



**FIGURE 3.1**

*Day 130, Fig With Fig Leaf Ice Cream*

*(Lorraine Loots, 2014)*

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*chapter three*

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# PROGRAM & CLIENT

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31 PREFACE

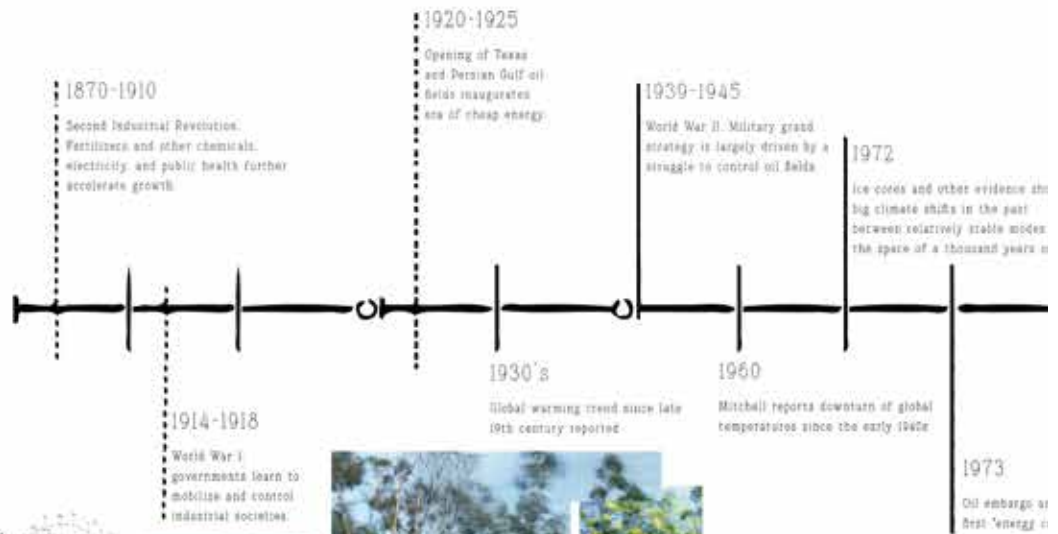
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The growing rate of urban diseases among city inhabitants including **allergic rhinitis, asthma, eczema** and **food intolerances** has become a serious issue for investigation in recent decades. The topic is raising much speculation among health practitioners that, if the issue is left untouched, it can lead to serious **epidemic consequences** for the living conditions of urban inhabitants.

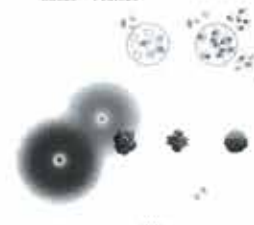
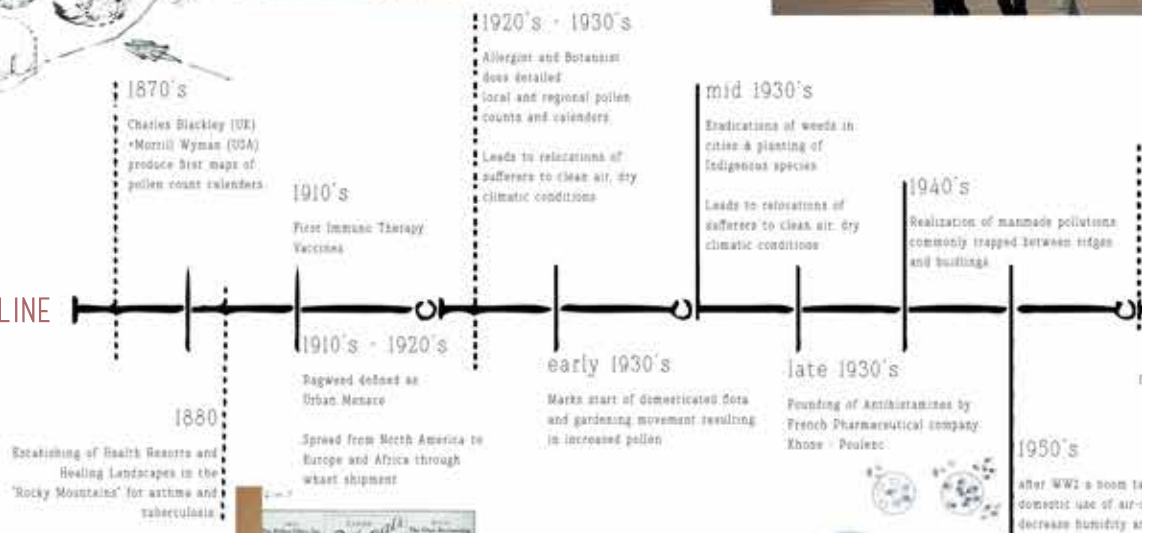
This chapter will discuss the proposed program, **a Wellness Centre for Urban Diseases** that deals with the **education, research** and **treatment** of the topic in question. First the history of urban diseases will be investigated by means of a timeline (Figure 1) in order to understand the different aspects and contextual influences that amplified it. Multiple conditions that cause the rise of these diseases in cities will also be examined in order to discover how they are interlinked and what the most effective means of intervention would be. The **Slow Food Movement** will be discussed as a core theme to shift the idea of only ‘curing’ our bodies of symptoms of diseases to that of ‘caring’ for our bodies, to **promote the internal wellbeing** of humans through food consumption. All these aspects of investigation will give expression to the programmatic intentions and requirements of the Wellness Centre.

