BUILDING CONTROL: PRIVATE VERSUS PUBLIC RESPONSIBILITIES

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Abstract
In the Western world, building regulations should guarantee that newly built buildings are safe and healthy for users and visitors. In most countries, additional demands are made concerning comfort, accessibility, energy efficiency and sustainability. In general, a building regulatory system consists of technical requirements procedural regulations. The latter determine building permit procedures and the extent and intensity of building control. In Europe, governmental bodies have traditionally played a central role in formulating and enforcing these regulations. In the past decades, however, we have seen some changes in this respect. In a growing number of European countries, private parties within the building sector (e.g., contractors, architects and engineers) have assumed some of the traditional activities of the local building control authorities. The reasons for this development differ. In the Netherlands, for example, alternatives for local authority building control are being explored, as doubts have arisen concerning the effectiveness and efficiency of the existing system of control. In some other countries, however, such changes have been motivated by more positive reasons. This paper focuses on public as compared to private responsibilities for the inspection and control of building regulations. The paper is based on the results of a research project comparing the building control systems of eight European countries (Belgium, Denmark, England, France, Germany, the Netherlands, Norway and Sweden). The material has been updated and extended with an investigation of the Australian building control system. The central question concerns the preconditions and ingredients necessary for an effective and efficient building control system.

Keywords*: building regulations, building control, deregulation, certification, private responsibility*

1. INTRODUCTION

The number of internationally-oriented research studies concerning technical building regulations and building control procedures is growing. Studies conducted by the INSTITUTE OF BUILDING CONTROL (1997), provide basic insight into the diverse systems that are in place in various European countries. SHERIDAN (2001) analyses technical building regulations in some European countries using a broad range of regulations and incentives that promote housing quality. BOWEN (1997) provides basic definitions that are helpful for understanding systems of technical requirements, focusing on performance-based building codes (e.g., the Dutch Building Decree). The Taskgroup for Performance-Based Regulatory Systems within the CIB (International Council for Research and Innovation in Building and Construction) is developing a performance systems model for the system of technical requirements (e.g., BELLER et al. 2001, BUKOWKSI et al. 2001, MEACHAM et al. 2002).

Within this field, the OTB Research Institute for Housing, Urban and Mobility Studies has focused on a range of national and international projects concerning different

systems of technical building control. Some of these studies have assisted the Dutch government in its search for alternative instruments (e.g., the development of an assessment guideline with requirements for certifying private companies to inspect construction work). Other research projects have analysed the organisation of building control in various European countries (MEIJER & VISSCHER, 1998). We have recently completed an international project concerning building regulations in eight European countries: the Netherlands, England, France, Germany, Sweden, Norway, Belgium and Denmark (MEIJER et al. 2002; SHERIDAN et al. 2003). Slowly but surely, these internationally oriented comparative studies have led to the development of a framework that can be used to analyse building regulatory systems in a coherent way. This paper focuses mainly on two aspects of the regulatory system: inspection and enforcement. While public authorities have traditionally played an important role, the role of private parties within the building industry is gaining in importance in a growing number of countries. The focus on this subject is inspired by the fact that public (as opposed to private) inspection is a topic of considerable discussion in the Netherlands. The paper is largely based on the European comparison mentioned before and is supplemented with information concerning the system used in Australia. The paper begins with a short description of why the debate over public and private inspection is a prominent subject in the Netherlands. In Sections 3 through 8, we review different systems in various countries, drawing conclusions in Section 9.

2. CHECKS AND INSPECTION: PRIVATE VERSUS PUBLIC RESPONSIBILITY

The general starting point for our research is a desire to establish a more effective and more efficient building control system in the Netherlands. This paper places particular emphasis on the system of plan checks and site inspections. At present, local authority building control in the Netherlands can hardly be made responsible for the quality of the inspections. The execution of control activities varies among (and also within) local authorities in terms of frequency and profundity, and it is not always consistent with what is actually needed. The size and quality of local authority building control differ widely in the Netherlands. Maintaining current knowledge and skills is particularly problematic for small municipalities. Applicants must prove in advance, by means of substantial planning documentation, that the regulations are going to be fulfilled, placing a relatively heavy administrative burden on the applicants. The need to improve the quality of plan checks and site inspections (with regard to skills, competencies and behaviour) is clear.

The system emphasises site inspections and the technical control of building plans. Aesthetic and planning control are left out of consideration. The authority to grant permits can be distinguished from the authority to execute plan checks and site inspections. In all of the European countries included in the study, local or regional authorities are in charge of building permit procedures (i.e., they formally grant the permits). The only exception is in England and Wales, where private organizations may grant building permits that cover only the technical aspects of proposed building projects and do not address the planning aspects. Both private and public organizations can be responsible for checking design applications and performing site inspections of building activities. In most cases, when private parties are

responsible for these tasks, local authority building control remains in charge in order to supervise the control of these private organizations.

