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Tasks and Responsibilities for Building Control in Europe

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ABSTRACT

Ensuring compliance with public building regulations is traditionally the task of local authorities in most Western countries. Since the last decades in many countries private parties play an important role too in testing of building plans and site inspections for the control on compliance with public regulations. This paper addresses on the public versus private responsibilities for inspection and control of the building regulations. The paper is based on the results of a research project in which the system of building control of eight European countries (Belgium, Denmark, England, France, Germany, the Netherlands, Norway and Sweden) were compared.

Central question is what are the preconditions and ingredients for an effective and efficient building control system? This will also be a topic for our research for the coming years in which we will go more in detail into the operation of the different systems in the building practice in European and other countries. In the near future we plan to pursue research in this building regulatory field and we hope to represent a valuable addition to the CIB - W113 group on Law and Dispute Resolution.

KEYWORDS: Building Regulations, Building Control, Plan Testing, Site Inspection

1. INTRODUCTION

Developments in society and in the building sector necessitate an alternative approach to the organization of public building control. In Europe, local authorities operate building and planning permit procedures to assure basic construction quality, and to verify that new buildings are appropriate to the location in which they are to be built. However, the organization of building control varies enormously. In many European countries, private organizations play an important role in conducting

building plan checks and site inspections to ensure compliance with public regulations. In the Netherlands, only the traditional local authority building control exists. In recent years, a number of serious incidents have placed local authority building control high on the political agenda. The organisation and the quality of control is now subject to discussion. In the search for a more effective and efficient organization of building control, a comparison of the approaches adopted by other European countries has proven to be useful (Meijer *et al.*, 2002). The Dutch Ministry of Housing, Spatial Planning and the Environment commissioned an exploratory study of ways in which certification can be used as an instrument to support enforcement of building regulations (Visscher *et al.*, 2003). The study devoted specific attention to the likely consequences of the certification of private parties in terms of the division of responsibilities between central government, regional and local authorities, and the private sector. Nowadays, the certification of private parties to perform public building control in the Netherlands is about to be introduced.

There is a growing number of international oriented research in the field of technical building regulations and building control procedures. Studies of the Institute of Building Control (1997), provide basic insight in the different systems in the European countries. The Consortium of European Building Control has updated that work in recent years. Within this field the OTB Research Institute for Housing, Urban and Mobility Studies has focused in a range of national and international projects on the different systems of technical building control. Some of these studies supported the Dutch government in the search of alternative regulations and instruments (like certification). Other research projects analyse the organization of building control in various European countries (Meijer and Visscher, 1998). A few years ago we finished an international project into building regulations in eight European countries: the Netherlands, England, France, Germany, Sweden, Norway, Belgium and Denmark (Meijer, Visscher and Sheridan, 2002; Sheridan, Visscher and Meijer, 2003). Slowly but surely these international oriented comparative studies lead to a framework, in which the building regulatory systems can be analyzed in a coherent way. In Paper CIB-445 Regulatory Systems in Europe (Meijer and Visscher, 2007) we analyse developments of privatisation and deregulation and consider conversion (Europeanisation) of the systems. In paper CIB-446 we describe current developments in the Netherlands and interpret them with some notions from regulation literature.

This paper focuses mainly on a part of the regulatory system, namely the inspection and enforcement aspects of the building regulatory systems. Traditionally the role of public authorities is large but in a growing number of countries, private parties within the building industry are playing a more important role.

2. RESPONSIBILITIES FOR CONTROL AND INSPECTION

In most European countries (local or regional), authorities have traditionally been responsible for controlling and checking building plans and for granting permits. Table 447.1 classifies the systems of eight countries according to the allocation of responsibility for exercising building control.

Table 447.1 Responsibility for control.