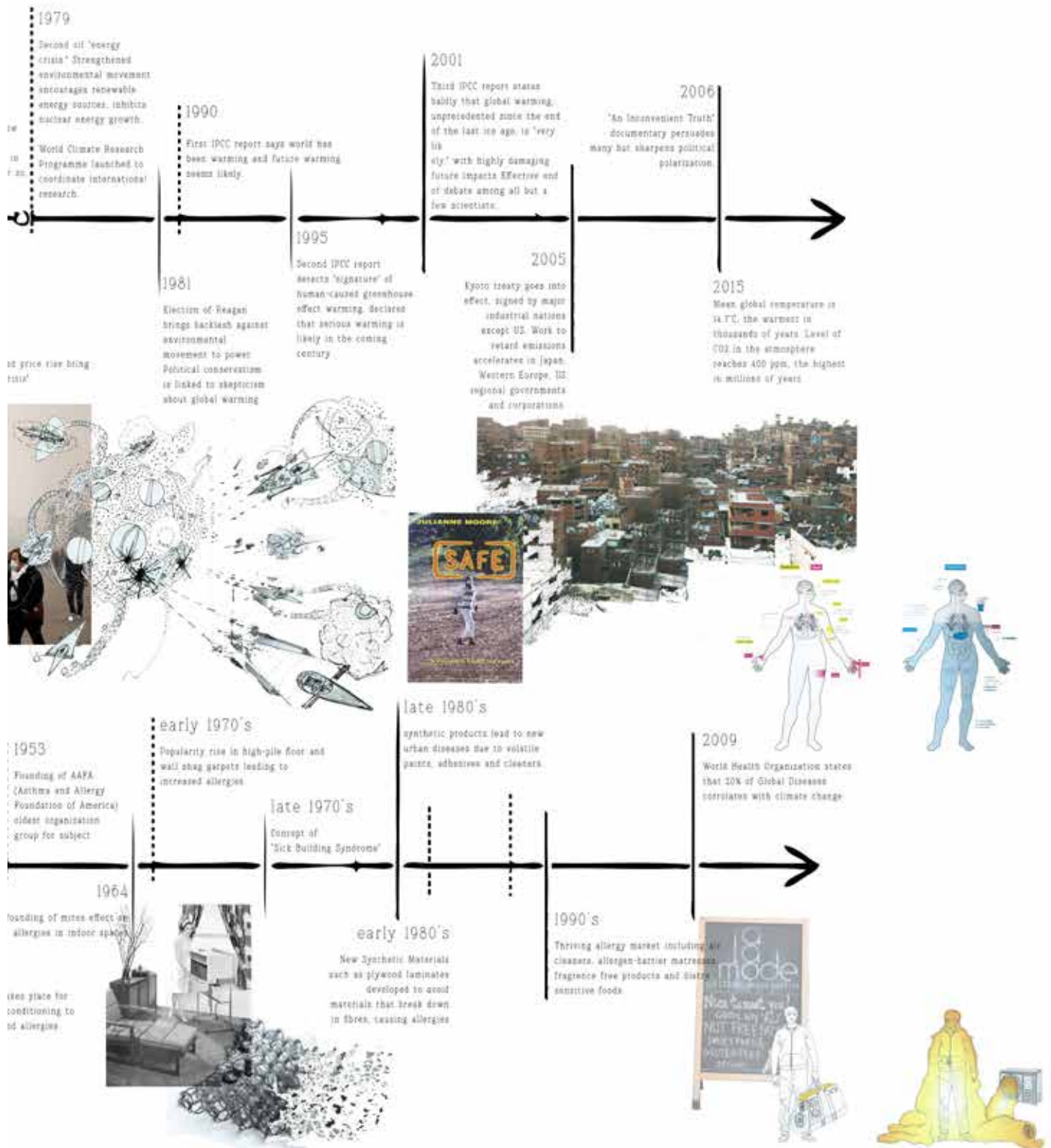


## GLOBAL WARMING TIMELINE



## URBAN DISEASES TIMELINE





▲  
**FIGURE 3.2**

Image of historic timeline of urban diseases.  
(Author, 2016)

## 3.2 A HISTORY OF URBAN DISEASES

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**E**nvironmental allergies were first recognised during the nineteenth century, when the invention of the microscope together with the production of **pollen maps** by allergists Charles Blackley and Morill Wyman (Borasi & Zardini, 2012: 98) in the 1870s dramatically changed the way landscapes were viewed. Over the next five decades, allergists, botanists and sufferers from allergies extended this information into detailed local and regional knowledge in order to expect and find refuge from them.

At the beginning of the 20th century in reaction to the **rise of new epidemics** and illnesses, the establishment of health resorts and healing landscapes supported the concept of **“climate therapy”**, where allergy and asthma sufferers would withdraw to specific regions in an attempt to escape the symptoms of these illnesses existing in their urban living environments (Borasi & Zardini, 2012: 99). In reality these facilities did not offer a truly effective therapy. The isolation from urban circumstances **minimized the friction** between people and their daily environments, resulting in people being **more sensitized and susceptible to diseases**.

**T**he 1930s marked the start of the **domesticated flora and gardening movement** in urban and suburban environments. Planting practices were focused on the beautification of living conditions and allowing people to connect to the natural environment; however, the result was a **rise in pollen counts** (Borasi & Zardini, 2012: 101) as well as the occurrence of **ragweed, classified as an ‘urban menace’**, and other harmful moulds and invasive species, increasing the occurrence of allergies. This in turn motivated the development of **antihistamines** by the French pharmaceutical company Khone-Poulenc together with immunotherapy vaccines to alleviate the severely uncomfortable symptoms of allergies.