The situation is somewhat different in Australia, where private building certifiers may issue both building and occupancy permits. Individuals employed by local government agencies may also carry out certain certification and inspectorial functions. In both cases, stringent demands are made with regard to qualifications and experience (ABCB 2003). In this respect, the situation is quite distinct form those in many European countries.

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, private organisations are playing an increasingly prominent role by conducting checks on the technical requirements. As stated above, the search for an alternative is driven by the fact that the traditional approach, in which each municipality – regardless of size – operates its own department of building control, does not function well, due to limited capacity and a lack of non-uniform control procedures. A draft assessment guideline (AGL) specifying requirements for processing certificates for testing building permit applications in compliance with the requirements of the Building Decree was completed in the summer of 2002, but has not yet been implemented. The idea behind the guideline is to allow engineering companies and architect firms to be certified to perform the checks specified in the integral Building Decree, but certification for one or more parts of the Building Decree is also possible. The following scopes have been specified: (A) General subjects (no specific calculations required) and co-ordination; (B) Structural safety; (C) Fire safety; (D) Building physics; (E) Installations and (F) Environment. The quality of the certified test procedure is assured by a series of requirements. In addition to general requirements that control the independence of the certificate holder (i.e., a company), there are requirements concerning the qualifications of the responsible controllers. These requirements are specified for each scope and include requirements for general (technical) education and additional specific courses. All specialists must follow professional development and training courses as required by changes in regulations and building techniques. The AGL further contains requirements for the quality systems of the certified organizations, which must. detail their systems in quality books. The checking procedures are the most important component and 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 that can be checked by drawing (e.g., presence of functions and dimensions). Other procedures relate to specific calculations (e.g., structure, building physics). Another important feature of the AGL is a format for a detailed test report for each building plan, which lists all of the requirements included in the Building Decree. An experimental project is currently being conducted with the certified Building Decree Test, involving the participation of about twenty engineering and architect firms. This project will test whether the concept works in practice. The new system could be incorporated into the building regulations as early as 2005.

4. GERMANY

In Germany, local building control authorities contract many checking and inspection activities out to specialized and recognized engineering firms. In general, structural checks and site inspections are the tasks most commonly contracted out. The engineering firms are responsible for their control. The engineers involved are specialized, recognized, must meet heavy qualification demands and are liable for the quality they deliver. The check engineer (Prüfingenieure) is an independent, freelance, fully qualified, consulting engineer who has knowledge of statics and structural problems. Potential check engineers must also have more than ten years of design experience, and have knowledge of various material, economical and ecological problems. They must also be familiar with building management and building legislation, have more than one year of experience as a site engineer and be between 35 and 60 years of age. If mistakes that should have been detected occur in the parts or functions of buildings that have been inspected, the engineers are legally liable for damages. Germany has also introduced the concept of self-regulation for small buildings (i.e., 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 providing adequate quality safeguards that, due to strong liability regulations, serve as the foundation for insurance. Whether, and to what extent, checking takes place depends mainly on financial considerations. In France, applicants for certain types of construction (e.g., constructions with a high risk of fire, as with large buildings) are legally obliged to hire private engineering or control firms. This system is basically the same as that described for Germany. The main difference is that, instead of the local authority, national law determines the cases in which such control firms must 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 be approved by the Council of State. The role and function of the technical inspection body are now defined in legislation known as the Spinetta Law. For 50 years, the profession of technical inspection, especially the issuing of decennial insurance policies, had 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 legislation specified the following:

- 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 risk of errors made by all professionals involved in a project).
- The main subjects of control that should be covered: structural stability and the general safety of individuals being the main concerns.
- The conditions of practice for the technical inspection profession.

Because of the strict liability systems and partially obligatory insurance systems in France and Belgium, extensive checks and site inspections by private organizations, commissioned by contractors, are sometimes necessary. Because of the important role played by private organizations, local building control authorities in France

execute hardly any preventive inspections anymore. This means that there is a category of construction activities that, in the absence of control by private organisations, are not controlled at all.