Public responsibility for control	Private responsibility for control	Private responsibility for granting permits
A. Local authority carries out control (Netherlands, Denmark, England & Wales)	C. Local authority contracts out, private organisation is responsible (Germany)	G. Private organisations are qualified to issue building permits (England & Wales)
B. Local authority contracts out but remains responsible (Netherlands, Denmark)	D. Legal liability for private control based on building regulations (France)	
	E. Private inspection because of liability and insurance requirements (Belgium, France)	
	F. Full private responsibility (Norway, Sweden, Germany)	

Three categories are distinguished:

- Public responsibility for building control.
- Private responsibility for building control.
- Private responsibility for granting permits.

The fourth possible category – public responsibility for granting permits – has been omitted, as this remains the archetype in all European countries. What we can conclude here is that (with the exception of Denmark), all countries have adopted changes in recent years in the way they check and control construction works. Responsibility for control tasks is shifting increasingly towards private parties.

The general point of departure of our research is the wish to establish a more effective and more efficient building control system in the Netherlands. In this paper the emphasis particularly lies on the system of plan checks and site inspections. At this moment local authority building control in the Netherlands can hardly be made responsible for the quality of the inspections. The execution of the control activities as to frequency and profundity varies between (and also within) local authorities and is not always in proportion to what is actually needed. The size and quality of local authority building control differs widely in the Netherlands. Small municipalities in particular have problems keeping the knowledge and skills up to date. Applicants have to prove in advance by means of substantial plan documentation that the regulations are going to be fulfilled. This leads

to a relatively heavy administrative burden for the applicants. The need to improve the quality of the plan checking and site inspections (skills, competences, behaviour) is clear.

The accent lies on the technical testing of the building plans and the site inspections. The aesthetic and planning control are left out of consideration. A distinction can be made between the responsibility for granting the permit and execution of the plan checks and site inspections. In all European countries studied local or regional authorities are in charge of the building permit procedure, i.e. they formally grant the permits. Only in England and Wales does an alternative exist in which private organizations may grant a building permit which only covers the technical aspects (and not the planning aspects). Both private and public organizations can be responsible for the check of the design application and the site inspection of building activities. When private parties are responsible for these tasks local authority building control in most cases stays in charge to supervise the control of these private organizations.

3. THE NETHERLANDS AND DENMARK

Denmark and the Netherlands are the only countries in which local authority building control is the only existing form of building control. In the Netherlands however, there are developments towards a more important role of private organizations by the testing of building plans on compliance with technical requirements.

As has been stated before this search for an alternative is driven by the fact that the traditional approach in which all municipalities (big and small) operate their own department of building control, does not function well because of the lack of non-uniform control procedures and limited capacities (See paper CIB-447, V.d. Heijden, Visscher and Meijer, 2007). Since the beginning of this century an assessment guideline for the certification of companies for testing of building plans on conformity with the requirements of the Building Decree was developed. In the period 2004-2006 a pilot was organised with a draft assessment guideline for certification, in which more than 20 organisations participated. The final certification requirements were laid down at the end of 2006. The issue of the first certificates is expected in short term. This certification (or accreditation) only has a private law meaning. It will be up to the local governments to decide if they will accept such 'Building Decree Tests' as sufficient proof of conformity. In the longer run the Dutch Government has the intention to implement this form of private building control in the law. Then it will operate as recognized alternative for public building control. It is expected that also for the site inspection a private law alternative will be developed.

The system is not yet implemented in practice. The idea is that engineering companies and architect's firms can be certified for the checks on the integral Building Decree, but certification for one or more parts of the Building Decree is also possible. The following scopes have been

specified: Co-ordination, General subjects (for which no specific calculations are required), Structural safety, Fire safety, Building physics, Installations, Environment and Small Construction Works. The quality of the certified test procedure is assured by a series of requirements. There are some general requirements to the certificate holder (a company) that controls its independence and there are requirements on the qualifications of the responsible controllers. These are specified for every scope and make demands on general (technical) education and additional specific courses. All specialists have to follow professional developments and courses if these are required by the change in regulations and building techniques. The AGL further contains requirements for the quality system of the certified organizations. They have to work out their system in a quality book. Most important are the checking procedures, which must be described in detail. The AGL contains requirements for a series of about twenty specific checking procedures. There is a general checking procedure for subjects which can be checked on drawing (presence of functions and dimensions). Other procedures relate to specific calculations (structure, building physics). Another important feature of the AGL is a format for a detailed test report for every individual building plan in which all the requirements of the Building Decree are listed.

