

INTRODUCTION

e-BPS, an electronic Building Permit System is an initiative of Kathmandu Metropolitan City (KMC), Lalitpur Sub-Metropolitan City (LSMC) and Kirtipur Municipality implemented through UNDP's Comprehensive Disaster Risk Management Programme and with financial support from UK-Aid for KMC and LSMC.

e-BPS has been designed to implement the National Building Code (NBC) and Building Bye-Laws (BBL) to promote safe building construction practices and planned urban development.

OBJECTIVE

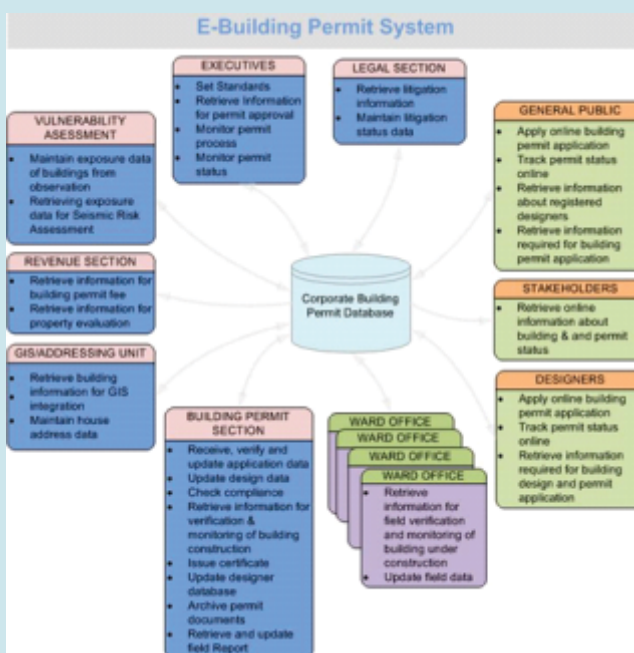
The main objective of this initiative is the **Implementation of NBC through e-BPS**, which is achieved through the following:

- (i) **Develop** a customized software system for managing a building permit system based on the NBC and Municipal BBL.
- (ii) **Digitize** and archive the existing 15,000 building plans and drawings in both Kathmandu Municipal City (KMC) as well as Lalitpur Sub Metropolitan City (LSMC) areas.
- (iii) **Train** municipal staff members to implement NBC and their respective Municipal BBL through e-BPS, which will allow them to manage and process building permits and ensure their compliance within the NBC framework.
- (iv) **Identify** and establish suitable ICT systems and logistic requirements to the municipalities to ensure business continuity.
- (v) **Provide** software implementation support to ensure a successful installation and a hassle free operational environment.

ELECTRONIC BUILDING PERMIT SYSTEM (e-BPS)

e-BPS is a **web-based application** software suite which has been developed to assist municipalities to improve their current building permit process and to maintain current building records. This is an effective and efficient system to monitor and evaluate the current state of building constructions in a municipal area. e-BPS is a distributed system and can be **accessed from both municipal head offices as well as their respective ward offices**. The

system also allows **citizens to submit as well as track their application(s)** and its status respectively over the internet. e-BPS enables municipal staff members to maintain a building permit database and ensure NBC and BBL compliance for individual buildings through an intuitive web interface. Municipal staff members with different responsibilities, such as application registration, technical data verification, compliance checking, field verification, certificate printing, handling of legal issues, house address generation, GIS data maintenance, collection of permit fees, assessment of disaster vulnerability, building permit data archiving, executive permit approval, etc. are able to access the e-BPS through any of the following mediums: LAN, Intranet or Internet.



SALIENT FEATURES OF e-BPS

(i) **Online Registration**: An applicant can register and submit a building permit application through the municipality's web portal. Submitting a permit application online is the fastest and easiest method which helps to eliminate many manual hours the municipal staff has to devote in entering the same information. The required

documents and information to apply for a building permit, i.e. information about BBL and NBC, checklist to apply for a building permit, information about Municipality's registered designers and trained Masons, etc. are available online.

(ii) **Tracking Permit Status**: The system updates the permit status of each application. Applicants may track their building permit status online by logging onto their Municipality's website through their web portal. This reduces (almost eliminates) the number of calls or visits an applicant has to make to their municipality to query about their permit status.

