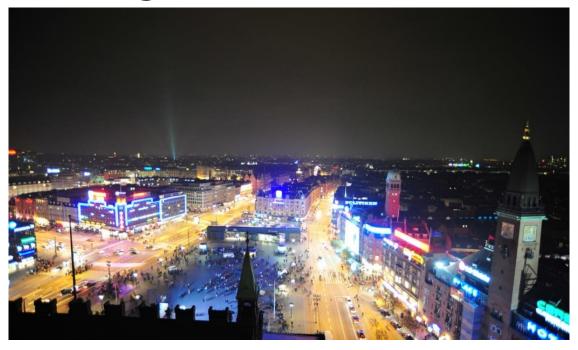




Addressing the Quality of Living and Nightlife in Nørre Kvarter



Source: https://upload.wikimedia.org/wikipedia/commons/5/50/Copenhagen_aerial_view_by_night.jpg

Submitted to:

Professors Fabio Carrera and Hugh Lauer Worcester Polytechnic Institute Project Sponsor: Miljøpunkt Indre By & Christianshavn

Interactive Qualifying Project [IQP] Final Report Copenhagen Denmark '17

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Abstract

Copenhagen's vibrant nightlife has become a problem for residents living in the district of Indre By. The purpose of our project was to research, observe, and analyze the behavior of young adults when partaking in nighttime activities located specifically in the community of Nørre Kvarter. To do so we interviewed locals, collected existing data, and created a plan to provide our sponsor with guidelines and sustainable methods for reducing noise and waste generated by the nightlife. Our final plan helped our sponsor raise awareness about the problem to increase Indre By's environmental sustainability.

Acknowledgments

We would like to thank everyone involved in this project. First, we would like to thank Miljøpunkt Indre By & Christianshavn for providing us with the support to complete our project. Specifically, our sponsor liaison, Marianne Spang Bech, for providing invaluable feedback on the project and for providing contacts to complete our interviews. We would like to thank our onsite advisors, Fabio Carrera and Hugh Lauer, for their guidance and support throughout the course of the project. In addition, we would like Melissa Butler, our ID 2050 Professor, for helping us to create our project proposal. Furthermore, we would like to extend our thanks to all interviewees for their cooperation in providing their perspective on our project. Finally, we would like to thank Worcester Polytechnic Institute for providing us with this opportunity.

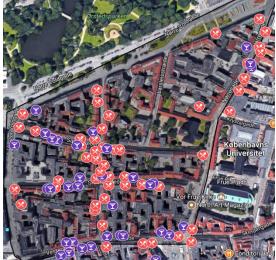
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All sections were revised and edited by all team members.

Executive Summary

The neighborhood of Nørre Kvarter, an area located in the Indre By district of Copenhagen, is a closely knit urban community living in the midst of a vibrant nightlife scene (Figure A). Behavior from adolescents participating in nightlife festivities constantly create noise by shouting, singing, or playing music in the streets; they also litter in the area leaving behind a mess for the residents when morning comes. The nightlife is fueled by the sale of cheap alcohol to adolescents from bars, clubs, and retail stores. Drinking heavily influences adolescents' behavior when socializing with one another, therefore creating an uncontrolled party scene. The residents of Nørre Kvarter have been struggling with unsustainable living conditions due to nightly noise and waste.



Our sponsor, Miljøpunkt Indre By & Christianshavn, is a non-profit environmental organization dedicated to increasing the sustainability of Copenhagen for the community. Noise is a main focus of their sustainability efforts. They have been working with a Noise Group composed of residents across Copenhagen that have gathered in efforts to reduce the noise and waste problem. Some residents of Indre By have decided to take legal action and filed a lawsuit against the Municipality of Copenhagen in order to draw attention to this issue. Meanwhile, the municipality has been developing a night plan to increase regulations on nightlife establishments, but it is still struggling with regulating individuals on the streets.

The goal of this project is to assist Miljøpunkt Indre By & Christianshavn to improve the quality of life for the residents of Nørre Kvarter by reducing noise and waste at night. The three objectives to complete this mission were: to assess the nightlife problem in Nørre Kvarter; to collect the opinions of the local community about nightlife issues; and to identify methods to raise awareness about nightlife issues and promote social responsibility in Copenhagen.

To assess the nightlife problem in Nørre Kvarter, we acquired data about noise and waste at night. In addition to compiling past data, we observed the area to record key aspects of the nightlife that contribute to the problem. Essentially, we gathered a compilation of photos, videos, noise levels, and maps to assess and document the magnitude of the problem. In parallel, we interviewed members of the community to gather qualitative data about the problem and to understand individual's perceptions of it. Our final step was to produce a series of recommendations that could reduce noise and waste at night. This process allowed us to refine recommendations based on the opinions of the residents and the municipality. This feedback allowed us to create a 'Good Night Plan' for Miljøpunkt Indre By & Christianshavn and Nørre Kvarter.

Every single individual and organization that we interviewed said that the people who crowd the streets create this problem since they have access to an abundance of cheap alcohol from retail stores and nightlife establishments. The streets turn into festival grounds packed with young people and leftover trash. The streets stay crowded from 23:00 to 08:00 when the last of the establishments finally close. By observing the scene, we found that trashcans overflow with garbage because there are not many and they are rather small. Also, we found that people line the sidewalks either waiting to get into an establishment or smoking outside, which contributes to the noise and forces pedestrians to walk in the streets against traffic. The scene is chaotic and unorganized, adding to all the inappropriate behavior at night.

The problem in Nørre Kvarter is a hot topic for the local community, where residents are searching for solutions. The noise data from the Danish Technical University students showed noise on the weekend exceeds the 40 dB zoning threshold with windows closed while the noise data we collected with open windows showed peaks of over 100 dB which far exceed the recommended limit from the World Health Organization of 40 dB at night. These levels can lead to disrupted sleep and health issues for residents. Our survey to the residents of Nørre Kvarter had 33 respondents that claimed 43% of the noise that bothers them is people shouting on the streets. If residents are bothered by the noise they can contact the Noise Guard to

deal with the complaint, but the Noise Guard can only regulate establishments and not people on the street. It is up to the police to regulate individuals on the street. However, with the police stretched thin across Copenhagen, other solutions are needed to provide more enforcement in the area of Nørre Kvarter.

We found a lack of awareness, regulation, and enforcement, so after we gathered a possible list of recommendations, we presented them to the Noise Group, who are a group of concerned residents. They then helped us select the most significant interventions. Then we presented to Martin Gyldstrand, a special consultant for the Copenhagen Municipality working to address this nightlife issue. His input was essential to distill our final recommendations, since he gave us opinions on what the municipal government would consider feasible.

Completing these three objectives enabled us to accomplish our goal to provide Miljøpunkt with a plan to reduce noise and waste at night. This plan includes three major phases: an awareness campaign, a set of interventions and regulations that government entities could undertake, and the corresponding enforcement tools necessary to apply the new rules.

A campaign will draw attention to and lead to the creation of regulations, which in turn will help authorities to enforce a responsible nightlife. The purpose of the campaign is to promote social responsibility and raise awareness of health issues associated with loud nocturnal noise, parental guidance with youth drinking behavior, and the correlation between a dense area of nightlife establishments and police interventions. To do so, Miljøpunkt and the residents can hold an event outside of the city hall to raise awareness of the issue to the community, but to focus on getting the attention of politicians. We believe the campaign should also focus on gymnasiums interacting with adolescents about being more socially responsible while drinking. This includes showing how young adults can still have a good time without drinking and the impacts they have on the community when they go out.

Following the campaign, we have listed recommendations for the types of regulations that would be feasible to address this problem. We first recommend that the municipality require nightlife establishments to have uniformed security to control patrons and regulate their behavior. Next, the municipality should increase the size of trashcans or empty them more frequently on the weekend since they overflow on popular nightlife streets. In addition to this, more trashcans should be placed on streets that have a high density of nightlife establishments such as Vestergade. Lastly, we suggest that the local government restrict the sale of alcohol in 24hr retail stores so they cannot sell past midnight. This would mitigate the issue of people loitering in streets since they won't have access to cheap and easily available alcohol.

Finally, we have provided recommendations on how and by whom these regulations could be enforced. We recommend that the city implements a night patrol dedicated to patrolling the streets at night in Nørre Kvarter. This patrol, either through a new entity or through increasing the size of the Nightlife Police, will be responsible for regulating people on the streets by giving out fines or simply telling individuals to quiet down. We also recommend an incentive or disincentive program for nightlife establishments; if an establishment regulates its patrons they will get a tax incentive; if too many complaints are filed then all the bars will be fined for not taking responsibility for their patrons. This system will engage the municipality and nightlife establishments to work together to ensure the people on the streets are behaving.

This plan outlines a way that will enable Miljøpunkt Indre By & Christianshavn to address the night-life noise and waste issues, garner the support of the community, and build a proper foundation to initiate change. With the milestones that our recommendations provide, we hope they can reduce noise and waste in the area of Nørre Kvarter and let local residents feel at ease with the place they live.

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1.0 Introduction

The city of Copenhagen has a thriving nightlife scene that has created adverse noise and waste pollution fueled by the consumption of alcohol. With over 2300 restaurants located in the capital city, Copenhagen is ranked #4 among the 15 best nightlife destinations in Europe [Pantazi, 2016]. Although entertaining for those participating, nightlife negatively impacts local residents who are beginning to openly protest the latenight noise and littering that is occurring in their neighborhoods. Copenhagen's more popular streets, where locals and tourists mingle until the wee hours, consistently experience noise levels higher than the 40 dB limit. In Indre By, the inner city of Copenhagen, residents are demanding a change in the way youth conduct themselves while socializing at night.

The neighborhood of Nørre Kvarter in Indre By is a small residential and commercial area composed of nine streets in central Copenhagen. It is a particularly busy and noisy nightlife hotspot. There are dozens of serving establishments along each of its tightly packed streets, and all of them serve well past midnight. The latest closing time in this area is 8 AM the next morning, even though the municipality of Copenhagen only provides permits that allow the serving of alcohol until 5 AM. The city's alcohol licensing committee has halted the allowance of any new 5 AM permits in an effort to prevent the production of more noise and waste at night. While this and other attempts at reducing noise and waste at night have been made, not enough progress made in the eyes of the residents of Nørre Kvarter. Many of the residents have been living here for decades, watching the neighborhood become louder and louder every weekend. This is not just a concern of the residents, but also an issue of sustainability for the rest of the city.

Sustainability initiatives and organizations are a large contributor to the eco-friendly environment in Denmark [European Green Capital, 2014]. However, the noise and waste pollution stemming from nightlife hinder Copenhagen's sustainability efforts to maintain a clean and friendly city. Our sponsor, Miljøpunkt Indre By & Christianshavn, is an environmental organization established as a result of the Agenda 21 initiative proposed by the United Nations in 1992 to promote sustainable urban development. Miljøpunkt views this nightlife problem as a growing sustainability issue for the residents of the city and for the environment itself, since waste and noise pollute the city. Copenhagen's existing initiatives promote sustainability but do not fully encompass the noise and waste issues generated at night.

In Indre By, those who have the ability to help solve the problem: elected and appointed officials, police, and even bar owners currently acknowledge the problem. However, past efforts to find solutions have failed to improve nighttime conditions for local residents. Our project sponsor has previously worked with local universities and a "Noise Group" formed by concerned residents, to research this issue. While they have had success in documenting the problem, they have not yet been able to stimulate the action needed to reduce the noise or take care of the waste.

Part of the reason is that Danish culture favors the use of drinking in social settings as a means to have fun and socialize with others [W. Christian, 2015]. During the process of socialization, alcohol can stimulate careless decisions including excessive noise and careless littering. While we cannot change social behaviors of an entire culture, we can recommend measures to lower the levels of noise and waste occurring at nighttime. The goal of this project is to aid Miljøpunkt Indre By & Christianshavn in improving the quality of life of its residents by reducing noise and waste created at night. The following objectives allowed us to accomplish this goal:

- 1. Assess the existing data of the nightlife problem in Indre By
- 2. Collect the opinions of the local community about the current state of nightlife
- 3. Identify methods to raise awareness about nightlife issues to Miljøpunkt and promote social responsibility in Indre By

2.0 Background

In recent decades, European youth have dramatically increased their consumption of alcohol in public venues, especially during the weekends [Aresi, G., & Pedersen, E. R. (2016]. This rise in alcohol consumption has led to increased amounts of inappropriate youth behavior at night, including a disregard for surroundings, which results in excessive noise and littering. Records have shown that Danish youth are considered heavy drinkers with 80% of the population reporting intoxication before the age of 15 [Friese & Grube, 2011]. Copenhagen is experiencing a dilemma with its nightlife scene getting out of hand, and its inhabitants are calling for a solution.

Our project focuses on the impacts of a thriving nightlife scene on the residents of Indre By, the inner city of Copenhagen, in a neighborhood called Nørre Kvarter, which translates to 'North Quarter.' Nørre Kvarter can be seen below in Figure 1 in respect to Copenhagen.

