



MCGM

# DEPARTMENT OF DEVELOPMENT PLAN

Transforming Skyline of Mumbai

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## REFORMS AND DIGITISATION HAVE BEEN A GAME CHANGER



**IQBAL SINGH CHAHAL**, IAS, Commissioner, Municipal Corporation of Greater Mumbai (MCGM), shares insights on the significance of the MCGM's Department of Development Plan taking the building approval process online

Looking at the high level of transparency accomplished, would you say that the MCGM's Department of Development Plan is an inspiring role model for other cities to emulate?

It has been ensured that the data of all departments involved in issuing the construction permit such as stormwater drain (SWD), sewerage, traffic, hydraulic engineering, road etc. are located at the central server. The information such as water main, sewage line, SWD line, road widening, etc., is synced in the common application during submission itself. Site inspection while issuing the remark is eliminated by this process.

An Auto Calculator has been provided in the application module by which the information such as the diameter of sewer and water connection size, SWD connection, etc. are auto-calculated. By this, the remarks required are system generated for each respective utility.

The time taken in all the processes, right from Commencement to Occupancy Certificate has been reduced from 99 to 45 days. A WhatsApp group has been made functional since January 6, 2017, for the architects and professionals to address day-to-day queries and share reform updates. A helpline number is available for them to address queries as well.

Review meetings are being held every week in which members of the architect fraternity are invited to get their feedback and to further improve the system. Various training sessions and workshops are conducted weekly with all stakeholders. Looking at all these accomplishments, the MCGM is truly a role model for all Urban Local Bodies of the country.

With a greater emphasis on being paperless and accessible from anywhere, to what extent do you see stakeholders benefitting from this approach?

The MCGM has ensured that the entire process is in the public domain for the complete construction cycle. An applicant need not visit the office of any of the agencies for NOC as the CAF has been integrated with all the concerned internal / external departments. The transparency has improved substantially as the status of the plan can be viewed online at any point in time. There is no physical interaction between the department and the applicant, thereby eliminating the chances of corruption. SMS and e-mail are sent to the applicant at every approval stage, right from application submission to release of approvals. Physical submission has been dispensed with since April 8, 2016. The payment fee is also only accepted online through payment gateways like net banking (RTGS / NEFT), debit card / credit card, etc.

Digitally signed approved plans and letters are issued which can be downloaded online by the architect / owner. Sanction / Plinth Inspection / Completion are being issued on risk-based assessment for all categories.

The online process has been quite useful during the pandemic; are there any further steps that you plan to incorporate?

The Building Information Model (BIM) is implemented in the MCGM. The approved plans, certificates, note sheets, video clips, photographs of all the departments can be availed through the GIS Search module. All the applications are GIS-centric so that information based on Unique Identification number (UID), which is basically Section Account Code (SAC) number of the building, can be received by the citizens.

Redevelopment is one of the concepts helping the process of revitalising Mumbai; how has that been facilitated by the online clearances system?

Given the declining state of some of the very old structures, redevelopment has become an ideal solution to maximise space availability in Mumbai via better quality units in newly constructed buildings. The reforms implemented by the MCGM have brought certainty in the approval process and nowadays, it has been observed that in the redevelopment process, developers are advertising their projects putting the time clock for delivering possession. The redevelopment concept can be monitored by the existing residents online, which makes it more transparent and much easier for them.

## 'The benefits hugely outweighed every problem'

**AJOY MEHTA**, IAS (Retd), Chairman, MahaRERA, explains the process re-engineering approach for the MCGM Online Building Permit System, initiated during his tenure as Municipal Commissioner



When you submit an application; it is not going to just one desk at a time but to everyone simultaneously and after the entire process is done, the responses come from all of them together.

So, we avoided unnecessary stages, eliminated unnecessary NOCs and sequential file processing. Then we started converting the system into information technology. There were certain aspects that were facilitated by the software. For instance, there is a certain level of water consumption based on the number of people residing in each unit. Once you input the number of units in the building, the total quantity required comes up automatically. Similarly, when you input the project details and size of the plot, if the minimum setback is not maintained the software will automatically reject the application.

The next step was the occupation certificate from each department - fire, water, sewerage. Instead of the developer approaching them one by one, the system will give a date at random for all of them to visit the project. Each NOC issuing authority has to respond within 24 hours thereafter. Slowly, layer by layer the process moved forward. The DCR of Mumbai is very complex so I must congratulate the software developers and developer associations like MCHI-CREDAI. We ensured that each noting, right from the junior engineer to the municipal commissioner about the project application is visible online.

Initially application files would come both physical and online. Finally, we took a decision that from this date onwards, we will not accept physical files at all. All in all, people were very helpful in making the transition. There were islands of opposition but about 99% of the people said 'let's get this done' because the benefits hugely outweighed every problem. In Mumbai you have very tall, huge buildings so you need CAD readers and other technology capabilities. The municipal corporation's systems also needed to be upgraded. Some junior architects said that they don't have the equipment; we provided them with a dedicated room and computers. Finally, everyone did the transition to the online model.

When we initiated the online process in 2015, nobody expected or ever thought that this type of pandemic will come and we will have to manage the process this way because of it, so it has in a way, been a blessing in disguise.

Given the landlocked nature of Mumbai, going vertical is the only option; what are the challenges posed?

