

## Optional Sectoral Module BUILDING REGULATIONS



In a resilient city, enforceable regulations on land use, building design and construction, and fire safety are critical (robust and coordinated). To enhance the quality of the construction process (robust and coordinated), there are regulations for the licensing and certification of architects, planners, engineers, builders, contractors, fire officials, and inspectors. Land use and building regulations integrate risk information and are updated regularly to consider climate change and local hazards (reflective). Indigenous, “non-engineered” construction is considered within the building regulations to address informal development (inclusive). Requirements for disabled and aged populations are integrated (inclusive).

TOPIC	GUIDING QUESTION	APPLICABLE RESILIENCE QUALITY	RELATIONSHIP TO RESILIENCE QUALITY
Institutional Capacity	Are there regulations for: (a) land use planning/zoning? (b) building design and construction, and retrofitting of existing buildings? (c) fire prevention? (d) resource/energy conservation? (e) accessibility? (f) historic/cultural preservation?	Robust	For resilient urban development and related projects, regulations for land use, building design and construction, and fire safety are critical; thus, related enabling legislation must be in place. A parallel condition exists for other areas where regulations can be helpful (e.g., energy conservation, accessibility, etc.).

Institutional Capacity	If formal land use planning, building, and fire regulations exist, are they legally promulgated and enforced throughout all areas of the city?	Robust; Coordinated	While it may be that a country has appropriate legislation to enable pertinent regulations, that fact alone does not mean such regulations have been adopted into use throughout all cities.
Institutional Capacity	Are there regulations for the licensing and certification of architects, planners, engineers, builders, contractors, fire officials, inspectors, third-party reviewers, and others?	Robust; Coordinated	The extent to which professions and trades associated with design and construction are controlled, including minimum qualifications and competency requirements, experience, and so forth, can have a significant influence on the quality of construction and compliance with regulations.
Institutional Capacity	Are there regulations that enable the certification, testing and quality control of building products and materials? Are the requirements consistent with the quality of locally available materials?	Robust	The extent to which construction materials and contents are controlled, in terms of quality, strength, and overall fitness for purpose, have a significant effect on the ultimate safety, health, energy, or other performance of the built environment. It is important to make sure that the regulatory requirements match available materials and production capacities and that local, accredited, and trusted laboratories exist to certify materials against the material performance requirements.
Institutional Capacity	What are the different types of training and capacity-building programs available for building officials, building professionals and crafts persons? What level of expertise do they have in the topic areas?	Robust	A well-functioning building regulatory framework needs suitably educated professionals and properly trained skilled crafts persons to improve the resilience and sustainability of the built environment.

Institutional Capacity	Do formal building regulations have specific provisions for, or is there a separate building code, indigenous, “non-engineered” and/or “informal” construction? “Formal” implies adopted by law and are enforceable and not used simply as guidance.	Inclusive	In low- and middle-income countries, building codes may not include provisions related to prevalent forms of indigenous, “non-engineered” construction resulting in increased “informal” or unregulated construction. Significant vulnerability resides in unregulated construction, and so it is critical to enhance the resilience of local building products and techniques that require consultations with owner-builders and crafts persons to seek affordable and feasible solutions.
Institutional Capacity	Are land use and building regulations updated at defined time intervals to consider climate change and the evolving force and frequency of hydro-meteorological hazards at the local level?	Robust; Reflective	It is important that the mechanisms of land use and building regulation are established to guide future investment and development. Protecting existing settlements in a cost-effective manner requires a dynamic regulatory approach that guides climate adaptation in advance of growing hazard effects.
Compliance	What is the rate of compliance with building regulations in the city for the existing built environment and for new construction? Is there an independent mechanism to monitor progress in regulatory compliance rates?	Robust	Measuring compliance with land use and building regulations will help evaluate the scale of informal construction. This important input helps to gain a better understanding of social vulnerabilities and exposure to chronic and acute risks.
Finance	Is there legislation in place that facilitates the establishment and collection of fees or levies to financially support implementation of regulations for planning, zoning, design, and construction of buildings?	Robust	The sustainability of any effective building regulatory regime will be dependent on the capacity of local city authorities to charge fees to cover the cost of building control activities and retain these resources to become financially self-sustainable.

Finance	Do loans for building finance require supporting documentation of code compliance?	Robust	Housing finance provides important input into safe, resilient, and sustainable buildings as the funds can be offered on the conditionality that the financed structure conforms to code and zoning requirements. This process can be supported with the cooperation of existing regulatory authorities.
Access	To what extent are access, use, and egress requirements for disabled and aged populations addressed within the building regulation?	Inclusive	Effective implementation of building and urban development standards for accessibility and protection of persons with disabilities and the elderly requires policies and principles to be translated into actual change in the configuration of the built environment.
Education	To what extent are land use planning, building, and fire regulations used as educational tools for describing the benefit of regulation to be applied to informal sectors that exist in the city?	Inclusive	It is essential to socialize the benefits of the building regulatory framework via social networks outside of traditional channels, especially within informal settlements and other unregulated areas, where traditional communication paths may be absent.
Education	Do educational curricula exist regarding the structure, content, and use of land use planning, building, and fire regulations that can be used as a basis of formal education, continuing professional development, and outreach to the informal sector?	Robust; Inclusive	A well-functioning building regulatory framework needs suitably educated professionals and properly trained skilled crafts persons for the framework to work well. It is also essential to socialize the benefits of the building regulatory framework via social networks outside of traditional channels, especially within informal settlements and other unregulated areas where traditional communication paths may be absent.

Risk Identification	What are the natural and technological hazards and risks of concern in the city?	Reflective	The range of natural and technological hazards that could impact the building stock should be well understood. This is to help assess whether the hazard/risk maps associated with the regulations, if they exist, are appropriate to the required mitigation targets.
Risk Identification	Do formal land use planning/zoning regulations exist? If so, do they incorporate hazard maps that identify areas vulnerable to natural hazards?	Reflective; Robust	For any building project, particularly for disaster risk/vulnerability mitigation, disaster recovery, urban densification, and related project types, it is critical to have hazard maps that guide regulations in determining what building can be constructed in which locations, and to what extent are those locations within, or external to, hazards (natural or man-made) that need to be mitigated.
Risk Identification	Are there mechanisms to restrict development in designated hazardous areas?	Robust	Control over construction taking place in hazardous zones is critical to ensure that new buildings are not constructed in areas vulnerable to landslides, floods and other such natural hazards.
Stakeholder Consultation	What is the process used for development and updating of the building regulations and to what extent are pertinent stakeholders consulted, or involved in the development, review, and/or approval of the final provisions?	Reflective; Inclusive	Building code development is usually a process led by central-level authorities yet typically involves both central and local stakeholders. It is important that building regulations and building codes be developed with reference to local practice, past experience, and locally available materials and allow for innovation and improvement in construction practice.