



# Summer smells

Understanding experience through the sense of smell

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Landscape Environment Advancement Foundation, LEAF

# Summer smells

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## Osmosis

A little square shop, a dark wall all along one side. As one's eyes adjust to the soft light, you can see that the dark wall is actually a series of tiny drawers; of dark wood. Inside each one is a spice – turmeric, fennel, red chilli, cloves, cinnamon, bay leaf and many more. One can almost visualize the fine powder of the spices getting embedded in the grain of the wood till the inside surface of each drawer is no longer wooden – it has transformed to become something else.

One did not see the inside surface of the wooden drawer, one saw only the dark, smooth outer surface. However, you can smell each of the spices. The various smells combined with the wood conjures up images of a warm wooden surface so deeply impregnated with the aroma of the spices, that it becomes difficult to separate the two; indeed one wouldn't want to. It is almost as if each of the spices was inhabiting and making the space of the drawer its own.

Though this is completely opposite to 'clean', 'hygienic', storage in stainless steel containers; there is something alchemical and poetic in the process of the reaction between the wood and what it contains.

The act of living – of dwelling, of everyday movement, of eating, of storing, of walking, leaves its marks and traces on the spaces that it is enacted in. As Peter Zumthor says in 'Atmosphere'; "*People interact with objects*". He goes on to say, "*(architecture), it collects different things in the world, different materials, and combines them to create a space like this. To me it's a kind of anatomy we are talking about*".

Like the wood in the spice shop, the body and material of the built begin to be permeated by the actions they are subjected to, a depression due to years of walking on them, a wooden door layered with years of human touch and the grime in the air, hard stone with tiny pores that accumulate the miniscule particles of dust and dried and powdered flowers over decades. This slow process of accumulated osmosis transforms materials and spaces into different beings – some hollow, some sad, some alive, some colourful, some smooth as silk, some rough.

Our bodies perceive all of this and more. After all, it is an instrument of perception and interaction. Though we primarily 'see', all the senses co ordinate with the body for a full sensory perception. Some senses make you feel, while others make you remember. The sense of smell triggers of memories that the eye has forgotten.

In this small study, Swati (a second year landscape architecture student) sought to explore this haptic world of atmosphere, smell and memory. She has chosen places within the city of Ahmedabad to understand these processes. She has specifically chosen the sense of smell as a tool to understand these phenomena. She has documented the places through her maps and photographs.

Facing a complex task, she has begun the study by looking at objects and smells; and the memories they trigger - building upto embedded smells and their layering through activities of weathering; of atmospheric and human action.

She has finally taken seven case studies and examined their several odours representing them through maps and photographs.

The study is not aimed towards a specific conclusion or inference; but tries to expand the notion of ways of seeing and representing place.

Anjali Jain

Oct 2012

## Smell and the city

**Odor: “An odor or odour (commonly referred to as a smell) is caused by one or more volatilized chemical compounds, generally at a very low concentration, that humans or other animals perceive by the sense of olfaction.”** (www.wikipedia.com)

The ability of humans and other animals to perceive odor is known as smell.

The olfactory system, which senses odour, is important to our lives, and comprises one of the most primary parts of the brain. Clues that the smells send to our brains come in the form of chemicals found in the surrounding environment. The sense of smell is a sense that is often underrated but works overtime. You are, all the time, unconsciously reacting to different smells.

Our lives are not ruled by the sense of smell only. However, consciously or subconsciously, it plays a very important part in our daily lives. Human beings can identify up to thousand different odours but not everybody can recognize them to the same degree. Our expressions, emotions directly relate to this sense. Environmental odours can affect mood and stress levels. Our sense of smell not only provides us with warnings about the environment, but also plays an important role in how we recognize each other, communicate with each other, and recall memory. Aroma also plays an important role in our social and cultural life. The use of fragrance in various rituals, cooking and other activities has become an inextricable part of daily life such that, knowingly or unknowingly various odours have also made their place in our existence.

*“When from a long distant past nothing subsists, after the people are dead, after the things are broken and scattered, taste and smell alone, more fragile but enduring, more unsubstantial, more persistent, more faithful, remain poised a long time, like souls, remembering, waiting, hoping, amid the ruins of all the rest; and bear unflinchingly, in the tiny and almost impalpable drop of their essence, the vast structure of recollection.”* - Marcel Proust

Places have distinctive smells too. This is expressed very well in the blog; www.tangdynastytimes.com, by Peony. Quoting Mahmoud Darwish, *“Acre is the smell of iodine and spices. Haifa is the smell of pine and wrinkled sheets. Moscow is the smell of vodka on ice. Cairo is the smell of mango and ginger. Beirut is the smell of the sun, sea, smoke, and lemons. Paris is the smell of fresh bread, cheese, and derivations of enchantment. Damascus is the smell of jasmine and dried fruit. Tunis is the smell of night musk and salt. Rabat is the smell of henna, incense, and honey. A city that cannot be known by its smell is unreliable. Exiles have a shared smell: the smell of longing for something else; a smell that resembles another smell. A panting, nostalgic smell that guides you, like a worn tourist map, to the smell of the original place.”* Peony goes on to say that, *“Many cities in the world have distinctive smells even today but many of them are a perception of the mind. For example, Venice smells swampy and sweaty and you notice it the minute you arrive; Bali is overwhelmingly like heavenly frangipani and temple incense; each has their own beautiful colors and culture; their own spirit and fragrances. Cityscapes like landscapes attain a particular atmosphere to which those who live in become attuned. It is this spirit, which enables people to say that great cities are all more than just the sum total of their parts.”*

For this document, I chose to investigate the layers of smells of Ahmedabad where I live and study. Ahmedabad is one of the largest and fastest growing cities in India. As in the case of a developing city, the smells of gasoline, vehicular & industrial fumes are a majority in the atmosphere. But under this layer of grey, lies a mosaic of other characters.

Places have a distinctive smell that can be associated with them. For instance, the smell around a fuel station or a meat market would automatically generate an image in a person's mind. The quality of smell (pleasant/unpleasant) is subjective and may vary from person to person.

To understand the complexity of this phenomenon, I decided to start my study with the inherent smell of certain objects and understand how the smell is generated. I also included some examples of where the object 'changes' when two or more smells come together.

Finally, seven locations were chosen in the city to understand the layering of odors within them - their sources, their intensity, spread and their ability to linger in the atmosphere.

These were observed through photographs and maps were generated for each location.

### How the olfactory system works

**Nose:** Serves only to take in and channel the air containing odorous molecules.

**Olfactory epithelium:** Contains the neurons that sense the odour molecules.

**Chemo Receptor:** Chemical sense is detected by sensory cells called chemo receptors. They pass on electrical impulses to the olfactory bulb.

**Olfactory Bulb:** Sorts sensation into perception.

**Limbic system:** A system that includes the amygdala and hippocampus: the received structures vital to our behavior, mood and memory.

The brain then interprets patterns in electrical activity as specific odors and olfactory sensation becomes perception - something we can recognize as smell.

(Source: Richard Axel and Linda B. Buck's research paper)

The chemical detected by the sensory system needs to have certain properties. It must be **volatile** so that it gets easily evaporated at normal temperatures and atmospheric pressure and it can be carried through the air in to the person's nose. It must be some what **water soluble** to pass through the mucus and reach the olfactory cells. It must also be **lipid soluble**, because the olfactory hair are composed primarily of lipids and the surface of the olfactory cells are also lipid containing.

Local weather conditions like temperature, humidity, wind direction also affect the movement of gaseous odour molecules.

Ahmedabad falls in the category of hot, dry, temperate climate. Observations have been made in the month of May, June, July. During these months, the climate is extremely hot and dry; the average summer maximum is 41 °C and average minimum is 27 °C. During early mornings and late evenings, since the temperature is low and because of the presence of humidity, one can smell various odours more than at other times of the day.





## **02. Object, smell, memories**

Sometimes memories of a place and time are embedded in our minds through sensory remembrances; the strongest being smell. Smells of specific objects can remind us of 'other places and other times.'

**Damp 'Khus'**

*Memories of a hot summer afternoon*



**Freshly mowed grass**

*Memories of a fresh summer morning*



**Dust in the air**

*Memories of an afternoon in May*



**Damp earth**

*Memories of the first shower of the monsoon*





## Damp 'Khus'

**Inherent** odor of complex root structure, which has **fine rootlets**.

They **absorb** complex molecules from the earth.

Moisture and **breeze** **spread** the fragrance.



[www.mountainvalleycenter.com](http://www.mountainvalleycenter.com)



[www.vetivemetinternational.blogspot.in](http://www.vetivemetinternational.blogspot.in)



# Freshly mowed grass

## Temporary smell

**Cutting** of the grass causes the molecular structure of chlorophyll to **break**.

This **releases** green leaf volatile (GLVs), which emits a **sharp, pungent** fragrance.



[www.ecorenovator.org](http://www.ecorenovator.org)



[www.informationvine.com](http://www.informationvine.com)



# Dust in the air

Dust particles are **thrown up** in to the air by wind and vehicles.

These get **suspended** in the atmosphere.



## Damp earth

**Bacteria** that are present in the soil produce **spores**.

These **spores** are **thrown up** into the air by **raindrops**.

These spores are responsible for the **earthy fragrance**.





## **03. Material, smell, experience**

Distinct smells work with other ones to completely transform the original ones - indeed, the very experience of the object/place itself.

Tea has an **inherent** smell

Paper / Clay / Styrofoam / Plastic are **porous in structure**. They **absorb** liquid and thus, change the flavour of the tea.

Steel / china utensils are not porous and do not add/ remove anything from tea. In fact we feel the 'cold' steel also when we drink a hot liquid in a steel cup/glass.

**Material, flavour, experience**





*“Lignin, the stuff that prevents all trees from adopting the **weeping habit**, is a **polymer** made up of units that are closely related to **vanillin**. When made into paper and stored for years, it **breaks down** and **smells good**.”*

<http://bookishlady.com/?p=763>

**Smell, place & memory**



Stone, layer of dust, thin film of water on stone.  
Plumeria - fallen, slightly decayed.

The three together remind me of a garden, water being sprinkled, and a tree or a grove of Plumeria near by.

A small fragment can remind one of a full picture. A picture can make you recall the experience of a place triggering off sensory memories including their smell(s) and touch.

**Smells, memories**





## **04. Smells of space**

Smells can convey both the tangible and the intangible - history, neglect, stone, dust, silence. All these come together to create a place; an atmosphere.

Ruins, sand stone, weathered, accumulated dust, moisture penetrated, silence, openness, abandoned, dogs, bats.

Space exposed to activities absorbs traces of them, almost adding layers of memories to surfaces.

The nature of the physical surface decides the degree of absorption.









## **05. Place and smells**

Places - surfaces - activities - people impregnate a place with innumerable odours, which subconsciously become a part of the experience of a place. The act of dwelling, gets embodied in various forms. The following are studies looking at this phenomena by focusing on smell as an instrument of experience.

કાકાબાલિયાની પોલ  
KAKA BALIYANI POLE

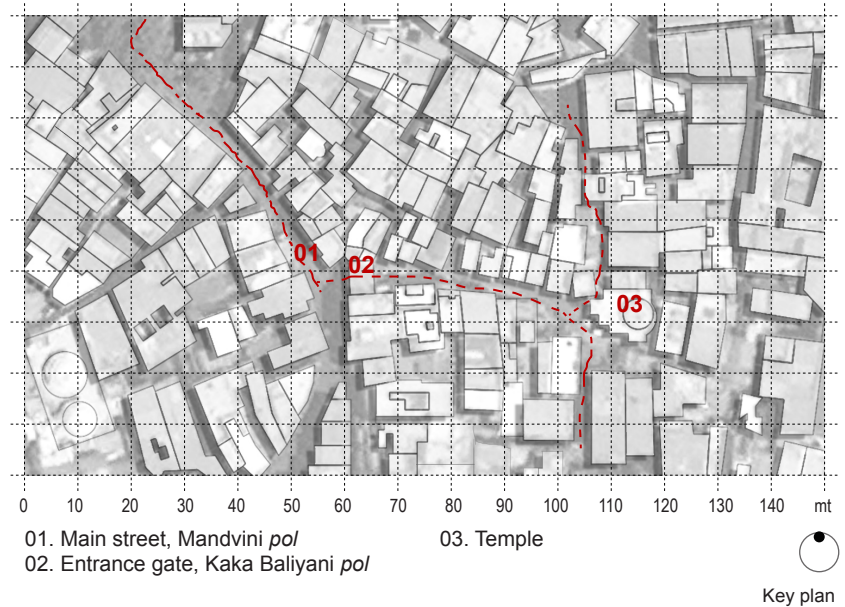
PH: 22144297  
JAYESH D. RAMI  
C. B.  
R. Cafe



## a) *Pol*

### 1. Kaka Baliyani *pol*

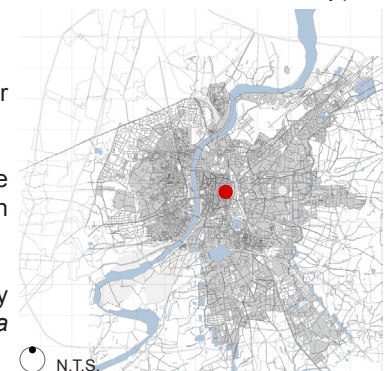
#### SMELL WALK - 1



A *pol* is a housing cluster in the walled city of Ahmedabad, which comprises many families of a particular group, linked by caste, profession, or religion. A common gate guards a *pol*.

A long narrow street, edged by houses with a shared wall. Some houses have a courtyard inside. The edge of the house facing the street have 'otlas' (raised plinth) made of stone. On the 'otla', carved wooden pillars supporting a wooden ceiling. The main entrance of the houses are intricate wooden doors.

The street is also punctuated with vacant houses, some collapsing. The life of the street is magnified by the presence of dogs, cows, bird feeders and also potted plants of *Tulsi* (*Ocimum sanctum*) and *Ajwa* (*Ocimum gratissimum*). At the end of the street there is a Jain temple.



**Odour map, Kaka Baliya ni pol**



Observation time 10:00 a.m. to 2:00 p.m.



#### OBSERVATION:

At dawn, the primary smell is that of *agarbatti* and *dhoop* from the temple at the end of the street.

As the sun rises, smell of the daily activities (toothpaste, soap, water) performed by the people of the *pol* starts infusing the air.

Mid morning, smell of cooking fills the air.

