


DTU

## STUDIES OF UNIVERSITY CITIES

- *The case of Kongens Lyngby*



Rikke Brinkø | 01.08.2012

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 2 of 108

# Studies of university cities - the case of Kongens Lyngby

---

## Title page


Content	Master thesis
Thesis supervisor	Morten Elle, DTU Management Engineering
External thesis supervisor	Jørgen Olsen, deputy manager at Plan and Byg, Lyngby-Taarbæk municipality
Project period	1. February 2012 to 1. August 2012
Location	DTU Management Engineering, Technical University of Denmark Produktionstorvet, Building 424 2800 Kgs. Lyngby

The master thesis is set for 30 ECTS points.

01-08-2012 Technical University of Denmark

---

Rikke Brinkø

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 3 of 108

## Preface


This report has been completed in connection with my master thesis at the Danish Technical University, DTU. The thesis is handed in on the 01.08.2012, constitutes 30 ECTS points and has been given the title "Studies of university cities - the case of Kongens Lyngby". The report has been developed at DTU Management and throughout the process I have been guided by Morten Elle, associate professor at DTU as well as Jørgen Olsen, deputy chief at "Plan og Byg" at Lyngby-Taarbæk municipality.

The idea for the thesis was formed based on the City of Knowledge Strategy developed by the municipality of Lyngby-Taarbæk, and focus' mainly on the desire to turn the city in to a more lively university city as described in the strategy.

Many people have helped make the completion of this thesis possible, and without the input received from these people the theoretical background as well as the practical background for the initiatives suggested would not be as thorough as is the case now. I would therefore like to thank Claus Nielsen, University director at The Technical University of Denmark, DTU, Mark Lorenzen, Professor at Copenhagen Business School, CBS, Niels Tovborg Jensen, Former director for Campus Service, The Technical University of Denmark, DTU; Jørgen Rosted, former development director at FO-RA; Helle Juul, Architect MAA, PhD, CEO at JUULFROST Architects; Ole Kristian Bottheim, Plan & Project chief, Campus Service; DTU and Freja Ludvigsen, Development consultant, Lyngby-Taarbæk Municipality, for all making themselves available for my interviews during the process of developing my thesis, Jens Kvorning, Architect, professor and director of the Centre for Urban Planning at The Royal Danish Academy of Fine Arts School of Architecture for help with finding relevant literature on the subject.

Also, I would like to send a tank you to all members of the City of Knowledge Network, who let me be a part of their work and permitted me to use the information and ideas developed during the meetings. My thesis would not have been the same without this opportunity.

Lastly I would also like to thank my supervisors, Morten Elle, associate professor at The Technical University of Denmark, DTU, and Jørgen Olsen, Deputy chief at "Plan og Byg", whom all through the process of developing my thesis have provided constructive criticism and suggestions for improvements. Without their help the report would not be as focused as it is today.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 4 of 108

## Abstract


Can a new dorm in the centre of a town, otherwise known by many to be devoid of life by 6 p.m. when the shops close, turn the trend around and help create life? And what, if any, other initiatives need to be taken in order to support this foundation created by the dorm?

These questions are the main focus of this report "Studies of University Cities – The case of Kongens Lyngby". A report that is the result of a study which sets out to investigate how a university city can improve life in the city, by tapping in to the potential constituted by the large amount of young creative people studying at the university in, or with a close proximity to, the city. The study is based on the assumption of a new dorm constructed in the centre of Kongens Lyngby, with a focus on facilitating more life in a city that so far, have focused most of its energy on the senior citizens.

As a part of the study behind this report, an investigation into the characteristics of the Creative Class as defined by Richard Florida, which most university students must be considered a part of, have been made - what is this new class and what makes them tick. The study on this same subject just on Danish terms by Mark Lorenzen is used to evaluate the validity of the American results for the Danish situation, and a look in to the theory of urban design is qualified by the work of architect Jan Gehl. Furthermore, a study has been made trying to outline the concept of university cities and the special advantages and disadvantages these cities have.


In order to connect these different theoretical studies to the case at hand, a number of interviews with key players, in connection with both the theoretical study as well as the case in question, are presented. Furthermore, a short insight in to the historical circumstances of the planning, regarding both the city and the university, DTU, in its near vicinity, as well as new initiatives like the City of Knowledge and Urban Creativity 2020 are included.

The findings in this study suggest that it is necessary to reach a certain critical point in order to start seeing things happen, especially regarding visibility. A dorm is in itself not enough, if no further initiatives are taken in the city, in order to support the foundation constituted by the young creative students living at the dorm. Suggestions as to what these initiatives could be, forms the latter part of the main section of this report.


	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 5 of 108

## Content

Content .....	5
1 Introduction.....	7
1.1 Problem statement .....	9
1.2 Problem delimitation .....	9
1.3 Reading guide.....	10
2 Theoretical study.....	13
2.1 Planning history.....	13
2.2 University cities.....	17
2.2.1 Empirical study.....	21
2.3 The Creative Class .....	23
2.3.1 Introduction .....	24
2.3.2 Comprising parts of the Creative Class .....	24
2.3.3 General characteristics and values for the Creative Class .....	26
2.3.4 Work for the Creative Class .....	26
2.3.5 Leisure time for the Creative Class .....	27
2.3.6 Place of residence for the Creative Class.....	29
2.3.7 The three T's .....	31
2.3.8 The Creative Class and Denmark .....	33
2.4 The creative class in relation to students and urban quality of life.....	34
2.5 Design of urban spaces .....	37
2.5.1 Activities in urban spaces and how to make them possible .....	37
2.5.2 The human scale .....	38
2.5.3 The four principles of Jan Gehl .....	40
2.6 The Creative Class, university cities and design of urban spaces .....	42
3 Analysis framework .....	44
4 Methodology .....	46
Case description .....	49
4.1 Kongens Lyngby as case .....	49
4.2 The planning in Kongens Lyngby .....	51
4.3 Kongens Lyngby now.....	55
4.4 The Creative Lyngby .....	58
4.5 The planning at DTU.....	59
4.6 DTU now.....	60
4.7 The relationship between DTU and Kongens Lyngby .....	61
4.8 Living situation and student composition .....	63
5 The City of Knowledge and Urban Creativity 2020 .....	66
6 New initiatives .....	70

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 6 of 108

6.1	DTU students and their view on Kongens Lyngby.....	72
6.2	Possible initiatives.....	74
6.2.1	The dorm.....	75
6.2.2	The study hall and meeting rooms .....	76
6.2.3	The student cafe .....	77
6.2.4	The library .....	77
6.2.5	Transport to DTU .....	78
6.2.6	Transformation of Klampenborgvej.....	78
6.2.7	Further initiatives.....	80
6.2.8	Section summary .....	80
7	Analysis.....	82
7.1	Visibility and critical mass .....	83
7.2	Diversity.....	86
7.3	Gathering.....	87
7.4	Shared space areas.....	88
7.5	Flexibility .....	90
7.6	Entrepreneurship .....	91
7.7	Authenticity .....	92
7.8	Human scale .....	92
7.9	Involvement .....	93
7.10	Section summary.....	94
8	Discussion .....	95
9	Conclusion .....	101
	References.....	104
9.1	Books/Pdf's.....	104
9.2	Websites.....	105
9.3	Table of figures.....	105
9.4	Table of tables.....	106
9.5	Table of pictures.....	106
10	Appendix.....	108

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 7 of 108

## 1 Introduction

*"We are now in the creative age - a time when the generation of economic value in a growing number of sectors depends directly on the ability of firms to embed creativity and cultural content within the goods and services they produce [...] Creative and cultural activity enhances a city's quality of place, helps to reclaim and revitalize neighbourhoods, enables more innovative thinking and problem-solving across all sectors of the economy, and shapes a city's identity in the face of increasing competition for talent, investment, and recognition "* [Creative spaces, p. 2]

All over the world, globalisation is becoming an unavoidable factor, in how we structure our societies, our cities as well as our lives. Knowledge and innovation have become some of the most important aspects in the development and branding of both cities and nations, and with this trend, universities have gained a new increased importance for urban planners. A fact stated by Kerstin Hoeger<sup>1</sup> in the beginning of the first chapter of the book "Campus and the city - urban design for the knowledge society"; *"The changing relationship between the campus - both academic and cooperate - and the city is transforming urban realities. Worldwide universities and their host cities are evolving into "knowledge cities". University and cooperate campuses thereby not only take a central role for the cultural, economic and social development of the city, they are also establishing themselves as laboratories for a new Denkkultur<sup>2</sup>. Classical inner-city universities are devising schemes to rejuvenate themselves in a manner that will also benefit their home cities, and Greenfield campus universities are in many instances developing a new urbanity in their suburban settings"* [Campus and the city, p. 13]. This new trend is about urban planning in a new context, and this is also what is happening north of Copenhagen in the case of the Danish Technical University, DTU, and the city of Kongens Lyngby. The Municipality of Lyngby-Taarbæk in which Kongens Lyngby is located, have devised a plan that depicts the city's desired development over the next decade or so; the City of Knowledge Strategy.

The city have up until now had a less than exiting reputation among the students at DTU, which have resulted in the depressing fact that less than 18% of the students attending an educational institution in Lyngby-Taarbæk actually live in the municipality and only 6% stay after they have finished their education [11CityDesign]. This entails that the city have a large untapped resource among the student population, and this is a part of what the city now wishes to change with the City of Knowledge strategy.


This untapped resource, students, is perhaps not a resource in the financial sense; they do not have large incomes and they do not pay any significantly amount of taxes, but this is not the only way a city or municipality can benefit. Students at higher education facilities are attractive for the knowledge heavy industries that are located in the area in and around Kongens Lyngby, and can perhaps also be an incentive for other businesses looking for a place to set up shop.

Furthermore the students can contribute with creativity, innovation and life to the city; all factors that with globalisation are becoming decisive factors in more ways than one as well as being

---

<sup>1</sup> Kerstin Hoeger is one of the authors of the book "Campus and the city"


<sup>2</sup> ~ "Think culture"

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 8 of 108

factors that are perfect in line with the desires of the City of Knowledge strategy as described in the first part of the publication; *"This strategy sets new, high ambitions when it comes to attracting and retaining knowledge companies, to turn the town into a university city, to create life, to create networks, to making the area green and sustainable with energy advisory services, to promote the welfare innovation, to create more entrepreneurs and promote the enterprise- and civil service in the municipality."* (Translated from Danish) [Vidensby, p. 2]

This thesis is an analysis of what characterises the young people taking a higher education, especially the students at DTU, and what initiatives city of Kongens Lyngby can take in order to maximise the appeal for this specific population group.



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 9 of 108

## 1.1 Problem statement

On the basis of the following assumption; a new dorm constructed in the centre of Kongens Lyngby, which will bring a large number of students down into Kongens Lyngby, the following question is sought answered:

- How can Kongens Lyngby become a more attractive city for students at DTU?

This leads to a few more investigative questions being raised:


- Why is the situation in Kongens Lyngby as it is now?
- How can Kongens Lyngby maximize the advantage constituted by DTU
- What initiatives can be taken to support the foundation for life constituted by the dorm?
- What will increased student life mean for the urban life in Kongens Lyngby in general?

## 1.2 Problem delimitation

The subject of university cities is a relatively new field of focus within the subject of urban planning. It is not a well-defined research area, but a subject with many different aspects influencing each other in order to create what we are now beginning to call a university city. There is the national students with their specific characteristics, there is the international students whom due to differences in both cultural and climate situation in their various countries, have another way of using the city than what is usually experienced with Danish students. There is also the economic aspect of university cities. The many knowledge heavy industries that are attracted by universities, the students who will form their future workforce, as well as the interlocking relationship that exists between city and university. All these work together to form the special kind of city that a university city is. Within this field, this report will focus solely on the social aspect of university cities. More specifically on the students at the Danish Technical University, DTU, and the aspect of creating life in the city of Kongens Lyngby, with a focus on the subtopics necessary to understand the target group, the city and the university.

This entails that many of the previous mentioned influencing aspects will not be looked at. The reason for the choice - to focus only on the Danish students at the Danish Technical University, and life in the city from a strictly social point of view - is that this part of the subject from the authors point of view, is vital in order to create the best possible circumstances for both the city to prosper but also for the students to have the best possible opportunities during their education.

Even with this delimitation, setting out to facilitate more life in a city is still a huge undertaking. There is such a large number of unknowns and such a large number of aspects that all need to work in unison, in order to obtain a positive outcome, that it has been necessary during this project to be extremely specific about which part of the problem that will be investigated in this report. It will be necessary during the process of developing this thesis, to constantly keep the core questions in mind, in order to avoid being sidetracked as well as making sure that the project is not allowed to slowly grow, until it has become too large and too complex to complete in a satisfying manner, in a single time limited project such as this.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 10 of 108

### 1.3 Reading guide

This reading guide consists of a list of abbreviations and glossary, followed by an overview describing the content of a chosen selection of the main sections. The chapters will be presented in the order in which they appear in the report.

#### **Practitioner:**

Practitioner is in this report used to describe individuals working with a given subject in their professional lives. In this case professionals working with the practical application of the theories related to urban planning and development, universities and university cities as well as the subject of the Creative Class.

#### **Plan og Byg, Lyngby-Taarbæk Municipality:**


The organisation within the municipality that handles all matters relating to urban planning and development.

#### **Names and abbreviations of the Danish Technical University:**

1829-1933: The College of Advanced Technology

1933-1994: Danish Technical College. The Danish abbreviation will be used; DTH.

1994-present: The Danish Technical University. Abbreviation; DTU.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 11 of 108

### **Planning history:**

The section constitutes the background for the study, with emphasis on the general practices within the subject of urban planning throughout history, in order for the reader to gain an insight into where urban planning originates from, how it has evolved and why we have planned our cities as we have up until now.

### **University cities:**

Presents theories on the topic of university cities; the different types of university traditions and how these connect to cities, what a university city is and how the students at the nearby educational facilities influence the ordinary life and structure of the city.

### **The Creative Class:**

Describes the theories of the American urban studies theorist, Richard Florida, as well as the study on how these theories translate to the Danish conditions by Mark Lorenzen. It has been a priority to provide a portrayal of as many of the different elements that sets the class apart, though with a special focus on the aspects that are most relevant in creating an understanding of the target group for this report, the students at DTU.

### **Design of urban space:**


Focuses on the theories of architect Jan Gehl and his ideas for designing our cities to better suit people in order to facilitate more life and activity in our cities, by moving away from the traditional modern planning which have for many years focused on dividing areas by function and facilitate the use of cars above slower moving traffic.

### **Case description:**

In this part the case that forms the base for this study is presented in the form of a description of both the city of Kongens Lyngby, the Danish Technical University and the background for the current situation. It is presented in the form of a short introduction into how the history of planning in the two different areas, the university and the city, have been up until now, what characterises the areas now, and how has the relationship between the two evolved over the years. Furthermore an account for how the living situation for the students has been earlier and how it is now brings the section to a close.

### **The City of Knowledge strategy:**

Summarizes the new initiative started by the city of Kongens Lyngby; an initiative that focuses on a closer collaboration between both the city, DTU and the local business community, in order to, among other things, transform Kongens Lyngby into a university city with more life in the streets. Readers with extensive knowledge of the City of Knowledge Strategy can skip this section.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 12 of 108

### **New Initiatives:**


The section contains suggestions for possible initiatives, that can help create a place in the city centre that will be attractive for the students, based on the information gathered from interviews with practitioners as well as the work done in the City of Knowledge Network.

### **Analysis:**

In the analysis the possible initiatives, which are based on information from practitioners as described in the previous section, are processed in more detail. The focus is on how they fit the chosen focus points from the theory, as well as the challenges with regards to realisation and the possible impact they can have on the city in the years to come.

### **Discussion:**

The discussion deals with the subjects of the usability of the theory, what a city of knowledge is and what it will take to succeed in turning Kongens Lyngby in to one. It is finished off with thoughts regarding the overall project, along with a description of an interesting project initiated by the students at DTU, exemplifying how the framework for an alternative collaboration between the city and the students at DTU can look like.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 13 of 108

## 2 Theoretical study

Understanding what a university city is, how the students can influence this and vice versa, and especially how the development can be supported in a positive way, with being aware of how we as a society plan, is not an easy task to undertake. It is necessary to first understand both the background for how our cities have been planned up until now, the new trends within urban planning, and last but not least, what characterises the special group of citizens that the students constitutes. To create this base for understanding and further development, the following sections will describe first a short introduction into the history of urban planning in Denmark, followed by a section on the complex subject of university cities. Second, theory to help understand what characterises the students that will form the target group will be presented in the form of theory the Creative Class. Along with this, a look into the subject of how university cities, the students and the Creative Class is connected based on a interview with the author of the book, the Danish Creative Class by Mark Lorenzen. Last, the section will be ended with a description of a new trend in modern urban planning constituted by the work of architect Jan Gehl<sup>3</sup>.

### 2.1 Planning history


The history of urban planning is long and diverse, and has over the centuries been influenced by both how we structure our society and the technological developments we have achieved, which are to this day constantly evolving. In later years many have begun to realise, that how we structure our cities have a major impact on our quality of life; as Jan Gehl, one of the forerunners on this subject have stated: "*First we shape the cities - then they shape us*" [GehlB, p. 9]. But in order to create the best base for changing our cities for the better, and maximizing the chance that it is being done "correctly", it is important to first understand why we have done as we have up until now.

As stated, urban planning is not a new concept and over the years, how we practice this task and why have changed over and over again, as the society in which it is applied have undergone continuous transformations. This correlation is evident when looking back in history; "*The review of urban planning history showed urban planning as part of a social practice from the time when man produced more than they immediately consumed. This brought about a need to protect the surplus and the opportunity to do this by using a portion of the surplus for city building*" (Translated from Danish) [Kjærdam, p. 147]. The above quote describes the birth of urban planning, and can be supported by a multitude of observations that illustrate the correlation between our society, technology and the way we have practiced urban planning.

The next step in urban planning is described as stemming from the slave based societies which brought with it the material base and need for actual city-states. With this, the urban planning that started as a means for protecting surplus resources now became about these city-states, which often also entailed a number of common facilities such as room for different cultural and political activities. In feudal cities, city planners worked mostly on designing the royalties' administration cities and in

---

<sup>3</sup> Jan Gehl is a Danish architect and urban planner, whom through his published works and career have had a significant role in the redesign of cities with the stated goal of making them better suited for humans.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 14 of 108

the medieval times in general, fortifications, and thereby military facilities, were a major factor in urban planning. [Kjærdam]

With the rise of absolute monarchy, the city planners tasks changed once again, now from focus on fortifications to a greater focus on planning cities to satisfy the royalty and making these cities the new centres of society. Following the transition to liberalism, the social cohesion changed from mainly physical to primarily economical. During this process it became necessary to facilitate the needed infrastructure and to create cheap residential areas for the workforce as well as securing sufficient room for the growing industry to expand. In the socialist countries the planning shifted focus to the development of an overall expansion of production and infrastructure. [Kjærdam]

Due to a general increase in social and ecological awareness in the liberal societies, along with an introduction of market economy in several socialist communities, a growing consensus on which tasks urban planning should encompass emerged. These came to be the securing of coherency in the physically development of both infrastructure, residential areas, recreational areas, industrial areas and so on, and by this we are nearing the conception of modern urban planning. [Kjærdam].

But as stated earlier, not only the societal structure have influenced urban planning, the development of technology and the industrialisation that started in the mid 1800's have also played a considerable role.


In previous centuries, especially military technology has had a huge impact on city planning as described earlier. To cope with the increasing precision of cannons and the like, renaissance cities created a complex system of earth based defence systems, in order to better protect themselves. These were so expensive to expand, that it was often chosen to just increase the building density in the city instead, which over time just became the way cities were build. Later on, the growing industrialisation meant, among other things, a shift from small workshops to factories, and these brought people who needed work in from the countryside to live in cities, which led to an explosive increase in population in the cities, see Table 1.

	Total population	Living in the countryside	Living in cities
The year 1855	1,5 million	80%	20%
The year 1901	2,5 million	62%	38%

Table 1: Increase in population in Denmark during the industrialization [danskhistorie]

This development is known as urbanisation, and forms the base for our modern society [danskhistorie].

The industrialisation did not only create a shift in where people lived, from the countryside to growing cities. The factories and production facilities that attracted the people, created pollution and a general unattractive environment, and since no one was interested in living right next to such a facility, industry and residential areas were isolated from each other. This led to an approach of dividing functions; an approach which have been the way of doing things in urban planning for many years up until now, and is considered to be the modernistic way of planning cities.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 15 of 108

This way of viewing urban planning has in recent years started to change, propelled by the transition away from the industrial communities and towards a knowledge based society, as well as the work of such innovators as Jane Jacobs<sup>4</sup> and Jan Gehl. Both of whom recognized the importance of integrating functions in neighbourhoods, in order to maximise the quality of life for the inhabitants, as well as securing the foundation for life in the city, making it an attractive place to be for the general public. Jacobs who already in the beginning of the 1960's advocated for functional diversity in urban planning; wanting to secure a constant flow of people at all hours of the day. This was to be achieved by making sure that any given area contained many different functions thereby attracting many different people [Jacobs]. This is something that is also strived for today in our new knowledge society.

This knowledge based society which has evolved, is a very different creature than what have been experienced so far. Knowledge and education have become some of the most important commodities, especially for a country like Denmark which do not have large amounts of natural resources to trade. This has a significant influence on how cities are viewed today, compared to just 50 years ago. Combined with the globalisation that follows, the development of information technology has brought with it a need for planning our cities in a new way, since companies are not nearly as bound to a specific location as they have been. Jobs can disappear just as fast as they are created, if investors spot a better offer another place on the globe; especially with the much higher wages that must be paid in the western world.


This results in a couple of things; municipalities and cities have to be planned in a way that offers something special, so as to keep companies in the area. Also; buildings, spaces and plans have to be created so they are flexible and can adapt to new uses easily, if a tenant suddenly picks up and leave.

In this new knowledge based society, universities are very attractive. Universities attracts young, talented people, universities create knowledge, many universities attract knowledge heavy businesses and many universities help create jobs. This popularity means that over the last many decades, many Danish universities have experienced an almost constant increase in new students, leading to a need for more buildings in which to teach them, inevitable leading to a lack of space in the old classic inner city university campuses.

This means that the universities in many cases relocated to or were established in suburban areas where space was not a problem, as can be seen with for example DTU which moved to Lundtoftesletten in Kongens Lyngby in the 1960's, the University of Roskilde, RUC, which was established in 1972 and the university of Aalborg which was established in 1974. These modern campus were designed in line with the prevailing trend of modernism in urban planning at the time - division of functions. Without a doubt this solved one problem with - space, but it can be argued that it instead created more. The universities often lost connection with the urban fabric, and the lively, informal exchange between different people and different professions that today is widely recognised

---


<sup>4</sup> Jane Jacobs was an American writer born in 1914 who's work, mainly the book "The Death and Life of Great American Cities" from 1961 has greatly influenced the debate on urban planning.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 16 of 108

as being the base for creativity and innovation. Something that will be accounted for in later sections of this thesis.

With this new realisation, as well as the universities new important role in a global knowledge society, understanding how a city can best utilise the huge advantage constituted by a university, is therefore an important aspect within the field of urban planning, both now and in the years to come.



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 17 of 108

## 2.2 University cities

Over the last 100 years, we have moved steadily but surely away from the agricultural and industrial society and towards the knowledge society, see Figure 1.

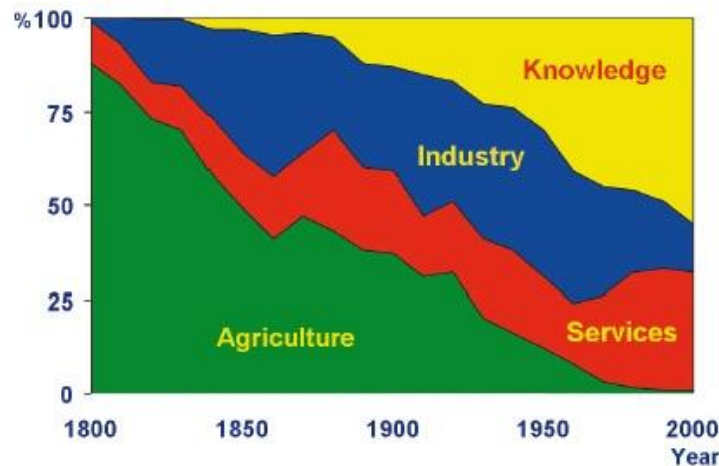


Figure 1: in working population from 1800-2000 [University Campus, p. 4]


Due to this transition, the new valuable commodity is knowledge and creativity. "As Hewlett-Packard CEO Carley Fiorina once told this (red:, USA) nation's governors: Keep your tax incentives and highway interchanges; We will go where the highly skilled people are" [Florida, p. 6]. As a consequence of this, the way society is structured have also changed, in order to adapt to the new way of living and the new values that follows. An increased globalisation have made it possible for new players to compete on for example the European marked, with the consequence that areas where labour costs are far lower than in many European countries have made it almost impossible for countries like Denmark to compete on the basis of cost alone. Something that have made it necessary to instead gain competitive advantage from knowledge heavy and creative innovations instead. [Creative cities - EU, p. 2].

This fact have led to a new focus on the knowledge heavy and creative industries, that both now and probably also in the years to come, will play a huge role in the success of both cities, regions and countries. The Universities and the cities around them have through this become an important aspect of urban planning. The name for these new knowledge centres varies, but the meaning is basically the same; Knowledge cities or Creative Cities; the latter which by Gert-Jan Hospers<sup>5</sup> is defined as "competitive urban areas that are able to combine concentration, diversity, instability and a positive image." [Creative cities - EU, p. 1]

The book Campus and The City - Urban Design for the Knowledge Society, also deals with the changing nature of the relationship between the universities and the cities around them, as Kees Christiaanse<sup>6</sup> opens his part of Campus and the City with: "The "campus" is a phenomenon of increasing relevance to urban planning. In Europe, universities are reconsidering their position in society and

<sup>5</sup> Gert-Jan Hospers is the author of the book "Creative Cities in Europe - Urban Competitiveness in the Knowledge Economy"

<sup>6</sup> Kees Christiaanse is one of the authors of the book "Campus and the City"

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 18 of 108

taking on extensive reorganisations and expansions of their physical structures. The post-war university campus as an isolated community of scholars is subject to thorough revision" [Campus and the city, p. 45]. These trends range, according to the authors, from promoting internal transfer of knowledge and social interaction, to strategies that foster urban life and integration in existing urban contexts. What they conclude is the common denominator for all of these is, that the aim without exception is to create sustainable centres of knowledge and innovation, that are flexible enough to respond to the constant changing demands of the knowledge society.


A lot of studies have been done, looking into the concept of Knowledge Cities, but most of the papers found during the literature search for this study have had the underlying basis of securing financial growth for a city or region, which is not the scope for this paper. Despite of this, the fact that the means to secure the financial growth desired by many of the papers, is to focus on developing our cities with this new knowledge economy in mind: *"Advanced economies are presently being radically altered by dynamic processes of economic and spatial restructuring within the frame of the new knowledge economy. In this context, Knowledge-based urban development has become an important mechanism for the development of knowledge cities."* [Knowledge cities p. 1], means that many of the results can be considered valid for this report also.

That being said, what most of the literature on the subject agree upon, is that knowledge cities are an important factor in our society today, and that knowledge institutions in particular play an important role for regions, when trying to attract knowledge workers. A group that has become a valuable commodity in modern society. This is expressed in different ways in the different studies, for example *"Literature about cities in the knowledge economy, based on nine case studies of European cities emphasises the role of knowledge institutions in attracting and retaining knowledge workers, in order to create knowledge, apply knowledge and develop growth clusters. A knowledge base is a required foundation, in addition to an economic base, quality of life, social equity, accessibility, urban diversity and urban scale."* [University Campus, p. 4] or *"In the global knowledge economy countries need "engines" to create, attract and retain knowledge workers. Universities play a key role in keeping these engines running, education the knowledge workers of the future, collaborating with industry in innovative research and creating economic clusters that generate employment. But with increasing mobility and ICT developments - making every place a possible workplace - students, professors and researchers can easily be tempted to go elsewhere"* [University Campus, p. 2]

Regarding the university as an institution, two basic traditions for building universities have run through the last 800 years, covering a total of 6 different types of universities which can be seen below in Table 2.

Tradition	Types of university		
<b>The internalist tradition</b>	The College	The American Campus	The External University
<b>The externalist tradition</b>	The Universitas	The Institutional University	The City University

Table 2: Types of universities [Campus and Study p. 12]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 19 of 108

**The college tradition** is modelled on the monastery, and includes the Collegio De Spagna in Bologna, Italy, which often is considered to be the first specialised university in Europe. [Campus and Study] The tradition is not the most interesting with regards to this thesis, since it mostly lives on in England, and it will therefore not be further described here.

**The Campus University** is originally an American Concept, and the first reference to the American Campus is from a letter dated from 1774, mentioning the Princeton University area. This special type of university was established by the first English colonists, and placed at the frontier to be the base for missionary work among the Indians. This placement and the independence that was a consequence, meant that the university needed to take responsibility for all aspects of the students life, meaning that these universities contain both living accommodation, sport facilities and so on. [Campus and Study]


**The External University** was the solution to the education boom in the 1960's. Lack of space to cope with the increasing number of students meant that the universities moved outside the cities, in order to have enough space to grow. This type of university is often called a campus, but unlike the American Campus university, they usually do not have dorms connected. [Campus and Study]

**The Universitas** is one of the very earliest university traditions, and evolved from the guild of university teachers. The early universities did not have set connections with any one building, but moved from city to city with their small collection of books, renting spaced in ordinary homes in the town they were in at the time. They usually preferred to stick to one part of the city, and the street on which they rented houses were often called a name in relation to the university. In Copenhagen there is for example Study Alley (Studiestræde). [Campus and Study]

**The Institutional University** in Europe is largely based on the Universitas tradition. As the universities grew and started having more purpose-built buildings, often starting with studies of anatomy, they ran out of space. It became necessary to use land plots available other places in the city, and it was therefore no longer possible to keep the university in one place. A good example of this is the university of Copenhagen, which have institutes and education facilities all over the city. [Campus and Study]

**The City University** was a solution in the 1990's to the criticism of the external university. Integration into the city once again became the way to go; the city as an approach to the university and the university as an approach to the city. This can for example be seen with the large new facility under the University of Aalborg in Copenhagen which will be placed in very close connection with the City of Copenhagen. [Campus and Study]

We have examples of many of these different kinds of universities in Denmark. The University of Copenhagen and the University of Aarhus are good examples of the Institutional University; *"its spaces overlaps large city neighbourhoods. Campus development thus becomes a matter of collaboration between university and city developers and planners. This collaboration between university and city planners is urgent and essential and mutually beneficial for the development of both the European university and the European City."* [Campus and Study, p. 21]. Newer Universities such as the University of Aalborg and the University of Roskilde are a different kind of university. They have been placed on

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 20 of 108


more or less empty fields where there is plenty of room to grow, and perfect examples of the external university;"*built outside the city centre without integrated functions for other purposes than the university's teaching and research. It often consist of large cohesive building complexes, which have been build in one go or just a few stages. The buildings are functionally designed solely for teaching and research in the daytime.* [Campus and study, p. 31].

With regards to DTU, it is a university placed outside the city, which could lead to believe it fell under the category of external university along with The university of Aalborg or the University of Roskilde, but actually DTU more closely resembles the American Campus. The university have a number of dorms on campus, as well as a sports hall and a supermarket. This is quite interesting, since the success of the American Campus is based on a culture and tradition, that is very different from what we see in Denmark, and what works well far out on the countryside is not necessarily ideal placed two kilometres from a city centre.

When all this is said and done, the next question is how can DTU be connected closer to the city and help create a creative city; a University City? According to Gert-Jan Hospers "*it is an illusion to think that one can force creativity or "construct" a knowledge-intensive city. And yet there are a few factors that can increase the chances of urban creativity developing and that thus can contribute to an urban knowledge economy. In general terms these factors are: Concentration, Diversity and Instability.*" [Creative Cities - EU, p. 3].

This last one, instability, is not so much something that can be plan in cities; it is more an observation that bursts of creativity have been witnessed in creative cities such as Berlin, London or Paris in periods with instability.

The first two however are aspects we can take in to consideration when planning our urban areas to help facilitate creativity. On the subject of **concentration** Hospers write that urban creativity is stimulated by the presence of a substantial number of people at a certain location, and we need to reach a critical mass regarding sufficient human interaction and communication in order to inspire creativity. He writes "*In the end, indeed, creativity, knowledge development and innovation are human work: not a city in itself but only its population can be innovative.*" [Creative cities - EU, p. 3]. The second factor he mentions as encouraging urban creativity is **diversity**, and not just diversity between the inhabitants but diversity in all meanings of the word; diversity in buildings, functions, neighbourhoods and so on. About the importance of this he writes "*[...] In a city of this nature there is every possible opportunity for the inhabitants to meet one another on the street, swap knowledge, pick up new ideas and bring about innovations. The built-up environment can give an extra helping hand here: in a street with "function mixing" - that is, a mix of buildings with differing functions (old buildings, new dwellings, offices, shops, churches, pubs and restaurants) - there is always something happening, day and night, and the chance of accidental encounters and "new combinations" is the greater*" [Creative cities - EU, p. 5]. The importance of this informal exchange that can happen where many different people come together is also described in the book "Campus and the City"; "*All the authors point out the importance of promoting informal exchange, culture and urban life*" [Campus and the city, p. 21]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 21 of 108

The above gives a short introduction as to why these university cities or "creative cities" are starting to become a focus in society, as well as describing some characteristics of the different kinds of universities found in Denmark. Furthermore the theory presents certain factors, that need to be present in order for cities to really be creative cities, and thereby attract or hold on to the creative and innovative people. A group of people that for example the close proximity of a university and thereby a large amount of students represents.


But this is just a superficial review of the subject, limited by the fact that it simply has not been possible to find more literature on the subject, during the creation of this report. If this is due to the fact, that it is a discussion that is relatively new and has not been studied in depth yet, with scientific publications following, is not to be said, but in order to fill the gap experienced, different practitioners within the field have been contacted. The purpose of this is to secure an empirical knowledge base on the subject, to fill in the gaps in the purely theoretical literature study.

### 2.2.1 Empirical study

Because not many scientific studies or investigations have been published on the subject of planning for increased social life in university cities, a practitioner within the field of urban planning and university cities has been contacted. Helle Juul, Architect MAA, PhD, CEO at JUULFROST Architects, have worked with the subject of university cities for many years, and is co-author of the report "Fremtidens Campusområder" that has been incorporated in the publication by the Danish Building and Property Agency "Campus and Study environment - physical framework for universities of the future". A study that is a part of the literature survey done as a part of this thesis.

The information gathered from this interview, will be used to fill out the holes in the theoretical study. Thereby hopefully securing a sufficient amount of material on the subject, to secure that the background information is thorough enough to support the analysis and conclusions made in this report.

According to Helle Juul, what all university cities have in common is, that they are characterised by a certain production of knowledge that permeate everything. "*A city is marked by the industry in it, and the industry of a university city is knowledge*" (Translated from Danish). Besides this initial similarity, she states that university cities are not one typology but many different, taking their base in the original characteristics of the city and the type of university located in or near it. For example a technical university as DTU, do not attract the same people as for example a university based more in the liberal arts, or a university based on the study of market forces and economy. This means that they will influence the city in slightly different ways, despite the many similarities there is between the different higher education facilities. What can be taken from this is, that the design of Kongens Lyngby as a university city must suit its university and be attractive to the students there. Furthermore, the history in the city of Kongens Lyngby is that of a commercial town or royal borough, and it is therefore from this base, that the city should take the initiatives to become a university city. Evolving but staying true to its characteristics. In short; it is about finding out when the city is attractive and when the university is attractive, and develop along those lines.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 22 of 108

There are many very different university cities that have gone completely different ways in planning to become a university city, but the common experience is according to Helle Juul, that the presence of a university is clear, they are full of life and they are interesting to experience.


One of the special aspects of these cities are according to Juul, that being a university city means there are certain standards expected of the culture in the city. The students are an unstable entity; they are only present for a limited amount of time, they might just pick up and go away for a semester or two, and they work at very different and varying hours of the day.