4. GERMANY

In Germany local building control contracts out many checking and inspection activities to specialized and recognized engineering firms. In general this is the structural check and the site inspection. These engineering firms are responsible for their control. The engineers involved are specialized, recognized, have to comply with heavy demands to qualify and are liable for the quality they deliver. The check engineer (Prüfingenieure) is an independent, freelance, fully qualified, consulting engineer having knowledge of statics and structural problems. Other requirements include - design experience of more than 10 years, knowledge of materials, economical and ecological problems, building management and building legislation, more than one year's experience as a site engineer and be within the age range of 35 - 60 years. When mistakes occur in building parts or functions of the building that are inspected which should have been detected, the engineers are legally liable for damages. Germany has also introduced the concept of self-control for small buildings: residential buildings with a maximum height of one storey and a maximum floor area of 200m².

5. BELGIUM AND FRANCE

In Belgium and France private companies play an important role in the provision of adequate quality safeguards as the foundation for insurances because of strong liability regulations. Whether, and to what extent,

checking takes place depends mainly on financial considerations. In France the applicant for certain construction types (e.g. constructions with a high 'fire-risk' like big buildings) is legally obliged to hire a private engineering or control firm. This system is basically the same as described by Germany. The main difference is that the national law and not the local authority decide in what cases this control firm has to be brought in. The technical inspector is subject to the same presumption of liability as the architect and contractor, must be completely independent of any design, construction or advisory activity relating to the structure and approved by the Council of State. The role and function of the technical inspection body are now defined under the Spinetta Law. For 50 years the profession of technical inspection, especially the issuing of decennial insurance policies, developed without legal obligation. The Spinetta Law, together with supplementary regulations, gave the profession official status and defined its new legal framework. In particular the following has been specified:

- The role of the technical inspection body: intervening on behalf of the owner, with a view to contributing to the prevention of technical hazards, i.e. the risks of errors made by all professionals involved in a project.
- The main subjects of control that should be covered: structural stability and peoples' general safety being the main concerns.
- The conditions of practice of the technical inspection profession.

In France and Belgium extensive checks and site-inspections by private organizations commissioned by the contractor are in some cases necessary because of the strict liability system and the sometimes obligatory insurance system. Because of the important role of private organizations, local building control authorities in France hardly execute any preventive inspections anymore. This means that there is a category of construction works (where there is no control by private organizations) that are not controlled at all.

6. ENGLAND & WALES

Before 1997 building control was carried out either by local authorities, or since 1985, by NHBC Building Control Services Ltd., the first organisation to be appointed as an Approved Inspector. Since January 1997, more Approved Inspectors, both corporate and individual, have been appointed, but only NHBC Building Control Services Ltd. has the necessary insurance to undertake building control of new-build houses and flats. A mutually agreed set of Performance Standards for both public and private sector Building Control Bodies (BCBs) was published in 1999. There are four stages to qualification as an Approved Inspector:

- Application: an application form and a detailed 'knowledge base' must be completed. The knowledge base, which is similar to an

open exam, addresses six key areas of knowledge: Building Regulations and statutory control; Law; Construction technology and materials; Fire studies; Foundation and structural engineering; Building service and environmental engineering. It uses the formulation "Please demonstrate, using particular examples from your experience, how you feel you are equipped with a comprehensive knowledge of / an understanding of / an appreciation of..." depending on the topic. Applicants must also submit an operational business plan.