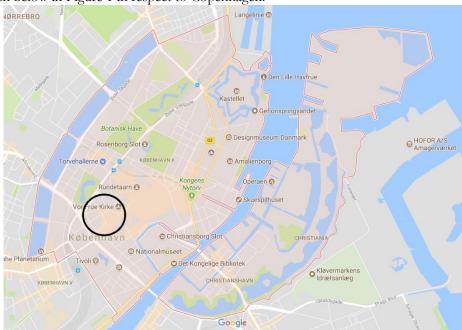


Figure 1: Map of Copenhagen Indre By district with Nørre Kvarter circled[Google.com/maps]

Nørre Kvarter, which can be seen below in Figure 2, is a small neighborhood composed of nine streets: Vestergade, Studiestræde, Sankt Peders Stræde, Larslejsstræde, Nørregade, Vester Voldgade, Gammeltorv, Teglgardstræde, and Larsbjornsstræde. It hosts a staggering total of nearly one hundred alcohol-serving establishments, some of which stay open until dawn. With a variety of closing hours, young Danes hop from one venue to another, accumulating in lines outside the establishments closing the latest. The result is many youth loitering in the streets of Nørre Kvarter, creating excessive noise and strewing trash in the streets and alleys. Nørre Kvarter is in need of a solution, and our project focused on searching for the root of this problem in order to provide recommendations that raise awareness to promote increased social responsibility on the part of nighttime revelers.

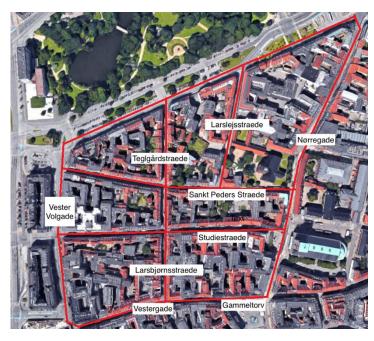


Figure 2: Close up of the target area of Nørre Kvarter [Google.com/maps]

2.1 Nightlife in Nørre Kvarter

The behavior of youth engaging in nighttime activities is a nuisance for the local residents in the area. Between the loud music heard from drinking establishments, stray shouts in the streets, and loitering in public spaces at night, to say that locals are annoyed is an understatement. Although this nighttime socialization has become annoying for the residents of Indre By, nightlife stimulates the economy, defines the culture, and brings life to the city. If a balance is found between the wishes of youth and those of the highly annoyed residents, Indre By will reap the benefits of a thriving nightlife without angering its non-participating inhabitants.

The World Health Organization (WHO), in their Night Noise Guidelines for Europe, provides evidence that, in addition to being annoying, night time noise also affects human health. Specific health risks due to this effect include stress, hypertension, insomnia, and possible mental health risks [WHO, 2009]. The physical and mental effects that noise has on the body are due to the disruption of normal sleep patterns, including the REM (rapid eye movement) cycle of sleep, resulting shallower sleep and a decrease in the productivity in the daily lives of these local residents. WHO recommends a noise level no higher than 40 dB at night for adequate sleep and the health of residents.

The citizens of Indre By are so fed up with the amount of noise reverberating from the streets that they are initiating legal action against the municipality. An article from the *City Advisen* newspaper reports that the citizens believe the city of Copenhagen has failed in its duty to supervise the nightlife scene and are prepared to file a class action lawsuit if their needs are not met [Rodgaard, 2017a].

Another negative impact on the local residents is the amount of waste being produced as a consequence of nighttime festivities. After a night of socialization in Indre By, visible piles of trash are left behind in the streets, parks, gardens, waterways, and almost every other public space of the area [Volpe, 2016]. Cups, empty food containers, plastic bags, and cigarette butts overflow trashcans in the wake of a night out. The problem of waste is most apparent on weekends, as well as during the summer season when outside drinking is more common [Asmussen & Tutenges, 2006].

2.2 Drinking in Danish Culture

Many aspects of the Danish culture influence the actions of youth: their history, laws, regulations, and economy are all factors in influencing the youths' behavior. Historically, Denmark is the only Nordic country that has not had a state monopoly on alcohol. The Danish government created a regulation in 1917 that was mainly founded on a tax on spirits, a license system for serving alcohol, and restrictions on retail sales. By the latter part of the twentieth century, the number of licenses approved per 1000 inhabitants doubled, restrictions on opening hours for bars and discotheques were substantially loosened, and Danish alcohol consumption per capita rose sharply (seen in Figure 3) [Demant, J., & Krarup, 2013]. The leniency in alcohol regulations caused an increase in noise levels due to the addition of nightlife establishments.

Recorded adult per capita consumption (age 15+)

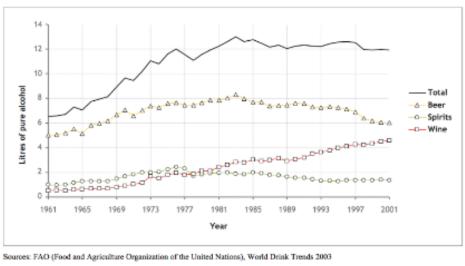


Figure 3: Recorded Adult Per Capita Consumption Rates in Denmark [WHO, 2004]

Even though the Danish government has made strides to lower the consumption of alcohol in young adults, the first age restriction (15 years) on buying alcohol from retail outlets was imposed in 1998. This was raised to 16 years in 2004 and again to 18 years for drinks stronger than 16.5% alcohol by volume in 2010 [Demant & Krarup, 2013].

Alcohol consumption among young Europeans occurs primarily in public drinking premises such as bars and nightclubs, particularly on weekends [Aresi & Pedersen, 2016]. Published research claims the behavior behind this tendency originates from cultural practices. Alcohol, specifically, has become an integral part of Danish leisure. The evolution of consumer capitalism during law reconfigurations of alcohol strongly supported the development of a particular sphere of adolescents drinking [Demant & Krarup, 2013]. In this particular sphere, the frequency of drinking and drunkenness among 15-year-olds underwent a sharp rise between 1988 and 1998. Danish adolescents remain among the highest consumers of alcohol in the European Union and the world as Figure 4 shows [Demant & Krarup, 2013].

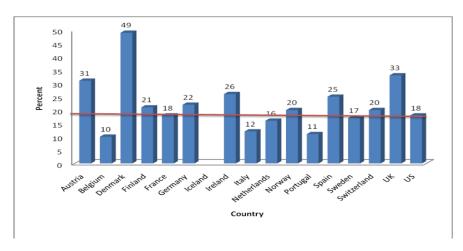


Figure 4: Percent of 15-16 Year Olds Reporting Intoxication [Friese, B.,& Grube, 2011]

In Denmark, binge drinking is the symbolic mark of an adolescent who has achieved independence and autonomy from his/her parents [Demant & Krarup, 2013]. Little parental restriction and surveillance is related to the direct growth and frequency of adolescent binge drinking [Järvinen & Østergaard, 2009]. Rules made by parents govern how late at night and how much alcohol their children are allowed to drink. However, it is difficult for parents to enforce rules regarding consumption while their children are out with friends. Parental guidance has an important role in contributing to youth alcohol behavior and, with proper implementation can prevent the use of alcohol in inappropriate manners.

2.2.1 Licenses and Renewal

In order for an establishment to obtain an alcohol license, it must first submit an application. The alcohol license allows serving until 12 AM, then the establishments must apply for a later closing hour license. The first is closing time at 1 AM, then successively until the 5 AM, which is considered a 24-hour license since any store in Copenhagen can open at 5 AM [License]. One important thing to note is that licensed establishments are required to pay annual fees to the municipality for expenses dealing with business waste [Permit].

2.2.2 Noise Regulations in Denmark

Because of the increasing number of disturbances, the Danish government established three main entities that manage noise regulations in Denmark: The Danish Environmental Protection Agency (EPA), the Advising Board, and individual municipalities [Solano, 2016]. The individual municipalities have the authority to create their own noise management regulations that can shape nightlife noise.

Under the Danish Constitution, municipalities are allowed to take on any task of their concern as long as it does not fall under the national government or another municipality. Copenhagen's municipal administration is divided into seven sectors that is responsible for health care, social services, and other local categories. [Technical]. We focused on The Culture and Leisure Administration as well as the Environment Administration for this project, since they address the noise and waste problem.

In Copenhagen, two separate groups are solely dedicated to the problem of noise in Nørre Kvarter. The first of these teams is called the *Noise Group*. This group is composed of local residents who want something to be done about this problem. They work with our sponsor, Miljøpunkt Indre By & Christianshavn, in order to discuss the problem and possible solutions. They meet monthly and go over new information along with possible plans of actions.

The second group is called *Stojvagt*, or 'Noise Guard' in English. They are responsible for regulating the noise produced from industrial, residential, and commercial zones under the Environmental Administration. When deployed at night, the Noise Guard goes around the city of Copenhagen to respond to noise complaints. When on a call, they go to the scene to measure the noise levels using noise meters to check against the zoning limits. For example, if a resident complains about noise from a bar, the Noise Guard

measures the noise across from the bar at the nearest residential building. If the value exceeds the noise limit, they will enter the establishment and tell them they are too loud.

In terms of noise zoning, Indre By is part of zone area (3) as it is city center. Figure 5 below was provided and explained by a Noise Guard employee. The Noise Guard follow this chart in order to test the noise levels of an area if a complaint is made. Indre By has a maximum threshold of 40 dB during the time period of 10PM to 7AM for everyday of the week.

of for the to this for every day of the			
	Monday - Friday 07- 18, Saturday 07 - 14	Monday - Friday 18 - 22, Saturday 14 - 22, Sundays and Sundays 07 - 22	All days 22 - 07
(1) Industrial Areas	70 dB	70 dB	70 dB
(2) Commercial and industrial areas banned from bothering companies	60 dB	60 dB	60 dB
(3) Areas for mixed housing and business development, centers (urban areas)	55 dB	45 dB	<u>40 dB</u>
(4) Housing Developments	50 dB	45 dB	40 dB
(5) Residential areas for open and low housing	45 dB	40 dB	35 dB
(6) Summer houses, colony areas and public areas	40 dB	35 dB	35 dB

Figure 5: List of Noise Zones in Copenhagen

2.3 Solutions to Nighttime Pollution

In the next two subsections we concentrate on the direct sources of the noise and waste, the social issues that indirectly lead to the problem, and possible solutions for each.

2.3.1 Direct Methods

The Nørre Kvarter neighborhood of Indre By has a high concentration of nightlife establishments as can be seen on Google Maps [See Figure 6: A map of Nørre Kvarter with highlighted alcohol serving establishments (google.com/maps)]. This concentration of bars, clubs, and music venues in such a compact urban environment promotes acoustic reverberation and a high density of waste and litter [Becheruci, 2014]. The high concentration of nighttime establishments also brings about a lot of people participating in nightlife festivities. Therefore, targeting these sources of noise can directly diminish the nighttime problem in Indre By.

A direct approach would be to reduce the number of events, thereby reducing the number of participants and the noise [WHO, 2009]. Zoning is a way to accomplish this, but the European cities are constrained horizontally or by high population densities, so establishments and residents cannot relocate [Becheruci, 2014; WHO, 2009].

Soundproofing can also work if implemented outside on the streets and in residential zones. [Morillas, 2010; WHO, 2009]. The problem is that some of the population need to have their windows open for fresh air during warmer weather, which completely negates the effectiveness of window insulation. Another physical method to reduce noise on the streets is to install noise absorbing cement or concrete [Morillas, 2010]. Specifically, porous roadways can reduce the noise levels 4-6 dB which would decrease the noise pollution from people and motor vehicles on the streets [Liu, 2016]. While an all-encompassing solution does not exist, various reductions of noise levels can be beneficial for the health of the sleeping population as well as the participants.

2.3.2 Indirect Methods

If nightlife establishments and participants cannot alter their disruptive behavior, then indirect solutions are necessary. These will not stop the source of noise or waste but mitigate the problem for the residential population. One method is to label or advertise alcohol with regards to social responsibility since individual and group behavior directly correlate with alcohol consumption [Asmussen & Tutenges, 2006]. The social responsibility of drinking is limited to the context of the event as it established how far an individual can go in social norms [Aresi & Pedersen, 2016]. Educational campaigns and information are all useful to spread the idea of drinking responsibility in urban environments [Morillas, 2010; WHO, 2009; Asmussen & Tutenges, 2006].

2.4 Danish Initiatives

Most of the prevention initiatives in Copenhagen focus on the youth. The organizations pushing for these initiatives, both public and private, provide educational material, guidance, and therapy for adolescents [Asmussen & Tutenges, 2006]. Examples of such prevention initiatives are: Social Centers that offer services to youth; Public Health Copenhagen that promotes moderate drinking to youth; and the National Board of Health, which distributes educational material related to alcohol consumption. Danish politicians have created a plan to increase regulations on nightlife as the issue escalates [Rodgaard, 2017b]. The plan provides an economic boost of 2.4 million kroner (approximately 387,000 USD) to reallocate aid to municipal employees at night in response to complaints on the streets.

3.0 Methodology

The goal of this project was to recommend methods to Miljøpunkt Indre By & Christianshavn to help reduce the negative impacts of nightlife behaviors in Indre By and Nørre Kvarter. We completed this by collecting data as well as suggesting and analyzing innovative new methods that influence the behavior of youth to reduce noise and waste created at night. By doing so, the overall goal is to aid Miljøpunkt Indre By & Christianshavn to improve the quality of living at night. In order to fulfill these goals, our team addressed the following objectives:

- 1. Assess the existing data of the nightlife problem in Indre By
- 2. Collect the opinions of the impacts of nightlife on the local community
- 3. Identify methods to raise awareness about youth behavior for Miljøpunkt and to promote social responsibility in Indre By at night

The Nørre Kvarter neighborhood of Indre By consists of nine streets, as shown in Figure 6, almost one hundred drinking establishments, and 1,220 residents. Nørre Kvarter has a recurring issue where young adults create noise and waste throughout the streets particularly late at night.



Figure 6: A map of Nørre Kvarter with highlighted alcohol serving establishments (google.com/maps)

The rest of this chapter reports what we did to fulfill these objectives and to make recommendations to our sponsor. We focused on the nights of Thursday, Friday, and Saturday, from the times of 8 PM to 8 AM between August 23rd and October 8th. By taking measurements as well as interviewing the locals around the problem, we were able to come up with recommendations for our sponsor to reduce nighttime noise and waste.