### AUTUMNAL CATARRH.

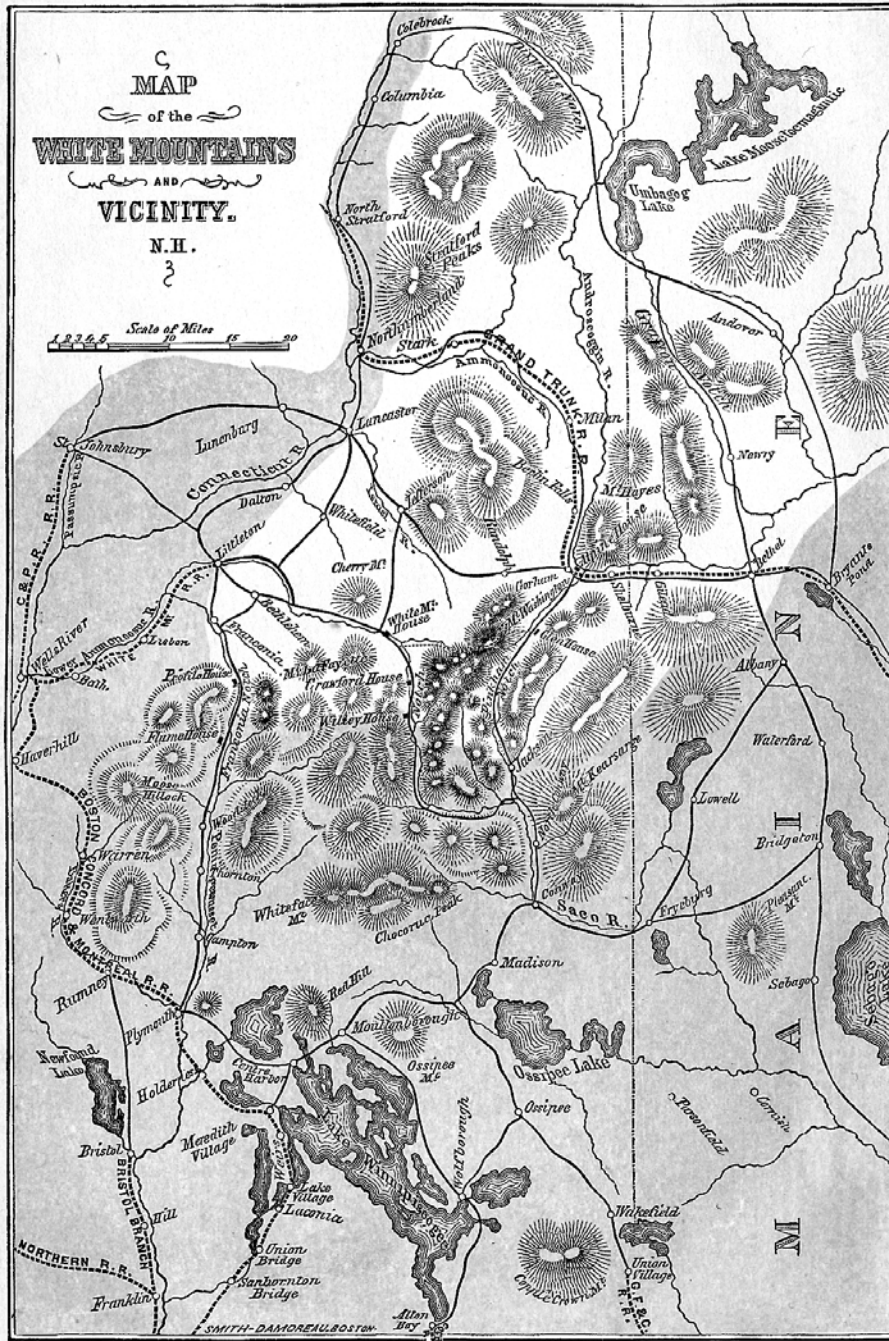


FIGURE 3.3

Images of first pollen maps and data surveys.

(Borasi & Zardini, 2012)

From the 1940s to 1960s, the popularity of wall-to-wall carpeting contributed to the accumulation of dust and material fibres, bringing forth the notion of **sick building syndrome**. Where historically nature and the outdoors were viewed as the threat, **indoor allergens** now became more common due to dust mites and mould growth that contributed to **building-related illnesses** (Borasi & Zardini, 2012: 103). The domestic use of **air-conditioning** became very popular as from the 1950's and was used to improve the circulation of fresh air in buildings and decrease humidity in an attempt to create a **'healthy home'**.

From the 1960s onwards the **rise in global temperatures** became more evident. It might not have been discovered at the time, but this also had a major impact on asthmatics and allergy sufferers in urban settings. It wasn't till the late 1990s that the serious nature of global warming and how it had impacted our health was beginning to be understood (IPCC, 2014: 6).

In the last decade the lucrative **'allergy market'** proposed multiple new products and approaches to create healthier landscapes and living conditions (Borasi & Zardini, 2012: 97). Many advances have also been made in the pharmaceutical and building industries to deal with the rise in urban diseases. Unfortunately most attempts are focused on treating the symptoms, rather than addressing the root of the problem.







▲  
**FIGURE 3.4**

*Image of specialized allergy market products  
(compilation by Author, 2016)*



## 3.3 CAUSES

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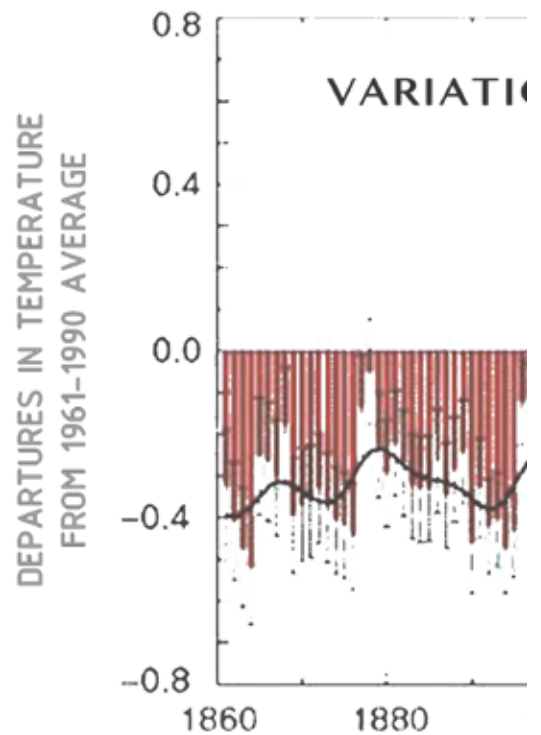
# OF URBAN DISEASES

### 3.3.1 CLIMATE CHANGE

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According to the United Nations (UN) World Meteorological Organization, 14 of the 15 hottest years on record have occurred since 2001 (IPCC, 2014: 5). **Temperature change** has a huge impact on the **levels of pollen, irritant particulates and dust** circulating in the air.

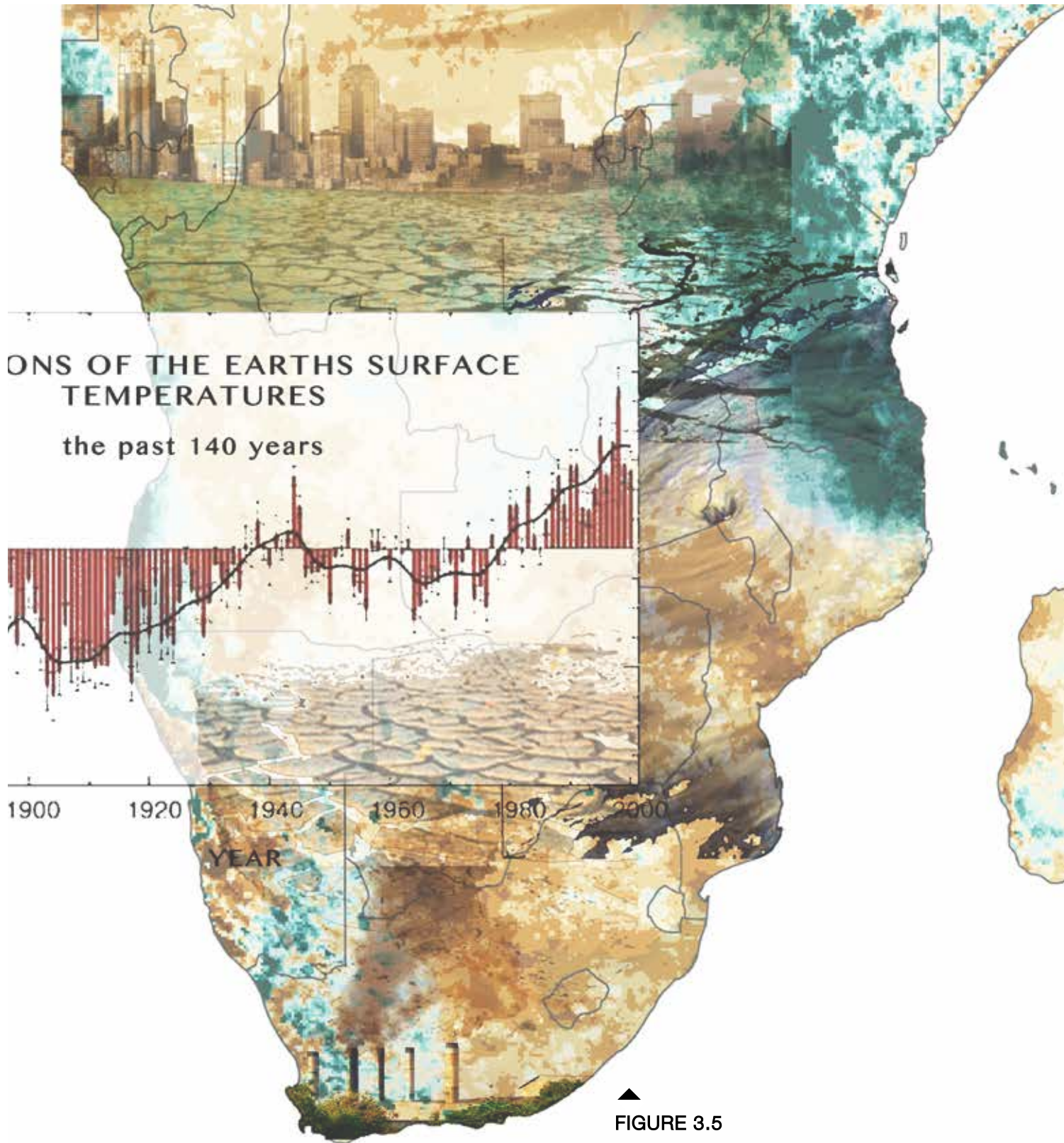
**Airborne pollen** is the most common cause of seasonal allergies (Borasi & Zardini, 2012: 98) and it is due to climate change that more and more urban dwellers are exposed to the risk of allergies and asthma. It is also important to understand that building structures within cities serve as a basin that contains air and reduces ventilation of cooler air, leading to **warmer ambient temperatures**.



