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Understanding School Building Policy and Practice in Belgium's Flemish Community

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UNDERSTANDING SCHOOL BUILDING POLICY AND PRACTICE IN BELGIUM'S FLEMISH COMMUNITY

OECD Education Working Paper No. 92

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This paper describes a conceptual framework that can be used to interpret the general policy issues driving the design, construction, maintenance and evaluation of school buildings in Belgium's Flemish Community. Within the context of this framework, eight policy challenges relating to the provision of school buildings in Flanders are presented, providing lessons for all national or regional authorities with an interest in governance thinking about school construction issues.

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ABSTRACT

This paper describes a conceptual framework that can be used to interpret the general policy issues driving the design, construction, maintenance and evaluation of school buildings in Belgium's Flemish Community. Within the context of this framework, eight policy challenges relating to the provision of school buildings in Flanders are presented, providing lessons for all national or regional authorities with an interest in governance thinking about school construction issues.

RÉSUMÉ

Ce document présente un cadre conceptuel pouvant être utilisé pour interpréter les questions de politique générale concernant la conception, la construction, l'entretien et l'évaluation des bâtiments scolaires de la Communauté flamande de Belgique. Ce cadre conceptuel présente huit défis stratégiques concernant la mise à disposition des bâtiments scolaires en Flandre, susceptibles d'éclairer toute autorité nationale ou régionale s'intéressant aux thématiques relatives aux infrastructures scolaires.

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1. Introduction

Today, there are more than 4 000 schools and over 6 300 school sites in Flanders, including primary, secondary and special schools, lifelong learning centres, pupil guidance centres and boarding schools (Figure 1). These represent nearly 17 000 separate school buildings and a total area of 16 million m² (Table 1) (AGIOn, 2009).

Flemish schools are organised in three "education networks":

- "GO! Education of the Flemish Community" is a public body operating under the auspices of the Flemish Community.
- "Publicly funded, publicly run education (OGO)" are schools managed by local authorities (municipal and provincial).
- "Publicly funded, privately run schools" (VGO) are schools organised by a private individual or organisation. The governing body is often a non-profit-organisation (vzw). Most privately-run schools in Flanders are Catholic schools (Flemish Government, 2008).

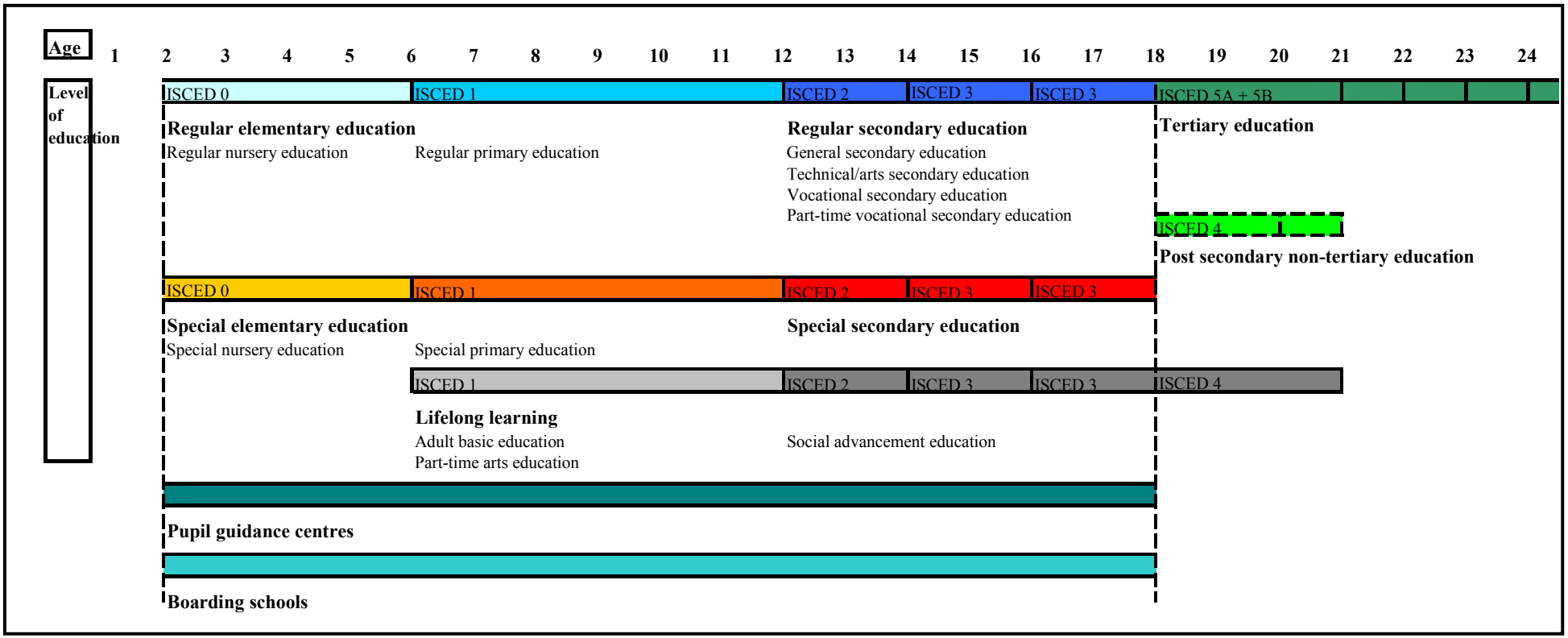
'De Letterdoos' Primary School, Oostakker

Two different bodies are responsible for implementing school building policy in Flanders (see Table 2).

- GO! Education of the Flemish Community is responsible for financing the construction of schools. GO! owns the school buildings in the network and acts as a client.
- Agency for Infrastructure in Education (AGIOn) is an agency within the Flemish Government that subsidises building projects for schools. The projects are organised by local authorities (OGO: publicly funded, publicly managed) or private organisations (VGO: publicly funded, privately managed). Within these networks, the schools boards own the buildings and act as clients. AGIOn does not own the schools.

GO! and AGIOn implement the policies of the Minister of Education and Training, although both institutions can make and implement their own policies. The responsibilities, decision-making procedures and functions of GO! and AGIOn, in addition to methods of project delivery, construction and maintenance, do not differ according to education level, but according to the education network to which a school belongs and the type of financing - PPP-financing or regular financing through subsidies (Design-Bid-Build) (Tables 2 and 3).

Figure 1 The Flemish Community's education system as it relates to education facilities



In Flanders, as elsewhere, school building policy is faced with the ongoing challenge of providing quality school buildings for staff and students which also meet the needs of communities. Although there has been renewed interest and investment in recent times, in general the Flemish Government has been investing too little in educational buildings over the years. As a result, Flanders is now faced with outdated school building stock, which is in many cases ill-equipped to meet the educational demands of the 21st century. In addition, in larger Flemish cities, an increase in the number of school-age children has put additional demands on educational spaces, requiring the expansion of existing school buildings.