(iii) **Management of Building Permit Application**: The system manages building permit applications which includes (but not limited to) the following documents: House and Land Ownership, Construction Site, Neighboring Land Parcels (plots), Building Plan and Drawings, Design Data required for BBL and NBC compliance, Citizenship certificate, Land ownership certificate, etc. and any specific municipality requirements.

(iv) **Compliance Checking**: Compliance checking for NBC and BBL is one of the most complex and time consuming tasks in Building Permit Process. e-BPS has an automated feature for checking against BBL and NBC compliance and is one of the most important features of the system. The system verifies the data and information provided by the building designer against the system standards defined by the Municipality. This feature helps Municipalities to expedite the permit process and to identify buildings that do not comply with its current standard. This feature can be eventually integrated as a key component of any future Disaster Risk Management System.

(v) **Archiving Building Permit Data**: This system enables municipalities to archive existing building drawings/plans and related documents. It has the capability of storing, retrieving and managing electronic AutoCAD and/or other image/PDF file formats of building drawings. e-BPS enables municipalities to store scanned maps and documents in the system.

(vi) **GIS/Addressing Support**: e-BPS enables Municipalities to integrate building data with a GIS based building database and thus assists them in assigning a House Address for new buildings.

SYSTEM PROCESS AND WORK DESK

e-BPS has been implemented on the concept of multiple work desks for processing building permit applications and maintaining a permit database. These include the Registration Desk for general data entry and verification, Technical Desk I for design data entry and verification, Technical Desk II for compliance checking, Field Desk for maintaining field reports related to field verification and monitoring of construction work, Ward Desk for maintaining field reports and neighborhood information, Revenue Desk for processing permit fee and property evaluation, Legal Desk for processing and maintaining litigation data, GIS/Addressing Desk for maintaining house addresses and data to integrate with Municipal GIS, Vulnerability Assessment Desk for maintaining exposure data for Seismic Risk Assessment, Archival Desk for managing archives of permit documents, and Executive Desk for approval of building permits & certification and standard settings.

CURRENT STATUS

Kathmandu Metropolitan City formally launched eBPS with support from UNDP and DFID in 14 wards of KMC on 6 December 2015 and expanded it to all 35 wards in July 2016.

UNDP's CDRMP has supported establishment of a fully operational e-BPS in Lalitpur Sub Metropolitan (LSMC). Aligned with MOFALD's plan for establishment of a central server, the piloting was commenced in Kirtipur Municipality, which was formally launched on 4th October 2016 in Kirtipur.

eBPS, providing for better governance through streamlined building plan approval process, is a key reason for Nepal's rise in overall rankings to second place in South Asia, and improvement by 44 places on dealing with construction permits globally, as per the World Bank assessment on Doing Business 2016: Going Beyond Efficiency.

While eBPS largely focuses on new buildings, for existing building it also enables creation of an archival database. 15,000 building stock from KMC and LSMC have been assessed and archived. To demonstrate its application for house addressing, geo-coordinates of 600 existing buildings including their exposure data have been collected and can be accessed through a GIS interface to city maps.

WAY FORWARD

In Kathmandu, eBPS has been fully transferred to KMC and its implementation has been expanded to cover all 35 wards. With digital signature becoming a reality in Nepal, eBPS will also be upgraded to make the permit issue a paper-less process. Similarly, LSMC has formally implemented eBPS in its jurisdiction.

To keep the updated Geo referenced database of new and the remaining currently existing buildings, both KMC as well as LSMC will continue this process in days to come.

Kirtipur municipality has become the pilot municipality for aligning eBPS with MOFALD's plan for establishment of a central server. Once the central server is in place, it will not only open opportunities for replication in other municipalities but also facilitate resource pooling and cost sharing opportunities for operation and maintenance of the system.

For more information on eBPS:

KATHMANDU METROPOLITAN CITY

eBPS Section Chief
www.kmcebps.gov.np

LALITPUR SUB METROPOLITAN CITY

eBPS Section Chief
www.lsmcebps.gov.np

KIRTIPUR MUNICIPALITY

eBPS Section Chief
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UNITED NATIONS DEVELOPMENT PROGRAMME

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e-Building Permit System

e-BPS

An e-Governance Initiative leading to
Resilient Construction

"Implementation of National Building Code
through Automation of Building Plan
Approval and Monitoring System"