This means that there need to be urban spaces and facilities, with a high level of accessibility and flexibility and the planning must holistically oriented. To illustrate this she uses an experience from a research trip taken to Harvard and MIT, as a part of the creation of the publication "Fremtidens Campusområder; *"Here students from Harvard used the library at MIT simply because it was open longer. Theirs at Harvard closed around 7 p.m. and at MIT they did not close until around 11 p.m."* (Translated from Danish). Due to the special nature of the students, it is according to Juul also necessary to have a high degree of dialog between the planners from the municipality and the students in the urban planning process, in order to gain an understanding of what is attractive to the students.

A valuable addition to the city would according to Juul also be incubation environments in the city centre, as well as spaces where students can interact with people outside their own specific field. As stated by Juul: *"Students need to be able to meet across professional competences. It is in these kind of circumstances like in for example large cantina areas where many different people meet that many ideas are born"* (Translated from Danish).

To create this desired presence, and to allow the knowledge to permeate all aspects of the city and its university, it is necessary to plan accordingly; to define what urban functions need to be present in order to experience or feel the university in the city, as Helle Juul says: *"The city must be a part of the university environment and vice versa - it is about inclusion"* (Translated from Danish). This she states is perhaps one of the problems facing Kongens Lyngby and DTU. As it is now; when you arrive at Lyngby s-train station you have no idea that DTU is close by, or any larger education facilities is for that matter, which means you have not achieved neither visibility, nor a feeling of knowledge being an underlying aspect of all parts of the city.

If this is to change, and the city of Kongens Lyngby is to attract the kind of people it desires, it is necessary to define what characterises these people. This is a subject that will be dealt with in the following section.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 23 of 108

### 2.3 The Creative Class

The theories of the Creative Class have been chosen in order to create a better understanding of what characterises the students at DTU, thereby securing the best possible foundation for customising the initiatives that will be suggested as a part of this thesis to their specific needs and desires.


With regards to authors who have published work within the subject of the Creative Class, two have made a special mark on the topic; Richard Florida and Mark Lorenzen.

Richard Florida became, with the release of the book "The Rise of the Creative Class - and How It's Transforming Work, Leisure and Everyday Life" in 2002, one of the first to address the shift in our society from the industrial society towards the knowledge based society. Within this field he dealt with the increased focus on the importance of the knowledge workers, what sets them apart and how cities can attract and sustain them; the exact goal of the city of Kongens Lyngby.

Mark Lorenzen is along with Kristine Vaarst Andersen the first author who have dealt with the Creative Class in a Danish context [Lorenzen, p. 15]. The book "The Danish Creative Class" is a critical evaluation of the theories of Richard Floridas from the book " The Rise of the Creative Class - and How It's Transforming Work, Leisure and Everyday Life", and how these translate to Danish conditions. The book is one of the results from the Danish participation in an international research project called "Technology, Talent and Tolerance in European Cities: A Comparative Analysis", the goal of which it was to investigate, whether or not it makes sense to speak of a Creative Class in a European context, and if it does, whether we can empirically support the same hypothesis for the European Creative Class as Richard Florida has done for the North American. The main focus of the book is to test whether one of the most central theories from Floridas book, the correlation between region's and municipalities' spatial quality, the percentage of the Creative Class in the population and the regions/municipality's economical development, is valid for Danish conditions also. A subject that will elaborated on in following sections.

The theories in these two books will form the theoretical base for understanding what characterises the students at DTU, since these when they finish their studies and enter labour market, according to the book "The Danish Creative Class", belong to the Creative Core and therefore is a central part of the Creative Class, which will be described in the following sections.



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 24 of 108

### 2.3.1 Introduction

There are many different types of Creativity. There is the classic form which many people think of when they hear the word Creative such as fine art, designers and so on, and what these people actually do is creating new objects and aesthetics. This is also true for many other professions, and this is the basis for the widened definition used to set apart the people belonging to the Creative Class.

Richard Florida uses in his book the definition of creativity from Webster's Dictionary; "*Creativity - the ability to create meaningful new forms*" [Florida, p.5], and later also the following explanation of what creativity is; "*It is a matter of sifting through data, perceptions and materials to come up with combinations that are new and useful*" [Florida, p.31]

Mark Lorenzen uses the following definition for creativity; "*Creativity is the process with which the individual person or team of people creates innovation*" (Translated from Danish) [Lorenzen, p. 17] and the following for the definition of the creative process "*The creative process includes identifying problems, devising solutions, and putting existing knowledge together in new ways, thereby creating new knowledge and new products*" (Translated from Danish) [Lorenzen, p.18]

With creativity defined, one part of the "Creative Class" is set. On the subject of class, as for example the Creative Class, Florida defines this as a cluster of people, that have shared interests and whom are inclined to think, feel and act in a similar manner. With these two definitions the foundation for the work on the Creative Class is laid, and the special characteristics of this class, what they look for in a place to live and how they would like to spend their spare time is described.

### 2.3.2 Comprising parts of the Creative Class

The transformation from an industrialised society to a knowledge based one, and the financial need that stems from this change, have according to professor Richard Florida led to the creation of a new class, The Creative Class, which he divides in 2 parts; The Super Creative Core and The Creative Professionals.

The core of this class, **the Creative Core**, is defined as being comprised of people, that in their professional life are engaged in science, engineering, architecture, design, education, art, music and entertainment; basically people whose financial function is to create new ideas, new technology and/or new creative content. Their work consist of solving as well as detecting problems, and it is this class the students at DTU will come to belong to.

**The Creative Professionals**, is the part of the workforce who work in a long line of knowledge intensive industries, such as the high tech and financial sectors, judicial systems, healthcare systems and occupy jobs in many different aspects of the general business sector. What is basically demanded of those who belong to the group of Creative Professionals is, that they on a regular basis think for themselves; they put the discoveries made by the Creative Core to use. [Florida].



Besides the Creative Core and the Creative Professionals, Florida also introduces **the Bohemians** as a part of the Creative Class, see Figure 2. The Bohemians do not invent new knowledge in a technical understanding, but instead they invent new aesthetics, forms and expressions. Both Florida and Lorenzen view these people as a special breed and as extremely important, given that they are a self-perpetuating part of the Creative Class: They appear inspiring and attractive on the other members of the Creative Class [Lorenzen].

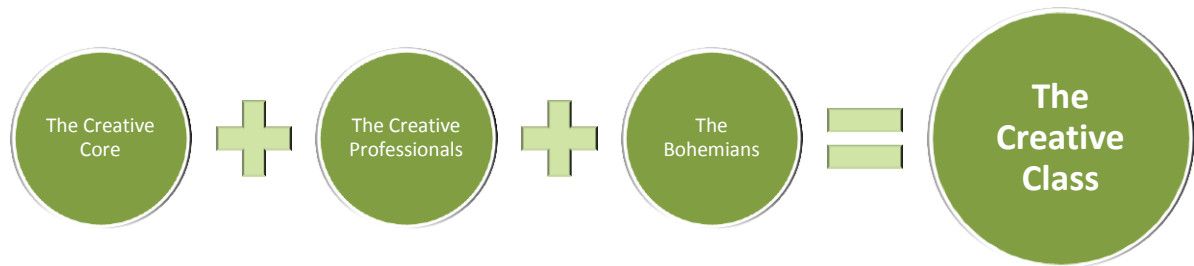



Figure 2: The comprising parts of the Creative Class

An overview of these characteristics can be seen below in Table 3.

The three subgroups of the Creative Class		
<b>The Creative Core</b>	Creates new ideas, products and processes and thereby financial and technological development	Architects, engineers, doctors, librarians and researchers within for example physics, chemistry and social science, and people working with IT as well as mathematics and education
<b>The Creative Professionals</b>	Do not create new ideas themselves, but uses the newest knowledge	Leaders, financiers, lawyers and people working in the health services, technical professions, financing and sales management and marketing
<b>The Bohemians</b>	Are the artistic part of the Creative Class; the spearhead of the Creative Class and appears attracting on the remainder of the Creative Class	Writers, journalists, sculptors, painters, composers, musicians, singers, choreographers, dancers, models, actors, designers, photographers, decorators, clowns, magicians and so on

Table 3: Subgroups of the Creative Class (Translated from Danish) [Lorenzen, p. 20]

The Creative Core constitutes approximately 40% of the Creative Class according to Floridas studies in the USA [Florida, p. 101], and represents thereby a little under half of the people considered to belong to the Creative Class in America. In Lorenzens studies of the Danish Creative Class, the Creative Core represents approximately 35,5% [Lorenzen, p. 31] , and since the scope of this report centres around engineering students, the focus from here on will be on the Creative Core, given that it is this part of the Creative Class these students according to Florida belongs to.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 26 of 108

### 2.3.3 General characteristics and values for the Creative Class

Floridas basic hypothesis, the assumption that forms the base for both his and Mark Lorenzen work on the subject, is that even though the individuals belonging to the Creative Class have widely different educations and wage levels, people whose daily work is based on creativity still have something in common; they constantly strive to increase their creativity and the means of using it. [Lorenzen p. 20]. Besides the description used in the introduction to this section, Lorenzen starts off by defining creativity and the Creative Class as follows: " *The creative class is quite simply the part of the workforce who mainly works with identifying problems, devising solutions and putting existing knowledge together in new ways.*" (Translated from Danish) [Lorenzen, p. 18].

The Creative Class encompasses a large variety of very different people, but despite this fact they do share a number of general characteristics, besides just belonging to the Creative Class. These are evident in the form of a shared set of values, which Florida and his team during their studies found to consist of a high esteem for Individuality, meritocracy and diversity.

The **individuality** consist of a basic wish not to adapt to other people or organisations directives "just because", and they resist traditional group-oriented norms. They strive to create an individualistic identity that reflects their creativity and personality.


**Meritocracy** is another of the values identified by Florida. The Creative Class place a lot of value on hard work, challenges and stimulation, as well as having goals and performing well. They have ceased to identify themselves by how much they make, and instead focus on earning status; they are ambitious and wants to move up in the world on the basis of their abilities and effort.

**Diversity**, and just as important the tolerance that according to Florida accompanies it, is a value that is harder to define. It is not one thing and one thing only, and Floridas conclusion was that the Creative Class simply valued diversity in all its forms, and he views diversity as a fundamental value for all members of the Creative Class. [Florida]

### 2.3.4 Work for the Creative Class

In general, work is extremely important for the Creative Class. They are always on the move, and the focus is not on lifetime-positions, as was often the case in the industrialised society, but based on changing jobs often in order to keep learning end evolving; keep being challenged. [Lorenzen] This is one of the main differences between the knowledge worker and the regular worker according to Florida; basically they have stopped identifying themselves with their company and instead with their specific job. Furthermore they change jobs more often in an effort to further their carrier, whereas people earlier used to stay in the same company for a long period of time, slowly working their way up the company ladder. [Florida]

Besides this, another change is according to Florida, that people in general, and especially the Creative Class, have started to take more responsibility for their career and are investing more time and money in their education. This is very much in line with the value attributed to the Creative Class, of wanting to move up in the world based on merits and abilities. [Florida]. This fact also seems to be true for the Danish Creative Class; "In the total Danish population between 15 and 69 years,

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 27 of 108

22% have a higher education. Among the Danish Creative Class 44% in the same age group have a higher education" (Translated from Danish) [Lorenzen p. 37]. This is a significant difference, and is an indication that at least some of Floridas theories, which are based on American studies and the American Creative Class, might be transferable to the Danish context.

### 2.3.5 Leisure time for the Creative Class

A side effect of being so involved in their work as the Creative Class must be said to be, is that they do not want to waste time by having to commute. The small amount of spare time they have is precious, especially as a way to cope with the stress of daily life, and since the amount of spare time can differ quite a lot, it must be utilized when it arises and not spend on transportation. This also means that planning is not something the Creative Class wants to do unless it is for something more substantial like vacations. Activities like going to the movies or buying groceries have to be readily available when the time is there to do it, and these are some of the reasons why larger cities have such an appeal for the Creative Class; they provide the chance to improvise. [Lorenzen, p. 44]

When going a little deeper than this, Floridas conclusion is that the Creative Class' often limited spare time often is used in a more interactive way, than experienced with people not belonging to the Creative Class. *"On many fronts, the Creative Class lifestyle comes down to a passionate quest for experience. The ideal, as a number of my subjects succinctly put it, is to >live the life< - a creative life packed full of intense, high-quality, multidimensional experiences [...] they favour active, participatory recreation over passive spectator sports. They like indigenous street-level culture - a teeming blend of cafes, sidewalk musicians, and small galleries and bistros, where it is hard to draw the line between participant and observer, or between creativity and its creators"* [Florida, p. 166]. This means that the typical cultural attractions that many cities focus on when wanting to create a more lively or cultural based image, like large sports arenas, theme parks, opera halls, large shopping malls and so on often will miss the point and fail to attract the desired people from the Creative Class. Florida even describes these attractions as being irrelevant to many people from the Creative Class.

Since these results presented by Florida were achieved based on studies of the American Creative Class and the American culture, Lorenzen launched his own survey into the leisure time activities of the Danish Creative Class in order to test whether Floridas results also were valid for the Danish Creative Class. This analysis was based on "Kulturvaneundersøgelsen" that contains detailed information about the Danish populations use of culture in their spare time activities [akf]. This information was combined with information about the population's job positions from "Danmarks Statistik" and finally distributed on Floridas classifications. [Lorenzen]. As a part of this survey he found that the culture- and leisure activities that the Danish Creative Class is most interested in, gathers around the following themes [Lorenzen p. 57]

- *Personal creative expression*
- *Unorganised exercise*
- *Literature and knowledge (reading of both fiction and non-fiction, journals, visits to libraries)*
- *Cultural heritage and history (visits to cultural history museums, natural history museums, activity centres and historic buildings and ancient monument)*

The results behind these four themes can be seen in Figure 7 to Figure 3.

Visits to cultural history and natural history museums

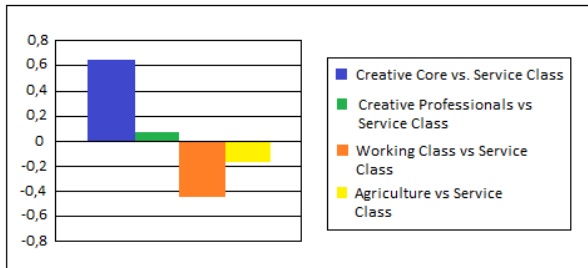


Figure 7: Visits to museums (Translated from Danish) [Lorenzen]

Own creative expression/display in spare time

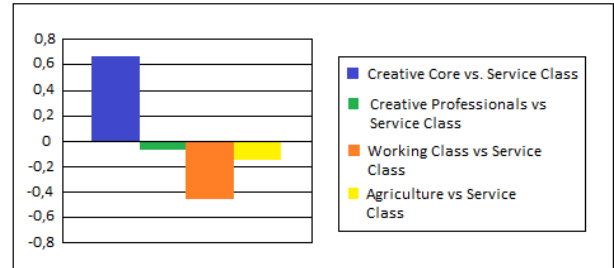


Figure 8: Own creative expression (Translated from Danish) [Lorenzen]

Engage regular in sport or exercise

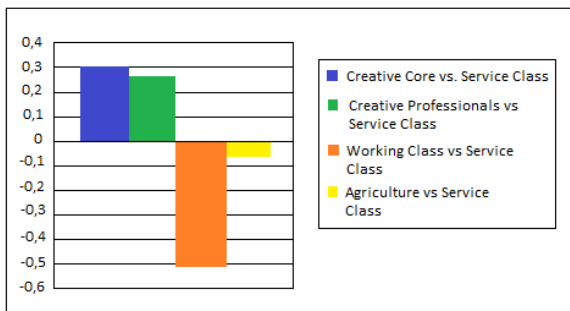


Figure 5: Engage in sport (Translated from Danish) [Lorenzen]

Visits to libraries

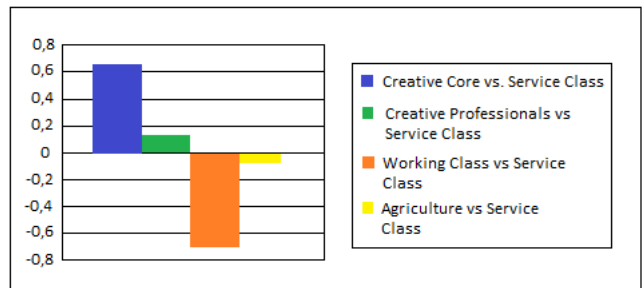


Figure 6: Visits to libraries (Translated from Danish) [Lorenzen]

Take a walk or cycle in nature or cycling to and from work

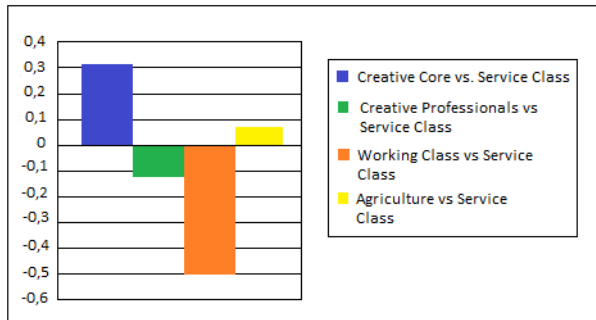


Figure 4: Walk or cycle (Translated from Danish) [Lorenzen]

Visits to urban environments

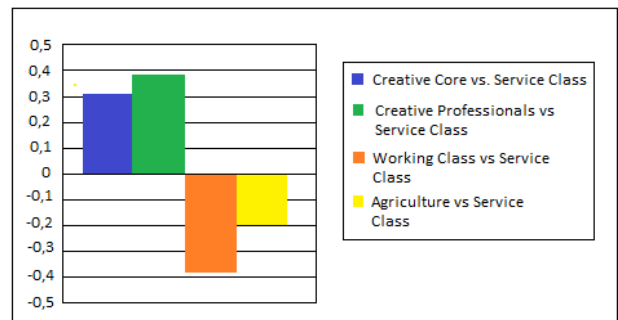



Figure 3: Visit urban environments (Translated from Danish) [Lorenzen]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 29 of 108

This illustrates that unlike the rest of the population, the Creative Class is significantly more interested in activities that requires personal involvement, and not only as a part of their job but also in the spare time, than for example being a spectator to a sporting event or the like. The result from the study also show, that there are several leisure activities where the Creative Class do not stand out significantly from the rest of the population. This is mostly with experience-oriented family activities such as visits to the zoo, amusement parks and so on, but when looking beyond these there are several points where the Creative Class stands out. First of all, the members of the Creative Class, and especially the Creative Core, are more creative in their spare time than the rest of the population. They are more likely to spend time on unorganised exercise, like taking a walk or a run or use their bicycles to and from work, and they are furthermore also more likely to take an interest in cultural heritage and history, than the remainder of the population. [Lorenzen p. 66]

Lorenzens results are more detailed than the results presented in the book by Florida, but the basic conclusion is the same; the Creative Class is more interested in activities that requires personal involvement than seen in the remainder of the population. An important aspect to have in mind in the further work with urban planning for the Creative Class.


### 2.3.6 Place of residence for the Creative Class

The basic conclusion from Floridas investigation in to the aspects, that play a role when the Creative Class choose where to live, is that whereas people earlier moved almost anywhere for their job, it is now according to Florida, the other way around. Some people from the Creative Class will simply not take a job, if it is not in a region or city they like; *"These people (red: the Creative Class) insist they need to live in places that offer stimulating, creativity environments. Many will not even consider taking jobs in certain cities or regions - a stark contrast to the organisational age, when people moved to chase jobs and gladly let firms shuttle them from one backwater to another as a part of the price of climbing the corporate ladder. I also meet Creative Class people who use location as their primary criterion in a proactive sense: They will pick a place they want to live, then focus their job search there."* [Florida, p. 95].

Based on these results from the empirical study conducted by Florida in America, Lorenzen conducted a similar study, just based on Danish conditions, and although the conclusion is not quite at steadfast as Floridas, Lorenzen still concludes that there are certain aspects of spatial qualities that attract the Creative Class.

Correlation between spatial quality and size of the creative class - 2004	
Variable	Correlation coefficient
Bohemians	0,341*
Share of foreign citizens	0,129*
Share of non-western citizens on the labour marked	0,160*
Level of cultural opportunities	0,003*
Stipulated norms in the public sector	0,094*
* Significance 0,01	

Table 4: Spatial quality and size of the Creative Class (Translated from Danish) [Lorenzen]


	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 30 of 108

The key thing here is, that separately the five variables have only mild correlations with the amount of people from the Creative Class, whereas the combination of them brings with it a much stronger attraction for the Creative Class. This illustrates how important it is for the regions, who desire to attract more of the Creative Class, to focus on creating overall solutions, and not just focus on improving a single aspect of the five variables used by Lorenzen.

The following illustrates the result Lorenzen achieved during his investigation and interviews: (About the Creative Class' assessment of spatial quality) *"Many highlights the urban space as a central element. Both beautiful architecture, cosy squares, green spaces and proximity to water is appreciated by the creative. At the same time is the creative class attracted to a diverse range of shops and lifestyle opportunities."* (Translated from Danish) [Lorenzen, p. 70]

Despite this, another interesting aspect of the Danish Creative Class is, that they do not behave as uniquely as described by Florida. *"The creative class is generally attracted to the big cities urban opportunities, diversity and the pulse which is in urban environments. However, while most of the creative finds city life stimulating, it is not all of them who want to live in the middle of the maelstrom. Many people chose to live in the suburbs or surrounding area and thereby have peace and nature around them, while the city is within a short commuting distance. Many creative people are also attracted by provincial towns with special characteristics."* (Translated from Danish) [Lorenzen, p. 83]. There are many similarities, but a large group within the Danish Creative Class do not wish to live in the middle of the large cities, despite the overwhelming possibilities present, which ought to be right up their ally according to Florida. Instead they choose to live a bit further from major city centres, with more peace and quiet, while still having the possibility to travel a short distance to the centre of the larger cities, enjoy the life there and then go home again. The important thing here is the distance, because even though they prefer the suburbs to the city centre they also severely dislike commuting as mentioned before. [Lorenzen p. 71]

Beside the things which in Lorenzens study are identified to attract the Danish Creative Class, Lorenzen also points out a couple of things he during his investigation discovered apparently repelled them. *"There are also some general traits that apparently repel the creative class: a thin labour market with limited career opportunities, a limited supply of culture and experiences in everyday life and on the whole lack of diversity."* (Translated from Danish) [Lorenzen, p. 71]. A short conclusion is: *"They are attracted by a relaxed atmosphere where openness is combined with commitment and a sense of community."* Besides this *"The professional life weighs heavily; The academic challenges and career opportunities is an important element in relation to where the creative choose to live"* (Translated from Danish) [Lorenzen p. 70]. To summarize, the Danish Creative Class is not attracted by the major cultural initiatives such as stadiums and operas, but rather by small, local, creative environments and especially the presence of Bohemians. It is basically quality rather than quantity, that is attractive for the Danish Creative Class. [Lorenzen, p. 73]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 31 of 108

### 2.3.7 The three T's

In order to understand the financial determined geography, that is the result of the Creative Class' choice of where to live and how this influences the economy, Florida use what he calls "*the 3 T's of economic development; Technology, Talent and Tolerance*" [Florida, p. 249]. Where all these three factors exists, the Creative Class is drawn, and if a city desires to attract these people, and thereby stimulate innovation and increase their economic growth, it is according to Florida necessary to understand what these factors entail.

This is of cause not the only theory on how to stimulate growth, but Florida stands by the validity of his theory, and argues that regional growth is driven by creative people that prefer diversity and openness, and that larger concentrations of scientist and creative people with different skills, create a greater chance for innovation and the combination of ideas in new ways. This means, as he takes it one step further, that even greater concentrations should lead to faster innovation, more innovation, more high-tech companies, more jobs and thereby more economical growth, thereby validating his theory. So based on this, if cities and regions desire to create innovation and financial growth they need lots of the three T's; technology, talent and tolerance.

All of these are equally important according to Florida, and all need to be present at the same time in the same area in order to achieve success, see Figure 9. [Florida]

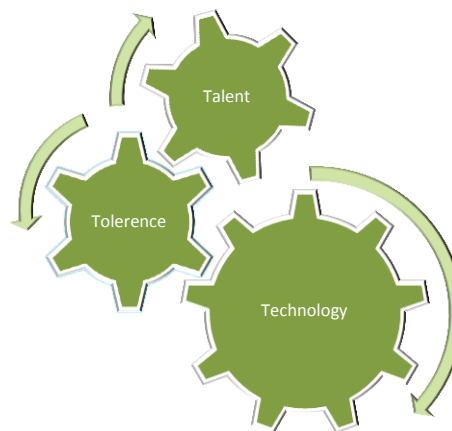



Figure 9: The three T's

The T for **Technology** in Floridas definition, is a combination of two things; the technological development in a given region, and the innovation that is experienced in the same region. In order to make this a measurable attribute, Florida and his team created indexes for the two, with the high-tech index based on the size and concentration of a region's economy within growth sectors such as software, electronics, bio-medical products and engineering, and the innovation index based on the amount of patents in relation to the population. This made it possible to study the relation between the technological development and the innovation in a region, and the presence of the Creative Class in the same region. Their result was that of the top 20 regions on the high-tech index, 15 were also on the index for top 20 regions with regards to the part of workforce belonging to the Creative Class,



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 32 of 108

and with regards to the top 20 index for innovation, 14 were also on the top 20 with regards to the Creative Class.

The T for **Talent**, is a little more straightforward to measure, and is simply an expression of the amount of the population with an education of four years or more. The results when comparing this index to the index for regions containing the most people from the Creative Class, was that 17 out of 20 regions from the talent-index also were to be found on the Creative Class index.

The T for **Tolerance**, is much harder to quantify. Tolerance is basically the openness and diversity experienced in a region, and in Floridas study this is made up of four different indexes; Integration of immigrants, number of people in the population who were born in foreign countries (Florida calls this the Melting pot index), the percentage of homosexuals in the population and the percentage of bohemians in the population, with bohemians defined as writers, musicians, actors, painters, sculptures, photographers and dancers. The results from the comparison of these indexes with the Creative Class index were as follows: of the top 20 on the Melting Pot index, 12 were also in the top 20 of the Creative Class index, of the top 20 on the index for homosexuals, 10 were also in the top 20 for the Creative Class. Last is the bohemian index, which is not measured up against the Creative Class but only with the indexes for the other T's where it scores highly. [Florida]

All in all Florida uses the result described in the previous section to conclude, that in order for a region to experience economical growth they must offer the three T's, and if they do not, they will fall behind. Even though the goal for this project is not to create economical growth, the theory is still usable. This is due to Floridas underlying assumption that it is the Creative Class that creates growth, and his means of creating growth is the goal itself for this report, attract and keep the Creative class. The combination of these three T's along with the percentage of people from the Creative Class in the general population, is what Florida uses to create what he calls the **Creativity Index**, see Figure 10. [Florida]

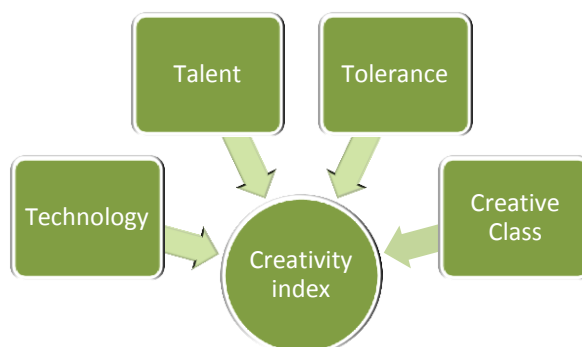


Figure 10: Elements of the Creativity Index

The Creativity index is a tool Florida uses to measure a regions basic creative capacity, and regions that scores highly on the creativity index are named **Creative Centres**. It is such a Creative Centre that Kongens Lyngby with the City of Knowledge strategy strives to become, and it will therefore



be relevant to have the elements of the creativity index in mind when deciding on which steps to take in order to maximise the chance for success of the City of Knowledge.

### 2.3.8 The Creative Class and Denmark

The conclusion of Mark Lorenzens investigation is, that the Danish Creative Class is remarkable unevenly distributed between the regions and municipalities, compared to the result presented by Florida. Despite this he conclude that his results nonetheless prove Floridas basic hypothesis, that the cities with the largest percentage of the Creative Class in the population, are doing the best financially. The results also show, that even though the larger cities with the inherent diversity appears to exert the greatest pull on the Creative Class, a number of smaller cities sets themselves apart in a positive way. Statistics further more show, that the Danish Creative Class are to be found in cities with certain spatial qualities, some of these equivalent to those described by Florida, as being attractive for the American Creative Class, such as ethnic diversity and the presence of creative and artistic people. *"Our statistical analysis and interviews have shown that the Danish creative class does not behave as uniquely as Richard Florida has interpreted the U.S. creative class' behaviour. This opens up for a more nuanced discussion of the Danish creative class and for understanding that there may exist different spatial qualities and different models for attracting the creative class in the Danish cities."* (Translated from Danish) [Lorenzen, p. 82]

An interesting aspect of Lorenzens study, and an aspects that confirms the results presented by Florida on this part of the subject, is that despite the fact that the Danish Creative Class is much more unevenly distributed than what Florida concludes with regards to the American Creative Class, Lorenzen do find that the 20 municipalities with the largest share of the Creative Class among municipal employees is concentrated in the area around Copenhagen. This is further backed up by a survey done by 11CityDesign in collaboration with "Danmarks Statistik", see Figure 11.

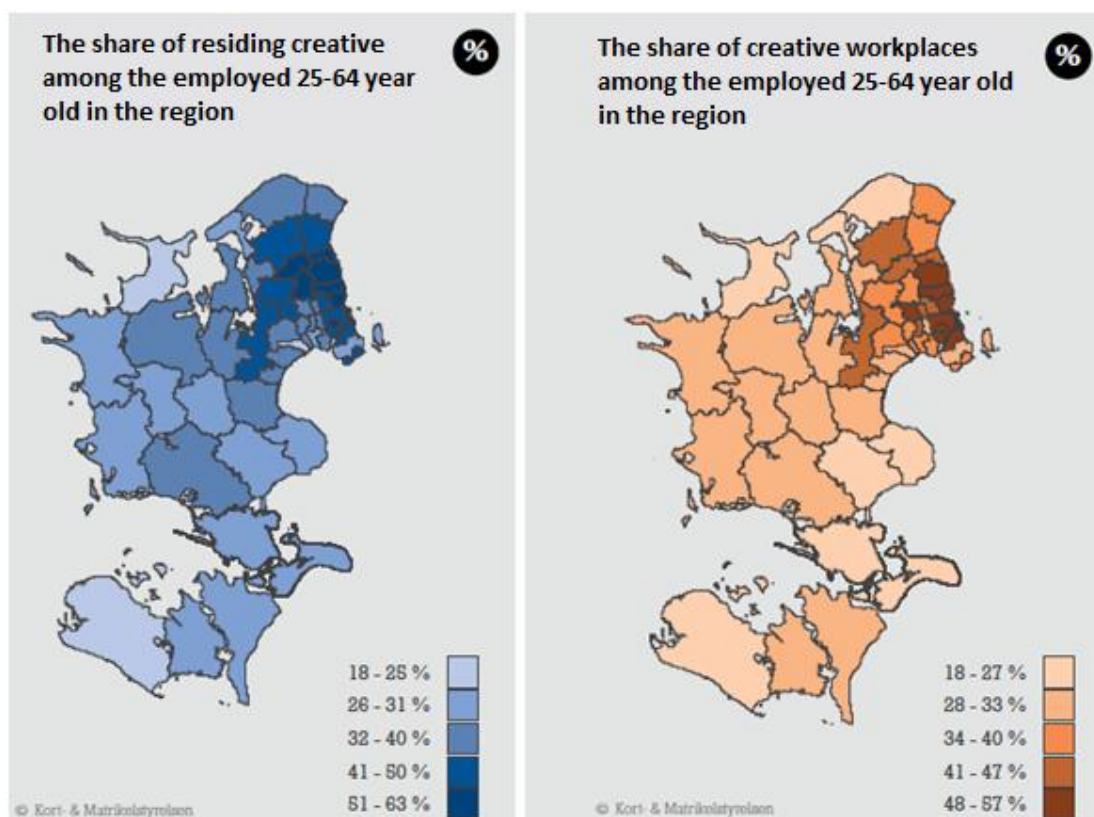



Figure 11: The Creative Class' distribution on Zealand [11CityDesign]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 34 of 108

It is thereby evident, that the proximity to the capital's educational opportunities and labour market is central to the occupation of the creative class. This, Lorenzen states, is also consistent with international studies showing that the creative class in several Scandinavian countries (Denmark, Sweden, Norway and Finland) sees big cities and especially the capital cities, as an important factor in creating a good life. [Lorenzen, p. 33]

Last, Lorenzen also looks at the claim by Florida, that the Creative Class creates financial growth in the regions in which they reside, a claim that have received a fair bit of criticism regarding causality. But the study completed by Lorenzen is much more thorough and far better founded in this regard, and still confirms the results by Florida; that the Creative Class contributes to regional growth. [Lorenzen, p. 76]

## 2.4 The creative class in relation to students and urban quality of life

Since the description of who can be considered to be a part of the Creative Class do not include students, the author of the book on the Danish conditions, "Den danske kreative klasse", Mark Lorenzen, was interviewed as a part of this study. This was done in order to discuss the topic of students in relation to the Creative Class, and how to take in to account the characteristics of this group in the planning of university cities with a high level of urban quality of life. This is an essential aspect in the quest to transform Kongens Lyngby from what it is now and into a lively university city, and the understanding of this specific aspect of the subject is therefore very important for maximising the chances of success.


Mark Lorenzens opinion on this matter was, that students taking a higher education, in this case the students at DTU, easily could be considered to be a part of the Creative Class. The reasoning behind this statement is based on a look into the processes defined as being characteristic for the creative work method, and the processes that forms the education for students at DTU.

To get a understanding for this position, some of the main characteristics of these two are listed below in Table 5, as stated by Lorenzen:

The creative work method	Work method of students at DTU
Project oriented	Project oriented
Irregular working hours	Irregular working hours
High degree of personal motivation	High degree of personal motivation
Openness	Openness

Table 5: Work methods of the Creative Class and students respectively

If taken a step further, then a part of being a student and taking a higher education is, that the students become used to looking for inspiration and non-conventional ideas in many different ways, as a part of their studies. This way of working and thinking is a very integrated part of the students life and also translates to their personal life, where they are very open minded and desire the same inspiration they experience in their professional lives, in their surroundings outside the university.


	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 35 of 108

From this outline it is easy to see, that there are many similarities between the work methods of the students and the creative work method, and it is therefore a reasonable conclusion to use the theory on the Creative Class, as a mean of gaining a better understanding of how the students work and what their preferences are; as Lorenzen says: *"The students have, so to speak, more of the stereotypical Creative Class preferences than the older generation whom need to trade off a creative life style with preferences stemming from having children and other responsibilities in their life: natural beauty, safety, day care and so on. This plays a role for where they choose to live"* (Translated from Danish). This means that the core characteristics of the Creative Class are more pronounced in these students than in the older generation, and this should be taken into consideration when planning facilities and activities, that are meant to attract them to the city.

With this relation determined, the next question is **how** to take this in to consideration with regards to planning a university city; in this case in relation to the City of Knowledge strategy and the relations between DTU and Kongens Lyngby. As a comparison Lorenzen used the city of Værløse which, just as Kongens Lyngby, have a large population group within the Creative Class, and is placed in relative close proximity to Copenhagen. Værløse has according to Lorenzen also had to find a strategy regarding the many from the Creative Class and how to tackle the challenges the close proximity to Copenhagen poses. Their solution have been to not try and compete with Copenhagen on cultural possibilities, shopping and the like at all, and instead focus on developing their own character as a relaxing and beautiful place to live. Due to this they now have a large part of the Creative Class in the population, who enjoy living in the city while going to Copenhagen for cultural activities and work.

The challenge Kongens Lyngby faces is to a certain extent the same; they also have a large group of the Creative Class living in the municipality, and they also have to find a strategy to cope with the close proximity to Copenhagen. But unlike Værløse, they also have many from the Creative Class working in the city but living elsewhere, and it is this group the city would like to utilise better.