To better understand the challenges and initiatives shaping school building policy in Flanders today, this paper presents a socio-theoretical approach which conceptualises school buildings as "nodes of relationships" operating in the midst of interactions between local actors, public policy and the broader social environment (Wielemans, 1993). The first part of this paper presents a conceptual framework that maps the complex relationships between *(1) education, (2) buildings and (3) policy* (Figure 2). Drawing on this framework, the second part of the paper provides some reflections about school building policy, with reference to the issues currently shaping the financing, design, construction, management and evaluation of school buildings in Flanders.

2. Towards a conceptual framework for school building policy

2.1. About education

In 1999 the Flemish Education Council (Vlaamse Onderwijsraad, VLOR) published its long-term "vision on education" (VLOR, 1999), which describes how education and education policy are embedded in a social context, influenced by broader social changes and relationships between groups and social interests. Since education can also influence the process of societal development, education can be seen as having a certain degree of autonomy from social structure. "Education" can adopt a critical stance vis-à-vis the demands imposed on it by society (Wielemans, 2000; VLOR, 1999).

Sint-Joost- Aan-Zee Primary School, Brussels.

The interaction between education and society takes place in an open system consisting of multiple layers. The cluster "student-classroom-school" can be seen as the smallest organisational unit that operates within broader local associations of co-operative education units or school communities. One layer above, in local and central (education) policy, policy making runs bottom-up from the schools to the central policy level, while policy implementation runs top-down from the central policy level to the schools. Depending on the context, a range of different stakeholder groups and

institutions – such as the ministry of education, parents' associations, trade unions, representative organisations and educational inspectorates – can play a role in the policy cycle (VLOR, 1999). At the next level, the education system is embedded within a broad social and cultural context. Education is thus a societal subsystem which exists next to other subsystems, which interrelates with family, the economy, politics, religious institutions, and science and technology. Furthermore, the importance of education is a priority for supranational institutions such as the EU, the OECD and UNESCO. At the highest level, the impact of the "all-pervasive dominant social and cultural model" (VLOR, 1999; Wielemans, 1999) can be described in terms of "post-modernity", "globalisation", "the network society", "post-fordism" or the "risk society" (Lammertyn, 2007).

The concept of "formative education" is one of the cornerstones of education in Flanders. It encapsulates the ongoing tension between societal expectations and education's own pedagogical tasks (VLOR, 1999). "Formative education" assumes a kind of critical-creative process where the development of the student's personality at school meets the expectations of today's society, resulting in "socialisation" or the process by which the individual becomes a member of a community (Wielemans, 1999). Within this notion of "formative education", the individual is presented as a "*node of relationships"*: 'to be is to be related' (Wielemans, 1993).

Likewise, the reciprocal relationship between education and society means that education systems are not entities that maintain a polar relationship with society but are also "nodes of relationships" (VLOR, 1999). Education processes should therefore be considered in terms of a *dual* relationship between the individual and society where on the one hand, education is influenced by supra-individual structures and, on the other, the social order is the product of the actions of "knowledgeable actors" in education (Wielemans, 1993, 2000; Giddens, 1984).

2.2. About buildings

A review of the current professional and scientific literature relating to school construction (AGIOn, 2011) reveals how school buildings are contextually defined and how they are interpreted in light of developments in pedagogy and societal expectations. The review also revealed that school buildings are not passive "containers" or "shells" for activity (AGIOn, 2011; Lackney, 1994): they enjoy a close relationship with the ambitions, expectations, interpretations and daily activities of a host of relevant actors. On the one hand, school buildings are the product of a social dynamic that is specific to planning and design, while on the other hand, they can influence the education process and are reinvented daily by their users.

Indeed, because current discourse about school buildings is more concerned with the "social dynamic", it seems no longer desirable to present the school building as an absolute space that exists independent of human activities. On the contrary, school buildings can be seen as a "relativistic space" (Hubbard, *et al*., 2002; Löw, 2001).

Using the concept of space in Giddens' (1984) structuration theory, Gieryn (2002) considers buildings as the spatial media between "agency" and "structure".[1] According to structuration theory, space is more than an "environment" for social interaction. Space needs to be interpreted as a resource enabling social actors to interact with each other, thus contributing to the (re)production of society as a whole (Giddens, 1984; Meert, 2000). In this respect, buildings also help to give structure and stability to our daily lives. But they do not serve this purpose perfectly: buildings are demolished, can serve a new purpose or are repeatedly renovated and reinterpreted. Buildings thus have a "dual" quality: they provide stability and structure in our social life and reproduce social structures because of their physical qualities; and they are an instrument that can be moulded and interpreted by "knowledgeable individuals" (Gieryn, 2002).

Dijkstijn Primary School, Sint-Katelijne-Waver

A complementary way of looking at buildings is to consider them as technological artefacts. In accordance with Pinch and Bijker's (1984) "Social Construction of Technology" (SCOT), Gieryn (2002) says that in the total life span of a building, the dynamic relationship between space and social action occurs in three "moments":

- ***Planning and design phase.*** The influence of human motivations, desires and views on the spatial structure is most pronounced in this phase. Different groups thus give their own meaning to a building's future design so that it increases its "interpretative flexibility". The notion of interpretative flexibility refers to the belief that artefacts are invariably socially constructed and that different actors may bring different meanings to different artefacts.

- ***Stabilisation and closure phase of the design***. This takes places as a consensus is reached about the definitive design of a building. When the construction of a building comes to an end and the building is occupied, there is a shift towards the structuring force of the building itself, as a physical object, that will stabilise social action patterns and continue to structure them.

- ***Reinterpretation of the building by its users***. The "interpretative flexibility" of the building increases again.

Using Gieryn's approach, "structure" relates to the building's spatial organisation. However, designers and users also create and interact with artefacts within a broader social-institutional context

[1] "Agency" refers to the daily social activities of knowledgeable individuals. "Structure" refers to the more or less fixed social relationships amongst members of society.

(Orlikowski, 1992). In this sense, designers and users can be both restricted and supported by this social-institutional context. Buildings will also to a degree contribute to reproducing the existing social-institutional context precisely because the organisation of the space provides stability to the action patterns of the users.

2.3. About policy

Since the 1990s, Flemish school building policy has been strongly influenced by "governance thinking" in public administration. The process of decentralisation – at the level of government, education and school building policy for central government, autonomous agencies, local administrations, school boards and schools – has meant that the school's authority to develop its own policy has been consolidated and strengthened. However, decentralisation does not necessarily lead to a weakening of the role of the central government. Often, governments continue to make the main strategic decisions and ensure that there is a constant flow of bottom-up information around the actions of schools. It is this independent-yet-dependent position of autonomous actors vis-à-vis (central) authorities that is characteristic of "governance thinking" (Leemans, 2010).