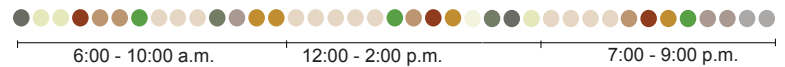
Latent smells include that of cow dung and spilled food. This causes foul smell due to decomposition.

The smell of dust and damp wood from old vacant houses adds to the distinct odour of the *pol*.

Due to occasional breeze, the smell of *Tulsi* (*Ocimum sanctum*) and *Ajwa* (*Ocimum gratissimum*) also lingers in the air for some time.

The shaded, narrow character of the street intensifies the smell in the *pol*s.

#### SMELL TIME SCALE :



#### LEGEND:

- Stone
- Wood
- Damp earth
- Cooking
- Algae
- Washing / Bathing
- *Tulsi / Ajwa* (*Ocimum sanctum/gratissimum*)
- Rotten food
- Vehicular fumes

#### NOTE:

This map is based on personal observation. It is a broad map of sources of odor and their spread. Each one is represented with a corresponding colour as shown in the legend.

# Sources of smell within the observed space



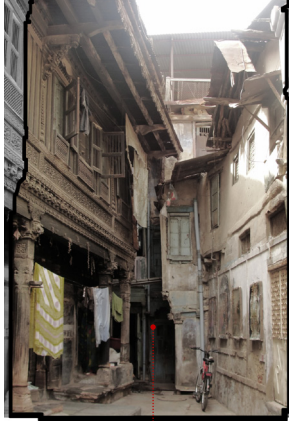
a  
The main street is a busy road. There is a continuous movement of vehicles.



b  
Ventilation for toilets opens onto the narrow service lane between houses.



c  
Kitchen window on first floor  
All the services of the house open on the street.



d  
Wooden carving adds another layer of wood and dust to the street. Cloths hanging on the verandah emanate smell of soap.



e  
In each pol, there are cows, bird feeders and dogs





f

Kitchen and wash area

Collapsed structure



g

Ventilators open on the narrow street



h

The smell of sandalwood and dhoop emanates from the Jain derasar



i

Tulsi (*Ocimum sanctum*), Ajwa (*Ocimum gratissimum*), Money plant (*Epipremnum pinnatum*) at the entrance of the house

Key plan

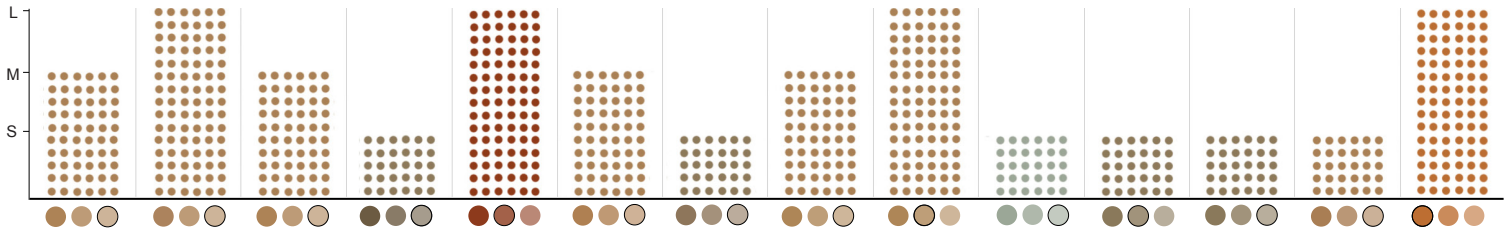


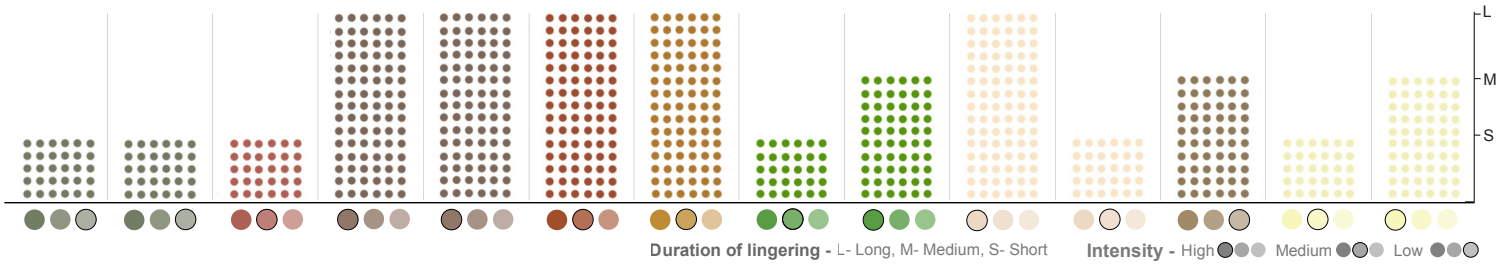
© N.T.S.

# Place, matter, experience



Wood Inherent    Wood+Stone Inherent    Dust Suspension    Stone Inherent    Damp wood Decay    Wood Inherent    Wood+stone Inherent    Metal grill Inherent    Wooden door Inherent    Wooden door Inherent    Damp stone Dampness    Various stones Dampness    Wood Inherent    Khus mat Inherent + dampness



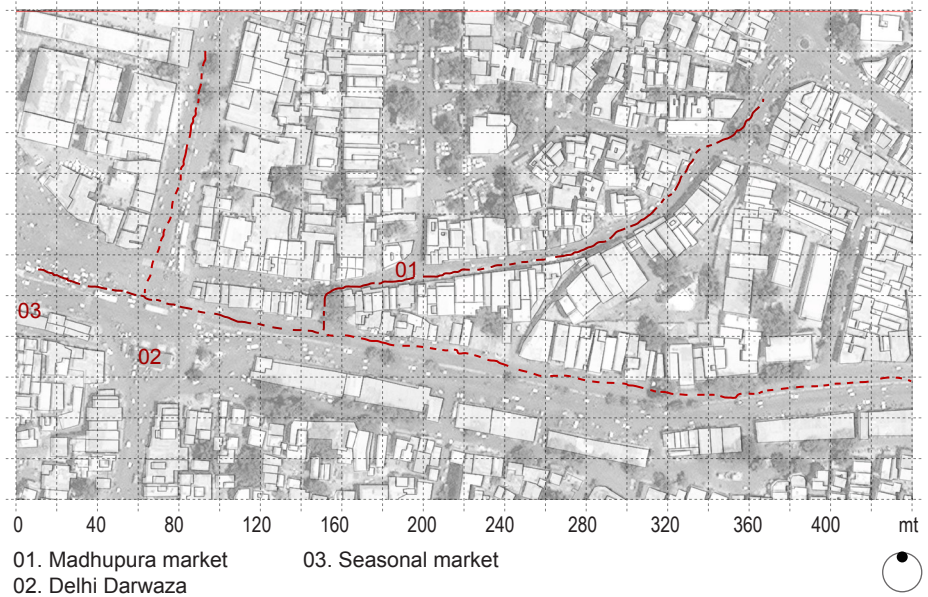




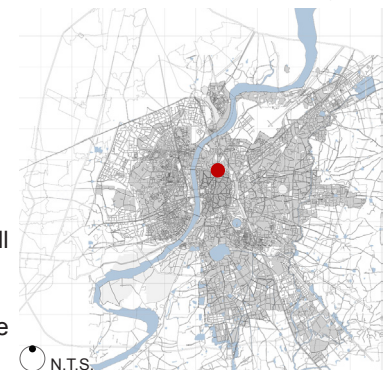
## b) Organic produce market

## 2. Spices and grain market

### SMELL WALK - 2



Key plan

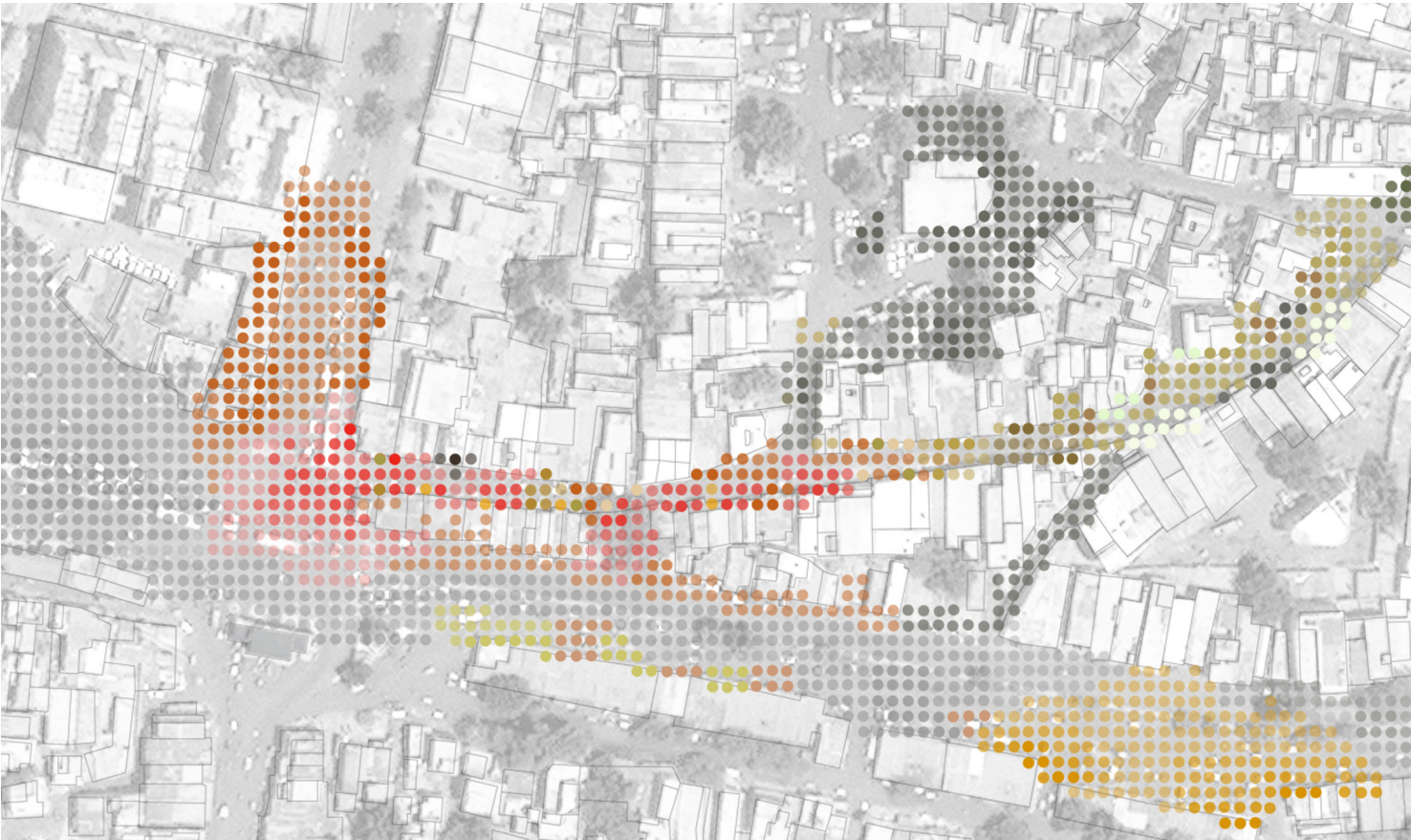


Madhupura is a retail and wholesale spice and grain market located near Delhi Darwaza.

The wide street has shops on both sides with various spices on display for people to touch and smell while shopping.

Shops open around 9:30 a.m. and close by 9:00 p.m. The street remains busy through the day due to the movement of shoppers and goods.

**Odour map, Madhupura spices and grain market**



Observation time 11:00 a.m. to 1:00 p.m. & 6:00 p.m. to 7:00 p.m.



**OBSERVATION:**

As you enter, the street is dominated by the smell of strong spices and a distinct smell of jaggery. The bright colour of the spices makes this place vibrant and the colours catch your eyes as you enter in the street.

As one walks deeper into the market, the pungent smell of oil and ghee takes over.

Layers of oil, flour and mud on the street surface decompose and release a foul odour.

Some niches in the street sell ayurvedic medicinal products that release smells of herbs that is noticed as you pass them.

Some times due to the extremely strong smell of spices, it becomes difficult to breath freely near the shops.

**SMELL TIME SCALE :**



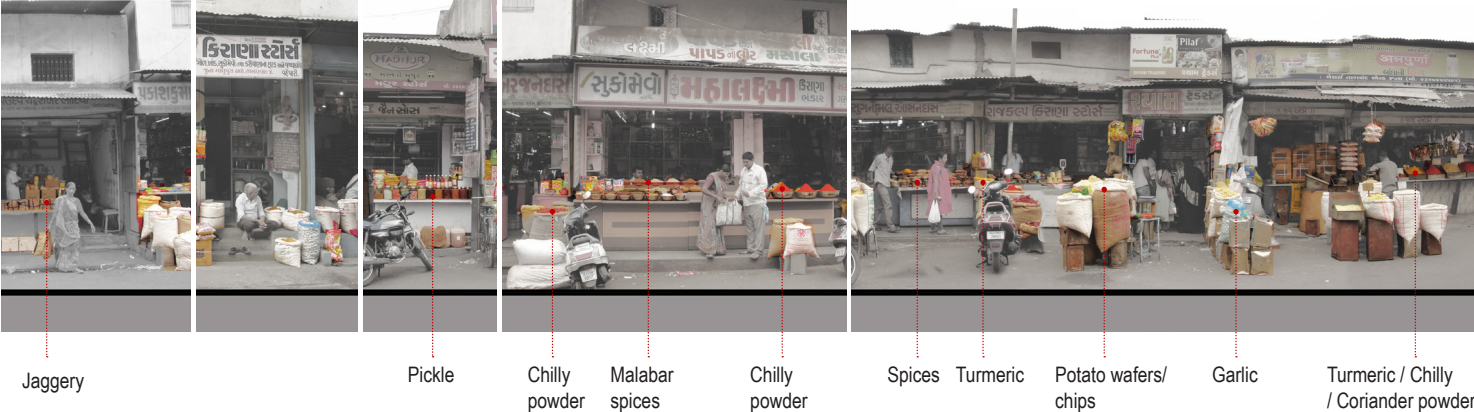
**LEGEND:**

- Chilly
  - Turmeric
  - Coriander
  - Malabar spices
  - Oil / Ghee
- Mud (*Kichad*)
  - Tea powder
  - Soap
  - Flour
  - Baking
- Vehicular fumes
  - Incense sticks (*Agarbatti*)
  - Herbal medicinal products

**NOTE:**

This map is based on personal observation. It is a broad map of sources of odor and their spread. Each one is represented with a corresponding colour as shown in the legend.

