

University of Mumbai



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UNIVERSITY OF MUMBAI

A Safety Analysis Report

The manual safety audits were conducted by the students of University of Mumbai in collaboration with Women Development Cell, University of Mumbai and **Akshara Centre**.

We are thankful for this collaboration.



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Safetipin is a technology platform that uses apps to collect data in order to make cities and public spaces safer and more inclusive for women.

At the core of the app is the Safety Audit. A Safety Audit is a participatory tool for collecting and assessing information about perceptions of safety in public spaces. The audit is based on nine parameters – Lighting, Openness, Visibility, Crowd, Security, Walkpath, Availability of Public Transport, Gender Diversity and Feeling.

This report has been prepared to share the findings of the safety audits conducted by the students of University Of Mumbai. Audits have been conducted in collaboration with our local partner organization Akshara.

Methodology

For this study, Manual audits were conducted by 20 students from University of Mumbai .The audits have been generated using **My Safetipin** app. A total of 135 audits have been done in the Mumbai University Campus. Most of the audits have been done between 4pm -8pm.

Overall, the Safety Score for Mumbai is rated **3.3/5** i.e. Good.



Light(Night)

Lighting measures the amount of brightness/illumination at a place and ranges from Dark to Bright. A place can be lit with street lighting or from other sources.



Openness

Openness refers to whether a person has a good line of sight in all directions.



Visibility

Visibility refers to how visible is one to others. It is based on the principle of 'eyes on the street'. This comprises windows-doors of shops, houses along with street vendors and hawkers.



People

People indicates the number of people around. This increases as a consequence of usage opportunities.



Security

Security refers to visible security offered either by the police or private security guards (for example along ATM/Bank).



Walk Path

Walkpath indicates whether a person can comfortably walk at a place. This could refer to the quality of a pavement or space along a road.



Public Transport

Transport refers to the ease of accessing any mode of public transport i.e. metro/bus/auto/taxi etc. and is measured in terms of the distance to the nearest mode.



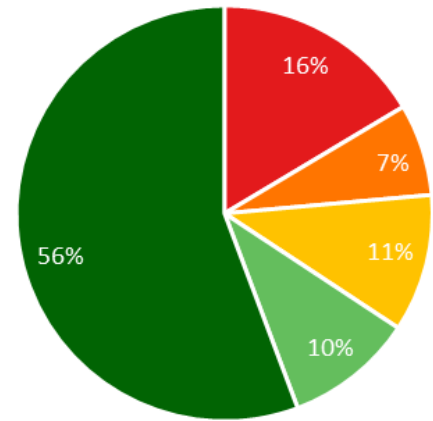
Gender Usage

Gender is about diversity i.e. the percentage of women and children amongst the crowd. This increases as a consequence of safety perception.

Safety Score

The Safety Score of a point is a reflection of the perception of safety at that particular location. For each audit point it is a number between 0 and 5, 0 being Poor i.e. very unsafe and 5 being Good in terms of overall safety.

Indicated in the pie chart is the percentage distribution of pins in each range. 16% of the audit points were rated poorly. 65% of the audit points have been rated as Good. The audit pins which have been rated as Good lie near Bharat Nagar, Mahatma Phule Bhawan, etc. Most of the poorly rated pins are located near Kolivery Village, Kalina area and Vidya Nagar.