3.1 Assessing the Nightlife Problem in Nørre Kvarter

To address the first objective, we compiled previously documented data about the issues of noise and waste in Nørre Kvarter. In order to address any issues observed by local residents, we used both archival and observed data, which supplement each other.

3.1.1 Acquiring Archival Data on Noise

In 2016, a team of graduate students from the Danish Technical University used precise sound meters to measure the noise on Studiestræde in Nørre Kvarter [Kavardzhikova, 2016] from behind closed windows. They collected running averages of every minute over a period of 14 hours daily for two weeks. This provided us with an accurate measure of the sound levels for the area. We contacted the team for permission to use their data because it is unequivocal proof and detailed evidence of the noise problem at night.

3.1.2 Conducting Observations in Nørre Kvarter

In order to gather all the necessary data for making inferences about the issues surrounding nightlife, we had to make observations to collect and document the problem. We captured the current state of the problem to see if previous attempts have made enough of a difference for local residents.

3.1.2.1 Collecting Information on Nightlife Establishments

We collected information on nightlife establishments to learn what establishments were contributing to the problem and how they were contributing. We recorded names of nighttime establishments and operating areas into an Excel spreadsheet. The official website of the municipality of Copenhagen has a map that contains information on alcohol permits. However, this map is not up to date so we used Google Maps and Google reviews, which provided much more up-to-date information. We had to record a few establishments, that were new or closing, by physically walking through the streets and noting all the required information using pen and paper, then transferring this data into Excel. The municipality also provided more information on nightlife establishments.

3.1.2.2 Mapping the Trashcans of Nørre Kvarter

In order to make recommendations on the issue of littered waste, we had to collect data on the municipality's trashcans in Nørre Kvarter. To do this, we walked through the neighborhood, and wherever we found a trash bin (Figure 7), we used the *label* feature of Google Maps to record its location. By completing this map, we could see the number, location, and type of trashcans along the streets. This allowed us to consider possible solutions to nighttime waste production by looking at the number of trashcans compared with the amount of trash.



Figure 7: This is an image of the municipality's trashcans. This overflowed trashcan photo was taken on a Saturday night on Vestergade. [Zachary Hearl, 2017]

3.1.2.3 Documenting the Current Situation in Nørre Kvarter

We used photography as one of our most important tools for gathering documentation to show the scope of the problem. The sheer number of people out in the streets at night and the overflowing trashcans was proof of the problem at hand. We took pictures and video of individuals and trash throughout Nørre Kvarter while we went out at night. We specifically wanted to take photos of people misbehaving while out. For example, we captured images of individuals vomiting on the streets, leaving trash behind, and urinating in the streets. To ensure that anonymity was retained, we blurred the faces out of the images. Furthermore, we used phone cameras that were up to spec for night images to remain inconspicuous. The pictures were taken at night (between the hours of 11 AM until 3 AM), but we also took images early in the morning (6 AM) to capture the nightlife aftermath. We later organized and analyzed these photographs as evidence of the present nightlife situation. [Appendix D].

3.1.2.4 Measuring Noise in Present Nørre Kvarter

In order to confirm the results of the DTU noise data (Section 3.1.1 Acquiring Archival Data on Noise), we recorded our own sound data in Indre By on a Friday and Saturday night, but with the window

open. We set up a noise meter in the window of an apartment during nighttime hours of 12-6 AM and configured it to collect the overall minimum, maximum, and average decibel reading throughout the night. We then compared the noisiest days, the weekends, to days that are less likely to be loud, weekdays, to verify the data provided to us by the students from DTU. Figure 8 below shows the setup and model of the noise meter used to measure the nightlife activity.





Figure 8: The image shows the sound meter placed on a window leading to one of the areas noisiest streets. This model is B&K2250

3.2 Gathering Local Perspective

In order for us to gather information and opinions from the local community about the current state of nightlife, our sponsor provided us with contacts. These contacts included local residents, local authorities, nightlife establishment owners, and even local government officials for conducting interviews and surveys. We spoke with all of these people to collect their opinions and views on the problem.

3.2.1 Analyzing the Perspectives of Local Residents

The people who live in Indre By, specifically the Nørre Kvarter, are a closely knit urban community that is surrounded by a vibrant nightlife scene. To understand the perspective of the Nørre Kvarter residents about the nightlife issue, we held three semi-structured interviews to discover these issues. The interviews were organized through Miljøpunkt, who had contacts from the community that were invested in improving this issue. Each interview was conducted by dual moderators (two team members); one individual made sure all topics were covered and the other kept the discussion running smoothly. The other two team members recorded the discussions by taking notes and using an audio recorder [Appendix C].

We also created a survey through Google Forms to collect supplementary qualitative data from local residents. The survey consisted of two parts, one about noise and one about waste [Appendix A]. The survey was distributed through the neighborhood weekly newsletter and responses remained anonymous.

3.2.2 Learning the Perspective of Local Authorities

Due to complaints from residents, the Municipality of Copenhagen created a "Noise Guard" ("Støjvagt" in Danish) to regulate the noise produced by nightlife establishments. Since the noise problem is such a major issue in Nørre Kvarter, we interviewed people in the Noise Guard to learn what the problems are from their perspectives.

We also set up a semi-structured interview with the Chief of the Local Police of the Copenhagen Police department, to discuss the behavior of youth in the neighborhood. We wanted to learn the steps the police were taking to combat nighttime behavior. We recorded the interview using a voice memo app on a smartphone and documented the responses [Appendix C].

3.2.3 Interviewing Nightlife Establishment Employees

The employees of the nightlife establishments provide another perspective into the problem. These bar workers usually work till late hours at night to accommodate customers. Using the observations we made

from Section 3.1.2.1 Collecting Information on Nightlife Establishments, we selected several nightlife establishments in the area to interview, based on the greatest number of patrons at night. These interviews provided another view on how patrons behave. We used semi-structured interviews so interviewees can openly talk about the problem [Appendix A] and was recorded in [Appendix C].

3.2.4 Gaining a Perspective of the Youth

In order to better understand how youth experience nightlife, on several occasions we used participant observation to gauge their behavior on the weekends and ask them basic questions to promote discussion about the noise and waste problem. Since we are young students, we were able to "blend in" and socialize with the youth. To fit in with the crowd in the streets and establishments, we actively participated with the youth in an attempt to record rich, holistic insights, and the nature of the neighborhood. It closed the gap between us, the observers, and the observed to engage in a social way [Briggs, Gololobov, Ventsel, 2014]. As an observer, it was essential that by "blending in" we did not become part of the problem or biased to a certain side.

To understand youth behaviors more thoroughly, we interviewed a researcher of the largest Northern European music festival, Roskilde Festival, who hosts thousands of young adults once a year. The purpose of this interview was to understand how to organize large groups of people in this type of setting. Also, we interviewed the principal of a local high school, Ørestad Gymnasium. He explained the role of the school in Danish drinking culture, and the current changes they are having at this particular school to improve alcohol consumption and nightlife misbehaviors.

3.2.5 Understanding the Perspective of Local Government Officials

It was essential that we interviewed officials so they could talk about their current ideas of what the situation was and how they thought it could be solved. In order to set up the interview, Marianne Spang Bech had contacts who were able to get in touch with politicians. By speaking with the local officials in charge of nighttime regulation, we were able to gain insight on their perspective of the problem.

3.3 Identifying methods to raise awareness about nightlife issues and promote social responsibility in Indre By

In order to identify methods to raise awareness about nightlife issues and promote social responsibility in Indre By, we used data from the previous two objectives to create recommendations where we refined them with external perspectives from the community.

3.3.1 Evaluating Recommendations through a Poll by the Noise Group

After gathering all the previously obtained data, we met with the staff of Miljøpunkt and the representatives of the Noise Group from the various districts of Copenhagen to present our findings. Our presentation consisted of a series of slides describing our methodology and project's process. Then we asked the audience to evaluate the possible recommendations that our team was considering using a poll. Each recommendation was given a score based on the average of all the responses from 1 (lowest) and 5 (the highest). After all the responses were recorded, we discussed the ratings, the reasoning behind the participants ranking, and decided which recommendations we would use and which we would discard.

3.3.2 Narrowing Recommendations through Discussion with the Municipality

In addition to speaking with the Noise Group, we wanted feedback from another perspective, the municipality. By discussing our recommendations to the appointed official of the municipality, we developed more refined and organized methods to help our sponsor.

3.3.3 Developing a 'Night Plan'

With a tightened list of recommendations, we next formed a plan containing them with the end goal of reducing noise and waste. To do this we compared and contrasted all the recommendations. By drawing out who could do what, we got a sense of the different categories recommendations could fit into. We then grouped all the recommendations into these categories and connected them into a plan.

4.0 Results and Analysis

To complete our mission statement of providing recommendations for our sponsor to reduce nighttime noise and waste, we completed three objectives over seven weeks in Copenhagen. All of the objectives aided in our understanding of the problem by collecting data, analyzing community opinions, and refining recommendations.

4.1 Assessment of the Nighttime situation in Nørre Kvarter

We were able to get a clear picture of the existing noise and waste problem by gathering existing data from interviews and contacts provided to us from our sponsor. We analyzed the information and used our observations to create a foundation for our goal. This gave us the ability to see the overall extent of the problem first hand as well.

4.1.1 Noise Data

We contacted a member of the DTU research team, Bertrand Smits, who gave us permission to use all the data that he and his team had collected. This was more information, and more accurate information than we could have possibly collected ourselves in our timeframe, as he and his team were from the acoustic technology department of electrical engineering at DTU. Also, this team's project was focused on the collection of noise data, while our project focuses more on providing original recommendations about what can be done to reduce noise (and waste). This information helped quantify the problem as it contained graphs showing the average sound levels during a normal day versus sound levels during a weekend "party" night. As shown in Figure 9, the "loud" averages can be seen in blue while the "normal" noise averages can be seen in orange. The 40 dB city noise limit for outside noise, shown in red, was exceeded 13 times on the weekend night and only 4 times on a weekday. It is important to note that these measurements were taken with the windows closed and the noise levels still exceeded the limit 13 times in 24 hours.

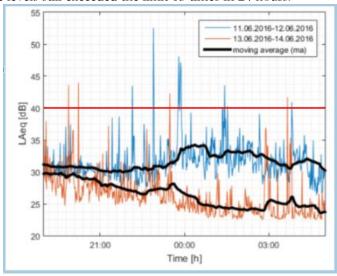


Figure 9: A graph given from the previous noise researchers showing the difference between noise averages from a "loud" night to a "normal" night.

Mr. Smits also explained to us about the noise spikes throughout the night. These graphs showed the average noise throughout the night by plotting the moving average [Appendix E]. They also implemented a threshold to the data by adding 3dB to the moving average. He explained that they marked every point over this threshold in order to show the number of loud spurts throughout the night. As shown in Figure 10, the moving average is outlined in black, the threshold is a dotted blue line, and the loud spikes of noise are highlighted with red circles. The graphs and raw noise meter data provided by Mr. Smits was essential in quantifying the problem. Since their project was conducted in the summer of 2016, their data is still pertinent to our project. It is important that by gathering this data our team could show how the depth of the problem. Within

the confines of a normal apartment with the windows closed, the noise inside the apartment surpassed the city's 40 dB threshold thirteen times over the course of a single night shown by the red line.

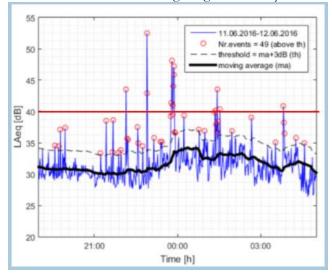


Figure 10: This graph showed the noise levels throughout the night collected by Mr. Smits' team.

Although we obtained data about the noise problem from the DTU team, we measured sound on a weekend ourselves to confirm that data. After talking with Mr. Smits of the DTU team, we found that the noise meter we used did not have the same license as theirs as it was unable to document noise data with respect to time. Instead, our noise meter documented noise throughout the night and showed the average over the measured time period. As shown in Figure 11, on a Friday night the average decibel level, LAeq, was 61, and on a Saturday night, 64.8 respectively. These values are significantly higher than the 40 dB city limit.

Measurement	Start Time	Stop Time	Elapsed Time	LAeq [dB]			LAFmin [dB]	Overload [%]
Total	9/2/2017 12:07:03 AM	9/2/2017 5:07:03 AM	05:00:00	61.0	114.4	96.1	43.1	0.0
Measurement	Start Time	Stop Time	Elapsed Time	LAeq [dB]			LAFmin [dB]	Overload [%]
Total	9/3/2017 12:03:52 AM	9/3/2017 5:03:52 AM	05:00:00	64.8	109.2	98.3	43.5	0.0

Figure 11: These charts show the results of the noise meter readings on a Friday and Saturday night respectively.

These results were, on average, 30 dB higher than those of the DTU team, but this difference can be explained by the fact that their measurements were taken inside of apartments with windows closed. Both sets of data prove different points about the noise problem. The DTU team's data proved that noise in residents' apartments was significantly louder during weekend nights than weekday nights. Our data shows that the noise out in the streets is extremely loud with the minimum noise recording over the entire period being 43.1 dB on Friday night making sleep with windows open difficult. The World Health Organization, WHO, states that the maximum decibels that people should endure for long periods of time is 40 dB, the averages on both nights were significantly higher [WHO, 2009]. This data shows how the noise in the streets is still a matter of concern for the residents.

