bulbs)	No						
		To thermal insulation	Yes		X				No
		To reduce air permeability	Future						Yes
Water		To implement water conservation techniques	Yes	X	X				No
		To implement water efficiency techniques (e.g. low-water flush toilets)	Yes	X	X				No
		For water metering	Yes	X	X				No
Minimize pollution	Waste	To minimize waste during construction	No						
		To register waste production (e.g. in site waste management plan)	No						
		To separate/recycle waste	No						
	Other aspects related to ecology	To limit emission of CO2	Future	X					Yes
		To limit ozone depleting gasses	No						
		To limit green house gasses	Future	X					Yes
Protect biodiversity and natural		To conserve flora on sites	Yes	X	X				Yes
		To conserve wildlife on site	Yes	X	X				Yes
		To conserve natural habitats on site	Yes	X	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						
		To reduce waste during the construction process	No						
		To keep water use to a minimum during the construction process	No						
		Top construct adaptable buildings	No						
Support local economic diversity		To the density of the development (e.g. minimal number of dwellings per area)	Yes			X			No
		To mixed land use	Yes			X			No
		To use local material/goods in construction	No						
Provide employment		To use local labor in construction	No						
Social quality									
Adhere to ethical standards during		To ensure ethical trading throughout supply chain	No						
		To provide safe and healthy work environment	Yes	X					No
Provide adequate local services and facilities		To provicde information to local community during construction activities	Yes	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					No
		To provide affordable housing	Yes	X					No
		To provide housing for the elderly and handicaped people	Yes	X					No
Integrate development in local context		To reject or discourage gated development	Yes	X		X			No
		To provide transport links to local context	Yes	X		X			No
		To provide links to adjacent neighborhoods	Yes	X		X			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	Yes	X		X			No
Functional quality									
Design optimalization		To the shape of the exterior	Yes	X		X			No
		For aesthetics	Yes			X			No
		To planned service life of structures	Yes	X					No
		To planned service life of building services	Yes	X					No
		To the demand of space per occupant and/or dwelling	Yes	X					No
Building envelope		To moisture protection of the building envelope	Yes	X					No
		To wind protection of the building envelope	Yes	X					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	Yes	X					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					No
Technical quality (construction process)									
Technical execution /quality of the construction process		To limit construction time (planning)	No						
		To construction management	No						
		To keeping records on construction progress	No						
		To level of education/experience of builders	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

Other aspects of regulation of sustainable construction

Arcadis France

Subject	Ordering of the regulations: all reg's apply to all buildings	a set of reg's per buildin	a set of reg's per buildi	a set of reg's per buildi	a set of reg's per buildi	Do the reg's apply to existing buildings?	Do the reg's apply to renovation of existing buildings?	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?
Ecological quality										
Energy		X				No	No	As functional regulations (goals are specified)	Yes	Cooperative, governmental parties collaborated with the construction sector
Water	X					No	No	As performance based regulations (performan	Yes	Cooperative, governmental parties collaborated with the construction
Waste	X					A lower level applies	Yes, but only for renovation of existing buildings larger than 1000m2	As functional regulations (goals are specified)	Yes	Cooperative, governmental parties collaborated with the construction sector
Other aspects related to ecology		X	X	X	X	Yes	Yes, but only for renovation of existing buildings larger than 1000m2	As prescipitive regulations (construction methods are stipulated)	Yes	Cooperative, governmental parties collaborated with the construction sector
Economic quality	X					No	Yes, for all renovation	As functional regulations (goals are specified)	No	Top-down, it was mostly a government led process
Social quality	X					No	Yes, for all renovation	As functional regulations (goals are specified)	No	Top-down, it was mostly a government led process
Functional quality		X	X	X	X	Yes	Yes, for all renovation	As functional regulations (goals are specified)	Yes	Cooperative, governmental parties collaborated with the construction sector
Technical quality (construction process)	X					No	Yes, but only for renovation of the main structure or building services	As functional regulations (goals are specified)	Yes	Bottom-up, it was mostly a construction sector led process

Ministère de l'Ecologie, de l'Energie, du Développement durable et de la Mer)

Subject	Ordering of the regulations: all reg's apply to all	a set of reg's per buildi	a set of reg's	a set of reg's per buildi	a set of reg's per building type for infrastru	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?	Comments
Ecological quality											
Energy		X	X	X		No	Yes, for all renovation	As performance based regulations (performance levels are	Yes	Cooperative, governmental parties collaborated with the construction sector	Attention : il est rarement possible d'avoir une réponse commune pour toutes les réglementations d'un même volet.
Water		X	X	X		Yes	Yes, for all renovation	As prescripitive regulations	Yes	Cooperative, governmental parties collaborated with the	
Waste											
Other aspects related to ecology	X					No	Yes, for all renovation	I dont know	I dont know	I dont know	
Economic quality	X					No	Yes, for all renovation	I dont know	I dont know	I dont know	
Social quality		X	X	X		No	Yes, for all renovation	I dont know	I dont know	I dont know	
Functional quality		X	X	X		No	Yes, for all renovation	I dont know	I dont know	Cooperative, governmental parties collaborated with the construction sector	
Technical quality (construction process)		X	X	X		No	No	As prescripitive regulations (construction methods are stipulated)	Yes	Cooperative, governmental parties collaborated with the construction sector	