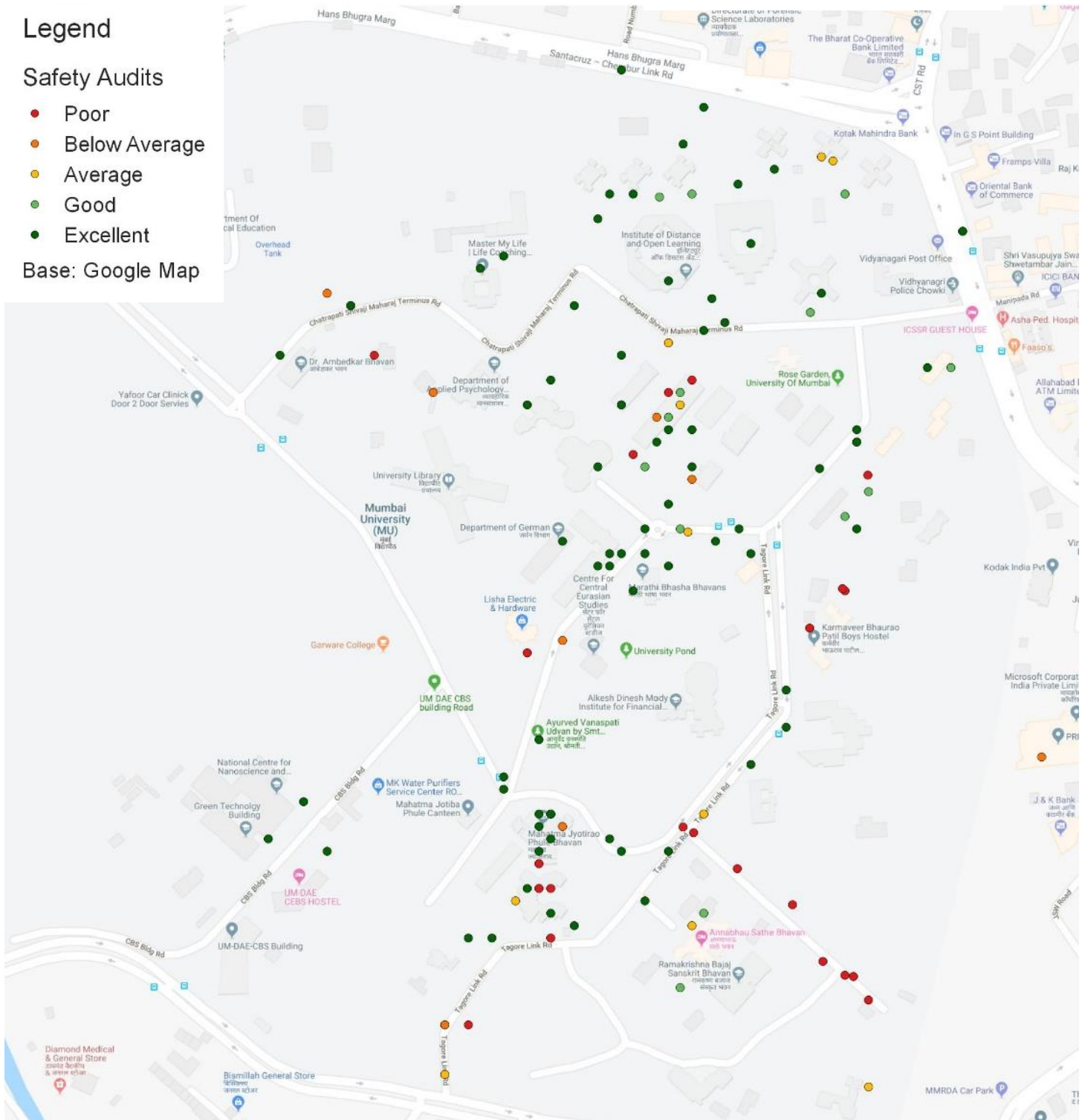


Legend

Safety Audits

- Poor
- Below Average
- Average
- Good
- Excellent

Base: Google Map

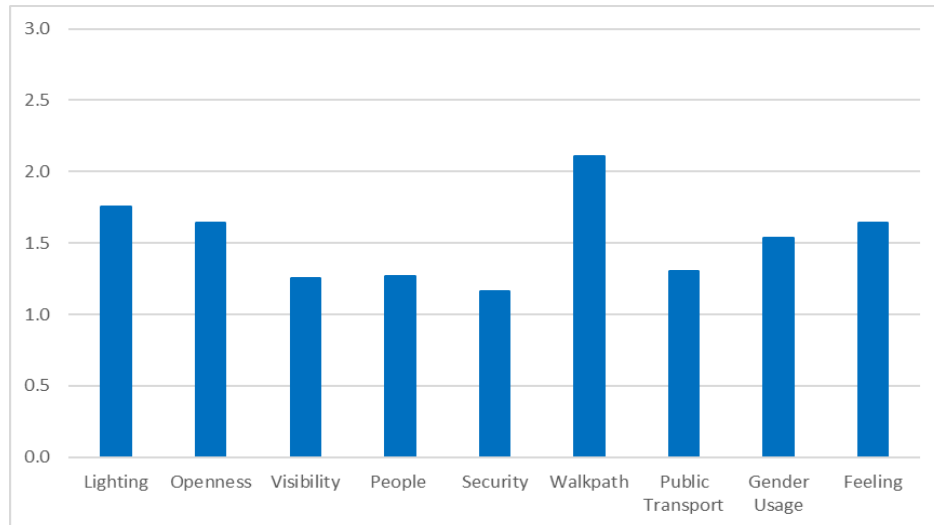


Map 1 indicating Safety Score Rating

Parameter Ratings

Each of the nine parameters is rated 0/1/2/3, 0 being the poorest and 3 good. The average parameter ratings graph indicates the overall average rating for each parameter. As seen in the graph below, the Walkpath parameter has been rated the highest followed by other parameters of Lighting and Openness.

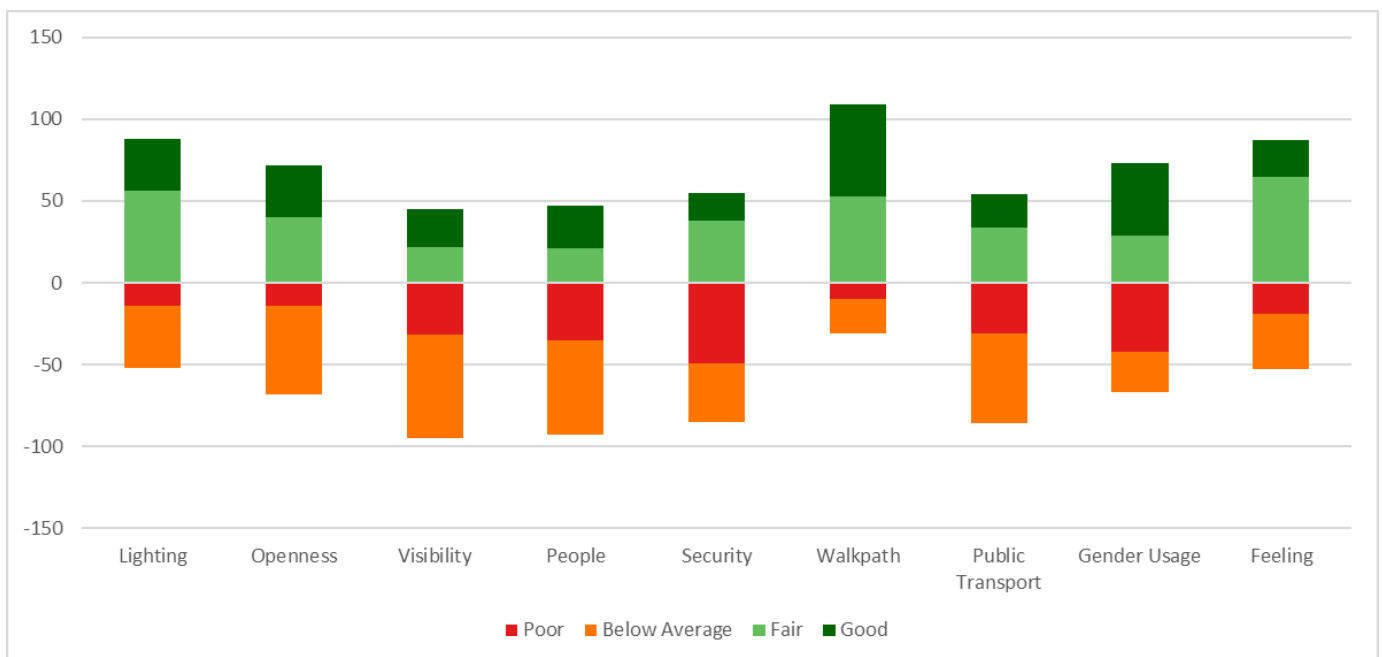
People, Gender Usage, Visibility and Public Transport parameters have been rated as Average. Security parameter has been rated Below Average. The overall safety in Mumbai University has been rated as Good.