4.1.2 Closing Times of Nightlife Establishments

Organizing the nightlife establishment data required information from Nørre Kvarters streets. Once we collected the opening and closing times, we put them into tables for comparison. Figure 12 shows that on Friday, Saturday, and Sunday the bars stay open the latest. Additionally, it can be noted in Figure 13 how the bars that stay open the latest are on Studiestræde. This makes people go from Vestergade, whose latest closing time is 5 AM, to Studiestræde which has the latest closing time of 8am. The shift in times creates random spikes of noise in the street that forces residents from their sleep as can be seen in Figure 9: A graph given

from the previous noise researchers showing the difference between noise averages from a "loud" night to a "normal" night. of section 4.1.1 Noise Data The difference in closing times makes individuals bar-hop throughout the night, leading to large groups of people on the streets. Besides closing times, some nightlife establishments have outdoor tables, standing room to smoke, and lines to get into their clubs that block pedestrians from walking on the sidewalk.

Street	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Vestergade	23:45	0:10	23:12	0:48	2:12	2	23:12
Studiesstrade	0:12	23:43	24	23:20	0:20	23:25	0:00
Sankt Peders Stræde	21:40	21:30	2:00	22:30	21:30	23:08	20:50

Figure 12: Medium Closing Time on Each Street in Norre Kvarter

Street	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Vestergade	2:00	3:00	3:00	5:00	5:00	5:00	2:00
Studiesstrade	6:00	6:00	6:00	6:00	8:00	8:00	6:00
Sankt Peders Stræde	24:00	24:00	24:00:00	2:00	2:00	2:00	23:00

Figure 13: Latest Closing Times on Each Street in Norre Kvarter

4.1.3 The Role of Alcohol in the Nightlife

After interviewing Martin Gyldstrand, a special consultant for the Culture and Leisure Administration, at the Municipality, he provided us with several documents pertaining to the nightlife problem. The documents highlight key aspects of the noise and waste problem.

4.1.3.1 Density of Late-Night Alcohol Licenses

Figure 14 maps out the nightlife establishments in Copenhagen (14a) and focuses on Indre By (14b). Each colored dot represents either a restaurant, bar, club, or other place that has a permit to close late in the night, or early in the morning. The different colors represent the different closing times that the establishments have a permit for which can be seen in the key. As it can be seen, the map contains mostly black, or 5 AM permits. High concentrations of these licenses are circled with Nørre Kvarter being the lowermost one. This means most of the inner city's nighttime establishments are open all night, creating a continuous party scene. This map can also be analyzed to locate concentrations of the establishments. The large group of black dots in the center of the map is precisely Indre By.

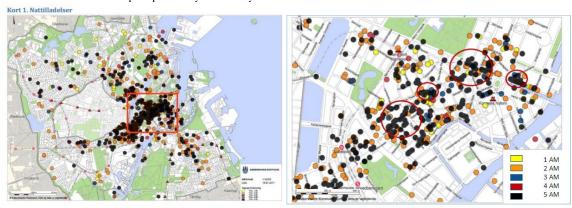


Figure 14a: Alcohol permits in Copenhagen

Figure 14b: Alcohol Permits in Indre By

4.1.3.2 Density of 24-hour Stores Selling Alcohol

Figure 15 illustrates stores where alcohol is sold 24 hours per day and that anyone over the age of 16 can purchase it. With the information gathered from interviews and personal observations we realized that a large contributor to the issue is the sale of cheap alcohol past midnight. The sale of cheap and easily accessible alcohol fuels people to drink on the streets throughout the night contributing to high noise and waste levels. Comparing this analysis to what we gathered in interviews, we think it would be a good idea to restrict the sale of past midnight in retail stores with the goal of keeping people of the streets.

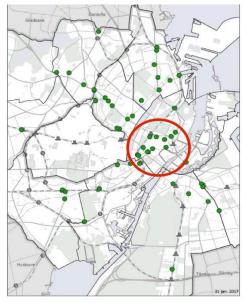


Figure 15: Markets that sell alcohol past 12 am

4.1.4 Nighttime Waste and Behavior

There is a lot of waste left behind in the streets by the nightlife that the city's street cleaners have to pick up. Figure 16 shows street cleaner's activity throughout Indre By on the weekdays and weekends based on GPS information from Kobenhavns Kommune. The activity these street cleaners had is a measure of the trash they cleaned throughout these streets. Green represents low cleaning activity, yellow means medium cleaning activity, and red means very high cleaning activity in that street. The blue circles indicate the nine streets of Nørre Kvarter. On the weekends, the activity of cleaning is high due to the increased amount waste in the streets. This map displayed the need to address the waste problem on the weekends so residents can live in a better environment on the weekends.

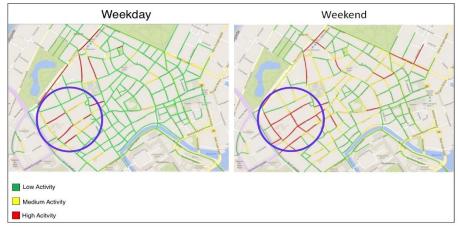


Figure 16: Street cleaners activity weekdays vs weekend

4.1.4.1 Nørre Kvarter's Nightlife Points of Interest

Organizing information from Objective 1 into maps helped to visualize the problem. Mapping the bars and restaurants in Vestergade, Studiestræde, Sankt Peders Stræde, and Larsbjørnsstræde show these streets have the highest density of alcohol serving establishments in the area in Figure 5. Aside from bars and restaurants, we mapped the convenience stores that sell alcohol, since they are also contributing to the problem. This created a visual for viewers to see the contributing locations. In addition to these nightlife establishments, our map shows where the majority of residents are. This gives an idea of the heavily concentrated nightlife scene in Indre By. See Appendix E for these maps.

In order to document a potential source of the waste problem, we also mapped out all the trashcans in the Nørre Kvarter neighborhood. As Figure 17 shows, there are simply not enough trashcans to contain all of the trash and we have highlighted areas that we think could use more trashcans in red. As the rightmost picture shows, these gaps contain nightlife establishments, but do not have any trashcans for any waste produced outside these establishments.



Figure 17: A map containing the trash receptacles in Nørre Kvarter with gaps outlined in red.

Vestergade, which from our observation is the one of the busiest streets in Nørre Kvarter, has only one trashcan along its street. A water fountain located off Vestergade is a popular spot for people to hang out and drink, but by the end of the night it accumulates a collection of empty bottles and cans. Since most of the nightlife happens on the three streets of Vestergade, Studiestræde, and Sankt Peders Stræde, an increase in the number or size of trashcans in the area would help alleviate the waste problem. If the streets had more trashcans, and if the trashcans were bigger, people could have places to discard their trash rather than throwing it on the streets.

4.1.4.2 Nighttime Activity in Nørre Kvarter

Our team took photos and videos of the streets of Nørre Kvarter (Appendix D), to collect a visual representation of the problem. The problem primarily spans from Thursday till Sunday morning going almost all night (2200-0600). Toward midnight trashcans were already full and surrounded by debris. Figure 18 below shows pictures late in the night showing the concentrations of people throughout the street and the overflowing trashcans.



Figure 18: Pictures showing the nightlife impacts along the streets.

Videos taken also showed that cars driving through the streets blasted music and were a source of greater chatter from the crowd. The rightmost picture shows an overflowing trashcan representing that some people do want to throw their trash away, but are unable to.

The map, provided by the Copenhagen Police Department, in Figure 19 shows the total number of police interventions in 2016 counting only Friday nights, Saturday nights, and Sunday mornings (between 23:00-7:00). It is divided into 500-meter squares, and each square displays the total number of incidents within that area for the year. The map is labeled with numbers all around the city, but in the area of Indre By, highlighted by the circle, the numbers are significantly higher than the rest of the city due to its nightlife scene. The numbers of police interventions correlate to the number of incidents and therefore the disturbance these events create in the neighborhood. After our research and observations, we concluded that this is a problem for not only the residents, but for the safety of Copenhagen.

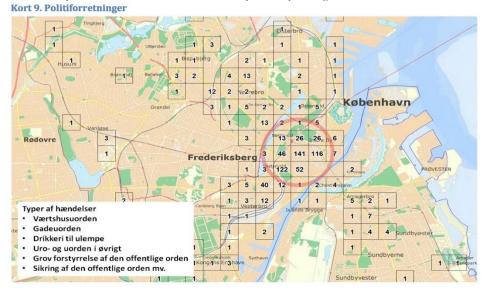


Figure 19: Copenhagen police reports from weekend nights during the times of 23:00-7:00 in 2016

4.2 Community Perspective on Nightlife in Nørre Kvarter

Interviewing individuals from all sides of the night noise and waste issue increased the scope of the problem and gave us valuable opinions to take into consideration for creating recommendations. By speaking with all of these individuals, we were able to gain greater perspective on the issue and the pros and cons of

what was happening every weekend and some weeknights. We were also able to gain more insight on what works and what has not been working in terms of managing noise and waste at night.

4.2.1 Perspective of the Noise Group

Some of the Noise Group members are also residents in Indre By, so they are always trying to find solutions to decrease the amount of noise they are exposed to. For example, some have tried soundproofing their windows, but they explained how even then people's conversations and shouts could be heard from inside their home. One person from the Noise Group led the filing of a lawsuit earlier this year against the municipality containing all the current complaints, and it is currently being processed. The residents also stated that the daytime is pleasant, but the atmosphere changes around midnight when people become drunk. They clean up the trash themselves at 6 am because they care for their community and the city, they even clean up vomit and blood. They also said they are better off doing something themselves than calling the police. One of the residents expressed how she felt in this quote" It should be possible to grow old in this city without being unwanted". These people said that the problem started 10 years ago with the "Get Copenhagen Going" campaign. The Noise Group members think that laws are too lenient and are not strongly enforced with regulating people on the streets or nightlife establishments.

4.2.2 Discontent from Residents

After sending out the survey to the local area newsletter, we got 33 responses from the residents of Nørre Kvarter, whose responses can be found in Appendix C. Most of the residents who answered this survey are over 40 years old and have been living in this area for over 20 years. This is important to note because this issue has developed over the last 10 years so a lot of these residents have experienced this change in nightlife and are not content. Another important factor is that only 18% of the residents indicated that their annoyance of noise was "Slightly" or "Not at All" showing that the vast majority of residents are perturbed by noise at night. 90% of the residents said that the type of noise that annoys them the most is the noise coming from people in the streets reflecting the distinct source of this problem. Another important analysis is with the responses to which days of the week the problem is most prevalent. Figure 20 below represents how the problem is significantly higher on the weekends reinforcing the fact that this problem prevails on Fridays, Saturdays and Sundays. Also noting that there were no responses in the "None" category residents show that this is a problem that needs to be addressed.

What days of the week have you noticed the most waste in the streets? Check all that apply



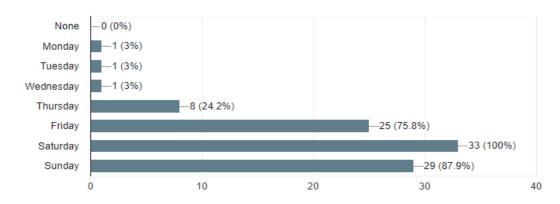


Figure 20: This graph shows how the problem rises throughout the week.

4.2.3 Limitations of Local Authorities in Nightlife

When setting up the interview with the Noise Guard, we got the opportunity to go out with them to see what they do first hand. In order for the Noise Guard to measure clubs and discotheques, they take noise

measurements from the nearest residential building. If the level is above the standard, they enter the establishment and tell them to quiet down. They made it clear that they only can regulate businesses and not individuals on the street, since that is all the enforcement Copenhagen's Environmental Administration can provide them. From interviewing Jesper, a member of the Noise Guard, we got information of city noise regulations, noise zoning, and additional information on the organization. They gave us a handbook with all the regulations for nightlife establishments and a description of the permissions for an alcohol permit.

We also interviewed the vice president of the local police department. This conversation allowed us to understand the police's role in nightlife. The police have several departments, one which is related to this issue and is called "Safe Nightlife," but even they have many other responsibilities in addition to patrolling the streets of Nørre Kvarter. He also provided us with data on noise complaints and statistics on rowdy people in the streets. He explained how they collaborate with the Noise Guard and the bar's security when a certain crowd is disturbing the area. The specific information on this interview is in Appendix C.

4.2.4 The Role of Nightlife Establishment Employees

We were able to interview four separate bouncers from clubs in Nørre Kvarter. We decided to conduct our interviews at several locations as we believed they all had their own perspective to offer us. While each bar employee had his or her own take on the current situation, we noticed several similarities and patterns in their responses. We observed that many bars in the area hire their own security staff as bouncers, while some bars contract bouncers from private security companies. Security from one of these contracted companies wear big blue jackets with "Vagt" (Danish word for "guard") which increases their visual presence outside of these bars. Security guards that work solely for bars are often dressed in street clothes, giving them a less professional demeanor than those working for these private companies. The bouncer of a discount bar named Billy Booze, who was solely employed by this bar, would tell patrons to "go get drunk" or inform them of their ten- two centiliter shots for eighty Danish crowns deal as they walked in.

Every bouncer interviewed said they intervene with rowdy customers on at least a weekly basis, some more than others. However, the extent to which they deal with them varies. Some of the bouncers we interviewed believe that once the customer is off of the bar's property, inside the bar, or on the sidewalk in front of the bar, said customer is no longer their responsibility.

