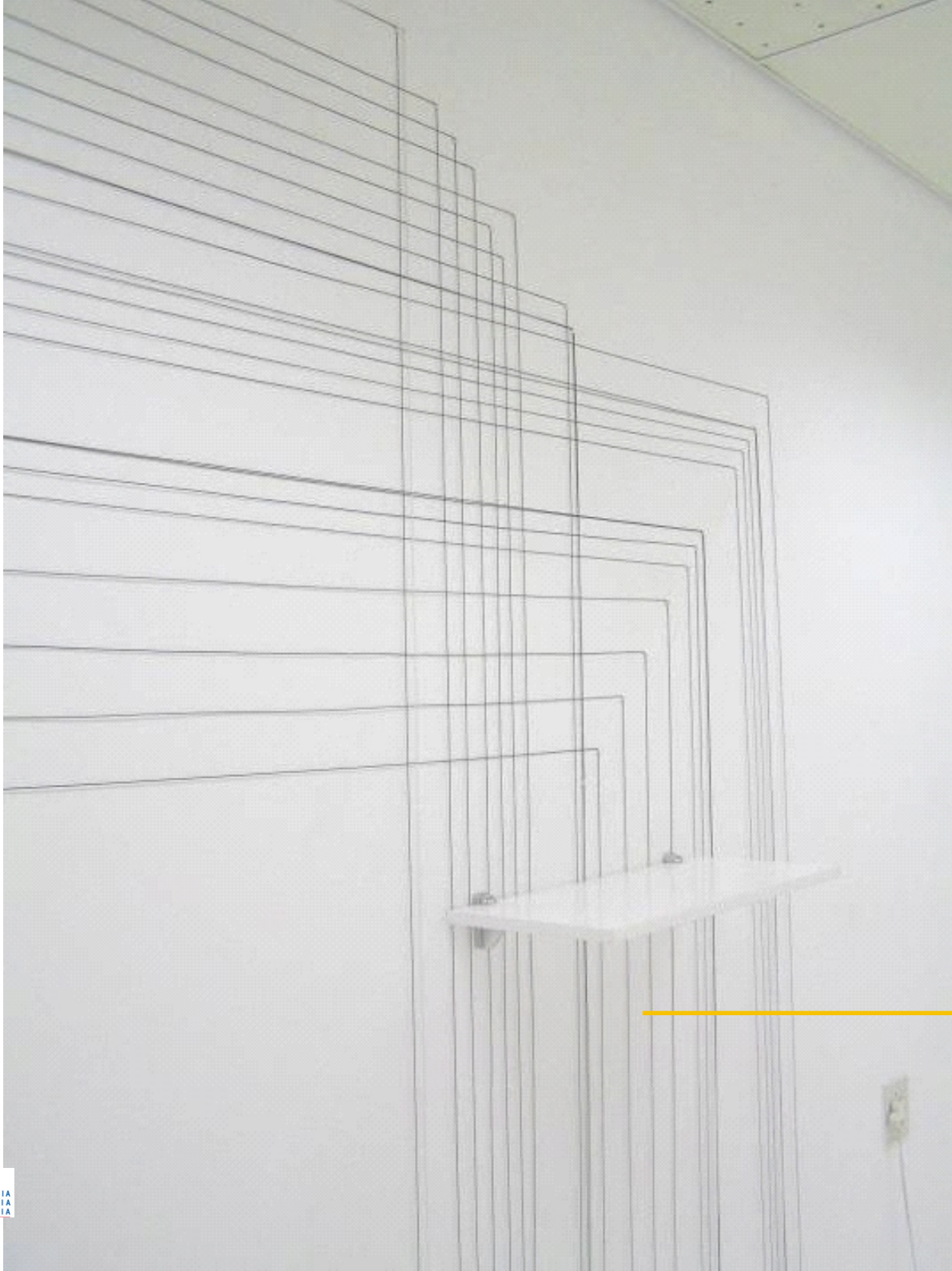


FIG 1-2: JENNA BURCHELL/UNIVERSITY OF PRETORIA



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incubation

Incubation is the term used to describe a period or a phase that is required within the early stages of life when an organism is unable to sustain its own life. It therefore requires external influences or providence to protect and nurture it, in order to survive and reach maturity or independence.

Business incubation is a process that provides entrepreneurs with business support through targeted resources and services that accelerates the successful development of their start-up company. Resources and services are provided, according to the needs and requirements of the entrepreneurs, and the process is orchestrated by the incubator management in order to create a successful incubator.

This business incubator would be specifically developed for the University of Pretoria and therefore the resources and services provided there will be according to the needs and requirements of recently graduated entrepreneurs in the fields of design/art and engineering. This incubator shall serve as the representation or the product of years of translating information to the students, honoring the University of Pretoria.

There is a narrative describing the University of Pretoria, it is the narrative of 'Translating Information' and it is constantly being written in the minds of the public sector. The incubator shall therefore be the conclusion to the narrative, displaying the result of the translated information and the competency of graduates in the fields of design/art and engineering, in order to form an interface between the university and the business world.

business incubation

"Business incubation is a unique and highly flexible combination of business development processes, infrastructure and people designed to nurture new and small businesses by helping them to survive and grow through the difficult and vulnerable early stages of development." (Business Incubation Limited 2006)

problem statement

The leap from the university to the industry or business world, is for many new graduates too large to take in order to establish their own company. They usually don't have the capital investment and cannot afford to start up their own business with the required facilities, equipment, software or man-power. "So many brilliant ideas have died in the garage because technologists didn't have the know-how to find resources to assure their survival in a competitive landscape." (Richards 2002: 3)

Innovative newly qualified graduates need to prove themselves to the world through their God-given talents and ideas and can only really put their name on the map by starting their own company. Graduates being compelled to join a company to attain, over a number of years, the necessary capital investment and business skills, cannot flourish and reach their full potential whilst being overshadowed by the company.

There is a need for an interface between the university and the industry, a middle ground and an incubator where newly graduates can be nurtured into maturity in order to be independent. An opportunity for innovative entrepreneurs to start his/her own company by providing them with the necessary services and conveniences, immediate and grand exposure as well as training in the field of business management.

Lynnwood Road as the front facade of the University of Pretoria, forms the visual interface with the public sector. Lynnwood Road is a narrative journey describing the translating of information being offered by the University of Pretoria. This narrative is formed in each person's own thoughts driving along Lynnwood Road, but the narrative is incomplete as it is without a conclusion. There isn't a building that serves as an exhibition space for the university to display the products and innovations that comes from absorbing years of information at the University of Pretoria.

problem statement

Most graduates, studying in the field of design and engineering, don't have the necessary business skills, such as business management, finance and tax, labour relations as well as project management and marketing which are all required to make a success of a business.

the need

There is a need for a building that provide recently qualified graduate entrepreneurs, in the fields of design/art and engineering, with the necessary resources and services for their start-up businesses. An opportunity to develop and display their innovations and artwork to the world. An iconic building to form the conclusion to the Lynnwood Road narrative, showcasing the competence of the university, in order to form the interface between the University of Pretoria and the business world.