### 3.3.2 POLLUTION

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The air in our cities can be perceived as a **toxic landscape** which we inhale every day. Pollution produced by industrial as well as transport activities in and around the city has become a third character in the context of Pretoria as much of the polluted air stays trapped between the two defining ridges of the city (Van der Walt, 1967: 8).



▲  
**FIGURE 3.5**  
*Image of climate change statistics.*  
*(IPCC, 2014, adapted by Author, 2016)*



# Pollution Precedent

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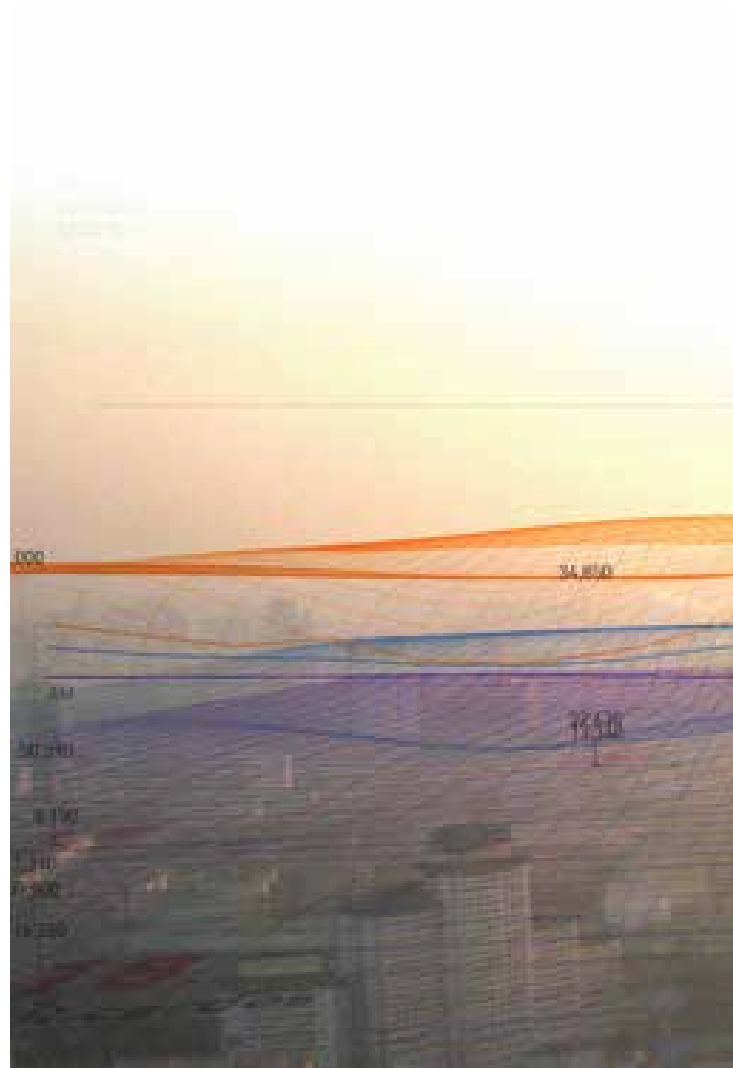
*“In the Air” visualization project, Nerea Calvillo.*

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The “In the air” visualization project created by Nerea Calvillo (Borasi & Zardini, 2012: 91) is a digital model that analyses the invisible pollution agents in the air of Madrid, in order to produce and demonstrate the quality of the air in a visually legible graphic.

The project identified sulfur dioxide, carbon monoxide, nitrogen oxide, particulate PM<sub>10</sub> and pollen as the key pollutants that have the most detrimentally effect on the health of urban inhabitants (Borasi & Zardini, 2012: 91). The project thus proposes a platform to create individual and collective awareness for practitioners to interpret and use for opportunistic selection and decision-making.

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**FIGURE 3.6**

*Precedent: "In the Air" visualization project, Nerea Calvillo.*

*(Borasi & Zardini, 2008)*

### 3.3.3 STRESS AND PLACELESSNESS

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**D**ue to the circumstances presented in an urban lifestyle, people are subjected to **high levels of stress**. They lack a meaningful connection with their natural environment (Du Plessis, 2012: 7), causing them to be naturally and socially isolated and under-stimulated, and leading to a common epidemic in the urban environment described as **Place Deficit Disorder** (Mang, 2009: 7).

### 3.3.4 INVASIVE SPECIES AND INAPPROPRIATE PLANTING PRACTICES

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**P**ollen generated by the **misapplication of tree species** is considered to be a major aspect that causes the increasing incidence of allergies and asthma in cities worldwide. Any type of vegetation, when **overplanted** can cause allergies, and together with the planting of **invasive species**, it results in the spreading of weeds that are highly allergenic.

Most professional design resources now include guidelines for designing interior and exterior spaces that reduce the negative effects of allergens. Devised by American horticulturalist Thomas Leo Ogren, the **Ogren Plant Allergy Scale (oPALs)** measures the allergy potential of garden and landscaping plants (Borasi & Zardini, 2012: 101). Low-scoring plants include those that depend on insects rather than wind for pollination, as they

produce significantly less pollen. Pollen levels can also be reduced by planting only the female variety of a species, as it is the male plant that produces pollen. Traditionally, males have been preferred in urban areas for aesthetic and practical reasons, for they do not produce fruit and thus create less of a mess. Alternative strategies can be considered to deal with the latter issue.

### 3.3.5 SICK BUILDING SYNDROME

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**A**s mentioned, the second half of the 20th century indicated a dramatic increase in allergies due to **inappropriately designed, furnished and finished home interiors** that become more heavily polluted than outdoor urban settings (Borasi & Zardini, 2012: 108).