Sources of smell within the observed space







Oil, Ghee



Oil, Ghee



Incense sticks



Tea  
Old paper

Key plan

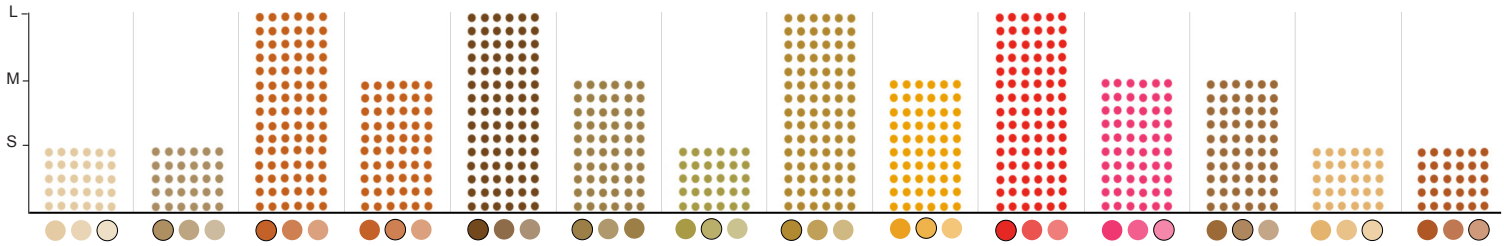


○N.T.S.

# Place, matter, experience

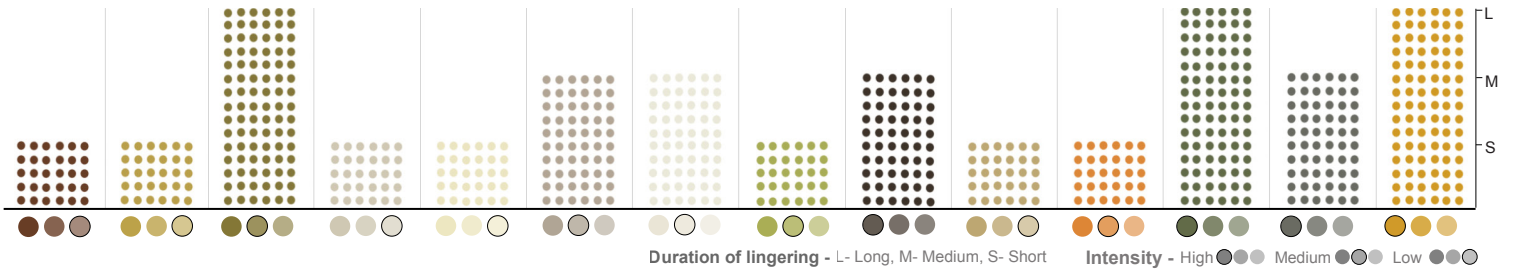


Cashew nut Inherent    Dry ginger Inherent    Cinnamon Inherent    Clove Inherent    Pepper Inherent    Fennel Inherent    Cardamom Inherent    Coriander Inherent    Turmeric Inherent    Chilly Inherent    Dried rose petals Inherent    Herbs Inherent    Wheat Inherent    Coconut Inherent





Damp Jute Inherent + Dampness    Jaggery Inherent    Oil Inherent    Dried coconut Inherent    Sugar Inherent    Garlic Inherent    Flour Decay    Ghee Inherent    Tea Inherent    Chips Inherent    Tea Inherent, Boiling,    Incense sticks Inherent    Mud Decay    Toast Baking



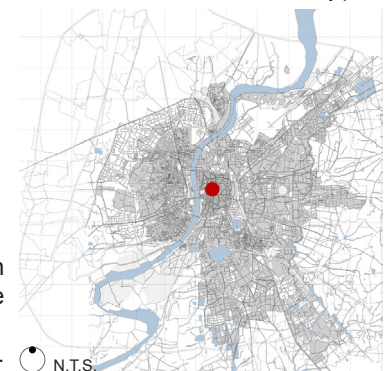


### 3. Fish market

#### SMELL WALK - 3



Key plan

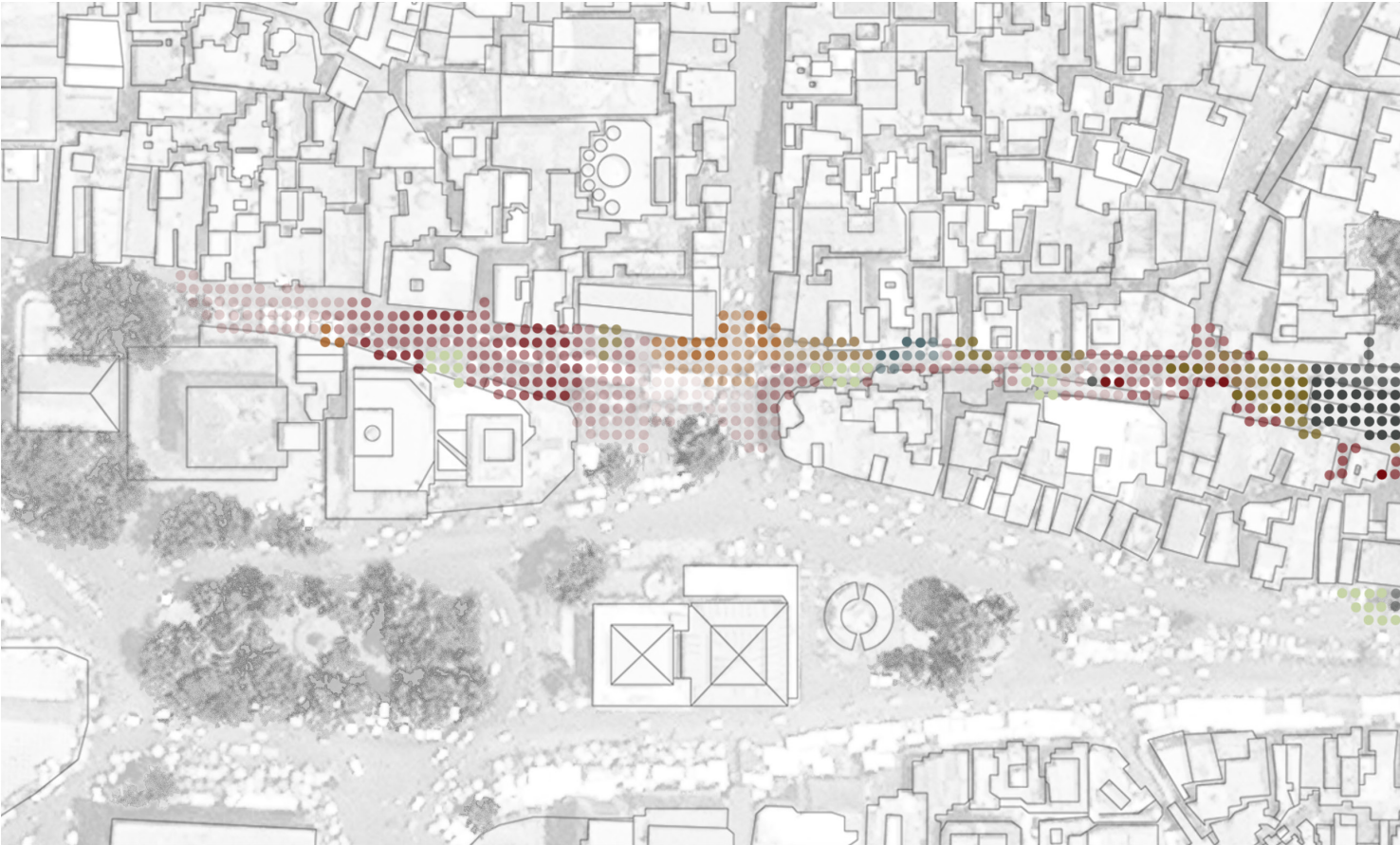


Bhatiyar Gali is the biggest fish market located in the walled city, near Teen Darwaza.

Early morning, these streets are filled with varieties of fish mounds and thermocol boxes full of fish placed in front of the shops. The designated market, located at the centre of the street starts after the informal market wraps up.

Afternoon onwards, the street turns into a food street that serves non vegetarian food, late into the night.

**Odour map, Fish market, Bhatiyar gali**



Observation time 6:00 to 8:00 A.M.



**OBSERVATION:**

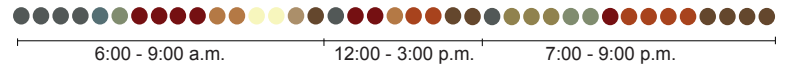
At the beginning of the day a strong smell of fish pervades the atmosphere because of unloading of fish on to the street pavement. This can be sensed from afar.

The process of cleaning and cutting of the fish happens inside and outside the market. The waste is thrown on the streets or at the rear side of the market. Accumulated layers of waste, and stagnant water with blood starts releasing foul gases, which causes an unbearable stench on the road.

Early morning the bakery on the street is a source of the smells of freshly baked bread, buns and cookies.

As the market transforms into an eating joint, the aromas of various preparations takes over; varying from deep frying of meat to Indian spices. Towards the end of the day, smoke from the cooking exhausts takes over the entire street.

**SMELL TIME SCALE :**



**LEGEND:**

- Fish
- Meat
- Pot holes
- Fish waste
- Tea
- Garbage
- Baking
- Soap
- Non-veg food
- Chicken
- Milk

**NOTE:**

This map is based on personal observation. It is a broad map of sources of odor and their spread. Each one is represented with a corresponding colour as shown in the legend.

Sources of smell within the observed space



a. Wholesale selling of fish on the street during early hours of the morning



b. Dump yard at the rear side of the fish market





C

Fish selling amidst the narrow street

Permanent fish market

Stacked crates of fish

Pot holes and waste along the street

Key plan

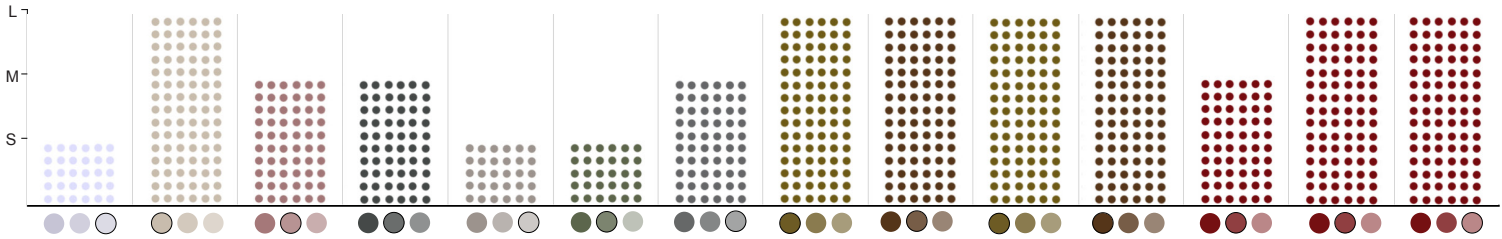


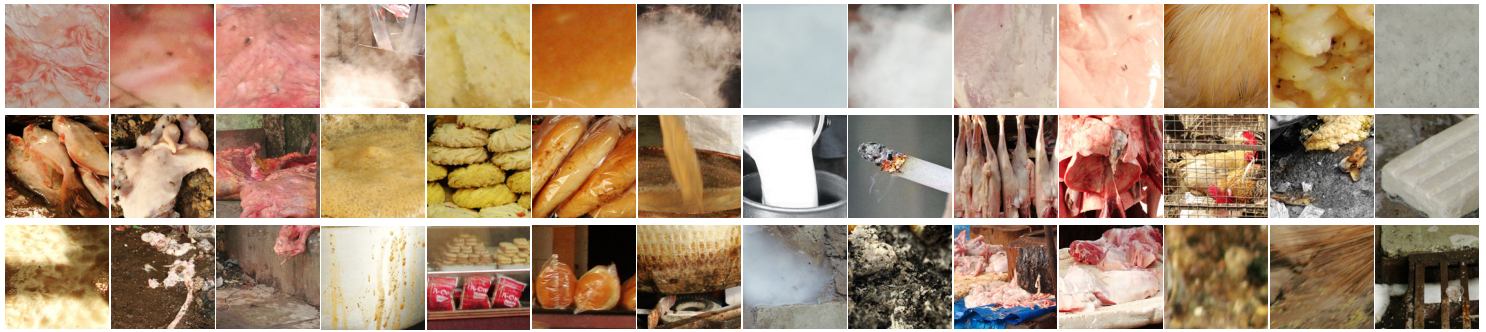
○N.T.S.