6. ENGLAND AND WALES

Prior to 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 insurance necessary to undertake building control of newly built houses and flats. A mutually agreed-upon 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: (1) Building regulations and statutory control; (2) Law; (3) Construction technology and materials; (4) Fire studies; (5) Foundation and structural engineering; (6) 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 upon the topic. Applicants must also submit operational business plans.
- 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: Experts nominated by members of the Construction Industry Council and qualified Approved Inspectors assess the papers. 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 to see whether the design and execution meet technical demands and is authorized to issue building permits. The applicant may choose between the local building control authority and an Approved Inspector. An Approved Inspector does not have the same competencies as a local building control authority. When conflicts arise about whether the regulations are being met (especially during the construction phase), Approved Inspectors must determine whether the local building control authority must take action. The system of building control may change again in the next few years. In addition to self-certification schemes, which were introduced in 2002 for the installation of specified equipment and replacement windows, the government is considering the development of self-certification of buildings by enterprises or individuals deemed by accrediting bodies to be competent.

7. NORWAY AND SWEDEN

In Norway and Sweden, applicants for building permits are always responsible for executing plan checks and site inspections. To ensure that construction will conform to building regulations, the local building control authority checks the control plans, in which applicants indicate the provisions that have been made for all required inspections (during design and on-site). The local authority decides whether self-regulation systems carried out by the firms that are involved in a particular project (e.g., designers, construction specialists and contractors) will suffice or whether independent inspection by a specialized inspection body is warranted. The qualification system for architects and building companies consists of a number of classes and levels. The class levels are based on the complexity of the construction work and the risk of health, environmental and safety damage. Classes can be combined within a single project, however. If a fire solution requires special attention, for example, that part of the project may be assigned to one class, while the rest may be categorized in another class. Based on this classification, construction work is divided into about a hundred categories. In addition to the three 'complexity/risk' levels, the system distinguishes three roles: (1) design responsibility, (2) on-site responsibility and (3) complete co-ordination responsibility. Most companies apply for approval for the complete set of 'risk and role levels'.

The demands for qualification and experience apply only to the professional staff. Administrative staff and other workers are exempt from these requirements. There are four levels of education, ranging from technical school to university degrees. The demands depend on the class. The building regulations contain a table listing the level of education and length of experience required for each function in each class. The demands for experience also depend on the class and vary from two to eight years. Co-ordination responsibility requires more experience than does responsibility for ordinary performance in design or construction, and there is also a demand for 'relevant' experience. In contrast to the demands for education and length of experience, which are related to the professional leadership of the company, the (quality) system requirements (or demands) are related to the company itself. 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 identifying official demands (often shown only in the control plans).
- A system for handling documents.
- A system for handling deviations.

In addition, there is a general demand for knowledge of the building regulations. As a part of the permit application, building and construction companies must show their qualifications in order to be given responsibility. The national qualification body provides the proof or certificate for this qualification. This certification has recently been given a duration of three years (formerly two years). If the company lacks national certification, it can nevertheless apply for a local issue, but must renew its application in each new case. The initial demands are the same as for national certification, but the municipality also has to the option of issuing responsibility to persons. At the national level, certification is issued only to companies. To date, it is estimated that about one third of all the Norwegian building and construction companies (between 30,000 and 35,000) have obtained certification from the

national qualification body, and it is also estimated that this figure (which still is increasing) will level off at about fifty percent. This is about two times greater than the number projected in 1997.

8. AUSTRALIA

In Australia, all states and territories have recently approved a nationwide uniform system of competency standards for building surveyors (ABCB, 2003). This framework seeks nation-wide harmonization of educational qualifications, experience and work scope for professionals who are involved in building certification. In essence, the framework describes two levels of building certifiers:

- Building Certifier, Level 1, who has an unrestricted scope of work and who must hold a tertiary level degree and have at least three years of relevant and practical experience; and
- Building Certifier, Level 2, who is able to certify the design and construction of buildings up to three storeys high and having a maximum floor area of 2,000 square metres. These professionals must hold advanced diplomas and have at least two years of relevant and practical experience.

Individuals who are employed by local government authorities may carry out designated certification and inspectorial functions for structures (including residential buildings) that are no more than two storeys high and have a maximum floor area of 500 square metres. The minimum requirements for such a position call for a diploma in building surveying and at least one year of relevant experience. The framework was developed in consultation with industry, state and territorial governments and other relevant stakeholders, and was adopted in its final form by the Australian Building Codes Board. The National Accreditation Framework requires practitioners to have attained competence through both education and practical experience. Graduates of accredited courses or programs are considered to have attained the educational competencies of the framework, and require no further assessment. Attaining practical competence requires a period of practical experience within the industry under the guidance of experienced professional Building Certifiers practicing at the relevant level. An additional guideline document was developed that details how the experience competencies should be assessed. The rationale underlying these guidelines is that changes are occurring throughout the building and construction industry at an unprecedented rate. The role of the building certification profession has changed significantly in recent years and now embodies work in building regulatory consultancy, building approval or enforcement (both in private practice and Local Government) and construction or asset management. The rapid change in the role of building certifiers has been influenced by industry-wide changes, including the introduction of private certification, adoption of the performance based Building Code of Australia, and by the rationalization of local government in most states and territories. These factors have raised industry and community expectations for the building certification profession to possess multiple skills in various facets of the construction industry. To this end, courses for professional building certifiers must encompass attributes that will facilitate the development of this array of skills.