Kongens Lyngby therefore have a second part of the challenge to which they need to come up with a strategy for, as well as a different starting point. It was planned that the city should take some of the load off Copenhagen, in a time where it was thought that the population growth in the capital would be too large for the city centre to handle. Since this growth never reached the heights they expected, Kongens Lyngby now have more and larger facilities as well, as a more extensive infrastructure, than the population size should deem necessary. This means that the city now suffers a bit from for example traffic planning, that is adapted to a much larger population, and a time where the most important citizens were those who would come by car. This influenced the focus of urban planning, and infrastructure and parking facilities got pride of place; as to say the focus earlier was "lets first focus on the traffic and then we can plant trees later". This does not fit well with the new desire of attracting the Creative Class; people that to a much higher degree value the quality of urban life. As Lorenzen puts it; if a city is to be sustainable it must shape itself around those who create growth for it, and with the City of Knowledge Strategy and the desire to become a university city this is to a much higher degree than before the knowledge heavy industries and the students.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 36 of 108


When it comes to actual initiatives and the amount of students needed to create a different feeling in the city, the three main aspects are size, visibility and type of initiatives. According to Lorenzen, it is at first not as important to achieve some form of critical mass with regards to size or amount, but more important to secure visibility. As he states: *"It is not as much about critical mass as about visibility and engagement"*, *"Visibility comes first. Critical mass only becomes important later, when the process has taken off and become self-reinforcing on its own. The primary concern for policymakers is visibility and engagement. Size and mass is not enough, and can even harm if introduced politically"* and last *"Few very visible initiatives and engaged people can have a larger effect than many whom are not as visible and engaged"* (Both translated from Danish)

With this in mind, the second aspect of the planning Lorenzen points out is diversity. He refers to Jane Jacobs who have inspired both Richard Florida as well as many modern urban planners, and states that one of the most important aspects of designing a city that suits the Creative Class is diversity, all the way down to the micro level.

For example with a realisation of a dorm in the city, it is not necessarily a good idea to make it too big; *"Just building a large dorm with many students to achieve some critical mass is not necessarily good, because you just risk them closing off because they have enough in themselves. You risk creating a dorm-ghetto"* (Translated from Danish), as stated by Lorenzen. As a good example of this he refers to the older and larger cities, that have grown to what they are now over a long period of time together with their university, as for example Copenhagen and Aarhus; here students live all over the place and are not gathered in a single spot.

Of course it should not be dispersed too much over too large an area, and the gathering of initiatives as described by for example Jan Gehl, is still an important aspect to have in mind.

Last but not least, when coming up with these new initiatives, one of the very important aspects according to Lorenzen is, that it is not about new monumental constructions and prestige buildings. It is much more about authenticity and micro design when designing for the Creative Class.

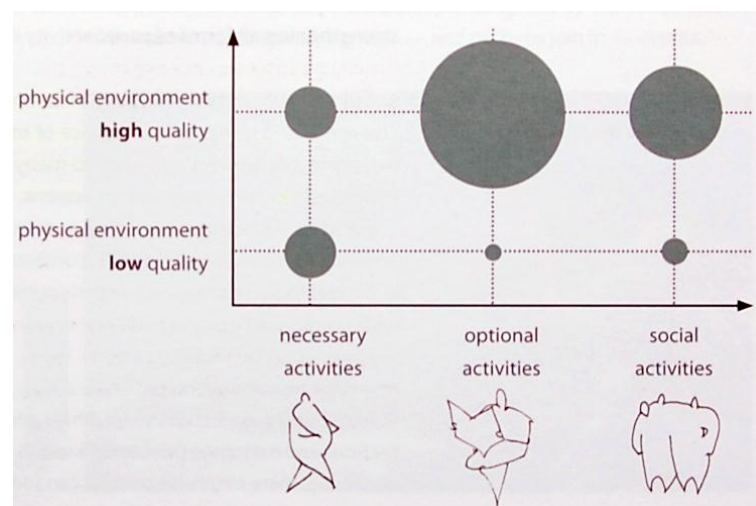
	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 37 of 108

## 2.5 Design of urban spaces

The theories presented by Jan Gehl in the books "Cities for People" and "Livet mellem husene" are based on the author's views on how to create a city, that is attractive to live and walk around in for humans. Unlike the theories of Florida and Lorenzen, it is not created on the basic premise of creating financial growth for a region or municipality, or centred around a specific class or type of people, but is instead directed towards caring for people in cities in general, which in the author's own words *"is an important key for achieving more lively, safe, sustainable and healthy cities"*. [GehlB, p. XI]

### 2.5.1 Activities in urban spaces and how to make them possible


Activities of all kinds are what shapes our cities for good or worse, and in order to achieve a better understanding of the different kind of activities that occur in cities, Gehl divides these into three categories: Necessary activities, which will take place under all conditions, optional activities, which only takes place under good conditions, and in addition to these he adds what he calls "Social activities", see Picture 1. [GehlB]



Picture 1: Activities and environment [GehlB p 21]

He defines **necessary activities** as follows: Going to and from work or school, waiting for the bus, shopping for groceries, running errands and so on. It is mostly the everyday activities that belong to this group; activities that almost everybody have to do, and most of the walking activity in a city comes from this activity group. Because of the fact that these activities are necessary, they are not easily influenced by the physical environment, but are more or less independent of outer conditions. The group of **optional activities** is a totally different species. It is activities that can be done if desired, and if the space around makes it possible. These activities only take place, when the outer circumstances are really good, and when the weather invites it. **Social activities** Gehl defines as all the activities that only occur, as a result of the presence of people in the same place. It is children playing with other children, conversations, passive contacts - watching and hearing other people and so on. These kinds of activities almost only arise, as a result of activities connected with the two oth-



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 38 of 108

er groups of activities. They happen coincidentally as a direct consequence of people meeting and re-siding in the same place. [GehlA, p.7-10]

It is the latter two of these two activity groups, that can help improve the feeling of life in a city, and also the diversity and options these activities brings with them, that matches the qualities needed to attract the Creative Class, as described by Lorenzen and Florida. Since this report, Studies of University Cities, has the focus of creating more life in the urban space, it is therefore these activities and how to make them possible, that will be dealt with in the following. How to improve the conditions in a city in order to facilitate more of these desirable "optional activities", is then the important thing to identify, and according to Gehl, it is all about improving the conditions for moving around the city on foot. *"More roads invite more traffic. Better conditions for bicyclist invite more people to ride bikes, but by improving conditions for pedestrians, we not only strengthen pedestrian traffic, we also - and most importantly - strengthen city life."* [GehlB, p. 19] *"If we take a closer look at the city life studies mentioned earlier, we can see that in city after city where conditions for life on foot are improved, the extent of walking activities increases significantly. We also see even more extensive growth in social and recreational activities"* [GehlB, p. 19]

The idea is to think of the city as a social meeting place, and when on foot, walking through the city at a much slower pace, makes it possible to engage in social activities, which by itself attract more people to the area. *"social activities include all types of communication between people in city space and require the presence of other people. If there is life and activity in a space, there are also many social exchanges. If city space is desolate and empty, nothing happens."* [GehlB, p.22]. So, how to attract people to the city in the first place? Well according to Gehl *"studies from inner-city shopping streets in Copenhagen show how happenings, events and building sites where we can watch people perform, play music or build houses attract far more people to linger and watch than shops along building facades."* [GehlB, p. 25].


Gehl's solution to creating more interesting cities, that are better adapted to facilitate life, is to work with what he calls the human scale. *"Basically, working with the human scale means providing good city spaces for pedestrians that take into account the possibilities and limitations dictated by the human body."* [GehlB, p. 33]. The human scale therefore becomes one of the essential theories in his work, and an important aspect in creating urban spaces, that will feel inviting and attract people.

### 2.5.2 The human scale

The theories described in the work of Jan Gehl, takes its basis from the basic human physiology; our sight, perception ability, as well as the speed with which we walk, and how this affect the way we perceive our surroundings. Our modern cities are often adapted to suit car traffic, with regards to both the size of streets but also regarding the design of our buildings, which are large and grand, but with a detail



Picture 2: Made for 100km/h traffic - Dubai [GehlB, p. 45]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 39 of 108

level of the facades that means, they are best experienced when driving by in a car; *"Driving in a car at 50, 80 or 100 km/h, we miss out on the opportunity se grasp detail and see people. At such high speeds spaces need to be large and readily manageable and all signals have to be simplified and magnified so that drivers and passengers can take in the information"* [GehlB, p. 44], see Picture 2. There is simply not enough new inputs, to keep the human mind interested when walking by on foot.

Older cities established before the car took over, have an entirely different scale to them, see Picture 3. They are build for humans on foot, and the spaces and facades provides us with new impressions everywhere we look and go; *"5 km/h architecture is based on a cornucopia of sensory impressions, spaces are small, buildings are close together and the combination of detail, faces and activities contributes to the rich and intense sensory experience"* [GehlB, p. 44]. The slower pace means that we have time and leisure, to take in the details and the people around us, which makes for a much more interesting urban space. This same kind of space is not just to be experienced in Venice, but also in for example the popular old neighbourhoods in Copenhagen and Aarhus, and also in some areas of the older Kongens Lyngby.



Picture 3: Made for 5 km/h traffic - Venice [GehlB, p. 45]

This matter of scale also translates to the size of the urban spaces. In the narrower streets and small urban spaces we can see the buildings around us clearly, and we feel protected and safe. The smaller space also means, that it takes fewer people for it to seem buzzing with life, see Picture 4, and this is extremely important when wanting to create life, whereas the larger space might seem majestic and impressing on paper, but they very easily feel empty and desolate, see Picture 5.




Picture 4: Small spaces - good [GehlB, p. 52]



Picture 5: Large space - bad [GehlB, p. 52]



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 40 of 108

Jan Gehl uses in his book "Cities for People" the following example to illustrate this *"If you're expecting 100 students for a lecture, find a room that seats only 50. The room will fill up quickly, and everyone will think that this must be an important lecture indeed since so many people have turned up [...]* In the reverse situation, where 50 students are spread out in a hall that seats 300, everyone wonders why the other students haven't bothered to come. People start to speculate about whether something more important is happening elsewhere at the university." [GehlB, p. 51]. Basically *"Life in the city is a relative concept. It is not the number of people that counts, but the feeling that the place is populated and being used."* [GehlB, p. 62]. In short, it is important to assemble people and events. Gehl's keywords for encouraging life in the city are clear: You should create compact, direct and logical routes suited for the slower moving traffic; you should make sure that spaces are not too large and you decisions about which spaces are the most important should be clear.

On how to create the feeling of life in an area, Gehl has two suggestions: You can either achieve the desired effect quantitatively, by inviting more people to come by, or you can do it qualitative **by inviting the existing population to stay longer and slowing down traffic**. The one he himself is advocating for is the latter, which he describes as being both simpler and more effective [GehlB, p. 73], and one of the ways to achieve this is according to him, to secure ground floor activities and functional interaction with the existing life on the streets. [GehlB, p. 79]

### 2.5.3 The four principles of Jan Gehl


Gehl's end goal with inspiring planners to create cities, where people are invited to walk and bike, is to secure a better foundation for life in the streets and thereby a greater wealth of experiences, because the fast traffic have been converted to slower traffic. [GehlB, p. 71]. But better conditions for pedestrians, are not the only change he suggests. In order to achieve cities better designed for humans, Gehl works with four simple principles [GehlA, p.77-121] for evaluating and designing outdoor spaces as well as buildings, which he have derived partly from a series of case studies completed as a part of making the book "Livet Mellem Husene", and partly on a range of national and international examples;

The four principles			
Gather	Integrate	Invite	Open up
Vs.	Vs.	Vs.	Vs.
Disperse	Segregate	Reject	Close of

Table 6: The four principles of Jan Gehl

The importance of **gathering activities and people** instead of spreading them out, is the first of Gehl's four principles. When people and activities are gathered at a single spot, they get the chance to influence each other, and a self-reinforcing process can take place. [GehlA, p. 77]. Furthermore, according to Gehl the radius in which a person will travel for a single excursion is approximately 400-500 meters, and the need for seeing other people is between 20-100 meters. The problem as he states it is, that it is much easier to spread out, but it does not take many space consuming, indifferent functions or much unnecessary pathway, before an activity or a feeling of life is replaced by an experience of lack of events and emptiness. [GehlA, p. 79]




	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 41 of 108

The second principle, **integration rather than segregation**, is about integration of both different functions, but also of different categories of people, so these have a chance to live side by side. In short, the opposite of separating people and functions that are different, into separate uniform areas [GehlA, p.95]. To illustrate the effect of this, he uses an example where the old Copenhagen University is compared with the newer DTU: *"The University of Copenhagen is still the centre of the old city. The main building is centrally located in the city, and scattered around the town you will find institutes and faculties in over 50 locations where there over the years has been space. The city streets are a part of the university and serve as communication channels, both externally and internally [...] But for those involved the closeness to the city means a myriad of opportunities to use the city and to participate in the urban life. And for the city the university's location and its distribution over the city is a valuable addition of youth, life and events. The counterpart is the rationally planned institution of higher education - a university campus - such as "Polyteknikerbyen" north of Copenhagen. Here has the training been systematised, the lines from department to department is rationally organized, but in return not much is happening in the "city" (Translated from Danish) [GehlA, p. 97]*

When it comes to the topic of **inviting rather than rejecting**, it is all about creating urban environments, that invite people to cross the threshold between private and public space, and thereby venture out in the public environment and contributing to life in the streets. This can according to Gehl be done by creating spaces, that are both physically and psychologically inviting. For example by creating transition zones that are neither fully private nor fully public to work as links, or by making it possible to see what is going on in the public space. [GehlA, p.107]

The last of Gehl's principles, **opening up rather than closing off**, revolves around creating an experiential contact between what goes on in the public environment, and what goes on in the adjacent houses, shops and so on. In connection with this Gehl points out, that it is not only about large windows and glass, but also about distance and visibility, and to illustrate this he uses the example of a library: *" The library with panoramic windows positioned 10-15 m in on a field (red: away from the street) and the library with the windows directly facing the street illustrate the two situations. In the first case, one can see a house with windows in it, in the second case one can see a library in function." (Translated from Danish) [GehlA, p. 115]*

These principles all focus on the same goal; facilitating new activities and experiences, and thereby bringing more life to the streets of our cities. In order for this to be incorporated in the case of Kongens Lyngby, it is necessary to understand a bit more about the complex entity that is a university city, and this will be dealt with in the following section.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 42 of 108

## 2.6 The Creative Class, university cities and design of urban spaces


There have been quite a bit of critique of Richard Floridas work; that his book is too populist and not well enough documented and that his conclusions on what to do are so vague that they cannot be used in practice. At least not without the need for further studies on the specific city in question, and also that his definition of the Creative Class is so wide and encompasses so many different people, that the usability of his results are questionable. In the Danish debate the problems with Floridas work have focused mainly on the fact, that the cultural differences between Americans, on which he have conducted his studies, and Danes are too massive for the theories to be directly transferable to Danish cities.

It may be discussed if the definition of the Creative Class, especially the Creative Professionals, should be narrowed, and the book is without a doubt a bit cumbersome, with the main points scattered throughout, but it is also clear that a comprehensive empirical study forms the base for the book, with documentation for the results placed in the appendix. So the book is not without scientific merit. The book is known and read by many, and the more strait forward, perhaps at times populist, approach to the subject, can also be one of the reasons for the success of the book. A success which have helped spread the message further, than perhaps would have been the case had it been more scientific in its language and approach. With regards to being applicable or not to the Danish culture and society, Mark Lorenzen have conducted a thorough testing of the basic hypothesis, as well as the results, and this study seems to confirm many of the results presented by Florida, though with moderations on some of the statements.

With regards to this thesis on university cities, the most interesting information from the theory of the Creative Class, is how the Creative Class prefers to spend their spare-time, combined with what they look for when searching for a place to live, and on this topic the results from the study by Lorenzen confirms the basic conclusion by Florida. It is primarily this information which will be used in the following sections, and will help create a base on which possible initiatives can evolve from. Another interesting aspect of the theory on the Creative Class, that is important in connection with the development of the initiatives, that will be suggested in later sections of this report, is the similarities between some of statements and the theory of Jan Gehl. The spatial qualities described as being attractive for the Creative Class, are very similar to what Jan Gehl describes as being the optimal way to design cities for all people, not only a specific part of the population.

Besides being an interesting convergence this also shows, that a city that strives to attract the Creative Class, for example a university city, not only can become much more attractive for the Creative Class, but also is an urban environment that is much better adapted for people in general. So an improvement in this direction will not only benefit the students, but also the general population of the city.

The last reservation regarding Florida's Creative Class in relation to this thesis, is that Florida has a financial starting point - it all originates from a desire to create economical growth. But even though he developed his theories in order to define a way to secure financial growth for cities and regions, it is very much relevant for this report due to the fact, that his means of securing financial

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 43 of 108

success is to plan cities to attract the Creative Class, which is the same goal for this thesis. The only difference is the desired end goal, which in the case of this report is an increase in life, activities, creativity and so on, and not financial growth in itself.

On the subject of university cities, many studies have been made regarding the effects of universities placed in close connection with cities, but how is a University City actually defined, and what is the difference between these cities and a regular city? These are questions that are necessary to look into, in order to understand how best to plan such a city, and make the most of its possibilities. Unfortunately most of the studies that have been located and examined during the making of this report, have been done on universities and cities located in Australia, Italy, USA and UK. Not much seems to be written about university cities, or knowledge cities for that matter, in a Danish or Scandinavian context.

Another aspect that is interesting, is how close to a city a university must be placed, in order for the city to be a university city? The University of Copenhagen lies within the boundaries of the city itself as does the university of Aarhus, but the University of Tokyo lies a good distance outside the city of Tokyo. And in America for example, you might say that DTU was the technical university of Copenhagen, but in Denmark and for the students at DTU, the university is barely even located in Kongens Lyngby. This illustrates some of the differences that makes it difficult to find out exactly what parts of the information gathered from studies abroad, that can be used for the Danish conditions. Since the culture and view on education in these countries are so different from the conditions found in Denmark, and the sheer distances are so different, it is difficult to draw direct parallels. The conclusions drawn from this theory must therefore first of all only be considered as guiding, while working as an inspiration for the creation of a plan for the development of Kongens Lyngby.

### 3 Analysis framework

There are many different focus points in the different theories used to form the basis for this thesis, as can be seen in Table 7.


Jan Gehl Design of urban space	Helle Juul University cities	Florida and Lorenzen The Creative Class
-	Stay true to the city's original characteristics	Authenticity
Diversity	-	Diversity
Visibility	Visibility	Visibility - critical mass
-	Involvement	Involvement
Gather	Gathering	-
-	Shared space areas	Shared space areas
Open up	Open up	Openness
-	Flexibility	Flexibility
-	-	Varied nightlife
-	-	Recreational areas
-	Take its base in the type of university and people in question	-
-	Entrepreneurship	-
Human scale	-	-
Integrate	-	-
Invite	-	-

Table 7: Main points from the theory

All of these are in their specific field described, as being very important factors to have in mind when designing cities. Combined they form a very long list of considerations to keep in mind, and it is simply not realistically feasible to include all of them. It is therefore necessary to identify the most important, which will then be used to form the base of this first step in the process to bring about a significant change in the city of Kongens Lyngby towards becoming a university city. Among the points in Table 7 there are several on which more or all theories agree, and these points are therefore the ones, that will be used in the analysis.

First of all there is **diversity**. This is one of the factors that is described as being most important, in both the theory of the Creative Class and in the work of Jan Gehl. It is as stated not only diversity regarding the functions in the city, but also when it comes to the people living in an area, and especially the tolerance that Florida describes as being present in areas with great diversity, that is extremely important for the Creative Class.

**Gathering** is one of the four main principles of Jan Gehl on design of urban spaces, and is also a tool described as important by Helle Juul. The point of *gathering* is to make sure that the initiatives proposed are not spread out over a large area, but instead placed together to create an environment where the different initiatives can feed off each other, and where many different people can meet.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 45 of 108

**Entrepreneurship**, or incubation environments, were mentioned by Helle Juul as a valuable attribute to the city, and since this subject has been touched upon on other occasions throughout both the theoretical study and interviews executed, it will be used in the analysis.


Both Helle Juul and the theory of the Creative Class names **visibility, authenticity, shared space areas, involvement** and **flexibility** as extremely important aspects of designing for the Creative Class as well as university cities. Since these subjects overlap in this thesis, the mentioned characteristics must be considered to be essential.

Visibility is described throughout the theory, as one of the most important factors to create live and excitement in a city. It is about making sure that both people and activities are visible to passersby's in order for a self-reinforcing process to occur, making the city a more interesting place to be.

Authenticity is according to both Juul and the theory of the Creative Class important, in order to create a city that does not just feel like an imitation of for example Copenhagen. The city needs to evolve on its own terms and develop its own characteristics, in order to feel the most attractive to the people it is wanting to attract. Shared space areas is about creating spaces where different people from different backgrounds and professions can meet, under more informal circumstances than usually. It is under such circumstances, that ideas are created and networks across professions are formed. Involvement is about giving people a chance at influencing their surroundings, and how they are developed. Something the Creative Class according to Florida and Lorenzen value highly. Last, Flexibility, is extremely important for the Creative Class when choosing where to live, due to the irregular work hours and very unpredictable spare time, and is therefore something there needs to be a constant focus on regarding all suggested initiatives in this report.

The theories by Jan Gehl are the only ones, that deal with designing urban spaces from a strictly urban planning perspective, and his ideas of **human scale** will therefore also be kept in mind in the sections to come. This is done in order to create a city, that is not only suited for the students at DTU and the Creative Class, but is also a city that is a pleasant place to be in, for the general public as well as visitors.

The above mentioned focus points will form the base for the analysis of the possible initiatives that will be suggested as well as the following discussion.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 46 of 108

## 4 Methodology

In this section the methods that have been used to gather information throughout the process of writing this thesis will be described.

The thesis have been based on a case study of the city and Kongens Lyngby, and there are two main methods via which the theory behind the thesis have been collected;

1. Theory gathered via literature survey.
2. Empirical knowledge gathered via practical work in the City of Knowledge Network, and interviews with select individuals with either direct knowledge of DTU or Kongens Lyngby, or specialist knowledge with regard to the subjects relevant in relation to the topic of this report.

These different methods will be described in more detail below.


### Case study

A case study is in short the study of the real life phenomena. It is a method often used in the study of rare, unique or highly complex phenomena, and is by Robert K. Yin defined as follows: "*A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.*" [YinA, p. 13].

The strength of the case study is according to Bent Flyvbjerg the closeness to real-life situations and the multitude of details that follows [Flyvbjerg, p. 223/5], and he also states that "*Predictive theories and universals cannot be found in the study of human affairs. Concrete, context-dependent knowledge is, therefore, more valuable than the vain search for predictive theories and universals.*" [Flyvbjerg, p. 224/6]. Robert K. Yin describes the strength as follows; "*Compared to other methods, the strength of the case study method is its ability to examine in-depth, a "case" within its "real-life" context.*" [YinB, p. 3].

These points illustrates very well why a case study forms such a good base for going in depth with the subject of this thesis. A thesis with a purpose that matches the best suited application given by Yin well; "*The case study method is best applied when research addresses descriptive or explanatory questions and aims to produce a first-hand understanding of people or events.*" [YinB, p. 5]. This is despite the fact, that the case study in this thesis is a special form of case study, since the case was predetermined. It has therefore not been chosen based on a theoretical founded selection process, and considerations on type, as for instance solely description, theory testing, theory building, or the like, as well as style, number of cases etc. have consequently not been in play.

Despite of this irregularity in the selection process, the subsequent considerations that must be made are still the same for this case study as for others. For instance regarding the skills needed to complete a case study in a satisfactory manner. Yin describes the skills needed as being very similar to any other research method, with the exception of a single instance; that unlike most other

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 47 of 108

research methods, data collection and data analysis must sometimes be done together. To illustrate this point he uses an example of a contradictory interview; *"For instance, a field interview of one person may produce information that conflicts with that from an earlier interview. Doing the interview is considered data collection, but surfacing the conflict is considered data analysis."* [YinB, p. 5]. Especially the fact that this analysis will have to be done quickly, while the researcher is still in the field and can adapt the remaining data collection to this, is emphasised as being important.

The methods chosen to collect the data for this thesis and this case have been versatile. Something that is very much recommended by Yin, as a means for triangulation which is needed to confirm the validity of the processes, and in case studies this can be done by using a multitude of data sources. The specific methods used are literature surveys, interviews and work in the City of Knowledge Network. These methods will be described in more detail in the following, with the exception of the City of Knowledge network, since this a data source and cannot be considered a method in itself.

### **Literature survey**

An academic literature survey, have been used to gather information which can help contextualise and frame the research. In the process of gathering information for this thesis it was, due to the lack of information directed at the specific research goal, necessary to secure a broader foundation than what would otherwise have been needed. This was done in order to secure sufficient background information to draw conclusions despite a lack of directly relevant literature.

Among the platforms used to gather the literature were the Urban historical archives and historical records at the city library in Kongens Lyngby, DTU digital library, Google Scholar as well as recommendations by professors.


The common denominator for any academic literature survey, no matter the subject or the search platform used, is the importance of source criticism. If this step is not vigorously adhered to, one runs the risk of basing further work on a less than satisfactory foundation.

In order to secure that this will not be a problem with regards to this thesis; multiple volumes have been gathered on each subject, after which overlapping theories and points have been identified before use.

### **Qualitative interviews**

Due to the lack of information published regarding planning of university cities from a social perspective, a choice was made to construct an empirical knowledgebase based on a series of qualitative interviews with people considered to have valuable knowledge with regard to the subject of this thesis.

The interviews will be devised with inspiration from the theories presented by Steiner Kvale in his book *"Interview – En introduktion til det kvalitative forskningsinterview"*, with its foundation in

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 48 of 108


the fundamental three questions a researcher according to Kvale must ask before conducting an interview;

1. What is the subject of the interview?
2. Why is the interview conducted?
3. How should it be performed?

All interviews will be conducted as semi-structured interview [Kvale]; meaning that there are certain subjects that must be touched upon during the interview, and to ensure this, questions will be asked that will guide the interviewee in the desired direction. Furthermore it will during the interview process be a matter of judgement if the questions will be followed to the letter, or can be veered from if the interviewee leads the conversation on to other relevant topics.

The interviews will, due to what they are intended for, not be transcribed but only summarised based on notes taken during the interview. Sound recordings of all interviews are used to ensure that all relevant information is noted down, as well as securing correct quotation. All quotations will furthermore be send for approval by the interviewee before being used in this report, to ensure that none of the participants feels misrepresented.



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 49 of 108

## 5 Case description

### 5.1 Kongens Lyngby as case

In Picture 6, the city of Kongens Lyngby can be seen marked on a map over Denmark.

There are many elements that interact and make Kongens Lyngby a very interesting case to look at, in connection with studies of university cities and the Creative Class. Among other things there is the combination of a reasonable sized city with approximately 11500 inhabitants and an internationally recognized university within two kilometres of each other. A situation that forms a good foundation for an investigation into how the interaction between these two can be optimized. The university has approximately 8.500 students [Municipality plan 2009], which represents a unique part of the Danish population, together with a considerable number of companies, who find it attractive to have a division in close proximity to a university like DTU. The city of Kongens




Picture 6: Map over Denmark with Lyngby marked [jaeger]

Lyngby can on the other hand contribute with an urban environment,

that can attract the students and help keep them in the municipality, to the benefit of both the university, the municipality and the business community. This mutual beneficial interaction requires a number of basic prerequisites, from both the university and Kongens Lyngby in order to function, which will be dealt with later in this report.


Kongens Lyngby already has several positive aspects working in its favour, when held up against the theory of both Jan Gehl on the subject of Urban Design, but also when held up against the theory by both Lorenzen and Florida on the subject of the Creative Class. First of all there is the location of the city. It is situated only 10-15 kilometres from the Capital, Copenhagen, in a scenic region of north Zealand with many green recreational areas, while still having cultural attractions from the capital within a reasonable distance. Even more so with regards to infrastructure and easy access to public transportation. Besides this, the city is known as a commercial centre, and has a thriving business life, both with regards to retail but also when looking at the number of larger knowledge heavy companies and industries, that are located in or around the city. These are accord-

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 50 of 108

ing to "Den danske kreative klasse" by Mark Lorenzen vital elements when the Creative Class has to decide where to live; a class the students at DTU are a part of.

Unfortunately, as it is now, not much is going on in the city that appeal to a younger audience. There is a lack of social activities in general, and the nightlife is almost non-existing, with the image among the students, of a city that shuts down at 6 p.m. when the last shops close [Karlsen]. This image is a problem when looking at the student population at DTU, where many students live on campus and the dorms in the surrounding area when they first start their education. After the first semesters many have a desire to move away from campus and often to Copenhagen. There is simply not enough that keeps them in Kongens Lyngby, and both the city and the municipality of Lyngby-Taarbæk thereby miss out on a special group of people. A group of people that could be not only good tax-payers later on, but also a group that could contribute to changing the image of the city, and help create some life in the streets - both during the day, but also after the shops have closed.

These are all aspects of the city, that makes it an interesting case with regards to the subject of this thesis, and combined with the work already initiated by the municipality, "The City of Knowledge", the reason why Kongens Lyngby was chosen as case for this particular study.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 51 of 108

## 5.2 The planning in Kongens Lyngby


From the turn of the century and on up until now, Lyngby-Taarbæk municipality have developed from being largely dominated by agriculture, though with a touch of commerce in the mix, to a fully developed suburban municipality, with an internationally recognized university. The population has risen from approximately 3.500 in 1850 [Municipality plan 1980] to about 65.000 in 1965 and 51.533 by January 2009 [Municipality plan 2009]. The development of the municipality towards an actual suburban municipality started in the 1940's and 50's, with a massive expansion in the construction of residential housing. This was followed by a plan in 1962, on the construction of a large shopping centre in Kongens Lyngby to decrease the pressure on Copenhagen, and the construction of the Danish Technical College, DTH, on "Lundtoftesletten" which was erected between 1962 and 1974.

With regards to official policies for the planning and development of both Kongens Lyngby and the municipality Lyngby-Taarbæk, the first genuine planning document was made public in 1949, in the form of a development plan [ltk.odeumA]. In 1977 a new law on municipality planning was passed in Denmark, stating that all Danish Municipalities within 2 years of a regional plan for the area being passed must compose a municipality plan. Since the plan for the greater Copenhagen area was being developed in 1979, Kongens Lyngby began work on the coming municipality plan in the same year [Municipality planning].

The first real municipality planning publication for Lyngby-Taarbæk was devised for the years 1979-1980, and targeted a number of different areas not previously addressed, like how it should relate to existing planning, as well as how to handle public involvement. A concern that was addressed was the decrease in population in general, with a simultaneous increase in the elderly population. Also the strategies for maintaining or improving Kongens Lyngby's reputation as a commercial centre and how to deal with the increasing traffic where touched upon [Municipality planning]. A municipality plan for 1980-1991 was passed in 1981, establishing the city pattern along with the traffic- and centre structure as well as describing the desired development for the residential and commercial parts of the Municipality [ltk.odeumA]. The plan for the years 1988-1996 was passed in 1989, but did not really bring with it any significant changes to the already existing plan, and in 1996 the plan for 1994-2006 was passed. This time the plan entailed a thorough revision of the basic premises used in previous plans, and subjects such as "building culture", "architectural policies" and "buildings worthy of preservation" was introduced [ltk.odeumA].

### Municipality plan 1980-1992

The 1980-1992 plan defined for the first time the municipality's urban pattern, as consisting of 7 districts: Virum, Sorgenfri, Lundtofte, Ulrikkenborg, Kongens Lyngby, Hjørtækær and Taarbæk, naturally divided by the landscape. Residential areas are to be the fundamental elements of the development, and centres, schools, recreational areas and traffic are to be the structuring elements for the urban pattern. Among these districts, Kongens Lyngby is seen as the commercial centre which the urban development therefore should support. Due to this, a separate centre structure is developed to secure the best possible conditions for the commercial activities to thrive.

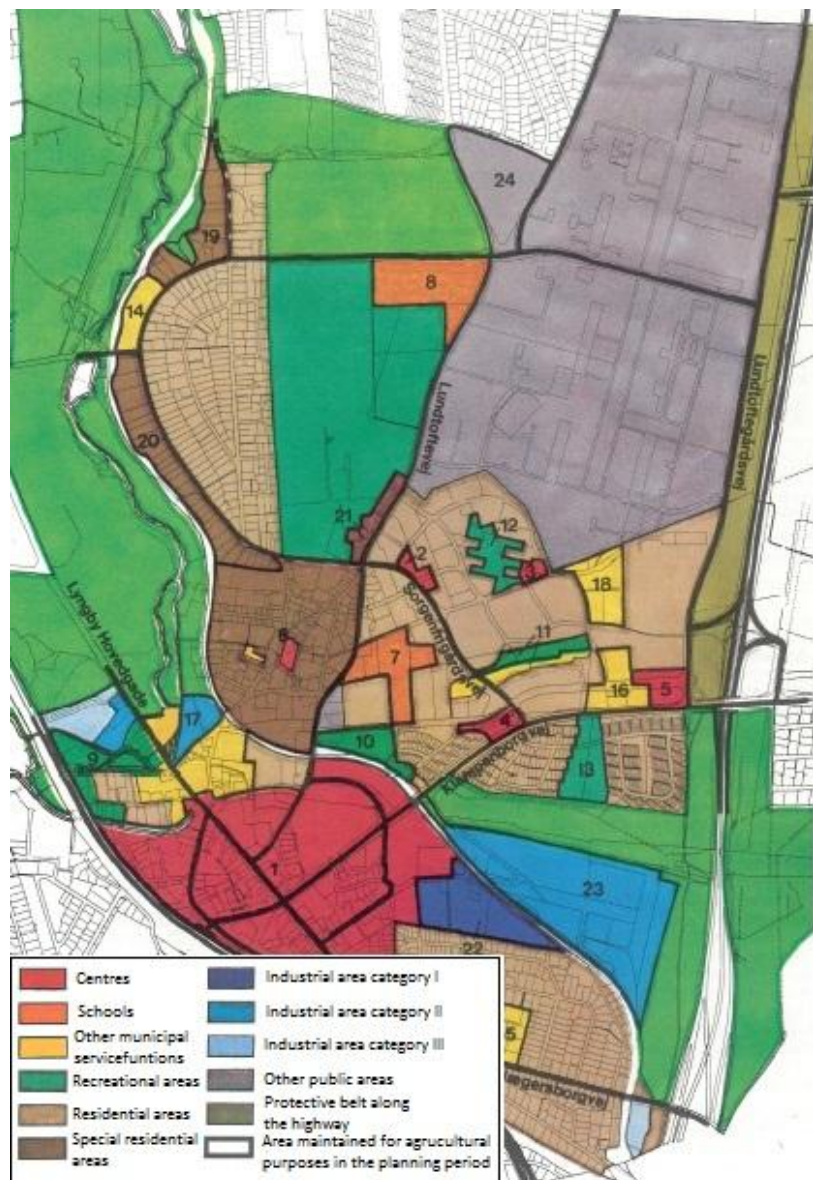
	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 52 of 108

Urban life is also dealt with in the plan, though it was viewed very different compared to how it is look at now. The goal for urban life as stated in the municipal plan illustrates very well this fact: *"Support the local community by giving the local community gathering places. The activity centres must contain a local library and newspaper- and magazine reading room, a day centre for the elderly citizens, day school, radio/TV facilities, tape- and video workshop, kitchen facilities (hot meals for retired citizens, cafeteria and changing rooms for local sports facilities, play opportunities and child-care for children"* (Translated from Danish) [Municipality plan 1980, section 25, page 25-06]. This is the only place where focus on improving the urban life is mentioned in the municipality plan, and the focus is almost exclusively on the elderly citizens, with nearly no initiatives to improve the city for the residents age 15 to 40.

DTU, then known as DTH, do not play any real role in the plan for the development of the municipality, and is in the plan described as follows: *"The area functions as an independent city within the city, with unique features and its own structure. Thus DTH work as a fairly large town, which is disconnected from the municipality as a whole"* (Translated from Danish) [Municipality plan 1980].


This lack of focus, is despite the fact that DTH represents one of the single largest workplaces in terms of workforce in the municipality, and the advantages the municipality, especially Kongens Lyngby, could have from this is not even considered.

In Picture 7 can be seen an overview from the municipality plan, illustrating the general Lyngby area. DTH is simply described as "other public areas", and on many of the remaining illustrations the area is simply a white area on the map amongst all the coloured.



