

USING **MINECRAFT** FOR COMMUNITY PARTICIPATION

MANUAL



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About UN-Habitat

The United Nations Human Settlements Programme (UN-Habitat) is the United Nations agency for sustainable urban development. It is mandated to promote socially and environmentally sustainable towns and cities while advocating adequate shelter for all. UN-Habitat works to expand understanding of inadequate shelter and urban poverty, and to facilitate the tracking of progress in urban development. It also sets out norms and best practice for sustainable urbanization and urban poverty reduction, promoting realistic and integrated urban planning as the key to harnessing the economic potential of cities.

About this manual

The purpose of this manual is to provide an overview and a step-by-step guide to the use of Minecraft as a community participation tool in urban design projects. UN-Habitat has been using Minecraft to engage communities in the design of public spaces since 2013.

UN-Habitat's Global Programme on Public Space

Public space has often been overlooked and undervalued by urban authorities but is increasingly being considered the backbone of the city and sustainable living. Public spaces are places that are accessible and enjoyable by all without a profit motive and take on various spatial forms, including parks, streets, sidewalks, markets and playgrounds. Good public spaces enhance community cohesion and promote health, happiness, and well-being for all citizens.

In 2012, UN-Habitat launched the specialized Global Programme on Public Space with the aim of improving the availability, accessibility, inclusiveness and quality of public spaces worldwide. As part of the development process, participatory planning workshops are held with members of local communities in which they can provide input into the design and eventual implementation and management of the spaces. The projects are usually implemented as a partnership between UN-Habitat and local development partners such as local authorities, non-governmental and community organisations.

Block by Block

In 2012, UN-Habitat entered into an innovative partnership with the Swedish computer game company Mojang AB, the makers of the popular computer game Minecraft. Through the partnership, named Block by Block, UN-Habitat uses Minecraft as a community participation and engagement tool in the design and implementation of public space projects. To date, Minecraft has been used for community participation on every continent, including in Nigeria, Peru, Mexico, Kosovo and Nepal.

About Minecraft

Minecraft is a 'sandbox' computer game originally launched in 2011. The game has sold nearly 100 million copies worldwide, making it one of the world's best-selling computer games.

The gameplay of Minecraft is perhaps best imagined as a complex 'digital Lego'. The creative and building aspects of Minecraft allow players to build structures out of textured cubes in a three-dimensional generated world. Creative mode enables gamers to easily create buildings similar to those produced by complex 3D modelling software, with the additional benefit of being able to construct structures together through the multiplayer setting. As a result, the building process is more similar to real-life construction projects with multiple workers carrying out different roles simultaneously, than traditional digital 3D model-making with only one designer.



Plage la Touterelle, Haiti, redesigned in Minecraft

Methodology for using Minecraft for community participation

Summary of method

1. Based on images, plans, Google Maps and other available materials, a Minecraft model is produced by UN-Habitat's Minecraft consultants.
2. UN-Habitat arranges for a Minecraft expert to provide Minecraft training and support.
3. Project staff, with the support of the Minecraft expert, hold workshops with community participants, project staff and partners in order to:
 - Train participants in the basics of Minecraft modelling
 - Facilitate a dialogue on issues regarding the space
 - Produce Minecraft models incorporating the proposed design ideas
 - Collate the ideas that are included in the models
4. The participants are divided into groups of 2-4 people, with one computer provided for each group.
5. The workshops need to provide sufficient time for participants to develop their ideas in Minecraft. Depending on the level of prior IT and Minecraft knowledge, two to four days is recommended.
6. Project staff facilitates a final workshop where the refined models are shown to stakeholders to generate discussion.
7. The Minecraft proposals feed into the professional design work.



Community participation using Minecraft in Kibera, Nairobi ©Vu Bui, Mojang

IT requirements

A space with access to computers and, ideally, a good internet connection is required. Increasingly most cities, including cities in the global South, have IT hubs or training centres with IT equipment that can be used for these activities. UN-Habitat can assist with the identification of such spaces. It is possible to work with Minecraft 'off-line' but it is necessary to have internet when installing and logging into Minecraft.