Parameter-wise Pin Distribution

The Parameter wise pin distribution graph indicates the number of points rated 0/1/2/3 i.e. the good points as positive and poor ratings as negative. The parameters of Gender Usage, Public Transport, Visibility and People have been rated poorly for many areas in Mumbai University, whereas parameters like Walkpath and Lighting need to be improved in some areas. Infrastructural improvements in Lighting and Walkpath parameters will enhance the overall Safety Score in the Mumbai University campus.

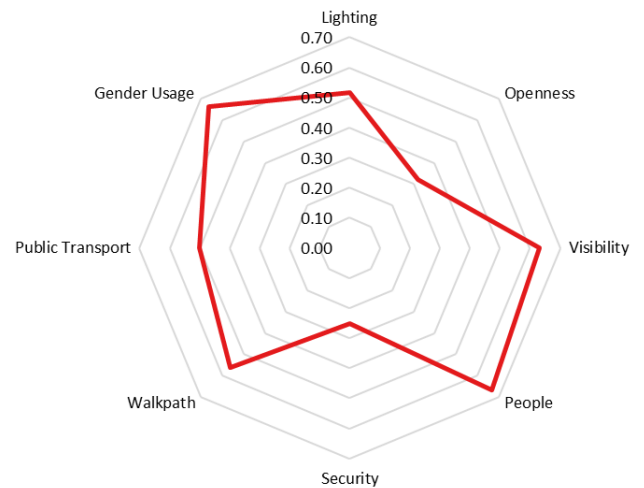
Individual Parameter maps are shown on the following pages.



Feeling

The Feeling parameter indicates an individual's perception of safety at a particular location. Feeling parameter is subjective hence may be rated differently by men/women, young/old, local/migrant, etc.

The correlation graph on the right indicates that the Feeling parameter is largely impacted by parameters of People and Gender Usage followed by the Visibility Parameter.



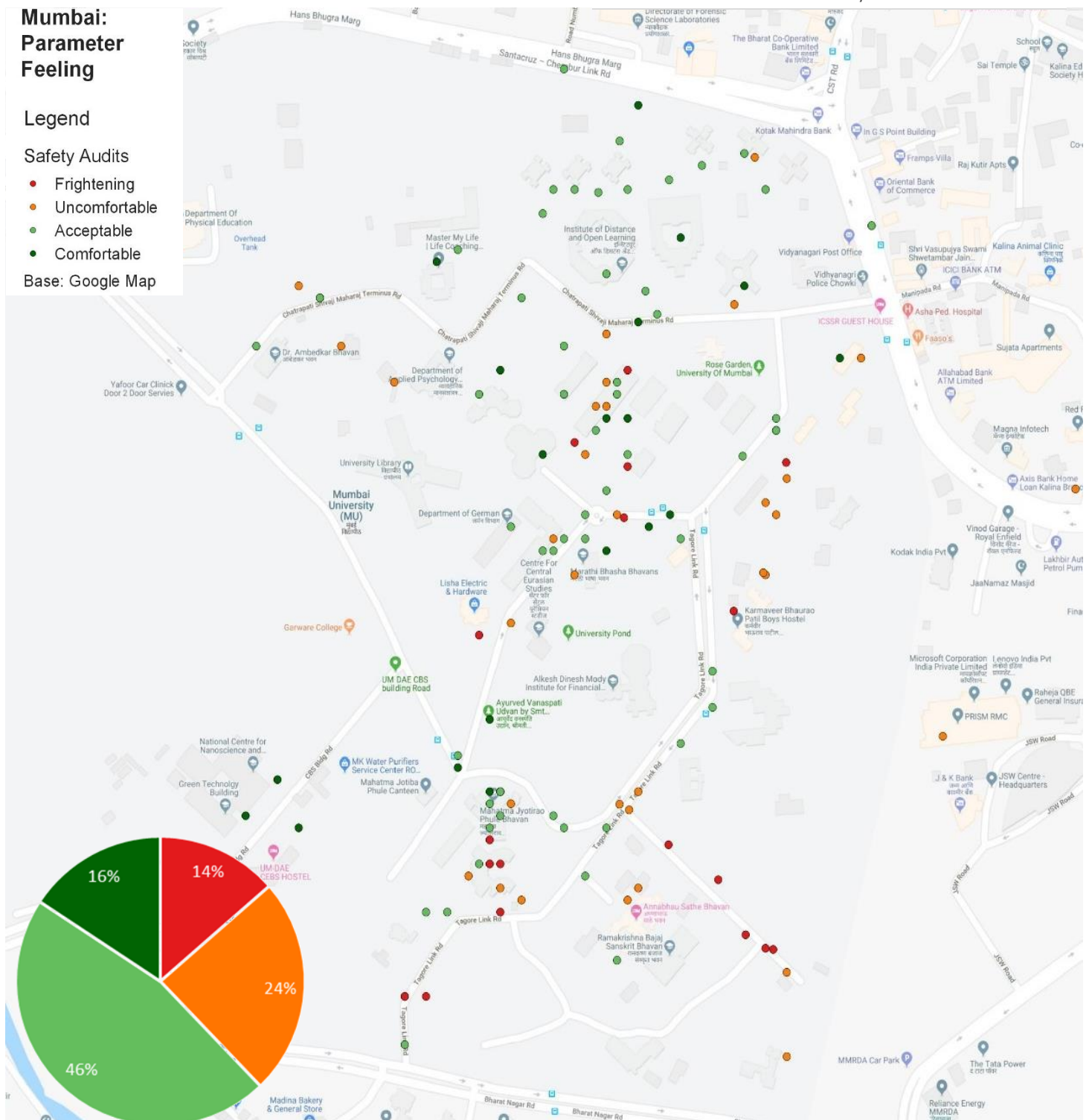
Mumbai: Parameter Feeling

Legend

Safety Audits

- Frightening
- Uncomfortable
- Acceptable
- Comfortable

Base: Google Map



Map 2 indicating Feeling Rating

Lighting

Lighting measures the amount of brightness or illumination at a place and ranges from dark to bright (rating 0 -3). A place can be lit with street lighting or from other sources such as light coming from houses, shops, street vendors etc. Light coming from the vehicles is not considered as it is a temporary source of light.