# Place, matter, experience

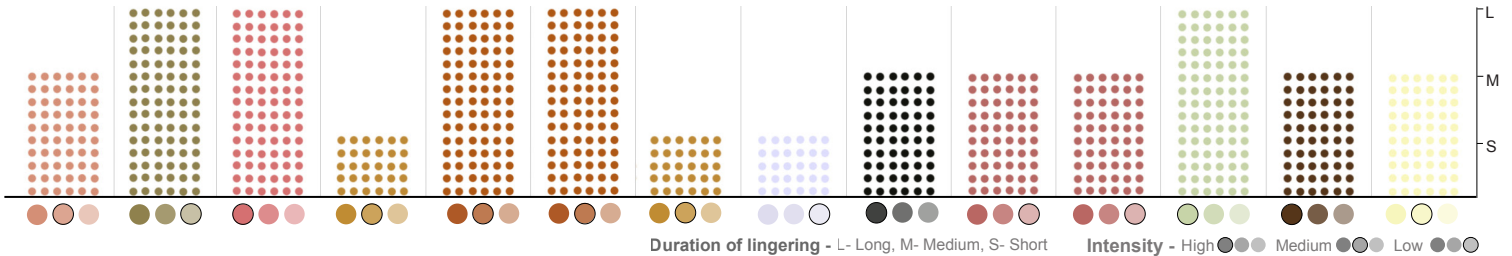


Smoke Combustion   Prawns Decay   Cat fish Decay   Fresh fish Decay   Fish Decay   Shrimp Decay   Fish Decay   Dirty water Decay   Garbage Decay   Dirty water Decay   Rotten onions Decay   Fish Decay   Fish Decay   Fish waste Decay





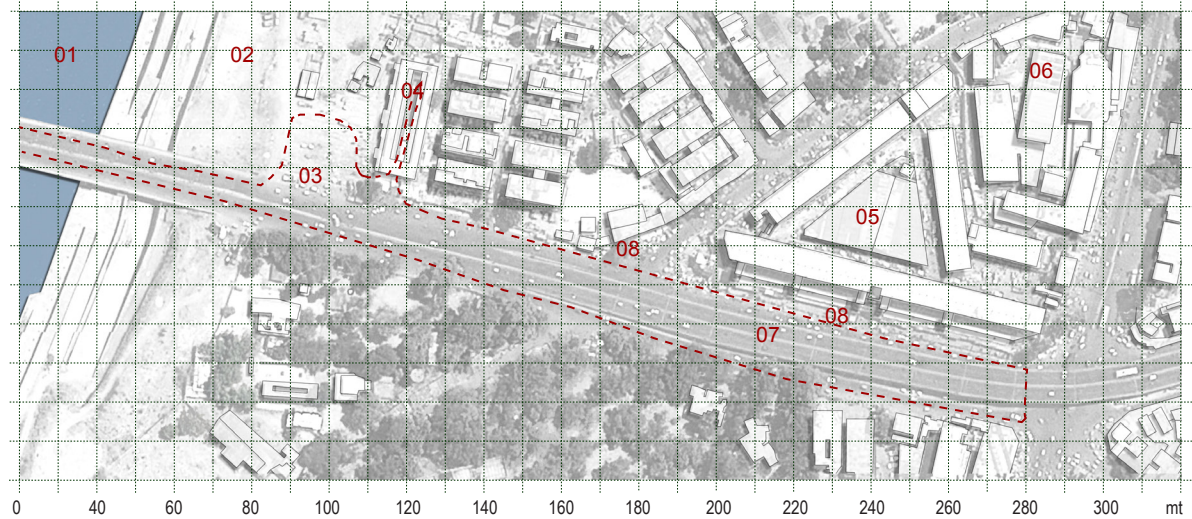
Fish Decay    Meat waste Decay    Beef Decay    Tea Boiling    Cookies Baking    Bread Baking    Tea Boiling    Milk Inherent    Cigarette Combustion    Mutton Decay    Liver Decay    Chicken Decay    Rotten food Decay    Soap water Dissolving





### 3. Flower market

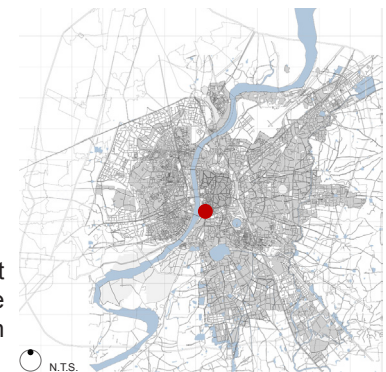
#### SMELL WALK - 3



- |                       |                            |                      |                      |
|-----------------------|----------------------------|----------------------|----------------------|
| 01. River             | 03. Informal flower market | 05. APMC market      | 07. Fly over         |
| 02. Construction site | 04. Flower market          | 06. Jagannath temple | 08. Vegetable market |

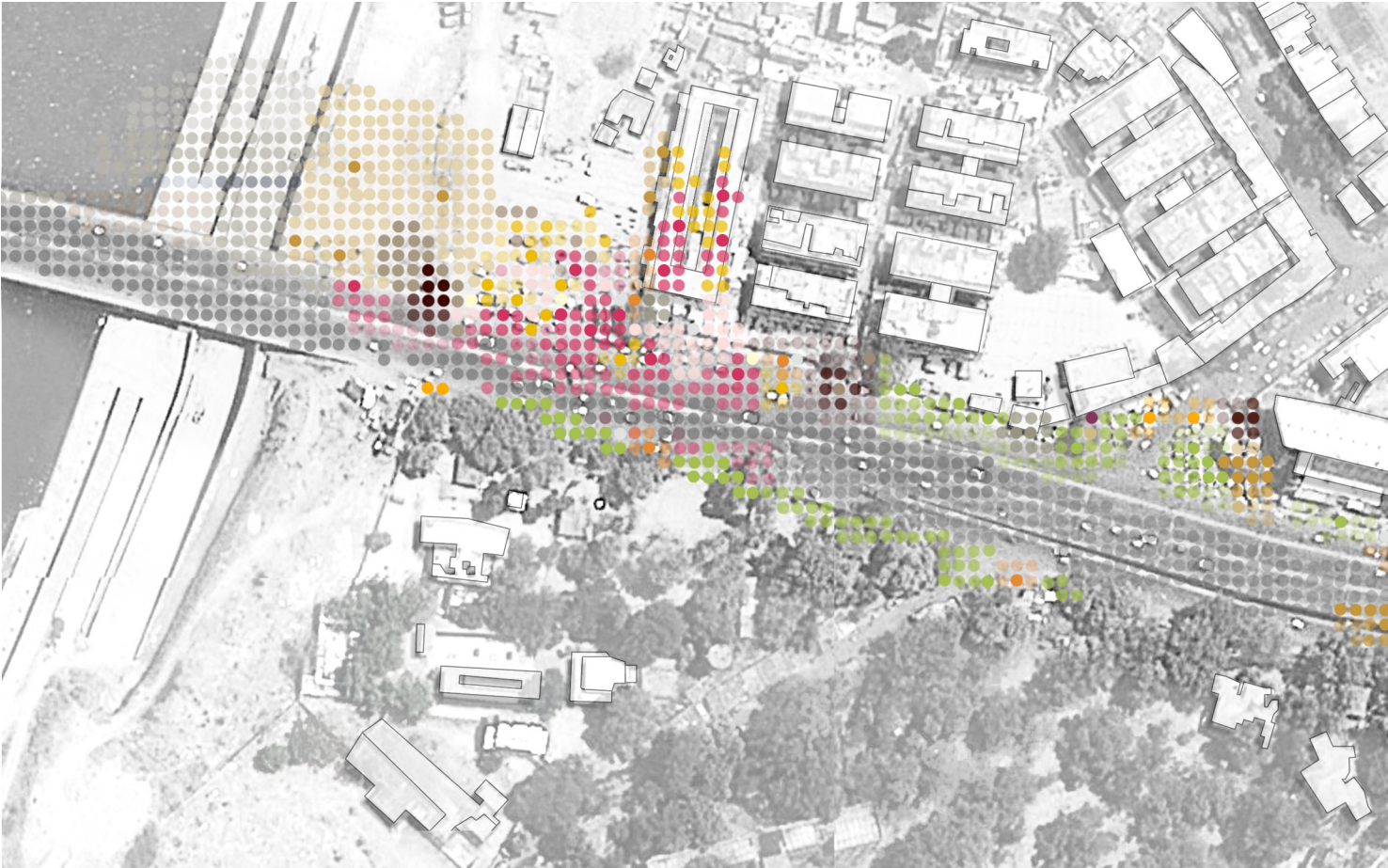


Key plan

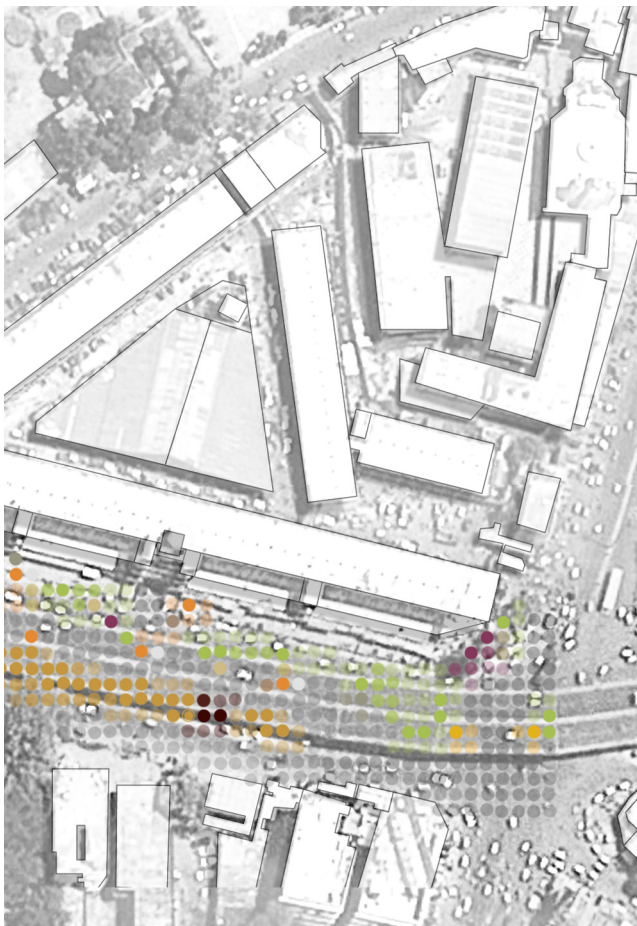


The Jamalpur market is a big wholesale market for the city selling vegetable & flowers. The market is meant to be contained within the flower market (04) & APMC building (05) but spreads out on the pavement, till the river bank and space below the fly over. The fly over carries intense traffic coming from the bridge adjacent to the Jamalpur market.

**Odour map, Flower market, Jamalpur**



Observation time 6:00 to 11:00 a.m.



### OBSERVATION:

3:00 - 6:00 a.m.

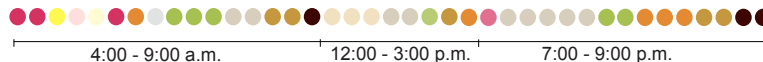
The market is dark with dim spots of light, illuminating white, yellow, pink and green. A gust of wind from the river brings the fragrance of roses, jasmine and marigold towards you.

6:00 - 9:00 a.m.

As the sun rises, one can see mound of colour and fragrance. In the air are also hints of hot tea, and fried *bhajiya*s. As the day progresses, the floral fragrances get suppressed by dust, smoke and discarded, decayed petals and leaves.

By 9:30, the fragrance of the flower has given way to the mild and pungent smell of vegetables.

### SMELL TIME SCALE :



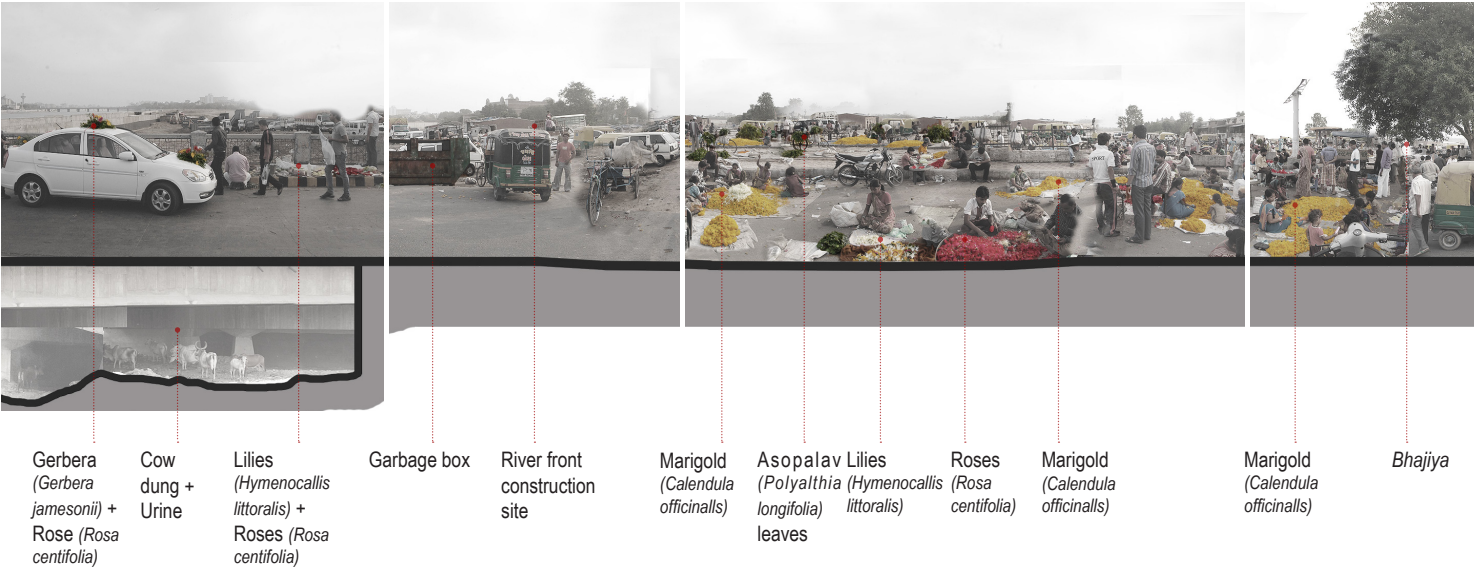
### LEGEND:

- |  |   |  |
|--|---|--|
| <span style="color: #e91e63;">●</span> Rose ( <i>Rosa centifolia</i> )           | <span style="color: #ff9800;">●</span> Tea/Bhajiya                      | <span style="color: #8d6e14;">●</span> Urine           |
| <span style="color: #ffff00;">●</span> Marigold ( <i>Calendula officinalis</i> ) | <span style="color: #4caf50;">●</span> Vegetables                       | <span style="color: #3e2723;">●</span> Garbage         |
| <span style="color: #ffccbc;">●</span> Jasmine ( <i>Jasminum spp.</i> )          | <span style="color: #d7ccc8;">●</span> Vehicular smoke                  | <span style="color: #5d4037;">●</span> Sewage          |
| <span style="color: #fff176;">●</span> Lilies ( <i>Hymenocallis littoralis</i> ) | <span style="color: #8e24aa;">●</span> Onion ( <i>Allium cepa</i> )     | <span style="color: #e0e0e0;">●</span> Cigarette smoke |
| <span style="color: #f0e68c;">●</span> Construction dust                         | <span style="color: #c8e6c9;">●</span> Garlic ( <i>Allium sativum</i> ) |  |
| <span style="color: #ffb74d;">●</span> Mango ( <i>Mangifera indica</i> )         | <span style="color: #546e7a;">●</span> Dhoop / Incense sticks           |  |

### NOTE:

This map is based on personal observation. It is a broad map of sources of odor and their spread. Each one is represented with a corresponding colour as shown in the legend.