Minimum requirements to run Minecraft:

CPU: Intel Pentium D or AMD Athlon 64 (K8) 2.6 GHz

RAM: 2GB

GPU (Integrated): Intel HD Graphics or AMD (formerly ATI) Radeon HD Graphics with OpenGL 2.1

GPU (Discrete): Nvidia GeForce 9600 GT or AMD Radeon HD 2400 with OpenGL 3.1

HDD: At least 200MB for Game Core and Other Files

Java 6 Release 45

Detailed method

Step 1 – Preparation of Minecraft model

The first step is to build a Minecraft model of the site as it currently is. The project team collects as much information about the site as possible, including photographs, Google maps and images, video footage, plans/blueprints, GIS maps (location map, street map) and any other relevant information. UN-Habitat coordinates the collection of this information and liaises with a team of Minecraft modellers. Construction of the model takes about three to four weeks. Once the model is developed, UN-Habitat shares it with partner agencies to cross check and validate. Any missing elements will be added before the model is finalized.

Step 2 – Participant selection

Prior to the participatory process, it is crucial to select a group of people who will be available for an intensive three to four day interactive workshop. The ideal size of the participant group is 25 to 30 people. These participants are usually local residents who use and will continue to utilize the site on day to day basis. A few participants may also join from implementing partner agencies, local government and other stakeholder organisations. Participant selection process should be handled carefully, ensuring as wide representation as possible, for example taking into consideration the following:

- Age, ensuring that different ages are represented
- Gender, focusing on the inclusion of women and girls
- Ability, ensuring the inclusion of people with disabilities
- Income, with a special focus on including low-income groups and slum dwellers
- Participants from local authority/municipalities (partner agencies)
- Representatives from NGOs or civil society organisations

Step 3 -Workshop preparation

Ahead of the workshop it is important to inspect the computers, including installing Minecraft with the existing model. An internet connection is required to install Minecraft, but not to play it. The following steps need to be taken ahead of time:

1. Install Minecraft on a separate computer with reliable Internet access. UN-Habitat can provide free Minecraft login codes.
2. Log into Minecraft using one of the accounts provided by UN-Habitat
3. Add the existing model and change in-game setting in preparation for the workshop (a program called NBTE Explorer can be used to directly edit settings in the model, enabling the turning off of animal spawning, day/night cycling and weather effects, which will make the program easier for participants to work with).

4. Copy the “.minecraft” folder from the appdata\Roaming directory and the “Minecraft” folder from the Program Files directory to a USB drive. These folders can then be copied into the same directories on the workshop computers, effectively cloning the prior installation, speeding up the process significantly. If the workshop computers are connected to the internet, separate logins may need to be used on each computer once the files are copied over, but if the computers are offline, no login is necessary.
5. Verify that Minecraft and the model work correctly on each workshop computer. This operation should be done at least one day before the training event.

Step 4 – Overview of the project (beginning workshop day one)

The workshop will be facilitated by an urban design expert and Minecraft expert provided by UN-Habitat. On the first day of the workshop, the urban design expert will brief participants on the background of the Global Programme on Public Space as well as the project under consideration. The participants compliment with background information on the site and its objectives and ensure that their participation and contributions are valuable. The training facilitators may focus on the following during this session:

- Explanation of the purpose and history of the Global Programme on Public Space
- Background on the partnership(s) for the project
- Objectives of this project
- Overview of the workshop process and objectives
- Explanation of the final design process

Step 5 – Training in public space basics

Participants are given basic training on public space issues, theories and design considerations. The following issues may be covered:

- What is public space?
- Typology of public space
- Why public space is important
- Why public space should be well planned, designed and managed
- Benefits of public spaces
- Case studies for better understanding

Step 6 – Group formation

After the overview of the project and public space issues, the participants are divided into groups who will work together for the remainder of the workshop. Each group consists of 2-4 people, depending on the number of computers available for the workshop. Each group should have relatively equal representation based on gender, age, technical competence, etc.

Step 7 – Community consultation:

Once the groups are formed they take part in a community consultation session. During this session the facilitators initiate a group discussion, asking participants to brainstorm, considering problems and challenges in the site, potential solutions to those problems, and amenities which are missing. Each group discusses these issues separately, listing the most important areas for further discussion.