10% of the audit points have been rated as Poor and identified as dark spots in the audit site indicating no source of lighting. Over 60% of the audits have been rated as Above Average or Good. To improve lighting, existing streetlights should be checked regularly and additional pedestrian scale streetlights should be installed as required.



Image showing an audit location (dark spot) with no lighting.

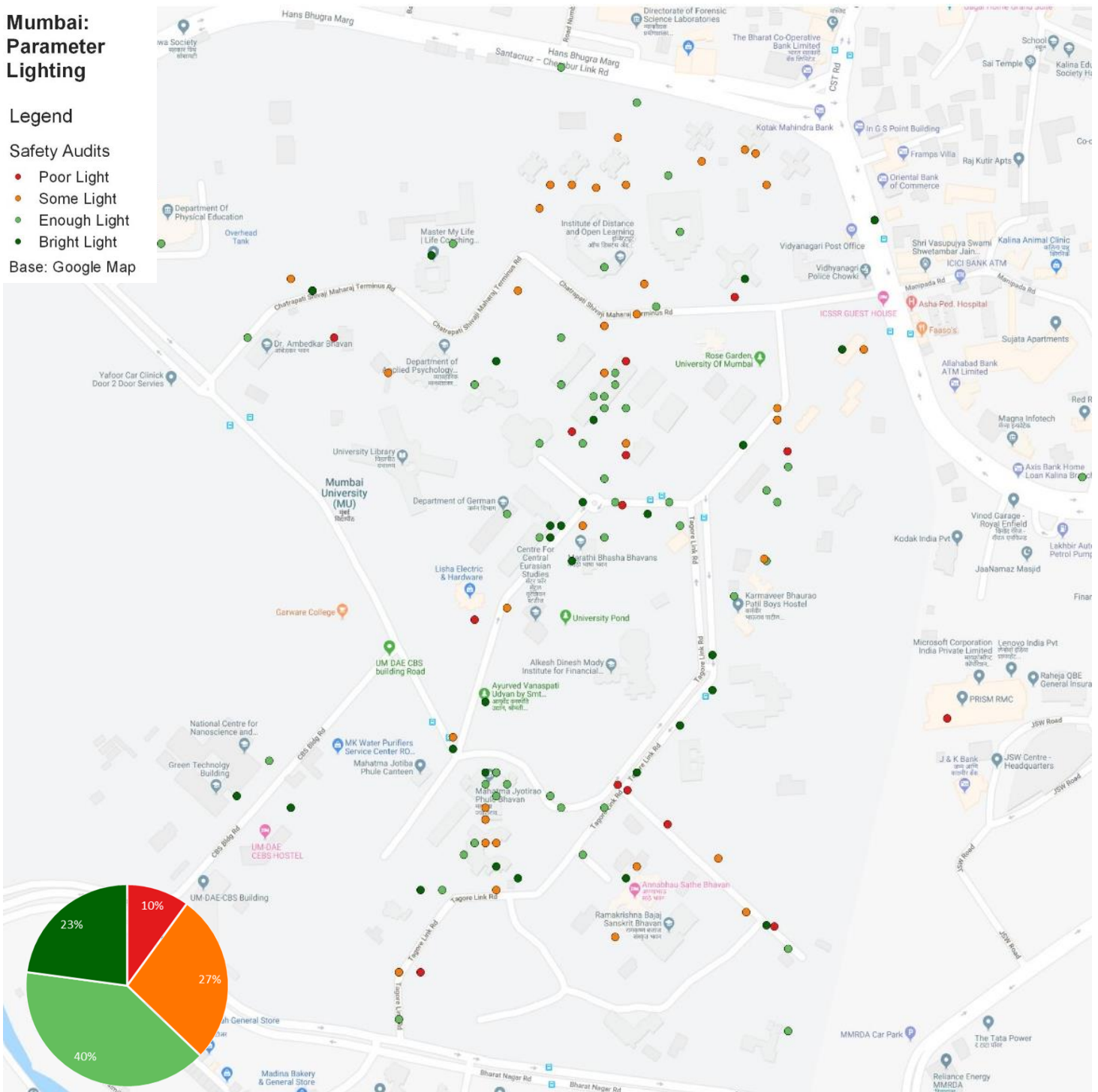
Mumbai: Parameter Lighting

Legend

Safety Audits

- Poor Light
- Some Light
- Enough Light
- Bright Light

Base: Google Map