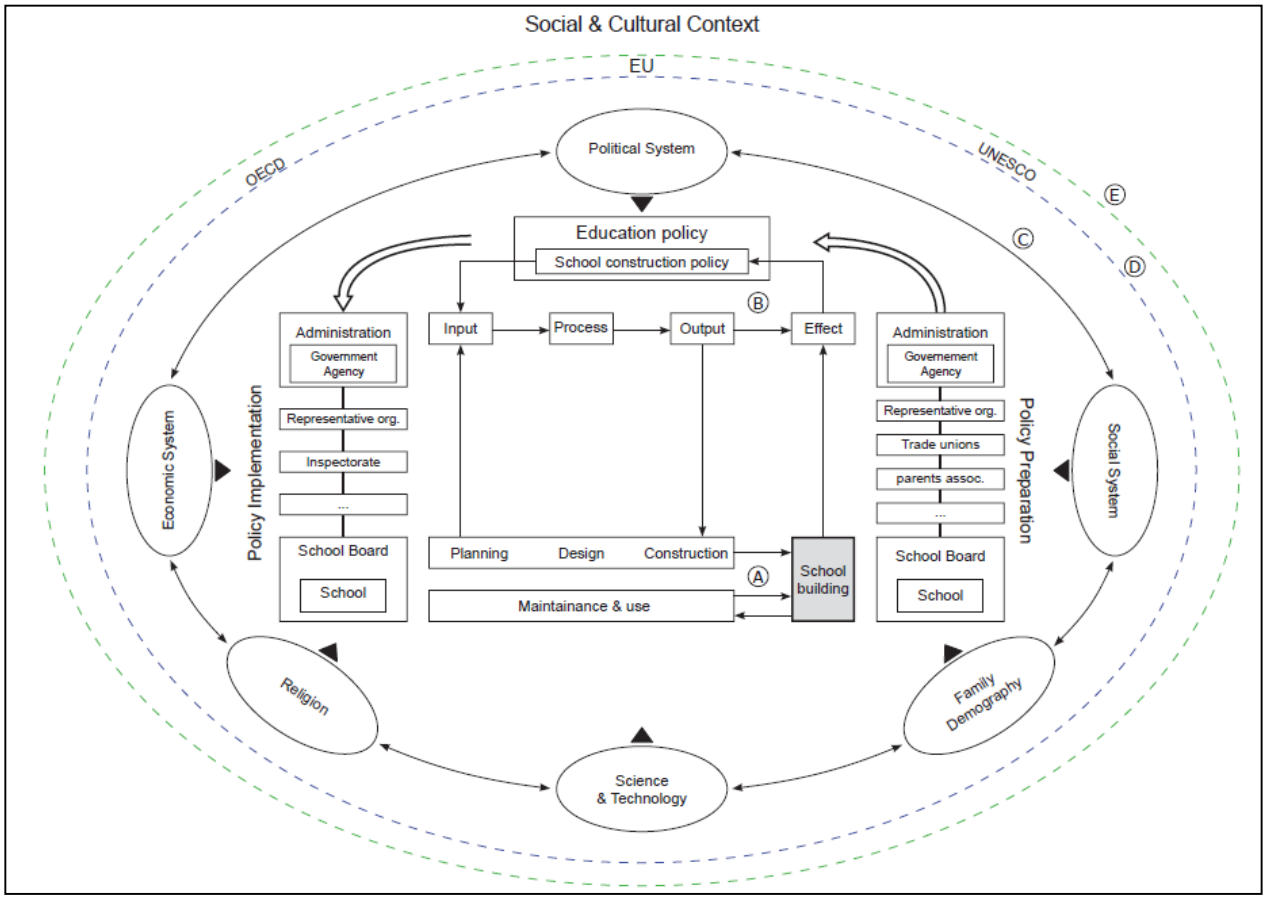
Bouckaert and Van Dooren (2009) use the management and policy cycle to conceptualise the performance of governments. The cycle starts from the *objectives* and the *mission* of a public administration, which can be achieved through a variety of policy instruments or *inputs*. In a broad sense, this refers to the governments' vision about the desired qualities of school buildings, financial regulations and procedures, control and advisory tasks, and the scale of investment in educational infrastructure. Next, the necessary *resources* to realise these objectives are allocated, as well as the *actions* and *projects* required by local actors to deploy these resources. So schools and their boards can use these policy resources as input for their own building projects. Next, these inputs are used in administrative *processes*. These processes refer to all the tasks that governments must execute (e.g. file handling, project management, advising, informing, etc.) to deliver certain *outputs* or *products*. These *outputs* are often part of a *contract* to which the parties involved are held accountable. These may be budgets, fees, controls, guidance and information that are made available to the schools to complete their building projects. Finally, the outputs will exert an impact on society in the form of *outcomes* or *policy effects*. When the various components of the input-output model are joined together, an evaluation can be made about the efficiency and the effectiveness of the policy (Bouckaert and Van Dooren, 2009).

Although the above-mentioned input-output model has already proven useful at various administrative levels, this model has been criticised for ignoring the complexity of policy making and implementation (Van Reeth, 2002). Within an educational context, where numerous actors and broad social and pedagogical developments appear to exert an impact on the quality of school buildings, a broader perspective is desirable. First, the contractual relationship between central authorities and local actors could be activated by embedding them in the complex social settings where public institutions are operating. This could clarify the complex relations between schools, school building policy, and the broader society at large. Second, it underplays the role of government agencies and schools, which are more than simple cogs in a policy system and often have enough autonomy to innovate school building policy and practice from the bottom-up. Policy makers need to accept that policy does not only steer (public) organisations but that these actors can either formally or informally change school building policy when they develop and implement it themselves (Slade, Muir and Pech, 2006).

2.4. Conceptual framework

Figure 2 presents a conceptual framework composed of five contexts, which reflects the complex relationships between (1) education, (2) buildings and (3) policy.

Figure 2 The school building and school building policy as an open system



Context A. The school building. Discourse on buildings is equally applicable to discourse on school buildings: all buildings are the product of the social actions of various relevant actors (architects, government officials, planners, departments, school boards, students, teachers, etc.), who can shape the planning and design of a building and (re)interpret the building during occupancy. School buildings will exert a stabilising and supportive but nondeterminant influence on learning and teaching and hence contribute to the reproduction and/or innovation of the educational system. They are no absolute 'spaces' that simply 'contain' educational activities, but as 'places' they are in a constant and dynamic relationship with all human activity going on in the building. Policy related to school buildings can facilitate or hinder the work of school leaders, planners and designers, although these "knowledgeable actors" have a certain degree of

Gymnasium, 'De Twijg' Primary School, Wijgmaal

autonomy vis-à-vis government policy. To a certain point, school buildings can encapsulate and reproduce a given policy and educational vision, but the building over its lifecycle will be subject to the (re)interpretations of different users, which may well depart from the original aspirations for the building.