# Sources of smell within the observed space







Tea

Jasmine  
(*Jasminum*  
*spp.*)

Tea +  
*Maska bun*

Lemon  
(*Citrus ×*  
*limon*)

Garbage

Mint (*Mentha*  
*arvensis*)  
+ Chillies  
(*Capsicum*  
*annuum*)

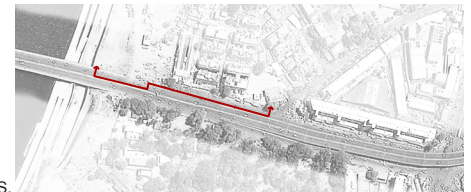
Temple *dhoop*

Onion (*Allium*  
*cepa*) + Garlic  
(*Allium sativum*)

Vegetables

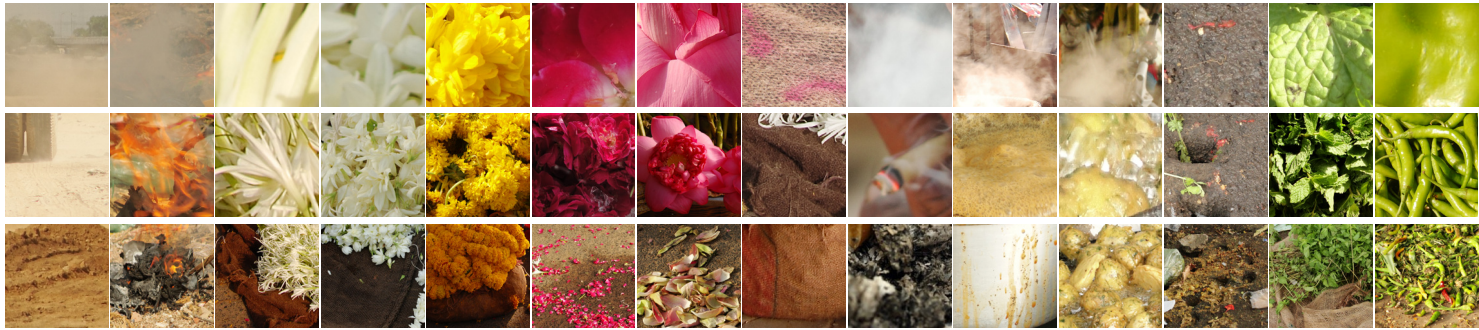
Vehicular  
smoke

Key plan



○N.T.S.

# Place, matter, experience



Dust  
Suspension of dust particles

Paper/wire  
Burning

Spider lilies  
Inherent

Jasmine  
Inherent

Marigold  
Inherent

Rose  
Inherent

Lotus  
Inherent

Jute  
Inherent + Dampness

Cigarette  
Combustion

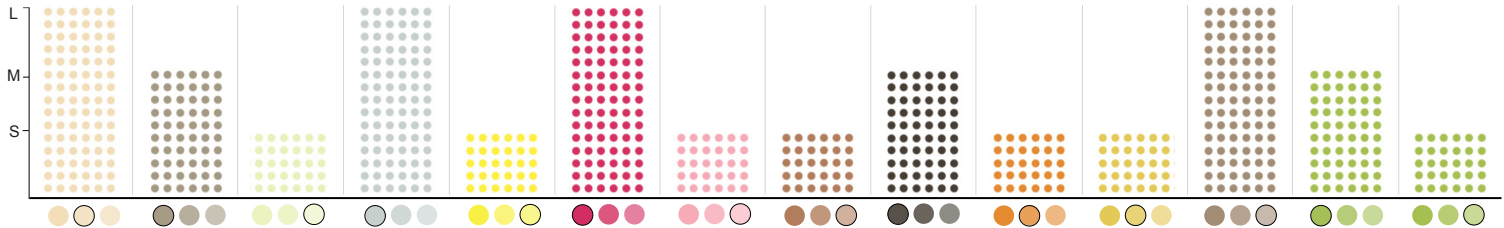
Tea  
Inherent + Boiling

Bhajiya  
Frying, decomposition

Sewage  
Decay

Mint  
Inherent

Chillies  
Inherent





Lemons  
Inherent

Mangoes  
Inherent

Tomatoes  
Inherent

Onions  
Inherent

Garlic  
Inherent

Bhajiya  
Frying,  
decomposition

Tea  
Inherent,  
Boiling

Incense sticks  
Burning

Bidi  
Combustion

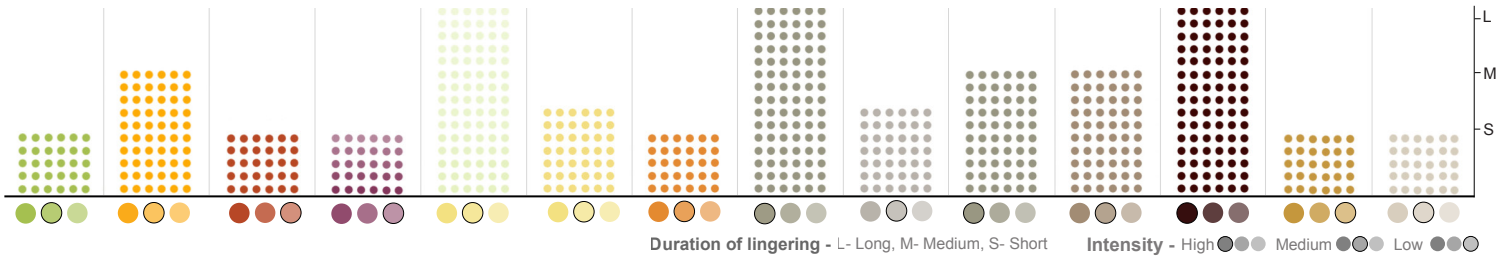
Dhoop  
Burning

Sewage  
Decay

Garbage  
Decay

Dung  
Decay

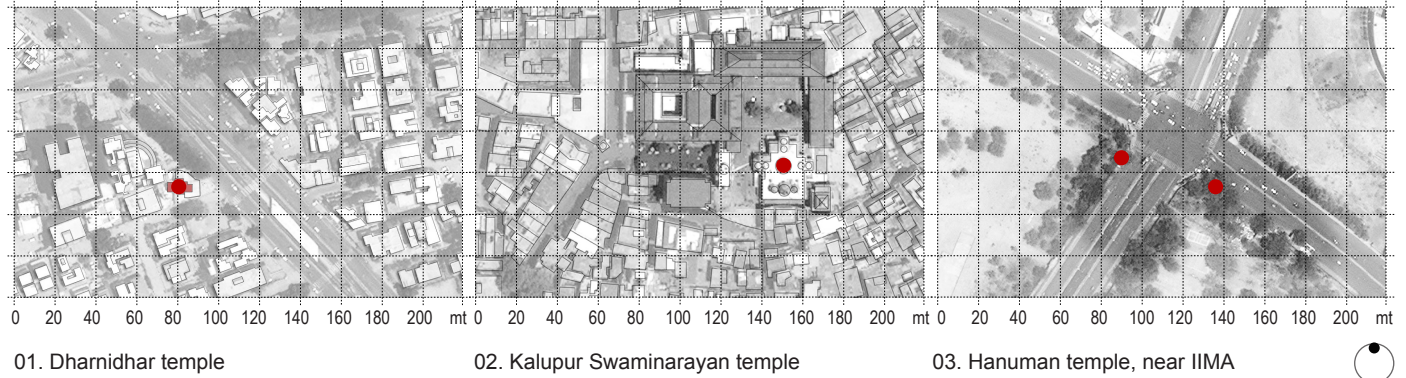
DDT powder  
Suspension





## c) Temples

### SMELL WALK - 4

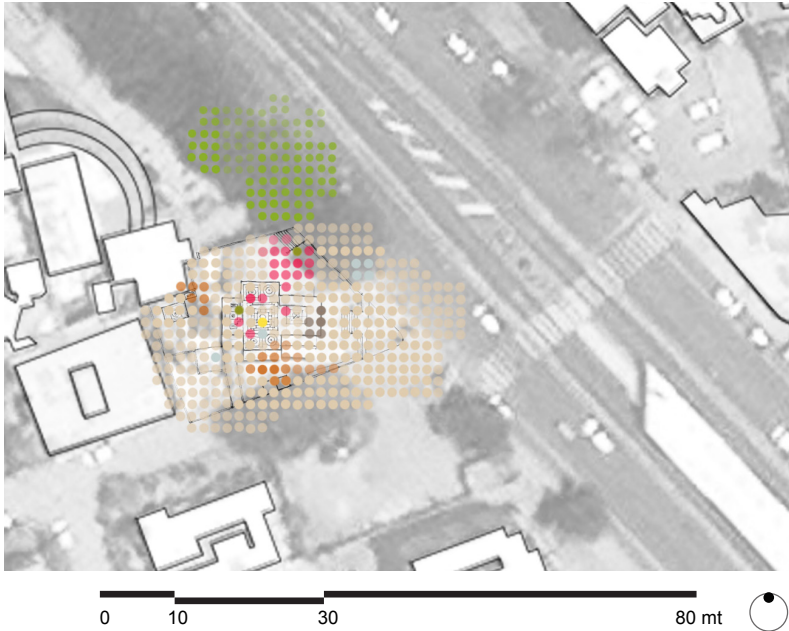


1. Dharnidhar Jain temple is located near 120 ft circular main road.
2. Swaminarayan temple is located in Kalapur area. It is constructed mainly with Burma teak wood and stone. A large courtyard located in the temple complex is used for parking and as a gathering space.
3. A small shrine near the IIMA cross road attracts small groups of devotees who offer coconuts and hang them on nearby tree.



**Odour map**

01. Dharnidhar temple



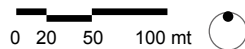
Observation time 5:00 to 7:00 a.m.

02. Kalupur Swaminarayan temple



Observation time 8:00 to 9:00 a.m.

### 03. Hanuman temple, near IIMA



Observation time 8:00 to 9:00 a.m. &  
6:00 to 7:00 p.m.

#### OBSERVATION:

For *puja* ceremonies in a Jain temple, only materials that are fragrant like Jasmine, Rose, *Damro*, Hibiscus etc. are used.

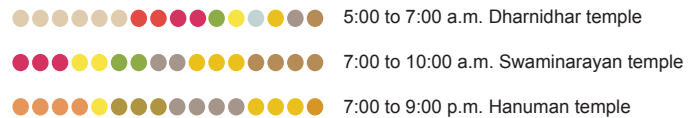
During the morning rituals, people rub sandalwood and saffron on stones and this fragrance dominates the entire temple and immediate environment.

In the Kalupur temple, the smell of old wood and stone lingers in the air. Devotee's synthetic smell of perfumes, talcum powder and flowers mix with the fragrance of ghee from the *prasad* and garlands of flowers.

The Hanuman temple, adjacent to a very busy road, smells of incense sticks, oil, *sindoor* and coconut mixed with the smoke from vehicles.

Outside all the temples, people feed grass to cows.

#### SMELL TIME SCALE :



#### LEGEND:

- |   |   |
|---|---|
| <span style="color: red;">●</span> Rose ( <i>Rosa centifolia</i> )      | <span style="color: orange;">●</span> Orange <i>sindoor</i> |
| <span style="color: tan;">●</span> Sandal ( <i>Santalum album</i> )     | <span style="color: olive;">●</span> Mustard oil            |
| <span style="color: red;">●</span> Saffron ( <i>Crocus sativus</i> )    | <span style="color: lightblue;">●</span> Milk               |
| <span style="color: green;">●</span> Tulsi ( <i>Ocimum sanctum</i> )    | <span style="color: brown;">●</span> Stone                  |
| <span style="color: yellow;">●</span> Lamp                              | <span style="color: gold;">●</span> <i>Prasad</i>           |
| <span style="color: grey;">●</span> Incense sticks ( <i>Agarbatti</i> ) | <span style="color: green;">●</span> Grass                  |

#### NOTE:

This map is based on personal observation. It is a broad map of sources of odor and their spread. Each one is represented with a corresponding colour as shown in the legend.

Sources of smell within the observed space

01. Dharnidhar temple



Dharnidhar temple



People outside temple



Puja in Jain temple



Mixing of Sandalwood (*Santalum album*) and Saffron (*Crocus sativus*)



02. Kalupur Swaminarayan temple



People feeding cows



Swaminarayan temple;  
devotees waiting for  
*darshan*



Vegetable vendors  
outside temple



03. Hanuman temple,  
near IIMA



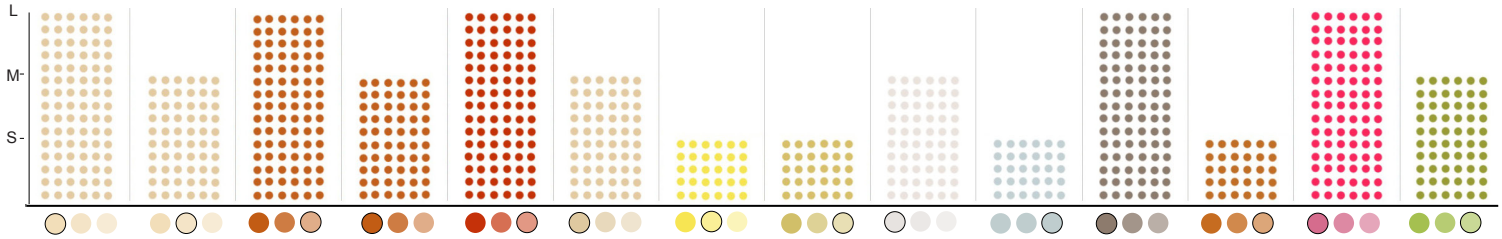
Hanuman temple,  
devotees queue up to  
offer oil, coconut

# Place, matter, experience

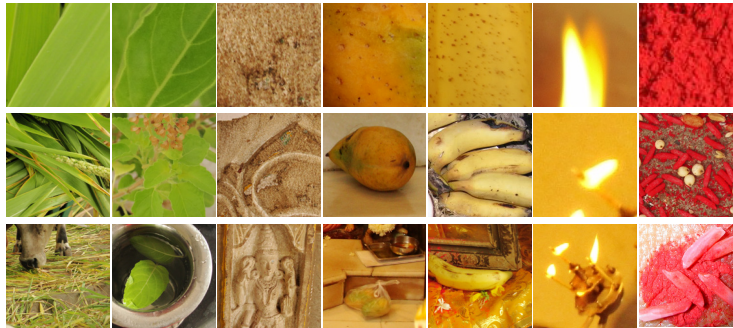
## 01. Dharnidhar temple



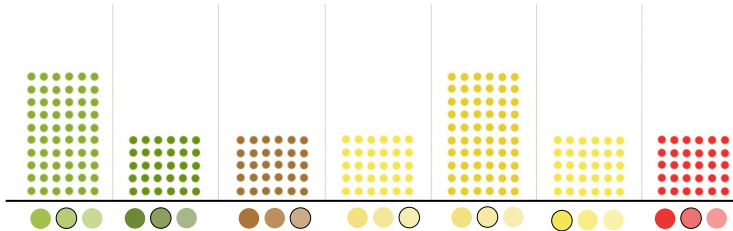
Sandalwood	Sandalwood paste	Saffron+Sandalwood	Saffron+Sandalwood	Saffron	Sandalwood powder	Lamp	Ghee	Jasmine	Milk	Incense sticks	Coconut	Roses	Damro
Inherent	Inherent	Inherent	Inherent	Inherent	Inherent	Burn	Inherent	Inherent	Inherent	Burning	Inherent	Inherent	Inherent