How did business incubation start?
How does business incubation work?
Is there a need for business incubators?
What are the benefits for South Africa?
Who goes in for incubation?
What should be provided to the graduates in order for the building to serve as an incubator and an interface between the university and the business world?
What are the characteristics of an incubator?
What would be the determining factor to prove their readiness and independence?
How can Business Enterprises and Continuing Education of the University of Pretoria be incorporated?
Who will be the client or operator that will orchestrate this incubator?
Where should the building be allocated?
How can the building represent the conclusion to the narrative of 'Translating Information'?
How can the building maximize the exposure for the newly graduates?
What should the iconic building look like?
How can the space inside be designed to create an optimal environment for the flow of creative ideas?
How can the concept of 'open building' allow for easy in and out lease agreements?
How can the building's aesthetics represent an incubator for innovative ideas?
How can urban regeneration take place alongside Lynnwood Road, in order to form an university precinct where a student can feel comfortable and relate to?

research questions

These research questions were formulated to guide the required research to be conducted in order to build up a sound argument, which would render my project viable.

"Resources are the missing link between the companies that make it and those that crash and burn." (Richards 2002: 6) The incubator should therefore provide services and facilities to the inventor to enable the development of their ideas and then provide for an exhibition space which would be transparent to Lynnwood Road. The incubator would function by providing the tenants with shared facilities and commodities, making it possible for each individual of about ten recently qualified mechanical engineers, fashion designers, etc. to start their own business. The shared facilities or commodities should take place in four main categories namely space, man-power, software and equipment.

Most innovative entrepreneurs in design/art and engineering have the brilliance and creativity but they are not business people. The incubator should therefore provide the tenants with the necessary programs in the field of business management for them to successfully run their own business in order for it to be sustainable. There should be continuous development programs available, relevant to their particular field in order for the tenants to be informed and updated with the latest developments and innovations. Research would also involve the discovering of principles and techniques in designing the optimum environment which stimulates creative thinking and guides innovative thought in order to create an unique and sustainable commercial product.

This Incubator should be placed at the end of the narrative journey and should be an iconic building to represent the conclusion of the narrative of 'Translating Information'. The building should serve as an exhibition space for the university, displaying the results and products of years of translated information, in order to honor the University of Pretoria. Incorporate urban design principles in order to better present and utilize Lynnwood Road as the front facade of the University of Pretoria. Through urban principles, stitch the university back into the urban fabric where it was cut off by Lynnwood Road.

research goal

To provide a space where recently qualified innovative graduates can be given the opportunity to develop and present their ideas and talents within a sustainable environment, in order to form an interface between the university and the business world. This space should be an incubator where they can be nurtured into maturity, in order to establish their own company or be grasped up by big innovative companies. The incubator's main focus will be to develop and exhibit innovative ideas, to provide publicity and exposure for firstly the inventor and secondly for the University of Pretoria.

The incubator would be managed in two ways namely the direct and indirect method of management. The direct method requires the Incubator management group to do market research in order to establish where the need lies for innovative ideas. Once they have established the need, they would approach the university for innovative graduates, who would then develop an innovation at the Incubator of Innovation which would best suite that need.

The indirect method functions where the inventor with his/her invention would approach the incubator, in order for the management group to market his/her innovation to the relevant people. Then once an investor have been established the graduate is invited to develop it at the Incubator of Innovation and start his/her own business.

Therefore in both cases it would be the Incubator who establishes the investor in order for the graduates' business to start, but the intellectual property remains the graduates' own. The graduates would therefore have no need for capitalization as they would already start with a salary from day one of development.

Enterprises@UP would receive a percentage fee of each individual's fee which comes from either their investors or the profit made, in order to make a profit for the University of Pretoria. The building that would be designed would also accommodate for the Continuous Education@UP group within the area schedule to form part of the interface between the university and the business world.

the client

The client would be Enterprises@UP who is currently handling the corporate affairs of the university. They already consist of two departments namely Business Enterprises@UP and Continuing Education@UP and I propose to add a third department which would be the Incubator@UP. Enterprises@UP would therefore be the orchestrators of the Incubator of Innovation.