Picture 7: Overview from the municipality plan 1980-1992 [Municipality plan 1980]



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 53 of 108

### **Municipality plan 1994-2006**

By 1994 the focus for Kongens Lyngby has shifted from the basic urban pattern, to a desire to refine the cities characteristics. The city of Kongens Lyngby is described as a regional retail centre, with a turnover that can compare to Copenhagen City's, and commerce is a constant focus point throughout the municipality plan. Besides commerce, the urban environment has started to become a factor in the planning of Kongens Lyngby's future, with a focus on keeping the "old market town feel" of Kongens Lyngby when developing the city further [Municipality plan 1994].

Traffic and parking have also become a major issue, which takes up quite a lot of space in the municipality plan, along with a desire to make better use of the cities green areas. With regards to the urban environment and culture in Kongens Lyngby, the focus is still primarily on attractions, that are aimed at the older part of the population. Culture is viewed primarily as historically interesting attractions, and this is illustrated very well by the fact the "city history collection" at Frieboeshvile, is described as one of the most central cultural attractions in the city, along with the city library [Municipality plan 1994].


The view on DTH, which have now changed its name to DTU, has also changed. In this new municipality plan DTU is described as a significant characteristic of Kongens Lyngby, and a short description of what DTU is, is made part of the plan, and DTU is now actually marked on the illustrations throughout the plan. Unfortunately this is about the extent of the change. The specific framework for the area is constituted by 3 short lines of text on a single piece of paper.

### **Municipality plan 2009**

The focus for the Kongens Lyngby district in the municipality plan, have by now shifted from focusing on the elderly citizens, and initiatives which are attractive for this specific population group, to a focus on creating a more diverse urban life, with attractions targeted towards a much broader spectrum of the population. The goal for the plan for Kongens Lyngby is, as stated on the first page of the plan, *"To focus on attractive urban spaces, a variety of shops and a mixture of housing, liberal professions, commerce, education and culture that can create life in the city at all hours."* (Translated from Danish) [Municipality plan 2009, p. 1].

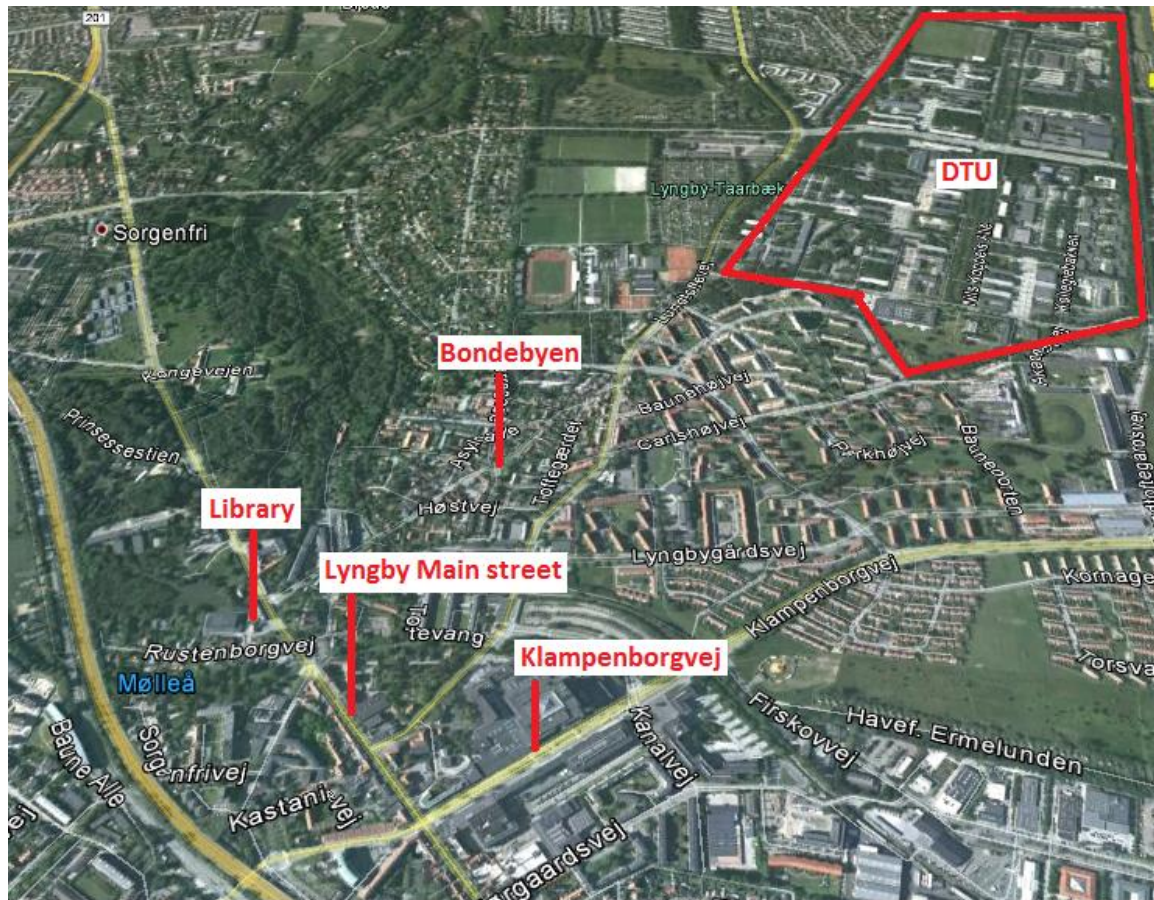
Besides this new focus on a different kind of life in the city, DTU has also received considerable more focus in this plan than seen before. An example of this can be found on page 106 of the municipality plan, where DTU is actually described as one of 6 separate districts in Kongens Lyngby, and further more as a self-owning university with a large number of workplaces and students, with very well described district plans, that for the first time goes into detail.

These changes in the way the municipality views urban life in Kongens Lyngby, and really recognizes DTU as an important aspect of the city is a significant shift in focus. This combined with the new initiative, the City of Knowledge, sets the stage for new possibilities in developing the city and making it a more attractive place to live for the part of the population under the age of 50.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 54 of 108

This shift in the way of planning, is essential in the understanding of how and why the city is as it is now, and it is therefore also a prerequisite for creating a plan for how the city should evolve over the years to come, and maximising the chance for success.

### 5.3 Kongens Lyngby now



Picture 8: Overview of Kongens Lyngby [ltk.odeumB]

Kongens Lyngby is a suburb to Copenhagen. It consist of many different urban environments each with their own special characteristics. Among these you have the original part of Kongens Lyngby called "Bondebyen", which consist largely of historic single family homes, narrow roads with restricted use of cars, see Picture 10 and Picture 9.




Picture 9: The original Kongens Lyngby  
[Photo: Rikke Brinkø]



Picture 10: The original Kongens Lyngby  
[Photo: Rikke Brinkø]



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 56 of 108

The centre of the city, which is a newer part of Kongens Lyngby, is centred around the intersection between Klampenborgvej, which is one of the city's largest traffic arteries, see Picture 12, and Lyngby Main Street which is the city's main shopping street, see Picture 11,



Picture 12: Klampenborgvej [Photo: Rikke Brinkø]



Picture 11: Lyngby Main Street [Photo: Rikke Brinkø]

It is also on this street and the smaller squares and by-streets connecting to it, that most of the city's cafes can be found, see Picture 14 and Picture 13.



Picture 14: Kongens Lyngby Library [Photo: Rikke Brinkø]



Picture 13: Likørstredet, Kongens Lyngby [Photo: Rikke Brinkø]

Moving south, Lyngby square and Lyngby City Hall as well as Lyngby Station are to be found, see Picture 16 and Picture 15. The station which is the main traffic hub in Kongens Lyngby, servicing a large amount of people everyday both via busses and the s-trains.



Picture 16: Lyngby City Hall [Photo: Rikke Brinkø]



Picture 15: Lyngby Station [Photo: Rikke Brinkø]

Besides the previous mentioned areas, Kongens Lyngby also has both a more industrialised area centred around Firskovvej a little north east of the city centre, as well as an area south of the station called Ulrikkenborg square, consisting mostly of apartment buildings and larger businesses dom-



icles; both areas that will not be dealt with in this thesis, due to the distance to the intersection between Klampenborgvej and Lyngby Main street.

The city is a part of the Lyngby-Taarbæk Municipality, which is characterised by a very low amount of public housing, as well as a very low density compared to many other municipalities in the greater Copenhagen area, see Figure 12.

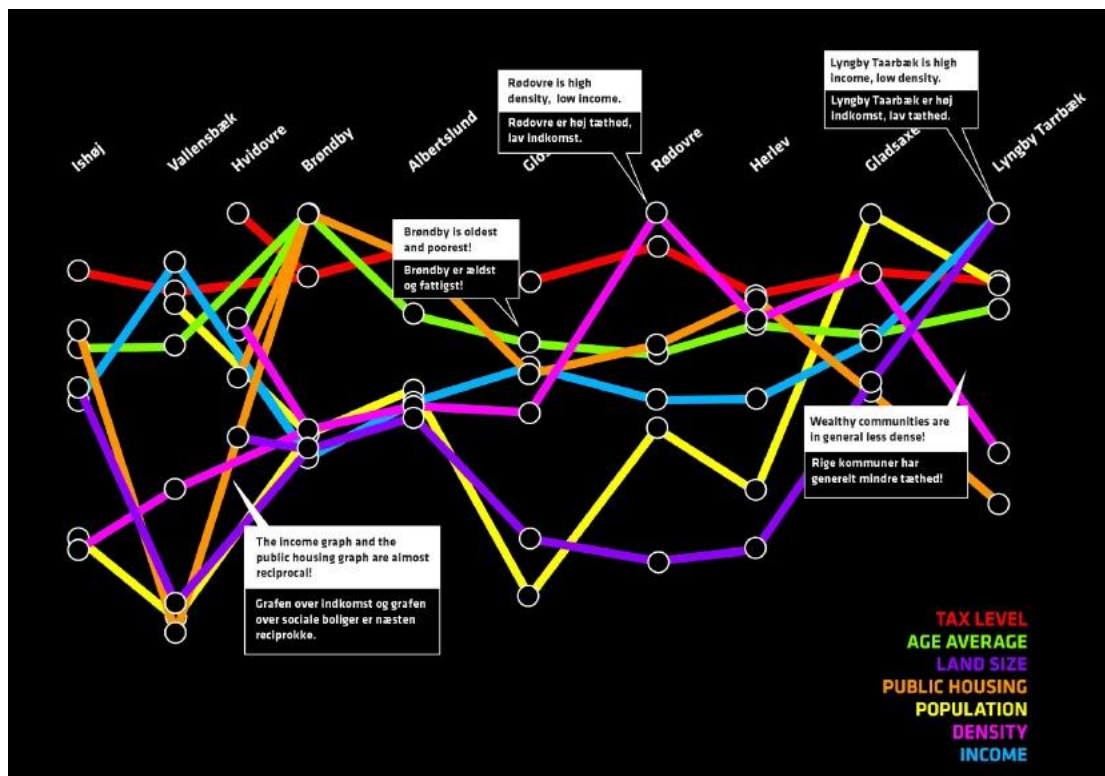


Figure 12: Lyngby-Taarbæk and surrounding Municipalities, [LoopCity]

The city also scores relatively high compared to these before mentioned municipalities, with regards to both tax level, income, land size and population. The city of Kongens Lyngby itself, is a city with a large amount of recreational green areas, which is one of the city's great assets, a large number of sports facilities and -clubs, a thriving business community and last but not least DTU placed only two kilometres from the city centre.

## 5.4 The Creative Lyngby

Out of the total population in Lyngby-Taarbæk Municipality 61% of the citizens are considered "Creative", compared to the capital Region of Denmark where it is 52%, and the general population in Denmark where the number is approximately 38%, see Table 8. [11CityDesign]

Municipality	Total amount of Creative	Creative Professionals	Creative Core
Gentofte	63%	43%	20%
Rudersdal	63%	42%	21%
<b>Lyngby-Taarbæk</b>	<b>59%</b>	<b>37%</b>	<b>22%</b>
Frederiksberg	59%	38%	21%
Hørsholm	58%	41%	17%
The country's average	36%	25%	11%

Table 8: The five municipalities with the largest share of Creative [11CityDesign]

Besides the large number of Creative in general, Lyngby-Taarbæk also have a large number of Creative youths, also within the so-called Creative Core, see Figure 13 and Figure 14, which according to 11CityDesign is an indicator of a regions growth potential. This is due to the believe, that the young Creative Core consciously or unconsciously, prefer to live with other young creative people, and that they according to the study done by 11CityDesign, acts as a catalyst in the Municipality [11CityDesign, p. 11]. This is also the most interesting part of the group with regards to this report, since it is students that is the main focus.

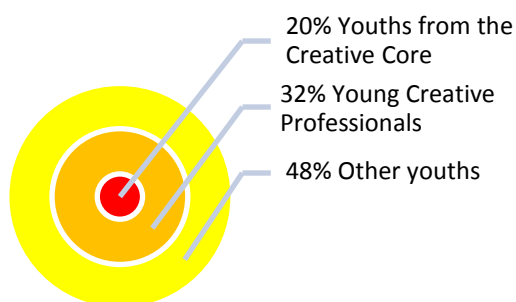


Figure 14: Distribution of Creative Youths in LTK Municipality (Translated from Danish) [11CityDesign]

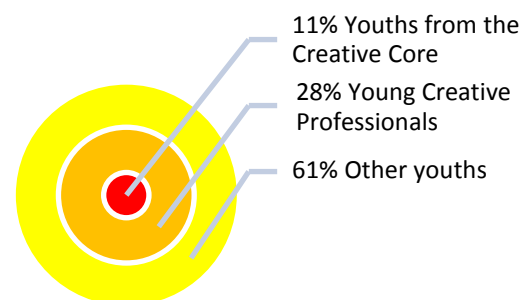



Figure 13: Distribution of Creative Youths in Denmark (Translated from Danish) [11CityDesign]

The study also concluded that Lyngby-Taarbæk Municipality have a clear first place in the country, when it comes to workplaces held by the young Creative Core with an impressive 31% of all young people, a number that unfortunately is not as high when looking at how many of the young Creative Core that actually live in the Municipality. This means that the Municipality have many interesting jobs for the young Creative Core but they do not prefer to live there. 11CityDesign's conclusion on this part of their study is, that while the Municipality have a very young age-average within the jobs for the Creative Core, they still have a uncultivated potential among the young Creative Core. [11CityDesign, p. 11]

This conclusion shows how important it is for Lyngby-Taarbæk and the city of Kongens Lyngby to start looking into how this potential can be utilized, not only to create a more inviting urban environment for the students, but also for the good of the city and its citizens.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 59 of 108

## 5.5 The planning at DTU

In 1958 the decision was made, to relocate the then DTH from Øster Voldgade in Copenhagen to Lundtoftesletten in Lyngby-Taarbæk Municipality. Several different locations were discussed, but Lundtoftesletten was viewed by both the then headmaster Anker Englund, and the architect chosen for the project, Nils Koppel, as the most optimal location. This was partly because of the amount of space that was available here and partly due to the planned railway parallel to the freeway, though this was never constructed [DTU campus].

The first plan for the new university campus was to accommodate 5000 students, with plenty of room to expand when - or if - it became necessary, with the only limitation that the buildings were not allowed to exceed 3 stories, in order to protect the undisturbed view from the "Ermitage castle" in Dyrehaven [DTU campus]. In 1959 the first construction began, and soon the first students followed, as former Campus Service Director, Niels Tovborg, tells; *"Students started getting their education here (red: At Lundtoftesletten) as soon as they had the first couple of buildings ready - even though it was mostly still a large construction site. But in the beginning not all the study lines could take all their courses at Lundtoftesletten so for the first many years, many were connected to two places, and the university had shuttle busses to and from Øster Voldgade and Lundtoftesletten."* (Translated from Danish)

By 1976 all educational activities were moved to Lundtoftesletten, where a total floor area of 238.983 m<sup>2</sup> above ground had been constructed [historie.dtu.dk]. This has since then been expanded to 322.250m<sup>2</sup> of floor area by 1986 [Lokalplan82], and is still constantly rising with the addition of new buildings and institutes. The buildings are all distributed throughout the campus area, in precise correlation to a Cartesian coordinate system with x- and y axis symbolised by the 2 main streets "Anker Englandsvej and the avenue constituted by the streets Asmussens Allé, Nils Koppels Allé, Henrik Dams Allé and Knuth-Wintherfeldts Allé, which divide the entire area into four quadrants, one for each of the original study lines available [DTU campus].

Some of the premises the plan was based on, is an excellent example of how much the student population have changed over the years. For example was it in the 50's a given, that most of the students would be males, and it was thought that most of these would not be able to cook for themselves. Due to this the cafeteria facilities were quite comprehensive and spread evenly throughout the campus area. Similar, it was natural that the few females that were expected to enrol, should have a separate room were the mail students were not allowed to enter. [DTU campus]. The most essential esthetical part of the plan, was the amount of greenery that should be part of the campus; the idea was that the campus area should be a clearing in a forest . This is an interesting observation of how the university desired to be a separate area not connected to the city. Something which is emphasised by the fact, that all the leftover soil from the construction was gathered on the southern part of the area, and used to create a tall embankment to function as a barrier; distancing the campus from the residential area, and Kongens Lyngby, to the south. [DTU campus]

In 1988 a new district plan was passed, setting the framework for the future expansion and development of DTH. [Lokalplan82] and in the newest plan from 2009 the university now have permis-

sion to build up to 33 meters in height, depending on the placement on the campus area. So even though Kongens Lyngby over the last couple of years, have started to acknowledge the advantages of having a university so close by, and plan accordingly to support this and make the most of it, DTU are lacking a bit behind. The campus area as a separate city with housing and sports facilities still exists, though with plans in action to start moving forward, towards a closer connection with the city of Kongens Lyngby.

## 5.6 DTU now

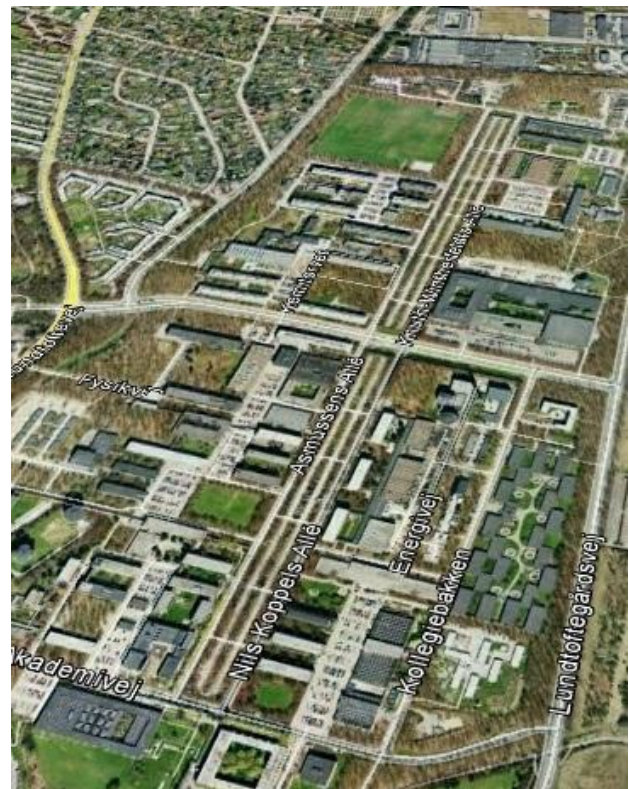
DTU was in 2009 the 3. largest university in Denmark with regards to both turnover, primary research and scientific personnel, only outdone by the University of Aarhus and the University of Copenhagen, see Table 9. This compared to its size - it had by 2009 the second lowest number of active students - is an impressive feat.

The Danish Universities in key ratios (2009)								
University	KU	AU	DTU	SDU	AAU	HHK	RUC	ITU
<b>Turnover (million kr)</b>	7.346	6.075	4.026	2.509	2.177	1.209	765	231
<b>Basic research (million kr)</b>	2.669	1.752	1.455	781	670	243	235	85
<b>Active students</b>	35.673	29.644	6.338	14.493	10.735	13.057	7.512	1.046
<b>Scientific personnel</b>	3.104	2.257	1.555	1.207	1.034	580	572	71

Table 9: Danish Universities in numbers [Gov]


The university had a yearly turnover of 4 billion in 2009, which can be seen above, and a total of 7597 students in 2011 [101.dtu.dk].

Over the last couple of years the university have undergone quite a lot of changes, one of which was a break with the original very strict architectural scheme, that characterised the university with mostly 2 story yellow brick buildings, running from east to west throughout the campus area, see Picture 19. This change can be seen with for example the construction of the new building 324, that will house the institute for informatics, see Picture 18, as well as the new building 328 that will house DTU Space, with many more like these to be constructed in the years to come.



Picture 17: DTU overview [google.maps]



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 61 of 108



Picture 19: Original DTU architecture [henninglarsen]



Picture 18: DTU, Building 324 [christensenco]


The university have also started to move away from the idea of DTU as a self-sufficient entity with a single campus area, which was the case in 2007, towards a multi-campus university with divisions and research activities all over the country. The university now has Risø which is placed outside the city of Roskilde, the research ship and a windmill research facility in northern Jutland, as well as the newly finalised incorporation of IHK (Copenhagen University College of Engineering), which will bring with it a substantial amount of new students.

Last but not least, DTU has with the signing of the cooperation contract between the university and the city of Kongens Lyngby, after many years started to look outside its own campus area. This contract will be described in more detail later

## 5.7 The relationship between DTU and Kongens Lyngby

The relationship between DTU and Kongens Lyngby did not start out in a good place. In 1930, Copenhagen Municipality bought a large amount of unused land in Lyngby-Taarbæk Municipality. In Kongens Lyngby and Lundtofte some of the most important locations were Rævehøjgård and Lundtofte airstrip, with regards to the later placement of DTU. During the 40's and 50's the parish council changed from having a socialist majority to a conservative one, and they decided to focus more on detached houses instead of apartment complexes, and since these take up considerable more space, the parish council decided in 1950 to start negotiations with Copenhagen Municipality concerning the possible repurchase of the areas that Copenhagen still owned in Lyngby-Taarbæk Municipality. The process surrounding this repurchase was long and difficult, but in 1957 the Lyngby-Taarbæk municipal council announced that the reunification of, among other, Lundtoftesletten with Kongens Lyngby was a reality. [Lyngby1999]


But even before the excitement had subsided, the local paper in 1958 printed a story mentioning the possibility of a relocation of the Danish Technical College, now DTU, to Lundtoftesletten. In the beginning of this, the Mayor of Lyngby-Taarbæk at the time, Paul Fenneberg, was positive towards this arrangement. This was probably due to the fact that of the 72 hectares of land the State anticipated was needed, 30 hectares was already reserved for sale to "Arbejdernes Andels Boligforening" for the construction of 800 apartments, and 6 hectares was reserved for other purposes. The state already owned 27 hectares in the form of Lundtofte airstrip, and on the first of June 1958, Lyngby-Taarbæk Municipality decided to sell the desired amount of land to the State.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 62 of 108

Unfortunately this was not the end of the story. In 1958/1959 the state suddenly upped its requirements from 72 hectares of land to 103 and later 106. Lyngby-Taarbæk had no real possibility to object, due to the fact that the then Minister for Education, Jørgen Jørgensen, had made sure that the state could expropriate the desired area, if Lyngby-Taarbæk Municipality would not sell voluntarily. The expropriation caused such a tense relationship between the State, DTU and Lyngby-Taarbæk Municipality, that the then Mayor of Lyngby-Taarbæk, Paul Fenneberg, chose not to participate in the groundbreaking ceremony, which took place in November 1960. This poor relationship was also noted at the inauguration in 1964, where Paul Fenneberg sent the Deputy Mayor instead, and the then Minister for Culture, Hans Sølvhøj, expressed regret that he could not get in touch with Paul Fenneberg. [Lyngby1999]

Luckily this relationship have over the years improved tremendously, and by the 1990's an actual working relationship was up and running, as described by the former director of Campus Service at DTU, Niels Tovborg; *"The relationship between DTU and the city started getting better in the early 1990's. We started having regular meetings and the general attitude continued to improve until we actually had a very good relationship in the latter part of my employment. It was a relationship I appreciated a lot in my work."* (Translated from Danish). This relationship has since then continued improving, and have so far resulted in a co-operation agreement being signed in 2011 by both the then president at DTU, Lars Pallesen, and the Mayor of Lyngby-Taarbæk Municipality, Søren P. Rasmussen. This agreement centres around the City of Knowledge Strategy, and focuses on working together on initiatives, that can support the desire to turn Kongens Lyngby in to a knowledge- and university city.

If this desire is to be realised, there needs to be more students in the city at all hours of the day, and the easiest way of facilitating this, is to have more students living in the city centre. To understand why this is not the case today, it is necessary to look into how the living situation and the student composition have changed, since DTU was first moved to Lundtoftesletten.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 63 of 108

## 5.8 Living situation and student composition

DTU was as described earlier, constructed in a way that is similar to the American style Campus. This means that living facilities have been a part of the campus from early on, but after these initial living facilities were constructed, the situation regarding students at DTU have changed significantly. The enrolment of students have increased dramatically over the last couple of decades. In 2011 DTU accepted 2576 new students compared to the 1249 in 1993. [101.dtu.dk] The effect of this is that there is a shortage of cheap housing like dorm rooms for the still increasing amount of students. This is a problem for both the Danish students who start at the university, many coming from all over the country, but it is also an increasing problem for the international students, who come to DTU expecting a first class University, and then gets placed in Campus Village, in temporary housing units.

Another aspect that play a role in this, is the change in student composition over the last forty years since DTU was build. In the 60's and 70's when DTU was moved to Lundtoftesletten it was expected, that most of the students who would attend the university would be male. This means that the living accommodation present, therefore often was build to target the specific segment, but with the change in society and the many new educations offered at the university, the share of women among the students admitted at DTU was 27% in 2011, see Table 10.

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>Total</b>	1.249	1.218	1.107	1.242	1.256	1.156	1.400	1.350	1.359	1.476
<b>Women</b>	-	-	-	-	23%	21%	25%	21%	24%	25%

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011
<b>Total</b>	1.726	1.611	1.627	1.537	1.789	1.995	2.311	2.517	2.576
<b>Women</b>	24%	24%	24%	27%	28%	27%	27%	27%	27%

Table 10: Student intake at DTU, 1993-2011 [101.dtu.dk]

This is one part of the challenge, that stems from a basic change in the student composition at DTU. *"The student population is getting more diverse in terms of age, background, nationality and life phases. Universities have to accommodate a variety of groups and need to be aware of the different space requirements."* [University Campus, p. 7]. This change in the student population brings with it a need for housing changes. Where many used to stay at dorms on or near the campus area throughout their education, many young new students at DTU now apply for the dorms on the campus area when they start their education, but after a couple of semesters when they have gotten in to a routine with classes and so on, they move away, and many in to Copenhagen. This trend was evident in the interviews completed by Tina Karlsen as a part of her study "Styrket samspil mellem DTU og Lyngby - med fokus på de studerende", and is backed up by a more general study published in "Campus and Study environment - physical framework for universities of the future", which states: *"Studies on student housing show that national and full-curriculum students preferably move off-campus as soon as they can get the opportunity."* [University Campus, p. 5].

This is also true in Lyngby-Taarbæk Municipality, where a study was undertaken as a part of the publication "The Creative Lyngby-Taarbæk" by 1CityDesign, see Table 11.

The settlement pattern for students in Lyngby-Taarbæk Municipality				
Top 10 and the province	Students studying at an institution in Lyngby-Taarbæk		Students graduated from an institution in Lyngby-Taarbæk	
	Number	%	Number	%
Copenhagen	2617	35	464	33
Lyngby-Taarbæk Municipality	1348	18	79	6
Gladsaxe	719	10	64	5
Rudersdal	572	8	34	2
Frederiksberg	334	4	80	6
Gentofte	246	3	40	3
Roskilde	73	1	15	1
Furesø	72	1	17	1
Hillerød	68	1	30	2
Herlev	60	1	14	1
Næstved	30	<1	6	<1
Odense	18	<1	9	1
Holdbæk	18	<1	10	1
Århus	11	<1	10	1

Table 11: Students choice of where to live [11CityDesign]

This means that a new way of planning needs to be developed, to better comply with the requirements, needs and desires of the new student population. Earlier most would have moved in to a form of student housing, as close to their education facility as possible, many consisting of small private rooms with shared bathroom and kitchen facilities. This is no longer attractive to the student population, where many will not accept sharing a bathroom with neighbours, let alone an entire hall.

When constructing a new dorm, or facilitating more tenancies for students one way or another, it is therefore important to understand the population group they will be directed at. As it is now most of the people living at dorms are between the ages 19 to 26, see Figure 15.

### Age and dorms

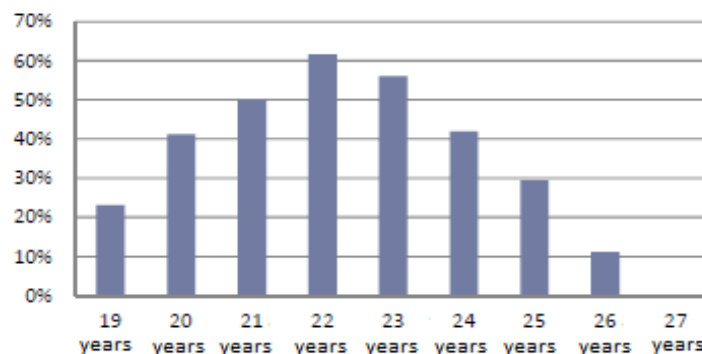



Figure 15: The likelihood of living at a dorm related to age (Translated from Danish) [Karlsen]



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 65 of 108


Part of this can of course be explained by students finishing their education, and therefore leaving the dorm, but this does not account for all. Another reason could be, that as the students get older, it is more likely that he or she will move in with a partner, and if there are no two-room accommodations available at dorms, the alternative is an apartment, and many in this situation then choose to move to Copenhagen.

In the following table a selection of the largest dorms within a 6 kilometre radius have been included. Campus village situated at DTU and reserved for international students have not been included since this is a temporary facility and is not open for the general student population.

Dorms	Number of single rooms	Apartments for 2 pers.	Distance to DTU
Nybrogård	468	68	5,4 km
P. O. Pedersen	528	48	5,9 km
Prof. Ostenfeld	276	12	1 km
VKR	84	0	0 km
Kampsax	521	0	0 km
William Demant	100	0	0 km
P. Bergsøe	352	32	5,1 km
Viggo Jarls	48	0	3,6 km
Total	2377	160	

Table 12: Dorms in a 6 km radius from DTU [ostenfeld],[nybro],[kampsax],[pbk],[pop],[vkr],[wdk],[vjk]

According to the "Boligkommissorium" that was formed as a part of the City of Knowledge, DTU alone will need a total of 1500 extra tenancies by 2018, among which 1000 of these are dorm rooms for students [BoligKom]. An extra dorm, which is the prerequisite for this thesis, is therefore very much needed.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 66 of 108

## 6 The City of Knowledge and Urban Creativity 2020

The City Of Knowledge and Urban Creativity 2020 is a plan for how to develop Lyngby-Taarbæk in the future, striving to transform the city of Kongens Lyngby into a knowledge- and university city. The first steps towards the strategy started already a couple of years ago, with the municipality's strategy plans from 2007. In the municipality plan from 2009 this was described in more detail, but it was not until 2010 it really started to take off.

Below is a short outline of the process that started in 2010 and have led up to the public meeting held on the 29. of may 2012, where the work done was presented to the public for debate.

### Summer 2010 - Creation of the City of Knowledge Task-

In order to realise the ideas from the 2009 municipality plan, a task force was set up by the Committee of Commerce, in collaboration with the city council of Lyngby-Taarbæk in the summer of 2010 [ItkA]. Their job would be to lead the way and form a series of recommendations, which should help the city create growth, business development and urban life among other things. The result from the work done by the task force, was a concept and a strategy for how Kongens Lyngby should be in 2020, that consisted of 4 primary points of focus [Vidensby, p. 5] :

- "One of the leading university towns, and centres of knowledge and creativity, in Northern Europe"
- "A leading university town with high quality and broad range of educations, and a generally high degree of well educated citizens"
- "An internationally oriented centre for culture, commerce, and a global workforce"
- "An area characterized by sustainable growth, welfare and urban development"

### January 2011 - Jørgen

In connection with an workshop held in January 2011 at DTU, as a part of the development of the City of Knowledge strategy, former development director at FORA<sup>7</sup>, Jørgen Rosted, was asked do to an evaluation and subsequent presentation of his thoughts regarding the concept. About his general impression of the plan he said the following: "*I was impressed that a suburban city had been that progressive and has grasped the importance of globalisation and seeing their city in an international perspective, which in Denmark we have only otherwise observed with Aarhus and Copenhagen*" (Translated from Danish).

Despite this overall very positive impression of the City of Knowledge concept, his view was that both DTU and the city of Kongens Lyngby had one major obstacle, that had to be dealt with in order for the strategy to have a chance at becoming reality. They had with the City of Knowledge Strategy, a business plan that includes both the local businesses and a focus on innovation, but there was according to him one serious problem with the strategy: The lack

<sup>7</sup> FORA is the Danish Business Authority's division for business economic research and analysis

of focus on entrepreneurship environments. As he said: *"They have missed an extremely important aspect - entrepreneurship. If they do not acknowledge the importance of this, they risk that all the other very good initiatives will fall through and not be realised successfully."* (Translated from Danish)

With regards to both DTU and Kongens Lyngby, he thinks that they are deceiving themselves if they believe they are doing well. There are three points on which the entrepreneurship should be measured according to him, and his opinion on how DTU is doing varied quite a bit, as can be seen in Table 13:

Points	Status at DTU
Starting new business	Quite good
Growth	Not so good
Realisation of global potential	Very bad


Table 13: Entrepreneurship according to Jørgen Rosted

Especially the fact that they believe they are doing well worried him. This is because if any person, business or municipality do not think anything is wrong, then they have no incentive to work to change anything. Another problem he points out in connection with this is, that many of the very small business started at DTU, have nowhere to go when they grow larger. As the situation is now, they can have a place at DTU SCION<sup>8</sup>, but the problem arises when they grow too large for this area. The most successful are moved to DTU's large facility at Hørsholm, when they instead should have access to very cheap commercial leases in the centre of Kongens Lyngby, and be an integrated part of the urban environment. This is according to Rosted the prerequisite for the achievement of the remaining goals in the City of Knowledge, especially increased life in the city, and would help create a better connection between the city, the business community, the citizens and the students which is very desirable. [Notes from the talk with Jørgen Rosted can be found in the appendix]

The final strategy covers a wide variety of points of interests, targeting everything from the creation of a business strategy for attracting and retaining knowledge based and creative businesses to developing Kongens Lyngby into a university city, creating urban life and inspiring more entrepreneurs.

As one of the first initiatives, a cooperation agreement between Lyngby-Taarbæk Municipality and DTU was signed at about the same time as the City of Knowledge concept was approved by the city council. The purpose of this agreement was to set the framework for a more committed collaboration between the DTU and Kongens Lyngby, with the intend to create platforms making it possible for external participants, to be involved in the realisation of the City of Knowledge strategy.

<sup>8</sup> DTU SCION is an incubation environment for small new business, see section 8.6

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 68 of 108

As a part of the contract, both parties commit to a collaboration on a number of different areas specified in the contract. Among these are [The contract can be found in the appendix]:

- Dorms and dwellings in the centre of the city
- Urban development
- Improved infrastructure and transport
- Promotion of entrepreneurship and commercial development
- Focus on climate, green technology, nature and environment
- New solutions in welfare technology
- Internationalisation
- Development of DTU Campus, especially Anker Engelundsvej and the connection with "Lyngby idrætsby"

The points in this contract covers most of the goals of the strategy for the City of Knowledge, and is a large step forward in the relationship between the university and the city; a relationship that needs to be strong and long-term if the desire to create *"One of the leading university towns, and centres of knowledge and creativity, in Northern Europe"* [Vidensby, p. 5] is to succeed. It will be very hard for either part to complete the goals and achieve the plan alone.

#### **August 2011 - Announcement of the City of Knowledge Strategy**


In the fall of 2011 Lyngby-Taarbæk Municipality announced their new initiative, the City of Knowledge strategy, for the first time at an open reception held at Lyngby Taarbæk City Hall.