Context B. Management and policy. This represents the governance context, in which the planning, design and construction of school buildings takes place. The *objectives* of school building policy are situated within the framework of broader education policy and can be achieved through a variety of policy instruments *(inputs)*. In a broad sense, this refers to the government's vision about the desired qualities of school buildings, financial regulations and procedures, control and advisory tasks, and the capital available for school construction. Schools and their boards can use these policy resources as input for their own building projects (*arrow up*). Next, these inputs are used in administrative *processes*. These processes refer to a totality of recurrent tasks and projects that governments seek to execute as efficiently as possible (e.g. file handling, project management, advising, informing, etc.). The administrative processes result in a number of *outputs* (e.g. budgets, fees, controls, guidance, information) that are made available to the schools and through which they can complete their building projects (*arrow down*). The finished building project is the desired *product* of school building policy (*arrow up*). Administrations and schools, in addition to institutions and stakeholder groups – such as the educational inspectorate, trade unions or representative organisations – can develop, implement and shape school building policy.

School buildings and school building policy are aspects of an education system that are embedded in a broad context ***(Context C)*** encompassing demography, family, economy, well-being, politics and administration, science and technology and religion. Changes in these aspects can influence the expectations of educators and governments about school buildings. Some of these expectations will be reflected in political decisions and the policy process, but schools will also be confronted directly with these new challenges, which can be translated to the policy level from the bottom up.

Contexts D and E demonstrate how the school building and school building policy can be influenced by ***supranational institutions*** such as the EU, OECD or UNESCO, and ***broad social and cultural context***.

3. Challenges for school construction policy in Flanders

This conceptual framework sheds light on some basic challenges in Flemish school building policy. The section presents 8 challenges in Flanders and describes how these challenges can or are currently being addressed: by focusing on quality as an objective; providing support and advice; being responsive to change; ensuring effective management, maintenance and use of school buildings; acknowledging the value of the school building for education and society; evaluating the quality of existing building stock against current and future needs; providing a transparent and supportive governance structure; providing a framework for evaluating school building policy; and collaborating with stakeholders.

3.1. Quality as an objective

The concept of "quality" in school buildings has been a topic of reflection and discussion at both national and international levels (OECD, 2006). But attaining and maintaining "quality" in school buildings is not without its challenges, and there is a need for policymakers to interpret "quality" in its proper context, reflecting the needs, aspirations and backgrounds of the groups that are directly or indirectly involved over the life cycle of a school building (Box 1).

Box 1 Quality as an objective in the Flemish Community

In recent years, there has been renewed interest in the more substantive aspects of school building policy in Flanders. Achieving high quality educational facilities has become an important policy objective of the central government and lies at the core of the Agency for Infrastructure in Education's (AGIOn) mission.

The central objective of Flemish school construction policy is the realisation and development of functional, durable and sustainable educational infrastructure, in consultation with the users (AGIOn, 2009).

- School buildings must be safe, comfortable, attractive, stimulating for learning, environmentally friendly and easy to maintain;

- School buildings should be flexible, support the school's educational programme and pedagogies, be available to the local community and have lasting cultural value; and

- School buildings should be cost efficient to use and manage.

3.2. Providing support and advice

The realisation of a school building project is not a linear process resulting in a single "optimal" solution. The process of planning, designing and building a school is shaped by the interests and interactions between contractors, government officials, architects, school boards, directors, teachers, students and others. It is in the government's interest to gain an insight into the challenges facing all of these groups at each stage of the process. The government is therefore responsible for developing the right policy to benefit each one of these partners, for example, by providing financial support, guidelines, examples of good practices and assistance to developers and builders about good project definitions, by developing evaluation instruments for the benefit of the user population, by playing a role in user participation; or by facilitating collaboration between the various parties involved. (Box 2).

Gym exterior, 'De Twijg' Primary School, Wijgmaal

Box 2 Initiatives to assist schools and school boards in Flanders

Regular financing (Design-Bid-Build). The Flemish Government provides a 100% subsidy for school capital projects in the Flemish Community and a 60% (primary education) to 70% (secondary education) subsidy for school capital projects in the OGO and VGO networks. In 2012, the global budget was EUR 193 million. Despite recent extra budgetary efforts, there has been a significant underinvestment in school construction over the last few decades. The result is an outdated, poor quality building stock in major need of work (see below). By the end of 2010, there was a waiting list of work to the value of EUR 2.5 billion for AGIOn (municipal and private network), and a significant shortage of funding for the schools in the network GO! Education of the Flemish Community.

Public-Private Partnerships (PPP). The DBFM-project (Design-Built-Finance-Maintain) is a specific kind of public-private partnership whereby the Flemish Government and a private partner, Fortis Bank-Fortis Real Estate, established a company to invest EUR 1 billion in school buildings in Flanders. The DBFM-company will be responsible for

designing, constructing, financing and maintaining approximately 200 school building projects. The DBFM-project was set up to decrease the backlog in construction works due to systematic underinvestment over many years.

Planning and evaluation. It is in the interest of schools to monitor and steer the planning, design and construction process. To facilitate this process, the government has developed planning and evaluation instruments, especially with regard to project definitions and post-occupancy evaluation techniques.

Information and guidance. An expert centre was set up for school building matters, including the establishment of a documentation and information centre and a website (www.scholenbouwen.be). Information and advice for schools on good practices in planning and design is available from the centre, and individual guidance is provided for schools in the GO! education network.

Masterplanning. Masterplanning can assist schools to plan for the future regarding school building projects. The GO! education network is preparing a limited number of masterplans for schools as pilot projects.

Modular classrooms to meet urgent needs. GO! Education of the Flemish Community is preparing a large-scale purchase of modular classroom units. Given the poor performances of existing container classes, the quality of the new units is expected to be comparable to new school buildings. The units will be used to meet urgent needs; to serve as transitional solutions while new schools are being constructed; and to provide additional space in large cities with growing school-age populations.

3.3. Responding to change

Changes in technology, demography, the environment and service delivery are shaping both policy objectives and instruments with regard to school buildings policy. Growing student-aged populations demand adequate school building capacity to accommodate all pupils. The need to equip students for the information age has necessitated proper integration of ICT infrastructure in school buildings. Increased concern about the environment and climate change has also introduced its own set of new requirements for sustainable buildings. The increasing demand for multifunctional accommodation has led to co-operation with other sectors, such as childcare, social services, culture and sports. (Box 3).

'Sint- Gerardus', school for students with special education needs, Diepenbeek

Box 3 Recent challenges for school construction policy in Flanders.

Energy-efficient school buildings. A number of measures have been taken to improve energy efficiency in school buildings. Schools can save more on their energy bills by using energy accounting and energy audits, installing oil meters, adjusting heating systems and training energy coordinators. From 2006 to 2012, a special budget was provided to schools investing in energy-efficiency measures. Both AGIOn and GO! also invested in energy efficient school buildings. Newly built schools will have to meet the strict E70-energy performance norm. A pilot programme was established to construct 24 schools according to the passive standard.