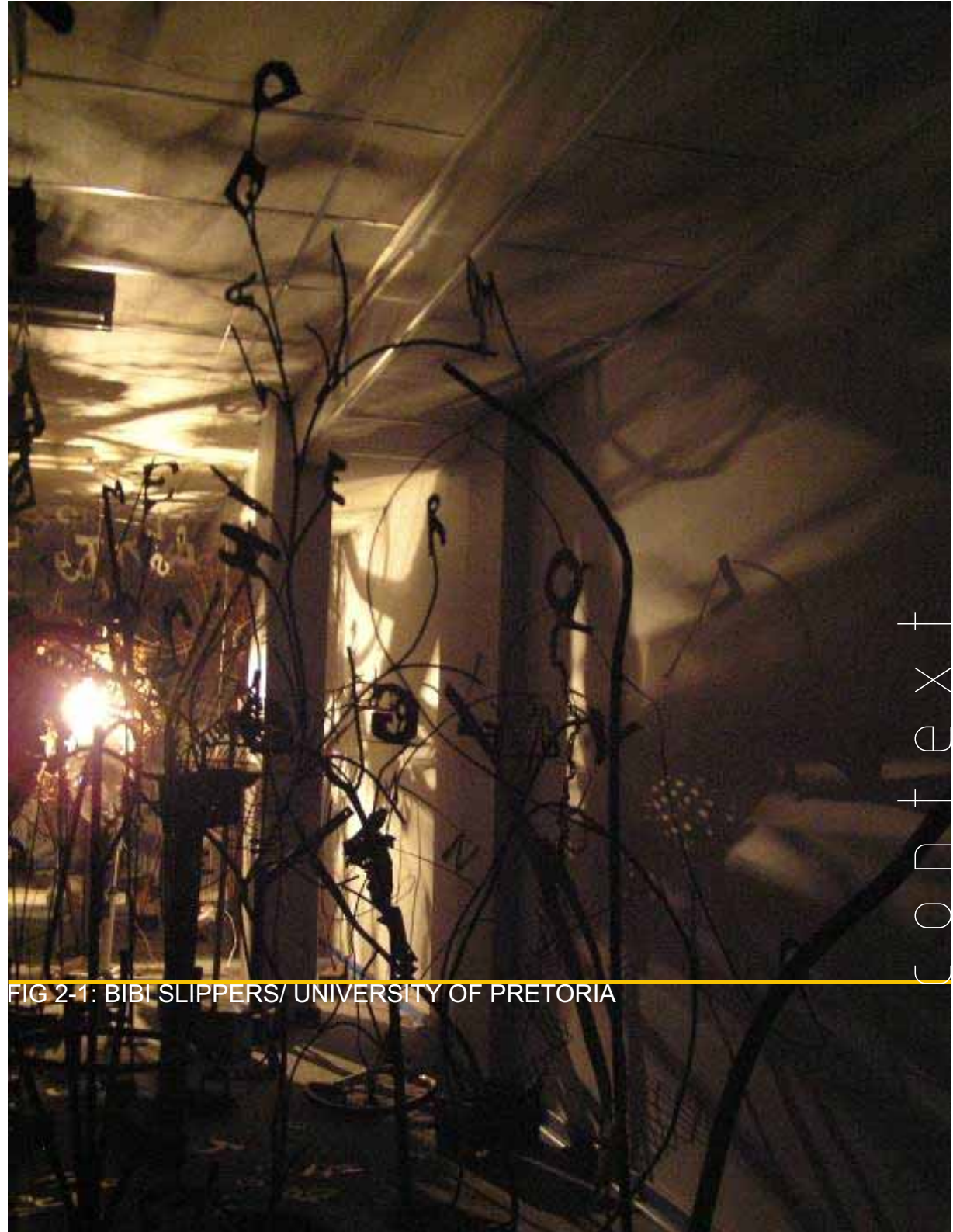


FIG 2-1: BIBI SLIPPERS/ UNIVERSITY OF PRETORIA

Context



FIG 2-2: AFRICAN CONTINENT

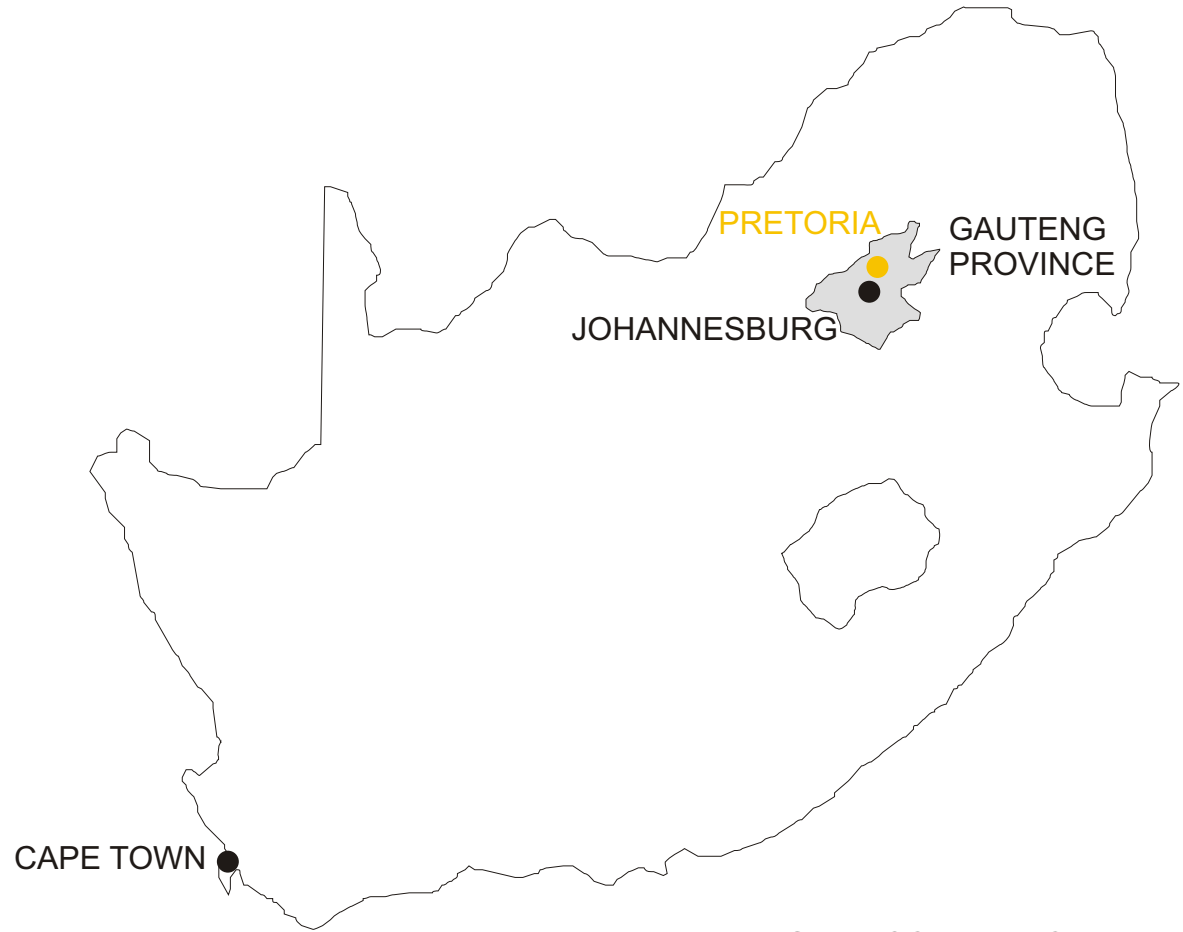


FIG 2-3: CONTEXT OF PRETORIA

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global context

The University of Pretoria, being close to the CBD of Pretoria, is situated in the Gauteng province in South Africa on the African continent. Indicated is the wealthiest cities in South Africa and also where the most innovative ideas come from, due to the creative and growing companies wanting to be in these economically stable environments. Pretoria, being the capital of South Africa, is connected with Johannesburg and Cape Town through the N1 Highway. By 2010 the Gautrain project will be finished, which is a submerged high speed train commuting between Pretoria and Johannesburg.