## 02. Kalupur Swaminarayan temple



Grass Tulsi Sand stone Mango Banana Lamp Kankoo  
 Breaking Inherent Inherent Inherent Inherent Burning Inherent



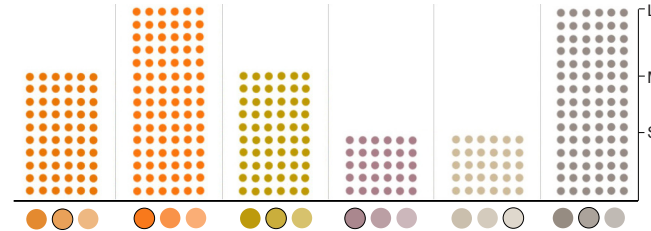
Duration of lingering - L- Long, M- Medium, S- Short



## 03. Hanuman temple, near IIMA



Laddoo Sindoor Oil Akda (Calatropis procera) Coconut Incense sticks  
 Inherent Inherent Inherent Inherent Cutting Burning



Intensity - High Medium Low

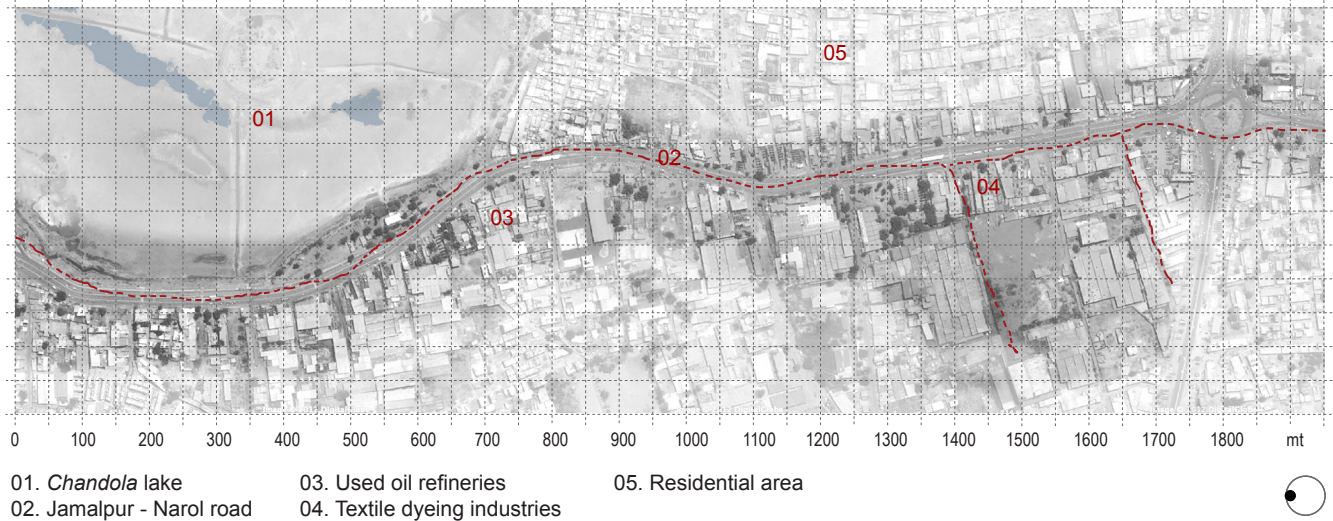




## d. Industrial area

## 6. Narol industrial area

### SMELL WALK - 6

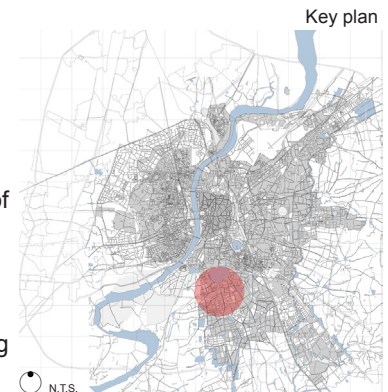


Narol industrial area is situated on south east side of the city.

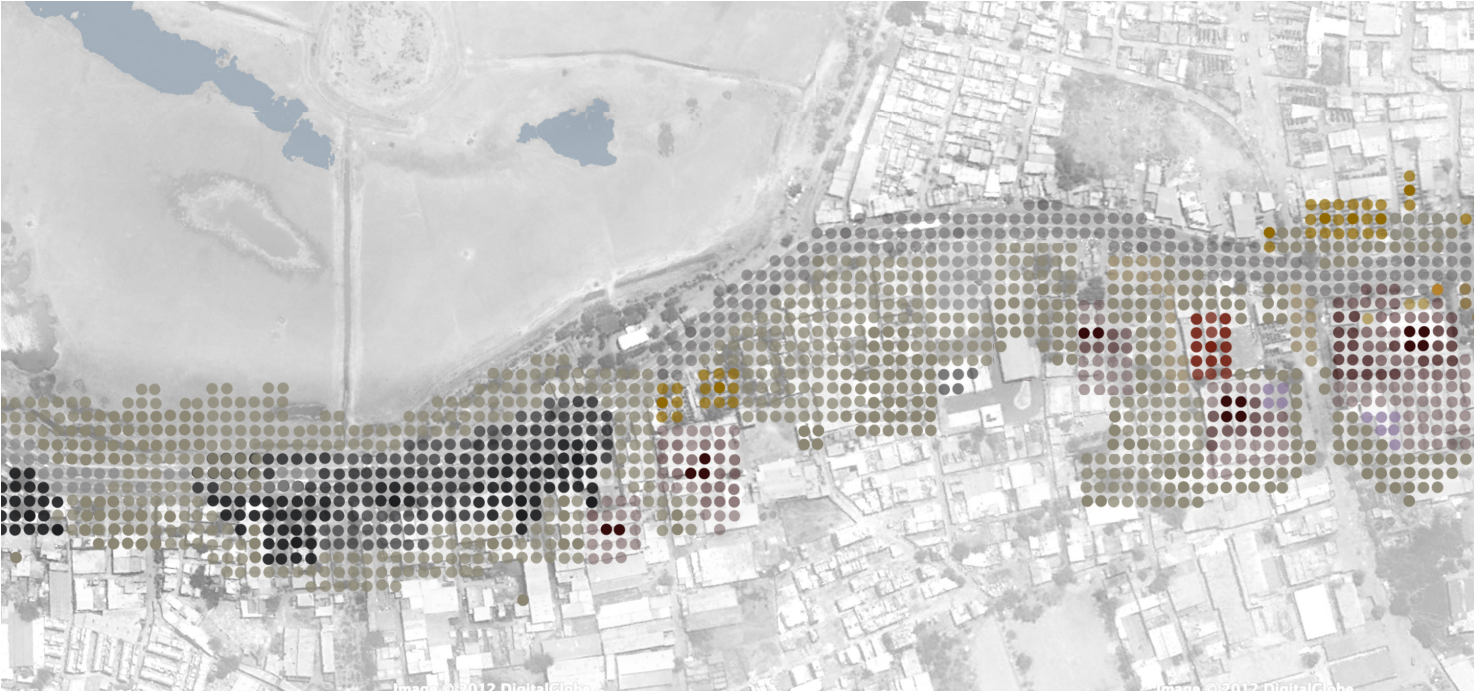
Continuous movement of heavy vehicles makes this space busy and extremely dusty. There are rows of trucks parked, along the road. Tall chimneys fill the air with dark industrial smoke.

There are slums at the periphery of the dried lake.

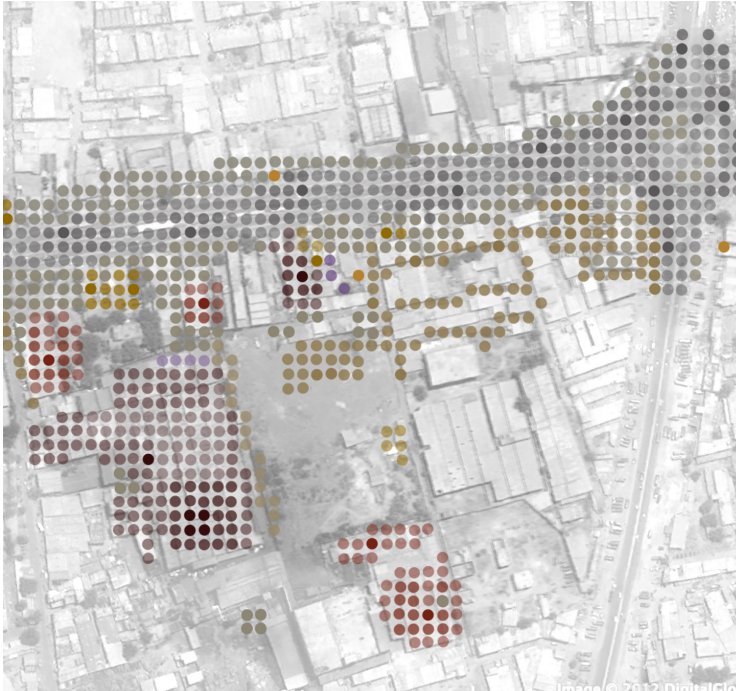
Along the road the major industries are chemical units, used oil refineries; textile, dyeing and printing units, wood sawing and metal craft units etc.



**Odour map, Narol industrial area**



Observation time 11:00 A.M. to 1:00 P.M.



**OBSERVATION:**

As one walks along the industrial area, a nasty chemical smell is the most dominant odour.

Along the dry Chandola lake, the stench emanating from the sewage generated from the slum is very strong.

Toxic odours from the oil refinery, chemical dyes and wood burning from the boilers hangs heavily in the atmosphere.

Dusty roads and smoke from vehicles combining with the acrid industrial odour covers the entire area making the atmosphere unpleasant.

**SMELL TIME SCALE :**



**LEGEND:**

- Industrial smoke
- Vehicular smoke
- Used oil refinery
- Textile dyeing unit
- Block printing unit
- Tea / Snacks
- Wood burning
- Moist timber
- Bleach
- Muddy road

**NOTE:**

This map is based on personal observation. It is a broad map of sources of odor and their spread. Each one is represented with a corresponding color as shown in the legend.

Sources of smell within the observed space



a. Used oil containers

Oil refinery



b. Drums containing chemicals



c. Stagnant & muddy water on internal road





d.

Slums on the lake edge



e.

Dry lake bed

Chimneys

Narol road

Key plan

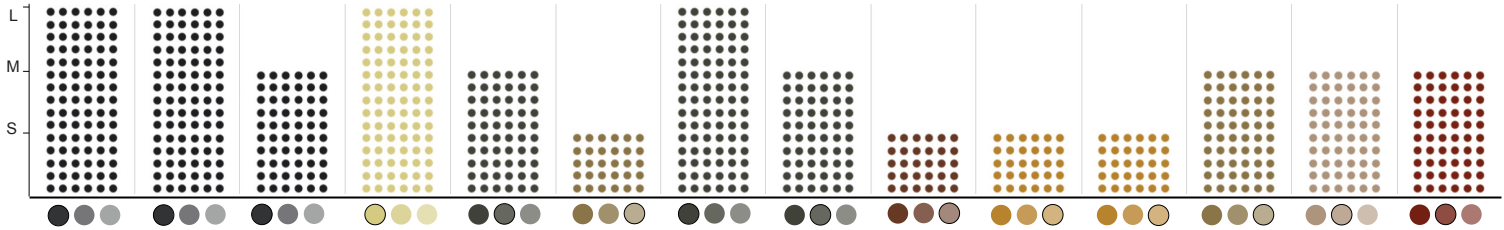


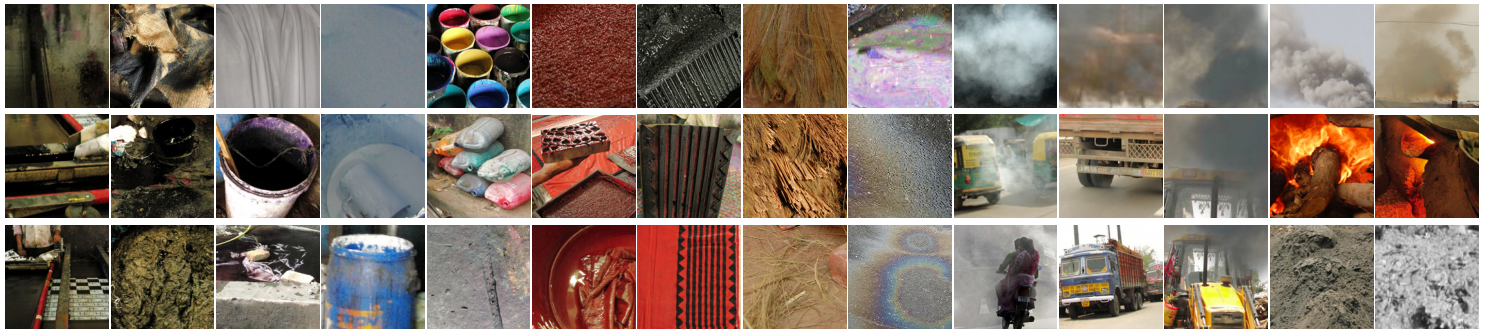
○ N.T.S.