Map 3 indicating Lighting Rating

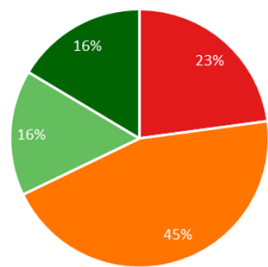
Mumbai:
Parameter
Visibility

Legend

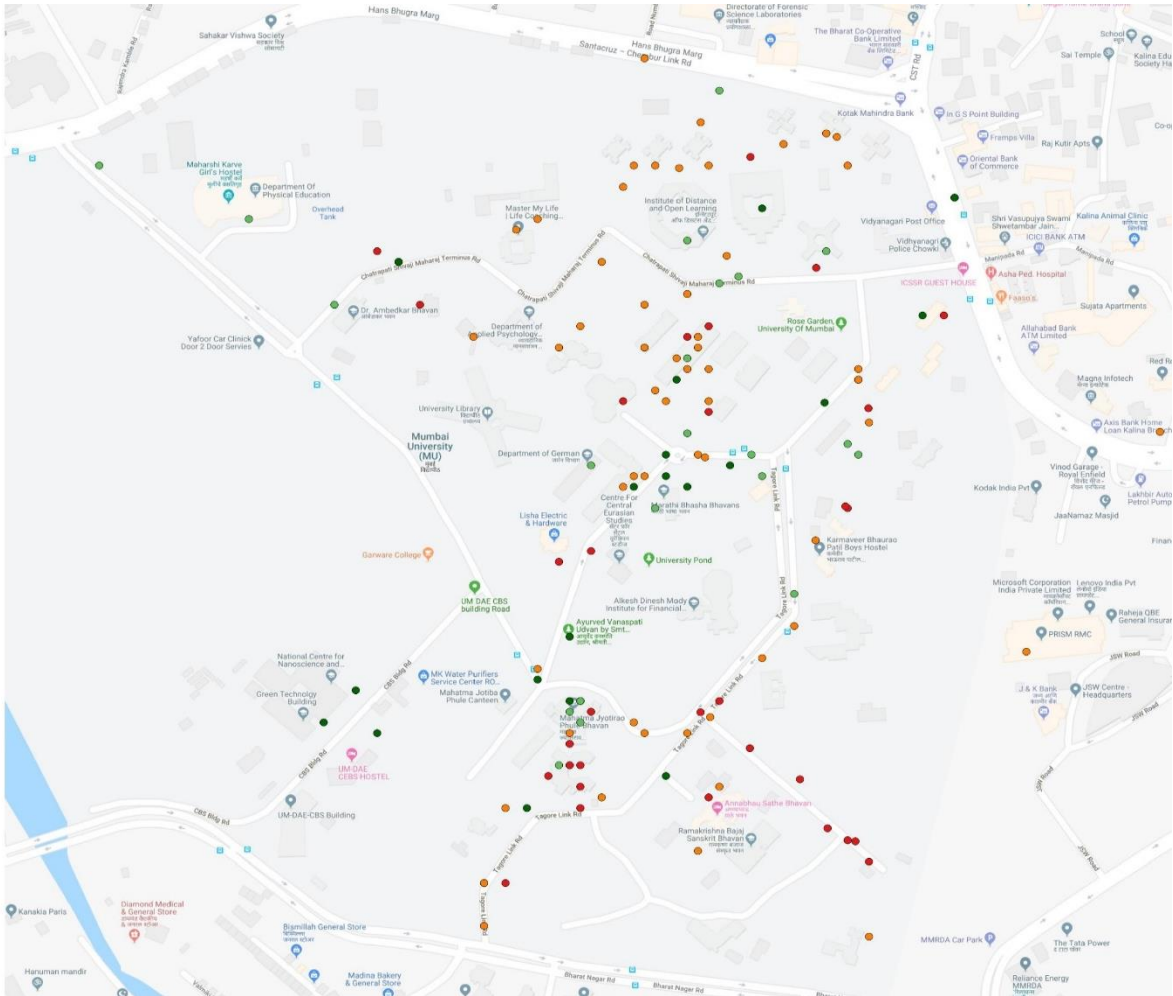
Safety Audits

- No Eyes
- Few Eyes
- More Eyes
- Highly Visible

Base: Google Map



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Map 4 indicating Visibility Rating



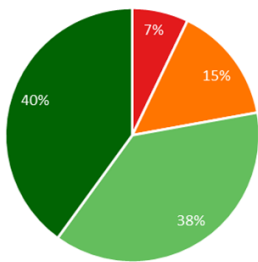
Mumbai:
Parameter
Walkpath

Legend

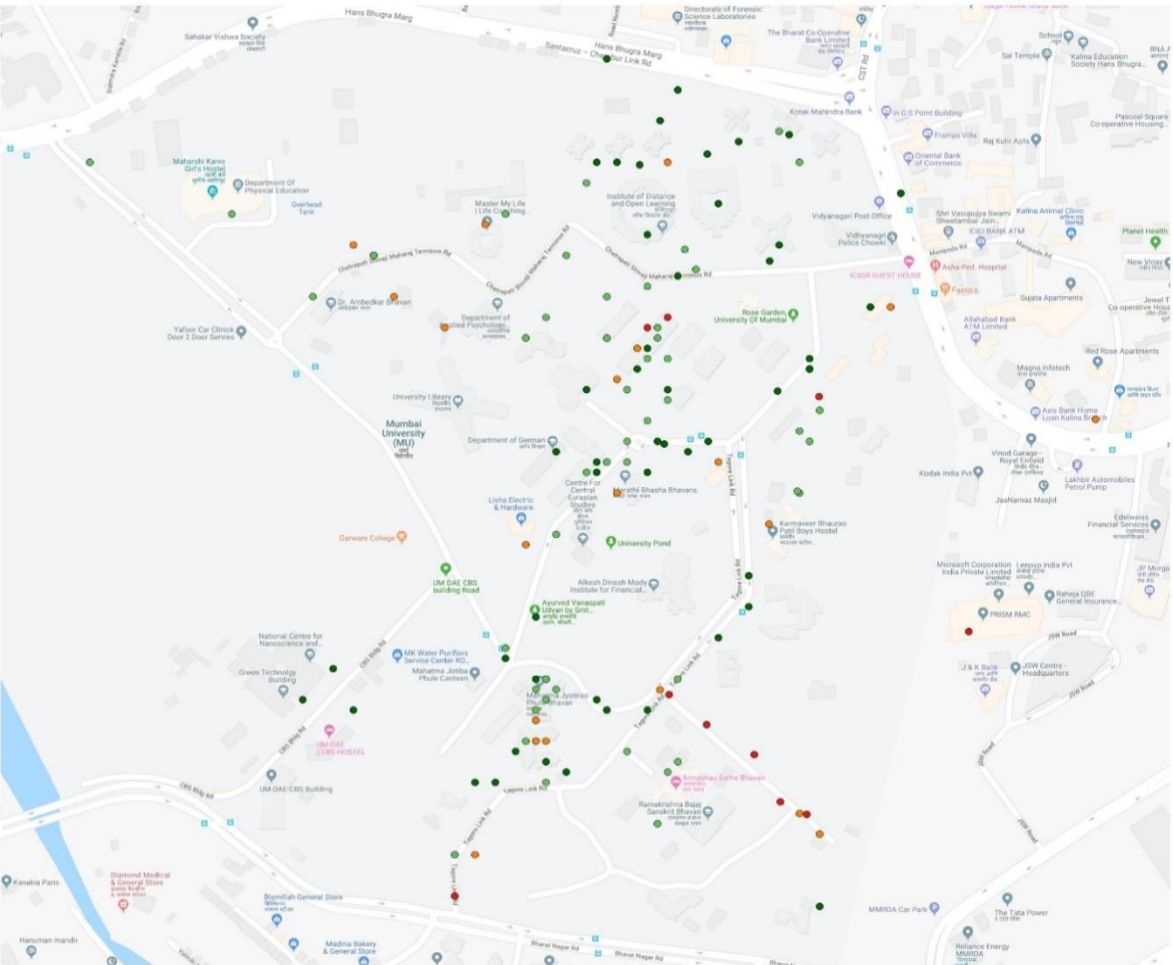
Safety Audits

- None
- Poor
- Fair
- Good

Base: Google Map



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Map 5 indicating Walkpath Rating