Agence Qualite Construction

Subject	Ordering of the regulations: all reg's apply to all buildi	a set of reg's per buildi	a set of reg's	a set of reg's per buildi	a set of reg	Do the reg's apply to existing buildings?	Do the reg's apply to renovation of existing buildings?	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?
Ecological quality										
Energy		X	X	X		No	Yes, for all renovation	As performance based regulations (performance levels are stipulated)	No	Top-down, it was mostly a government led process
Water		X	X	X		No	Yes, for all renovation	As functional regulations (goals are specified)	Yes	Top-down, it was mostly a government led process
Waste		X	X	X		No	Yes, for all renovation	As performance based regulations (performance levels are stipulated)	No	Top-down, it was mostly a government led process
Other aspects related to ecology		X	X	X		No	Yes, for all renovation	As performance based regulations (performance levels are stipulated)	No	Top-down, it was mostly a government led process
Economic quality		X	X	X		No	Yes, for all renovation	As performance based regulations (performance levels are stipulated)	No	Cooperative, governmental parties collaborated with the construction sector
Social quality	X					No	Yes, for all renovation	As performance based regulations (performance levels are stipulated)	No	Cooperative, governmental parties collaborated with the construction sector
Functional quality		X	X	X		No	Yes, for all renovation	As functional regulations (goals are specified)	No	Top-down, it was mostly a government led process
Technical quality (construction process)		X	X	X		No	Yes, for all renovation	As performance based regulations (performance levels are stipulated)	No	Top-down, it was mostly a government led process

Socotec

Subject	Ordering of the regulations: all reg's apply to all buildin	a set of	a set of re	a set of re	a set of	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?
Ecological quality										
Energy	X					A lower level applies	Yes, for all renovation	As performance based regulations (performance	Yes	Cooperative, governmental parties collaborated with the construction sector
Water										
Waste	X					No	Yes, but only for renovation of the main structure or building	As performance based regulations (perfor	No	Cooperative, governmental parties collaborated with the construction sector
Other aspects related to ecology						I dont know	I dont know	I dont know	I dont know	I dont know
Economic quality						I dont know	I dont know	I dont know	I dont know	I dont know
Social quality						I dont know	I dont know	I dont know	I dont know	I dont know
Functional quality						I dont know	I dont know	I dont know	I dont know	I dont know
Technical quality (construction process)						I dont know	I dont know	I dont know	I dont know	I dont know

Checking of building plans (combined response by Arcadis, from the answers of Arcadis, MinDeDur, AgQuCon)

	ARCADIS France																		
	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**					**How thoroughly are building plans normally monitored to check compliance with sustainability criteria in constructi**	**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**
		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	A check based on a paper check list, to find if/how	A computer aided check based on a digital check	Check on registration of the architect/engineer	Other			
Ecological quality - Energy	Yes					X	X					No								
Ecological quality - Water	Yes		X									Yes		X				Thorough, mostly a check assesses if and how	The building permit will be issued , reference is made to the	Yes, by word of mouth (e.g. a phone call or a short talk after the
Ecological quality - Waste	No											No								
Ecological quality - Other	No											No								
Economic quality	No											No								
Social quality	No											No								
Functional quality	Yes					X	X					Yes		X				Superficial, mostly a check only assesses if criteria have	The building permit will be issued , reference is made to the	Yes, a proof on paper is issued (e.g. a report, a letter, a permit
Technical quality (construction process)	Yes					X						Yes		X				Thorough, mostly a check	Other	Other

Checking of work under construction (combined response by Arcadis, from the answers of Arcadis, MinDeDur, AgQuCon)

	ARCADIS FRANCE														
	CHECKING OF WORK UNDER CONSTRUCTION														
Subject	**Is work under construction monitored to check compliance with sustainability criteria in construction regulation?**	**Who is monitoring work under construction?**										**Is the monitoring process of work under construction regulated in law?**	**How is work under construction normally monitored to check compliance with sustainability criteria in constructio**	**How thoroughly is work under construction normally monitored to check compliance e with**	**If from this monitoring non-compliance is found, how is this disciplined?**	**If this monitoring shows compliance with sustainabilty regulation, is this reported to the future owner of the building**
		Municipal authority	Other public auth.	Architect	(Tech,)advisor on behalf of auth's	Techn.adv. on behalf of insure	Techn. adv. On behalf of (future) owner	Utility company	Private Inspecto	Building owner	Other					
Ecological quality - Energy	No											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	A check based on a paper checklist, to find if/how criteria on the	Superficial, mostly a check only assesses if criteria have	The contractor is requested to solve the problem. This will be assessed in a	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 (combined response by Arcadis, from the answers of Arcadis, MinDeDur, AgQuCon)

	ARCADIS FRANCE														
	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**	**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 sustainabilty regulation, is this reported to the future owner of the building and/or the builder?**
		Municipal authority	Other public auth.	Archi tect	(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 level	A visual check, to find if/how criteria have been integrated	Thorough, mostly a check assesses if and how criteria have	Other	Yes, by word of mouth (e.g. a phone call or a short talk after
Ecological quality - Water	No											No	A check based on a paper checklist, to find if/how criteria on the list have	Thorough, mostly a check assesses if and how criteria have been integrated	The building may be occupied under the condition that this non-	Yes, a proof on paper is issued (e.g. a report, a letter, a permit or certificate)
Ecological quality - Waste	No											No				
Ecological quality - Other	No											No				
Economic quality	No											No				
Social quality	No											No				
Functional quality	No											No				
Technical execution /quality of the construction process	Yes				X	X						Yes	A visual check, to find if/how criteria have been integrated	Thorough, mostly a check assesses if and how criteria have	The building may not be occupied	Yes, a proof on paper is issued (e.g. a report, a letter, a permit or

Checking of existing buildings (combined response by Arcadis, from the answers of Arcadis, MinDeDur, AgQuCon)

	ARCADIS FRANCE
	CHECKING OF EXISTING CONSTRUCTIONS
Subject	**Are existing constructions monitored to check compliance with sustainability criteria when in use?**
Ecological quality - Energy	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	No