4.2.5 Youth Observations

In addition to going out at night and taking pictures and videos, we wanted to understand the problem from the youth's perspective. We interviewed six young people in total and their responses are documented in Appendix C. We learned that Nørre Kvarter is a very well-known spot to hang out where "drinks are cheap and there are lots of people to hang out with." A lot of the youth frequent the area every weekend and drink a lot for a very little price. When asked about the source of the noise and waste problem a lot of them said that the source was people being drunk on the streets. Half of them also said that they were aware that people lived around here. This is a very interesting point in how the youth know that there are people around them, but continue to scream and shout. But equally many did not know that people lived around here so by raising awareness maybe the attitudes of some of the population will change and thereby reduce noise. We only surveyed a few people, so it is impossible to draw general conclusions.

By interviewing a researcher studying the Roskilde Festival we made a comparison between behavior at the festival to the nightlife in Indre By. The best input we received from the interview was the importance of organizing people since it is essential to improving their behavior. Nightlife establishments working with the municipality can organize individuals into a more responsible environment, while maintaining or increasing economic gains. The interview also brought up the topic of the worst behaved group; studies showed that the high school students were the most misbehaved.

To learn more about the behavior of high school students, we decided to interview the gymnasium director at Ørestad. He explained to us what his school has been doing to improve the behavior, where they teach students that alcohol is not essential to have fun. He also said it was important to target the parents, who agree with youth drinking, which we gathered a campaign that approaches them too would be important.

4.2.6 The Perspective of a Local Government Employee

The interview with Martin Gyldstrand, a government appointed official, provided our team with a plethora of new information on Copenhagen's noise and waste at night. Mr. Gyldstrand has been part of Copenhagen Municipality for two years as a special consultant for the Culture and Leisure administration. He and his administration have been working on a night plan to stop the current expansion of nightlife in Indre By to reduce the effects of night noise and waste. The first step of the plan halts distributing more permits to bars and restaurants, but once an area already is saturated with establishments it gets harder to make a difference. They also plan on increasing the size of the Noise Guard and its frequency of patrols at night. The issue with the Noise Guard is they only have authority to control and measure noise in establishments, festivals, or sanctioned events, they cannot regulate people of the streets or private residence.

In regards to alcohol licenses and late night licenses, he explained that a board comprising of the council head, a police representative, a noise center representative, and one other appointed official determine if an establishment is eligible to receive a license. Establishments with just an alcohol license can only stay open till midnight; but establishments with the additional 5:00 AM license essentially allows establishments to serve alcohol all day and all night. Presently, the renewal process for a license is simply a formality; the administration's secretary will hold a hearing, and if the establishment in question has had severe problems it won't be renewed. Mr. Gyldstrand explained that he cannot recall a time where the license has not been renewed. If there are enough problems or reports of disturbance from the police, then the renewal can be canceled, but the police do not make these reports top priority so the process remains lenient.

Mr. Gyldstrand also said that the problem really is all the people in the streets late at night shouting and throwing trash on the ground. Individuals at night now use spaces of the city differently from their original intention; they can go to a 24-hour store and buy alcohol and then stay outside and drink socially. This directly plays into people loitering on the streets drinking since they can buy cheap alcohol from a store and stand outside. Furthermore, laws prevent people from smoking inside bars so they must go outside onto the streets to smoke. This adds to the number of people loitering on the streets causing disturbances.

To prevent loitering on the streets, Mr. Gyldstrand suggested a new group to only focus on people in the streets. Since the Noise Guard focuses on regulating businesses, this new organization can be similar to a night police force to control crowds and noise. He also talked about a gap in government knowledge about the adverse effects of noise. If a scientific organization like the World Health Organization could show their research to prove that loud noise during sleeping hours has a negative effect on health, the government would be forced to look at this issue with more scrutiny. An extreme solution would be to ban alcohol on the streets, but that simply is not feasible; the nightlife industry should not suffer from changes. Nightlife should be more than drinking, it should be able to bring out the liveliness of the city without hindering the lives of residents.

4.3 Recommendations for Miljøpunkt

In order to develop recommendations for Miljøpunkt Indre By & Christianshavn, we had to first analyze the evidence gained from Objectives one and two. After seeing specific problems in Nørre Kvarter, we were able to come up with an initial list of recommendations. We then narrowed them down by assessing each of their feasibilities through meetings with residents and an appointed municipality official.

We created an initial list of ideas by analyzing collected data and interviews. This list addressed issues that we thought were important such as the need for more or bigger trashcans in order to reduce waste. After grouping similar ideas together, we were able to come up with an initial list shown below in Figure 21. This list represented a preliminary set of guidelines that we, with the help of the local community, thought would be beneficial to reducing some of the noise and waste problem.

Have resident representation on the Licence board	☐ Regulate retail sale of alcohol
目 Have a "Night Mayor" to oversee nightlife activities	■ Work with municipality to implement electric street cleaners during the night
Hold an event for social responsibility/raising awareness at the city square	Implement a universal closing time for drinking establishments
Promote more nightlife events in parks	Fromote social responsibility in High-Schools
El Create a campaign about "Free and Responsible" Copenhagen	Restrict car traffic on "party" streets
☐ Put more/bigger trash cans in the area ☐	
Form a group that is specifically dedicated to patrolling "party" streets	☐ Raise the age to purchase alcohol from 16 to 18 ☐
Strategically place portable urinals around streets	Issue fines to drinking establishments and restaurants for outdoor noises
Fromote the redistribution of bars	Fine bars that don't clean their sidewalks/storefront

Figure 21: A list of the initial recommendations that we came up with as a team.

4.3.1 Residential Preferences for Recommended Actions

To narrow down our list of recommendations, we polled the Noise Group on the feasibility of each idea and obtained a score based on the averages from the response which can be seen in Figure 22. Residents disliked encouraging events in isolated places such as parks because some of them live near parks and it is not really providing a solution to the problem. Portable urinals and making the streets pedestrian only were also seen as an acceptance of the problem and were disliked. One of the more interesting results had to do with the idea of more or bigger trashcans. From the discussion afterwards, we found that residents would be okay with bigger, but not more, trashcans.

	Recommendation	Responses	Score
	Resident representation on licence board	6	4.66
	Night Mayor	8	3.66
	Social responsibility/Raising awareness event	11	4.82
	Nightlife events in parks	11	2.08
	Responsibility Campaign	11	4.91
	More/Bigger trash cans	11	3.06
	Night patrol group	10	4.7
	Portable Urinals	10	2
	Redistribution of bars	11	4.05
	Regulate retail sale of alcohol	11	4.91
	Implement electric street cleaners	9	2.89
	Universal closing time	10	4.2
	Social responsibility in high schools	10	5
Disapproved	Restric car traffic on the streets	10	2.4
Approved	Raise age to purchase alcohol to 18	10	4.6
хрукочей	Fine establishments for noise	12	5
Neutral	Fine establishments for waste	10	5

Figure 22: The results of the poll of the Noise Group

4.3.2 Feasibility of Municipal Actions

In order to gain further insight on the remaining recommendations, we spoke with Martin Gyldstrand again to check the feasibility of the resident-approved solutions for the municipality [Appendix C]. He said that resident representation on the licensing board was already being looked at, but that it would be impossible to grant them the power of a vote since the elected officials already represent the people. He also said that a night patrol group would be a very good start to a solution, but that at the moment they could not afford it in their budget. He also informed us the municipality wanted 24-hour retail stores to limit the sale of alcohol at nighttime, but it would be on a voluntary basis as this kind of regulation would deal with national legislature. In regards to a universal closing time, he said that they could not change the permits that they had already given out but that they could set a closing time for future permits. Also, he said that parliament had tried to vote on issue of the drinking age, but that it had been to reduce the age to buy drinks in

bars from 18 to 16. This item had been dismissed for the time being but could be brought back up. The final thing that we talked about were having rules that establishments must try to control their patrons outdoors and clean up their sidewalks in the mornings. He said they could do nothing about the patrons, but the municipality could add to the licenses a section about cleaning up waste which would be a good start to reducing the waste problem.

5.0 Recommendations

We identified three main phases of recommendations, namely a campaign, regulations, and enforcement. We refer to this three-phase plan as *The Goodnight Plan*. Below, we outline the guidelines that Miljøpunkt Indre By & Christianshavn can follow.

5.1 Conduct a Campaign to Increase Awareness

A campaign will enable Miljøpunkt to address the nightlife noise and waste issues, garner the support of the community, and promote social responsibility, building a proper foundation to initiate change. The themes could include: the health risks linked to noise at night for residents of noisy neighborhoods; the positive correlation between the number of drinking establishments in an area and the number of police interventions in an area, suggesting to the municipality that drinking establishments are catalysts to public disturbances; how the current behavior of youth could lead to strict regulation of nightlife activities by the municipality, which could encourage youth to discuss with their peers how their actions can have negative and unwanted repercussions; and even a simple message of respecting your surroundings and the community of Indre By.

We believe a campaign could help find a balance between nightlife and the wishes of the residents by stressing proper communication and collaboration between residents and nightlife participants, both parties should know and understand what each other's desires are. Communication between law enforcements and nightlife establishments should also be stressed by the campaign, allowing for problems to be dealt with in a more efficient and open manner. Following are possible methods to do this:

- Organize an awareness event outside city hall
- * Add residential representation on alcohol license board
- * Raise awareness about health risks associated with excessive nighttime noise
- Promote educational campaigns in gymnasiums

We have recommendations that could supplement progress during the campaign period. The first is to have an event outside of city hall to raise awareness about the severity of the problem. This event would probably be in coordination with Miljøpunkt, the Noise Group, and local residents and would occur right before a meeting of the politicians. This would help prompt the politicians to start making the regulations we propose below. Another recommendation we have is to have resident representation on the licensing board so residents can get a say in the process. Optimally, they would have the ability to cast a vote in the process, but we understand that this is most likely impossible. Finally, we recommend that social responsibility be promoted in high schools, like what Ørestad Gymnasium is currently doing, promoting events that do not involve alcohol and showing students that it is possible to have a good time without drinking.

5.2 Implementation of Enhanced Waste Collection Standards

Following the campaign phase and before the regulation phase, we suggest an implementation of our recommendations to help solve the waste problem. We believe that the waste problem can be immediately reduced by using our recommendations.

At the moment, there are not enough trash cans on the streets which can be seen on Vestergade particularly. Concentrations of drinking establishments still exist in the gaps of trash cans so we suggest that these gaps be filled even though the residents will not fully agree. Figure 23 below shows the gaps in the area. Each number suggests how many trash cans we believe should be put into the gap based on the number of drinking establishments in the area. Our previous documentation shows that the current trash cans do not have the capacity to hold all the trash that accumulates throughout the night. For this reason, we recommend that the Municipality increase the size of trash cans, at least in Indre By, along with the amount of times they are cleaned out during the night.



Figure 23:A map containing the gaps of trash cans in the street along with how many trash cans we recommend be put there

5.3 Create Regulation for Nighttime Noise and Waste

New regulations in Copenhagen's city legislature could help reduce noise and waste by increasing the presence of quasi-authoritative figures around nightlife areas and decreasing youth's access to alcohol at night. By campaigning for additional regulations and making use of our sponsor's connections in city hall, we believe the following recommendations can be implemented with the help of the politicians:

- * Require uniformed security for 5AM bars
- Give fines for waste/noise outside of bars
- * Regulate the sale alcohol in 24hr retail stores
- * Raise age to purchase alcohol in retail stores
- Introduce bigger/more trash cans
- Institute a universal closing time

We recommend the addition of a bylaw stating that bars must have the presence of a uniformed security employee if they want to keep their 5 AM alcohol permit upon the time of renewal for their permit. This will aid bars in monitoring the actions of their patrons, and will deter patrons from behaving poorly by having an increased visual presence of security. Fines should also be imposed for any bars receiving multiple complaints in a night, and for the presence of waste remaining on an establishment's property or storefront. We have noticed that bars have varying closing times and some stay open all day and all night. As a result, people accumulate in the streets as they move from one establishment to another. A recommendation that we have come up with is to have a universal closing time for all the establishments so that there is a short period of noise then quiet for the rest of the night. We recognize that this could take five years or more and would have to go through the national government for existing licenses, but the result would be less noise and waste at night. We also recommend that the opening of bars at 5 AM be forbidden in the use of a 5 AM permit, by adding another bylaw stating that doing so can result in the suspension or revocation of an alcohol permit. There should be a gap between the 5 am license and the opening of all stores, thereby forcing an establishment to close before it can open again.

There also should be greater regulation for the retail sale of alcohol. Stores located in areas with large amounts of nightlife activity take advantage by remaining open 24 hours with the intent to sell alcohol to nightlife goers at much lower prices than what can be found inside of bars and clubs. This also forces nightlife establishments to try and compete with the retail price of alcohol by providing low priced drink deals, like ten- two centiliter shots for eighty kroner, to their patrons. While undercutting the price of nightlife establishments, 24-hour stores also allow for drinking to continue after the nightlife establishments close but lack to provide people a venue where they can drink. So, we believe it would be in the municipality's best interest to halt the retail sale of alcohol after midnight, but we recognize that this would be a national level effort.

Presently, the administration of culture and leisure is discussing the possibility of making the age to purchase alcohol uniform between retail shops and drinking establishments. We believe that if they raise the age to 18 for both, or lower the age to 16 for both, it will result in a positive outcome. If the age is raised to

18, it would make it more difficult for 16-year olds to gain access to alcohol, and if the age was lowered to 16, it would provide these 16-year olds with a venue to drink instead of leaving them to drink in public.

5.4 Introduce Enforcement to Control the Nightlife

In order for the result of the laws to be seen, there must be enforcement so that they are upheld. Our team has found a lack of enforcement not only by personal observations, but from interviews too. The problem is that it is the police's job to regulate noise on the streets, but there are more pressing issues that they must attend to. Therefore, in order for our recommendations to be enforced, we have come up with some alternatives.