### 3.3.6 WHAT WE EAT

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**T**he reliance that urban inhabitants have on **fast and processed food** has become a fundamental contributor to the origin and rapid propagation of the latest epidemics and illnesses (Borasi & Zardini, 2012: 260). The use of **genetically modified food and homogenized mass growing processes** has compromised the essential diversity and quality of nutrients in our food, exposing humans to becoming more **susceptible to human-induced disease and immune disorders**.



SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	OPAL SCORE
<i>Acacia</i>	█	█	█	█	█	█	█	█	█	█	█		8
<i>Acer</i>		█	█	█	█	█							4
<i>Ailanthus</i>			█	█	█	█	█						4
<i>Albizia</i>							█	█	█	█	█		4
<i>Alder/Alnus</i>		█	█	█	█							█	3
ALMOND		█	█	█	█								2
BERMUDA GRASS		█	█	█	█	█	█	█	█	█	█	█	9
<i>Betula</i>			█	█	█	█				█	█	█	6
<i>Broussonetia</i>		█	█	█	█	█	█						5
<i>Buxus</i>		█	█	█	█	█							4
<i>Celtis</i>			█	█	█	█							3
<i>Chionanthus</i>					█	█	█	█					3
<i>Cinnamomum</i>				█	█	█	█						2
<i>Cupaniopsis</i>			█	█	█	█							2
<i>Cupressus</i>	█	█	█	█	█	█	█	█	█	█	█	█	10
<i>Elaeagnus</i>				█	█	█	█						3
<i>Eucommia</i>			█	█	█	█							3
<i>Euonymus</i>								█	█	█	█		2
<i>Ilex</i>		█	█	█	█	█	█						5
<i>Maytenus</i>		█	█	█	█	█							4
<i>Melaleuca</i>			█	█	█	█	█						4
<i>Olea</i>				█	█	█	█	█					4
<i>Ostrya</i>			█	█	█	█							3
PALM TREES	█	█	█	█	█	█	█	█	█	█	█	█	10
<i>Pennisetum</i>	█	█	█	█	█	█	█	█	█	█	█	█	10
<i>Podocarpus</i>		█	█	█	█	█	█	█	█				7
<i>Populus</i>			█	█	█	█	█	█					6
RAGWEED								█	█	█	█	█	5
<i>Rhamnus</i>		█	█	█	█	█	█	█					7
<i>Rhus</i>			█	█	█	█	█	█					6

▲  
**FIGURE 3.7**

Diagrams of oPals (Orgen Plant Allergy Scale) scores of common urban planting.

(PolliNation, 2012)



### 3.3.7 THE CHANGING OF OUR IMMUNE SYSTEMS

The theory of **the hygiene hypothesis** (Okada, 2010: 12) has stirred much speculation and interest in recent years. Its fundamental argument is that infectious agents that have co-evolved with us, in order to protect us against a large spectrum of **immune-related disorders** (Okada, 2010: 16) have been removed from our urban environments in our efforts to have a **clean and germ-free lifestyle**.

The inherent risk in lacking exposure to bacteria is that we reduce the necessary friction between ourselves and our environment, causing our immune system to overreact to harmless proteins such as those found in pollen grains (Okada, 2010: 14).

Another aspect that causes our immune systems to become weaker is the **contamination of the water** supply, **pasteurization** and **sterilization** of milk and other food products, **vaccination** against common childhood infections and the wide use of **antibiotics** (Okada, 2010: 14). The result is a lower infectious burden, but ultimately a higher incidence of urban diseases.