The inherent space limitations do impact the quantum and nature of real estate development possible in Mumbai. While the vertical growth approach offers scope to accommodate greater number of units, one should also keep in mind that as buildings go higher, the technical requirements and specifications that must be ensured also rise in tandem. This poses challenges for the municipal corporations providing construction permits and clearances through a manual process along with opportunities to shift to online mode, considering aspects like a) lack of standardisation of all applications b) a plethora of redundant procedures c) lack of objectivity in the scrutiny process d) no integrated application to offer a single window system and e) need of self-certification / outsourcing the no-objection certificate (NOC) process.

What is the significance of the MCGM's role in this?

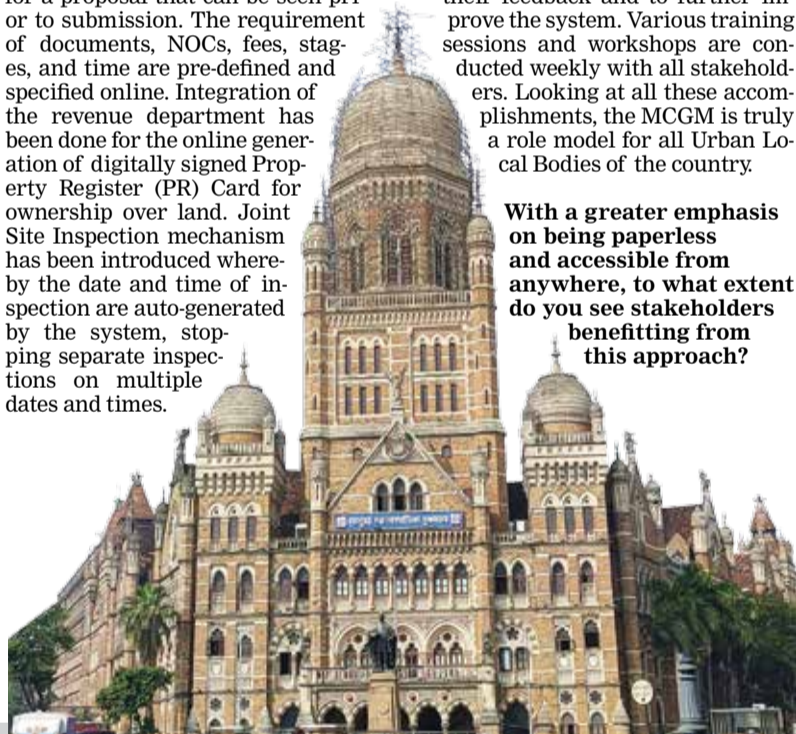
The MCGM has been able to script a tale of transformation by completely re-engineering the process. This involved introducing standardised procedures, forms, undertakings, fact sheets and documentary requirements; devising a standard fee structure with one window payment; setting up a parallel NOC procedure and ensuring availability of exhaustive information to all the departments, architects, developers, and citizens.

Simultaneously, the MCGM has also removed redundancies in the process and pre-intimation of Disapproval (IOD) clearances while eliminating certain scrutiny levels in each department, as well as the requirement of similar documents more than once

and non-value adding processes such as manual routing of applications to the desk. Single layers of approval, approval for part potential, the fact sheet and concession report by Senior Engineer and Assistant Engineer have also been done away with by the MCGM.

How has the MCGM managed to facilitate the real estate project application-to-approval process?

The entire process of construction permits is online and in the public domain. There is a single-window clearance system in place called the 'Online Building Permit System.' There's a Common Application Form (CAF) provided, a checklist, a tentative fee structure, and a list of required NOCs for a proposal that can be seen prior to submission. The requirement of documents, NOCs, fees, stages, and time are pre-defined and specified online. Integration of the revenue department has been done for the online generation of digitally signed Property Register (PR) Card for ownership over land. Joint Site Inspection mechanism has been introduced whereby the date and time of inspection are auto-generated by the system, stopping separate inspections on multiple dates and times.



## Total transparency lauded by all

**VINOD CHITHORE**, erstwhile Chief Engineer (Development Plan), MCGM, explains how the paperless system and anytime, anywhere access to the status of building permit applications have boosted the World Bank's Ease of Doing Business rankings from 183 to 27

To what extent have online approvals facilitated and accelerated Mumbai's vertical growth in recent years?

The achievements of the Online Building Permit System (OBPS) conceptualised and implemented by the MCGM Department of Development Plan speak for themselves. The Building Plan Scrutiny is online. Timebound approval is given at each stage during the construction cycle. All approvals are digitally signed and online. All approvals copies, digitally signed documents and plans with comments are available online and in the public domain. There is a provision for the applicant to upload and the authorities to view the construction site status through photographs and video clips. The proposal information of the developers / architects is available to view online.

Most importantly, there is no need to apply separately for getting the No Objection Certificate (NOC) from any internal departments. NOCs from Airport Authority and National Monument Authority, which are external agencies, can be obtained through single window. Railway department is integrated with OBPS. Application for Railway NOC application and receipt



of NOC happen online through OBPS. The Solid Waste Management (SWM) NOC is system generated with on call service for debris.

Occupation and Building Completion are issued as a single certificate and online. An architect can approve the proposal on open plot as per DCR up to 500 sq. mt. plot area and issue Occupation Certificate on his own. All old files related to the application are available on the website. There

is a grievance redressal facility at all levels. Online DP Remarks facility has been provided. There is instant online approval for addition, alteration, and minor repair work, that may not need the entire permit process. Regulation for latent defect liability for the professionals has been introduced.