- Implement night patrol to control noise and waste
- ❖ Add members to the Safe Nightlife Initiative

The first option is that the Noise Guard be given the authority not only to regulate inside the bars, but also on the streets working with police. Another option would be to assign more officers of the police force to the Safe Nightlife Initiative to solely patrol the streets at night, on foot, so that this is their highest priority. The group already exists, but there are only eight officers for all of Copenhagen so we suggest at least 10 more be added. Both of these options dedicate a group of people to regulate the streets making sure people keep the volume down and streets clean. They do not have to be armed, but they should be given the power to give out fines for people violating the regulations. This sector of enforcement should also be trained in communication skills that can help them interact with and calm down particularly loud or misbehaved individuals without using authority or fines.

5.5 Incentives to Promote Self-Regulation for Establishments

Within the enforcement period we recommend that a way be found to motivate bars to self-regulate, and come to an agreement on what should be done about the issues of noise and waste. This agreement would focus on reducing noise and waste as well as being economically beneficial to the establishments. It would be their job to make sure that people are following the guidelines they set. In this way the bars would have something to gain by enforcing social responsibility. One way this could be done is with a tax deduction from the government for reducing noise and waste in the streets. Alternatively, a universal fine to all bars open at a time of multiple complaints would force all the establishments to enforce social responsibility. Figure 24 is a visual representation of our plan with all its phases.



Figure 24:The overall plan with our recommendations to reduce noise and waste.

6.0 Conclusion

To accomplish the goal of reducing noise and waste at night, multiple solutions will have to be implemented to alleviate the problem, not just a singular method. Over the project's course, our team organized existing data and gathered the community's opinions in order to provide recommendations for our sponsor, Miljøpunkt Indre By & Christianshavn.

Through assessing existing data, we were able to visualize and document the noise and waste created at night in Nørre Kvarter. Since existing noise level data and the data we collected exceeds the zoning limit of 40 dB, residents should campaign that this problem can also lead to health complications. We observed overflowing trashcans and trash scattered on busy streets such as Vestergade. This allowed us to recommend that additional trashcans can be placed on streets that have a high concentration of nightlife establishments while making existing ones larger to contain more trash.

Learning about the perspective of multiple groups of the community shaped the recommendations we created. All of these groups stressed that the main problem group was people in the street that come to the area at night for cheap alcohol and its vibrant nightlife scene. The behavior of these individuals can be shaped from their upbringing or education in a campaign aimed at raising social responsibility. The other part of the solution is regulating the retail sale of alcohol and organizing bars through regulations.

The perspective of our sponsor, residents, and municipality helped to refine our recommendations into three major phases: Campaign, Regulation, and Enforcement. The campaign would push social responsibility of adolescents and raise awareness about the problem to the community in Nørre Kvarter while pushing short term actions such as dealing with the layout and design of trashcans. Following the campaign, regulations can be passed through the local government that would put greater pressure on nightlife establishments to organize patrons; further regulations would regulate the sale of alcohol from retail stores, implement a universal closing time for establishments, give fines for noise and waste, and require uniformed security outside bars and clubs. The final phase is to carry out the regulations through enforcement. Uniformed security can regulate patrons both inside and outside their establishments and a night patrol, comprised of volunteers and the police, that will control people on the streets to reduce noise and waste at night.

With a greater perspective, we saw that there are multiple sides to this problem that need addressing. As a result, collaboration is necessary in order to strike a balance that the residents, the municipality, and nightlife establishments can reach. Even though we put a lot of effort, this problem is larger than us, and the neutral side, Miljøpunkt, should continue to work with the community based on the guidelines we have provided.

7.0 Work Cited

- Aresi, G., & Pedersen, E. R. (2016). 'That right level of intoxication': A grounded theory study on young adults' drinking in nightlife settings. *Journal of Youth Studies, 19*(2), 204-17. doi:10.1080/13676261.2015.1059931
- Barry, A. E., & Goodson, P. (2010). Use (and misuse) of the responsible drinking message in public health and alcohol advertising: A review. Los Angeles, CA: SAGE Publications. doi:10.1177/1090198109342393
- Becheruci, Maria., Pon, J. (2014). What is left behind when the lights go off? Comparing the abundance and composition of litter in urban areas with different intensity of nightlife use in Mar del Plata, Argentina. Waste Management Journal, ScienceDirect.
- BBC News(2015). *Mayo: Free lollipops are 'gobstoppers' for late night revellers.* New article from: http://www.bbc.com/news/world-europe-35053425
- Bøhling, F. (2014). Crowded contexts: On the affective dynamics of alcohol and other drug use in nightlife spaces. *Contemporary Drug Problems*, 41(3), 361-392. doi:10.1177/009145091404100305
- Bruce Berg and Howard Lune (2017). Qualitative Research Methods for the Social Sciences. Textbook, *Pearson, 9th Edition*.
- Briggs, D., Gololobov, I., Ventsel, A. (2014). Ethnographic Research Among Drinking Youth Cultures: Reflections From Observing Participants. Research Paper: http://dx.doi.org/10.7592/FEJF2015.61.youth_culture
- Calafat, A., Juan, M., & Duch, M. A. (2009). Preventive interventions in nightlife: A review. *Adictiones, 21*(4), 387-413. doi:226 [pii]
- Christian, W. Danish Youth Under Pressure to Drink Alcohol. Copenhagen Post, 10 July 2015.
- "Danish Government and Politics." Representative Office of Denmark, ramallah.um.dk/en/about-denmark/danish-government-and-politics/.
- Demant, J., & Krarup, T. M. (2013). The structural configurations of alcohol in denmark: Policy, culture, and industry. *Contemporary Drug Problems*, 40(2), 259-289. doi:10.1177/009145091304000206
- Demant, J., & Landolt, S. (2014). Youth drinking in public places: The production of drinking spaces in and outside nightlife areas. *Urban Studies*, 51(1), 170-184. doi:10.1177/0042098013484532
- European Green Capital (2013). Copenhagen European Green Capital 2014. Paper, European Union.
- Friese, B., & Grube, J.. (2011). Youth drinking rates and problems: A comparison of european countries and the united states. Paper, Pacific Institute for Research and Evaluation.
- Guides, R., & Safari Books Online. (2014). Pocket rough guide copenhagen (1st ed.). New York; London: Rough Guides, Limited.
- "How Do I Apply for a License to Have Outside Seating, Advertising Boards and Product Displays?" International.kk.dk, The City of Copenhagen, international.kk.dk/artikel/how-do-i-apply-licence-have-out-side-seating-advertising-boards-and-product-displays.
- Järvinen, Margaretha, and Jeanette Østergaard. "Young Adults, Drugs and Alcohol (YODA) a 10-Year Longitudinal Study." Department of Sociology, University of Copenhagen, www.sociology.ku.dk/research/research_projects/current-projects/yoda/
- J. M. Barrigón Morillas, V. Gómez Escobar, G. Rey Gozalo, F. J. Carmona del Río, R. Vílchez-Gómez, J. A. Méndez Sierra, M. Mellado Narciso (2010). Study of the Noise Associated with Night Leisure Activities in the Caceres City. Inter noise 2010.
- Læssøe, J., & Öhman, J. (2010). Learning as democratic action and communication: Framing danish and swedish environmental and sustainability education. *Environmental Education Research*, 16(1), 1-7. doi:10.1080/13504620903504008
- "Legislation." Folketinget, Thedanishparliament.dk, 4 June 2017, <u>www.thedanishparliament.dk/About the Danish Parliament/Tasks/Legislation.aspx.</u>
- Liu, M., Huang, X., & Xue, G. (2016). Effects of double layer porous asphalt pavement of urban streets on noise reduction. *International Journal of Sustainable Built Environment*, *5*(1), 183-196. doi:10.1016/j.ijsbe.2016.02.001

- Matthew Easteal, Simon Bannister, Jian Kang, Francesco Aletta, Lisa Lavia, Harry Witchel (2014). Urban Sound Planning in Brighton and Hove. doi:10.13140/2.1.2772.0964
- Ministry of Environment and Food of Denmark: Environmental Protection Agency. (2013) Retrieved from http://eng.mst.dk
- Noise annoyance in the Inner City of, & Copenhagen. Noise annoyance in the inner city of Copenhagen
- Pantazi, Chloe. "The 15 Best Party Destinations in Europe." Business Insider. Business Insider, 03 Aug. 2016. Web. 29 Apr. 2017.
- "Permits and licenses" International.kk.dk, The City of Copenhagen, http://international.kk.dk/artikel/permits-and-licenses
- Petrescu, N. (2008). Loud music listening. McGill Journal of Medicine: MJM: An International Forum for the Advancement of Medical Sciences by Students, 11(2), 169.
- Kavardzhikova M., Mageswaran A., Scarlatti A., Smits B. (2016). *Nocturnal noise exposure in studiestræde, copenhagen.* Acoustic Technology, Department of Electrical Engineering, DTU.
- Pitta, D. (2012). Journal of consumer marketing Emerald Group Publishing Limited.
- Renouf, N. P. T., ebrary, I., General Reference Center Gold, Popular Magazines, Hospitality, Tourism and Leisure Collection, & General OneFile. (2007). *Copenhagen and the best of denmark alive* (1st ed.). Edison, N.J: Hunter.
- Roberts, M. (2015). 'A big night out': Young people's drinking, social practice and spatial experience in the 'liminoid' zones of english night-time cities. *Urban Studies*, *52*(3), 571-588. doi:10.1177/0042098013504005
- Roberts, M., Turner, C., Greenfield, S., & Osborn, G. (2006). A continental ambience? lessons in managing alcohol-related evening and night-time entertainment from four european capitals. *Urban Studies*, 43(7), 1105-1125. doi:10.1080/00420980600711423
- Rødgaard, M. (2017a). Noise-ridden residents will sue the municipality :: City newspaper. Retrieved from https://www.cityavisen.dk/stoejplagede-beboere-vil-laegge-sag-an-mod-kommunen/
- Rødgaard, M. (2017b). Politicians will strengthen control and visibility in the nightlife:: City newspaper. Retrieved from https://www.cityavisen.dk/politikere-vil-styrke-kontrollen-og-synligheden-i-nattelivet/
- Rychal, L (2015). Copenhagen swamped by rats. Article, CPH Post.
- Solano, Daniel. *Noise Annoyance in the Inner City Copenhagen*. Retrieved from http://a21.dk/wp-content/up-loads/2016/07/Project-final-report Daniel.pdf
- "The Technical and Environmental Administration." International.kk.dk, The City of Copenhagen Website. https://international.kk.dk/institution/technical-and-environmental-administration
- Turner, R. (2015). Travel and Tourism: Economic Impact 2015. Paper, World Travel & Tourism Council.
- Tutenges, S., Jæger, M. M., & Hesse, M. (2012). The influence of guides on alcohol consumption among young tourists at a nightlife resort. *The American Journal on Addictions*, 21(s1), S76. doi:10.1111/j.1521-0391.2012.00291.x
- Vibeke Asmussen, Sébastien Tutenges With contributions Karen Elmeland, Mads Uffe Pedersen, Charlotte Siiger, & Leif Vind. Rapid appraisal on alcohol consumption, drinking behaviour and related problems in copenhagen
- Volpe, L. (2016). Stop trashing your city, copenhagen residents! Retrieved from https://www.thelo-cal.dk/20160630/stop-trashing-your-city-copenhagen
- World Health Organization (2009). Night noise guidelines for europe. Paper, WHO.
- City of Copenhagen, Culture and Leisure Policy 2016-2019. https://www.kk.dk/sites/default/files/up-loaded-files/kultur- og fritidspolitik til web engelsk.pdf

Appendix A: Interview questions

A1. Director Bech Interview Questions

- 1. What funding is available?
- 2. What can you tell us about the effectiveness of existing laws?
- 3. What can you tell us about the competence of local law enforcement?
- 4. Who can we contact from the different groups? (Youth, Residents, Bar employees, Noise Guards, Noise Group, Past Researchers, Police and Politicians)
- 5. Are street cleaners a viable solution?
- 6. What input do the politicians have on this matter?
- 7. What is your perception of the the noise level? (circle one) High, moderately high, medium, moderately low, low

A2. Interview Questions for Residents

- 1. Do you live in Indre By?
- 2. How long have you lived here?
- 3. How far away is the nearest drinking establishment from your home? What is your perception of the the noise level? (circle one) High, moderately high, medium, moderately low, low
- 4. Are you annoyed by nighttime noise? (circle one) Highly annoying, Moderately annoying, Mildly annoying, Occasionally annoying, Not annoying
- 5. What nights of the week do you find noise most annoying? (Circle as many as apply) M,T,W,Th,F,Sa,Su
- 6. What types of noise do you find annoying? (List all)
- 7. Does the noise keep you up at night? If so, how often?
- 8. Is their trash outside your home when you wake up? If so, who picks it up?
- 9. Can I ask how old you are?

A3. Survey for Residents

- 1. What street do you live on?
- 2. How old are you?
- 3. What do you do for a living?
- 4. Thinking about the last couple of weeks, when you are at home in the evening and at night, how much does noise from the street bother, disturb or annoy you?
- 5. Thinking about your previous answer, how much does noise in the evening or at night bother you from a scale of 1-10 with 1 being not at all and 10 being extremely?
- 6. What type of noise annoys you the most? Check all that apply
- 7. How long have you lived in Nørre Kvarter
- 8. How far away is the nearest drinking establishment from your home?
- 9. Thinking about the last couple of weeks, how much does waste from the street bother, disturb or annoy you?
- 10. What days of the week have you noticed the most waste in the streets? Check all that apply
- 11. Who usually picks up the waste on the streets?