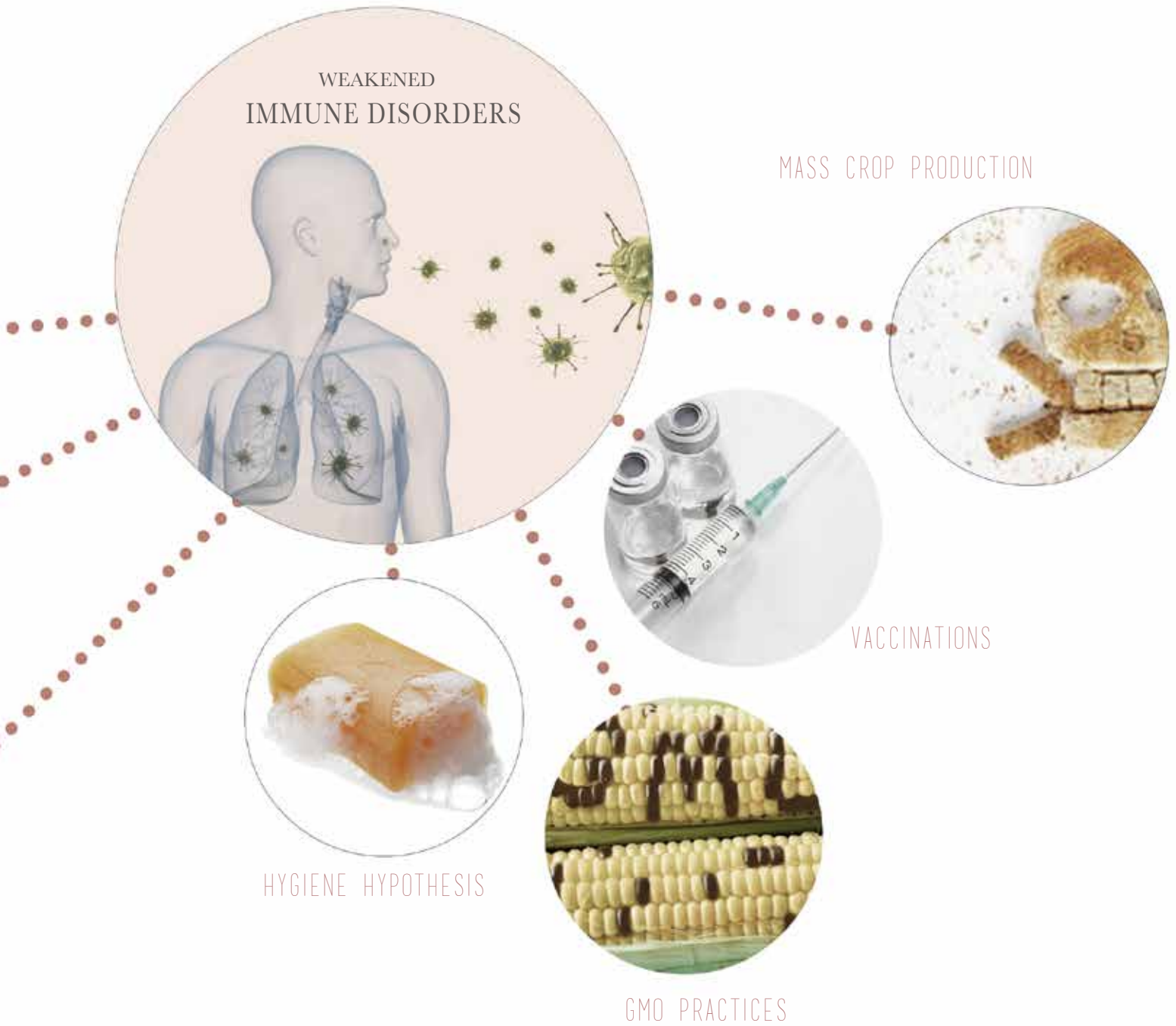
TOXIC FOOD PRACTICES



WATER CONTAMINATION



ANTIBIOTICS



**FIGURE 3.8**

*Causes of changing Immune systems.*

*(compilation by Author, 2016)*



## 3.4 TYPES OF URBAN DISEASES

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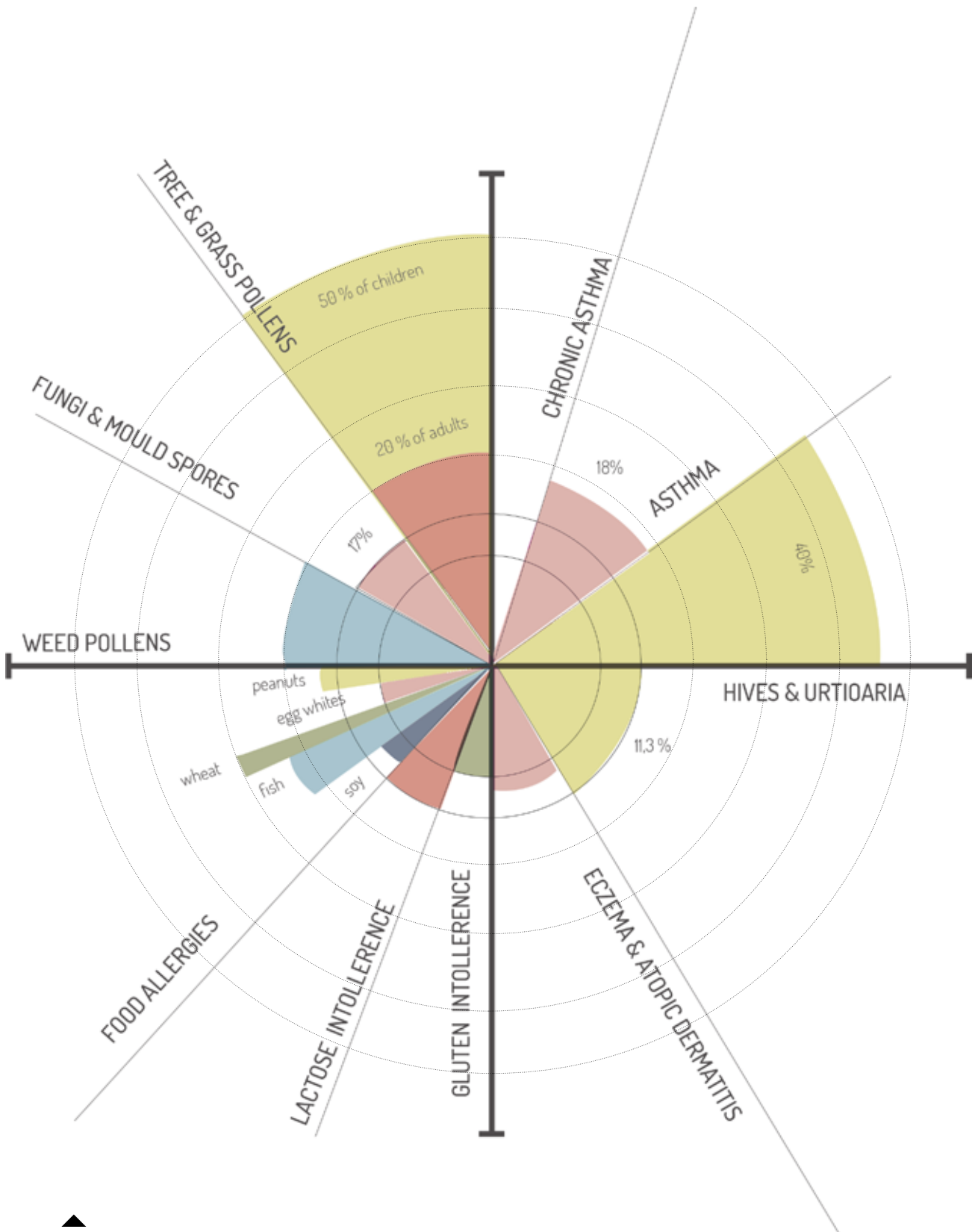
It is important to note that many urban diseases can be genetic. Statistics do however indicate that a strong incline has taken place over the **last two decades**. About 50% of children under the age of twelve suffer from allergies. Furthermore statistics show that 20% of adults are showing increased symptoms of urban diseases, whereas it was less than 8% during the 1990s. Even more troublesome is that an estimated **235 million people suffer from asthma** (Berman, 2011: 6), which is now described as an **epidemic phenomenon**.

Most urban illnesses are classified as **aero allergens**, dependent on the quality and content of the air we breathe. These illnesses include **rhinitis, asthma** and other **environmental allergies** such as **hay fever**. These are aggravated by climate and seasonal change (Berman, 2011: 4).

Less common urban diseases include **skin allergies** such as **eczema, hives and atopic dermatitis**. Skin allergies are in most cases genetic, but are most definitely triggered by severe environmental changes and inappropriate eating habits (Borasi & Zardini, 2012: 252).

A more modern urban phenomenon is the occurrence of **food allergies and intolerances** among urban inhabitants, for they are most exposed to **genetically modified** and processed foods that are reduced in quality (Borasi & Zardini, 2012: 260).





▲  
**FIGURE 3.9**

*Statistical diagram of types of urban diseases and their occurrence in our cities.*

*(Berman, 2011, Adapted by Author, 2016)*



▲  
**FIGURE 3.10**

*Slow Food Pavilion, Milan, Italy,  
Hertzog and De Meuron, 2015.  
(Archdaily, 2015)*

*Slow Food Precedent*

*Slow Food Pavilion, Milan, Italy, Hertzog Aand De Meuron, 2015.*

## 3.5 THE SLOW FOOD MOVEMENT

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The **Slow Food movement** began in Italy in 1989, and was advocated by Carlo Petrini in an ambitious attempt to counteract the rising trend of fast food consumption predominant in modern environments. Recurrent themes of these efforts can be described as **slow, low** and **local**, in order to place a brake on the rapid changes that city living causes. The contextual nature of these efforts seeks to **find existing flows**, and then honour them by unlocking their potential to allow urban and economic revitalization. The mantra is thus simple: **to grow, eat, shop and hire local** (Borasi & Zardini, 2012: 261).

The Slow Food movement suggests that humans should become **co-producers**, to be active, proactive and informed members of the food chain once again, rather than be only consumers. It is more than just about food: it is about a lifestyle that connects our food consumption to the wider social, ethical, environmental and spiritual elements around us.