The groups then present their lists and discuss similarities and differences. The training facilitators play a key role in managing the discussion, dealing with potential conflicts and validating different issues that are brought up during this session. Once the presentations are done, the facilitators display each of the groups' lists in the training venue so that the participants can consult them while building their models in Minecraft. If there is time, the participants may also take a short tour of the site to better understand the issues related to this discussion session.



Group presentation in Hargeisa, Somaliland ©Jose Chong, UN-Habitat

Step 8 – Introduction and justification

Minecraft is a computer game that allows people to build models and portray real life scenarios by using blocks (similar to building toys like Lego, but in a digital world). It is assumed that participants are not always familiar with the software and may not be proficient with computers. During the final session on the first day, the facilitators introduce Minecraft and explain why it is useful for this kind of participatory workshop. The presentation includes examples and results from previous workshops to help illustrate the power of the software and encourage participants to explore and be creative.

It should be clear to the participants that Minecraft is not a precise architectural design tool, but instead useful for creating close approximation of the users' ideas. It is also important to mention that UN-Habitat is using this tool because it is easy to learn and to use – usually, people can learn within few hours and can contribute their ideas and participate in the design process even though they might not be familiar with computers.

Step 9 – Learning Minecraft (end of workshop day one)

After introducing and explaining the justifications for using Minecraft, each group is provided with a reference card explaining Minecraft controls and inventory descriptions and shown a live demonstration of the controls using a digital projector. The participants are then given time to play with the software and explore the existing site model. The facilitators circulate around the room to answer questions that arise and to ensure that each participant has a chance to try the controls. One to two hours should be adequate time for the participants to learn the controls and begin experimenting with the game.

Step 10 – Minecraft building tutorial (beginning of workshop day two)

The second day of the workshop begins with a Minecraft building tutorial. The tutorial provides the participants with an overview of the design and building process and instruction in specific building techniques. The facilitator may want to base the tutorial on objects located in the project site in order to demonstrate the connection between the Minecraft model and the real world. At the end of the tutorial, the facilitators will hold a question and answer period before sending the participants to their computers.



Learning Minecraft in Lokoja, Nigeria ©Cecilia Andersson, UN-Habitat

Step 11 – Model design and building (remainder of workshop day two)

After the tutorial, each group has the remainder of the second day to modify the existing model of the site to reflect their preferred changes/additions to the site. Each group is encouraged to be creative. The facilitators check in with the groups to answer questions, provide advice and feedback on designs, ensure that groups are saving their work regularly and demonstrate additional building techniques. The facilitators may want to ensure the following:

- All group members are taking part in designing and building the model
- Participants are basing their designs on the results of the community consultation that took place earlier
- Groups are progressing adequately and their questions are being answered
- Groups are saving their work regularly

At the end of the day the facilitators will back up each group's model to an external drive and, if necessary, collect notes and other materials to be redistributed when the participants return.



A participant redesigning a public square in Mexico City ©Pontus Westerberg, UN-Habitat

Step 12 – Model finalization (beginning of day three)

After the previous day's efforts to build the model, the participants will be given a few hours to finalize their work. During that time participants make sure all the services they have proposed during the community consultation are represented. Each group also determines how they will present their model and prepare justifications for their proposals for specific services.

Step 13 – Model presentation

Once the models are finalized, each model is copied to the presentation computer. The groups then present their model to the rest of the participants and invited stakeholders, for example representatives from the planning department of the municipality, local leaders, technical experts, NGOs or other partner organisations. In these presentations, they are asked to communicate the following:

- Show and explain each modification/addition to the model
- Provide justifications for the designs
- List the three additions to their model that they consider to be the highest priority

Each group presentation is followed by a question and answer session. During the presentations, the facilitators write down each proposed addition (one facilitator may use a flip pad so that the other participants can see the list). They also keep track of the number of groups who proposed each modification and the number of groups who listed them as high priority. These lists will be used during the next phase of the workshop.

The facilitators may choose to judge the presentations and award one group for the best model design to encourage the participants for their teamwork, however this is not mandatory. It would be best if representatives from the partner organizations could attend and participate in the judging of the models.