Tree cutting permission up to 25 numbers is delegated to the Municipal Commissioner as against Tree authority, hence one external agency is removed. The colour coded zone map showing permissible height as per AAI is available online. Any suggestion may be posted on twitter handle @mcmConstPermit or the Facebook page 'MCGMconstructionpermit'.

The time period for construction cycle is now reduced from 365 days to just 45 days.

What were the obstacles hindering the process prior to that and how has leveraging technology made an impact?

Earlier there were multiple approvals / NOCs / Remarks required, whereas now they are reduced and standardised. The approval process is defined with predictability. Previous

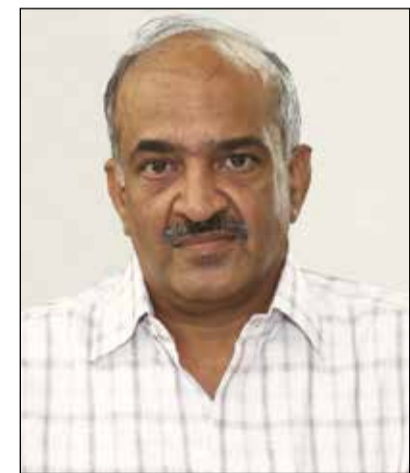
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## Online approvals setting benchmarks for the country

**ATUL KULKARNI**, Chief Engineer (Development Plan), MCGM, suggests that the online building proposal approval system will set a benchmark for the civic authorities across the country to adapt to paperless working

Given the complicated nature of the DP and large number of skyscrapers that are rising higher and higher, how has the online system enabled to manage this aspect in a more efficient manner?

The approval of the proposals involves different no objection Certificates and remarks of different department such as High-Rise Committee (HRC), Heritage Committee, National Monument Authorities, Airport Authorities, Railways, CTSO, Collector's Office, etc. Some of the authorities have their online applications however some NoC's were earlier processed offline like HRC, Her-



itage Committee. We converted those online as well and their response is received online by the applicants. So even these departments who used to have their separate application are now integrated with online system with MCGM.

The colour coded maps of other state and central government departments related to identification of restriction, buffer zones or requirements of approval are incor-

porated in the Development Plan Geographic Information System (DP GIS). Therefore, the requirements of NoC can be realised on the map, which is made available by MCGM on its public portal. Such key challenges have been successfully eliminated by the conversion to online system.

How do you see the OneMCGM portal taking the existing EoDB benefits further ahead?

The information of different departments involved in the issuing of construction permits are brought under a single umbrella, which helps in early decision making process. Also eliminated the dependency on the other department since data of all department can be reviewed under the oneMCGM webpage.

The One MCGM solution has been deployed to bring all the existing GIS applications in MCGM under a single umbrella to enable seamless data flow. The objectives are to position the MCGM as a GIS-centric organization, establish a GIS-based decision support system and seamlessly integrate GIS with all other applications.

Continued on Page 4...

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## 'A remarkable accomplishment by the MCGM (DP) department'



**BOMAN IRANI**, President, CREDAI-MCHI, presents the real estate industry association point of view on the advantages accruing from online construction permit process

was the case earlier.

It is also noteworthy that the approval process continued even throughout the lockdown period, as the DP department team was coordinating online and working from home. During the pandemic, there have been instances where we have received the orders at late night to proceed with the construction work and under special circumstances, this was made possible even on Sundays, which is a remarkable accomplishment.

Year 2015 witnessed a major transformation in real estate development in Mumbai. By putting the entire construction permit process online, the MCGM Department of Development Plan (DP) has indeed reduced the timeframe for approving the project proposals and simplified the procedures involved to a great extent.

The real estate industry has benefitted greatly from this move towards making the procedures easier and the CREDAI-MCHI members have especially welcomed the greater transparency provided by the online system.

The advantages are manifold, one can monitor the status of the application and go through all the relevant documents online. Similarly, the fees can also be paid online, from anywhere and at any time on a 24x7 basis. Now there are no restrictions of making payments only during the specified banking hours, which

As an apex body consisting of members from the real estate industry across the Mumbai Metropolitan Region (MMR), we really appreciate this initiative by the previous Municipal Commissioners, which has been taken forward by Iqbal Singh Chahal, IAS, the present MCGM Commissioner.

This, coupled with the sustained efforts of the DP department team earlier headed by Vinod Chithore, erstwhile Chief Engineer (DP), MCGM and his team members including Sanjay Nirmal, Executive Engineer (DP), has made a significant difference. They have understood our requirements and facilitated the transition to online project approval process for the real estate industry to a great extent.

## 'MCGM's Ease of Doing Business initiative is a great success'

**Ar SAMIR R HINGOO**, President, PEATA (I), explains how the online approval system has created a level playing field for the entire fraternity be it a young professional or a senior experienced architect



is easily available to concerned individual as all documents are now in public domain which has saved lot of working hours of the MCGM officers, which now they can devote to constructive work. With easy access and transparency in approvals granted through online system approvals are strictly in accordance with prevalent laws. Applicants get SMS alerts when the application moves forward at each stage.

Paperless approvals have also made us architects realize the value of time saved for the project. Imagine the cost escalation of a project in Mumbai. Even during the pandemic construction work wasn't held up. The MCGM made sure all approvals were granted through the software even during the testing times and we have to appreciate the commitment of all the officers who made us realize the benefits of modern technology put in place by the authorities.