# Place, matter, experience

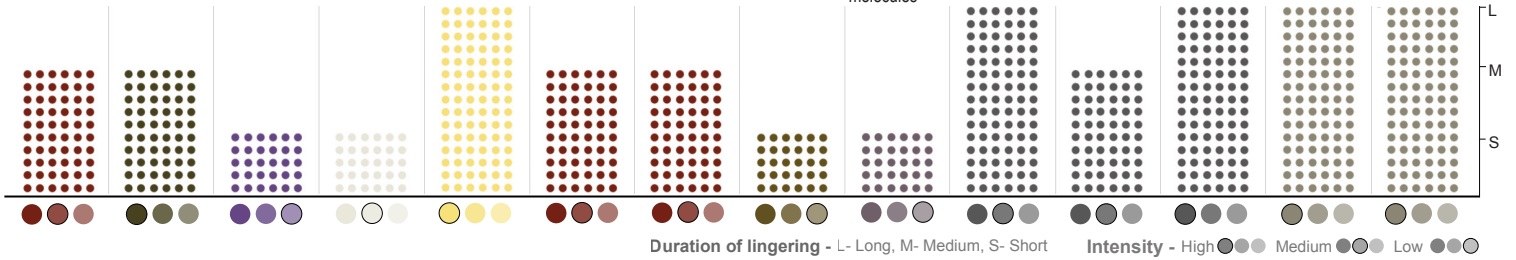


Used oil Decay, release of inorganic gas    Barrel of oil Release of inorganic gas    Oil residue Release of inorganic gas    Filtered oil Release of inorganic gas    Grease Decay    Mud Decay    Used oil Decomposition    Oil residue Decomposition    Wood pieces Inherent + dampness    Tea Boiling    *Bhajiya* Frying    Mud Dampness, decay    Dust + cloth Suspension of particles    Printing Release of chemical molecules





Printing Release of chemical molecules  
 Colour Decay, release of inorganic gas  
 Bleach Release of toxic gas  
 Color Release of toxic gas  
 Colors Release of chemical molecules  
 Color Release of chemical molecules  
 Printing Release of chemical molecules  
 Broom stick Suspension of particles  
 Petrol Suspension of inorganic gaseous molecules  
 Vehicular fumes Combustion  
 Vehicular fumes Combustion  
 Vehicular fumes Combustion  
 Burning chamber Combustion  
 Burning chamber Combustion

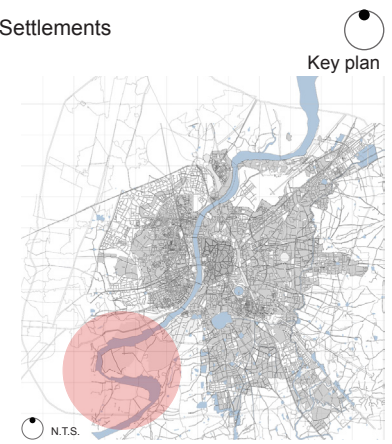
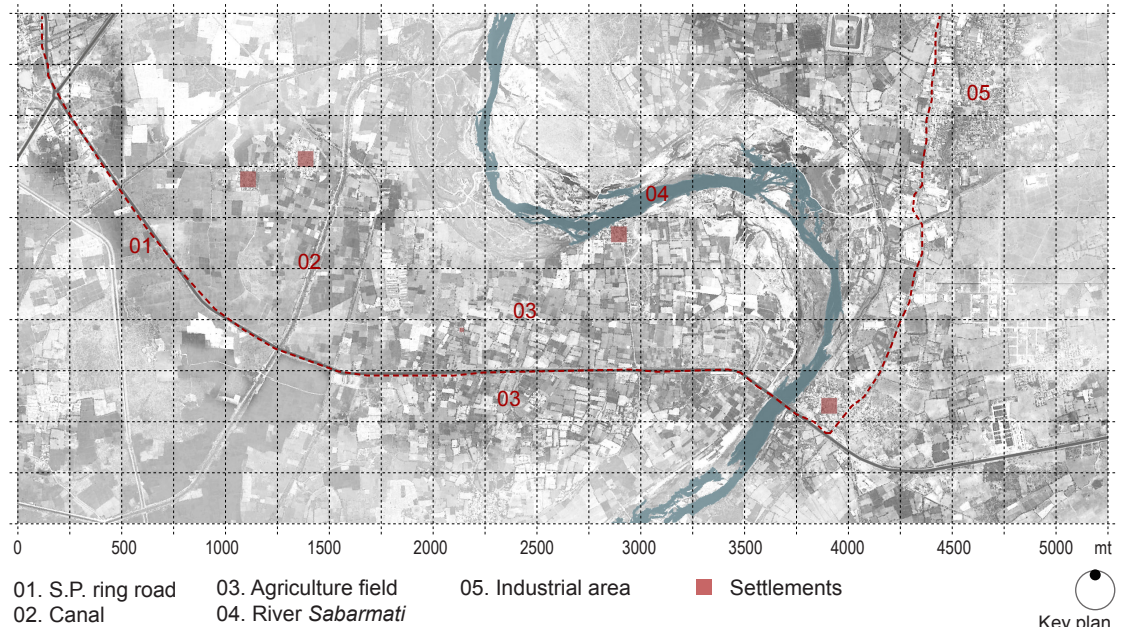




e. City edge

7. Fields near S.P. ring road, Pirana

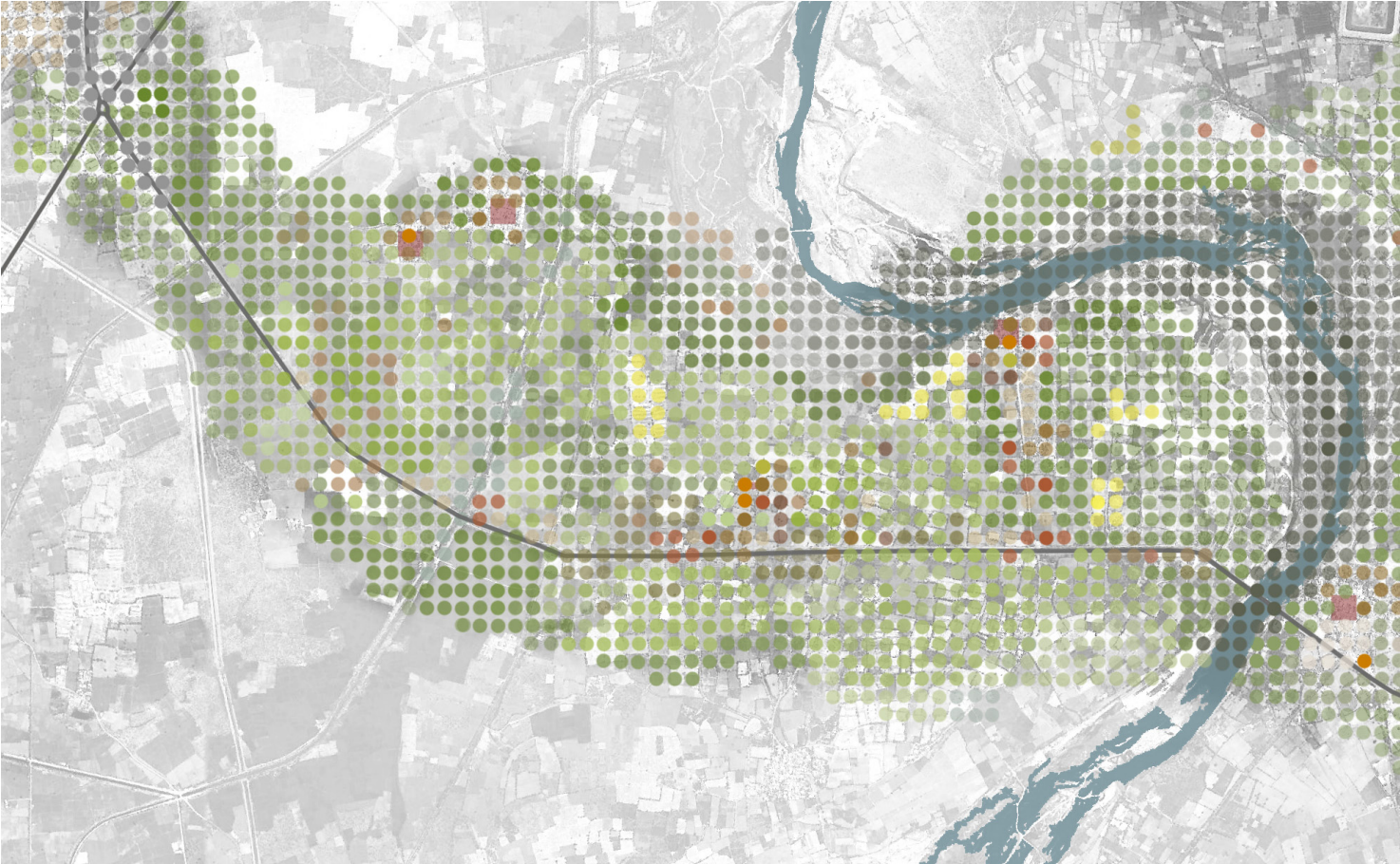
SMELL WALK - 7



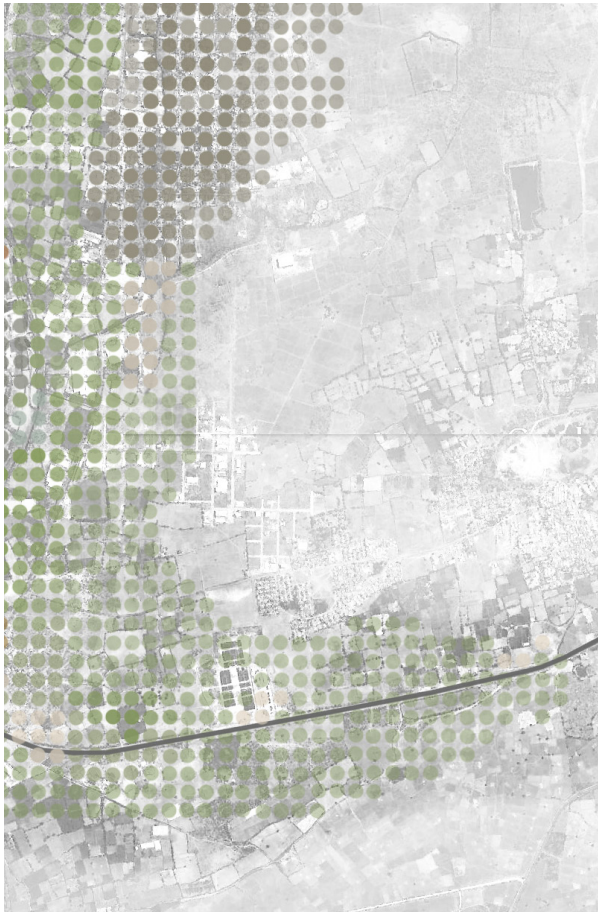
At the edge of the city, one can observe built areas set amidst working fields.

Small settlements can be seen near roads, rivers and at the edges of canals. During this season (May-July) farmers cultivate paddy, pulses etc.

**Odour map, Fields near S.P. ring road, Pirana**



Observation time 6:00 to 11:00 A.M.



**OBSERVATION:**

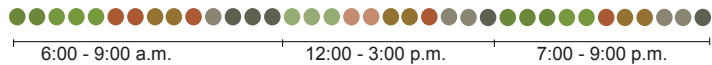
At sunrise, the smell of milk and cooking is first noticed as one walks between the settlements.

With continuous breeze around the settlements, the smell of fresh cow dung hangs in the air which gives the place a very earthy fragrance.

After the first shower of the monsoon, the atmosphere is filled with the smell of damp mud.

The city's sewage is released into the river. This sewage releases foul odours that suppress the 'freshness' of the air of the place.

**SMELL TIME SCALE :**



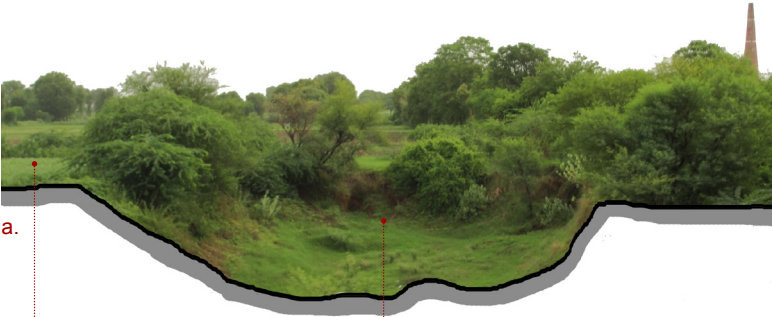
**LEGEND:**

- Vehicular fumes
- Wild vegetation
- Paddy fields
- Fields
- Damp earth
- Fresh cow dung
- Damp timber
- Wood charring
- Sewage slurry
- Industrial smoke
- Construction site

**NOTE:**

This map is based on personal observation. It is a broad map of sources of odor and their spread. Each one is represented with a corresponding colour as shown in the legend.

Sources of smell within the observed space



a.  
Farm land

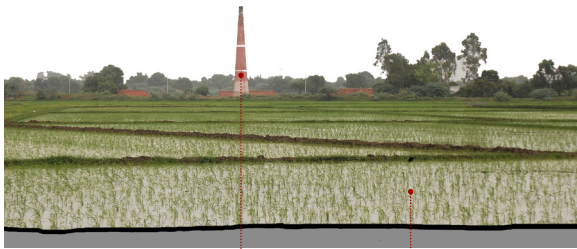
Depression with  
vegetation



b.  
River, breeze, vegetation  
on edge

Settled sewage slurry

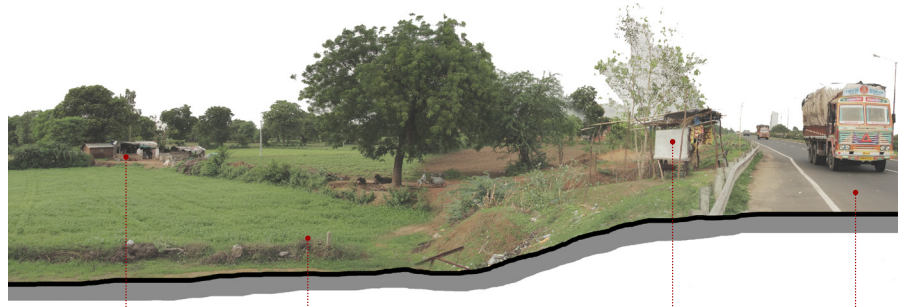




c.

Chimney

Paddy fields,  
damp earth,  
water, breeze



d.

