

# Handbook on Building Construction: Brief Summary of Revised Building Construction Working Procedures (BCWP)



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# Preamble

In August 2020, the Department of Urban Development and Building Construction (DUDBC) has revised the Nepal National Building Code (NBC) 105: Seismic Design of the Buildings in Nepal, and has been enhancing regulations for compliance of building code in new buildings. However, constructions have been different from building design drawings in many cases. This is mostly due to lack of awareness and knowledge regarding legal compliance among the building owners and contractors. Therefore, it is necessary to enhance the capacity of design checking and construction inspection by the municipalities, capacity of supervision by the architect and engineers, capacity of quality control by the contractors, and the awareness of stakeholders.

To contribute to improve above situation, Ministry of Urban Development (MoUD) and Japan International Cooperation Agency (JICA) concluded the Record of Discussions (R/D) on November 2020 and the technical cooperation project “The Project for Promotion of Nepal National Building Code Compliance for Safer Building Construction (NNBC Project)” that aims to establish a mechanism of building code compliance for safer building construction against earthquakes has started on April 2021.

Based on the above background, the NNBC Project revised the Building Construction Working Procedure (BCWP). This booklet is the brief summary of the revised BCWP introducing roles and responsibilities of Stakeholders in Building Construction, Application Process, and so on.

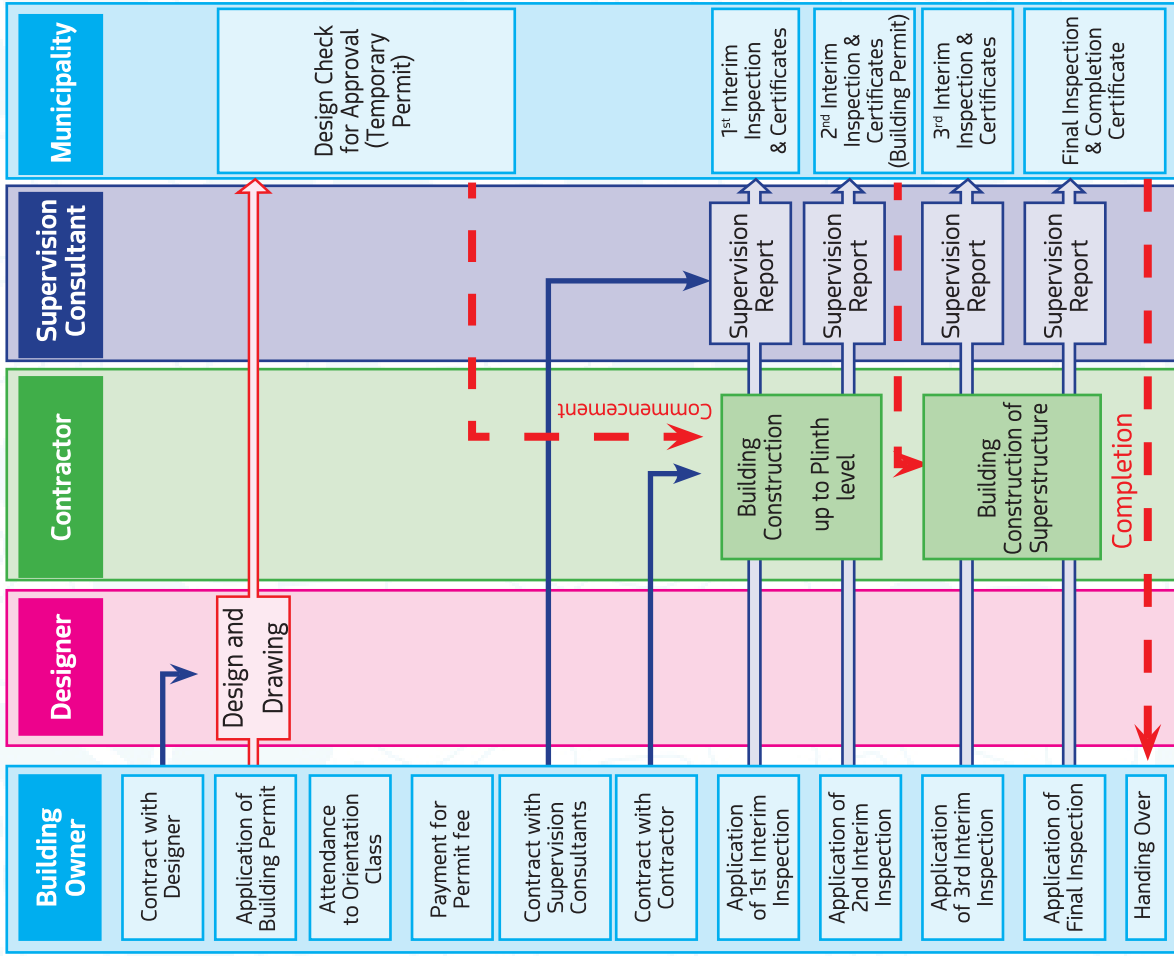
We hope that this booklet will give you the necessary information.