Another aspect that is promoted to ensure optimal well-being is to, as far as possible, consume **organic produce** that is less exposed to pesticides, fungicides and fertilizer (Borasi & Zardini, 2012: 261), and is higher in nutrients and self-produced antioxidants that strengthen the immune system. Furthermore, organic produce is **low impact**, especially when cultivated on a **non-industrial scale**.

Finally, the movement motivates **local growing communities** where seasonal planting and sowing can take place on an **educational platform** to aid peoples understanding of the connection between soil, food and their own health and to encourage healthier living with tremendous wealth implications for future generations (Borasi & Zardini, 2012: 261).

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The Slow Food Pavilion project aims for visitors to “discover the significance of agricultural and food biodiversity, to explore the variety of the products that are protagonists of biodiversity, and to become aware of the need for adopting new consumption habits” (Archdaily, 2015).

The architectural and curatorial proposal of this project is based on a simple layout that creates an atmosphere of a refectory and market. People can watch visual statements about different consumption habits and their consequences for our planet and our health and be exposed to exponents of sustainable agriculture and local food production to learn about alternative approaches. The sensory use of smell and taste contribute to the richness of the program.

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## 3.6 THE

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# PROGRAMMATIC INTENTIONS

It becomes very clear that there are certain key elements missing in cities, which contribute to the occurrence of urban diseases. The first is an **awareness** and **knowledge** regarding the existence, causes, dangers and remedies of these illnesses. The Second it is the **lack of specialized treatment possibilities** that can address these diseases through alternative means. Urban diseases are not properly acknowledged as a problem for urban inhabitants, and thus are treated in general medical terms.

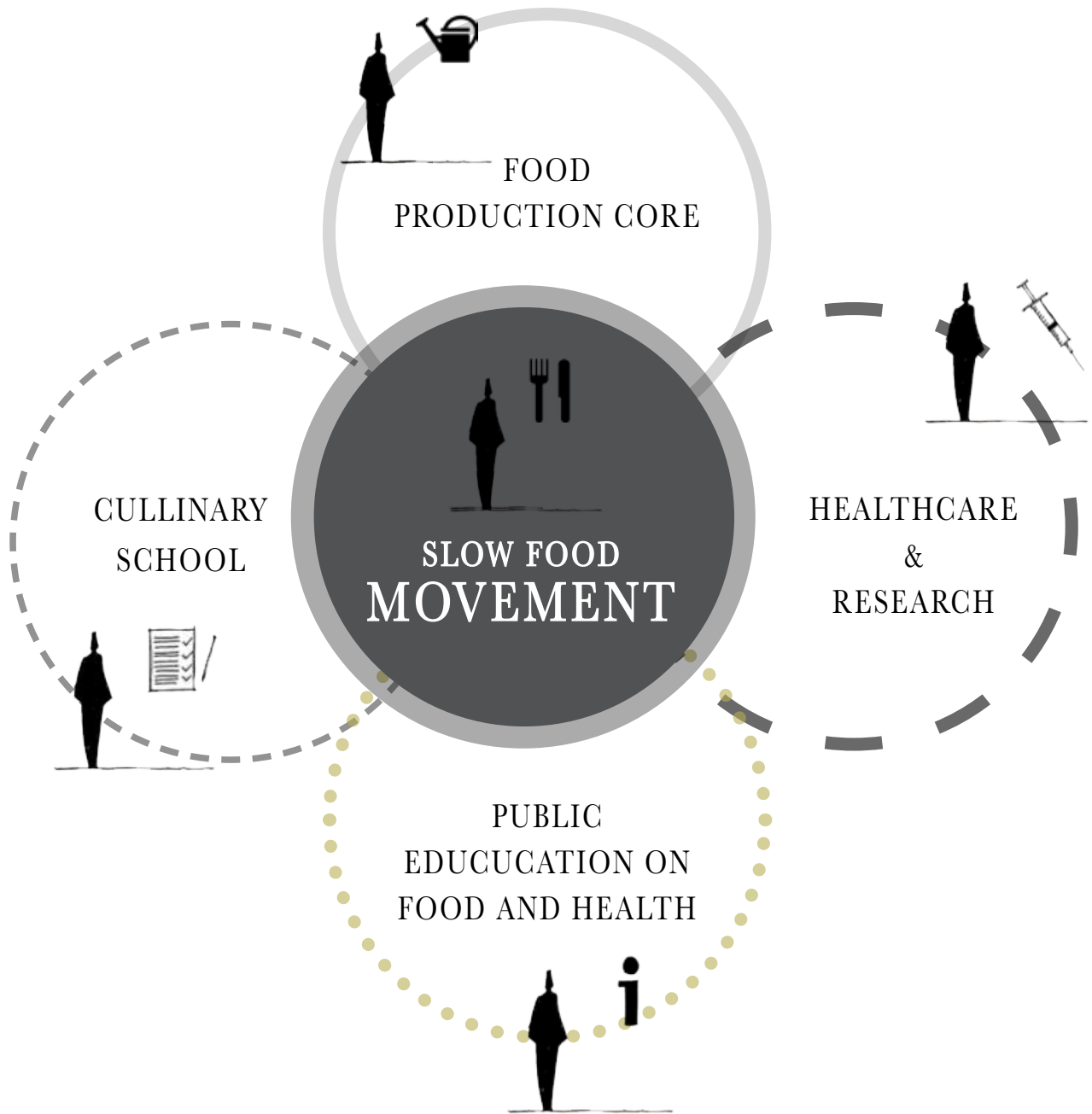
Thirdly, the **concept of wellness** is not fully understood and strived towards, for it should gain more importance in the city and not only be considered as the absence of illness. It becomes evident that there is a lack of spaces in our cities that truly motivate and celebrate wellness for all inhabitants.

Finally, it is crucial that the **inhabitants of the city become aware that they are an interlinked part of nature**, unconsciously seeking connection with it and the qualities it presents. Although all inhabitants are not able to enjoy nature to its fullest because of illness, the program presents major opportunities to explore spaces that provide

people with the necessary qualities of nature without improper exposure. However, in no way should the proposed program promote refuge from these illnesses and the management of these diseases in isolation, but it should rather seek to help people to **ultimately thrive beyond it**.

The program for the Wellness Centre thus includes three core components. The first is **Caring for our bodies**, the second is the **Cultivating of our minds** and the third the **Curing of our illnesses**.





**FIGURE 3.11**

*Diagram of programmatic composition  
(Author, 2016)*

### 3.7.1 THE SLOW FOOD PRODUCTION

#### CORE

The Slow Food movement promotes the idea that well-being is achieved through the internalized **Caring for Our Bodies**. Organic food produce will be cultivated on site using **permaculture techniques** in an attempt to restore the soil and simultaneously **reveal and celebrate the health benefits** of simplicity. It will demonstrate visually how the middlemen, commonly present in mass food production can be eliminated to avoid exposure to GMOs and other practices. The **urban food production core** also promotes **job opportunities** for the inhabitants of the surrounding environment, presenting opportunities for multiple NGOs to be involved.