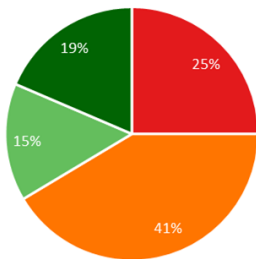
Mumbai: Parameter People

Legend

Safety Audits

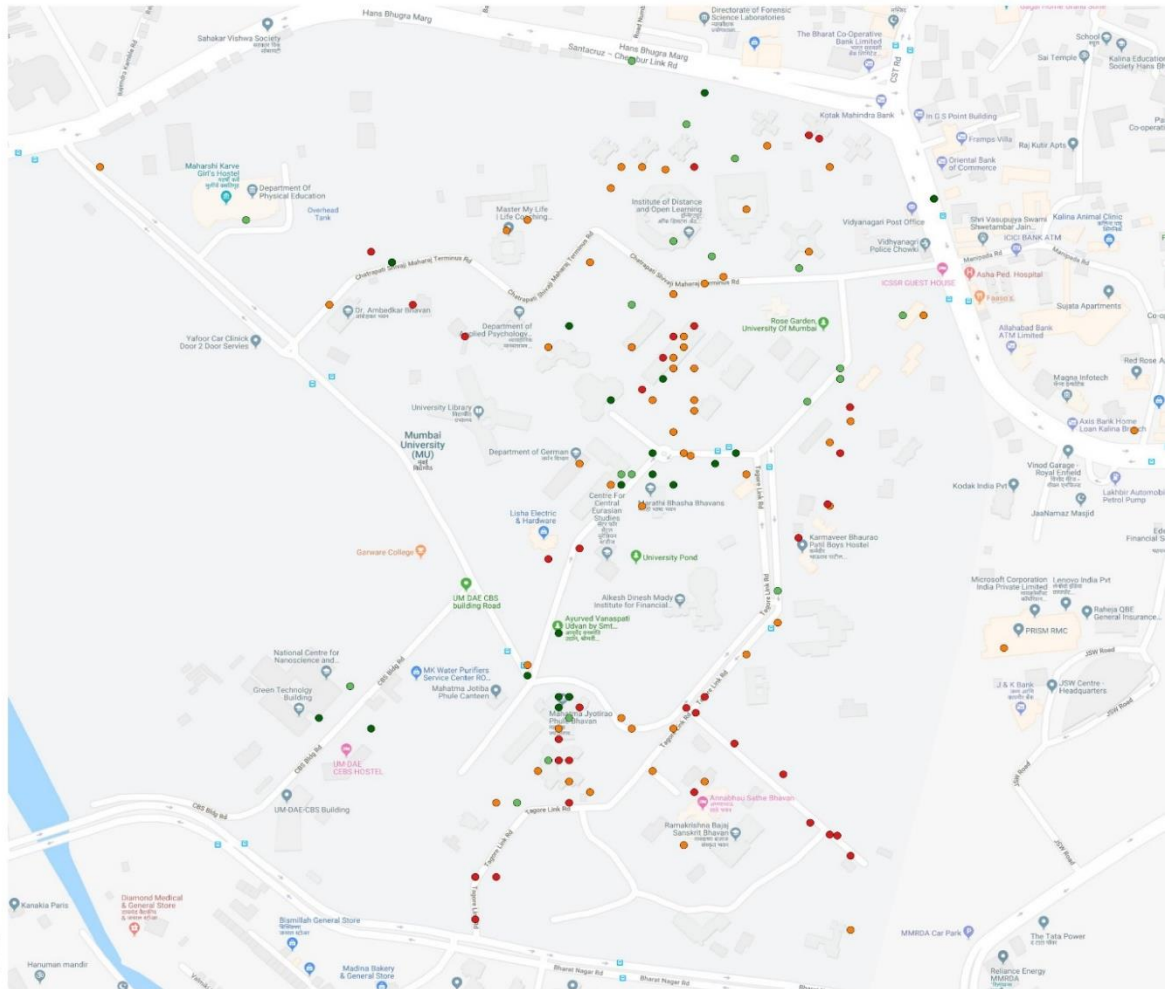
- Deserted
- Few People
- Some Crowd
- Crowded

Base: Google Map



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Map 6 indicating People Rating