Community use of school buildings. The Flemish Government is promoting community use of school buildings by supporting projects that take into account the multifunctional use of school infrastructure and school sites. In this

respect, AGIOn undertook a research project on the spatial translation of the "community school" in Flanders. GO! is setting up two pilot projects in which a school will be combined with housing and sports facilities.

Better integration of ICT in school buildings. Recent research indicates that schools in Flanders often cannot fulfil their curriculum objectives due to inadequate ICT infrastructure. Significant investment is therefore needed in this area.

Investing in adequate infrastructure for technical and vocational education. The operational budgets for schools offering technical and vocational education do not allow for technical equipment to keep up with the latest technological developments in the industry. Further investment is required.

Accessibility. Schools and boarding schools must adhere to new regulations on accessibility for all public buildings. Increasing the integral accessibility of school facilities is one of main objectives of the Flemish policy on equity, with specific focus on full access to newly built infrastructure.

Capacity. Recent demographic changes have created capacity problems in schools in the cities of Ghent, Antwerp and Brussels. In order to ensure that existing educational infrastructure is sufficient to meet the demands of increasing school-age populations, in 2012, the Minister of Education announced EUR 1 million of additional funding on infrastructure to meet the most urgent needs. A special "task force" was established to find long-term solutions.

Changing pedagogical needs. More space per student is required to accommodate changing pedagogical requirements such as competency-based education and a focus on well-being. Cost per square metre has also risen (VLOR, 2010).

Equity. Poor quality school infrastructure exists to a greater or lesser extent in all Flanders' educational networks and for all levels of education. While 21% of school buildings were reported as "inadequate", 53% were reported as "adequate". Socio-economic factors account for differences in school facilities: in general school buildings located in poor, inner-city, neighbourhoods are often of poorer quality than school buildings located in more affluent areas (AGIOn, 2009).

3.4. Effective management, maintenance and use

'Dijkstijn' Primary School, Sint-Katelijne-Waver, a warm and welcoming school

The completion of a school building project signifies the start of the school building's lifecycle, raising questions for school building policy about its daily management, utilisation, maintenance and performance (Box 4). Because school buildings are subject to the (re)interpretation of users, they are invariably seen as *learning buildings,* capable of adapting to new situations and being the subjects and objects of spatial reinterpretations and physical adjustments. But when the structural-physical properties of buildings are no longer reliable or if major changes relating to school activities or teaching curricula are introduced, decisive intervention is required.

Box 4 Maintaining and managing school buildings in Flanders

Professional maintenance of school buildings is an important issue, both for the schools and the government. School maintenance in GO! Education of the Flemish Community is financed by the government, which is the owner of the school building. Maintenance of school buildings in the municipal and private network is financed exclusively by school boards and local authorities, not by AGIOn. New schools financed through PPPs (DBFM-project) are maintained by the private PPP-partner.

Regarding the management of school buildings, survey results show that most schools in Flanders have a prevention plan or a policy note on health, safety and the environment. However, a master plan setting out a school's long-term policy on infrastructure was available in only 42% of school sites. In terms of energy sources for heating, gas is the most commonly used energy source (74% of the sites), followed by fuel oil (42% of the sites). Renewable energy sources are very rarely used for heating buildings.

The management of school buildings has become more complex as facilities are often used by the school and community. Also recent developments in specialised techniques (heating, acoustics, ventilation) call for more know-how by the user.

Clearly, learning and teaching in an outdated building can pose a daily challenge for principals, teachers and students and demand a lot of goodwill, creativity and flexibility on the part of users. But it also risks demotivating them.

Little is known about these issues on a government level. Currently, some qualitative research has been conducted on the evaluation of governmental policy on school building use, maintenance and management (see Box 5).

3.5. The meaning of the school building for society

The school building is expected to fulfil its purpose by supporting the school activities for which it was designed. Through its spatial organisation, the building embodies an educational vision and pedagogical project that is implemented on a daily basis. In addition, school buildings need to provide a reassuring, stimulating, secure, safe and healthy working and learning environment, where both students and teachers can feel comfortable and motivated. The social role of school buildings can also be interpreted from a broader perspective as mirroring the society that created them (Box 5).

Freinetschool 'De Levensboom', Marke

Box 5 Evaluating the quality of school buildings in Flanders

As elsewhere, research about the impact of school infrastructure on learning is limited in Flanders. No research has been conducted thus far into the relationship between the quality of school infrastructure and student performance, although Cuyvers *et al*. (2011) found a significant relationship between the quality of schools buildings and the well-being of students in Flemish schools: "Differences in students' well-being can be linked to the quality of infrastructure of the schools they attend. It follows that scores on well-being were significantly lower among students attending schools with poor quality infrastructure". These results do give cause for concern about the possible impact of the condition of the current school building stock in Flanders on teaching, learning and well-being.

In 2008, a survey was conducted on the quality of school buildings for all Flemish school sites (N=6318) (AGIOn, 2009). The results show that 29% of the building stock is more than 60 years old; and only 15% were

constructed after 1990 (Table 4). 21 % of school buildings were reported as "unsatisfactory", with regard to their attractiveness and cost, followed by functionality and condition (Tables 5 and 6).

The survey's most important finding was that the quality of most Flemish school buildings is no more than adequate in terms of the basic conditions of comfort, current state and safety. Most students and teachers are provided with a basic standard of accommodation. However, a minority of school buildings (about 7%) do not even meet these basic standards. This group of schools is faced with the most urgent problems.

Concerning building size, survey results indicated that on average there is a shortage of educational space in Flanders. At 32% of the sites, school buildings are considered too small. Besides a lack of traditional classrooms, there is a marked need for more support areas, such as libraries/multi-media centres, relaxation spaces, staff rooms and multifunctional halls. The lack of space is most pronounced in the Brussels-Capital Region.

Results also indicated that most school buildings are severely underperforming with regard to meeting 21st century challenges for school infrastructure: 26% of school buildings cannot provide such an environment, while only 21% can.

- Only 42% of school buildings support the pedagogical project of the school.

- At 48% of school sites, school principals are satisfied with the integration of ICT-equipment in the buildings.

- At 30% of school sites, principals are satisfied with the available working and meeting space for teachers.

- At 30% of school sites, principals reported that educational spaces are sufficiently flexible and multifunctional to support different teaching and learning methods.

- At 35% of school sites, the school buildings allow safe and easy multifunctional use by parents and the wider community.

- At 35% of school sites, the school entrance is sufficiently secured.

- At 30% of school sites, school buildings are sufficiently accessible for disabled pupils and teachers.

- At 22% of school sites, school buildings are sufficiently energy efficient.

These findings suggest that a large proportion of the building stock is outdated and does not meet the criteria for 21st century learning environments. Without significant additional support from the government, this situation will probably persist or even deteriorate. The future construction of 200 new schools through PPP financing (DBFM-project) is promising. While these projects have good project definitions and architects are carefully selected, this only represents about 5% to 6% of the total building stock.