Year 2015 is a feather in cap for the MCGM as under the leadership of efficient Municipal Commissioner Ajoy Mehta, IAS and erstwhile Chief Engineer Vinod Chithore, a complete overhaul of the building approval system was done. The entire approval system was placed online and the commissioner held on to his decision of not going back to manual approvals; we are all seeing the positive results now. The MCGM has introduced reforms to reduce the procedures from twenty to eight; many other positive measures are implemented time and again. Many NOCs have been removed and/or simplified and in some cases replaced with a simple self or third-party certification by means of a licensed surveyor or architect or consultants.

PEATA(I) has also been active in working and coordinating with the MCGM and its officers in implementation of various policies, circulars and notifications for further smoothening the entire process. I congratulate the MCGM, Housing Department and Chief Minister for his proactive relief measures during tough times due to which the real estate sector and the economy has got a boost. Lastly, I would like to congratulate MCGM for implementing its decision of effective use of building plans approval system and wish other planning authorities would follow the Mumbai model as well.

BIMDCR®, an innovative product by SoftTech Engineers Limited, enabling Construction Permit System at the MCGM has helped it in enhancing Ease of Doing Business (EoDB) Ranking by World Bank by manifold. The MCGM is successfully leveraging Building Information Modeling (BIM) technology, which is a model-based design concept, where buildings can be built virtually before they are built physically. By adopting BIMDCR®, the MCGM is going to streamline data models with complete integration of all relevant factors in the building lifecycle starting from permits to detail design to cost estimation to project management and maintenance. Also, the solution is helping manage information exchange between architects, engineers and contractors in the ecosystem, to strengthen collaboration among all stake holders with single source of data (BIM Model) to manage entire building development cycle.



model-based online single window system, BIMDCR® based integrated Building Plan Approval System is enabling automatic scrutiny of building proposals by dynamically reading building models submitted by applicants or architects.

BIMDCR® is dynamically simplifying and automating the construction permit processes: Single BIMDCR® model submis-

## 'Ease of Doing Business has received a major boost'

**Dr NIRANJAN HIRANANDANI**, Vice Chairman, NAREDCO, highlights the benefits of the online system and suggests steps to empower MCGM still further

The Online Building Plan Approval System of the Municipal Corporation of Greater Mumbai (MCGM) Department of Development Plan (DP) reflects a comprehensive procedural revamp. Such an effective and efficient approval process is essential, given the complexity involved in the development of any real estate project. Looking at the accelerated approval procedures and reduced timeframe, the current online system ranks much, much higher as compared to the earlier manual processes.

There is much faster and more effective coordination on the part of the MCGM, no doubt about it. The advantages of being able to access information about your project approval status online, from anywhere and at any time, are significant. The paperless system has indeed given Ease of Doing Business (EoDB) a boost and it has also been especially helpful in keeping the process moving during the pandemic.

The government is bringing the cities all over India online, it's the target of the Ministry of Housing and Urban Affairs (MoHUA), Government of India. Now this is the stage where



major municipal corporations like the MCGM should be empowered still further.

For instance, while developing a real estate project in Mumbai, one must also separately approach the officials in charge of Environment clearance. This can be avoided, especially in places where residential zones are declared like Mumbai. The city of Mumbai should be given clearance, instead of making the developers apply separately for each project.

Similarly, developers of real estate projects are still having to approach numerous author-

ities such as the Forest Department permission or clearance, or for aspects like CRZ, flamingoes, plus one must get clearances from the three defence departments.

All these can be unified and brought under a single window. The MCGM Commissioner can be empowered so that every clearance is received from one point of contact. While the EoDB in construction permits has really improved due to the reforms undertaken by the MCGM DP department; now it is time for the government to integrate the rest of the aspects as well.



## 'Ease in record keeping and access of information to all'

**DOMNIC ROMELL**, Sr. Vice President, CREDAI-MCHI, affirms that the online single window approval system is the most effective reform undertaken by the MCGM DP department

ing in India is very high. One of the attributes of such high costs is the cost of financing. It is therefore imperative to keep control on time taken for each process in building permits required for construction. The transformations carried out by the MCGM in the approvals process have definitely contributed to the real estate projects positively by bringing down time taken to obtain construction permits.

The online single window approval system has made application to various departments possible, right from your desk, saving a lot of valuable time and manpower. Applications can be processed simultaneously at various departments now without investing time in travelling. Acceptance of certification by experienced consultants has eliminated requirement of NOCs from departments, thereby speed-

ing up the processing of files. The duration for approvals has been reduced exceptionally. The paperless system has made it obligatory for digital submissions improving our environment and reducing carbon footprint. It ensures ease in record keeping and access of information to all. The uploaded information is now public and has improved transparency. Financial institutions as well as end users can check the doc-

umentation and progress of projects of their interest, independently. Benefits on the online system were experienced during the pandemic. The online system replaced one to one contact with authorities, without affecting businesses. Correspondence through the online portal made it possible for us to continue construction work on site with standard operating procedures as recommended by the state.

## 'Due credit must be given to MCGM officials'

**HARRISHKUMAR JAIN**, Vice President, Brihanmumbai Developers Association (BDA) and Vice President, NAREDCO-WEST, shares perspectives on the online approval process

The entire approval process was taken online and when everyone started experiencing the benefits it was very much appreciated and adopted seamlessly. Due credit must be given to the MCGM officials for their willingness and ability to adapt very quickly to this mode of working and improving effi-

ciencies. We at BDA are a body of developers who are primarily engaged in redevelopment. One of our major pain points was to keep all the members abreast with what was going on during the approval process. But with the entire process put online, each and every member of our association has had access to the process and



this has also aided the developer's communication to the stakeholders.