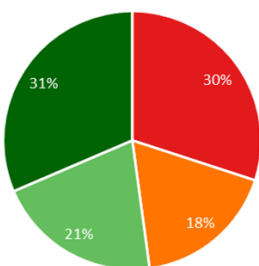
Mumbai: Parameter Gender Usage

Legend

Safety Audits

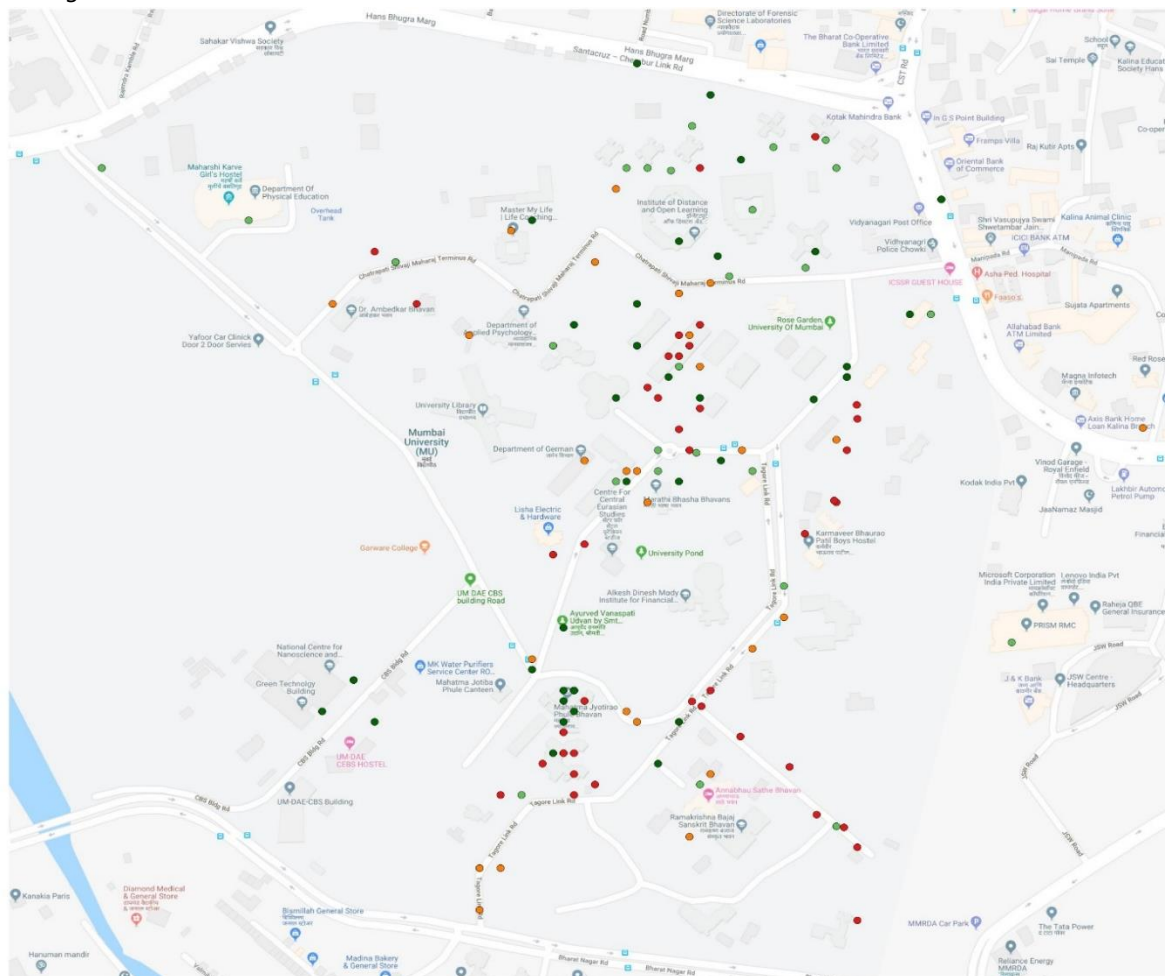
- Not Diverse
- Somewhat Diverse
- Fairly Diverse
- Diverse

Base: Google Map



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Map 7 indicating Gender Usage Rating



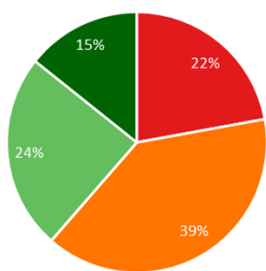
Mumbai: Parameter Public Transport

Legend

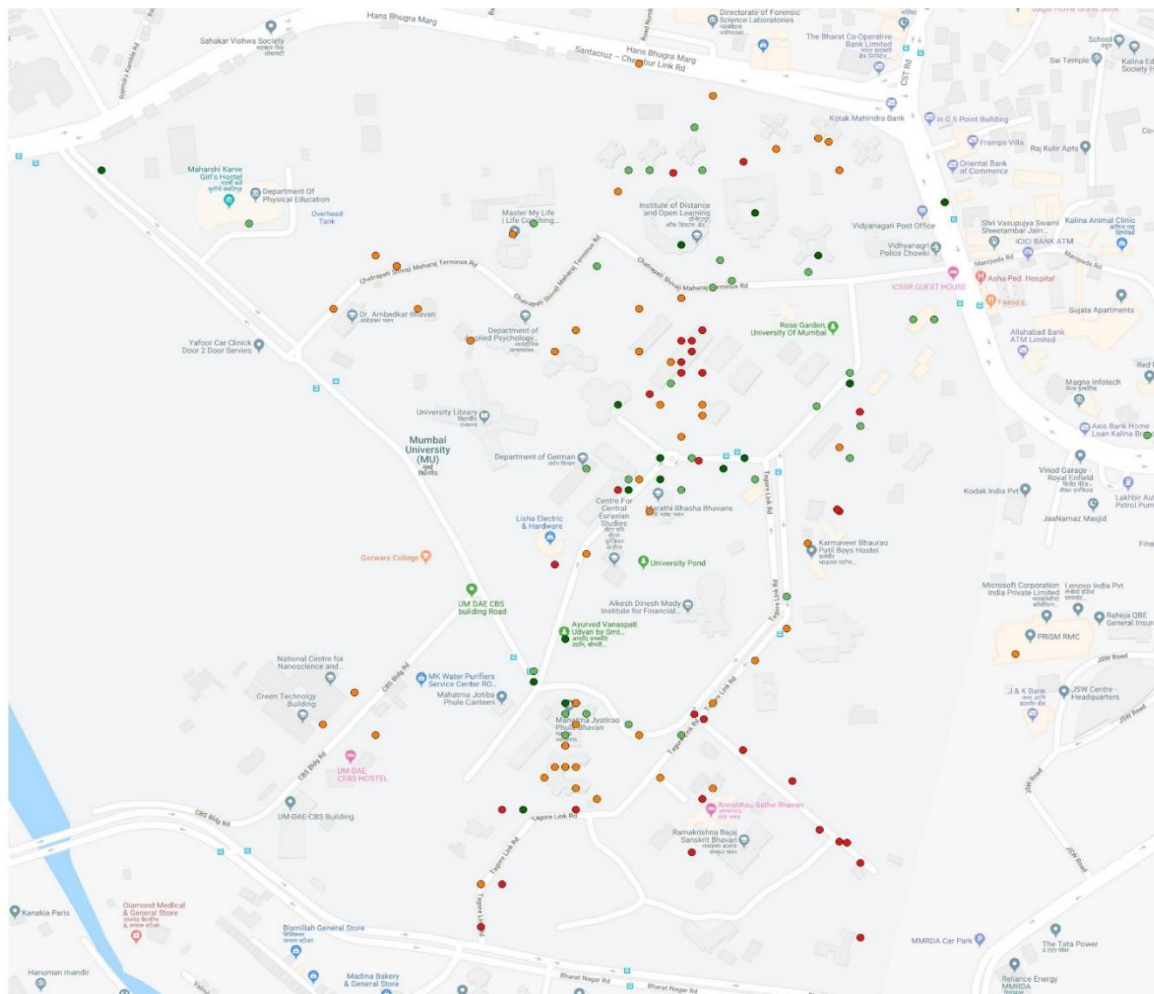
Safety Audits

- Unavailable
- Distant
- Nearby
- Very Close

Base: Google Map



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Map 8 indicating Public Transport Rating