January, 2023

Kathmandu

Department of Urban Development and Building Construction (DUDBC)

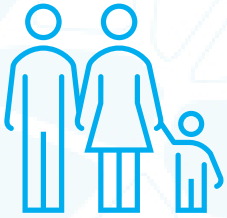
# Flowchart of Building Construction Working Procedure



## Roles and responsibilities of stakeholders

There are 6 stakeholders when people build houses. They are Building Owners, Designers, Contractors, Masons, Supervision consultants, and Municipalities.

### Building Owner



The Building Owner is the main body for Building Application who shall makes the final decision of the building design and its construction.

The Building Owner is responsible for employing the Designer, the Supervision Consultant and the Contractor as well as for application to Municipality

### Designer

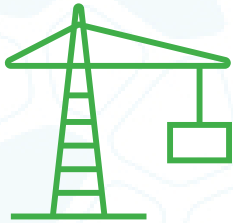


The Designer is responsible for preparing design documents for building construction

The Designer must be qualified for defined category of Building and registered to the Municipality.

Construction and Supervision are implemented based on the design documents prepared by the Designer.

## Contractor/Mason



Contractor is responsible for carrying out the construction work according to the design documents within the construction period and contract amount specified in the contract as well as safety control on site.

The Mason/Contractor must be qualified for defined category of Building and registered to the Municipality

## Supervision Consultant



The supervision consultant is responsible for confirming that the construction work is being carried out according to the design documents and for reporting to the Municipality.

The supervision consultant must be qualified for defined category of Building and registered to the Municipality.

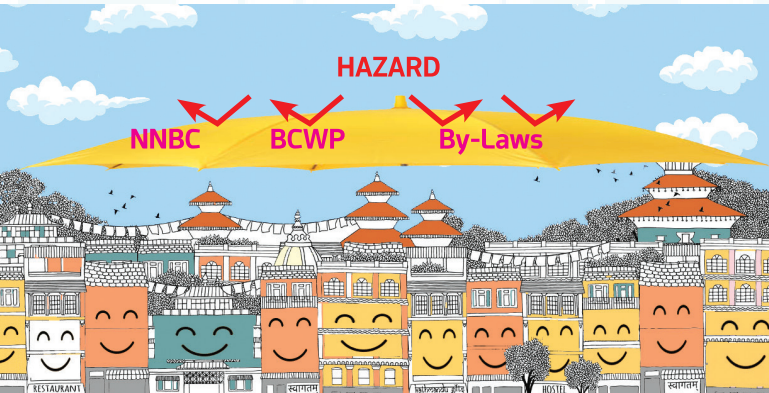
## Municipality



The Municipality is responsible for “Design Approval” at the design stage and “Interim Inspection” and “Final Inspection” at the construction stage for issuing Completion Certificate.

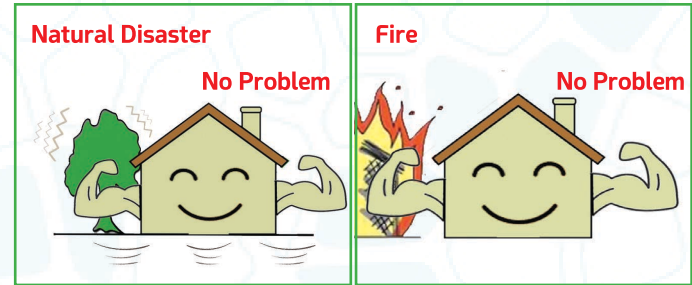
# Necessity of Building Construction Working Procedure

We all are living in the buildings all through our life. In order to protect our lives, health and property each other, following 2 rules are regulated.