We could easily map the timelines needed for approvals. Earlier, when the process was manual, it took a long time for officials to vet the proposal as well as the developers team to meet compliances at every stage. Increased transparency is also one of the hallmarks. Also, with simultaneous launch of Ease of Doing Business (EoDB) guidelines the number of NOC's needed from an array of departments

have been reduced with certifications from consultants being now considered. The MCGM Department of Development Plan has been very pragmatic and nimble during this pandemic and helped the entire industry from being derailed. We are very grateful to erstwhile Chief Engineer Vinod Chithore and Commissioner Iqbal Chahal who have always engaged with us proactively and made decisions with clear intent to enable further Ease of Doing Business and set benchmarks in this regard.



## 'Online process is very beneficial for all stakeholders'

**AR. SANDIP ISORE**, Regulatory Consultant, appreciates the progress that has been made in terms of reduced timeframe, quicker scrutiny and journey of the application files

if we compare the online building proposal system with the offline manual system that existed earlier, we have come quite far ahead as far as the scrutiny and journey of the files from one desk to another is concerned. It has been very advantageous for all stakeholders; the time required has reduced and this has been very beneficial.

Where it comes to creating and implementing the online

system, the MCGM is the first of its kind to have done this for Mumbai and Maharashtra, and among the few of its kind to have accomplished this for India. This has helped improve India's perception across the world, particularly the World Bank Ease of Doing Business ranking. When you start something new, initially there is some level of inertia to be dealt with. The MCGM, despite being a semi-government

organisation has overcome that inertia thanks to the leadership of the CM, the MCGM Commissioners, and department heads. Everyone is happy because they get to know the progress of the proposal wherever they may be at any given point in time. Even messages are sent to us, stating that the approval has been given or that the file has gone to the next level. This has ensured an equal approach for everyone.

Considering the improvement that has taken place over the last few years, there is scope to improve further as well. I am sure that MCGM will definitely think over these things. What has been achieved must be admired, success must be celebrated. This is a continuous process of improvement and as the system evolves going forward it will become even easier for all stakeholders.

## 'Human interaction has been largely eliminated'

**ER. YOMESH RAO**, Secretary, PEATA, highlights how department integration facilitated processes

The MCGM Department of Development Plan took E-governance to another level through the online building plan approval system, bringing along citizen centricity and making the entire process online and transparent, apart from greater service orientation and integration of all departments related to building permits. The

single window clearance system of online building proposals using single window BPAS application was made compulsory from May 16, 2015 when erstwhile Chief Engineer Vinod Chithore amidst tremendous resistance took the bold initiative of stopping all manually processed files and taking all applications only through the online AutoDCR



and Auto Scrutiny System. This resulted in what we see as the most successful online building proposal application system in the country.

As professionals and stakeholders, we have seen numerous initiatives that have evolved and strengthened the system along the years. There are a lot of ancillary benefits such as time saved in travel due to online systems and the precious per sq. ft. space saved due to conversion to online system

and online data availability. The Municipal Commissioner, the MCGM Development Plan Department and Building Proposal Department have periodic interaction with PEATA professionals and other stakeholders regarding process reforms and its implementation. This progressive strategy of the MCGM and its approach has enabled the process of development unhindered even through the pandemic, resulting in huge savings.

## Successfully leveraging technology

**VIJAY GUPTA**, Founder, Chairman & MD, SoftTech Engineers Limited explains the significance of BIMDCR® - a BIM-based construction permit platform powering the MCGM Permit System

sion to various municipal departments will ensure that the change 'Anywhere' is the change 'Everywhere'. The chances of deviations in the building plan approved by the different departments can cause inconsistencies in the approval process. A unified 3D BIMDCR® model with layers of all functions in the same model can help avoid this challenge and adhere to the regulations. Moreover, the approvals at various stages are made easy with the in-depth assessment and analysis. BIMDCR® enables total unauthorised construction control at various stages of any project and will help adhere to Green Building Code compliance.

Considering the complexities in Mumbai though this transfor-

mation is not easy. The initiative by BP department of MCGM under the leadership of erstwhile Chief Engineer Vinod Chithore and able drive by Executive Engineer and nodal officer of EoDB Sanjay Nirmal to adopt this tech-

nology clearly proves their intention to bring technology to the advantage of citizen of Mumbai. The Overall Rank of India in the Doing Business Report 2015 was 142 out of 190 economies. This has improved to 63rd Position in

the Doing Business Report 2020 released in October 2019.