#### **January 2012 - The City of Knowledge Association and network**

January 2012 marked the end for the Task-Force and the City of Knowledge association was founded in its place to further develop the strategy with the director of DTU, Claus Nielsen as president. A network which the author of this report became a member of and a minute taker for, during the process of this study, was founded to help formulate the more detailed concept, with the deputy manager of "Plan og Byg" at Lyngby-Taarbæk Municipality as co-ordinator. The network is comprised of more than 6 CEO's as well as a large number of vice presidents and project chiefs covering a variety of industries, educational facilities and local commerce, such as COWI, MT Højgaard, Danica, DTU and the Trade Association of Kongens Lyngby.

The work laid out for this network was, to come up with a plan on how to achieve the goals described in the City of Knowledge strategy over a series of meetings and focus groups, and based on this plan make a series of recommendations for focus points.




	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 69 of 108

## May 2012

The 7<sup>th</sup> of May the work completed by the City of Knowledge Network was presented for the city council of Lyngby-Taarbæk.

On the 8<sup>th</sup> of May 2012 Caroline Arends was presented as the new director for the City of Knowledge association, to put even more focus on growth, sustainability and innovation [ItkB].

On the 29<sup>th</sup> of May the City of Knowledge Strategy and the work done by the Network was presented to the citizens at a public meeting.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 70 of 108


## 7 New initiatives

*"The presence of a major research university is a huge advantage in the Creative Economy [...]Universities help to establish the broader quality of place of the communities in which they are located. But a university cannot do this alone. The surrounding community must have the capacity to absorb and exploit the innovation and technologies that the university generates, and also help put in place the broader lifestyle amenities and quality of place sought by Creative Class people. The university is this a necessary but insufficient condition for generating high-tech firms and growth"* [Florida, p. 291-292]

This is taken from the book " The Rise of the Creative Class - and How It's Transforming Work, Leisure and Everyday Life " by Richard Florida, and describes the necessity for collaboration between university and city, in order to create the settings that according to the theory of the Creative Class, is so important for attracting and keeping the Creative Class in an area. This need is also described in the book "Campus and Study environment - physical framework for universities of the future" as shown earlier *"[...]Campus development thus becomes a matter of collaboration between university and city developers and planners. This collaboration between university and city planners is urgent and essential and mutually beneficial for the development of both the European university and the European City."* [Campus and study, p. 21].

Due to both distance and differences, it is probably not realistic that DTU and Kongens Lyngby will fuse into one energetic mass; a conclusion which also became the prerequisite for the further and more detailed discussions, after the second or third meeting in the City of Knowledge Network. Since it is not possible to change the fact that DTU is placed where it is, meaning that it is not directly connected to the city, as can be seen with the University of Copenhagen or the University of Aarhus, *"The city that is a university and vice versa"* (Translated from Danish) [GehIA, p. 97], other steps must be taken, in order to achieve the valuable contribution the university and the city can bring each other. A contribution that is often missing in a university/city constellation, as is the case with DTU and Kongens Lyngby, as described in Campus and the city: *"The phenomenon of the Greenfield university campus has not done the post-war European city any good. The city centre and the university were increasingly separated due to expansion of the university. In the old cities the academic world was integrated into the urban fabric of the city via pubs, student residences, social venues, bookstores and libraries. In the suburban campuses, there seems today no suitable replacements for this collective scholastic life"* [Campus and the city, p. 77] . What must be done is to focus on the different locations separately; to identify their core competences and what makes them unique, focus on cultivating these special characteristics, and instead of merging them physically, focus on creating a symbiotic relationship between the two. A relationship where the two different areas can maintain their special characteristics, while still complement and mutually benefit from each other.

In order to make this situation a reality, where this symbiotic relationship between Kongens Lyngby and DTU defines the development in the city, changes must come from both parts and not just one. If both are not fully committed to the project, the chance of this already challenging project to succeed becomes very slim. Both parties must therefore be prepared to make compromises, and actively engage in a long term partnership to continuously develop, evolve and improve the urban

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 71 of 108

environment in Kongens Lyngby, and thereby also make it a place that will attract the Creative Class. Not only in form of students, but also in form of business life and Knowledge heavy industries, which are appealing for both university and city. For both DTU and Kongens Lyngby this would mean opening more up to each other in more ways than one. Not necessarily by placing educational facilities in the city centre, an idea which was also rejected by the City of Knowledge Network, but perhaps by looking at some of the facilities, that are not directly connected with an educational facility. Functions that are not necessary to have at the Campus area, in order to provide a good education environment for the students and a good working environment for the employees, not only intellectual but also social.

This does not mean, that all social activities at the university should be relocated to the city, since the social environment plays a huge role in creating a positive environment for both students and researchers, which actually plays an important role in the idea process, as physicist Lene Hau<sup>9</sup> puts it; *"Many have an idea about scientific research as being about sitting alone in isolation writing down dull formulas. This is not how it is at all. We work closely together, discussing back and forth. There is no ordered systems, all is often chaos. We get an idea, discuss it and work nonstop as we combine theory with practical experiments"* (Translated from Danish) [politiken]. This is why it is so important for both university and city, to find and support initiatives that can support the students outside lectures, so the urban environment in Kongens Lyngby can work as an attractive supplement to the social and intellectual environment at the university, and not as a substitute. This will not only benefit Kongens Lyngby but also the University; just as the fact that the University of Copenhagen seems so attractive to many soon-to-be students, both nationally and internationally, by being placed in Copenhagen with all this entails, then DTU can have an attractive immediate environment, in the form of Kongens Lyngby.

In order to maximise the chance of success, it is extremely important to get a feel for what exactly it is the students would like to see and experience in Kongens Lyngby, if they were to use it more. A study on this subject have been completed in the fall of 2011/spring of 2012, "Styrket samspil mellem DTU og Lyngby - med fokus på de studerende", which centred around an investigation into how the students at DTU view Kongens Lyngby, what they desire of it, where they would like to live and why and so on. In the following, this study will be further described, after which a series of possible initiatives based partly on the results from the study, the work done by the City of Knowledge Network as well as the information gathered via interviews with practitioners, which forms the "real world" base for this thesis will be presented.

---

<sup>9</sup> Lene Hau is a Danish physicist now working at Harvard University. She is known for her experiments on slowing down and stopping light.



## 7.1 DTU students and their view on Kongens Lyngby

The result from the by Tine Karlsen gives an insight in to what the students at DTU feel is missing, what could be improved and what is already working well in the city. Among the many results presented in the study, some can help create a better understanding of the target group for this report. They can thereby constitute a base for the formation of the ideas and initiatives that will be suggested to help support the dorm that is the prerequisite for this thesis. Some of the most essential of these results are presented in the following; the ones that give and insight into what the students think of Kongens Lyngby. The first results chosen illustrate how the students at DTU view Kongens Lyngby, see Figure 16:

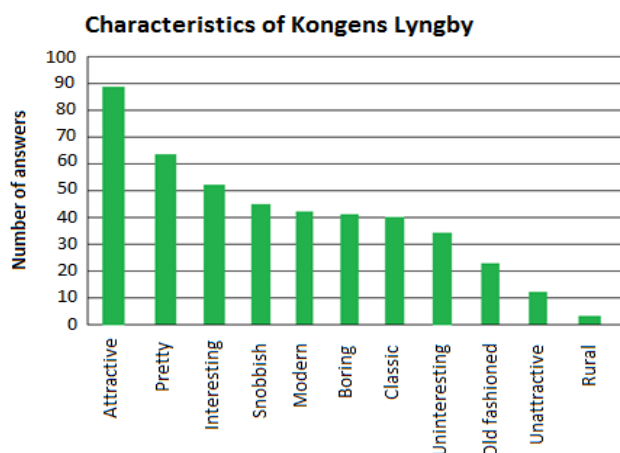


Figure 16: Characteristics of Kongens Lyngby (Translated from Danish) [Karlsen p. 202]

The figure shows what words the students at DTU connect with Kongens Lyngby, and as can be seen the students have a generally positive disposition towards the city. Despite this there are still quite a lot that could be improved; it is alarming that so many use the words boring, uninteresting, old-fashioned and unattractive to describe the city, and this is something that needs to be worked towards changing.

If the this is held up against Figure 14, which shows what the students feel is missing in Kongens Lyngby and here the number one answer is life, one begins to understand where the description of boring and uninteresting originates from. The positive aspect of this is that these are areas that can be improved, and with the City of Knowledge strategy the first steps towards a change has already begun.

Missing	Percentage
Life in the city	59%
Entertainment	35%
Better transport	29%
Music venues	29%
Dorms/youth housing	24%
Cafés	23%
Young people	21%

Table 14: Missing in Kongens Lyngby (Translated from Danish) [Karlsen p. 203]

Besides what people feel is missing, Tina Karlsen also asked the students which facilities they used in Kongens Lyngby, and the results from this can be seen in Figure 17.

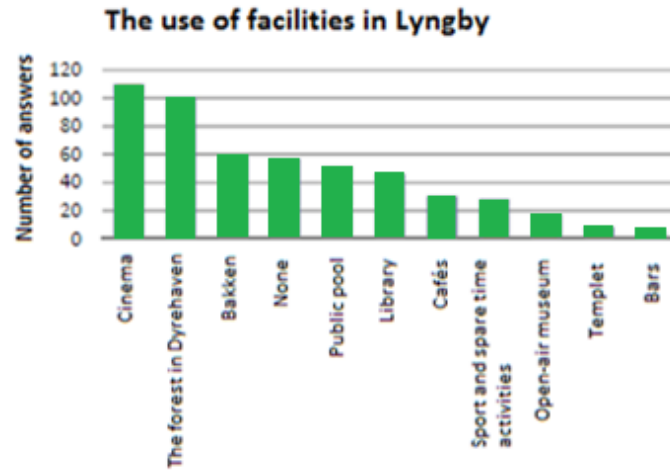


Figure 17: The use of facilities in Lyngby (Translated to Danish) [Karlsen, p. 66]

What can be seen in the figure is, that the activities used by the students are activities, that do not contribute to life in the city. It is activities that if you disregard the cinema and the people who have stated they do not use any facility at all, then the top three most used facilities does not even lie in the city itself, but in the surrounding area. Besides cultural facilities, the students at DTU were also asked about their use of two other of the main attractions in Kongens Lyngby, Lyngby Main Street and Lyngby Mall.

The results of these questions can be seen in Table 15 and Table 16.


	Lyngby	Northern Zealand	Inner City	Outer City	Suburb	Other
<b>Often</b>	96%	68%	28%	20%	11%	25%
<b>Rarely</b>	4%	32%	72%	80%	89%	75%

Table 15: The use of Lyngby Mall. Often=daily, weekly or monthly; Rarely=semi-annual, annual or never (Translated from Danish) [Karlsen]

	Lyngby	Northern Zealand	Inner City	Outer City	Suburb	Other
<b>Often</b>	89%	61%	28%	16%	22%	19%
<b>Rarely</b>	11%	39%	72%	84%	78%	81%

Table 16: The use of Lyngby main street. Often=daily, weekly or monthly; Rarely=semi-annual, annual or never (Translated from Danish) [Karlsen]

The above tables show, that while both the mall and the Main Street are quite popular with the students living in Kongens Lyngby and in Northern Zealand, they are far less likely to use these facilities if they move in to Copenhagen, which according to the results from the study by Tine Karlsen, many of them do or wish to do. This just shows how important it is, to identify initiatives to transform the city in to a place the students will want to live in, and if they get a stronger connection to the city while they study, they might also be more likely to stay when they finish.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 74 of 108

## 7.2 Possible initiatives

The initiatives that will be described in this sections are a dorm, a study hall, a student cafe, a library, better transportation and a transformation of Klampenborgvej. Besides these, a number of smaller initiatives will be suggested, which can be implemented more easily along the way, in order to give the students as well as the general public a feeling of progress while waiting for the larger initiatives to become reality.

Agreed on by the City of Knowledge Network, gathering the initiatives is extremely important in order to create life, so in order to maximise the chance of success. All initiatives in the following sections will therefore be proposed to be placed as close together as possible, in an effort to make it possible for a self-reinforcing process to take place.

This location then becomes extremely important, since it will help determine the possibility of success for all of the initiatives. The place in Kongens Lyngby with most life as the city is now, is the intersection between Lyngby Main street and Klampenborgvej, see Picture 20 and Picture 21.

It is the single busiest spot in Kongens Lyngby, which means that new initiatives here will have the greatest chance at influencing the passer-byes, but also the greatest chance at being influenced by them. All initiatives should therefore preferably be placed as close to this spot as possible. If for example the dorm is placed too far from the city centre, then the chance of student life permeating the city will be much less.


Besides the dorm itself, the most important thing that needs to be recognised, by all parties involved in the City of Knowledge strategy, is that if more initiatives to support this foundation is not made the chances for success will be small. If no other activities or facilities are present, the students might only use the dorm for sleeping, and will just have even easier access to Copenhagen via the station then at dorms placed at DTU campus and nothing will change. Attack only on one front is simply not enough, which is also stated in "Strategies for Creative Spaces and Cities: Lessons Learned" page 21. The challenge is therefore to come up with initiatives, that can keep the students interested and engaged in the city, so they do not only use it as a transportation hub or a place to sleep, but as a place to live, work and have fun. In order to achieve this it is necessary to create spaces and activities, that combined can make the urban environment seem inspiring to the Creative Class and connect the students, the city and the business community.



Picture 20: Klampenborgvej and Lyngby main street, Saturday at 13 pm [Photo: Rikke Brinkø]



Picture 21: Lyngby main street, Saturday at 13 pm [Photo: Rikke Brinkø]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 75 of 108


### 7.2.1 The dorm

The prerequisite for this study is as mentioned, the creation of a dorm in Kongens Lyngby. This dorm is a means of getting students down into Kongens Lyngby itself, so they do not only pass through it on the way from for example Copenhagen to DTU, but live in it, and the students can then form a foundation for increased life in the city. Because of this, the dorm is not just a dorm, and the design and layout of it can have a huge impact on the effect it is hoped to have. As it is now, many of the dorms in Denmark are constructed as small closed enclaves, which do not interact with their surroundings or the surrounding community in any way. What the city of Kongens Lyngby needs to gain from a dorm placed at a central location, is for the students to be integrated in the urban environment. It will therefore be necessary to ensure, that the dorm instead of following the traditional trend, brakes away from tradition and forms an integrated part of the city, while still being private enough, that the special feeling of a dorm can still be kept.

One way this could be done, is by opening up the ground floor of the construction, so the public can see what happens. This means that the ground floor will not be optimal for tenancies, but may instead provide a framework for other study-related activities, like for example a student cafe or a study hall, which will be described in the following sections. Other functions could perhaps also be integrated in or in connection with this space as well, to possibly help finance the dorm; the only thing that is important in this case is, that it is relevant for the mission the dorm has to help fulfil for the city.

Besides the design of the dorm, and a ground floor that interacts with the city, another way of creating something special with the dorm, which could help change the image of the city of Kongens Lyngby away from "boring", would be to build the dorm in a unique way. A suggestion would be to combine the cheap housing of a dorm, which will get the students attention, with the constructions trends of sustainability, by for example building the dorm as a plus-energy house. Something that could help get the attention of possible investors or sponsors. The dorm could also help mark Kongens Lyngby's place in globalisation, as well as mark the city nationally; you don't need to be at the City Hall Square in Copenhagen, to be in touch with the latest new trend. It can be a driving force internally in the City of Knowledge Association and Kongens Lyngby, but also outward with the international students returning home, and telling about the amazing experience they have had in Kongens Lyngby, instead of returning home and telling about Campus Village DTU which might not seem as attractive to future exchange students. Depending on the design it can also be used to attract attention to certain topics, be a supporting feature in Kongens Lyngby's desire to be a green city as well as make DTU visible in the city centre.

All these facets of the dorm could help create positive publicity, and thereby contribute to change people's perception of Kongens Lyngby as being a boring city, and image is according to the book *Creative Cities in Europe* (p. 265-266) an important aspect in attracting the Creative Class and thereby the students at DTU.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 76 of 108


This describes the plans for one dorm, but the huge need for student housing, as described in section 5.8, means it could be interesting to consider a possible second dorm in the plans, which also could help support the life created by the first dorm after this hopefully have become a success. This dorm would also need to be close to the first, so the two does not become two separate entities but can benefit from each other and together help contribute to the transformation of Kongens Lyngby in to a university city.

### 7.2.2 The study hall and meeting rooms

One suggestion that would fulfil all the demands for an initiative placed in the ground floor of the dorm would be a study hall; perhaps in connection with some sort of study cells, group rooms or conference rooms. This area should not be exclusively for students, but be a place where everybody is welcome to come and sit with their computer and have a cup of coffee, do some work or reading, and also a place where industry professionals could reserve or rent a meeting room when needed.

This mixture of both different people and functions would serve multiple purposes; first of all it would create a place, where the students and the general public would be together, but it could also be a place where students and the business community could meet and interact. It is also an excellent asset to the city, since the space for this kind of work is limited at DTU as it is now, and many student have half or whole days, where they do not have to be at the university. A place in the city where they can come and do group work or homework, would give the city a chance to have student activity during the daytime.

Another interesting aspect that could be considered, is that the study hall could be designed in a way, so that it a couple of times a year, could serve as a venue for hosting large conferences. This is a thing that DTU has expressed a need for, and could therefore be another thing that could bring the university, the students, the general public and the business community closer together.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 77 of 108

### 7.2.3 The student cafe

Due to the fact that a lot of people would be going in and out of this area, at all times of the day, both students living at the dorm, but also users of the study hall, group rooms and conference rooms, it would be an ideal location for a cafe. This is a function that could easily be placed in the ground floor of the building, and with facades that are open and a design that can help blur the transition from city to dorm, a cafe could be a way of connecting the city and the dorm together. There are many different ways this could be done; either supported by the municipality or university by a cheap rent, deficit guarantee or the like, or it could for be run as a regular cafe during some hours of the day or some days of the week and then function as a student cafe on others, see Picture 22. [Creative spaces, p. 14-15] and [Campus and study, p. 41] .



Picture 22: Shared cafe at Lancaster University [Campus and study, p. 41]

A cafe like this could perhaps also help strengthen the connection between both regular citizens, the local business community and the students, that hopefully would be initiated by the study hall described before.


Lastly, it could be interesting to look into the possibilities of constructing the cafe as a form of shared space area, in order to have more than one attraction helping to pay the rent; maximising the chance for success.

### 7.2.4 The library

Now there has been suggested a dorm with students, a student cafe and a study hall with study cells, all in connection with each other. The next idea, which were also suggested and recommended by the City of Knowledge Network, is the relocation of the public library, or part of it, from its current position at the farther end of Lyngby Main Street, to this new intellectual hot spot at the heart of the city. This would help support the study hall, and be another incentive for people to use this hot-spot, instead of doing their group work or homework somewhere else, like for example in Copenhagen.

It would also be another step towards gathering as many of the attractions in Lyngby in one spot, at least to begin with, which according to the theory will increase the chance for overall success. The location where the library is currently placed, could instead be used to house other functions, that are not necessarily as attractive to have in the city centre, or be a tool to support some of the recreational areas and activities that are located nearby like for example "Baadfarten" which is a very popular attraction sailing from "Fæstningskanalen" in Kongens Lyngby.



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 78 of 108

### 7.2.5 Transport to DTU

In the previous section, a number of initiatives that could help bring more life to the city of Kongens Lyngby are described, but these are all large projects and will not have any influence on the city in the near future even if they were initiated immediately. A quick initiative that could be implemented much faster and have the potential for starting a positive trend, would be a direct bicycle path from the centre of Kongens Lyngby to DTU. Such a path have also been one of the main ideas proposed by the City of Knowledge Network, and the thought is that a direct dedicated bicycle path would create an instant physical connection between the city and the university. A path like this could also be made in to a promenade over time; becoming the path to take when just going for a walk in the area. This would not just be a quicker way to get to and from the university, but would be a way of signalling that the City of Knowledge Strategy is not just talk but action.

### 7.2.6 Transformation of Klampenborgvej


Making Kongens Lyngby more attractive for the students at DTU, and other educational facilities for that matter, is not only about creating affordable housing opportunities, and giving them a place to do their homework. It is just as important to make the city of Kongens Lyngby a place where they would like to spend time. As mentioned earlier, there are two main streets running through Kongens Lyngby, Lyngby Main street and Klampenborgvej. Lyngby Main street is already a popular shopping street and is an attraction for the city, while Klampenborgvej is purely a traffic artery, and one that many use to get to and from DTU.

It is thereby one of the main ways students, and many other, enter the city, and as it is now it does not exactly beckon people to stay, but more likely to pass through, which is the exact opposite than desired, see Picture 23.



Picture 23: Klampenborgvej, Saturday at 12 [Photo: Rikke Brinkø]



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 79 of 108

What exactly to do with Klampenborgvej, was a subject for discussion throughout the City of Knowledge Network meetings. Since a proposed light rail is planned to follow Klampenborgvej through Kongens Lyngby, as illustrated on Picture 24, a massive amount of construction work will be done to this area. It is therefore a perfect opportunity, to re-design it into a more people friendly place to be.




Picture 24: Klampenborgvej - strategy [lokalavisen]

Since it is as wide as it is, as well as being one of the main traffic arteries for the city, closing it entirely for traffic might not be a good idea. Even if the traffic problems that will occur if the street is closed are disregarded, it might remove the only dynamic there is during the weekdays, since not many people are to be found in this area during the daytime as it is now.

A compromise could be to implement a form of regulation instead. Let it be open for traffic during the weekdays, where it is at its busiest, and close it in the weekends to make room for urban life. The important thing would be, that the traffic in the weekdays would have to be on the conditions of the urban space and not the other way around. The space should not be designed to best facilitate the car, but instead be a space that is optimized for people, and the weekend life that hopefully would take place, while still making it possible for cars to pass through when allowed. It would also be preferable, if an alternative way of getting through the city were established, perhaps by the construction of an alternative route around the city centre, to minimise the amount of traffic that have to pass through Klampenborgvej at all. When all these things are in place, and the life in the city hopefully have increased as a result of the initiatives taken, it can then be reconsidered if the new conditions are more favourable for a total closing of the street.

With the traffic regulated, the design of the space can be redone, and with this comes two main challenges; the width of the street and the closed facades on either side. According to both Jan Gehl and the theory by Florida and Lorenzen on the Creative Class, it is essential that the ground floor facades are open so the life, inside and out, can interact, in order to create a feeling of life in the streets. A feeling that is necessary in order to create an area, where people would like to spend time and not just pass by. As Jan Gehl have said; *“A good city is like a good party – people stay much longer than really necessary because they are enjoying themselves”* [citiesforpeople]

Besides these considerations, one last thing needs to be taken into account; is it even possible to use Klampenborgvej as a traffic artery when the light rail comes, or will this change the conditions to the extent, where an alternative route for the cars have to be devised in any case?

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 80 of 108

### 7.2.7 Further initiatives

Besides the initiatives described, which can be laborious and difficult to implement, several smaller initiatives can be taken, in order to keep the interest among the public and keep people believing in the greater project during the long process.

A very easy suggestion could be to establish a student card for Lyngby. It should not necessarily be just an agreement on student discount in selected stores, which you can get by showing your student id card, since this is not something new, and will probably not persuade many students to use the city more. Instead it should be something unique for Lyngby, that pre-determined groups could apply for, and for example collect at the City Hall. This would make it special, and could perhaps help connect the students closer to the city by direct interaction. It could also be interesting to explore other possibilities than just possible discounts in stores, like for example initiatives in connection with the local knowledge heavy business community.


Besides a student card, cooperation within the area of sports facilities would be an obvious choice, and Kongens Lyngby and DTU have already touched upon this subject, in the cooperation agreement signed by the Mayor of the city and the president of DTU in 2011. Kongens Lyngby already have a large variety of sports activities very close to DTU and a plan for the development of what is called "Lyngby Idrætsby" [DGI]. At the same time, DTU is experiencing problems with capacity at their sports facilities, and collaboration between the city and DTU on finding a solution to this is something that the director at DTU, Claus Nielsen, would like to see happen. He says; *"The sports hall at DTU is under a lot of pressure with exams, events and so on, so a new one have to be made at DTU. On the other hand we have Lyngby Stadium right next to the campus, so instead of using money and space on campus to build a new sports hall, we (red. DTU) would like to be a part of it if someone decides to renovate the Stadium. Of cause there would have to be drawn up some sort of user agreement so the students and employees at DTU could use the facilities."* (translated from Danish)

An agreement on this point, would not only bring the cooperation agreement signed by the two parties into action, but it would be a visible sign to all, that DTU no longer is a separate entity, but instead plays an active role in the development of the city.

Lastly, the establishment of internet hot-spots in cafes and the like, could provide the students with the possibility of doing their homework not only at home, but around the city where they can be visible on the urban scene. An initiative that would not only benefit the students but also the remainder of the general population.

### 7.2.8 Section summary

According to much of the theory on the subject, it is not enough to attack only on one front. It is simply not enough to just establish a dorm in the city; more initiatives need to be made, if the strategy described in the City of Knowledge strategy is to become reality. In the previous sections several possible initiatives, that could work together to support the foundation constituted by the dorm are made, but they are of cause not the only ones. These have been chosen based on infor-


	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 81 of 108

mation from many different sources, among which are the thesis by Tine Karlsen, interviews with practitioners and the ideas produced by the City of Knowledge Network.

Whether or not the suggested initiatives are chosen, or the solution becomes something totally different, the most important thing is that Kongens Lyngby should not try to compete with Copenhagen, in the quest to create a more lively city. Copenhagen will due to its size always have the upper hand, and Kongens Lyngby should therefore instead focus on what makes this city unique, and cultivate these characteristics. Authenticity is one of the things that by both the theory on the Creative Class and the book "Strategies for Creative Spaces and Cities - Lessons Learned" identify as being important for the Creative Class, and this should therefore be the main focus. [Creative spaces, p. 8, 17-18].

Florida describes in his book many different ideas that could fulfil the Creative Class' desire for life in the city where they live, and these are largely backed up by Lorenzens study in to the Danish Creative Class. *"The culture is >street level< because it tends to cluster along certain streets lined with a multitude of small venues. these may include coffee shops, restaurants and bars, some of which offer performance or exhibits along with the food and drink; art galleries; bookstores and other stores; small to mid-sized theatres for film or live performance or both; and various hybrid spaces - like a bookstore/tearoom/little theatre or gallery/studio/live music space - often in storefronts or old buildings converted from other purposes. The scene may spill out onto the sidewalks, with dining tables, musicians, vendors, panhandlers, performers and plenty of passersby at all hours of the day and night."* [Florida, p. 183]

All of the above describe possible initiatives in Kongens Lyngby, but another way to connect the university closer to the city is by de-mystifying the university environment for the general public. A public study hall or the like is one step in this direction, but as it is now many large events take place at DTU, such as anything from concerts to visits by ministers, without even the local newspapers, let alone the public, is aware of it. Initiatives like this have already been seen in connection with the City of Knowledge idea seminar in January 2012. An example could be the classical concerts hosted at DTU by/for debutants from the Royal Danish Music Conservatory, public lectures held in the evening like what is seen at the University of Aarhus, evening school or any other activity that could bring the citizens and the university closer together. [Campus and study, p. 33]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 82 of 108

## 8 Analysis

The changing relationship between DTU and the city of Kongens Lyngby, as well as the change towards integrating the university better in the city, is not a unique case; *"Currents trends in campus design represents a major turnaround from the mono-functional and isolated Greenfield campus, the prototypical model for university development in the 1960s and 70s. The ETH Hönggerberg, for example, is just such an ensemble of monolithic teaching and research facilities forming a cloister-like enclave in a natural open landscape setting where the idea was to provide the solitude and calm thought to be conducive to study and contemplation. However, that same introversion and separation from the city - once seen as advantages - have isolated these campuses from other civic structures and public life, and hence do not nowadays provide the right environment for the modern knowledge society to flourish"* [Campus and the city, p. 13-14]

The basic premise for this thesis; having a dorm in the city, is according to the theory something there is a demand for among the students; *"Studies on student housing show that national and full-curriculum students preferably move off-campus as soon as they can get the opportunity"* [University Campus, p. 5]. This study might have been completed on the situation in the Dutch universities, but it is backed up by the results from the study on the students at DTU completed by Tina Karlsen, and the goal must therefore be to give the students a possibility to have this in the local community instead of relocating to Copenhagen.

The most important points from the theory which will form the base for this analysis as described in section 8 can be seen below in Figure 18.

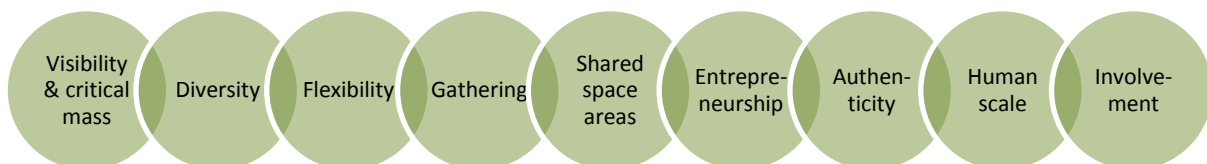



Figure 18: Important points from the theory

How exactly to implement the ideas describe above, in line with the listed points from the theory, in order to achieve the desired effect of more synergy, and to provide the students with a desirable alternative to Copenhagen when they wish to move off campus is of cause difficult. It is an entirely different matter, than just stating in a report that the initiatives suggested would be valuable assets to the city and that they according to theory are needed. There are many considerations to be made, from placement to size, economy and so on, and also a prioritisation of which initiatives are most important, which should be tackled first and which ones can wait.

A major aspect of whether or not the strategy laid out can become a reality, is which areas DTU will be willing to "let go" regarding their own campus and support initiatives in the city instead, and how willing the city of Kongens Lyngby will be to help make it happen. Because no matter how it is done it will not be free, and the money to finance the initiatives have to come from somewhere, as well as the man-hours needed to make the plans a reality, as stated by Ole Kristian Bottheim the Plan

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 83 of 108

& Project chief at Campus Service at DTU, *"The work with communicating the strategy properly will take a lot of time, and the willingness to do this is vital"* (Translated from Danish).

On the question as to what DTU would be willing to see moved from campus to the city, it was especially the supporting facilities, that are not directly linked with the university's main field of business - education and research - that should be considered, as the Director, Claus Nielsen said: *"DTU must be a place of work and study. One should not sit in a cafe"* (Translated from Danish). Also dorms and other living facilities were a possibility he stated; DTU should primarily be a place of work. The attitude of Ole Kristian Bottheim is a bit more nuanced than this, and he has the following to say on the subject; *"Earlier the plan was for DTU to be strictly a place for work and study. Now the attitude towards the city is much more positive and there is a desire to have a closer connection with the city and a better mixture of Campus and city"* (Translated from Danish), but what can be taken away from both these statements is, that DTU is open to the idea of creating a stronger link with Kongens Lyngby, which is a very positive trend.

From the city, the huge amount of work done to develop the City of Knowledge strategy, already shows a willingness to change the current situation, and move towards a different future. The question now is whether or not all the good intentions, and the work done by the network, will be incorporated in the municipal plans, and actually create the possibility of the strategy actually becoming a reality, or if politics and economy will result in the project petering out. One thing is sure if this happens; the municipality will never again get such a group of people together, as they have in the City of Knowledge network now; a position that was made clear by the members during the network meetings.


In the following, the initiatives suggested in the previous section will be held up against the chosen focus points from the theory, and analysed with regards to especially the challenge and the feasibility of the actual realization of the projects, and how well the initiatives fulfils the focus points from the theory.

## 8.1 Visibility and critical mass

The question of what it will take, to make the idea of Kongens Lyngby as a university city with more life in the streets a reality, is a question of making the university and the students, an integrated part of the urban environment. In order to answer this question it is necessary to define what circumstances need to be present; what initiatives, how many students, or perhaps more important, how visible the initiatives and the students are in the city.

Visibility was one of the important factors identified in the theory, and this alongside with the issue concerning critical mass of both the initiatives and the students, that will be located in the city centre, is one of the first issues that must be clarified. Getting it right here will be an extremely important step in the right direction, since too few, or not visible enough, students will result in an inability to facilitate a change, and will make it that more difficult to obtain the goal of student life permeating the urban environment.



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 84 of 108

Determining how many students that would be needed to reach this theoretical critical mass however, will be an extremely difficult task, with so many variables and unknowns, that a result at most could be guiding and with no guarantee of success. It might therefore also be more reasonable to take the position of Mark Lorenzen, as described in the theory, and forget about critical mass as a size at first and instead focus on visibility, which is also in line with the importance of visibility as stated earlier. As stated by Mark Lorenzen; *"a few who are engaged can make more of a difference than many who are not"*. (Translated from Danish)

Wanting 300-500 students to move down to the city centre at one time would also be a challenge, both regarding space and economy, whereas 100-200 students might be easier to find place for. Especially when talking about a location, which preferable must be as close to the city centre as physically possible. With this smaller amount of students, it becomes even more important that they are visible in the city. Jan Gehl's recipe for making few people feel like more, is to invite the people to stay longer in an area, for example by securing activities in the ground floor levels of the buildings, and thereby creating interaction with the life on the streets, making the students and the activities going on as visible as possible.

With regards to the actual practical suggestions made in the previous section, then the placement of the dorm is one of the essentials, if the students are to be visible. It is the dorm that will house them and attract them to the city, and it is the dorm that with regards to both placement and design, must make sure that the students are visible. A possible location that would fulfil this criteria, could be the area around Gasværksvej, see Picture 26, Picture 27 and Picture 25.



Picture 26: Overview, Gasværksvej [google.maps]




Picture 27: Gasværksvej [Photo: Rikke Brinkø]



Picture 25: Gasværksvej [Photo: Rikke Brinkø]



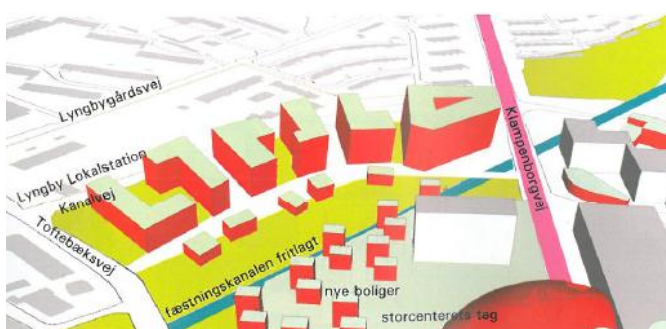
	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 85 of 108

This would put the dorm right in the centre of Kongens Lyngby, in close connection with as many people as possible, which fits perfectly with the importance of visibility; one of the most important factors, based on the theories on urban design by Jan Gehl. Of course the most ideal location would be, if the facades faced the streets directly, so all people passing by both on foot and on bicycle, could see and feel what was going on, but due to the lack of space that is a consequence of building in a city centre, the suggested placement is a good alternative. The building seen on Picture 27 is empty at the moment, and if removed or renovated could perhaps be included in, or make sufficient room for, a dorm.

Another benefit of this, would be a much more interesting area than the existing. As it is now the squares are neither interesting nor inspiring, see Picture 27 and Picture 25, but looks desolate and worn, and a renovation here with the initiatives proposed could really provide the city with interesting new squares and a new intellectual hotspot.

Despite these positives, there will however be a considerable challenge in connecting the dorm at Gasværksvej to the Main Street as well as Klampenborgvej, which will be an important aspect in achieving the desired visibility. The main Street will probably be the easiest, since there is already plans for opening up the square, connecting the dorms location with this street; a connection that does not exist at the closely packed Klampenborgvej. How then to achieve this connection, is a question that must be answered early in the process, but if successfully solved, will make the location at Gasværksvej even more attractive. One possible way of solving this problem, could be to utilise the glass overpasses planned to cross over Klampenborgvej; creating the idea of a close connection without having direct access from street level.

Unfortunately there is already a project under development, regarding building new townhouses and an expansion of the Lyngby Malls facilities in this area, in combination with new plans for the area behind this leading up to Kanalvej, see Picture 29 and Picture 28.