## 1. National Building Code: (NBC):

To protect people's life and property from natural disaster and fire ensuring structural safety of buildings and convenience of occupants.



## 2. By-Laws:

To keep comfortable environments for the whole people living in the area.



Then, BCWP is required to make all building owners follow above 2 rules fairly and impartially.

### Benefit of BCWP for Building Owner:

BCWP enables Building Owners

- To live in the safer building against the natural disaster and fire.
- To live under the comfortable environment.

- To confirm the quality of the building through the supervision record.
- To register the building as a certified property under the Final Inspection Certificate by Municipality.



### Requirement for the Building Owner:

BCWP requires the building owners

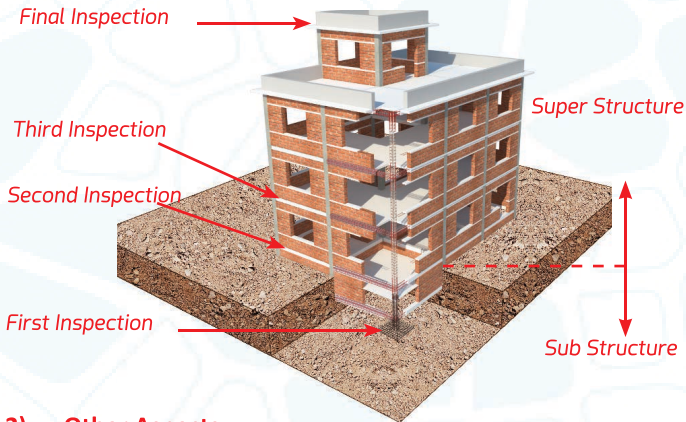
- To employ the Designer, the Supervision Consultant and the Contractor.
- To pay for Permit Fee.
- To attend the orientation class of BCWP.
- To apply Municipality for building permit with design document by the designer.
- To apply Municipality for Interim and Final Inspection with Supervision report by supervision consultant.

### Critical points under BCWP:

#### 1) Technical Aspects

- Owner shall employ registered supervision consultant & contractor.
- Designer, Mason/Contractor, Supervision Consultant shall be verified and registered to Municipalities to be employed.
- Supervision consultant shall submit the technical report for application for interim inspection and final inspection. (Material test, Rebar inspection, Concrete strength test etc.)
- Municipality shall act on unethical activities by the Designer/Supervisor.

- Municipality shall conduct the inspection strictly as prescribed (To inspect 2 times for substructure and 2 times for superstructure)



## 2) Other Aspects

- Owner shall attend the orientation class on NBC and Bye-laws.
- Registration of designer, contractor/mason, supervision consultant shall be free of cost.
- Application through e-BPS is recommended as compared to the Manual System.
- Punishment to defaulters are prescribed pursuant to the local government operation act.
- Requirement for construction safety is prescribed.

## Critical Points of BCWP for Building Owner

Building owner should consider following critical points of BCWP for processing building applications and getting certifications from the municipality:

- The time period of building permit for superstructure is two years. If the building is not completed within two years, additional two years' time period can be extended by the municipality upon receiving the application for time extension with payment of 5% additional tax.
- Building owner should hire only registered designer, supervision consultant, contractor and masons for building application, approval and construction process.
- Payment of building permit fee is made only after the public inquiry "Sarjamin" by ward desk upon receiving the public deed "Sarjamin Muchulka" and technical report.
- Tested and certified construction materials should be used for building structure.
- Compressive strength test of concrete is compulsory for foundation, columns and slab to assure the quality of reinforced cement concrete works.



Collecting concrete cube sample



Compressive Strength Test of Concrete



- Attendance in orientation class on building By-Laws and building code is compulsory for building owners before starting the building construction works.
- Photographic evidences should be submitted along with the technical report for applying interim and final inspections by the municipality.
- Building owner need to receive interim inspection certificates for getting permanent building permit and final completion certificates from the municipality.
- Building owner need to fulfill the instructions provided by the municipal technicians during interim inspections regarding quality and detailing works.
- Building owner need to get permission from concerned municipality for occupancy change of building.
- The public infrastructures such as side drains, sewer line, water supply line, footpath if damaged during building construction should be restored and maintained to get the building completion certificate.