3.6. Governance

Traditionally, Flemish school boards are autonomous with regard to school construction due to the decentralisation of responsibilities for school construction projects, although this can vary according to education network. Governance means that authorities have a facilitating role with regard to schools and school boards: schools and school boards initiate school construction projects and bear the responsibility for them. School construction policy is a cyclical process whereby the authorities are striving to (1) adopt the most relevant policy objectives, (2) chose the correct policy instruments to achieve these objectives and (3) monitor and safeguard the effectiveness of these policy instruments in use in the field. (Box 6).

Box 6 Governance and school building policy in Flanders

In 2000, the Flemish Government underwent a major reorganisation as part of its "Better Administrative Policy" (*Beter Bestuurlijk Beleid*). This reorganisation of the public sector, as in many other countries, was inspired by "governance-thinking".

The process of decentralisation – in public administration, education and school buildings – translates on the one hand into increased autonomy for government agencies and schools, and on the other into a desire by the central government and on the political level to gain more information and control over the actors (Leemans, 2009).

But the decentralisation of education in Flanders is not a consequence of governance alone. The introduction of this policy model served to confirm and strengthen existing school autonomy. Throughout its history, education in Flanders has been characterised by tensions between the central government, which has only limited control, and autonomous schools, which can make their own policies. Moreover, this relationship has been characterised by ideological and philosophical differences, resulting in different education networks.

Governance also has an important impact on school construction policy in Flanders. Following the governance philosophy, AGIOn carries out its tasks as a facilitating and supporting agency that respects the autonomy and ambitions of schools. On the other hand, as the quality of the school building stock has degraded, AGIOn has been taking steps to improve the quality of infrastructure through *(1)* clear policy objectives, *(2)* public sector contracting, *(3)* giving advice and guidance to schools, and *(4)* setting up policy evaluations and monitoring systems concerning the efficiency and effectiveness of school construction policy (see Box 7).

3.7. The need for policy evaluation

The decentralisation process and autonomy of agencies and schools also creates a demand for a school construction policy that actually *works;* one that achieves its objectives efficiently and effectively. Policy evaluation is a basic principle of governance thinking, where judgements may be passed about the relevance, coherence, (cost) efficiency, realisation of objectives, and economy, or (cost) effectiveness of school construction policy. The results of policy evaluations can lead to adjustments of the current policy at strategic and operating levels. (Box 7).

Box 7 Evaluating school building policy in Flanders

The Flemish Agency for Infrastructure in Education (AGIOn) is currently undertaking a major policy evaluation project composed of three parts:

- Monitoring the quality of the school building stock. The school building monitor takes place in Flanders at the end of every government tenure. The first Flemish school building monitor was carried out in 2008, and the second is planned for 2013. The monitor focuses on the policy outputs that have been produced (investments, advice and guidelines) and the effects of these policies (the quality of the building stock). The statistical data used for monitoring purposes are collected from all schools in Flanders via an online survey. In the survey, school principals are asked to assess the school building(s) using a large number of criteria relating to diverse aspects of quality (AGION, 2009).

- Investigating how school building policy works and why it is (un)successful. This aspect can be addressed by employing a "realist" perspective of policy evaluation (Pawson and Tilley, 1997), which means reconstructing - through interviews with experts and focus groups with stakeholders such as architects, principals, school boards, pupils, teachers and civil servants - the (social) mechanisms through which school construction and maintenance projects are carried out; how policy interventions impact on the planning and design process; and how this process leads to the desired output, i.e. the construction and maintenance of a "good" school building.

- Analysing the relevance and consequences of school building policy. The relevance and potential impact of policy objectives is evaluated from the perspective of major trends and changes in education and society.

3.8. Collaborating with stakeholders

'Sint-Joost-Aan-Zee' Primary School, Brussels, a quality learning environment for a popular inner-city neighbourhood.

Schools and authorities are not the only actors in school construction policy. Representative organisations in education have an important responsibility to defend the interests of schools and to support them. The influence of these groups on school construction policy should not be underestimated, and governments must try to engage in a permanent dialogue with them. Other stakeholder groups such as unions and teacher-parent associations can also play a significant role in developing and implementing school construction policy. (Box 8).

Box 8 Stakeholders in Flemish school construction policy

One of the roles of AGIOn is to contribute to a quality building stock policy through engaging schools and users of the building in constructive dialogue.

The representative organisations of the VGO, OGO and the GO! network play an important role in preparing and implementing school construction policy in Flanders:

- The Flemish Secretariat for Catholic Education (VSKO), which represents Catholic schools, has its own infrastructure department: the Investment Department of Catholic Education (DIKO);

- The Education Secretariat of Cities and Municipalities (OVSG) and the Provincial Education Flanders (POV) represent the local authorities (municipalities, cities and provinces); and

- Schools in GO! Education of the Flemish Community have their own services.

Governmental agencies whose core business is not school buildings – such as the Flemish Government Architect, the Flemish Energy Agency and the Education Inspectorate – also exert an important influence on school construction policy.

The representative organisations of education networks, together with teachers', parents', student and social-economic organisations are represented in the Flemish Education Council (VLOR), which has also an advisory taskforce on school building issues.

4. Conclusions

In this paper, the school building is presented as a *"node of relationships"*. Conceptualising the school building as a "node of relationships" – which exists amidst a web of complex relationships between various social actors, policy structures and societal subsystems, all of which are embedded in a social and cultural model – can shed light on the forces shaping school building policy in Flanders (AGIOn, 2011). Although research on the impact of school buildings on learning is inconclusive, school buildings remain important for education because they are entwined within both education and social life in general.

After many years of underinvestment in educational buildings, Flanders is now faced with the important challenge of improving its stock of school buildings. The lessons for school building policy from Flanders relating to governance, evaluation, management, collaboration and social change are also relevant to other countries. But in order to address these challenges, education authorities need to consider school buildings as dynamic places for teaching and learning, rather than passive infrastructures. Such reflections are important to understand how school buildings can support the complex needs and demands of education and economies today and in the future.

References

Agency for Infrastructure in Education (AGIOn) (2009), De schoolgebouwenmonitor 2008, indicatoren voor de kwaliteit van de schoolgebouwen in Vlaanderen, Garant, Berchem.

AGIOn (2011), Schoolgebouwen als knooppunten van relaties. Naar een theoretisch denkkader voor de scholenbouw en het scholenbouwbeleid in Vlaanderen, Vlaamse overhead, Brussel.

Bouckaert, G. and W. Van Dooren (2009), "Performance measurement and management in public sector organizations", In T. Boivard and E. Löffler (Eds.), *Public Management and Governance,* Routledge, London.

Cuyvers, K., *et al.* (2011), "Well-being at school: does infrastructure matter?" *CELE Exchange*, No. 10, December 2011.

Flemish Government (2008), *Education in Flanders. The Flemish Educational Landscape in a Nutshell 2008*, http://www.ond.vlaanderen.be/English/

Giddens, A. (1984), *The Constitution of Society: Outline of the Theory of Structuration*, University of California Press, Berkeley.