- Pre-qualification verification: the registrar checks the knowledge base responses for gaps in experience or qualification that may disqualify the applicant or cause delays at later stages.
- Admissions panel: the papers are assessed by experts nominated by members of the Construction Industry Council and qualified Approved Inspectors. They decide whether the candidate merits a professional interview.
- Professional interview: three assessors assisted by the Construction Industry Council Approved Inspectors Register Interview the candidate.

Successful completion of the four stages results in an invitation to register as an Approved Inspector. Approval is valid for five years. New Approved Inspectors are issued with the CICAIR Code of Conduct and Disciplinary Procedures. The Approved Inspector checks if the design and execution meets the technical demands and is authorized to submit a building permit. The applicant may choose between local authority building control or an Approved Inspector. An Approved Inspector does not have the same competences as a local building control authority. When conflicts arise about whether the regulations are being met (especially during the construction phase), the Approved Inspector has to call in whether local building control authority to take action. The system of building control may change again in the next few years. In addition to self-certification schemes for the installation of specified equipment and for replacement windows, which were introduced in 2002, the government is considering the development of self-certification of buildings by enterprises or individuals deemed to be 'competent' by accrediting bodies.

7. NORWAY AND SWEDEN

In Norway and Sweden the applicant is always responsible for the execution of the plan checks and site inspections. Local building control authority checks the control plan in which the applicant indicates how all the necessary inspections – during design and on-site – are provided for to ensure that the construction meets the demands of the building regulations. The local authority decides when they are satisfied with a self-control system carried out by the firms involved (designers, construction specialists and contractors) and when they insist on an independent inspection by a

specialized inspection body. The qualification system for architects, building companies knows various classes and levels. The basis for the class levels are complexity of the construction work and risk for damage on health, environment and safety damage. There can, however, be a mix of classes within one project, if a fire solution requires special attention, that part of the project can be put in a certain class, while the rest may be categorized in another class. On the basis of this, the construction work is divided in some hundred categories. Besides the three 'complexity/risk' levels, three roles are distinguished: responsible for design, responsible on site and responsible for the complete co-ordination. Most companies apply for approval for the complete set of 'risk and role levels'.

The qualification and experience demands are limited to the professional staff. The administrative staff and the workers are not included. There are four levels of education, from technical school to university degrees. The demands depend on the class. The building regulation contains a table for the demands for education and length of experience for each function in each class. The demands on experience depend also on the class, and varies from two to eight years. Co-ordination responsibility requires longer experience than ordinary performing responsibility in design or construction, and there is also a demand for 'relevant' experience. Contrary to the demands for education and length of experience, which are related to the professional leadership of the company, the so-called (quality) system requirements (or demands) are related to the company as such. There are four formal demands:

- Organisation plan (or rather two organisation plans, one showing how the company is organised, and one showing how the company organises its projects).
- A system for identification of official demands (often just shown in the control plans).
- A system for the handling of documents.
- A system for handling of deviations.

In addition, there is a general demand for knowledge of the building regulations. As a part of the permit application the building and construction companies have to show qualifications in order to be given responsibility. The national qualification body provides the proof or certificate for this qualification. This certificate has recently been given a duration of three years (formerly two years). If the company does not have a national certificate, it can nevertheless apply for a local issue, but it must renew its application in each new case. The demands are initially the same as for the national certificate, but the municipality also has a possibility to issue responsibility to persons. On the national level, certificate is only issued to companies. Until now, it is estimated that about 1/3 of all the Norwegian building and construction companies (= 30 to 35.000) have obtained certificate from the National qualification body, and it is also estimated that this figure (which still is increasing) will stop at about 50 %. This is about the double of what was estimated in 1997.