### Critical Points of BCWP for Designers

Designers should consider following critical points of BCWP for facilitating building owner for compliancy of building By-Laws and building code in the constructions.

- The Designer is responsible for preparing design documents for building construction.
- The Designer must be qualified for defined category of Building and registered to the Municipality.
- Construction and Supervision are implemented based on the design documents prepared by the Designer.
- The Designer must support the supervision consultant if there are any issue with the construction drawings

Municipal engineers conducting an interim inspection to verify the under construction building as per approved design drawing.



### Critical Points of BCWP for Contractors/Masons

Contractors/Masons should consider following critical points of BCWP for facilitating building owner for compliancy of building By-Laws and building code in the constructions

- Contractors/Masons need to be registered in the concerned municipality to work for building constructions on behalf of the owner



Supervision consultant must submit the photographic evidence as shown during the submission of supervision report

- The technical supervision is mandatory for all buildings and building owners need to hire supervision consultant for carrying the supervision works
- Contractors/Masons need to carry construction works under direct monitoring of supervision consultant
- Contractor/Masons should assist supervision consultant to provide photographic evidences and record of construction detailing and quality works
- Tested and certified construction materials should be used for maintaining quality of building constructions
- Compressive strength test of concrete is compulsory for every story to assure the quality of reinforced cement concrete works
- Contractors/Masons need to fulfill the instructions provided by the municipal technicians during interim inspections regarding quality construction and detailing works
- Contractors/Masons need to address of site safety along with cleanliness and management of construction materials in site.



*Supervision consultant conducting an interim inspection to verify the foundation as per approved design drawing.*

### Critical points of BCWP for Supervision Consultant

Supervision Consultants should consider following critical points of BCWP for conducting his supervision services for compliancy of building By-Laws and building code in the constructions:

- The technical supervision is mandatory for all buildings and building owners need to hire Supervision Consultant for carrying the supervision works.
- Supervision Consultants need to be registered in the concerned municipality to work for Supervision services on behalf of the owner.
- Registered Supervision Consultant shall supervise building site and prepare supervision report proving building is constructed as per approved designs and drawings.

- The supervision report shall include test reports on compressive tests of concrete for every story to assure the quality of reinforced cement concrete works for building categories A, B and C
- Contractor should assist supervision consultant to provide photographic evidence and record of construction detailing and quality works
- Municipality will carry out three interim inspections and one final inspection of building constructions for assurance of compliancy of building By-Laws and building code.
- Supervision Consultant shall apply for each Inspection with supervision report on behalf of the Owner

### The procedures, actions and responsibilities of the municipality are:

- Building permit to be obtained mandatorily for building construction.
- Prepare and specify model design & drawings on the basis of the nature of land and building, size & shape and plot area for the construction of similar type of buildings in all or specified area of the municipality.
- Carry out the checking of application along with drawings & supporting documents received for getting building permit.
- Carry out field investigation and public enquiry on objections of land owners abutting to the land plot of the building owner for the proposed construction.
- Get the report on field investigation & deed of public inquiry on the proposed building construction.
- Issue building permit in case there is no objection from the land owners abutting to the land plot of the building owner or such objections have been resolved as per the prevailing laws. Approve the designs & drawings received with the application.
- Monitor the construction of buildings being carried out in the municipality to check that the construction is being done after getting building permit, in compliance to the approved designs & drawings and not encroaching public lands & properties. If not, take actions against the building owner as per the prevailing laws.
- Enforce the compliance of the Building Code while issuing the building permit.
- Standards to be developed for building construction on the basis of risk sensitive land use.
- Directives to be issued for retrofitting or demolition of hazardous buildings after classifying the buildings within the municipality.
- Specify standards on building construction incorporating detailed specifications on building height, set back, roof, front elevation, construction materials and art for the construction of buildings to be constructed in a historical, cultural, touristic or archeological settlement or a part of the settlement.
- Municipality will carry out three interim inspections and one final inspection of building constructions for assurance of compliancy of building By-Laws and building code.



*Supervision consultant must submit the photographic evidence as shown during the submission of supervision report*

# For More Information

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[www.dudbc.gov.np/en/detail/domain-menu/1973?parent=1862](http://www.dudbc.gov.np/en/detail/domain-menu/1973?parent=1862)



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