Leveraging BIM (BIMDCR) and CAD (AutoDCR) based permit system, MCGM has significantly improved Ease of Doing Business. Procedures have been

reduced from 20 to 8, the time taken for the process has been reduced from 99 to 45 days, the cost has reduced from 6.6% to 2.21% value of warehouse, the quality parameter is achieved 100% as per World Bank norms, transparency ensured by randomization of scrutiny officials and remarks being in the public domain has been maximized and information dissemination

Continued on Page 3...  
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### Crucial BIMDCR® features that are powering Automatic Building Plan Approval Systems across the globe:

**Auto Scrutiny:** Automatic Building Plan Approval System is developed as per the Development Control (DC) rules and regulations of various municipal corporations along with the local language support. The solution helps automatically read and identify building information and layout objects from the building model. The system intelligently maps the objects in the building model file to the relevant and applicable develop-

ment control rules. **Dynamic reports:** BIMDCR® generates reports that can be customized and produced in regional language including key factors such as plot area report, MIS report, failed item reports, along with the associated rules. **Automated workflow and alerts:** The approval process can be mapped dynamically using the rule-based template. Scrutiny of documents,

email or SMS bases alerts and notifications are enabled by the solution and mobile app is provided to capture real-time site information. **Flexibility of customisation:** BIMDCR® can be easily customised as per the applied rules and procedures of the approving authorities with local language support. **BIM boosting MCGM's EoDB ranking significantly:** Advanced and developed countries such as the

US, UK, Singapore, Hong Kong have started significant adoption of BIM in AEC industry because of obvious benefits of this proven technology. The building permit technology product BIMDCR® developed by SoftTech has been a strong facilitator to adopt BIM in the industry. MCGM has been harnessing the power of BIM through BIMDCR® by introducing permits on BIM model. This is second initiative in the world only after Singapore.



# Enabling and empowering MUMBAIKARS

**SANJAY NIRMAL**, Executive Engineer, (DP), MCGM, explains how the civic body's initiative to be geographic information system (GIS) centric has enabled a vast number of citizen services, culminating with the OneMCGM portal



The MCGM's vision is to integrate multiple information and communication technology platforms and the Internet of Things (IoT) to manage city assets and operations. The goal is to improve the quality of life and to improve efficiency of services that meets the citizen needs. The MCGM covers a total area of 454 sq.km. and caters to a population of 12.43 million according to 2011 census. There are 24 wards under the corporation and more than 75 departments to provide various services to citizens of Mumbai.

Being the largest city of India, with a high density of population 20634 persons per sq. km., the major challenge is to meet the increasing demands of governance and service delivery for the citizens. To maintain the sustainability of service delivery, the MCGM embarked on an ambitious e-Government initiative.

The aim has been enhancing responsiveness to citizens' needs; increasing operating efficiency and effectiveness; improving financial health and ensuring greater transparency within various departments like Sewerage Operations, Storm Water Drains, Roads & Traffic, Hydraulic Engineering, Development Plan and Disaster Management Unit.

The two main challenges addressed initially were facilitating citizen services through a geographic information system (GIS) portal and inter-departmental / intra-departmental collaboration. GIS provides a common communication language to the different stakeholders of a city and to its citizens to interact with government. These two are major aspects of sustainability of a city.

GIS is a conceptualized framework that provides the ability to capture and analyse spatial and geographic data. GIS applications (apps) are

computer-based tools that allow the user to create interactive queries (user-created searches), store and edit spatial and non-spatial data, analyse spatial information output, and visually share the results of these operations by presenting them as maps.

The land base of Greater Mumbai was created from aerial photographs in 2004/05 duration by digitising 'tikka' and town planning scheme images. Land parcels and roads were digitised, followed by scanning and digitising of 6000+ images to capture different features of the city incorporating the development plan for 20 years duration. All major utilities, revenue elements and social infrastructure were planned to have an integrated database for better planning, management, and sustainable development of the city.

The primary objective of this project was to design, migrate / implement and maintain department-wise GIS data and web applications for end-to-end asset management. Desktop GIS applications were deployed in 2008 for generating Development Plan re-

marks for department users. The MCGM GIS Integrator was launched in 2009, which envisaged bringing all MCGM data into a centralized database and deploying GIS web applications. Ten departments were identified to be the potential torchbearers of GIS in the MCGM: Roads, Sewage Operations, Hydraulic Engineering, Estate, Disaster Management Unit, Property tax, Storm water Drainage, Garden, Education and Licenses.

A SRDP1991 & DP2034 online DP remarks portal was then launched in 2015 by the MCGM DP department. This enables interested land developers / citizens with access to GIS-based online remarks to get information about reservations / demarcations, etc. on required CTS number (plot). Citizens can obtain these remarks by online payment, which is generated instantly. This GIS portal has reduced substantial time of citizens as well as MCGM DP officials.

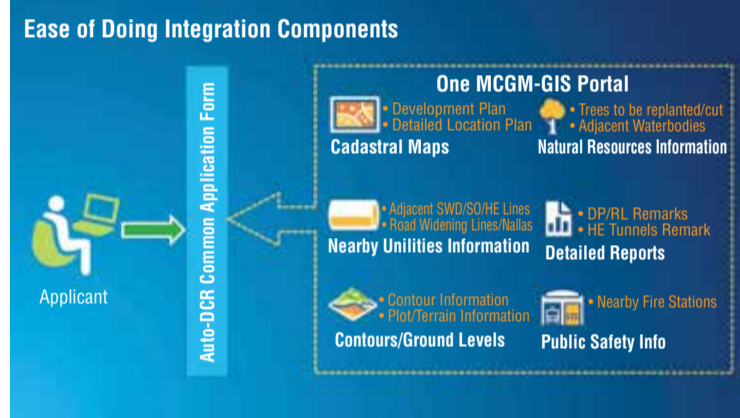
In line with the World Bank's EoDB and MCGM's latest business process, the DP Department then launched the OneMCGM

portal. Initially accessible only by the MCGM internal users, the portal hosts all the GIS data of different departments and web applications that are shared across the user base.

Over 200 layers of GIS information have been created in the OneMCGM portal for catering to the requirements of various MCGM departments. GIS applications have already been built and deployed for 20 plus departments.