FOOD SPINE
Kitchen (Nut/shellfish separation)
Cleaning of Food Facility
Cold Stores
Dry Stores
Wash-up Area
Storage
Seedling Preparation Area
Recycling Area
Disposal Area
Preparation Area (Plating) / Serving Counter
Cheff offices
Restaurant Seating Area
Cafeteria and Coffee Shop
Health Shop / Food Store
Entertainment Area
Ablutions
Connection to Food Delivery
<b>TOTAL APPROX AREA</b>



## 3.7 THE

# PROGRAMMATIC REQUIREMENTS

DAY VISITOR PUBLIC	STAFF	PATIENTS	DOCTORS & RESEARCHERS	LECTURERS	STUDENTS	APROX. AREA
	X					600 m <sup>2</sup>
	X					15 m <sup>2</sup>
	X					20 m <sup>2</sup>
	X					20 m <sup>2</sup>
	X					30 m <sup>2</sup>
	X					15 m <sup>2</sup>
	X					20 m <sup>2</sup>
	X					10 m <sup>2</sup>
	X					10 m <sup>2</sup>
	X					10 m <sup>2</sup>
	X					20 m <sup>2</sup>
X	X	X	X	X	X	500 m <sup>2</sup>
X	X			X	X	120 m <sup>2</sup>
X	X	X				70 m <sup>2</sup>
	X					20 m <sup>2</sup>
X	X	X	X	X	X	15 m <sup>2</sup>
	X					
						1495 m <sup>2</sup>



**FIGURE 3.12**

*Accommodation list for the Slow Food Production Core.*

*(Author, 2016)*



3.7.2 THE SPECIALIZED CULINARY SCHOOL

The **culinary school** will directly tie into the food production core, and serve as the **artisan platform** to expose and celebrate the art of cooking organic food. All kitchen’s and training studios will be exposed to support the notion of “**theatre food**”. The school will also provide **education** on **allergy-free cooking practices** to accommodate people that suffer from food allergies and intolerances.

CULLINARY SCHOOL
Training Kitchens / Studios (150 students)
Administration
Staff Room
Lecturer’s Offices (10 lecturers)
Ablutions
Social Areas
Library
Storage
Parking
Urban Agricultural Production Core
Herb Gardens
Fruit & Vegetables
Roof Gardens
<b>TOTAL APPROX AREA</b>





DAY VISITOR PUBLIC	STAFF	PATIENTS	DOCTORS & RESEARCHERS	LECTURERS	STUDENTS	APROX. AREA
				X	X	600 m <sup>2</sup>
	X			X		50 m <sup>2</sup>
	X			X		15 m <sup>2</sup>
				X		40 m <sup>2</sup>
	X			X	X	25 m <sup>2</sup>
					X	100 m <sup>2</sup>
	X	X	X	X	X	250 m <sup>2</sup>
	X					30 m <sup>2</sup>
X	X	X	X	X	X	100 Bays
	X				X	
	X				X	
	X					
	X					
						1210 m <sup>2</sup>



**FIGURE 3.13**

*Accommodation list for Culinary School.*

*(Author, 2016)*

### 3.7.3 THE CONFERENCE AND EXHIBITION FACILITY

In order to **Cultivate our Minds**, the Wellness Centre will include an **educational platform** that serves as a **public interface**. Here education can be provided on how to deal with urban diseases by presenting new related research and technologies. It includes an **auditorium** for larger conferences as well as an **exhibition space** for expos and smaller events. The facility can also be hired out and used for other functions since it is in close proximity to the Gautrain Station.

CONFERENCE AND HOTDESK FACILITY
Auditorium / Lecture Rooms (300 people)
Projection Room
Stage
Backstage
Exhibit Space / Hotdesk Meeting Rooms
Storage
Outdoor Amphi theatre
Entrance Foyer
Reception
Security Area
Ablutions
Parking (400 people)
Connection to Delivery Area
Connection to Food Spine
<b>TOTAL APPROX AREA</b>



DAY VISITOR PUBLIC	STAFF	PATIENTS	DOCTORS & RESEARCHERS	LECTURERS	STUDENTS	APROX. AREA
X				X	X	300 m <sup>2</sup>
	X					25 m <sup>2</sup>
			X	X	X	20 m <sup>2</sup>
	X					20 m <sup>2</sup>
X			X	X	X	500 m <sup>2</sup>
	X					50 m <sup>2</sup>
X					X	200 m <sup>2</sup>
X						100 m <sup>2</sup>
	X					
	X					
X	X		X	X	X	25 m <sup>2</sup>
						200 bays
	X					
X	X	X	X	X	X	
						1090 m <sup>2</sup>



**FIGURE 3.14**

*Accommodation List for the Conference and Exhibition Facility.*

*(Author, 2016)*

### 3.7.4 THE IMMUNOTHERAPY CLINIC AND RETREAT

**T**o **Cure our Bodies of Illnesses**, the treatment of allergic rhinitis, asthma and skin allergies such as eczema will take place in an **immunotherapy clinic** and other **alternative treatment facilities**, depending on the symptoms presented. The clinic will also have the necessary **laboratories for conducting research** on diseases that predominantly exist in the context of Pretoria, to **produce locally appropriate data** such as pollen counts and other aspects that influence our health.

HEALTHCARE & RESEARCH CENTRE
Reception
Record Storage
Administration Area
Waiting Area
Consultation Rooms
Immuno Therapy Treatment Rooms (60 patients)
Staff Amenities
Supply Storage
Clean and Dirty Utility
Disposal Areas
Testing Laboratories
Children Playing Area
<b>TOTAL APPROX AREA</b>





STAFF	PATIENTS	DOCTORS & RESEARCHERS	LECTURERS	STUDENTS	STAY OVER	APROX. AREA
X	X					15 m <sup>2</sup>
X		X				50 m <sup>2</sup>
X		X				50 m <sup>2</sup>
	X					25 m <sup>2</sup>
	X	X				100 m <sup>2</sup>
X	X	X			X	500 m <sup>2</sup>
X		X				50 m <sup>2</sup>
X						40 m <sup>2</sup>
X						15 m <sup>2</sup>
X						10 m <sup>2</sup>
	X	X				150 m <sup>2</sup>
	X					25 m <sup>2</sup>
						1130 m <sup>2</sup>



**FIGURE 3.15**

*Accommodation List for the Immunotherapy Clinic and Laboratory.*

*(Author, 2016)*



**FIGURE 3.16**

*Combination of Illustrations by Lorraine Loots  
(Lorraine Loots, 2013-2015)*

## 3.8 SUMMARY

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It is the changing of our natural environment, the changing of our immune systems to adapt and resist the attacks of the environment and finally the awareness among humans as to what the consequences are of how we treat our bodies as well as our environment that have a direct impact on our health and wellbeing. It is these three key aspects that the Wellness Centre for Urban Diseases will ultimately attempt to expose and address, so that the result may be threefold: to ensure a **healthy environment**, a **healthy body**, and a **restored connection** between human and nature.