Picture 28: Kanalvej [GrøntLys]



Picture 29: Gasværksvej [GrøntLys]

In this second plan, there is also mentioned the possibility of a dorm for international students, but this is here located in the area around Kanalvej, which puts it about 250 m away from the existing hot-spot in Kongens Lyngby, the intersection between Lyngby Main Street and Klampenborgvej.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 86 of 108

This might not seem like that much, but there are two things that could pose a problem. First of all, the students and the dorm will not be visible in the city centre at this location. Furthermore, the City of Knowledge Strategy was to have the students put their mark on the city and the urban spaces, so that "*Kongens Lyngby appear as the centre of a university city*" [GrøntLys, p. 19], but If the students have all they need in the area around Kanalvej, then why should they venture further in to the city? And if they stay at Kanalvej, how can they influence the life in the city centre, which is widely recognised as being centred around the Main Street and Klampenborgvej?

Of course there is a financial aspect, that plays a huge part in the decision on where to place the dorm, and the price of land in the city centre is by no means cheap, which might mean that the placement at Gasværksvej simply is not possible. Despite the initiative with other functions placed in the ground floor area, that might help with the financing. In this case it will be necessary to look into alternative locations and a dorm at Kanalvej will of course be better than no dorm at all. But initiatives to support it as well as the students, will be even more important here, especially initiatives that will take the students from the dorm and out in the streets of the city. And in this case, facilities incorporated in the dorm, such as the study hall and cafe as suggested in this thesis will not have the desired effect, since they will be placed too far from the main streets to influence the general public and vice versa. There will simply not be the same level of visibility.


All these considerations regarding placement of the first dorm, are equally relevant for a possible second dorm. A possible location for this could perhaps be on the other side of Klampenborgvej as a part of the desired densification of the squares behind the "Kulturhuset" and Magasin, and could help support the life created by the first dorm, after this hopefully has become a success. To connect these two dorms together, to try and secure a flow of people between them, to help influence the general life in the area, the planned glass gallery or walkway from the Lyngby Mall to "Kulturhuset", see Picture 24, can perhaps serve as a connecting joint over Klampenborgvej. This would eliminate the need for crossing the busy Klampenborgvej until the traffic situation here is sorted out, and will hopefully make it more attractive to move between the two, making the students visible from the street.

## 8.2 Diversity

Diversity is not one thing but many. Diversity of buildings and functions are a part of it, but most important is the people living in a certain area and the activities taking place. Furthermore, in the theory of the Creative Class it is also the tolerance, that often is to be found in areas where many people of different nationality, professions, faith and so on live together that is important.

Regarding diversity of buildings, the placement and design of the dorm could be a place to start. The facades will have to be designed in a way that fits in to the surrounding building while still standing out so as to create a varied and interesting experience for passersby's, in line with the theories on diversity by Jan Gehl.

Besides the buildings, it could also be interesting to look into what kind of students the dorm should house; people of different age groups, nationalities and so on in order to fulfil the desire for diversity among the people living at the dorm. Besides diversity, the type and composition of stu-

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 87 of 108

dents that will live in the city centre, can also contribute to the quest of maximising the chances for success, since students of different nationalities, ages and stages in their education will view the facilities of the city differently, and thereby also use them differently.

International students for example, especially the ones from warmer countries, are coming from a culture where the urban spaces are used, as a much more integrated part of everyday life, than what we are used to in the Danish culture. When walking around in the city, it is already today possible to hear conversations in many different languages, and when sitting at the cafes, it is not as unusual as it has been, to see students sitting with their computers and working. It is among other things this sort of activity, that needs to be seen much more; with the students being a visible part of the everyday life.

It will be important though, to determine the right balance of students. With diversity being an important factor, and not only with regards to urban functions, but also regarding the people, a good mix of different students will help create an interesting and varied location, that can contribute to create life. But if it is purely international students, there might be a problem with too large a renewal rate. Many international students are only in the country for a semester or perhaps two, and this could create problems with anything from a large amount of wear on the rooms, due to many people moving in and out, to a difficulty in maintaining social connections and the special dorm feeling among the residents, due to this high renewal rate.


Finding the balance between these different considerations, so the diversity needed can exist simultaneously with a sufficient cohesiveness within the dorm to make it attractive will be a big challenge, but can if achieved help support the desire for a more visible university- and student life in Kongens Lyngby, that is one of the goals with having a dorm in the city.

### 8.3 Gathering

Gathering is especially important in the case of Kongens Lyngby, due to the limited population in the city. There is simply not enough people in the city, to support two or more different hot-spots, which means that establishing a new "centre" too far away from the existing one, the intersection between Klampenborgvej and the Main Street, or dispersing the initiatives over too large an area, will be risking them all to fail.

Gathering the initiatives in a single area, will therefore play a determining role, in the quest for transforming Kongens Lyngby in to a lively university city, and the initiatives that are relevant in relation to this, are the supporting facilities for the dorm and the placement of these.

The supporting initiatives for the dorm are, as described in the previous section a study hall, a student cafe/shared space area and possibly a section of the library, and all these functions need to be placed somewhere in the immediate vicinity of the dorm(s), so they are all at one location. If thinking ahead in this situation, and taking into account the situation with a possible second dorm on the other side of Klampenborgvej, an interesting location for all these initiatives could be in a redesigned version of the ailing "Kulturhuset".

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 88 of 108

If the glass gallery planned, can be used as a passage way between the two dorms as described in the previous section, then the "Kulturhuset" will be a perfect location, and especially the ground floor area would be ideal in more ways than one. It will help create life and activity in a "Kulturhuset", that is currently not successful, and could perhaps also help change it from a place with just a large movie theatre and a lot of fast food restaurants, to a place that lives up to its original purpose of being a house of culture and life.

Furthermore, if the facades are opened up to the surrounding area, than the passersby will be able to see what is going on, and life on the streets and life inside can interact, which is so vital according to the theories of Jan Gehl. It will also make the students and the university life immediately **visible** in the city, which is one of the desires of the City of Knowledge Strategy; as well as the first focus point from the analysis framework.

A placement for all supporting initiatives close to - but not in - the actual dorm, would also mean that the students need to venture outside the dorm itself, and can perhaps be a contributing factor to minimize the risk mentioned by Mark Lorenzen, of the dorm focusing inwards instead of outwards. Last but not least, the proposed relocation of the library, could be another step in the direction of gathering; not just the new proposed initiatives, but also a gathering of the existing facilities in the city, as stated earlier. Then it could perhaps not only be a positive supporting feature for the study hall, but also a way of inspiring the students, to use the library more than they do now.


Besides this, a dedicated bicycle lane and better public transportation between DTU and Kongens Lyngby, is another initiative that can tie the two closer together, creating a better physical connection between them. These initiatives are not centred around gathering regarding creating a single hot-spot in Kongens Lyngby, but in a broader sense of the word, by connecting the two locations closer together. A closer and more direct transportation link between the two, could be the first step in gathering the two closer together in the minds of the students, setting the stage for the suggested initiatives to follow.

## 8.4 Shared space areas

Shared space areas is a focus point from the theory, that is described as important by both Helle Juul and Mark Lorenzen. Shared as in many different people can use them; creating the possibility for dynamic interaction between many different people, but also shared in the sense of incorporating different functions in the same space.

With regards to the proposed supporting initiatives, it would be interesting to execute them in a way so the study hall, the library and the cafe can function as one large shared space area; that fulfil both of the above interpretations of the phrase "shared space area".

Regarding the study hall; it is a suggestions that is chosen in order to create a space in the city centre, that is aimed towards students and student related activities, but is perhaps not one of the most popular suggestions from DTU's point of view. When asked about the possibility of a student hall or student study cells in the city, the director of DTU, Claus Nielsen, had the following to say; *"No. DTU require that their employees are available in the area during working hours and the stu-*

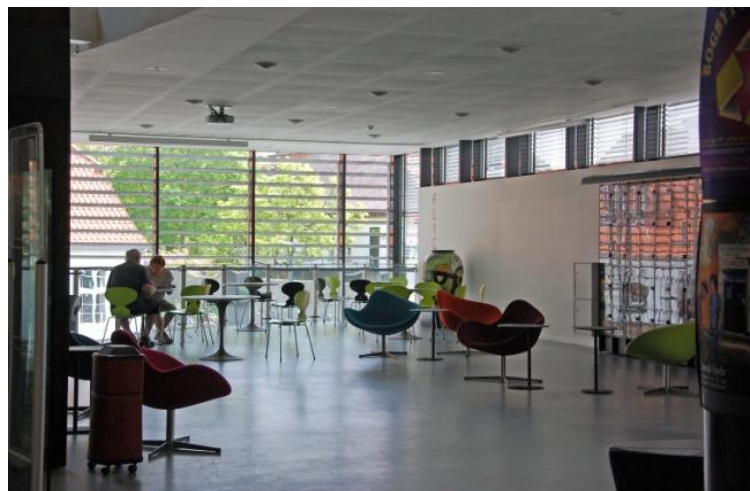
	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 89 of 108

*dents must also be. They must be near their test facilities and their supervisors / trainers".* (Translated from Danish).

This is, however, mostly relevant when the students have classes and planned work at DTU, but there are many hours every week, where the students do not have to be at DTU for classes, and where group work and homework are done in a private setting. It is this situation that perhaps could be moved to the new study hall, so the students instead of having to make do in a small dorm room, or where ever they can find space, instead can come and work in the new study hall in the city centre; perhaps especially an attractive option for the students, that are going to be living at the new dorm just in connection to it.

The study cells, meeting rooms or conference that are described in the previous sections, as an interesting attribute to the study hall and dorm, should as stated not be exclusively for students, but also be open for booking by the local business community, private citizens and the like. This is in order to create spaces where the students and business community can interact under less formal circumstances, than at for example job fairs and so on, and where ideas can be discussed and evolved, which is an important part of creating thriving student environments.

As it is now, there are space for studying and reading at the Lyngby Library, see Picture 30. But to go to a library and study, or sit, read and work in a place where you should preferable be a bit quiet is perhaps not the most attractive option. This combined with the library's location, 500 m from the intersection between Lyngby Main street and Klampenborgvej, and the fact that it is a little hidden behind other buildings, when you approach it from the Main Street, is




Picture 30: Reading area at the Library in Kongens Lyngby [Photo: Rikke Brinkø]

perhaps a contributing reason as to why students do not choose to come here to read very often. A fact that is evident in the study by Tine Karlsen, where use of the library came in at number 6 for the students, when asked about which facilities in Kongens Lyngby they used, see Figure 17.

With regards to the cafe, a completely student run cafe will be difficult to finance, since the prices in order to suit the clientele will have to be low, but the rent for a location in the city centre is high. But if realised as described earlier, as a regular cafe during some hours a day or some days a week, and a student run cafe on more odd hours and days, then perhaps it can be self-sustaining.



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 90 of 108

Another way to increase the chance for success, while keep in line with the focus point of gathering, would be to incorporate two businesses in the one single space. This concept can be found with a combination of cafe and bookstore in many places in for example Aarhus and Copenhagen, a grouping that is very relevant in connection with the dorm, but also in the combination of cafe and music store, which for example can be seen in Malmö with the store "Folk å Rock", see Picture 31.



Picture 31: Folk å Rock, Malmö [folkrock]

## 8.5 Flexibility


One of the characteristics for the Creative Class as described by Mark Lorenzen, is that they have very irregular work hours and flexibility is therefore crucial, and is therefore another of the chosen focus points from the theory. This means that for the supporting initiatives to have the best chance for success, the students have to have access to them for as many hours a day as possible; as described by Helle Juul, the students at Harvard used the library at MIT instead of their own, simply because it was open a couple of hours longer than theirs.

The study hall which is the main facility among the chosen initiatives, should therefore if possible be accessible 24 hours a day. Not that it necessarily should be open for all at all times, but it could perhaps be possible to obtain a card-key for students, so they can use it also when it is necessary to work all night to reach a deadline.

With regards to the cafe, then the before mentioned collaboration could also help secure the needed amount of flexibility. With two parties running it, there is greater possibilities for it being open for more hours a day, than what is experienced in Kongens Lyngby now. This will also mean that the students will have a place in the city to go after 9 p.m., where many of the cafes in Kongens Lyngby close as it is now; a fact that is not exactly helping the effort to create life.

The library will probably be one of the most difficult to secure longer opening hours for, due to the need for professionals to keep it open, but it is probably also the one where it matters the least among the chosen initiatives. As long as the study hall is open, so the students have a place to study, and the cafe it open so they have a place to buy coffee, then the strive for flexibility have come a long way.



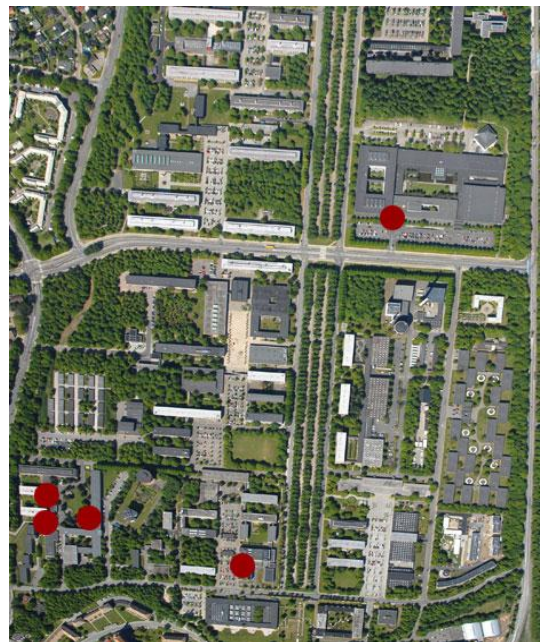
	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 91 of 108

## 8.6 Entrepreneurship

Besides the previously analysed initiatives, another aspect that during the process with gathering information for this thesis was pointed out as being essential in obtaining the goals of becoming an university city and create more life is entrepreneurship.

The most important aspect of this with regards to the strategy of creating life in the city, is as stated by Jørgen Rosted, to have cheap commercial leases for the new start-ups in the city centre, where they can be in touch with the local community and preferable the students. Incubation environments is also by Helle Juul mentioned as a valuable asset to the city if it wants to become a university city. She states, just as Rosted, that a lot of innovative ideas are thought of in more informal environment where different people with different backgrounds and professions meet, talk and interact.


As it is now, DTU have a location at their Lyngby campus that serves this purpose, see Picture 32. This is a very good start-up location, due to the close connection with the facilities at DTU, but it is unfortunately too far away from the city centre to have any impact here. The establishing of incubation and innovation environments in the city, could perhaps be an initiative that could be a joint venture between both DTU, the local business community and the municipality. It is an area where all parties would benefit, and as stated by Ole Kristian Bottheim; *"The interest of the different participants must be identified and places where these overlap are where it will be easiest to develop initiatives. Here all can see an advantage in cooperation and will be willing to go the extra mile"* (Translated from Danish)



Picture 32: SCION DTU, Lyngby Campus. Red dots marks the locations. [sciondtu]

DTU could achieve a closer connection between the students and the business community, which is a big focus point according to the director of DTU, Claus Nielsen, it could help set Kongens Lyngby apart as an innovative university city with a focus on entrepreneurship, and these environments could also be attractive for businesses considering establishing themselves in the area.

It is without a doubt a strategy that is worth striving for, but realistically it might be an initiative that is very difficult to achieve. Leases in the city centre are expensive and few, and for such environments to be a reality, they need cheap, central locations, which means that somebody have to pay; the question is who?

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 92 of 108

## 8.7 Authenticity

Authenticity is many things; Helle Juul talks of being true to any given cities starting point and own special characteristics, when planning to become a university city, and Florida have the following description in his book about the Creative Class; *"Authenticity comes from several aspects of a community - historic buildings, established neighbourhoods, a unique music scene or specific cultural attributes. It comes from the mix - from urban grit alongside renovated buildings, from the commingling of young and old, long-time neighbourhood characters and yuppies, fashion models and "bag ladies""* [Florida, p.228]

In the case of Kongens Lyngby and the suggested initiatives, staying authentic to the special characteristics that define the city, such as the history of being a royal borough and a market town, will be important to keep in mind during the transformation towards becoming a university city. This could for example be done, by setting requirements to the design of the dorm(s), making sure that it will fit in to the existing areas and their immediate surroundings, so they do not seem out of place.

Besides the dorms, keeping the authenticity will also mean that Kongens Lyngby will need to stay true to its original character throughout the overall transformation, and not get sidetracked and start trying to compete with Copenhagen on its terms. The initiatives chosen must be relevant in relation to Kongens Lyngby as a unique city, and should not be "copied" blindly from other cities with other circumstances. This will only deter the Creative Class, and thereby do the exact opposite than desired.


## 8.8 Human scale

Considerations regarding the human scale will like the focus on authenticity, not only be important in relation to planning the suggested initiatives in this report, but will be an important factor in all aspects of the planning of the city.

With regards to the initiatives proposed, considerations on the subject of human scale will be very important when deciding on size, design and placement of both the dorms, the suggested initiatives as well as the proposed transportation connection between the city centre and DTU. But also regarding the city's plan for redesigning and densifying the squares, should reflections on how to best suit the human scale be an important factor. The large square behind "Kulturhuset", see Picture 33, is a great example of what not to do - it is a large planned square with benches along the sides, which almost never gets used. But a more human scale to the square would help provide smaller more comfortable areas, that according to Gehl are more attractive to humans.



Picture 33: Square behind "Kulturhuset" [Photo: Rikke Brinkø]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 93 of 108

Besides the considerations that must be made, when for example the dorm is designed and placed, as well as their immediate surroundings; the human scale can also be applied in other areas of the transformation of Kongens Lyngby.

As mentioned earlier in the report, the new light rail will run through one of the main traffic arteries of the city, Klampenborgvej, which means that the traffic on this street and its role in the city, will be changed. This means that it is a perfect opportunity to reinvent the street, adapting it to the human scale and make it an asset to the city, instead of a large dividing path running down the middle of the city centre, as is the case now. As stated earlier in this report; *"[...]by improving conditions for pedestrians, we not only strengthen pedestrian traffic, we also - and most importantly - strengthen city life."* [GehlB, p. 19]


With this change it will also make it much more attractive for the business alongside it to open up towards the street, which can help contribute to make the street a more attractive place to be.

## 8.9 Involvement

According to Helle Juul who have worked extensively with university cities, involvement is an important aspect to keep in mind, in order to maximise the chance for success. Students as well as the remainder of the Creative Class, enjoys being part of their community, and getting them interested in the project and involving them in the process of transforming Kongens Lyngby, is according to the theory and important aspect in securing the best chances for success.

The question is then how to bring this about. A public meeting at City Hall as has been held so far, is a very good tool for presenting the plans to the general public, but is perhaps not an ideal way of getting the students interested. Instead, a way could be to get the student union at DTU, Polyteknisk Forening, involved in the project. It is the perfect and perhaps only way to really get in contact with the students at DTU, and get them involved in the process. And since making the city attractive for students, is an important part of the development plan, having them involved in the process can maximise the chance for the initiatives to hit the right spot.

But involvement is not only about including the Creative Class, and especially the students in this case, in the plans; it is also about the type of initiatives and activities that are present. Florida and Lorenzen both conclude, as described earlier in this report, that the Creative Class is more interested in activities that requires personal involvement, than seen in the remainder of the population. There are already some activities in Kongens Lyngby that fulfil this desire, due to the many sport activities present; a list of which can be found in the appendix, but this is of course only one aspect of the desired activities, and is not enough on its own. Another way of involving the students, is for example to have them help run the student cafe, study hall and conference rooms, as well as other relevant initiatives established. This will not only have the advantage of fulfilling the students desire to be involved, but volunteer work by the very students who are meant to use the facilities, can also help keep the running costs down, and thereby help increase the chance for success.


	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 94 of 108

One thing is certain; involvement is a very important fact to keep in mind, and must be incorporated in the plans for supporting initiatives for the dorm, as well as in the city in general in the process of becoming a university city.

### 8.10 Section summary

In upper secondary school there is a lot of focus on interdisciplinary projects, in order to enhance the students professional competences, but when getting to the university level, the education becomes specialised and streamlined and the ability to work with professionals outside one's own subject, is no longer a priority. The new hotspot in Kongens Lyngby can if accomplished in the desired way, hopefully help to create an environment, where the students have contact with both other students from many different study lines, as well as the local business life. This will hopefully expose the students to other ways of thinking; preparing them for a future where they will have to work in close collaboration with people from many different professions. A more open interaction can perhaps also help encourage and promote the tolerance, that along with the presence of bohemians as stated in the theoretical, is so important for the Creative Class as described by both Florida and Lorenzen.

But before this can become a reality, there are many challenges that must be overcome. The possible initiatives suggested in this thesis, is based on information from a wide range of sources, all working with different parts of the subject for this thesis in the "real world", and it is backed up by a comprehensive theoretical study. The suggestions made illustrate one possible way to move towards the desired goal of becoming a university city, but before all this is initiated, there is one question that must be answered; how can the strategy be communicated out to those who have to help realise it, as stated by Ole Kristian Bottheim; *"The question that must be solved is, how do you get from a strategy to the practitioners?"* (Translated from Danish)

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 95 of 108

## 9 Discussion

This discussion illustrates the reflections, that have been made over the course of this thesis. It will contain three main sections, dealing with "*usability of the theory*", "*How will a city of knowledge look in it is fully finalised form*" and "*What will it take to succeed*" respectively. The first part, the usability of the theory, reflects the difficulties with finding relevant theory during the project formation, as well as a discussion of how well the chosen theory match up with the empirical study. The second is a discussion based on the theory and information gathered, trying to determine what exactly being a City of Knowledge entails, and the last addresses the question of whether or not the initiatives suggested in this report, will be enough to bring about a change in the city.

### Usability of the theory


Since the subject of planning for social and lively university cities, with this as the main intent and goal, as is the case with this thesis, is not a field of research where much theory has been published. It has been necessary to work around this, by securing a sufficiently pervasive literature study, as well as gathering information from practitioners. The theoretical framework set up for this thesis, therefore takes its base in three different fields of theory; urban planning, university cities and the theory of the Creative Class, with additional knowledge and insights gathered via interviews with professionals and experts.

These three theoretical fields, each deal with different aspects of knowledge cities. Urban planning was chosen to secure that the plans and suggestions made will support the development of Kongens Lyngby as an inspiring place to live in general. Theory on university cities was chosen since this is the kind of city Kongens Lyngby strives to become, and theory on the Creative Class was chosen in order to gain an understanding of the type of people the city of Kongens Lyngby, with their City of Knowledge strategy, is trying to attract. What characterises them and what they value in a place to live.

A challenge of this approach is, that none of the theory deals with the subject at hand for this thesis directly, and most is completed based on studies of countries other than Denmark. Due to size and distances, Denmark and Kongens Lyngby is a very different case to study than for example USA, on which Florida, for example, have completed his studies. Something that has to be taken into account, when used anywhere other than USA. A good example of this is, that in Floridas studies the amount of homosexuals in a city is one of the best indications of tolerance, but due to the different conditions and mentality in Denmark, this cannot be used here as a deciding factor to the same degree.

The question of the usability of the theory on the Danish conditions, is tackled by the study by Lorenzen, where this exact point of critique is investigated, but it is not the only point of critique the theory of the Creative Class have received in Denmark. Florida have received a lot of criticism for including too many professions in the definition of who belongs to the Creative Class, making it too broad and wide-ranging, and as a consequence of this not as useful.



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 96 of 108

The problem is that a definition containing so many very different people and professions, can result in a Creative Class that it is so large and diverse, that it makes it very difficult, if not impossible, to formulate any recommendations, that will fulfil the needs and desires of all. The strategies will have to appeal to everyone from engineer and artist to lawyer and sales managers, and in order to encompass this broad span in characteristics, the guidelines risk being too vague to be useful. Also Floridas basic claim, that the Creative Class creates financial growth in the regions in which they reside have as stated earlier been criticised regarding causality; something the far better founded study by Lorenzen confirmed nonetheless.

Furthermore the theory only includes members of the work force, and therefore not students, among which many are very stereotypical Creative Class, according to Lorenzen. This is especially relevant in regards to this thesis, where students are the main focus group, but with a definition containing so many professions, it is strange that the boundary have been set with members included in the active workforce only.


Regarding the theories of Jan Gehl, his four main principles - *gather, integrate, invite and open up* - among which some are used as focus points during the analysis, are not directed towards neither students or the Creative Class, but is a guide on how to plan for cities, that are made for humans in general. Despite this, the concept of for example opening up is very much in line with the desires of the Creative Class and plays a big role in the ideas suggested. This crossover is an interesting and very important factor since it means, that initiatives that will support the desire to create a city that is attractive for the Creative Class, is also an important aspect in designing cities for humans in general. An aspect that is very important to keep in mind; the city should not just be a nice place to live for the members of the Creative Class, but also for the population in general, otherwise the desire for diversity in the population will be very difficult to uphold.

The theories on university cities, have been the most problematic during the creation of this thesis. The first issue have been, that a university city can be many different things depending on who is asked, and according to which country a study have been conducted in. Much of the theory that was found, have been studies based on cases in countries other than Denmark, and thereby on circumstances that are so far from the Danish, that the usefulness of them are limited.

Besides this a problem has been to find theory, that focused on planning of university cities from a social point of view instead of an economic one, and the extremely limited amount of literature found on this specific part of the subject, have without a doubt had an influence on this thesis. The hole have been filled with information from interviews with practitioners, but this is of cause not the same as a recognised scientific publication.

These points illustrate some of the difficulties with finding theory on the subject, and the final conclusion on this part of the process have been, that on the subject of university cities, the theory has simply been dissatisfactory. Not only for this thesis, but also for the field as a whole. Education and universities have become an integral part of our society, as well as for each of us as individuals. Finding the "good" solution for integrating cities, universities and the knowledge these produce, have the potential for making a huge difference in modern society.



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 97 of 108

Despite the uncertainties with some of the aspects regarding these theories, combined the three different fields of study, can cover all the theoretical aspects in question, and provide a sufficient base for the conclusions made in this thesis.

This was put to the test in the analysis where the theoretical study was used to analyse the possible initiatives that were suggested based on the practical information gathered as well as the work completed in the City of Knowledge Network. The deciding factor at this stage, was to see how well the practical initiatives matched the focus points chosen from the theory, and if all focus points were met by the initiatives. The result of this analysis were fortunately very positive in this regard, but this is of course still no guarantee, that they will be a success.

### **How will a city of knowledge look in its fully finalised form?**

In order to present a realistic evaluation, of whether or not these suggested initiatives, along with the City of Knowledge strategy and strategy, will be enough to transform a commercial city as Kongens Lyngby into a lively university city, two questions need to be answered;

- What is a city of knowledge - a university city - and what does it take for a city to call itself a city of knowledge?
- How will a city of knowledge look in its fully finalised form?

These are not easy questions to answer. And at the core of these issues, is another question that many have asked; is it even possible to transform a relatively small suburban city as Kongens Lyngby, in to an attractive, lively university city, or are the city simply too late and the competition from Copenhagen too strong.


Both the theory and the people interviewed during the process of creating this thesis, all have their own version of what characterises a university city and what is important.

Florida for example, do not seem to believe that size itself necessarily is the defining aspect and focuses instead on diversity and tolerance as the major attractions; *"An attractive place doesn't have to be a big city, but it has to be cosmopolitan - a place where anyone can find a peer group to be comfortable with, and also find other groups to be stimulated by; a place seething with the interplay of cultures and ideas; a place where outsiders can quickly become insiders"* [Florida, p. 227].

Helle Juul defines a city of knowledge, or a university city, as a city where knowledge permeates everything. A city where the university is a constant presence in the city, and where the city is a constant presence at the university

Mark Lorenzen focuses on flexibility in all aspects of the word; from shopping to spare time activities, and with regards to the younger part of the Creative Class, to nightlife.

Jørgen Rosted focus is instead on the relations between the university and the city and the business community, in the form of efficient and well-functioning entrepreneurship-environments in the city centre, as an fundamental factor if Kongens Lyngby wishes to fulfil the strategy of becoming a City of Knowledge.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 98 of 108

There are as many explanations to how such a city will look as there are people to ask, which is clearly shown, but there is no way to say that any one is correct. There are many successful examples of knowledge cities all over the world, and each one is unique.

### **What will it take to succeed?**


All the different aspects and focus points described in this thesis, must all be considered to be important to plan for, in the quest to become a university city. This thesis only deals with a specific aspect of university and knowledge cities; the social and lively part, but this is far from the only aspect of what a city of knowledge or university is, as described earlier. Due to the recognition by the City of Knowledge network, that it was unrealistic to expect DTU and Kongens Lyngby to merge physically, planning towards this theoretical end was considered futile. The focus in this thesis, have therefore instead rested on identifying and cultivating the special characteristics of both areas. Of course with a constant focus on making sure that they operate in symbiosis. One can say that DTU must deliver two of the T's described in the theory of the Creative Class - *Technology and Talent* - and the city of Kongens Lyngby the last - *Tolerance*.

Another of the hurdles that must be overcome, on the path to become a university city, is for the general public to have some sort of relationship with the university, in order for it to be a part of the mentality of the city. In order for this to happen, the university environment have to be demystified and integrated in the city. If not, the students and the initiatives suggested here, will have a hard time being integrated properly in the urban environment, and there will be a risk of creating two separate entities in the city; the commercial town as it is known now, and a separate enclave of students, that do not interact with each other as is desired.

In order to prevent this from happening, the planning and communication between both the parties involved in the development, but also to the general public, have to be strong, so they do not feel their city changing without having a say in how or why. Also, the collaboration between the three parties involved in facilitating and planning the transformation, the city, the university and the business community, will have to be steady and long-term, because there are many difficulties along the way; not only theoretical ones as described earlier, but also regarding something as tangible as locations, as illustrated by Ole Kristian Bottheim; *"DTU have many empty lots at the Campus area and many possible locations for development which they already own. Locating facilities in the city, even though we like the idea, is a question of economy"* (Translated from Danish).

These considerations are perhaps not an answer to the two questions posed, or an answer to the question of whether or not the suggested initiatives will be enough to bring about a change, but combined with the questions, they illustrate some of the challenges that will have to be dealt with, as a part of the transformation towards a lively university city and knowledge centre. The challenges that will be on the road to securing, that the initiatives will be a success.

Despite of these challenges that must be overcome, there is also a major positive benefit of the suggestions provided in this thesis. The transformation of Kongens Lyngby is not only interesting for the students at DTU and the other educational institutions in the city, but also for the employees

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 99 of 108

at the many knowledge heavy business located in Kongens Lyngby. DTU and the many knowledge heavy business that are located in the area attract many international employees and researchers, and it would be a huge asset for both parties as well as Kongens Lyngby, if the city appealed more to these people. Drawing these researchers and international professionals as well as the students in to the city, will be another huge step towards creating a diverse and interesting city bustling with life, and it is a field where Kongens Lyngby would not be competing with Copenhagen to the same extent as it would, if choosing to focus on larger museums, theatres, night clubs and activities like these. A field where Kongens Lyngby would have a chance for really standing out.

A mix of students, researchers and working professionals, both national and international, in the city centre, will also create the base for interesting, informal creative environments. The environments that are so desired, according to both theory and professionals on the Creative Class and university cities, and help the city to provide all variables as seen in Table 4, than according to Lorenzen combined are very attractive for the Creative Class when choosing where to live.

But this is just the base; the question is, what framework must the City of Knowledge provide in order to keep the interest of these people?


An interesting example of the type of informal and creative environments that are called for, by many of the parties interviewed as a part of this thesis, is the student run project created in collaboration between DTU and Roskilde Festival, Sustainable Lab, see Picture 34. Sustainable Lab Roskilde Festival is a presentation, research and work area, where ideas are formed and networks across professions and interests are established; a regular "playground" for engineering students and professionals.



Picture 34: Sustainable Lab, Roskilde Festival 2012  
[photo: Ditte Valente]

The festival provides the students with real life challenges, space to work and showcase their work, and the possibility of their solutions being taken to full scale and incorporated in the festival. And along the way this process creates new ideas, new inspiration and a feeling of life and excitement. At the same time the festival gets innovative solutions to some of their major challenges, and the students get a chance at tackling real life problems.

What is really interesting about this, is that it can be translated to the case of Kongens Lyngby. What if the city could provide the students with the setting and opportunity, to do this in the downtown area? Provide them with a space where they can "play", be innovative and creative, and last but not least, be visible in the city?


	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 100 of 108

The city and municipality can help create the connection between the students who are working on projects, and a network of people who could be interested in either the solutions presented, or have new problems to be solved. For example people from the municipality itself or via the City of Knowledge Network, which would provide the students with a much better connection to the business community, than through a regular university or spare time project. A place like this could also be a link in creating the valuable incubation and innovation environments in the city, and connect the students to the local business community; perfect in line with both the theory behind this thesis and the cooperation contract signed between DTU and Lyngby-Taarbæk.

To ensure the space would be attractive to the students, a collaboration could for example be made between the municipality and DTU similar to the one between DTU and Roskilde Festival, so the students can take on relevant real world problems as a course and as a part of their education. Having fun, doing academic work and helping solve the city and municipality's problems, at the same time as creating the desired student life, as described in the City of Knowledge Strategy and strategy. This would furthermore help engage the students in the city, opening their eyes to its potential, and could thereby play a huge role in changing the way the students view the city - from boring to interesting and engaging, and provide the city with the desired student and university related activities in the city, without moving a auditorium or faculty.

Regarding placement and design, it would be vital that it was open and central. For example in connection with the proposed initiatives in the "Kulturhus", or as a part of the planned densification of the large square behind. This would be close enough to the dorm and supporting initiatives to be another attractive feature for the new hot-spot, and it fits the important criteria set forth by Ole Bottheim, which is also stated previously; *"The interest of the different participants must be identified and places where these overlap are where it will be easiest to develop initiatives. Here all can see an advantage in cooperation and will be willing to give more"* (Translated from Danish). DTU wants a closer connection between their students and the business community, the city would like more student life and student related activities, and the business life will have easy access to hard-working students, and innovative and creative new ideas.

This thesis and the results and suggestions made in it, is only a step on the road, and cannot be considered a final plan for the development of Kongens Lyngby for the next 10, 20 or 30 years. The society is in constant motion, as are the way we work and what we value. The strategies for improving the city therefore have to be constantly updated to keep up with globalisation, and the ever-changing world in which the city must see itself and adapt to; as illustrated by Richard Florida about cultivating creativity; *"We do not know how the next big idea about how to support the ideas will look like."* [Florida, p. 319]

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 101 of 108

## 10 Conclusion

The purpose of this report is to provide suggestions, based on a broad theoretical background, for how the city of Kongens Lyngby can become a more attractive city for the students at DTU, with the construction of a dorm in the city centre as a prerequisite. As a part of this quest, the following sub questions were answered;

- Why is the situation in Kongens Lyngby as it is now?
- How can Kongens Lyngby maximize the advantage constituted by DTU
- What initiatives can be taken to support the foundation for live constituted by the new dorm?
- What will increased student life mean for the urban life in Kongens Lyngby in general?

This conclusion will be divided into three subdivisions, the two first concentrating on answering the question asked in the problem statement, and the third giving an overall assessment of the chances for success.


The first part will focus on the questions that are mainly founded in the theoretical study completed as a part of the report, and will therefore be founded only in the theory. The second part will instead concentrate on the analysis of the initiatives suggested; revolving around the answering of the questions relevant for this.

### Part one

A possible explanation for why the situation in Kongens Lyngby is as it is now, was answered by a look into the history of both DTU and the City of Kongens Lyngby from the late 50's till present day. The municipality had fought for 7 years to get Lundtoftesletten back from Copenhagen municipality and had planned to subdivide the area for single family houses. But within a year after they finally succeeded, the area was expropriated to make room for DTU, which can help explain the strained relationship between the two in the first many years. Furthermore, the city of Kongens Lyngby was due to its placement in relation to Copenhagen chosen to take some of the pressure off down town Copenhagen. This means that the city became a successful commercial town with an image based in trade, and did not have a need to look towards the university and the students.