Step 14 – Prioritization and ranking of services

Using the notes taken in the previous step, the facilitators rank the services based on the number of groups who proposed them and the number of groups who listed them as high priority. The facilitators then present this prioritized list to the participants for comments, questions, and approval. Once the list of services has been approved by the participants, the Minecraft expert begins work on consolidating the participant models into a final design with the support of the urban design expert taking in consideration the cost of the proposed services.



Park in Lima, Peru before participatory Minecraft workshop



Park in Lima Peru, showing improvements in Minecraft

Step 15 – Cost estimation

After prioritizing and ranking the proposed services, the urban design expert works with representatives from the partner organizations to do a cost estimation exercise for each of the services. This is best done with professionals from the municipality and using public procurement rules and cost estimates. All services proposed by the participants will be considered in the cost estimation, regardless of ranking. Once the cost estimation is complete, the urban design expert presents it to the participants.

Step 16 – Final model consolidation (end of day three)

During the cost estimation, the Minecraft expert will begin the process of creating a final consolidated model based on the designs submitted by each group. This model includes all the proposed services regardless of ranking. While building the final model, the Minecraft expert focuses on the following:

- Designs drawn from the participants' models as equitably as possible.
- As some groups propose alternate designs and locations for services, the Minecraft expert (in coordination with the urban design expert) may select the design/location that best fits the final model. If necessary, the Minecraft expert may choose new locations or make modifications to group designs to ensure that all proposed services will fit within the model.
- Modifications to original group designs should be kept to a minimum and should reflect the spirit of the originals. Justifications must be provided for any modifications.

A draft of the consolidated model will be presented to the participants on the final day of the workshop for comments and approval.



1. Public Toilet
2. Cafe + Wifi Zone
3. Comm. Center + Prayer Room
4. Fountains
5. Boating Dock
6. Swimming Facility
7. Security + First Aid Post
8. Tube Wells
9. Children's Play Area
10. Bicycle Parking
11. Foot Bridge
12. Orchard
13. Basketball Court + Amphitheatre
14. Park Map / Guide Signs

Final consolidated model of Solar Park, Khulna, Bangladesh

Step 17 – Final model presentation (last day of the workshop)

The Minecraft expert presents the draft of the final model to the participants and provide justifications for any changes made to the participants' designs. The participants may ask questions and provide feedback during the presentation. After the presentation, there will be a final discussion in which participants may voice any concerns and provide additional feedback on the final model. The facilitators will document this feedback and the Minecraft expert can use it to revise and finalize the consolidated model. After the discussion, the facilitators inform the participants of the remaining steps in the process.

Step 18 – Technical briefing

This meeting usually takes place between UN-Habitat representatives, representatives from partner organizations, the Minecraft expert (if possible), and outside experts (if any). The facilitators brief the other representatives on the workshop and model building process and will present the final consolidated model.

UN-Habitat may also take this opportunity to finalize agreements and other details regarding project management with the partner organizations. During this technical briefing the following may be discussed:

- Who will do the architectural drawing/detail design lay out for implementation
- Responsibilities of different parties
- Coordination mechanism to involve the community people with the project
- Phasing of different works for future improvement

Step 19-Architectural drawing preparation

Once the responsibilities are agreed, an architectural drawing and working layout is produced based on the final model. Generally, the municipality is included in this design and layout preparation task. The design includes all the services proposed by participants (based on the final Minecraft model). The locations and designs of services/facilities may be changed if necessary, but justifications may need to be provided (e.g., for cost efficiency). The final design will include an architectural drawing and a working layout with detailed design specifications. Once the drawing is prepared it will be shared and discussed internally among the implementing agencies and necessary changes will be made based on their recommendations.

Step 20-Validating final design and model

Once the final drawings are ready and approved by all participating organizations, a community meeting may be called for validation. During that meeting the implementing agencies will invite the participants from the Minecraft workshop. The facilitator (could be either from UN-Habitat or implementing agency) will explain the final set of drawings to the participants and provide justifications for any changes from the participatory design workshop. The facilitator also explains the process and schedule for implementing the design.

After the presentation, the floor will be opened for discussion and questions. Any suggestions or concerns from the participants will be carefully considered, and if there is justification, the designs will be altered accordingly. After the model is approved, it will be finalized within short period of time and will be ready to use for implementation.



A completed public space in Mumbai, India ©Mumbai Environmental and Social Network

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