A4. Interview Questions for Drinking Establishment Owners/Employees

- 1. What time does your establishment close?
- 2. What type of bar license do you have?
- 3. What time do you stop serving drinks?
- 4. Are any of them your customers?
- 5. Do you regulate the behavior of customers outside? If so in what way?
- 6. How often do you have to deal with extremely rowdy customers? If so how?
- 7. Have you ever been noted or fined due to noise complaints?
- 8. Do you take the residents around you into account when your customers go outside to smoke?
- 9. Do you pick up trash in the morning?
- 10. What is your perception of the noise level? (circle one) High, moderately high, medium, moderately low, low

A5. Interview Questions for Youth

- 1. Where are you from?
- 2. Why did you come to this area tonight?
- 3. Are you part of a group of people? If so, how many people?
- 4. How many establishments have you visited?
- 5. What time did you get here? Did you drink before going out?
- 6. How often do you come here?
- 7. How many drinks have you had? How much did you spend?
- 8. Do you consider yourself respectful of the people living around you?
- 9. Where do you think the trash on the streets come from?
- 10. What is your perception of the noise level? (circle one) High, moderately high, medium, moderately low, low

A6. Semi -Structured Interview with Noise Guard

- 1. Where do you work? Nørre Kvarter or all of Copenhagen?
- 2. How many complaints do you get? What types and what days?
- 3. At what times does the noise begin? end?
- 4. What do you do when you receive a complaint?
- 5. What happens to a complaint if you are not open?
- 6. Have any solutions been tested? Soundproof windows?
- 7. What times do you work?
- 8. What time is noise the loudest?
- 9. What do you think is the root of the problem?
- 10. What fines or regulations currently exist?
- 11. Are these regulations enforced? How much?
- 12. Does the government to anything about this problem?
- 13. Street Schedule?
- 14. What is the maximum noise level in Nørre Kvarter? Are there noise zone level?
- 15. Do you know about kbhkort.kk.dk? Do you know if it is outdated? Who creates this?
- 16. Zone levels..
- 17. What is your perception of the noise level? (circle one) High, moderately high, medium, moderately low, low

A7. Semi -Structured Interview with Previous Research Student

- 1. Can you tell us a little bit about your project? Why it began?
- 2. What year was that project published in? June 20, 2016
- 3. Would you mind sharing your thoughts on the noise problem?
- 4. Where did you record the noise measurements? address?
- 5. What do you think is the largest noise contributor?
- 6. What is the "other" in blue?
- 7. What software did you use to make the graphs?
- 8. Is it possible to use some of your raw data for our project?
- 9. How did you interview people? Random?
- 10. What kind of responses did you get when asking how annoyed people were? How did you use input these responses as data?
- 11. Have there been any new developments recently?
- 12. Do you think there are any possible solutions?
- 13. Do you have any suggestions for our project?

A8. Semi -Structured Interview with Noise Group

- 1. How long has this group existed?
- 2. How many people currently are a part of this group?
- 3. What does your group do? Why did it start?
- 4. How did you become a part of this group?
- 5. What previous efforts have been made to deal with this noise problem?
- 6. Do you reside in Nørre Kvarter? If not, where? * inner city , high end, as
- 7. Do you have noise at night time around here?
- 8. Are weekdays ever a problem? If so, which are the worst?
- 9. Do you ever contact the noise guard? If so, how often?
- 10. Is the problem consistently at nighttime establishments or are apartment parties also a problem?
- 11. What do you think about Youth's behavior? *
- 12. What can you tell us about the municipality's input on this matter?
- 13. Do you have children? How old..? *
- 14. Is it possible for street cleaners to come at night to deter people from loitering?
- 15. Do you know more about the schedule for street cleaners?
- 16. Can efforts from other cities to reduce noise be effective in Copenhagen?
- 17. What do you see as a feasible solution to this problem?
- 18. What is your perception of the the noise level? (circle one) High, moderately high, medium, moderately low, low
- 19. Why is Copenhagen the most happy country in the world?

A9. Semi-Structured Interview for Government Official Culture and Leisure Administration

- 1. What is your position in the Cultural and Leisure Administration?
- 2. In regards to nightlife what duties does this involve?
- 3. Are you aware of the night scene and the noise and waste problem?
- 4. Who gives out the licenses?

- 5. Do you have records of noise complaints?
- 6. Why does the city of Copenhagen allow for such openness in respect to alcohol?
- 7. We have interviewed some local residents, they have a perception that this is out of hand and that the youth are crazy, they say it comes from Scandinavian ancestors and bad parenting, what do you think of this?
- 8. Do you think Copenhagen's nightlife is out of hand versus other nightlife lively cities in europe?
- 9. Do you have any ideas as to how this can be controlled?
- 10. In the US people are not allowed to drink on public premises, what is you opinion on this?
- 11. Residents blame the municipality because they are too lenient, why do you think this is?
- 12. Do you know it is a health problem? 2 years ago the health department sent a message to the city saying noise has health effects, scientifically proven long term effects. They ensure Denmark 500 people yearly are dying from directly noise related issues.
- 13. What do you think youth's behavior is like at night?
- 14. Do you have children? How do you educate them about social behavior and respect?
- 15. Now that election are coming up, do you think it is possible to call politicians attention respect to this issue?
- 16. We are trying to get an interview with the local police to hear their perspective on this issue. Is there anyone you can contact us with?
- 17. How high do you think the noise level is: High, moderately high, medium, moderately low, low
- 18. Why do you think Copenhagen was the most happy country in the world?

Appendix B: Sponsor information Miljøpunkt Inner City and Christianshavn

Address: Regnbuepladsen 7, St. Tv. 1550, København V, Danmark

Telephone: 1-45-33-93-2121 (USA to DK)

Website link: http://a21.dk/

Appendix C: Interview Answers

C1. Director Bech Interview

What funding is available?

We do not have a set budget, but it is within reason. For example, she is willing to buy lollipops for us.

The effectiveness of existing laws.

Currently, many do not know the extent of the problem as the politicians do not live in the city. Also, the local residents care about their surroundings, so they pick up the trash in the morning removing evidence of the problem. There are no laws restricting drinking or establishments. Permits are given out, but some go all the way through the night essentially giving the establishment the ability to never close.

The competence of local law enforcement

The police do come when called but people usually leave before they arrive.

What connections (who and where)

Marianne has many contacts from working at Miljøpunkt and previously working in the political system. She also has previous project teams that have stayed and are currently working on the problem. For example, there is a separate Noise team that is currently working on the same project with a wider network that is more than willing to work with us.

Street cleaners noise

When the topic of street cleaners as a solution was brought up, she talked about previous attempts to set that in place. Apparently, there was too much noise making the solution basically negated. Advances from then have made electric street cleaners possible which could solve the problem.

Political questions

The Parliament meets biweekly to discuss topics. This is a good way to reach the politicians with ideas. 2017 is an election year so politicians will be especially receptive to the public right now which is perfect to address the noise problem.

C2. Interviews of Residents

Marietta and Torr

Talking about project

Noise and waste problem is real problem. Neighbors go out in the morning to clean up trash.

Marietta wakes up all the time while Torr is fine by taking out hearing aids

Sleeps around 2 since noise is so bad needs time to calm down

They have lived here since March 1998, lived above before so has always lived around here

Vestergade is the worst. Side road channels noise so noise from Vestergade transfers everything over and throws it into courtyard.

Space sound phenome closed space sound travels upwards and it increases the narrower the street

Number 1 most annoying sound is Gay bar across the street. People come out and scream into their phones with emotion and sound travels upwards.

Not as bad during the week: Sunday and Monday are Quiet, people use up their energies

When municipalities try to clean the streets have man with blower blow trash into street at 6 in the morning then the vehicle street cleaners come through

Street sweepers come at 9 in the morning because protested because coming early is hard when they just got to sleep

Making plans for new nightlife actions

5oclock on get the street cleans

Last bar doesn't close to 8

Solutions Tried

- Tried many different hearings
- Local citizen organization for Nørre Kvarter
- Mariette in local committee to try to get responses from municipalities

- Most politicians trying to run for November race so trying to talk to politicians.
- Chloe talked to politicians different answers based on age and party.
- Most above 40 many above 50, enraged people because got impressions that older people should move out. Not just age because younger people also have to study
- Politicians argue that city should be alive. Argued that daytime is very pleasant, then the atmosphere changes around midnight and becomes drunk
- 14 Studiestræde lot of people standing outside trying to get in or smoke break
- 50-60 young people stand there not supposed to be drinking but they do and more they drink louder they get
- Now allowed to take drink outside with plastic cups or go to local supermarket to buy more to drink
- Moved into neighborhood 1991 really moved into front house 1998
 - Nothing on this side, 2 bars, cozy bar and another both gay bars.
 - Like this until the year 2000
 - People have been living here since 15th century
 - People haven't been moving in recently
 - Started getting worse 2001-2002
 - Politicians started campaign for "Tivolization"
 - Mr Bondam wanted to add to value of Copenhagen and thought the way to do was drinking.
 - Gave out lots of permits for serving alcohol
- Lots of places now where can sell alcohol after midnight
- Not supposed to serve alcohol outside
- 650 people standing outside drinking, Cleo counted one night
- Bars nots allowed to serve outside after midnight
- Give plastic container = not serving them
- 7-11s and Nettos selling alcohol
- Street life not regulated by same as permit giver for bars
- Noise guard can tell people inside the bar to quiet, Police is responsible for streets
- Police distracted with other priorities
- If they call police they tell them off
- Restaurant not doing anything "wrong" since people are outside talking

PROBLEM CAN ONLY BE SOLVED IF PEOPLE AGREE AND COORDINATE

- Better served by doing something themselves than police coming
- Continue complaining
- Better to collect data and send it off in official complaint
- When call police they say might take a look if they pass by. Don't really care about a "little bit of noise" sometimes say shouldn't live in the city
- Can't do anything about inside courtyards
- Whole house shaking during new years party
- Extreme sound levels 140db
- One party gay pride is most awful Really loud music residents usually go out and then come back after
- Several noise sources not only the bars but if could stop the bar it would be easier to tell people that this is not entertainment area

Solution

- Try to create bar clusters without people living too close, some of the islands
- Take some of the pressure
- Should be forbidden to sell very cheap alcohol

Worst thing seen

- Torr: Argue with politicians that they have a responsibility to people that live here and when they
 give out new permits create traffic
- Marietta: People yelling really loud in streets. Disturbs sleep. People standing outside in front of your door so feel like sitting inside of prison. Someone kicked in gate to pee in the courtyard. Disregarding living quarters. Wouldn't do it in front of own families door. Behavioral approach. How do we get into their conscience and make them see that its not something they would do if they lived here. Area changes and is not as appealing as all. This neighborhood lives off of its originality but that changes at night. Prefer that the area stay the same. People around here are quite tolerant

Trash

- Not quite as bad as in front of cleos. Closer you get to the cross street the worst. Go out around 830 and collects stuff off the street. Hates how cigarette butts get in between tiles. Blowers can get some but usually not all. Cleo has it the worst. Even has to clean up blood from fight and didn't report to police since drug related. That's when it gets scary.
- Trashcans are small and always full.
- Cleo went to Japan where no trashcans because people take trash with them. No one drops trash in the street
- Matter of attitude. What do you want city to be like. Get into conscience that it is also there city and want to keep it the same
- When people tell others that they dropped trash they get cussed at and flipped off
- Neighbor rented out his flat in Airbnb type thing and doesn't sort trash. People need to be brought up to be considerate of where they are living. Need to change attitude to be more focused on behavior because most people don't care.

Do young people live around here

- Yes good mix. Sons and daughter of people living around here try to get flats because they like it around here. Usually around mid 30s 40s.
- Front buildings get it the worst. Courtyards are not as bad but still has the problem.
- Gave us mail of some people in 20s coming here for college who lived in dorms for 4 years and could tell us about the problem
- Police can be reasonable people but do not focus on nightlife. Shootings in Nørrebro much
 more pressing. But this is pressing issue that is expanding throughout the week and the issue is
 not going away
- Garbage is an attitude problem. People peeing in the streets. Not really nice for people living there.
- At the end of the day, try to get the youth to start caring about the people around them and the city that they are living in. This is most concentrated area should be more respectful. Huge difference between 3pm and 3am. Sometimes surprise people that there are residents upstairs. Get people to realize the consequences of their actions
- Not against things going on in the street people should just care about their surroundings more. If complain to people making noise they say if you don't like it here why don't you move.
- Residents getting angry and don't wanna be forced out of a place that they love. It should be possible to grow old in this city without being unwanted.

• Her own guests are being annoyed Thursday Friday and Saturday. Left on Monday. Waking up at 4-5 in the morning. When you rent a big flat like that you should be able to enjoy it.