Regarding how Kongens Lyngby can maximise the advantage constituted by DTU, the most important aspect is identifying the special characteristics of the students: From the theory gathered as a part of this thesis the following was found:

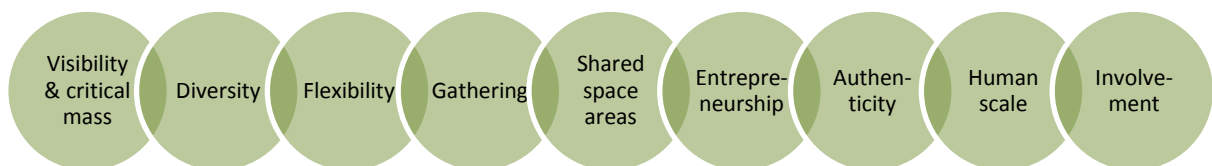
- Stereotypically the Creative Class
- Personal values: Individuality, Meritocracy, Diversity and tolerance
- Characteristics in work life: Irregular working hours, high degree of personal motivation and openness.
- Factors valued: Involvement, flexibility and authenticity.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 102 of 108

It is these characteristics that must be kept in mind at all times and in all plans if the city is to become attractive and thereby succeed in the desire to tap into the resource constituted by DTU. Furthermore, it is important that Kongens Lyngby in its development do not try to compete with Copenhagen, but instead focus on developing the city from its own unique starting point.

## Part 2

The theoretical study was concluded with a summary of the most important focus points to be taken on through to the analysis.



These were then tried applied to the initiatives suggested based on the empirical information gathered via interviews and the work done by the City of Knowledge Network, to try and identify how the initiatives would fulfil what the theory deemed necessary in creating a lively university.

A study hall, a student cafe, a library, improved transportation between DTU and the city, a transformation of Klampenborgvej, sport facilities and internet hot-spots, where the initiatives chosen based on the empirical information gathered, and backed up by the chosen focus points from the theory. These are therefore the answer this report gives to the question of what the city of Kongens Lyngby can do to support the foundation of life created by the new dorm that is the prerequisite for the thesis.


The aim of all these initiatives is to create an environment in the city that can function as a form of "playground" where the students can interact informally with each other, the public and the local business life, as exemplified by Sustainable Lab at Roskilde Festival as described in the discussion. Something that according to all information gathered during the creation of this thesis, along with the focus points above, is essential in making the city attractive for the students and creating the feel of a university city.

What this increased student life will mean for the urban life in Kongens Lyngby in general is an interesting question. Hopefully it will help create a sense of life, activity and excitement lasting also after the shops have closed and not only on Saturdays which is the busiest day for the commercial part of the city.

## Part 3


As shown by the research for this report is that the city of Kongens Lyngby already has many positive features, and therefore have the foundation needed for beginning a transformation towards a university city. This will however not be an easy transformation. The city have for a long time been characterised as a commercial town and the way of thinking, planning and prioritising will therefore need to be shifted in order to support the new goal of becoming a lively university city. There are



	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 103 of 108

furthermore inherent challenges due to the layout of this city, the image of the city in the eyes of the students, as well as the price of land which makes it difficult to provide the cheap leases needed for both students and incubations environments for businesses. Besides these, the challenge lies mainly in getting the students involved and exited about the process, and convincing both them and the remainder of the population that this is a project that is being taken seriously and has a real chance of becoming a reality. Communication and small quick results along the way, showing that the process is moving will be essential.


In short; a dorm in itself is a good and necessary initiative, but it cannot stand alone. The design and placement will be important, and there must be supporting initiatives, as for instance the bicycle path, the study hall as well as sufficient patience to see the implementation through. The root of success will in any case depend upon both parties being willing to continue innovating and cooperating. Lastly, the city of Kongens Lyngby will never be a new cultural hotspot rivalling Copenhagen, but this is not what the city should strive for either, and is not the only way to succeed with creating an interesting and lively city.

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 104 of 108

## 11 References

### 11.1 Books/Pdf's

Name	Title
[GehIA]	"Livet mellem husene", by Jan Gehl, 2007, 6. edition,
[GehIB]	"Cities for people", by Jan Gehl, 2010
[Landry]	"The Creative City", by Charles Landry and Franco Bianchini, 1998
[Florida]	"Den kreative klasse" by Richard Florida, 2005, 1. edition
[Lorenzen]	"Den danske kreative klasse", by Mark Lorenzen and Kristina V. Andersen, 2009, 1. edition
[Creative spaces]	"Strategies for Creative Spaces and Cities: Lessons Learned", by Cities Institute, London Metropolitan University and Munk Centre for International Studies, University of Toronto, 2006
[Chieti-Pescara]	"The urban role of a new university - a case study of Chieti-Pescara, Abruzzo, Italy" by Department of Architecture and Urban design, University of Chieti, Pescara, Italy, 1996
[Knowledge cities]	"Rising knowledge cities: The role of urban knowledge precincts", by Tan Yigitcanlar, Koray Velibeyoglu and Cristina Martinez-Fernandez, 2008
[University Campus]	"Managing the University Campus in an Urban Perspective: Theory, Challenges and lessons from Dutch Practice", by Alexandra den Heijer, 2008
[Creative cities - EU]	"Creative Cities in Europe - Urban Competitiveness in the Knowledge Economy", by Gert-Jan Hospers, 2003
[University students]	"University Students and City Centres - the formation of exclusive geographies, The case of Bristol UK", by Paul Chatterton, 1998
[Sustainable cities]	"A planning model for designing sustainable and healthy cities. The importance of people's need of recreational environments in an urban context." by Patrik Grahn, Ulrika A. Stigsdotter and Ann-Margreth Berggren-Bähring
[Idealer]	"Idealer, Planer og Virkelighed - belyst gennem udviklingen af Høje Taastrup By", by Jette Fuglsig Mogensen and Dorte Burlaas, 2002
[Kjærdam]	"Byplanlægningens historie", By Finn Kjærdam, 2. edition, 2006
[Byhistorie]	"Den moderne by", by Dansk Center for Byhistorie, 2006
[Lyngby1999]	"Lyngby-bogen 1999", by Historisk-topografisk Selskab for Lyngby-Taarbæk Kommune,
[Karlsen]	"Styrket samspil mellem DTU og Lyngby - med fokus på de studerende", master thesis by Tina Flohr Karlsen, DTU, 2012
[DTU campus]	"DTU Campus 1829-2029", by Erik Reitzel, Merete Ahnfeldt-Møllerup, Lotte Bjerregaard and Anders Munck, 2004, 1 edition
[Gov]	"Internationalt konkurrencedygtige universiteter", by the Danish Government, 2011
[LoopCity]	"Loop City presentation", by Realdania, 2010
[11CityDesign]	"Det Kreative Lyngby-Taarbæk", by 11CityDesign and Danmarks Statistik
[Campus and study]	"Campus and Study environment - physical framework for universities of the future"
[Vidensby]	"Lyngby-Taarbæk, Vidensby 2020" - ( <a href="http://www.ltk.dk/vidensby">www.ltk.dk/vidensby</a> )
[JuulFrost]	"Byens rum2 - Det kendte i det fremmede", by Juul Frost arkitekter
[Jacobs]	"Death and life of great American Cities" by Jane Jacobs, 1992
[GrøntLys]	"Grønt lys - strategy, viden, vækst" by Lyngby-Taarbæk municipality
[BoliKom]	"Kommissorium for boliger til studerende og forskere i Vidensby"
[DGI]	"DGI huse og haller", Børne- og fritidsforvaltningen & DGI huse og haller
[Campus and the city]	"Campus and the city - urban design for the knowledge society", by Kerstin Hoeger and Kees Christiaanse, 2007
[International students]	"International Students and the changing character of the inner area of a city: A case study of Melbourne" by Jan Tsutsumi and Kevin O'Connor, 2005
[Kvale]	"Interview – En introduktion til det kvalitative forskningsinterview", by Steiner Kvale, 2002
[YinA]	"Case Study Research – Design and Methods", by Robert K. Yin, 2. edition, 1994
[YinB]	"Case study methods - revised draft", by Robert K. Yin, 2004
[Flyvbjerg]	"Five misunderstandings about case-study research", by Bent Flyvbjerg, 2006, Vol. 12 Nr. 2
[Lokalplan82]	Lokalplan 82, For DTH and DIA in Lyngby, 1988
[Municipality plan 2009]	Kommune plan 2009, for Lyngby-Taarbæk Kommune
[Municipality plan 1994]	Kommune plan 1994-2006, for Lyngby-Taarbæk Kommune
[Municipality plan 1980]	Kommune plan 1980-1992, for Lyngby-Taarbæk Kommune
[Municipality planning]	Lyngby-Taarbæk kommune, Debat, Kommuneplanlægning, 1979

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 105 of 108

## 11.2 Websites

Name	Full address	Visited
[ltk.odeumA]	<a href="http://ltk.odeum.com/dk/oevrig_planlaegning/hidtidig_planlaegning/">http://ltk.odeum.com/dk/oevrig_planlaegning/hidtidig_planlaegning/</a>	23.02.2012
[ltk.odeumB]	<a href="http://ltk.odeum.com/dk/byudvikling/kgs_lyngby/">http://ltk.odeum.com/dk/byudvikling/kgs_lyngby/</a>	13.03.2012
[ltkA]	<a href="http://ltk.dk/composite-8277.htm">http://ltk.dk/composite-8277.htm</a>	09.05.2012
[ltkB]	<a href="http://ltk.dk/composite-8658.htm">http://ltk.dk/composite-8658.htm</a>	09.05.2012
[hisotrie.dtu.dk]	<a href="http://www.hisotrie.dtu.dk/DTUinside">http://www.hisotrie.dtu.dk/DTUinside</a>	27.02.2012
[101.dtu.dk]	<a href="http://www.101.dtu.dk/DTU-studiedataavarehus/default.aspx">http://www.101.dtu.dk/DTU-studiedataavarehus/default.aspx</a>	27.02.2012
[danskhistorie]	<a href="http://www.danskhistorie.dk/emner/oekonomi/industrialiseringen/">http://www.danskhistorie.dk/emner/oekonomi/industrialiseringen/</a>	07.03.2012
[google.maps]	<a href="http://maps.google.dk/">http://maps.google.dk/</a>	13.03.2012
[noegletal]	<a href="http://www.noegletal.dk/">http://www.noegletal.dk/</a>	15.03.2012
[politiken]	<a href="http://politiken.dk/videnskab/ECE481062/jysk-harvard-professor-taemmer-lyset/">http://politiken.dk/videnskab/ECE481062/jysk-harvard-professor-taemmer-lyset/</a>	04.05.2012
[lokalavisen]	<a href="http://lyngby-taarbaek.lokalavisen.dk/hvilken-vej-skal-kommunen-gaa-20120522/artikler/705229154">http://lyngby-taarbaek.lokalavisen.dk/hvilken-vej-skal-kommunen-gaa-20120522/artikler/705229154</a>	22.05.2012
[citiesforpeople]	<a href="http://www.citiesforpeople.net/jan-gehl-and-good-cities">http://www.citiesforpeople.net/jan-gehl-and-good-cities</a>	25.05.2012
[baadfarten]	<a href="http://www.baadfarten.dk/galleri3.htm">http://www.baadfarten.dk/galleri3.htm</a>	28.05.2012
[christensenco]	<a href="http://www.christensenco.dk/projekter&amp;p=19">http://www.christensenco.dk/projekter&amp;p=19</a>	28.05.2012
[henninglarsen]	<a href="http://da.henninglarsen.com/nyheder/nyhedsarkiv/2011/07/praekvalificeret-til-dtu.aspx">http://da.henninglarsen.com/nyheder/nyhedsarkiv/2011/07/praekvalificeret-til-dtu.aspx</a>	28.05.2012
[akf]	<a href="http://www.akf.dk/projekter/container/2736/">http://www.akf.dk/projekter/container/2736/</a>	01.06.2012
[ostenfeld]	<a href="http://www.ostenfeld.k-net.dk/">http://www.ostenfeld.k-net.dk/</a>	14.05.2012
[nybro]	<a href="http://www.nybro.dk/">http://www.nybro.dk/</a>	14.05.2012
[kampsax]	<a href="https://www.kampsax.dtu.dk/">https://www.kampsax.dtu.dk/</a>	14.05.2012
[pbk]	<a href="http://www.pbk.dk/index.php?omraade=4&amp;subomraade=4&amp;side=2">http://www.pbk.dk/index.php?omraade=4&amp;subomraade=4&amp;side=2</a>	14.05.2012
[pop]	<a href="http://www.pop.k-net.dk/">http://www.pop.k-net.dk/</a>	14.05.2012
[vkr]	<a href="http://www.vkr.dk/content/about-villum-kann-rasmussen-dormitory">http://www.vkr.dk/content/about-villum-kann-rasmussen-dormitory</a>	14.05.2012
[wdk]	<a href="http://www.wdk.dk/kollegiet">http://www.wdk.dk/kollegiet</a>	14.05.2012
[vjk]	<a href="http://www.vjk.dk/">http://www.vjk.dk/</a>	14.06.2012
[folkarock]	<a href="http://folkarock.se/wp/om/">http://folkarock.se/wp/om/</a>	26.06.2012
[sciondtu]	<a href="http://www.sciondtu.dk/da-dk/kig-ind-lyngby.aspx">http://www.sciondtu.dk/da-dk/kig-ind-lyngby.aspx</a>	26.06.2012
[jaeger]	<a href="http://jaegerforbundet.dk">http://jaegerforbundet.dk</a>	27.07.2012

## 11.3 Table of figures

Figure 1: in working population from 1800-2000 [University Campus, p. 4].....	17
Figure 2: The comprising parts of the Creative Class .....	25
Figure 3: Visit urban environments (Translated from Danish) [Lorenzen] .....	28
Figure 4: Walk or cycle (Translated from Danish) .....	28
Figure 5: Engage in sport (Translated from Danish) [Lorenzen] .....	28
Figure 6: Visits to libraries (Translated from Danish) [Lorenzen] .....	28
Figure 7: Visits to museums (Translated from Danish) [Lorenzen].....	28
Figure 8: Own creative expression (Translated from Danish) [Lorenzen].....	28
Figure 9: The three T's.....	31
Figure 10: Elements of the Creativity Index .....	32
Figure 11: The Creative Class' distribution on Zealand [11CityDesign].....	33
Figure 12: Lyngby-Taarbæk and surrounding Municipalities, [LoopCity] .....	57
Figure 13: Distribution of Creative Youths in Denmark (Translated from Danish) [11CityDesign] .....	58
Figure 14: Distribution of Creative Youths in LTK Municipality (Translated from Danish) [11CityDesign] .....	58
Figure 15: The likelihood of living at a dorm related to age (Translated from Danish) [Karlsen].....	64
Figure 16: Characteristics of Kongens Lyngby (Translated from Danish) [Karlsen p. 202] .....	72


	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 106 of 108


Figure 17: The use of facilities in Lyngby (Translated to Danish) [Karlsen, p. 66].....	73
Figure 18: Important points from the theory.....	82

#### 11.4 Table of tables


Table 1: Increase in population in Denmark during the industrialization [danskhistorie].....	14
Table 2: Types of universities [Campus and Study p. 12].....	18
Table 3: Subgroups of the Creative Class (Translated from Danish) [Lorenzen, p. 20].....	25
Table 4: Spatial quality and size of the Creative Class (Translated from Danish) [Lorenzen] .....	29
Table 5: Work methods of the Creative Class and students respectively.....	34
Table 6: The four principles of Jan Gehl.....	40
Table 7: Main points from the theory.....	44
Table 8: The five municipalities with the largest share of Creative [11CityDesign].....	58
Table 9: Danish Universities in numbers [Gov] .....	60
Table 10: Student intake at DTU, 1993-2011 [101.dtu.dk] .....	63
Table 11: Students choice of where to live [11CityDesign].....	64
Table 12: Dorms in a 6 km radius from DTU [ostenfeld],[nybro],[kampsax],[pbk],[pop],[vkr],[wdk],[vjk].....	65
Table 13: Entrepreneurship according to Jørgen Rosted.....	67
Table 14: Missing in Kongens Lyngby (Translated from Danish) [Karlsen p. 203] .....	72
Table 15: The use of Lyngby Mall. Often=daily, weekly or monthly; Rarely=semi-annual, annual or never .....	73
Table 16: The use of Lyngby main street. Often=daily, weekly or monthly; Rarely=semi-annual, annual or never .....	73

#### 11.5 Table of pictures

Picture 1: Activities and environment [GehlB p 21].....	37
Picture 2: Made for 100km/h traffic - Dubai [GehlB, p. 45].....	38
Picture 3: Made for 5 km/h traffic - Venice [GehlB, p. 45] .....	39
Picture 4: Small spaces - good [GehlB, p. 52].....	39
Picture 5: Large space - bad [GehlB, p. 52] .....	39
Picture 6: Map over Denmark with Lyngby marked [jaeger] .....	49
Picture 7: Overview from the municipality plan 1980-1992 [Municipality plan 1980].....	52
Picture 8: Overview of Kongens Lyngby [ltk.odeumB] .....	55
Picture 9: The original Kongens Lyngby .....	55
Picture 10: The original Kongens Lyngby .....	55
Picture 11: Lyngby Main Street [Photo: Rikke Brinkø] .....	56
Picture 12: Klampenborgvej [Photo: Rikke Brinkø].....	56
Picture 13: Likørstredet, Kongens Lyngby [Photo: Rikke Brinkø].....	56
Picture 14: Kongens Lyngby Library [Photo: Rikke Brinkø] .....	56
Picture 15: Lyngby Station [Photo: Rikke Brinkø] .....	56
Picture 16: Lyngby City Hall [Photo: Rikke Brinkø].....	56
Picture 17: DTU overview [google.maps].....	60

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 107 of 108

Picture 18: DTU, Building 324 [christensenco].....	61
Picture 19: Original DTU architecture [henninglarsen].....	61
Picture 20: Klampenborgvej and Lyngby main street, Saturday at 13 pm [Photo: Rikke Brinkø].....	74
Picture 21: Lyngby main street, Saturday at 13 pm .....	74
Picture 22: Shared cafe at Lancaster University [Campus and study].....	77
Picture 23: Klampenborgvej, Saturday at 12 [Photo: Rikke Brinkø] .....	78
Picture 24: Klampenborgvej - strategy [lokalavisen] .....	79
Picture 25: Gasværksvej [Photo: Rikke Brinkø].....	84
Picture 26: Overview, Gasværksvej [google.maps].....	84
Picture 27: Gasværksvej [Photo: Rikke Brinkø].....	84
Picture 28: Kanalvej [GrøntLys].....	85
Picture 29: Gasværksvej [GrøntLys] .....	85
Picture 30: Reading area at the Library in Kongens Lyngby [Photo: Rikke Brinkø].....	89
Picture 31: Folk å Rock, Malmø [folkarock] .....	90
Picture 32: SCION DTU, Lyngby Campus. Red dots marks the locations. [sciondtu] .....	91
Picture 33: Square behind "Kulturhuset" [Photo: Rikke Brinkø].....	92
Picture 34: Sustainable Lab, Roskilde Festival 2012.....	99

	Master thesis at DTU•MAN	Date: 01.08.2012
	Studies of university cities	Author: RB
		Page 108 of 108

## 12 Appendix

Notes from the interviews completed are the author of this thesis' personal notes, written down during the interview. Besides statements listed under "approved quotes" , all written material are this authors interpretations of what was said and meant, and not specific wordings or statements by the person interviewed.

Furthermore, the presentation by Jørgen Rosted is enclosed in this appendix with the permission of Jørgen Rosted.

- Notes from interview with Claus Nielsen
- Notes from interview with Niels Tovborg
- Notes from interview with Jørgen Rosted
- Notes from interview with Ole Kristian Bottheim
- Notes from interview with Helle Juul
- Notes from interview with Mark Lorenzen
- Presentation by Rosted
- Cooperation contract between DTU and Lyngby-Taarbæk Municipality
- List of sport facilities in Kongens Lyngby



# Notes from interview with Claus Nielsen

---

# Notes, interview with Claus Nielsen, 06.03.2012

## Questions

- Hvad håber/ønsker DTU at få ud af Vidensby samarbejdet - hvad er baggrunden for at indgå i samarbejdet?
  - Er det muligt at se samarbejdsaftalen?
- Lyngby vil gerne have et institut, et auditorium eller lignende ned i centrum. Hvordan ser DTU på dette?
- Hvordan forestiller DTU sig at nærme sig Lyngby? - Hvordan vil DTU åbne sig op?
- Studieboliger?
  - Hvilke forestillinger har DTU omkring behovet?
  - Forskellige typer studerende - behovet afhænger af hvor man er i sit studie og sit liv.
  - Internationale studerende?
- Hvilken effekt kan det stadig stigende studieoptag have på ovenstående - hvis nogen?

## Fra samtalen:

DTU begyndte at arbejde med task-forcen der ledte op til foreningen Vidensby omkring midten af 2010. Selve arbejdet omkring Vidensby projektet (fra kommunens side) formentlig en realitet pga. stor udskiftning på rådhuset - ny borgmester samt mange nye venstremænd - som måske nok havde lidt et markeringsbehov. Selve Vidensby strategien startede som en erhvervsstrategi.

DTU's årsager til at deltage: Det internationale perspektiv er ekstremt vigtigt for DTU (samt for mange virksomheder som DTU gerne vil have i nærheden). Hvad gør kommunen for ikke at miste disse? (Rambøll flyttede til Ørestaden og IBM/microsoft flyttede også)

Begyndte at se på DTU's behov og udfordringer: Har svært ved at tiltrække PhD'er samt postdocs da Lyngby ikke er attraktiv og boligerne er alt for dyrere - de er beregnet for "*pensionistpelse*". Der var en eksisterende dialog omkring bygninger og lokalplanen for DTU - DTU ville gerne fortætte og bygge højere - positiv stemning fra kommunen og den nye lokalplan er god for DTU.

Forklaring på hvorfor der er så dårlig sammenhæng mellem Lyngby og DTU: Infrastrukturen mellem stationen og skolen er alt for dårlig. Der er ingen direkte buslinier og ingen direkte cykelstier. Dette vil også hjælpe DTU at få forbedret.

## DTU's generelle indstillinger til at åbne sig op:

*"DTU skal være et sted for arbejde og studie. Man skal ikke sidde på cafe"* Dette skift i indstilling til campusområdet har medført et paradigme skift: Der behøves ikke være bymiljø/liv på campus. Og hvis der ikke er det hvorfor skal de studerende så bo på området. *"Der behøves ikke være kollegier på DTU, de må faktisk gerne være i Lyngby"*

Sportshallen på DTU er meget presset med eksamener, arrangementer osv. så der skal laves en ny sportshal på DTU. Dog har man Lyngby stadion lige ved siden af. Så i stedet for at bruge penge og plads på campus til en ny sportshal vil man gerne være med hvis nogen beslutter sig for at renovere stadion. Selvfølgelig skal

der så laves en eller anden form for brugsaftale så de studerende og ansatte på DTU kan bruge faciliteterne.

De forbedrede erhversvudviklingsmuligheder der vil komme som følge af Vidensby samarbejdet samt den nye Letbane kan komme DTU til gode. DTU vil gerne være med til at præge hvilke virksomheder der kommer. Det skal ikke være fabrikker men virksomheder som kan se en fordel i at lægge så tæt på et stort universitet, så som udviklings eller forskningsafdelinger osv.

Absurd tanke at flytte et fakultet eller anden form for undervisningsvirksomhed fra campusområdet!!!!

(studieceller = NEJ) DTU kræver at deres ansatte er til rådighed på området i arbejdstiden og det skal de studerende også være. De skal være i nærheden af deres forsøgsfaciliteter og deres vejledere/undervisere.

Claus Nielsen ser de store populære universitetsbyer som Cambridge osv. som indeholdende mange ulemper pga. de spredte bygninger og vil IKKE være ligesom disse.

Bruge Vidensby samarbejdet til at forme en øget kontakt mellem erhvervslivet og de studerende samt kommunen og de studerende.

## **APPROVED QUOTES**

*"The sports hall at DTU is under a lot of pressure with exams, events and so on, so a new one have to be made at DTU. On the other hand we have Lyngby Stadium right next to the campus, so instead of using money and space on campus to build a new sports hall, we (red. DTU) would like to be a part of it if someone decides to renovate the Stadium. Of cause there would have to be drawn up some sort of user agreement so the students and employees at DTU could use the facilities." (Translated from Danish)*

*"It's not DTUs idea to move a faculty or other teaching activities from campus" (Translated from Danish)*

*With regards to creating study cells for DTU students in Kongens Lyngby: "No. DTU require that their employees are available in the area during working hours and the students must also be. They must be near their test facilities and their supervisors / trainers". (Translated from Danish)*

*Regarding what facilities could be seen moved to Lyngby, and in the context of DTU being primarily a place for work: "DTU must be a place of work and study. One should not sit in a cafe" (Translated from Danish)*

# Notes from interview with Niels Tovborg

---

# Notes, interview with Niels Tovborg, 21.03.2012

Questions:

- Background
- The development at DTU
- The relationship between DTU and Kongens Lyngby
- Entrepreneurship

## 1. Background

Started as an engineering student at the then Polyteknisk Læreanstalt in 1959 when it was situated at Sølvtorvet.

Took his masters at DTH when it was moved to Øster Voldgade

Wrote his thesis at DTH when it had moved to Lundtoftesletten

After 2 years in the military he was employed as an adjunct in 67 and moved up the ranks (lector, professor and so on)

Became interested in student politics and joined the "Studienævnet"

Became head of the then "Teknisk service afdeling", later Campus Service in 1986

## 2. The development at DTU

The location at Lundtoftesletten was partially chosen due to the fact that most of the teachers employed at Polyteknisk Læreanstalt/DTH lived in Lyngby and Northern Zealand in general.

Students started getting their education here as soon as they had the first building - even though it was mostly a large construction site. They could not have the entire education at Lundtoftesletten yet so for the first many years they were connected to two places, and the school had shuttle buses to and from Øster Voldgade and Lundtoftesletten. This was properly one of the reasons as to why no dorm was build before later on - no reason to do so when the students had business in Copenhagen anyway. But "*When more students started studying full time at DTU at Lundtoftesletten this changes and they started building dorms*"

## 3. The relationship between DTU and Kongens Lyngby

All the way up until the mid 1990's (from 1982 - all he knows from) he felt like the Municipality of Lyngby-Taarbæk had the mantra "Hvor er det træls at DTH skulle ligge her, vi ville meget hellere have haft de 1000 parcelhuse". "It felt like they (red. "The municipality") were mad and did not want anything to do with us."

There was no regular contact before this



The relationship became better starting in the mid 1990's. Starting having meetings, and the general attitude starting improving until by the later part of his employment they had a very good relationship which he appreciated a lot in his work.

#### **4. Entrepreneurship**

SCION is a collaboration between DTU and Research centre Hørsholm. Lyngby Municipality had nothing to do with it apart from the "lokal plan". They even resisted it a bit - they thought the amount of space DTU wanted was way too much.

**APPROVED QUOTES:**

*"Students started getting their education here (red: At Lundtoftesletten) as soon as they had the first couple of buildings ready - even though it was mostly still a large construction site. But in the beginning not all the study lines could take all their courses at Lundtoftesletten so for the first many years, many were connected to two places, and the university had shuttle busses to and from Øster Voldgade and Lundtoftesletten."*

(Translated from Danish)

*"The relationship between DTU and the city started getting better in the early 1990's. We started having regular meetings and the general attitude continued to improve until we actually had a very good relationship in the latter part of my employment. It was a relationship I appreciated a lot in my work."*

(Translated from Danish)

# Notes from interview with Jørgen Rosted

---

# Notes, interview with Jørgen Rosted, 07.05.2012

## Questions

- Background
- City of Knowledge
- Own experiences with urban environments and university cities
- Conclusions

### 1. **Background**

Born: 26. October 1945

#### Education

- Graduated in Economics at the University of Copenhagen

#### Employment

- Director, FORA, 2002
- Permanent Secretary, the Ministry of Business Affairs, 1994
- Permanent Secretary, the Ministry of Economic Affairs, 1993
- Director of Finance, the Ministry of Finance, 1991
- Director of the Economic Department in the Ministry of Finance, 1988
- Economist, the Ministry of Finance, 1976
- Economist, the Secretariat of the Danish Economic Council, 1971

#### More in-depth info

- Was of course educated in the field of economy but gained a greater interest in the way we structure our society and the increasing globalisation during his work at the ministry of finance.
- Did not think we as a country understood the consequences and effects of globalisation well enough. Wanted to understand the universities better, so wanted to start an institute with the focus of utilizing the knowledge produced by our universities better. This was to be placed at CBS, but was saved away at the change of government where Anders Fogh became prime minister. Instead a similar institute was placed under "Erhvervsstyrelsen". Ran successfully in 10 years with Jørgen at the helm, but was shut down under a year after he left.

### 2. **City of Knowledge**

Was called in to do an external evaluation of the City of Knowledge programme - what was good and what needed work. He in general thought it was very good and was impressed that a suburban city was so progressive and had grasped the importance of globalisation and seeing the city in an international perspective which in Denmark otherwise only have been seen with Århus and Copenhagen. Despite this he

feels that they have missed an extremely important aspect - the business life, innovation and entrepreneurship. His opinion is that if they do not grasp the importance of this, they risk that the many good initiatives will fall through and not be realised.

Both DTU and Lyngby underestimate the importance of new jobs and that "entrepreneurship is the way forward in the new knowledge economy". He talked to Lars Pallesen (Friend through many, many years) and he did not think that entrepreneurship was necessary

He thinks that it is self-deception that DTU thinks they are doing perfectly.

There are three points on which the entrepreneurship should be measured:

- Starting new business? At DTU - OK
- How much do they grow? At DTU - not so good
- How many realise their global potential? At DTU - none at all - BAD

Right now, long term commitments between the business world and DTU only happen through personal connections.

If they do not realise these problem - City of Knowledge will not succeed according to Jørgen

The next important thing for Jørgen was that innovation environments and entrepreneur environments should be a part of the urban environment and not gathered at a single location somewhere outside the city as with DTU's facility in Hørsholm. The city should make very cheap commercial leases available in the downtown area, to create a place where the small new business can go after they grow too big for fx. SCION at DTU. This does not need to be new fancy buildings - old industrial buildings or storage houses would be very good (See example of both Sheffield and Austin). This will create the very thing the City of Knowledge strives for as well as creating a better connection between the city, the business community, the citizens and the students which is very desirable.

### **3. Own experiences with urban environments and university cities**

Sheffield (DON'T)

- Thriving creative environment in all the old pack houses and so on between artists and technicians - many new business ideas came from this.

- The city saw this and wanted to support it and join. They therefore tore down many of the old industrial pack houses to make room for a large new art school/creative institute. This created a much more uniform environment, all the play that took place between the two groups of professionals in the old industrial warehouses stopped and the many, many business that were placed around this former environment ended up moving away from the area - total failure!

AUSTIN (DO)

- City build on the oil industry - the crisis smashed this and the city needed something new to revive and reinvent the city.

-Story: The oil-husbands where all about money, cigars and naked women, but their wives thought further ahead and saw that it was necessary to make strategic investments to secure their status when the oil-business could not anymore. Invested together with the city in new ideas proposed by students, for example a student named Dell who had a specific idea about a new way to build and sell computers cheaper. Huge success and Austin is today leading within the field of IT. Created a sense of pride among the citizens that their university helped turn the city around and all this new thriving industry came - and still comes - from work and play in old industrial pack houses and the like.

#### BOULDER, COLORADO (DO)

-Very interesting university city, and a place DTU should compare itself to. It is not allowed to build in more than 3 stories and the small business stemming from the university cannot grow too big or they have to move.

-The citizens can use to university's premises, many public events are held at the university, and the university feels open to all in the city.

### **4. Conclusions**

In Jørgens experiences with all the university cities he have visited (maybe as many as a 100), to things have been clear and present at the places where the "university city" was a success:

First; the regular citizens - even those who did not have any connection to the university educational wise (cleaners and so on) were proud of their university and proud to live in a city with such a university. The university was open and many of the cities events were held at the university.

Second; they all had a thriving innovation- and entrepreneurship environment.



## **APPROVED QUOTES**

On the City of Knowledge strategy

*"I was impressed that a suburban city had been that progressive and has grasped the importance of globalisation and seeing their city in an international perspective, which in Denmark we have only otherwise observed with Aarhus and Copenhagen"* (Translated from Danish)

*"They have missed an extremely important aspect - the entrepreneurship. If they do not acknowledge the importance of this, they risk that all the other very good initiatives will fall through and not be realised successfully"* (Translated from Danish)

# Notes from interview with Ole Kristian Bottheim

---

# Notes, interview with Ole Kristian Bottheim, 04.06.2012

Questions:

- What is your background?
- What does the City of Knowledge mean for DTU?
- What is DTU doing in relation to the cooperation agreement signed revolving around the evolving of the City of Knowledge?
- How will the development of DTU Campus be over the next couple of years?
- How do you secure that the university, the city and the business community all speak the same language? How do you make the City of Knowledge a reality?

## 1. What is your background?

Have been employed at Campus Service at DTU for 3 years.

have before this worked for companies doing very large construction projects like Sjælsø gruppen.

## 2. What does the City of Knowledge mean for DTU?

The cooperation between the city and DTU during the work of creating the new local plan for the university was perhaps one of the initiating aspects to the creation of the City of Knowledge strategy and vision

The university would like to be visible in the city. For example by establishing DTU bikes at the station

## 3. What is DTU doing in relation to the cooperation agreement signed revolving around the evolving of the City of Knowledge?

Ole thinks that a creating a study hall, study cells and the like in connection with a dorm in the city sounds very interesting and is very "oplagt"

They like the idea of being more visible in the city and would like to support this, but if the municipality does not help make this a more attractive option and more available then it is simply too expensive compared to the fact that they have many possibilities for development at campus. So there is a great desire for being more visible in the city but it all comes down to a question of finances. The city must provide the possibility.

## 4. How will the development of DTU Campus be over the next couple of years?

The Campus is way too large, about 1,8 km \* 0,8 km.

Earlier the plan was for DTU to be strictly a place for work and study. Now the attitude towards the city is much more positive and there is a desire to have a closer connection with the city and a better mixture of Campus and city.

Difficult to incorporate many of the urban traits that they would like in the campus since the original plan and the desire of the previous administration was that DTU should be a bit exclusive. Like building 101 which is often a special tone of gray instead of white - more exclusive. This does not fit well with a pizza place for example.

DTU have many empty lots at the Campus and many possible locations for development which they own, and locating facilities in the city, even though they like the idea, is a question of economy.

**5. How do you secure that the university, the city and the business community all speak the same language? How do you make the City of Knowledge a reality?**

The interest of the different participants must be identified and places where they overlap are where it will be easiest to develop initiatives. Here all can see an advantage in cooperation and will be willing to give more.

What drives the different parties?

The communication of the City of Knowledge strategy and vision must be done to all relevant people - is this achieved at a public meeting?

The parties must understand each other so parallels can be drawn and the practitioners must be included in the communication and the work. Their experience utilised.

The work with communicating the vision properly will take a lot of time, and the willingness to do this is vital.

The question that must be solved is "*how do you get from the vision to the practitioners?*"

*"Who have the incentive?"*

## **APPROVED QUOTES**

On DTU's attitude towards Kongens Lyngby and opening up. :

*"Earlier the plan was for DTU to be strictly a place for work and study. Now the attitude towards the city is much more positive and there is a desire to have a closer connection with the city and a better mixture of Campus and city"* (Translated from Danish)

*"DTU have many empty lots at the Campus area and many possible locations for development which they already own. Locating facilities in the city, even though we like the idea, is a question of economy"* (Translated from Danish)

On the work with realising the City of Knowledge Strategy:

*"The work with communicating the vision properly will take a lot of time, and the willingness to do this is vital"* (Translated from Danish)

*"The question that must be solved is, how do you get from a vision to the practitioners?"* (Translated from Danish)

*"The interest of the different participants must be identified and places where these overlap are where it will be easiest to develop initiatives. Here all can see an advantage in cooperation and will be willing to give more"* (Translated from Danish)

# Notes from interview with Helle Juul

---

# Notes, interview with Helle Juul, 04.06.2012

Questions:

- What is a university city and what are the characteristics?
- What needs to be taken in to consideration when planning a university city?
- What influence do the students have on the city and how do you incorporate this in the planning?
- What have been the focus when designing the new local plan for DTU Campus

## 1. What is a university city and what are the characteristics?

They are characterised by a certain production of knowledge that permeate everything.

A university city sets requirements to the culture in the city

A university is carried by ambitions, and cannot survive if it do not profile it self

*"A city is marked by the industry in it, and the industry of a university city is knowledge"*

*"In the case of Kongens Lyngby it might be said that they are too late. DTU is already internationally marked and Lyngby is a local market town"*

University cities are not one typology but many different.