Gieryn, T.F. (2002), "What buildings do", *Theory and Society*, Vol. 31, No. 1, pp. 35-74.

Hubbard, P., *et al.* (2002), *Thinking Geographically: Space, Theory and Contemporary Human Geography,* Continuum, London.

Lackney, J.A. (1994), *Educational Facilities: The Impact and Role of the Physical Environment of the School on Teaching, Learning and Educational Outcomes*, University of Wisconsin-Milwaukee, Center for Architecture and Urban Planning Research, Milwaukee.

Lammertyn, F. (2007), *Sociologische tijdsdiagnosen. Agenda's voor onderzoek. Deel 1*, Acco, Leuven.

Leemans, G. (2010), "Governance in de overheid, het onderwijs en de scholenbouw. Nieuwe uitdagingen voor het Agentschap voor Infrastructuur in het Onderwijs (AGIOn)", *Tijdschrift voor Onderwijsrecht en Onderwijsbeleid, 2009-2010,* No. 5, pp. 378-392.

Löw, M. (2001), *Raumsoziologie*, Suhrkamp Verlag, Frankfurt am Main.

Meert, H. (2000), "Giddens' structuratietheorie en de maakbaarheid van de samenleving door ruimtelijke planning", *Ruimte & Planning*, Vol. 20, No. 3, pp. 277-295.

Organisation for Economic Co-operation and Development (OECD) (2006), "CELE Organising Framework on Evaluating Quality in Educational Spaces", http://www.oecd.org/education/country-studies/37783219.doc

Orlikowski, W. (1992), "The duality of technology: rethinking the concept of technology in organizations", *Organization Science*, Vol. 3, No. 3, pp. 398-427.

Pawson, R. and N. Tilley (1997), *Realistic Evaluation,* Sage, London.

Pinch, T.J. and W.E. Bijker (1984), "The social construction of facts and artifacts: or how the sociology of science and the sociology of technology might benefit each other", *Social Studies of Science,* No. 14 (August 1984), pp. 399-441.

Slade, B., S. Muir and R. Pech (2006), "When policy and practice collide: A structuration approach to examining the failure to unify an organization", *Proceedings of the 20th ANZAM conference*, 6 December 2006, Yeppoon, Australia.

Van Reeth, W. (2002), *The Bearable Lightness of Budgeting. The Uneven Implementation of Performance Oriented Budget Reform Across Agencies* (Unpublished doctoral dissertation), K.U. Leuven, Leuven.

Vlaamse Onderwijsraad (VLOR) (1999a), *Visie op onderwijs*, VLOR, Brussel.

VLOR (2010), *Advies over de uitdagingen met betrekking tot de onderwijsinfrastructuur* (unpublished policy document), http://www.vlor.be/sites/www.vlor.be/files/advies/ar-adv009-0910.pdf

Wielemans, W. (1993), "Voorbij het individu. Mensbeelden in wetenschappen", Garant, Leuven-Apeldoorn.

Wielemans, W. (1999), "Vergeten dimensies in opvoeding en onderwijs. Tussen globalisering en verinnerlijking", *Tijdschrift voor Onderwijsrecht en Onderwijsbeleid*, *1999-2000,* No. 6, pp. 413-424.

Wielemans, W. (2000), "Ingewikkelde ontwikkeling. Opvoeding en onderwijs in relatie tot maatschappij en cultuur", Acco, Leuven.

Table 1 Size of the school building stock by education level

Education level	ISCED level	Number of school sites with own buildings	Estimated average numbers of school buildings per school site	Estimated total number of school buildings	Estimated number of separate educational spaces per school site	Estimated total number of educational spaces	Estimated average m² per school site	Estimated m² of the total school building stock
Regular elementary education	ISCED 0+1	3 616	2.41	8 723	22	78 673	1 233	4 458 288
Regular secondary education	ISCED 2+3+4	1 381	3.91	5 399	66	90 643	6 572	9 076 556
Special elementary education	ISCED 0+1	231	2.55	590	35	7 976	1 702	393 061
Special secondary education	ISCED 2+3	146	3.57	522	44	6 390	2 939	429 108
Lifelong learning	ISCED 1+2+3+4	628	1.51	946	20	12 590	1 376	863 989
Pupil guidance centres		170	1.10	186	18	3 076	571	96 986
Boarding schools		146	2.06	301	52	7 587	3 667	535 360
TOTAL		**6 318**	**2.64**	**16 666**	**33**	**206 935**	**2 509**	**15 853 348**

Source: AGIOn (2009), *De schoolgebouwenmonitor 2008, indicatoren voor de kwaliteit van de schoolgebouwen in Vlaanderen*, Garant, Berchem.

Table 2 Decision-making and procurement approaches in Flanders

		Education networks					
		GO! Education of the Flemish Community		Publicly Funded, publicly run education		Publicly funded, privately run schools	
		Bodies	Role	Bodies	Role	Bodies	Role
financing	regular financing / design-bid-build	GO! local (school groups)	Financing of small infrastructure works	Local authorities	Initiative to build, demand for subsidies	School boards	Initiative to build, demand for subsidies
				Representative organisation	Prioritisation of projects, support	Representative organisation	Advice, support
		GO! central administration	Financing of large building projects	AGIOn	Approval of subsidies, file handling, information, support, policy	AGIOn	Approval of subsidies, file handling, information, support, policy
		Minister	General policy, budgeting	Minister of Education	General policy, budgeting	Minister of Education	General policy, budgeting
	PPP-financing trough DBFM	GO! local (school groups)	Initiative to build	Local authorities	Initiative to build, demand to join DBFM	School boards	Initiative to build, demand to join DBFM
		GO! central administration	Control, availability fees, file handling, policy	AGIOn	Control, availability fees, file handling, policy	AGIOn	Control, availability fees, file handling, policy
		DBFM-company	Finance , control	DBFM-company	Finance , control	DBFM-company	Finance , control
		Minister	General policy, budgeting	Minister of Education	General policy, budgeting	Minister of Education	General policy, budgeting
	PPP-financing trough classical PPP	GO! Central administration	Financial input or input in natura				
		PPS partner	Financial input or input in natura				
		Minister	General policy, budgeting				
planning, design, construction, maintenance, management, evaluation	regular financing / design-bid-build	School	Maintenance, advice building programme	Schools	Planning, design, construction, maintenance, management, evaluation	Schools	Planning, design, construction, maintenance, management, evaluation
		GO! local (school groups)	Maintenance, proposals for large projects, advice building programme	Local authorities	Planning, design, construction, maintenance, management, evaluation	School boards	Planning, design, construction, maintenance, management, evaluation
						Representative organisation	Advice, support, information, expertise, policy
		GO! central	Planning large infrastructure	AGIOn	Advice, support,	AGIOn	Advice, support, information,