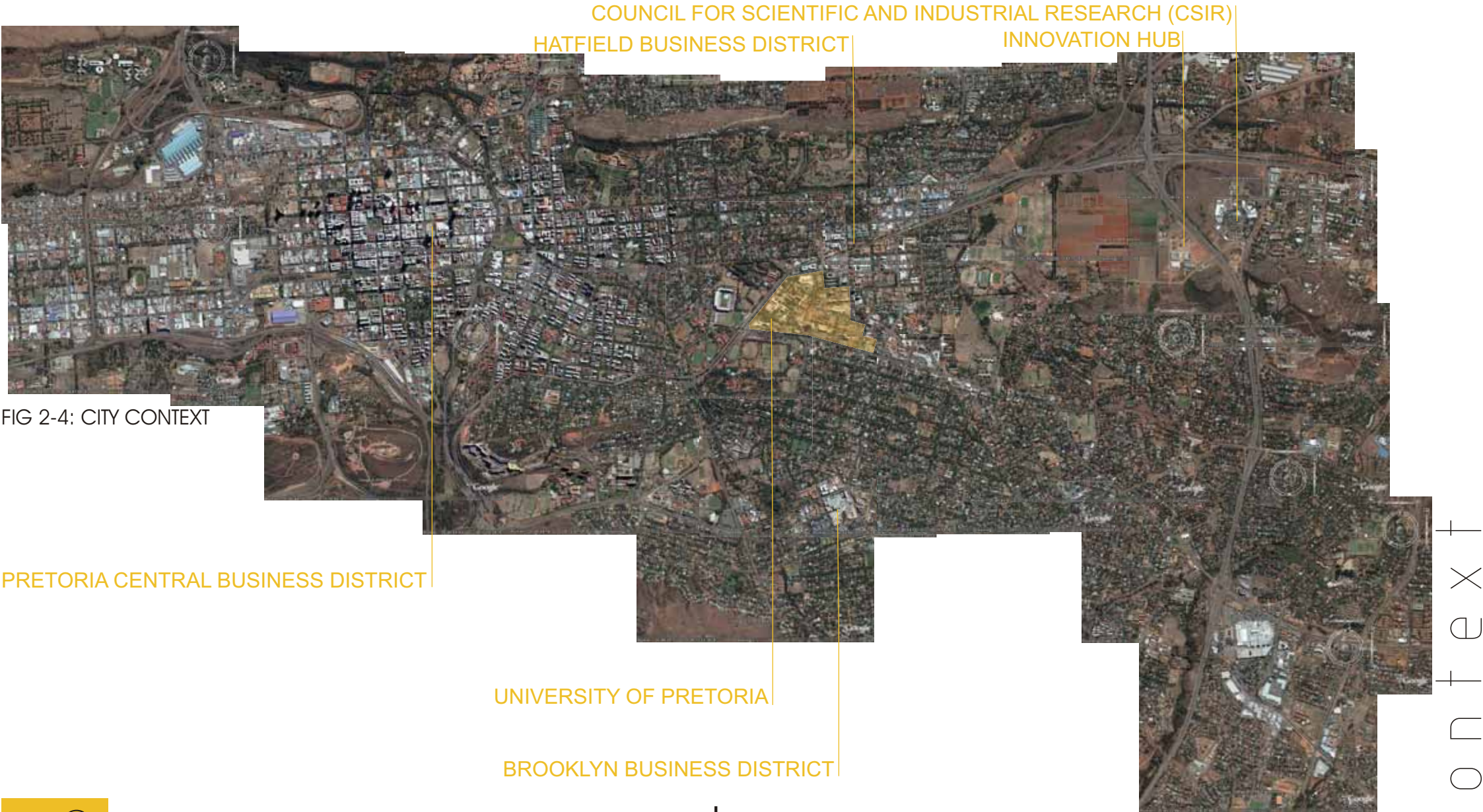


FIG 2-4; CITY CONTEXT

C O N T E X T

urban arena

Pretoria expanded and developed from the centre of town into all directions with the University of Pretoria established on the eastern side. The university is within close proximity to the CBD as well as Hatfield and Brooklyn's Business Districts. The Incubator will be located on the university's premises forming the interface between the university and the surrounding as well as the international business world. The Innovation Hub and the CSIR is also relatively close to the university which serves to create an inspiring environment for the young entrepreneurs' startup innovative companies.



FIG 2-4: CITY CONTEXT

C O N T E X T

important corridors

The N1 highway is the most important corridor in South Africa, connecting places from the southern tip of Africa in Capetown, to Cairo at the top of Africa. The corridor is however not called the N1 once it crosses the South African border but the principle still applies. The N1 also crosses the N4 highway which connects places from the western to the eastern sea border. The University of Pretoria is relatively close to both these important corridors, and when considering that the Incubator would be situated on these premisses, initiating an internationally acclaimed incubator of innovation could be possible.



FIG 2-4; CITY CONTEXT

C O N T E X T

important corridors

The University of Pretoria is situated on Lynnwood Road which is one of the most prominent roads in Pretoria. It connects the university with central business district of Pretoria on the western side and with the N1 highway on the eastern side. People coming from the east and from the highway therefore utilizes Lynnwood Road to get to the CBD or to Loftus Versveld sport stadium. The buildings situated on this road will receive enormous public exposure. Therefore with the Incubator situated on the university's premisses on Lynnwood Road, there will be prime exposure for the young entrepreneur's startup businesses.



FIG 2-4; CITY CONTEXT

C O N T E X T

important corridors

The Gautrain connects Johannesburg, which is the largest city in South Africa, with Pretoria with a high speed submerged train. Therefore through this ease of transport made possible by the Gautrain, huge business opportunities are opened up. There is a railway track to the north of the university, with two Gautrain stations on this track. A train station right opposite the university connects the university with the CBD, the Gautrain and thus Johannesburg. Through this connectivity, accessibility to the Incubator is increased and thus motivating business opportunities.

FIG 2-5: CITY FRAMEWORK



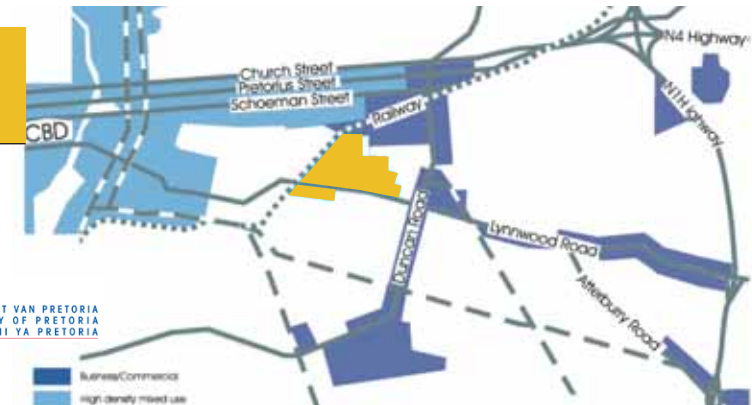
CORRIDORS



GREEN AREAS AND SPORTS FACILITIES



RESIDENTIAL AREAS AND EDUCATIONAL FACILITIES



BUSINESSES/COMMERCIAL AND MIXED USE

city framework

The University of Pretoria is well connected and well situated in the urban framework of Pretoria with nearby surrounding residential areas, facilities of education as well as nearby green areas and sports facilities. Most important of all is the fact that the university is within close proximity to businesses, which is beneficial for the business incubator.



LOFTUS VERSVELD

BOYS HIGH SCHOOL

UNIVERSITY OF PRETORIA
SOUTH CAMPUS

PRETORIA-OOS SCHOOL

UNIVERSITY OF PRETORIA
MAIN CAMPUS
BROOKLYN RESIDENTIAL AREA

SITE

HILLCREST BUSINESS CENTER

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urban focus

This is the Main Campus of the University of Pretoria with the South Campus on the southern side of Lynnwood Road. The site where the Incubator will be located is situated on Lynnwood Road to gain maximum exposure. It would be the last building of the university from the west and the first building from the east. Loftus Versveld is a sports stadium situated to the west of the university which attracts sports fans from all over the country. Through Loftus Versveld people from all over the country pass by the university as well as the Incubator, providing tremendous exposure for the entrepreneurs' businesses.