As part of the OneMCGM initiative, a mobile application has also been developed for the citizens of Mumbai, which enables viewing the various DP reservations. The earlier system had necessitated visiting local ward offices of MCGM to seek the information of DP reservations, city survey number. However, with the launch of this mobile application, citizens now can download the app and using GPS location, view all details of the plot/DP reservations on their mobile phone itself at anytime from anywhere. It has also become a common application platform.

This e-Government initiative helps citizens to request services in an easier and faster manner, thus resulting in significant savings in cost and time. The municipality would consequently be in a better position to service its citizens, better monitor and control its activities and introduce Customer Relationship Management (CRM) concepts, resulting in tangible and visible increase in the quality of services for every citizen.



**Development Plan Mobile Application Links:**  
**Play Store Link:**  
<https://play.google.com/store/apps/details?id=com.bmcrcnative&showAllReviews=true>  
**Apple Store Link:**  
<https://apps.apple.com/in/app/mcgm-development-plan/id1322314500>



## 'A major initiative undertaken by the civic body under the WB Ease of Doing Business'

**HEMANT D. PARAB**, Chief Fire Officer, Mumbai Fire Brigade, provides insights into the specific advantages resulting from the MCGM Online Building Permit System with emphasis on how it has facilitated the Fire Department's No Objection Certificate

under the World Bank Ease of Doing Business.

**Procedure**  
 During the entire process, the application moves from Assistant Divisional Fire Officer to Divisional Fire Officer for plan verification to Deputy Chief Fire Officer for final approval.

For the construction of any structure, NOC from the department has to be taken twice. First, prior to commencement of the project by getting the plan approved wherein the fire officers check if all required fire safety measures have been incorporated into the project. In the preliminary stage, it takes only seven days for the Mumbai Fire Brigade to issue the mandatory clearance. Thereafter, the second application is made when the project is ready, which is processed and disposed within a short span of 15 days.

**Simultaneous**  
 Once the application is submitted to our portal, it is simultaneously sent to the licenced

**THE ONLINE PROCESS HAS BENEFITTED APPLICANTS, OFFICIALS AND THE CITIZENS**

surveyors, architect and the Development Plan Department as well. The application and plans first undergo scrutiny and our remarks are shared to make necessary rectifications. These comments are marked on the portal itself.

**Checklist**  
 On project's completion, additional documents such as list of firefighting equipment (booster pump, fire alarm, water tank, smoke detector, sprinkler, etc.), certificates related to installation, elevator and escalator related documents, electrical and duct details, etc. After submission of these documents and scrutiny, the visit date gets generated automatically by the online system. The fire officers

visit the premises for inspection and test the equipment, such as checking the water pressure of booster, fire pumps, etc. Similarly, checking equipment like fire alarm system, detection system, etc.

**Documenting**  
 All the details are well documented along with their photographs. These are uploaded onto the system to ensure compliance. Once all the requisite rules are complied with, the clearance is issued digitally.

**Benefits**  
 In case if there are any technical challenges that we may encounter the same gets addressed immediately with the assistance of a software helpdesk. Not only has the online process benefited the applicant and officials alike, but also the citizens. The online movement of files has helped in bringing in transparency as well with citizens able to track the process and status of the application.

## 'Majority proposals are for redevelopment'

**ULHAS MAHALE**, erstwhile Deputy Chief Engineer, Building Proposals (W. S. - I), shares insights on the jurisdiction and responsibilities of the zonal office

Used to handle one of the sub-departments under the Building Proposal Department. Under my jurisdiction were H East and West as well as K East and West wards, that span from Bandra to Oshiwara-Majas and Marol areas. This office has some of the best facilities available among all the zonal offices of the department. We were in the process of installing much-needed storage compactors. Over half of the paper files and records have been safely stored in these storage compactors, which otherwise used to get damaged due to wear and tear as well as its exposure to dust and moisture.



room with all possible facilities such as internet connection, comfortable desk and chairs, provided for applicants to upload the documents online by coordinating with their respective offices. This organised set-up helps in cutting the visitor crowd at the office. A weekly food menu list is also put-up inside the room, to ensure they do not have to hunt for food during lunch hours and the same can be ordered from our canteen. These are a couple of initiatives implemented under the Ease of Doing Business initiative.

The onus of submitting genuine and original documents is on the architects and the developers. Earlier, the Building Proposal

Department used to verify those records to ensure no fake documents are submitted.

Other than a portion of the eastern suburbs, these wards of K East and West as well as H East and West are affected by the air funnel zone due to the two runways in the heart of Mumbai. Hence, there is a restriction on construction's height even when the plot has the FSI to build a higher structure.

Given that these suburban areas were developed over 30-40 years ago, the majority of the proposals that we receive are for redevelopment and there are very few pertaining to Greenfield construction.

The applications and proposals get disposed of within 7-10 days, subject to submission of all the requisite documents. This is now possible due to the online interface that has been introduced and it proved to be a lifeline during the lockdown period, ensuring work doesn't come to a standstill.