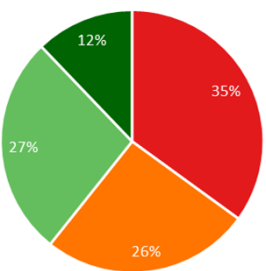
Mumbai: Parameter Security

Legend

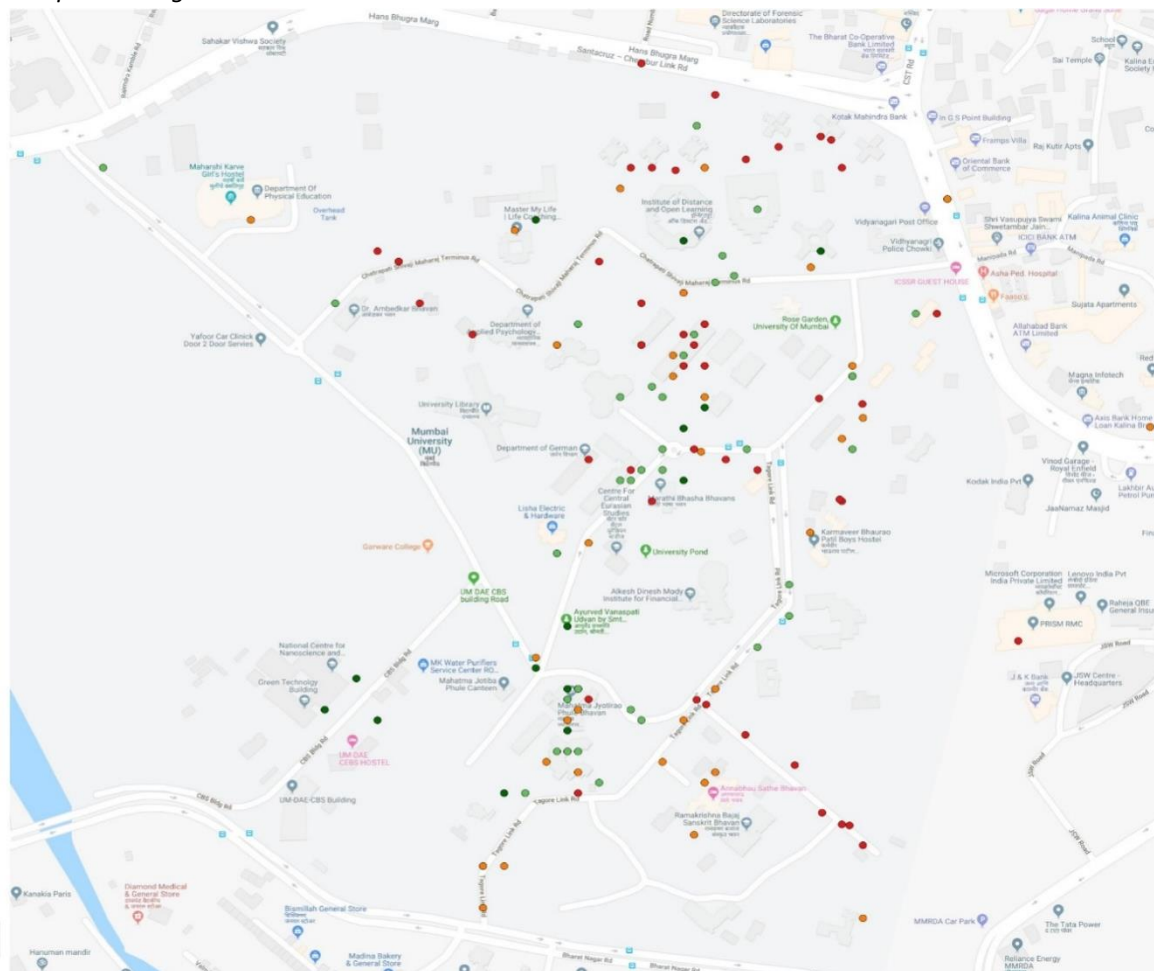
Safety Audits

- None
- Minimal
- Moderate
- High

Base: Google Map



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Map 9 indicating Security Rating

The safety ratings varies largely on account of the infrastructure provision and planning typology of the area. Areas which are well lit, have proper footpaths, has access to public transportation and are active, tend to be safer. Lighting, Walkpath, Security, Public Transportation and Visibility are infrastructural parameters that can be improved upon. This improvisation would result in more people especially women using public places at night.

Recommendations

- **Enhance Illumination along Walkpath :**

The streetlights in the Mumbai University Campus needs to be checked and maintained regularly to ensure adequate illumination levels. Streetlights need to be installed along areas, identified as dark spots i.e. at these locations there is no illumination at present.



Image showing an audit location with non functional streetlight.

- **Construct Pavement and Repair existing ones:**

At certain locations, the pavement was found to be broken. This needs to be repaired and a proper paved surface should to be created. Along certain roads either no footpath exists or space has been left for one but it hasn't been constructed. A proper footpath needs to be constructed, free of any obstruction. Also provision should be made to ensure smooth movement of people with any form of disability.



Image showing an audit location with no footpath

- **Improve Visibility and Security:**

Visibility has been rated as Poor or Below Average in many areas in the project site. The auditors have reported that there are few stretches which are completely isolated. Efforts should be made to make such stretches active. Security in such areas should be improved by increasing patrolling through security guards.



Image showing an audit location with Poor visibility



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