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RAILWAY
TRAIN STATION

LYNNWOOD ROAD

MAIN ENTRANCE

SITE

DUNCAN STREET

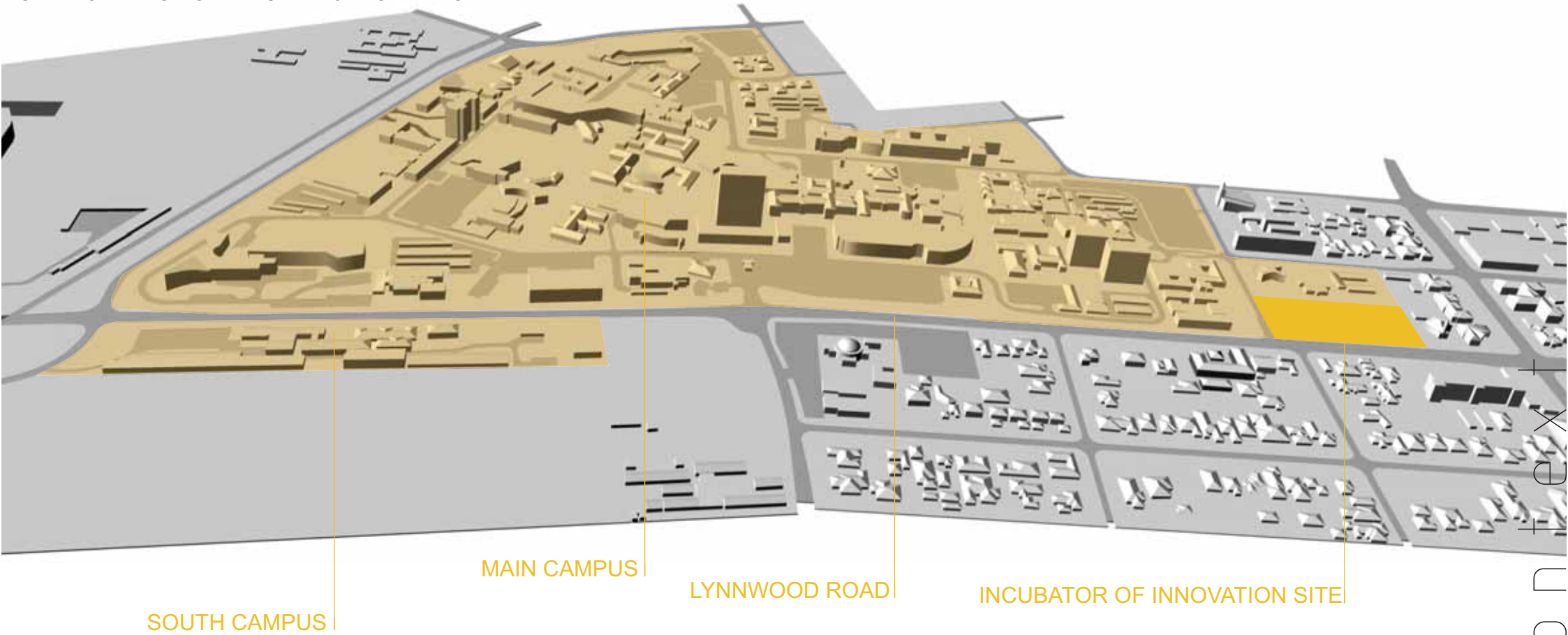
ROPER STREET

urban focus

The main entrance to the university is on Lynnwood Road with the most prominent buildings facing it in order to make Lynnwood Road the front facade of the University of Pretoria. Duncan Street connects the Brooklyn business district with Hatfield business district which also has corporate businesses alongside the road. Therefore with the site for the Incubator on Lynwood Road and close to Duncan Road, the entrepreneur's businesses would add to the corporate 'genius loci'.

C O N T E X T

FIG 2-7: 3D IMAGE OF THE UNIVERSITY OF PRETORIA



SOUTH CAMPUS

MAIN CAMPUS

LYNNWOOD ROAD

INCUBATOR OF INNOVATION SITE

university of pretoria

FIG 2-8: FIGURE GROUND STUDY - URBAN STITCHING

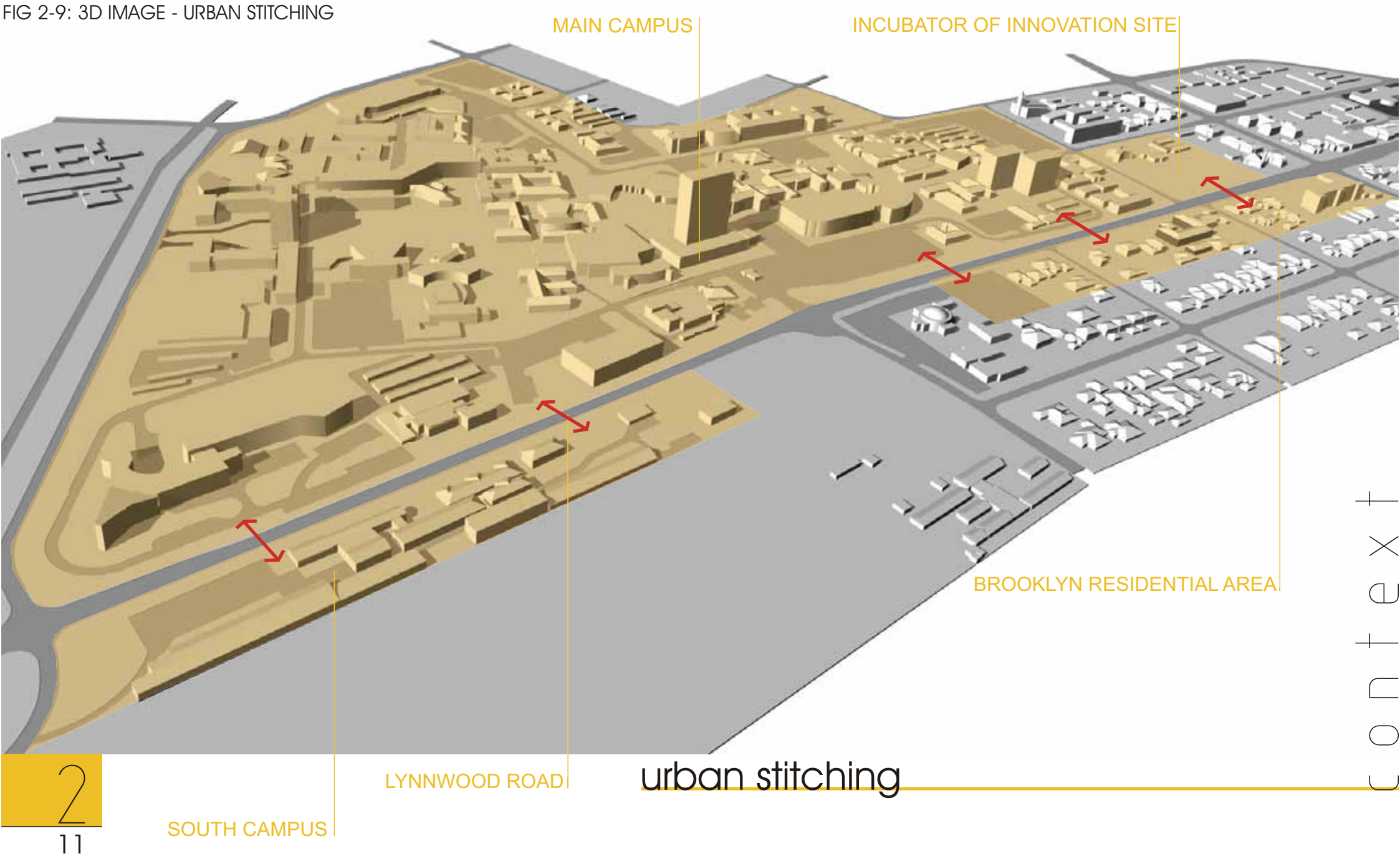


urban stitching

The university is cut off by the railway and Lynnwood Road from the rest of the urban fabric, creating a fragmented island which prohibits integration with the surrounding urban fabric. Therefore urban stitching is required through urban design techniques in order to integrate the university with the Brooklyn residential area to the south of Lynnwood Road. Through this also establish and emphasize an identifiable character suited for a university precinct. Houses to the south of the university that are not of architectural or historical value can be utilized for high density mixed use student housing in order to achieve integration.



FIG 2-9: 3D IMAGE - URBAN STITCHING



C O N T E X T



EXISTING BUILDINGS

CAR DOMINATION

GREEN AREAS

existing urban framework

The figure ground study indicates the existing urban framework of the University of Pretoria as well as the area to the south of Lynnwood Road. As can be seen the urban fabric of the university is much more coarse than the residential area as a result of the larger buildings. In order for urban stitching to take place this should be examined as this is part of the reason why there isn't integration between the areas. The other reason is as a result of Lynnwood Road dividing the two areas and creating a barrier which prohibits integration.

FIG 2-10: URBAN FRAMEWORK OF THE UNIVERSITY



FIG 2-11: FIGURE GROUND STUDY - FOCUS AREA

focus area

The diagram indicates where the focus area of the thesis would be as this area would have the most impact on the design decisions taken for my building. Therefore a thorough urban analysis and urban design will take place in this area in order to present the decisions taken for my building successful. The area encompasses the part of the University of Pretoria that faces Lynnwood Road, which is the front facade. The thesis will deal with Lynnwood Road itself as well as the area to the south of Lynnwood Road, which includes the South Campus and the Brooklyn residential area.