		administration	works, building programme, selection of architects, coordination of planning and construction		information, expertise, policy		expertise, policy
		Flemish Government Architect	Advice, support, information, expertise, policy	Flemish Government Architect	Advice, support, information, expertise, policy	Flemish Government Architect	Advice, support, information, expertise, policy
		Minister of Education	General policy	Minister of Education	General policy	Minister of Education	General policy
	PPP-financing trough DBFM	GO! local (schoolgroups)	Advice				
		GO! central administration	Advice, support, information, expertise	AGIOn	Advice, support, information, expertise, policy	AGIOn	Advice, support, information, expertise, policy
		DBFM-company	Design, built, maintain	DBFM-company	Design, built, maintain	DBFM-company	Design , built, maintain
		Flemish Government Architect	Advice, support, information, expertise	Flemish Government Architect	Advice, support, information, expertise	Flemish Government Architect	Advice, support, information, expertise
		Minister of Education	General policy	Minister of Education	General policy	Minister of Education	General policy
	PPP-financing trough classical PPP	School	Maintenance, advice building programme				
		GO! local (school groups)	Maintenance, proposals for large projects, advice building programme				
		GO! central administration	Approval of projects, building programme, specifications, Selection of PPP-partner, evaluation and control of PPP-contract				

Table 3 Methods of project delivery for design and construction

	GO! Education of the Flemish Community	Publicly Funded, publicly run education Publicly funded, privately run schools
Regular financing/ design-bid-build	The procedure for design and construction in GO! Education of the Flemish Community is as follows: (1) preparation of the building programme by the central administration in collaboration with the school group and the school; (2) appointment of a designer by the administration or in collaboration with the Flemish Government architect; (3) guidance throughout the design process by the central administration together with the school group and the school, (4) call for tenders and appointment of contractor, (5) guidance and completion of construction works via the designer.	A school that belongs to publicly funded, publicly run education or publicly funded, privately run education in Flanders can be subsidised by AGIOn to carry out construction works. The subsidies add up to 70% of the total building cost for primary education and 60% for other education levels. There are several procedures in subsidizing construction works. Besides the standard procedure for the construction of new buildings and renovation, there are other procedures: (1) a 'fast' procedure for relatively small projects; (2) specific investments like for example investments in energy efficiency or the purchase of an existing school building. Every procedure goes by four phases: (1) subscription on a waiting list, (2) agreement on granting of subsidies, (3) norm control of the design and assignment of the works to a contractor, (4) payment of the subsidies.
PPP-financing trough DBFM	Fortis Bank Belgium - Fortis Real Estate has been indicated as the private partner for a 36 years Framework Agreement to Design, Build, Finance and Maintain new school buildings in Flanders. This private partner, AGIOn and ParticipatieMaatschappij Vlaanderen will jointly set up the DBFM-company. The DBFM-company has the responsibility for the Design (D), Build (B), Finance (F) and Maintain (M) of 211 low-energy schools with a total investment of EUR 1 billion in Flanders. The School Board will be able to make use of the school building for 30 years. Over those 30 years, the DBFM-company guarantees the maintenance and the meeting of certain requirements. In return the School Board pays a recurring Availability fee. A part of this fee is subsidized by AGIOn. After 30 years the school building is transferred to the School Board without any costs.	
PPP-financing trough classical PPP	Different procedures can be followed, for example promotional contract: (1) establish building program in cooperation with school group and school, (2) establish procurement guidelines for the Design Build Finance, possibly with assistance from external expertise, (3) appoint a supervisor who is responsible for design, financing and construction, and (4) follow up of the contract in collaboration with the school or school group.	

Table 4 Age of school buildings, by level of education and building period

Level of education	ISCED level	Percentage of total schools constructed:				
		Before 1920	1920-1949	1949-1969	1969-1989	1990 and after
Regular elementary education	ISCED 0+1	14	17	28	24	17
Regular secondary education	ISCED 2+3+4	12	15	32	29	13
Special elementary education	ISCED 0+1	7	12	27	31	24
Special secondary education	ISCED 2+3	11	13	23	30	23
Lifelong learning	ISCED 1+2+3+4	26	19	25	17	13
Pupil guidance centres		6	13	44	32	7
Boarding schools		12	25	29	25	9
TOTAL		13	16	29	26	15

Source: AGIOn (2009), *De schoolgebouwenmonitor 2008, indicatoren voor de kwaliteit van de schoolgebouwen in Vlaanderen*, Garant, Berchem.

Table 5 General usability of school buildings, by level of education and reported level of satisfaction

Level of education	ISCED level	Percentage of total schools reported by school principals as:				
		Very unsatisfactory	Unsatisfactory	Average	Satisfactory	Very satisfactory
Regular elementary education	ISCED 0+1	8	13	26	39	14
Regular secondary education	ISCED 2+3+4	6	13	28	39	14
Special elementary education	ISCED 0+1	11	15	25	34	16
Special secondary education	ISCED 2+3	10	18	25	34	13
Lifelong learning	ISCED 1+2+3+4	7	19	26	37	12
Pupil guidance centres		5	13	27	43	12
Boarding schools		3	19	23	45	10
TOTAL		7	14	27	39	14

Source: AGIOn (2009), *De schoolgebouwenmonitor 2008, indicatoren voor de kwaliteit van de schoolgebouwen in Vlaanderen*, Garant, Berchem.

Table 6 School sites reported as "satisfactory" or "very satisfactory", by level of education and category

		Percentage of schools reported by school principals as "satisfactory or very satisfactory with regard to:						
Level of education	ISCED level	**Safety**	**Condition**	**Functionality**	**Comfort**	**Attractiveness/a esthetics**	**Costs**	**School site**
Regular elementary education	ISCED 0+1	61%	49%	48%	63%	39%	12%	48%
Regular secondary education	ISCED 2+3+4	59%	41%	43%	50%	35%	9%	49%
Special elementary education	ISCED 0+1	58%	43%	38%	55%	35%	11%	48%
Special secondary education	ISCED 2+3	60%	48%	43%	58%	36%	9%	50%
Lifelong learning	ISCED 1+2+3+4	61%	53%	49%	51%	50%	32%	48%
Pupil guidance centres		56%	56%	57%	58%	41%	28%	49%
Boarding schools		63%	50%	49%	70%	54%	16%	70%
TOTAL		60%	48%	47%	58%	39%	14%	49%

Source: AGIOn (2009), De schoolgebouwenmonitor 2008, indicatoren voor de kwaliteit van de schoolgebouwen in Vlaanderen, Garant, Berchem.

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Leemans, G. (2009), "Monitoring the Quality of School Buildings in Belgium's Flemish Community", *CELE Exchange*, No. 8.

OECD (2011), *Designing for Education: Compendium of Exemplary Educational Facilities 2011*, OECD Publishing, Paris.

OECD (2006), *PEB Compendium of Exemplary Educational Facilities*, OECD Publishing, Paris.

OECD and European Investment Bank (2011), Best Practices in Educational Facilities Investments, website, *http://edfacilitiesinvestment-db.org*.

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