*"It is all about the critical mass"* in all aspects if Lyngby is to become a university city

## 2. What needs to be taken in to consideration when planning a university city?

Their approach is what they call "Plug in - plug out". About for example the university developing in an attractive way but also being a clear presence in other places - the city, and vice versa.

It is about finding out when the city is attractive and when the university is attractive and developing along those lines.

Defining what urban functions need to be present in order to experience or feel the university in the city

The city must be a part of the university environment and vice versa - it is about inclusion!!!

The city must be visible at the university and the university must be visible in the city. As it is now; when you arrive at Lyngby s-train station you have no idea that DTU is close by. Or that any larger education facilities is for that matter.

Incubation environments would be a valuable addition to the city.

Since university cities are not one typology but many different, it is about identifying the special characteristics for this specific university and this specific city and work with this. There are many very different university cities that have gone completely different ways in planning to become a university city,



but the common experience in both is that the presence of a university is clear, they are full of life and they are interesting to experience. In the case of Kongens Lyngby, it's university is DTU, and engineering students are a special kind of people and they are attracted to special ranges of activities, as well as students in the field of the liberal arts as for example history are attracted to a different kind of facilities again. So the design of Kongens Lyngby as a university city must suit its university and be attractive to the students there.

### **3. What influence do the students have on the city and how do you incorporate this in the planning?**

Due to the unstable entity students are - they might just pick up and go to Asia for a semester or more for example, and they work a very different and varying hours of the day, there needs to urban spaces with a high level of accessibility and flexibility.

A good example is from a trip they were on as a part of the research to the report now included in the "Campus and Study" publication. *"Here students from Harvard used the library at MIT simply because it was open longer. Theirs at Harvard closed around 7 PM and at MIT they did not close until 11 PM or something"*

*"Students need to be able to meet across professional competences. It is in these kind of circumstances like in for example large cantina areas where many different people meet that many ideas are born"*

The urban environment needs to be flexible and holistic (oriented)

The planning must to a high degree be based on dialog- dialog between the planners from the municipality and the students.

### **4. What have been the focus when designing the new local plan for DTU Campus**

Its basis was in the scaling of different types of needs - CAS, PhD's, ADM, students and so on.

What kind of collaboration can be achieved with the city?

Visibility in the city. Invite people on to the university's premises and not on the city's.

Placing public available study environments in the ground floor areas

Openness, visibility and transparency, especially regarding the ground floor areas.

FX. must building 208 to a higher degree open up.

*"The university must expose what they produce "*

The balance between formal and informal areas. Informal is very attractive and informal areas are often where the ideas are formed.

Incorporate urban spaces in the campus

Gathering, not spreading out, activities. Densifying certain areas and creating network centres instead of having activities spread out all over the very large campus.

## **QUOTES**

A good example is from a trip they were on as a part of the research to the report now included in the "Campus and Study" publication. *"Here students from Harvard used the library at MIT simply because it was open longer. Theirs at Harvard closed around 7 PM and at MIT they did not close until 11 PM or something"* (Translated from Danish)

*"Students need to be able to meet across professional competences. It is in these kind of circumstances like in for example large cantina areas where many different people meet that many ideas are born"* (Translated from Danish)

*"The university must expose what they produce "* (Translated from Danish)

*"A city is marked by the industry in it, and the industry of a university city is knowledge"* (Translated from Danish)

*"In the case of Kongens Lyngby it might be said that they are too late. DTU is already internationally marked and Lyngby is a local market town"* (Translated from Danish)

# Notes from interview with Mark Lorenzen

---

# Notes, interview with Mark Lorenzen, 06.06.2012

Questions:

- The Creative Class in relation to students and university cities
- DTU - Lyngby
- The critical mass for success and Possible initiatives

## 1. The Creative Class in relation to students and university cities

The current theory on the Creative Class do not contain students. But there is a high degree of similarities between the work process of students taking a higher education and the processes characterising the creative work method.

It is very much about being driven by an internal motivation, irregular working hours and very project oriented work.

It is necessary for the students to be open

The students are used to look for inspiration and non-conventional ideas as a part of the school work, which also translate to their personal life where they are very open minded and they desire the same inspiration in their surroundings outside the school.

*"They (red: the students) need to recognise themselves and their lifestyle in the city they live in"*

*"The students are so to speak more stereotypical Creative Class than the older generation whom have children and other things in their life that draw attention from the strictly creative lifestyle and plays a role in where they settle" (Check sound)*

## 2. DTU - Lyngby

Many Creative live in Værløse and work in Copenhagen. Værløse have established a sort of relationship with Copenhagen - they do not try to compete with the cultural possibilities of the capital but focus instead on being a nice place to live. Værløse realised they could not compete with Copenhagen so they found their own character instead.

Lyngby have another challenge since it was designed to take some of the load off Copenhagen in a time where it was thought that the population growth in Copenhagen would be much larger than what actually came to be. So they actually have many more facilities than the population size should deem necessary.

Many Creative work in Lyngby but live in Copenhagen - the city has a challenging relationship with the capital that Værløse have not anymore.

Lyngby is suffering a bit from the traffic panning that is adapted to a much larger population then what is the case now. Stems back from the tie when the population in Copenhagen was expected to grow so much that cities like Lyngby was planned as relief cities for Copenhagen but the need never arose.

If a city is to be sustainable it must shape itself around those who create growth for it; with Lyngby this is to a high degree knowledge heavy industries and thereby students. Lyngby is now designed for people who like easy access by car and not for the Creative Class that value urban life.

Earlier: Traffic first, then we can plant trees later

Now: Urban environment first, then work the traffic around this.

### **1. The critical mass for success and Possible initiatives**

"They critical mass is not so much about size as it is about visibility"

"Few very visible can have a larger effect than many whom are not as visible"

"Visibility first, critical mass as a size later"

Look at the larger cities that have grown to what they are now over a long period of time - students live all over the place and are not gathered in one place

Inspired from Jane Jacobs: There must be diversity all the way down to the micro level

The link between the old and existing and the new must be secured. It will not be good to just build a large dorm - you risk creating dorm-ghetto

Libraries are much more popular among the Creative Class than in the remainder of the population

public lectures are much more popular among the Creative Class in the remainder of the population

The Creative Class wants to contribute themselves

The Creative Class like multipurpose facilities like for example a book store/café

Most importantly: It is not amount new monumental constructions and prestige buildings. It is much more about authenticity and micro design.

### **APPROVED QUOTES:**

*"The students have so to speak more of the stereotypical Creative Class preferences than the older generation whom need to trade off a creative life style with preferences stemming from having children and other responsibilities in their life: natural beauty, safety, day care and so on. This plays a role for where they choose to live"* (Translated from Danish)

*"It is not as much about critical mass as about visibility and engagement"* (Translated from Danish)

*"Few very visible initiatives and engaged people can have a larger effect than many whom are not as visible and engaged"* (Translated from Danish)

*"Visibility comes first. Critical mass only becomes important later, when the process has taken off and become self-reinforcing on its own. The primary concern for policymakers is visibility and engagement. Size and mass is not enough, and can even harm if introduced politically"* (Translated from Danish)

*"Just building a large dorm with many students to achieve some critical mass is not necessarily good, because you just risk them closing off because they have enough in themselves. You risk creating a dorm-ghetto"* (Translated from Danish)

# Presentation by Jørgen Rosted on the City of Knowledge strategy

---



## Lyngby-Taarbæk Vidensby 2020

Jørgen Rosted

Mandag den 23. Januar 2012

Vurdering af vækstmodellen i Vidensby 2020, der er baseret på innovation gennem samarbejdsprojekter, samt sætte modellen i et national og globalt perspektiv.

### Fire punkter.

- Vurdere, vision, mål og indsatsområder.
- Hvordan bevare fokus og viljen til forandring?
- Hvordan udarbejde konkrete forslag, der kan gennemføres og skaber forandring?
- To anbefalinger.

### Vurdere, vision, mål og indsatsområder.

#### Vurderingskriterier:

- Den faglige kvalitet
- Politisk forankring
- Konkretiseringsgrad
- Bliver det gennemført og realiseres visionen!

### Vurdere, **vision**, mål og indsatsområder.

- En af Norderuropas førende videns- og universitetsbyer.
- En førende uddannelsesby med høj kvalitet, bredt udbud og et generelt højt uddannelsesniveau.
- Et internationalt orienteret knudepunkt for arbejdskraft kultur og handel.
- Et område kendetegnet ved bæredygtig vækst, velfærd og byudvikling.

### Vurdere, vision, **mål** og indsatsområder.

#### En af Nordeuropas førende videns- og universitetsbyer

- Bidrage til at fastholde DTUs position som et af Europas førende tekniske universiteter
- Der skal i 2020 være mindst 20 % flere vidensvirksomheder i Lyngby-Taarbæk

## Vurdere, vision, **mål** og indsatsområder.

### En førende uddannelsesby med høj kvalitet, bredt udbud og et generelt højt uddannelsesniveau

- Lyngby-Taarbæk skal fortsat ligge absolut i top nationalt målt på folkeskolernes resultater
- Alle folkeskoler og uddannelsesinstitutioner skal tilbyde undervisning og projekter i entrepreneurship. Resultaterne skal kunne aflæses på **en stigning i antallet af nystartede virksomheder i kommunen**
- Andelen af unge i kommunen, der gennemfører ungdomsuddannelser, skal stige fra 80 til 95 %

## Vurdere, vision, **mål** og indsatsområder.

### Et internationalt knudepunkt for arbejdskraft, kultur og handel

- Kgs. Lyngby skal kunne måle sig med andre universitetsbyer målt på attraktivitet og benyttelse i og uden for butikkernes åbningstid og på attraktive kultur, natur- og fritidstilbud
- Markedsandel inden for stormagasiner og specialbutikker i Kgs. Lyngby skal øges
- Der skal være markant bedre bosætningsmuligheder for udenlandsk arbejdskraft og udenlandske studerende

## Vurdere, vision, **mål** og indsatsområder.

### Et område kendetegnet ved bæredygtig vækst, velfærd og byudvikling

- Der skal i 2012 ligge en ambitiøs og godkendt model for, hvordan Lyngby-Taarbæk som vidensby ser ud og opleves for borgere, virksomheder og handelsliv i 2020-30. Modellen skal indeholde bæredygtige trafikløsninger, byfortætning og byrumsudvikling
- CO2-udslippet fra Lyngby-Taarbæk som geografisk område skal reduceres med 20 % i 2020, i forhold til CO2-udslippet i 2008, herunder skal CO2-udslippet fra den kommunale drift reduceres med 2 % om året frem mod 2025
- Lyngby-Taarbæk skal være kendt som et testlaboratorium for nye, grønne og bæredygtige teknologier
- Lyngby-Taarbæk skal på mindst ét område være kendt som foregangskommune i udviklingen af nye velfærdsydelser.

## Vurdering af mål.

- Mange mål er målbare.
- Vil visionen blive realiseret, hvis målene realiseres?
- Er målene gode nok til at fastholde fokus og viljen til forandring?

## International Benchmark

### • Vi skal benchmarke os med andre universitetsregioner

- I andre nordeuropæiske videns- og universitetsbyer samarbejder kommune, universiteter og erhvervsliv aktivt om fx forskerparker og iværksætterhuse, der skal omsætte forskningen til forretning. De satser på entrepreneurship og kreativitet i uddannelserne. De udvikler nyt erhvervsbyggeri med funktioner og anvendelsesmuligheder, der fremmer klyngedannelse og netværk mellem virksomhederne. De fokuserer på at udvikle særlige arealer, der tiltrækker vidensbaserede virksomheder. Og de etablerer særlige videnscentre, der danner ramme om nyskabende innovationsprojekter.

## Anbefaling 1: Lav et internationalt benchmark system.

- Vælg de nordeuropæiske universitetsbyer, der skal udgøre benchmark. (Amerikanske og Asiatiske universitetsbyer?)
- Indkomstskabelse og antal vidensarbejdere. (Hovedstaden skal have 90.000 flere vidensarbejdere for at matche Stockholm)
- Nye vidensvirksomheder og tiltrækning af talenter.
- CO2 udledning og ressourceforbrug.

## Benchmarking Cities

- Benchmarking cities giver 12.900.000 resultater på Google.
- Benchmarking university cities giver 6.620.000 resultater på google.
- Best educated cities giver 40.600.000 resultater på google.
- Den første der kommer op på benchmarking cities er: <http://www.citybenchmarkingdata.com>

## Ranking på <http://www.citybenchmarkingdata.com>

Comprehensive ranking of cities in the global innovation economy.

INDEXES > [TOP 100](#) | [AMERICAS](#) | [EUROPE](#) | [ASIA](#) | [EMERGING](#) | [GLOBAL](#) | [NATION STATES](#)

View [our latest findings](#) & [contact the team](#)

RANK	CITY	STATE	COUNTRY	REGION	2010 GRADE
1	Boston	Massachusetts	United States	AMERICAS	1 NEXUS
2	Paris		France	EUROPE	1 NEXUS
3	Amsterdam		Netherlands	EUROPE	1 NEXUS
4	Vienna		Austria	EUROPE	1 NEXUS
5	New York	New York	United States	AMERICAS	1 NEXUS
6	Frankfurt		Germany	EUROPE	1 NEXUS
7	San Francisco	California	United States	AMERICAS	1 NEXUS
8	Copenhagen		Denmark	EUROPE	1 NEXUS
9	Lyon		France	EUROPE	1 NEXUS
10	Hamburg		Germany	EUROPE	1 NEXUS
11	Berlin		Germany	EUROPE	1 NEXUS
12	Toronto		Canada	AMERICAS	1 NEXUS
13	Stuttgart		Germany	EUROPE	1 NEXUS
14	London		United Kingdom	EUROPE	1 NEXUS
15	Munich		Germany	EUROPE	1 NEXUS
16	Milan		Italy	EUROPE	1 NEXUS
17	Stockholm		Sweden	EUROPE	1 NEXUS
18	Hong Kong	Hong Kong	Hong Kong	ASIA	1 NEXUS
19	Melbourne	VIC	Australia	ASIA	1 NEXUS
20	Tokyo	Tokyo	Japan	ASIA	1 NEXUS

## Best educated cities

- Top 100 best educated cities (highest percentage of bachelor degree holding residents)**
- New! We added hundreds of new lists - [see our top 101 city lists](#).
- Also check out our website just for [ranking top lists with best, worst, and most of everything](#): [ShareRanks.com](http://ShareRanks.com).
- 1. Stanford, California (94.6%)2. Forest Home, New York (91.8%)3. Muir Beach, California (90.9%)4. Chevy Chase Section Five, Maryland (89.7%)5. Saddle Rock Estates, New York (89.7%)6. Kenilworth, Illinois (89.4%)7. Chevy Chase, Maryland (88.4%)8. Grosse Pointe, New York (88.3%)9. Chevy Chase Village, Maryland (87.4%)10. Chevy Chase Section Three, Maryland (86.4%)11. Somerset, Maryland (86.4%)12. Winnetka, Illinois (84.4%)13. Glen Echo, Maryland (84.9%)14. Montreat, North Carolina (83.7%)15. Mission Hills, Kansas (83.5%)16. Barton Hills, Michigan (82.5%)17. Carlisle, Massachusetts (82.4%)18. Zippa Passes, Kentucky (82.3%)19. Martin's Additions, Maryland (82.7%)20. Beaux Arts Village, Washington (82.4%)
- Read more: <http://www.city-data.com/top12.html#xz1kDWhzqCO>

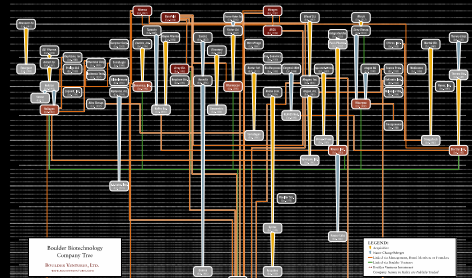
## Metropolitan Statistical Areas

- No. 1 Boulder, Colo.\***
- Boulder, Colo., metropolitan statistical area (MSA)**
- Adult population: 188,987 Bachelor's degrees: 56,460 (30%)  
Master's degrees: 31,770 (17%) Professional degrees: 6,333 (3%)  
Doctorates: 8,509 (5%)
- Just north of Denver is Boulder, the most-educated city in the U.S. At the heart of the region is the University of Colorado at Boulder, the system's flagship university. Part of the secret to the region's success? According to the Boulder Economic Council, a lot of those graduates stay in the area to work for employers like IBM or Sun Microsystems.
- Master Degrees i Danmark 7%, Hovedstaden 11% og Lyngby-Taarbæk 18%.

## Boulder University



## Boulder Biotech cluster



## Vurdere, vision, mål og indsatsområder.

Mål og indsatsområder			
Retningspille Overskrifter	Fokus på videns- baserede erhverv	Sammenhængende og bæredygtig by	Nye services og kvaliteter i Lyngby- Taastrup
Strategisk byudvikling	Tiltrække og fastholde vidensvirksomheder	Udvikle LTR som universitetsby med effektiv infrastruktur	Lernede og attraktiv bymiljø med unikke kvaliteter
Innovation og netværk	Netværk for vidensvirksomheder	Udvikle grønne bygninger og grøn teknologier	Udvikle fremtidens velfærdstjenester
Erhvervs- og borgerservice	Fremme af iværksætteri og entreprenørskab	Fremme energigrønt	Fremme erhvervs- og borgerservice

## Byrum og infrastruktur

- Attraktive byrum med levende handel og oplevelsesmuligheder.
- Effektiv infrastruktur – letbane og DTU som del af byen.

## Udviklingsprojekter

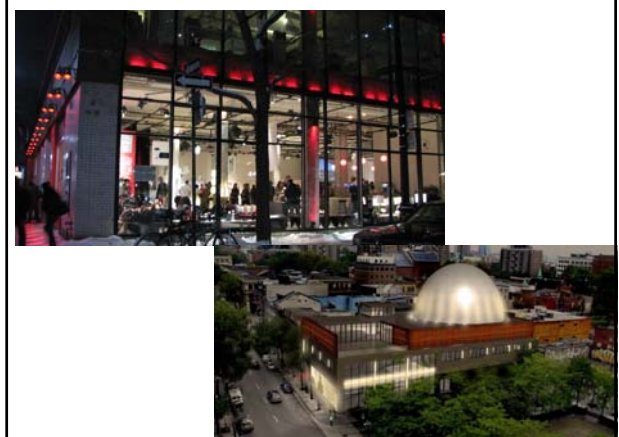
- Udvikle grønne boliger og grøn teknologi.
  - Der skal udvikles lavenergibyggeri samtidig med, at det grønne element indtænkes i udviklingen af nye bygninger.
- Udvikle fremtidens velfærdsteknologi.
  - Målet er en åben innovationsproces, hvor brugere, virksomheder og forskere samarbejder aktivt om at udvikle fremtidens digitale løsninger og læringsmiljøer.

## Erhvervs- og innovationspolitiske indsatsområder

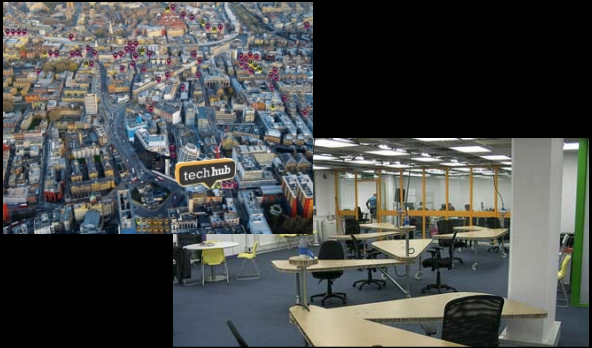
- Tiltrække vidensvirksomheder.
- Fremme iværksætteri.
- Skabe netværk for vidensvirksomheder.
- Fremme energirådgivning.
- Fremme erhvervs- og borgerservice

## Fremme iværksætteri

- Etablere en erhvervs- og innovationspark tæt på DTU, der er skræddersyet til vækstvirksomheder. Parken skal danne ramme for at udvikle en klynge af innovative vidensvirksomheder. Og den skal tiltrække danske og internationale virksomheder - med interesse for at ligge tæt på DTU og i en kommune med højtuddannet arbejdskraft.
- Scouting af forretningsidéer (skuffeidéer) i områdets virksomheder, som de studerende kan videreudvikle som led i projektførløb.
- Et væksthus hvor elever, studerende og andre kreative iværksættere får hjælp og vejledning til at commercialisere gode idéer.
- Matchmakingaktiviteter hvor iværksættere får mulighed for at præsentere idéer og forretningsplaner for virksomheder og lokale investorer.



## Silicon Round About, Tech Hub, London



## Skabe netværk for vidensvirksomheder.

- Arbejdet med visionen om en vidensby er kick startet ved at etablere en række vidensbynetværk – kaldet VBN. Lokale virksomheder og institutioner er tovholdere for netværkene.
- Netværkenes opgave er bl.a. at være et forum, hvor aktører bringes sammen for at drøfte den nyeste viden, udvikle og afprøve de mange ideer i strategien og måske gøre dem til projekter, der hver især bidrager til en forandring.

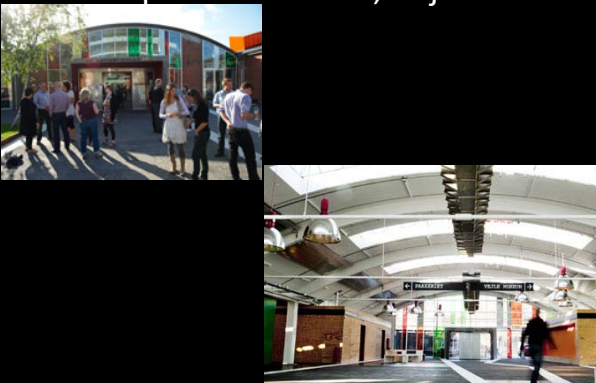
## Der er pt. følgende netværk:

1. VBN Klima og grøn teknologi – COWI
2. VBN Iværksætteri og entrepreneurship - K-nord
3. VBN Internationalisering – DTU
4. VBN Byudvikling og handel – Kommunes Tekniske Forvaltning
5. VBN Velfærdsinnovation -DTU og Kommunes Social- og Sundhedsforvaltning

## Anbefaling 2: Lav konkrete innovationsprojekter med kommunen eller store virksomheder som opgavestiller.

- Spinderihallerne i Vejle
- Smart cities i Copenhagen Cleantech Cluster.
- Plastik i Copenhagen Cleantech Cluster.

## Spinderihallerne, Vejle



## Smart city i Nordhavnen. Et CCC initiativ.



Plastik i biogasanlæg. Amagerværket.  
Et CCC initiativ.



# Cooperation contract

---



Samarbejdsaftale mellem

**Lyngby Taarbæk Kommune (LTK)**

og

**Danmarks Tekniske Universitet (DTU)**

## 0. Indhold

0. Indhold .....	2
Bilag: .....	2
1. Samarbejdsaftalens parter .....	3
2. Formål .....	3
2. Samarbejdsområder og -relationer .....	3
3. Organisatoriske forhold.....	4
4. Økonomi.....	5
5. Gyldighed .....	5
6. Påtegning .....	5

## Bilag:

Projektaftale DTU og LTK 2011-12 (udkast)

## 1. Samarbejdsaftalens parter

Samarbejdsaftalens parter er:

Danmarks Tekniske Universitet (DTU), Anker Engelundsvej 1, 101A, 2800 Kgs. Lyngby,  
CVR-nr. 30 06 09 46

og

Lyngby-Taarbæk Kommune (LTK), Lyngby Rådhus, Lyngby Torv, 2800 Kgs. Lyngby,  
CVR-nr. 11 71 53 11

Samarbejdsaftalen er underskrevet af rektor for Danmarks Tekniske Universitet og borgmesteren i Lyngby-Taarbæk Kommune.

## 2. Formål

Lyngby-Taarbæk har potentialet til at blive en førende videns- og universitetsby i Nordeuropa. En by, der i høj grad lever af viden.

DTU og Lyngby-Taarbæk Kommune har bidraget aktivt til at formulere en vision og strategi (vidensbystrategien) for at realisere denne vision og er centrale aktører i at fremme en sådan udvikling, der er til gavn for områdets borgere, virksomheder, ansatte og studerende. Parterne er enige om, at den formulerede vidensbystrategi er en god ramme for det langsigtede samarbejde mellem LTK og DTU omkring udvikling af Lyngby-Taarbæk som universitetsby.

På den baggrund indgås en samarbejdsaftale, der sætter de overordnede rammer for et tættere og mere forpligtende samarbejde mellem parterne. Formålet med kontrakten er at forpligte DTU og LTK til at skabe platforme, der muliggør andre aktørers, herunder virksomheders og vidensinstitutioners involvering i realiseringen af vidensbystrategien overordnet set – og indholdet i denne aftale mere specifikt.

Samarbejdsaftalen indeholder perspektiver og vilkår for samarbejdet mellem DTU og LTK.

## 2. Samarbejdsområder og -relationer

Vidensbystrategien indeholder en række forslag til initiativer, der kan understøtte visionen om at gøre Lyngby-Taarbæk til en videns- og universitetsby:

- Kollegier og boliger i centrum
- Byudvikling
- Forbedret infrastruktur og transport
- Fremme af iværksætteri og erhvervsudvikling
- Fokus på klima, grøn teknologi, natur og miljø
- Nye velfærdsteknologiske løsninger
- Internationalisering
- Udvikling af DTU Campus, herunder særligt Anker Engelundsvej og koblingen til Lyngby Idrætsby.

Mulige samarbejdsrelationer kunne være:

- Partnerskaber omkring større udviklingsprojekter som f.eks. at styrke Lyngby-Taarbæk som en attraktiv og tilgængelig universitets- og uddannelsesby og udvikling af kommunale services og velfærdsydelser, herunder fx ældre-, sundheds- og skoleområderne.
- Lyngby-Taarbæk Kommune som testlaboratorium eller udstillingsvindue for teknologier i udviklingsstadiet og afprøvning af etablerede teknologier i forbindelse med f.eks. større anlægsprojekter, klima, byrumsudvikling etc.
- Videnserhverv i vækst. Overførsel af forskningsbaseret viden til kommunens små og mellemstore virksomheder samt medvirke til at udvikle rammebetingelserne for en erhvervsvenlig kommune gennem fx Match Point-funktion.
- Prognoser og analyser af trafik- og miljøbelastning i forbindelse med vækststrategi.

Samarbejdsrelationer, herunder eventuelle finansielle forhold, aftales i projektstyregruppen. Projektstyregruppen kan vælge at lade andre relevante aktører indgå som samarbejdspartnere i et projekt.

Til kontrakten vedlægges en 1-årig projektaftale med beskrivelse af projektinitiativer. Denne udformes og revideres løbende af projektstyregruppen.

### 3. Organisatoriske forhold

Der etableres en politisk-administrativ styregruppe til opfølgning på og genforhandling af kontrakten. Styregruppen består af rektor på DTU og borgmester og viceborgmester i Lyngby-Taarbæk Kommune sekunderede af koncerndirektør for afdeling for erhverv og myndigheder på DTU og kommunaldirektør i Lyngby-Taarbæk Kommune.

Den politisk-administrative styregruppe mødes mindst én gang årligt og er øverste ansvarlige for nærværende kontrakt. Konfliktspørgsmål, der er rejst af projektstyregruppen, skal løses her.

Den politisk-administrative styregruppe nedsætter en projektstyregruppe bestående af 2-3 ledelsesrepræsentanter fra hhv. DTU og LTK. Projektstyregruppen mødes 3-4 gange om året med henblik på at definere og igangsætte nye projekter samt evaluere eksisterende projekter.

Projekterne initieres i projektstyregruppen. Projektstyregruppen forelægger en projektaftale og en handlingsplan for den politisk-administrative styregruppe. Projektaftalen ligger som bilag til kontrakten. Projekterne implementeres via standardkontrakter, hvis dette findes nødvendigt.

For hvert af de projekter, som igangsættes af projektstyregruppen, udpeges en projektansvarlig. Den projektansvarlige har ansvaret for den daglige drift af projektet og er forpligtet til at holde projektstyregruppen løbende underrettet om projektets fremdrift og resultater.

Samarbejdsaftalen og hertil knyttede organer kan ikke drøfte og beslutte forhold, hvor LTK optræder som myndighed i forhold til DTU. Det understreges, at samarbejdsaftalen ikke er en delegation af beslutningskompetence fra Kommunalbestyrelsen til medlemmerne af styregruppen.



#### 4. Økonomi

Parterne forpligter sig til, indenfor gældende rammer, at anvende ressourcer og personale med relevant kompetence til at løse projekterne. Til hvert projekt udarbejdes en projektbeskrivelse inklusiv finansiering og bemanning.

I det omfang at der er tale om forskningsbaserede leverancer, vil DTU søge at rejse midler som f.eks. forsknings- eller fondsmidler. Såfremt Lyngby-Taarbæk Kommune skal bidrage til medfinansiering af forskningen aftales dette på forhånd.

Ved siden af finansieringen af de konkrete projekter vil der blive behov for medfinansiering i forbindelse med vidensby-strategiens realisering, herunder stillingtagen til brug af udbygningsaftaler ved etablering af letbanen. Parterne er enige om at arbejde konstruktivt for etablering af en fælles organisation til implementering af vidensby-strategien.

#### 5. Gyldighed

Samarbejdsaftalen er som udgangspunkt løbende, men er genstand for en årlig vurdering i den politisk-administrative styregruppe, hvor der formuleres en projektaftale om konkrete projekter.

Samarbejdsaftalen kan opsiges af begge parter med udgang af kalenderåret. Eventuel opsigelse af kontrakten har ikke betydning for allerede indgåede samarbejdsprojekter.

#### 6. Påtegning

Dato: 21. 09. 11



Søren P. Rasmussen  
Borgmester, Lyngby-Taarbæk Kommune

Dato: 21/9 - 2011



Lars Pallesen  
Rektor, DTU



## **Projektaftale DTU og LTK 2011-12 (udkast)**

Som bilag til samarbejdsaftalen mellem DTU og Lyngby-Taarbæk Kommune vedhæftes denne projektaftale med beskrivelse af konkrete projekter mellem DTU og LTK for det kommende år. Aftalen formuleres endeligt af projektstyregruppen og godkendes af den politisk-administrative styregruppe.

### **Kollegier og boliger i centrum**

Der er brug for flere attraktive boliger til studerende og arbejdskraft, der kommer til kommunen fra andre lande. Samarbejde om finansiering og udvikling af et eller flere internationale kollegier og øvrige boligtyper i Kgs. Lyngby i partnerskab med bl.a. uddannelsesinstitutioner.

### **Internationalisering**

Lyngby-Taarbæk oplever en stigning i tilstrømningen af international arbejdskraft. Kommunen skal være åben og imødekommende overfor denne gruppe. Derfor ønskes et tæt samarbejde om modtagelse, housing og integration af denne gruppe borgere med henblik på at skabe en åben og mangfoldig kultur i Lyngby.

### **Byudvikling**

Letbanen giver helt nye muligheder for arealudvikling i og omkring stationerne i strækningen Kgs. Lyngby-DTU. Der ønskes et tæt og forpligtende samarbejde om udvikling af kommende stationsnære områder i tråd med vidensbystrategien med henblik på at gøre Lyngby-Taarbæk til en videns- og universitetsby.

### **Forbedret infrastruktur og transport**

Der efterspørges forbedrede offentlige transportmuligheder mellem Kgs. Lyngby og DTU fx gennem etablering af shuttle bus, en kommende letbane samt etablering af gang- og cykelstisystemer etc. Dette forudsætter et samarbejde, fx via udbygningsaftaler mellem DTU og LTK. Samtidig betyder den forventede vækst og udvikling, at der skal udarbejdes præcise prognoser for og analyser af trafik- og miljøbelastning, fx via erhvervs ph.d. projekter, studenterprojekter etc.

### **Fremme af iværksætterier og erhvervsudvikling**

DTU fungerer som motor for udklækning, tiltrækning og fastholdelse af vidensvirksomheder i Lyngby-Taarbæk. Samarbejdet skal derfor fokusere på, hvordan denne styrkeposition kan fastholdes og udvikles gennem match making-aktiviteter, iværksætterrådgivning, bedre erhvervsservice mv.

### **Fokus på klima, grøn teknologi, natur og miljø**

DTU er førende i forhold til forskning i løsninger til at fremme klimaindsats og grøn teknologi. Samarbejdet kan derfor bidrage til at kommunens klimastrategiske mål nås og at der udvikles og afprøves teknologier inden for klima, natur og miljø. LTK kan fungere som testlaboratorium for sådanne nye løsninger og teknologier.



### **Nye velfærdsteknologiske løsninger**

Det velfærdsteknologiske område er et væsentligt vækstområde og skal bidrage til at løse nogle af de kommunale velfærdsudfordringer. Der fokuseres i første omgang på ældre-, sundheds- og folkeskoleområdet i forbindelse med nedenstående projekter:

- Fremtidens plejehjem: Samarbejde om at udvikle fremtidens plejehjem på baggrund af nyeste velfærdsteknologiske forskning.
- Sundhed: Implementering af velfærdsteknologiske løsninger, fx telemedicin. Brug af LTK som testlaboratorium.
- Fremtidens folkeskole: Brug af forskningsbaseret viden til at sikre højt niveau i folkeskolens naturvidenskabelige fag i Lyngby-Taarbæk.

### **Udvikling af DTU Campus, herunder Anker Engelundsvej og koblingen til Lyngby Idrætsby**

Et konkret udviklingsprojekt bliver omlægningen af den nuværende trafikløsning på og omkring Anker Engelundsvej. Samarbejdet skal her fokusere på at skabe en helhedsorienteret løsning for trafikken samt understøtte udviklingen af universitetsområdet.

Desuden forpligter parterne sig til at undersøge mulighederne for en mere intensiv og gensidig udnyttelse af de i området placerede idrætsfaciliteter, både på DTU Campus og Lyngby Idrætsby.

# Sport facilities in Kongens Lyngby

---

# Sport facilities in Kongens Lyngby

Source: DGI og DGI-huse og haller

Forening/gruppe
Brugere af stadion i dag i alfabetisk orden
Brede Idrætsforening
FOF
Hjortekær Tennis Klub
HJV Skyttelaug
Hockeyklubben Orient
IF Limone (idræts for sindslidende)
Kegleklubben 8 om Kongen
Kongens Lyngby Marineforening
Krop og Sjæl
Lundtofte Boldklub
LYAF - Lyngby Dans
Lyngby Bokseklub
Lyngby Boldklub A/S
Lyngby Boldklub af 1921
Lyngby Bueskyttelaug
Lyngby Dance team
Lyngby Gymnasterne
Lyngby Handicap Idrætsforening
Lyngby Håndboldklub
Lyngby Kegleklub
Lyngby Statsskole FK
Lyngby Svømmeklub
Lyngby Tennis Klub
Lyngby Taarbæk Firma Idræt
Lyngby Taarbæk Gymnastikforening
Lyngby Udspringsklub
Lyngby Ældreklub
Lyngby-Taarbæk Aftenskole
N.B. Garderforening
Old English Sheepdog Club
Politiets Idrætsforening

Skovridergårdens Tennisklub
Skyttelaugget Kgs. Lyngby
Trongårdens Idrætsforening
Taarbæk Idrætsforening
Taarbæk Tennisklub
Wing Tsun
Ældresagen
<b>Skoler / uddannelses-institutioner:</b>
Lyngby Private Skole
Skt. Knud Lavard Skole
Billums Skole
Teknisk Gymnasium
Handelsskolen K Nord
Poul Petersens Idrætsinstitut
Virum Gymnasium
Lindegårdsskolen
Kongevejens Skole
Engelsborgskolen
Fuglsanggårdsskolen
Heldagsskolen
Hummeltofteskolen
Lundtofte Skole
Virum Skole
Sorgenfri Skole
Taarbæk Skole
Trongårdsskolen
LTU (Ungdomsskole/10. klasse)
DTU
<b>Naboer til stadion</b>
Sorgenfrigård grundejerforening
Bondebylauget
Haveforeningen Stadion
Andelsboligforeningen Grønnevang
Haveforeningen Lyngen
Naboer langs Lundtoftevej og Sorgenfrigårdsvej
<b>Selvorganiseret idræt</b>
Skatere
Morgensvømmere
Motionsløbere
Brugere af styrketræningsfaciliteter