SOUTH CAMPUS

MAIN CAMPUS

LYNNWOOD ROAD

INCUBATOR OF INNOVATION SITE

focus area

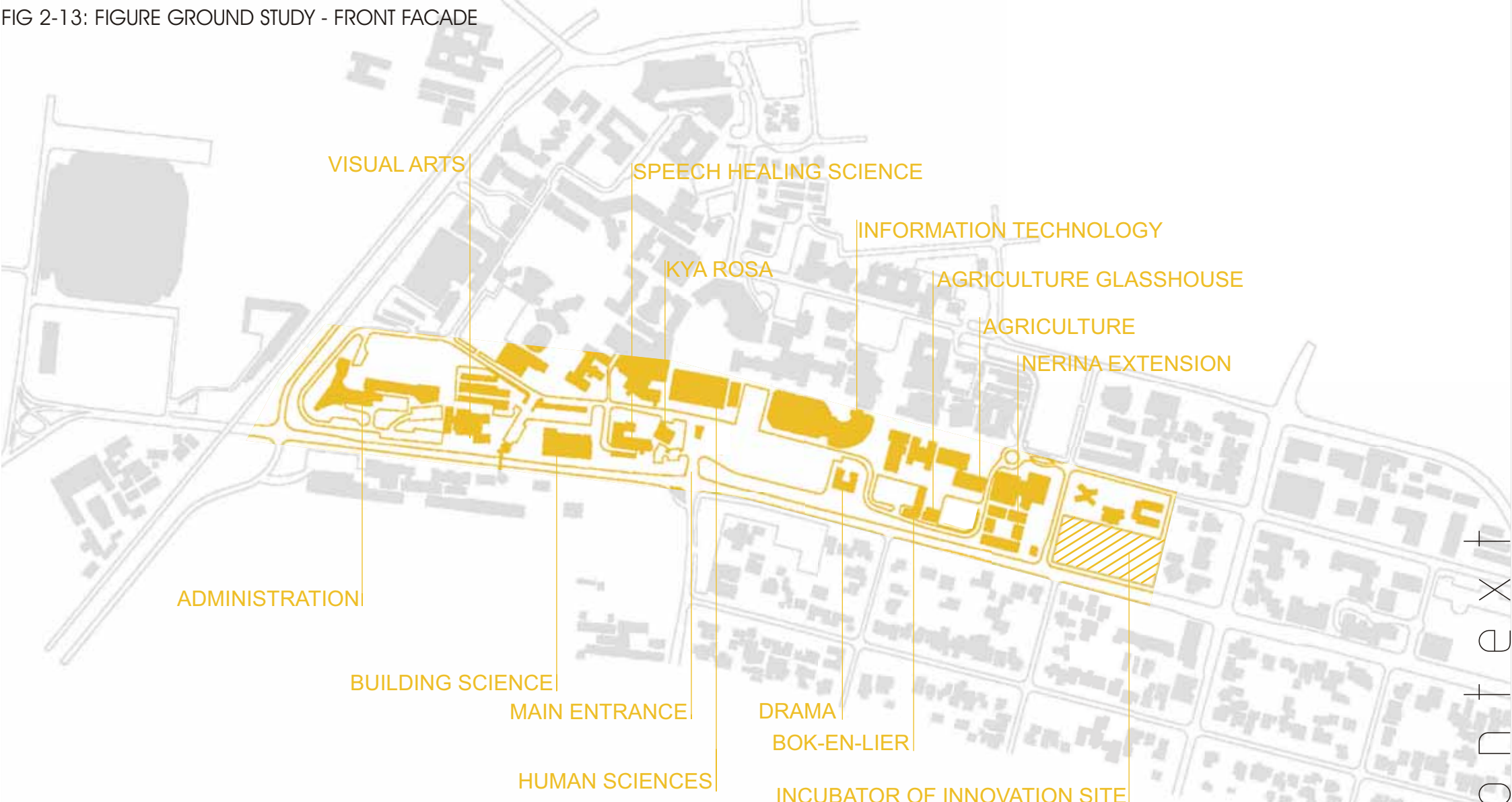
BROOKLYN RESIDENTIAL AREA

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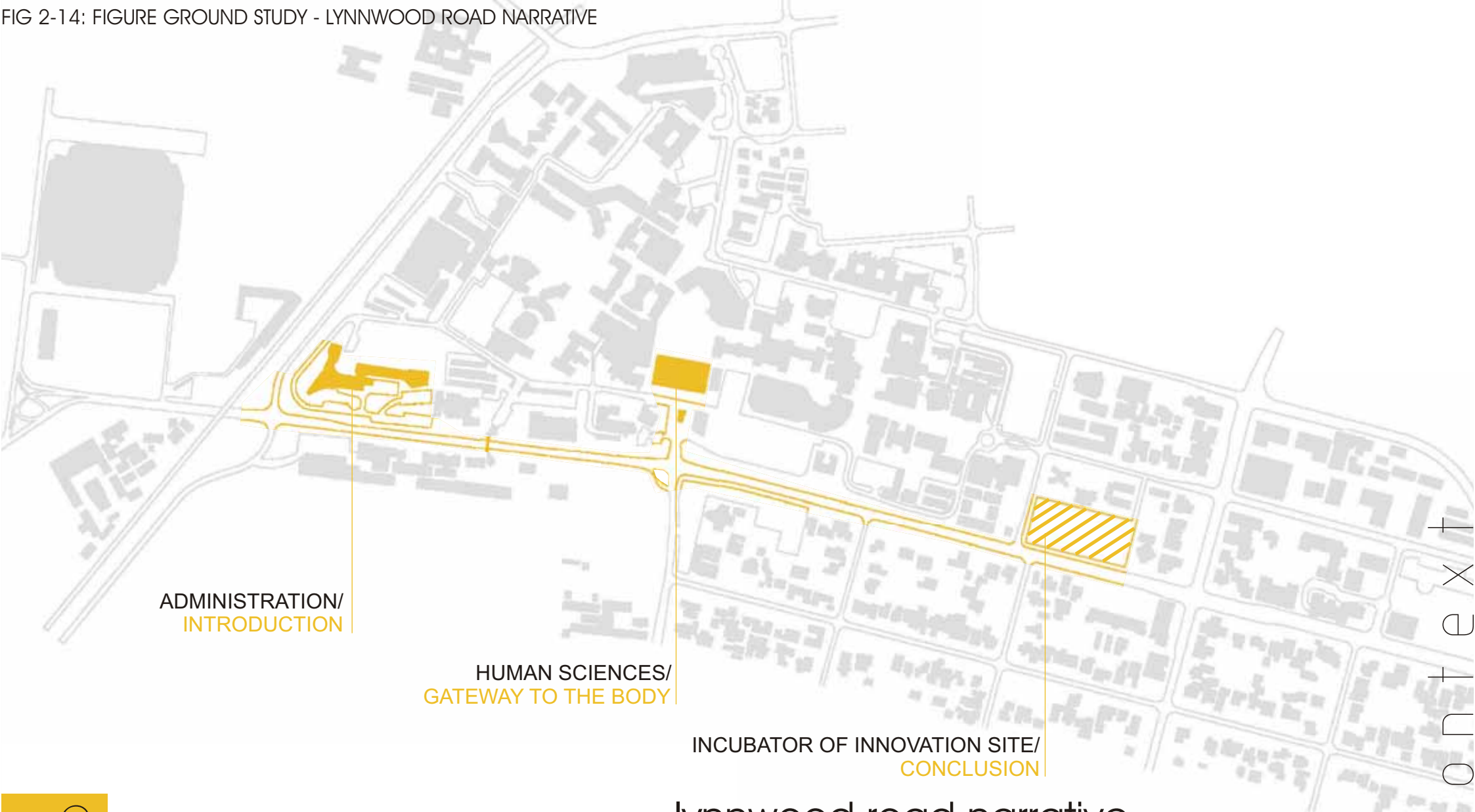
C O N T E X T

FIG 2-12: 3D IMAGE - FOCUS AREA



front facade

The front facade indicates and display in a physical way, the competency of the University of Pretoria and should therefore be examined to ensure the displaying of excellence. The buildings which contribute to the aesthetics of the facade is indicated on the diagram. The facade is currently extremely fragmented with large open spaces used for parking. There are also buildings such as the Bok-en-Lier and the Agriculture Glasshouse which is of no architectural or historical value and does not contribute to the facade. The new extension to the Nerina residence has toilet windows facing Lynnwood Road!