8. CONCLUSIONS

The general point of departure of our research is the wish to establish a more effective and more efficient building control system in the Netherlands. In this paper the emphasis particularly lies on the system of plan checks and site inspections. The need to improve the quality of the plan checking and site inspections (skills, competences, behaviour) is clear. Theoretical the optimum situation would be architects and engineers being certified to check their own work: process control in stead of end control. In this would have a maximum impact on the quality (effective) and the speed of process (efficient). However, such a shift of responsibilities from local authorities to certifiers raises much questions about the liability of the system (see Fisher, 2003). For the coming years, the solution lies not only in the introduction of private inspection to replace local authority building control. Apart from the fact that this will lead to unforeseeable effects, local authority building control still has basic qualities and skills based on many years of experiences. The aim should be to develop a system in which private and public building control (eventually) work side by side. A framework has to be established that guarantees the competences of both public as private inspectors. The introduction of private control could be used as a catalyst for improvement of building control all along the line. The demands on both inspectors (private or public) should be identical and both public and private inspector should be accredited for the same skills, capabilities and experiences.

Almost every European country used to have a 'traditional' control system, in which local authority building control played a key role. This system has undergone major changes and the role of private organizations within the permit procedure has grown considerably. Due to liability reasons this has been the case in Belgium and France for a long time. In Germany the responsibility of the check engineer to enlarge the security that buildings are built according to the rules also goes back a long time: to the early 1920s. In the other countries however the developments are from a more recent date. In England Approved Inspectors have been able to take over the role of local authority building control since the mid 1980s. At the moment the English are considering enlarging the role of private organizations further by introducing a form of self-certification for architects. This could mean that inspection and control could be integrated in the design and draft phase of building projects. The same idea is behind recent propositions in the Netherlands to certify architects, building advisory organizations, construction companies, etc. to check whether the plan meets the technical requirements of the Building Decree. In Norway and Sweden the decision has been made to move away completely from the traditional role of local authority building control. The applicant is responsible to take care of the necessary inspections. Local authority building control checks the control plan. In Denmark local authority building control can contract out inspections to private organizations, but they stay responsible for the inspection. To our knowledge there are no

developments in Denmark comparable with those described for the other countries..

With the exception of Belgium and France (where financial and liability reasons play an important role) the main motives for other countries to adapt their system is to enlarge the quality of the building control and to diminish the administrative burden for applicants. The systems in Belgium and France are not an inspiring example. Apart from the fact that these systems there are the result of historical factors, the disadvantages seem great. Main disadvantage is that this option creates a dependency of the building regulatory system on the insurance market. In France we see furthermore that, because of the important role of private organizations (including insurance companies), local building control authorities hardly execute any preventive inspections anymore. This means that there is a category of construction works (where there is no control by private organizations) that are not controlled at all. The experiences in the other countries support our conclusion that the Netherlands should develop a system in which private and public building control work side by side. A certification/accreditation framework both for public and private inspectors in which educational standards and the demands on the building practitioners are linked, offers the optimum chance for effective and efficient actual control and inspection.

The question how the quality, skills and competence of inspectors can be guaranteed is of course of great importance, but there are more preconditions and ingredients for an effective and efficient building control system. The technical requirements should be clear and nationally wide uniform. The most obvious solution is that an organization (with representatives from governmental organizations and the building industry) defines the regulations at a national level. The performance approach as used among others in the Netherlands provides a good basis. In the future determination methods are uniform in Europe if the Euro Codes are implemented in all the countries. All countries can set their own limit values that can vary because of regional reasons (like climate and geophysical factors). It is important that the systems are the same and that a set of approved documents (with acceptable solutions) and alternative solutions is kept up to date. The procedures should be transparent, effective and efficient. It must be possible that an applicant can get information about the feasibility of the planned construction work as early as possible. This could be realized in various ways, for instance by making a distinction between a permit for location dependent aspects (e.g. planning permit) and a permit for location independent aspects (e.g. building permit) of construction works. Other ingredients that can contribute to this goal are the introduction of an obligatory pre consultation meeting, a phased procedure and fixed permit handling times.

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