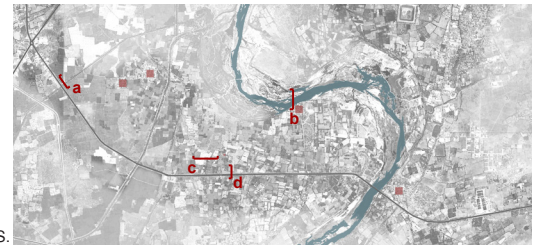
Settlement, cattle,  
fresh dung, burning  
*chulah*

Fields

Stall

S.P. ring  
road

Key plan

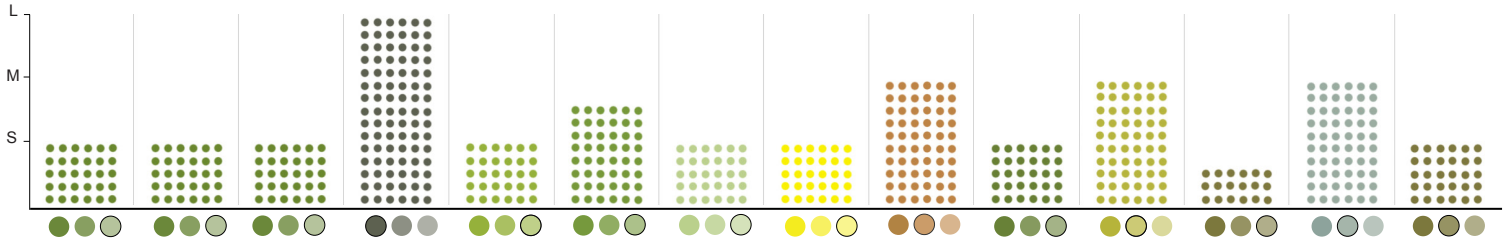


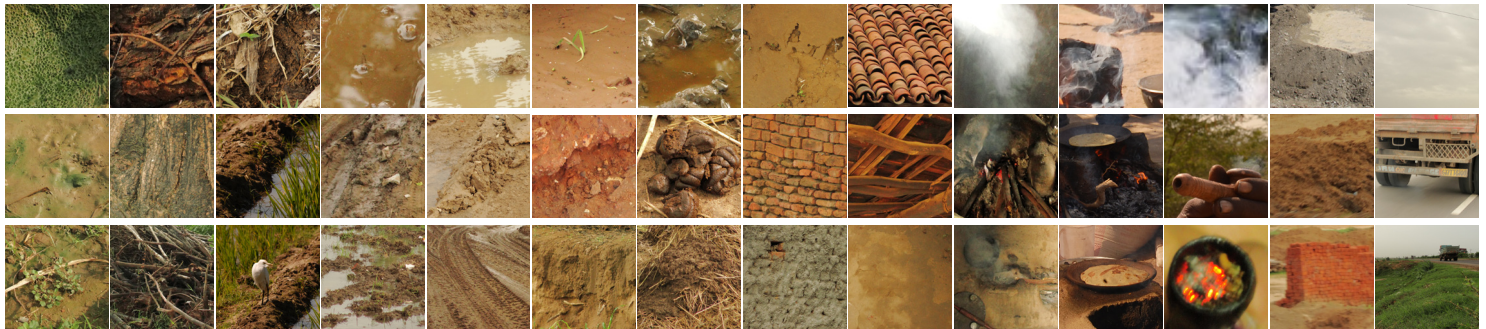
○ N.T.S.

# Place, matter, experience

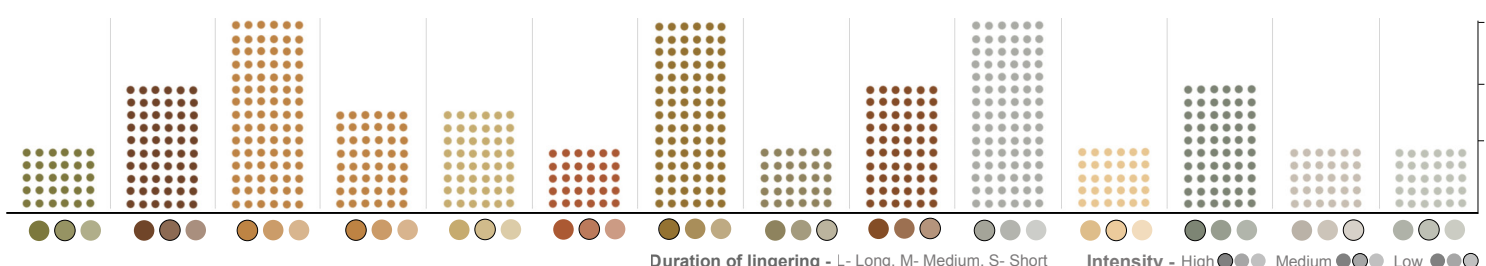


Crops Inherent	Damp earth Dampness, suspension of spores	Vegetation Inherent	River, sewage sludge Release of inorganic gas	Damp earth Dampness, suspension of spores	Crops Inherent	Damp earth Inherent	Marigold farm Inherent	Damp earth Dampness, suspension of spores	Tree Inherent	Neem Inherent	Cactus Inherent	Water in canal Decay, release of gaseous molecules	Algae Dampness, decay, microorganism
-------------------	--	------------------------	--	--	-------------------	------------------------	---------------------------	--	------------------	------------------	--------------------	---	---





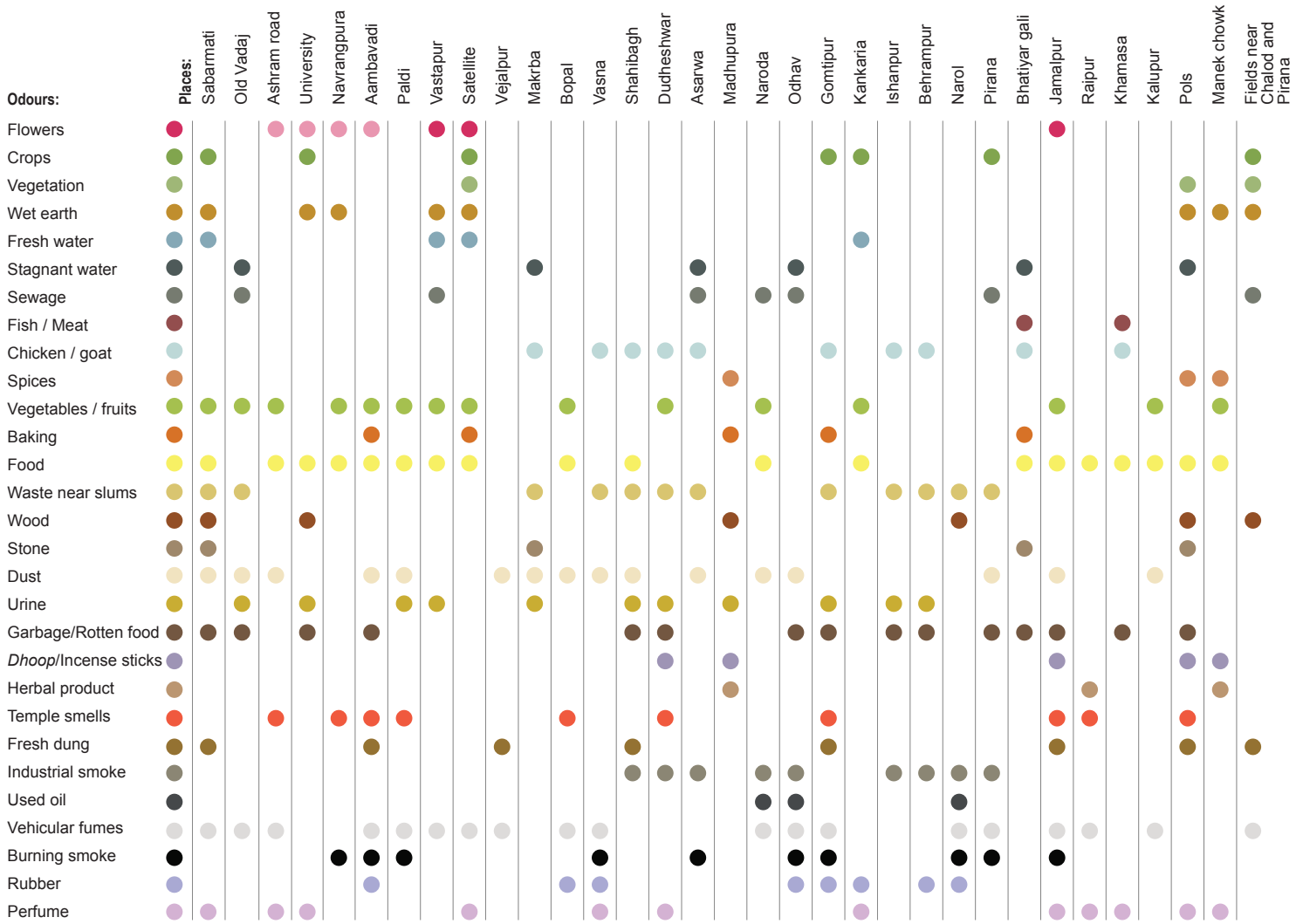
Algae Dampness, decay, microorganism spores  
 Algae Dampness, decay, microorganism spores  
 Damp earth Dampness, suspension of spores  
 Damp earth Dampness, suspension of spores  
 Damp road Dampness, suspension of spores  
 Damp earth Dampness, suspension of spores  
 Fresh dung Microorganism, release of inorganic gas  
 Damp wall Dampness  
 Damp wood, plaster Inherent, Dampness  
 Chulah Combustion  
 Cooking on chulah Combustion  
 Tobacco Inherent, Combustion  
 Construction site Suspension of particles  
 Vehicular fumes Combustion of particles



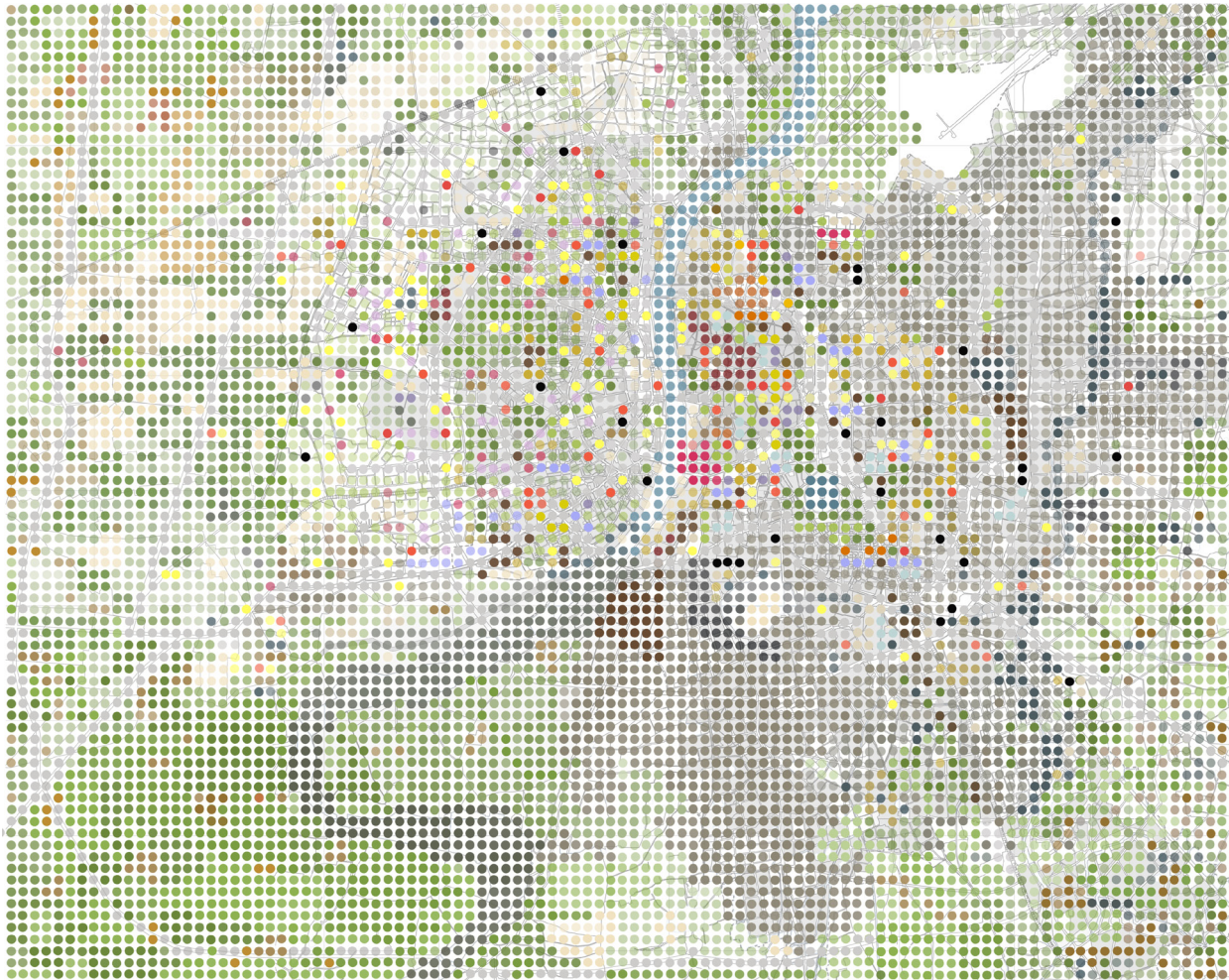


## 06. Smell map

# Place and smell perception



# Odour map of the city



**NOTE:** Based on observations for this document this map has been generated as a hypothetical exercise. Each coloured dot is based on the legend shown on the facing page.







## **07. Inferences**

**01. Kaka Baliyani pol**

History, stone, wood, weathered, layered, porous, accumulation.



**02. Spice/grain market, Madhupura**

Sharp, pungent, colour, fresh, engaging.



**03. Fish market, Bhatiyar gali**

Stagnant water, congealed blood, decomposition, ice, dissolution.



**04. Flower market, Jamalpur**

Flowers, dust, smoke, fragrance, ephemeral.



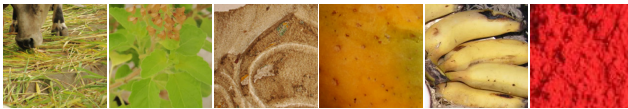
**05. Temples: Hanuman temple, near IIMA**

Orange, oil, coconut, husk, thick air.





**Temples: Dharnidhar Jain temple 05.**  
Sandalwood, Saffron, light, dawn.



**Temples: Kalupur Swaminarayan temple 05.**  
Old and new, food, heavy, decomposition.



**Industrial area, Narol 06.**  
Soot, layered, embedded.



**City edge: fields near S.P. ring road, 07.**  
**Pirana**  
Earth, mud, water, air, flow.

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05. [www.serendip.brynmawr.edu](http://www.serendip.brynmawr.edu)
06. <http://www.nytimes.com/interactive/2009/08/29/opinion/20090829-smell-map-feature.html>
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10. <http://www.tangdynastytimes.com/2012/05/dante-sighs.html>
11. [www.sensetheplace.it](http://www.sensetheplace.it)
12. [www.ecastudent.blogspot.in](http://www.ecastudent.blogspot.in)
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14. [www.sensorymaps.com](http://www.sensorymaps.com)
15. <http://science.howstuffworks.com>



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