ADMINISTRATION/
INTRODUCTION

HUMAN SCIENCES/
GATEWAY TO THE BODY

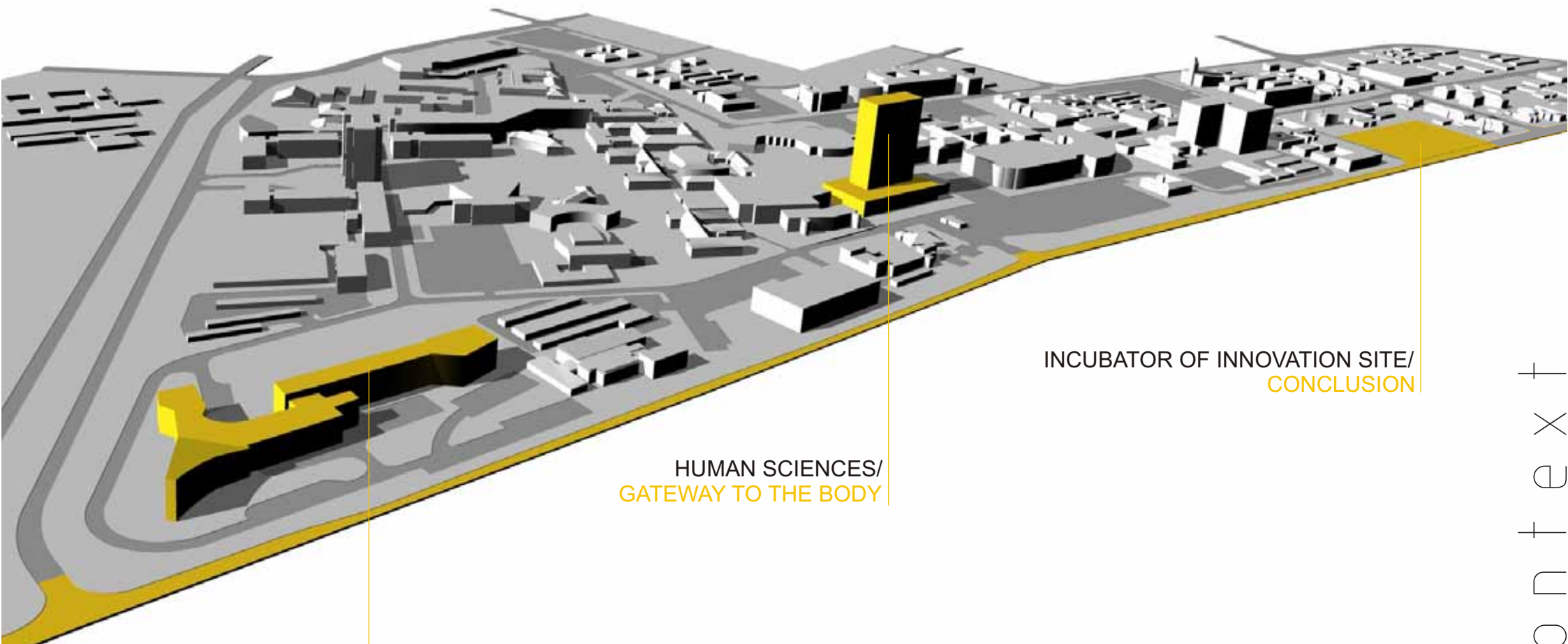
INCUBATOR OF INNOVATION SITE/
CONCLUSION

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lynnwood road narrative

Lynnwood Road as the front facade of the University of Pretoria, forms the visual interface with the public sector. Lynnwood Road is a narrative journey describing the translating of information being offered by the University of Pretoria. This narrative is formed in each person's own thoughts driving along Lynnwood Road, but the narrative is incomplete as it is without a conclusion. There isn't a building that serves as an exhibition space for the university to display the products and innovations that comes from years of absorbing information at the University of Pretoria.



ADMINISTRATION/
INTRODUCTION

HUMAN SCIENCES/
GATEWAY TO THE BODY

INCUBATOR OF INNOVATION SITE/
CONCLUSION

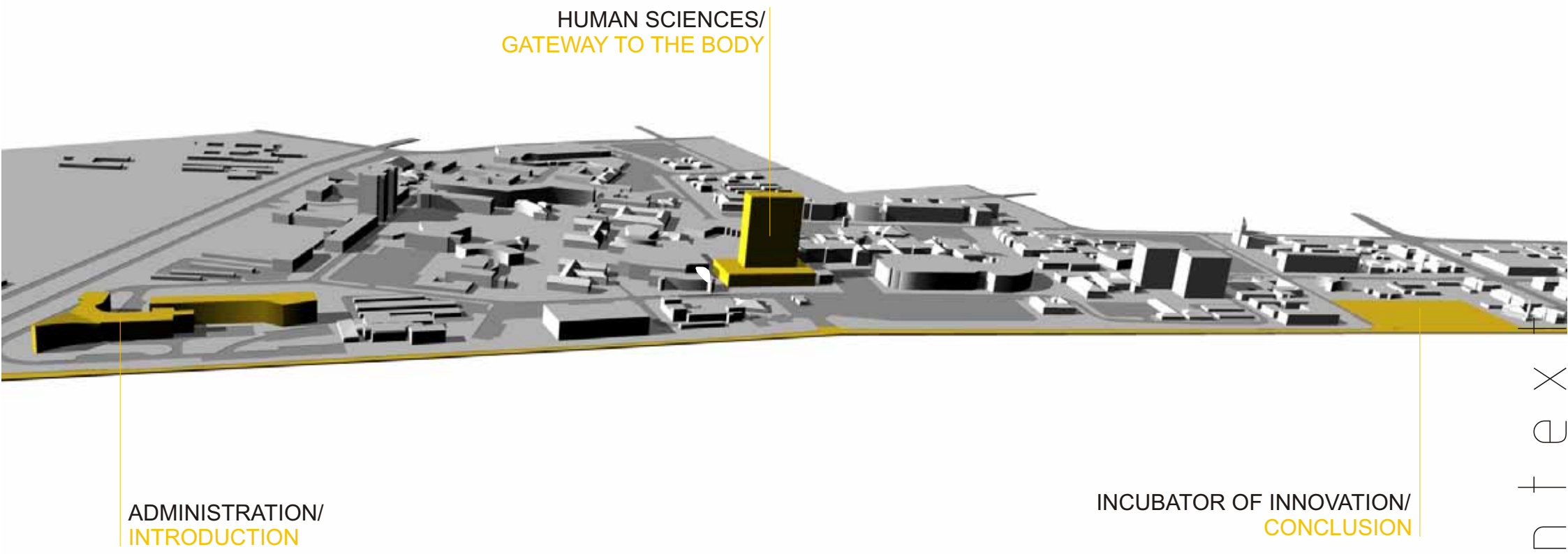
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lynnwood road narrative

It was the intention that when one is approaching the university from the central business district in the west, that there would be an iconic building representing the introduction or the start of the university narrative, which would also serve to be a landmark for Pretoria. The Administration building of the university serves to be just that, it is one of the most prominent landmark buildings in Pretoria, due to its extraordinary architectural design.