## Successfully leveraging technology

... Continued from Page 2

by dynamic dashboard has been accomplished. BIMDCR® is an all-inclusive and shared source of information on a single BIM model facilitating effective decision-making during the building construction lifecycle, starting from permits. The pace of urbanization is speeding up in India. Ministry of Urban Development (MoUD) initiated the much-celebrated national program for urban India - 'Smart Cities'. The idea is to build greenfield cities as well as rebuild or re-vamp existing cities to be smart, future-ready, and sustainable. The growth of city can be made smart only when the buildings constructed follows the development regulations. So implementation of regulations is at the heart of this great initiatives by MoUD. Whether it is a green-field smart city or an upgrade of an existing city into a Smart City, CAD, BIM and GIS technology with automated permit system will have to be key contributors to Digital Transformation for smart buildings, community and cities.

## 'Mumbai had a larger role to play in improving India's World Bank EoDB ranking'



**PRAVEEN PARDESHI**, IAS, Member, National Capacity Building Commission, shares insights on the transformation that the MCGM Online Building Permit System has effected over the years

**How does the current online system, conceptualised and implemented by the MCGM Department of Development Plan in 2015 and taken forward at an accelerated pace during your tenure as Municipal Commissioner, compare to the earlier manual processes?**

The Ease of Doing Business (EoDB) ranking by World Bank for the entire nation - India - is based on the construction permits of two cities, Mumbai and Delhi. Therefore, a lot is at stake for India and that has been the prime motivator for the shift to Online Building Permit System (OBPS) by the Municipal Corporation of Greater Mumbai (MCGM), in addition to making the process quicker and easier.

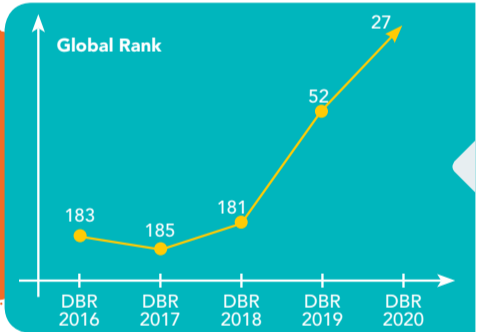
**WHAT'S SIGNIFICANT ABOUT THE WORLD BANK EODB RANKING IS THAT IT IS BASED ON AN INDEPENDENT SURVEY. THE VALIDATION IS FROM THE ACTUAL STAKEHOLDERS, VERIFIED FROM THEM**

In fact, the previous manual process also used to have an additional impact. Not many realise that like property tax, the premium charged for construction permits is also an important source of revenue for the MCGM. So, delays in the issue of construction permits, directly translated into delayed revenue. The Prime Minister's call to improve India's EoDB ranking is the background, there was incentive to push for the shift from manual to online processes as the rules are very complex.

**What were the various challenges faced, both internally and externally from various stakeholder segments?**

The major delays used to happen due to the multiplicity of departments involved in giving permissions for construction permits. There are various departments and the applicant had to go and visit each of them for the No Objection Certificate

The average time taken in sanction of building plans - since 1 April 2016 - has come down to 13 days and average time taken in issue of completion certificates reduced to 9 days. As a result, India's rank in Ease of Doing Business (EoDB) in construction permits recorded a jump of 154 spots as per the latest World Bank Doing Business Report (DBR). The country's rank improved to 27 in DBR 2020 as against 181 in DBR 2018.



## 'The work happens swiftly and smoothly'

**DR SANGITA HASNALE**, Dy. Municipal Commissioner, SWM, MCGM, provides perspectives based on her experiences as the Online Building Permit System kept evolving

The overall image perception of the building proposal department and its pace of operation has changed considerably ever since everything began being processed online. When the MCGM Online Building Permit System was introduced, initially there were some teething troubles and problems faced as people adjusted to the change. However, they were soon overcome.



All the procedures became so smooth, everyone across all the departments involved, responds online. Integration among all of them has made a big difference. Earlier for any project application a lot of time was taken up. With the shift to online process, the time required for each stage has reduced and one can see that the work is being done swiftly and smoothly. Previously, when I was the head of department for assessment, we observed that whenever any proposal was received, they had to get the entire paperwork done separately by the assessment department.

**WHEN THE ONLINE SYSTEM WAS INTRODUCED, INITIALLY THERE WERE TEETHING TROUBLES AS PEOPLE ADJUSTED TO THE CHANGE. HOWEVER, THEY WERE SOON OVERCOME. WE SAW THAT ONCE THEY GET A QUICK AND EASY APPROVAL, THOSE WHO ARE DOING THE PROJECT ALSO DEVELOP GREATER CONFIDENCE.**

With the introduction of the online system, that was changed as well. It was decided that once the online system was implemented, the Department of Development Plan will make its own assessment and submit. The assessment department will just check and confirm the same.

We also introduced an additional feature. If someone is purchasing a flat, the sale transaction from the builder's side is entered in the collector's office but the buyer had to go through a separate process to get the name transferred with the assessment department. Now, automatically that name transfer in the assessment department also gets simultaneously done in the flat purchaser's name.

India's ranking under World Bank Ease of Doing Business has improved significantly. Sanjay Nirmal and his team at the Department of Development Plan have created an ideal methodology. For instance, under the Ashraya Yojana we have to develop around 6000 houses; I got permission for that in just 7 days. I am not even an engineer, so it really boosts the morale.

Once they get a quick and easy approval, those who are doing the project also develop greater confidence. For me as an administrator, even previously when I was Head of Department Planning, we didn't have a single engineer in the team. Despite this, the work was never stuck up at any point in time. This is very important for any Department Head.

Currently, in the Solid Waste Management (SWM) department we find the system enabling us to give the NOC online. Since all the departments are integrated, the entire process happens simultaneously.