The recently endorsed national competency standards and higher education benchmark for building surveyors is an integral part of the framework. Competency standards are the building blocks used by TAFE–Institutes (Technical and Further Education) to develop courses. These standards have been specifically designed to match the core functions specified in Level 2 of the framework. Similarly, the benchmarks align with the functions described at Level 1, and universities will structure their undergraduate courses accordingly. These two sets of standards mean that, irrespective of where students obtain their building surveying qualification, they will graduate with the same skills, knowledge and understanding in the identified core areas. Moreover, much care has been taken to ensure a seamless transition between the two sets of education standards. People with a TAFE qualification in building surveying may progress through to the University degree.

9. CONCLUSIONS

The general starting point for our research was a desire to establish a more effective and more efficient building control system in the Netherlands. The paper has placed particular emphasis on the system of plan checks and site inspections. The need to improve the quality of plan checking and site inspections (e.g., skills, competences, behaviour) is clear. Theoretically, the optimal situation would be to have architects and engineers who are certified to check their own work (i.e., process control instead of end control). Such a situation would have a maximum impact on the quality (effectiveness) and the speed (efficiency) of the process. Such a shift of responsibilities from local authorities to private certifiers, however, raises many questions concerning the liability of the system (see also FISHER in this issue). For the coming years, the solution lies not only in the introduction of private inspection as a replacement for local authority building control. Aside from the fact that the effects of such a shift are not foreseeable, local authority building control still has basic qualities and skills based on many years of experience. The goal should be to develop a system in which private and public building control (eventually) work side by side. A framework must be established to guarantee the competencies of both public and private inspectors. The introduction of private control could serve as a catalyst for improving building control along these lines. The demands on inspectors (both private and public) should be identical, and both public and private inspectors should be accredited for the same skills, capabilities and experiences.

In the past, nearly every European country had 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. Issues of liability have led this to be the case in Belgium and France for a long time. In Germany, the responsibility of the check engineer to strengthen the assurance that buildings are built according to the rules also dates back to the early 1920s. In the other countries, however, the developments have been more recent. In England, Approved Inspectors have been able to take over the role of local authority building control only since the mid-1980s. The English are currently 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 into the design and draft phases of building projects. A similar idea lies behind recent propositions in the Netherlands to certify architects, building advisory organizations, construction companies and other bodies to ensure that plans meet

the technical requirements of the Building Decree. Norway and Sweden have decided to abandon the traditional role of local authority building control completely. Applicants are responsible for taking care of the necessary inspections. Local authority building control checks the control plan. In Denmark, local building control authorities can contract inspections out to private organizations, but they retain responsible for the inspections. To our knowledge, there are no developments in Denmark that are comparable to those described for the other countries. In Australia, all states and territories have recently (2003) approved a nationwide uniform system of competency standards for building surveyors. Both private and public building surveyors fall within the scope of the framework.

With the exception of Belgium and France (where financial and liability reasons play an important role), the main motivations for other countries to adapt their systems have included the desire to increase 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 are the result of historical factors, the disadvantages seem great. The main disadvantage is that this option makes the building regulatory system dependent upon the insurance market. In France, the important role played by private organizations (including insurance companies) further impedes the local building control authorities such that they execute hardly any preventive inspections anymore. This means that there is a category of construction works that, in the absence of control by private organizations, are not controlled at all. The experiences in the other countries support the conclusion that the Netherlands should develop a system in which private and public building control entities work side by side. A framework for certification and accreditation for both public and private inspectors, in which educational standards are linked to the demands on the building practitioners, offers the greatest chance for effective and efficient actual control and inspection.

The question of how to guarantee the quality, skills and competence of inspectors is of great importance, of course, but there are additional preconditions and ingredients for an effective and efficient building control system. Technical requirements should be clear and uniform nation-wide. The most obvious solution is that an organization (with representatives from governmental organizations and the building industry) would define the regulations at the national level. The performance approach as used in the Netherlands (and other countries) provides a good foundation. In the future, methods of determination will be uniform in Europe, provided that the Euro Codes are implemented in all the countries. Each country can set its 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 for an applicant to obtain 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 permits) of construction activities. Other ingredients that can contribute to this goal are the introduction of obligatory pre-consultation meetings, phased procedures and fixed permit-handling times.

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