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lynnwood road narrative

When driving past the university, old students are reminded of their years of studying, their friends and of all the good times as well as the sad times. The buildings however display the history of translating information of the different sciences with the Human Sciences building represented as the gateway to this information hub. Passing this iconic building, there is a world of information available to those who are fortunate enough to be accepted to the university. The Human Sciences building is therefore represented as the body of the Lynnwood Road narrative.

ADMINISTRATION/
INTRODUCTION

INCUBATOR OF INNOVATION SITE/
CONCLUSION

CLIENT SERVICES CENTER/
GATEWAY TO THE BODY

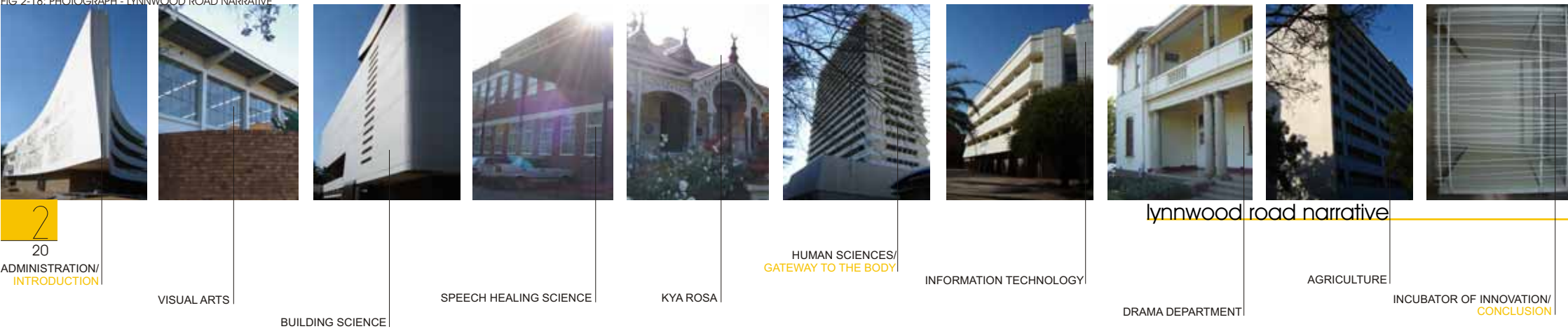
lynnwood road narrative

The narrative that is constantly being written in the minds of the people passing the university, is a narrative of 'Translating Information'. The Incubator of Innovation should be placed at the end of the narrative journey and should be an iconic building to represent the conclusion of the narrative and the product of the university. The building should be an exhibition space for the university, displaying the results and products of years of translated information, in order to honor the university and showcasing their competency.

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FIG 2-18: PHOTOGRAPH - LYNNWOOD ROAD NARRATIVE



Within the socio-economic context of South Africa there are an enormous need for job creation, empowerment and social upliftment. New and small firms are extremely important for the country's economic well-being as it increases the employment rate, unfortunately some statistics have shown that there is a very high failure rate of new small businesses. The main reasons for that being a lack of business management expertise and under-capitalization.(Roure and Keeley 1990)

Business incubators aim to solve these problems by nurturing start-up companies into maturity. This Incubator@UP will achieve this by providing graduates in the fields of design/art and engineering, with the necessary business skills as well as shared facilities in order to minimize their capitalization and start producing innovations. Once help is available to the entrepreneurs, the starting of new businesses will be motivated which would in turn create more jobs in South Africa.

Society in general pay the most money for intelligence and creativity, therefore when combined to form an innovation it is a recipe for success and economic upliftment. Therefore the most sustainable economies in the world are those driven by innovation and entrepreneurship. The incubator's main focus is to develop innovation and provide maximum exposure to the newly graduates. This shall be utilized for firstly their own development and economic upliftment and secondly for South Africa's socio-economic upliftment.

Regarding the ecological context, the single largest contributor to global warming is the building sector. As illustrated in the figure below, buildings not only use more than 40% of the planets energy demand but also uses a great deal of water and raw materials. Buildings also generate waste and potentially harmful atmospheric emissions, which have a huge impact on the ecology.

triple bottom line

The triple bottom line deals with the social, economical and ecological aspects which my project could effect, and which could effect my project. The decisions therefore made in this project and every project to come, will be evaluated according to the triple bottom line principle.

Environmental Impact of Buildings

Percentage of U.S., Annual Impact

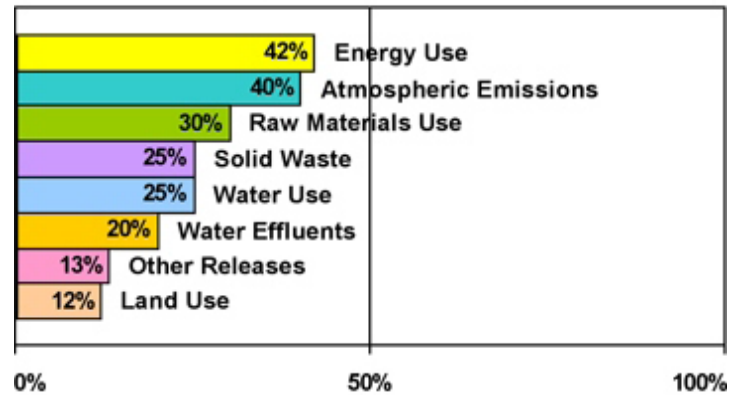


FIG 2-19: ENVIRONMENTAL IMPACT OF BUILDINGS

When considering the facts above there should be a drastic change in the way we design, manufacture, supply, install and maintain buildings. It is therefore important to design with these facts in mind, and any design whether it is developed in architecture, interior or landscape architecture or urban design, should be energy, water and waste sufficient. Buildings should be designed to save resources, be sustainable and conserve our planet for the generations to come.

There is a 2030 challenge for all design professionals with regard to reducing global warming. This challenge, initiated by Edward Mazria and Architecture 2030, requires design professionals to create buildings which use substantially less energy and reduce greenhouse gas emissions, whilst maintaining a healthy and comfortable space. The challenge includes targets such as an immediate reduction of 50% energy use for all new buildings. By 2010 - 60% with a 10% increase every five years in order to reach a carbon-neutral building environment by 2030.

triple bottom line

Architecture 2030 is a non-profit organization, which was established by Edward Mazria in 2002 in direct response to the current global-warming crisis. Their goal is: "To achieve a dramatic reduction in the global-warming-causing greenhouse gas (GHG) emissions of the Building Sector by changing the way buildings and developments are planned, designed and constructed." (Mazria, 2002) We as designers should adopt this goal of Architecture 2030 in order to be set in the right frame of mind which would allow us to create sustainable buildings.

The building to be designed, will be situated within a legislative context which is defined by the local authorities. The process of design shall therefore comply with all National, Provincial and Local laws and acts that may pertain to my project, with specific reference to the National Building Regulations.

triple bottom line

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