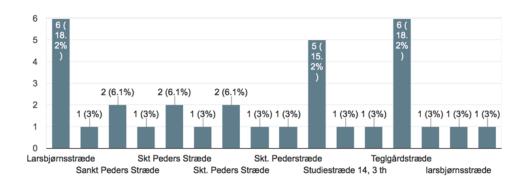
Perception on the noise level

- Torr: High but in bursts. Sunday 10am to Thursday 10am. 8 in the morning garbage being picked up. Cobblestones make noise when being cleaned.
- Mariette: Pull garbage containers out over cobblestone of the courtyard and that makes noise. So try to move it to 730-8 in the morning. Last week people came earlier at 6. When they come earlier you wake up earlier. Crushing garbage in trucks is really loud. 7:30-10 trucks delivering food and beer and coolers. Mondays are usually the days for that but usually up and running by that time. Can't do anything about that. But at that time if hadn't slept during night you cannot rest. Afternoon is bit more quiet. People sit in café and enjoy. Pleasant atmosphere. Thursdays Friday Saturday 10pm until 7-8 in the morning.
- Residents look forward to Sunday because that's the only day that you can have peace during the weekend. If people make noise on Sunday people get angry.
- Some people have weekend houses and goes away. Don't know if politicians expect that people are rich enough to go away during weekends.
- Shouldn't be necessary. People go away during the entire summer which is bad.
- Torr: Noise is unavoidable the main problem is the attitudes. If they start thinking a little more about others and not about themselves, things will get better
- Mariette: Trash is everything from glass to plastic to coffee and waste. Stuff smashed up. Cigarettes, Burger King
- The problem is not only how to make people have a conscience but also keep the conscience while they start getting drunk.
- Expect us to come up with new ideas for people to try besides complaints. Something they could do to attract the attention.

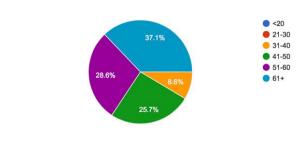
C3. Survey for Residents

What street do you live on?

33 responses

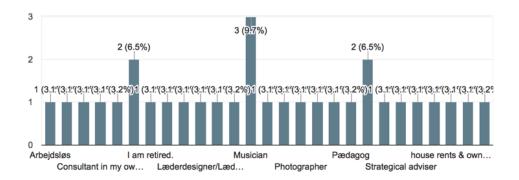




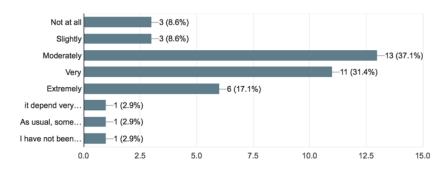


What do you do for a living?

31 responses

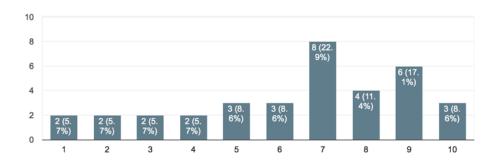


Thinking about the last couple of weeks, when you are at home in the evening and at night, how much does noise from the street bother, disturb or annoy you?

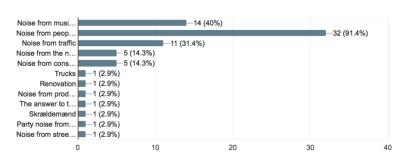


Thinking about your previous answer, how much does noise in the evening or at night bother you from a scale of 1-10 with 1 being not at all and 10 being extremely?

35 responses

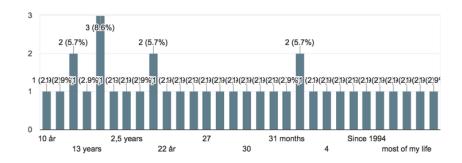


What type of noise annoys you the most? Check all that apply.



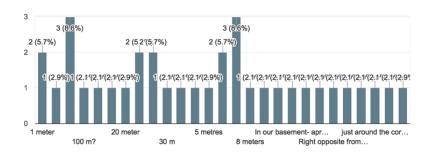
How long have you lived in Nørre Kvarter

35 responses

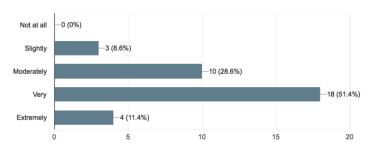


How far away is the nearest drinking establishment from your home?

35 responses

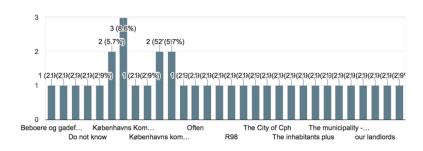


Thinking about the last couple of weeks, how much does waste from the street bother, disturb or annoy you?



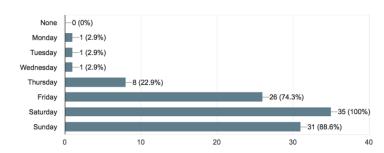
Who usually picks up the waste on the streets?

35 responses



What days of the week have you noticed the most waste in the streets? Check all that apply

35 responses



C4. Drinking Establishment Owners/Employees Interviews

The locations of these interviews included a two story club called the Tørst bar, a discount bar known as Billy Booze, a smaller gay bar called the Cosy bar, and a gentleman's club called the Angel's Club.

Angel club doorman

1. What time does your establishment close?

Tuesday at 5, Weekends till 7

- 2. What type of bar license do you have? 8am I believe
- 3. What time do you stop serving drinks? About a quarter to close
- 4. Do you regulate the behavior of customers outside? If so in what way? Not really, it's hard to conduct drunk people and once they are off of our sidewalk they aren't too much our problem

5. How often do you have to deal with extremely rowdy customers? If so how? Only ever so often. This is a gentleman's club so we tend to have a better behaved clientele

6. Have you ever been noted or fined due to noise complaints? No

- 7. Do you take the residents around you into account when your customers go outside to smoke? We have a smoking section inside and just about everyone smokes in there
- 8. Do you pick up trash in the morning? No, we don't allow drinks outside and the city does a well enough job
- 9. What is your perception of the the noise level? (circle one) High, moderately high, medium, moderately low, low Moderately high
- 10. Are any of them your customers? I suppose some could be but most aren't

Billy Booze Bouncer

1. What time do you close? We are open 8pm to 5am

- 2. What type of bar license 6am license
- 3. When is last call? Quarter before close
- 4. Are any your customers
 Yes Some could be customers
- 5. Do you try to regulate customer behavior Try to quiet them down
- 6. How do you intervene

Talk and explain about neighbors the main noise issue is people driving by playing loud music

7.How often do you interven Every night

- 8. Have you ever been fined or noted due to noise? Haven't been find or aren't told if they have been
- 9. Do you take residents into account when your customers go to smoke outside People smoking has been a problem
- 10. Do you pick up trash in the morning Most trash ends up in trash bin and the rest the city picks up, we pay taxes so the inner city cleans

11. What is your perception of the noise level Varies on the night medium high in the summer

Cosy Bar

1. What time does your establishment close?

Tonight(tuesday) we'll be open till 6am, The weekend we close at 8am

2. What type of bar license do you have?

5 am license, but we do tend to close a little later than this, just giving the people a place to go when they still want to party

3. What time do you stop serving drinks?

Last call is 10 minutes before close

4. Do you regulate the behavior of customers outside? If so in what way?

In a way yeah, but you can't to everything about everyone

5. How often do you have to deal with extremely rowdy customers? If so how? Not too often, every other weekend or so maybe

Not too often, every other weekend or so maybe

6. Have you ever been noted or fined due to noise complaints?

We've gotten a complaint or two but nothing ever of a fine

7. Do you take the residents around you into account when your customers go outside to smoke? You can smoke inside so most of our customers tend to do that rather than leave the action

8. Do you pick up trash in the morning?

Yeah we like to keep our spot tidy, looks good to the neighbors too

9. What is your perception of the the noise level? (circle one) High, moderately high, medium, moderately low, low

Moderately high on weekends but only about medium the weekday nights

10. Are any of them your customers?

Yeah a few, but the majority of noise is from the people just wandering around looking to be loud, can't do much about that now

Tørst bar

We also observed that before conducting our interview with the Tørst bar bouncer, he was helping a young lady around the corner who was sick on the sidewalk by giving her a vomit bag, water, a thermal blanket, and directions to the nearest train station. This bouncer worked for a private security company and was contracted by the venue. The bouncer at Torst bar took it upon himself to help out the young girl half a block away from their property.

1. What time does your establishment close?

Closes around 3 or 4 tonight (tuesday)

2. What type of bar license do you have? Until 6 am close at 5 no later due to cleaning and things

- 3. What time do you stop serving drinks? Normally half an hour to 20 minutes
- 4. Do you regulate the behavior of customers outside? If so in what way? Sometimes, if people are screaming being ridiculous we try to calm down. If it is in the street that is not acceptable but if they are not our customers then we just don't care. Can't deal with everyone
- 5. How often do you have to deal with extremely rowdy customers? If so how? Of course on weekends some people just are loud
- 6. Have you ever been noted or fined due to noise complaints?

No, but every bar had been told to keep it down but it's hard because it's a central street we have two doors the outer door and inner door for keeping the music in

- 7. Do you take the residents around you into account when your customers go outside to smoke? People arent allowed to smoke inside, same with most bars not hard pretty simple that they can't smoke inside give warning if they smoke inside find somewhere else
- 8. Do you pick up trash in the morning?

Usually they have to every morning, we clean outside here, even though its not ours. This plastic isn't ours, can't bring glasses outside and we don't provide plastic unless we are closing. we do sweep but that is really barely any ours out here. The bin gets filled with a lot of rubbish that isn't ours either

9. What is your perception of the the noise level? (circle one) High, moderately high, medium, moderately low, low

You do see that the noise level is medium to moderately high and it is a major street always been like this there is less noise than before this street maybe 5 or 6 years back it is a lot less loud but a lot less as than then but the idiots are loud you do know what you're getting into if you move here you know what you're getting into

10. Are any of them your customers?

Yeah definitely but you can't do anything about some of the screamers, just like hearing themselves I guess

Gave sick female a vomit bag and an aluminum blanket to keep her warm. She was around the corner

C5. Youth Interviews

Interview 1

- 1. Copenhagen
- 2. Drinks are cheap and lots of people to hang out with
- 3. Yes, 2
- 4. 3 bars
- 5. 9:00pm, yes
- 6. Most weekends
- 7. 6 drinks each, little under 200 krowne
- 8. Yes
- 9. People outside screaming and yelling

Interview 2

- 1. Yes. Nørreport
- 2. Because I'm always here
- 3. Yes, 8
- 4. 2
- 5. 23, yes 2 vodka red bulls 4 doubles
- 6. Every day
- 7. 500 kronor don't know how much drink
- 8. Yes,
- 9. From mqe

Interview 3

- 1. UK
- 2. Have fun
- 3. Yes, 8
- 4. 1
- 5. 12am, yes couple of drinks
- 6. Holidays
- 7. 2 drinks, 30 krona
- 8. No
- 9. I don't know

Interview 4

- 1. No, germany.
- 2. To have fun and drink
- 3. 2
- 4. 1 establishment
- 5. 1100 pm, 3 drinks, 100 krona
- 6. On vacation whenever I can
- 7. 3 drinks 100 Kroner
- 8. Sure didn't really know people lived around here
- 9. People on the street

Interview 5

- 1. No, north of copenhagen
- 2. To party!
- 3. Yes, 10 people
- 4. 4 establishments been with my friends
- 5. 830 pm for beer pong tournament, too many drinks
- 6. Just graduated first time on break, red shirt just gonna work, come here not too often
- 7. Too many too much to count
- 8. Yeah
- 9. People being too loud and drunk

Interview 6

- 1. Yes
- 2. To party
- 3. Yes, 5
- 4. 4
- 5. 1000pm
- 6. Every weekend whenever I can
- 7. 6, I don't even know

- 8. People live here?
- 9. What are you talking about

C6. Noise Guard Interview

We were able to go out with the Noise Guard to see what they do at night:

One of the first calls was from a resident with a complaint that a cafe was playing music too loud. Once on scene, the Noise Guard entered the establishment with a noise meter and measured the sound level inside. The Noise Guard explained to the employees of the bar that since it was a single-doored establishment, it is only allowed to play background music at a certain decibel level. The establishment complied with the instructions and lowered the music level to a reasonable value.

C7. Previous Research Student Interview (Bertrand Smits)

Can you tell us a little bit about your project? Why it began?

1. Master in Acoustics. Did a environmental concentration so did this project. Group of 4 people. Context is that lots of complaints so big problem that needed to be documented. Took measurements on Studiestræde in 1st and 3rd floor during a weekday and a weekend day. 4 measurements.

What year was that project published in?

2. June 20, 2016

Would you mind sharing your thoughts on the noise problem?

3. It is a problem people are waking up all the time due to noise

Where did you record the noise measurements? Address?

4. 21 Studiesgade. Did not really remember

What do you think is the largest noise contributor?

5. Depended where you were on the street but a lot about people and construction at night

What is the "other" in blue?

6. 58% data was lost.

What software did you use to make the graphs?

7. Same software. Measure LAq to like 1min to get fluctuation. Higher time more straight, but less time too much data. Took data and plotted it. Made moving average through the graphs then made a threshold to show which peaks were above. This showed what made people wake up. Then plotted both weekday and weekend to show how much lower the moving average was.

Is it possible to use some of your raw data for our project?

8. Doesn't mind but doesn't have all of the raw data. Will send to us.

How did you interview people? Random?

9. Went door to door from one side to another of the street and asked questions. Isostandout software used. Took the data from the noise meter and tried to classify each peak into a category of noise

What kind of responses did you get when asking how annoyed people were? How did you use input these responses as data?

10. More than 50% were quite annoyed with the noise

Have there been any new developments recently?

11. None

Do you think there are any possible solutions?

12. Didn't really focus on that but to soundproof the windows is probably the only sure situation. Everything is pretty old because it is historic so can not really do much. The windows are really bad which should really be changed if possible. Restore windows? Amsterdam night mayor? People in the street to moderate others during the worst hours?

Do you have any suggestions for our project?

13. In order to get accurate data we need to get more licenses on our noise meter. We need to make measurements before and after. We need more measurement. Do many measurements before then provide the solution then many measurements. Give out lollipops to more than one bar. Interview people after provided lollipops and see if change in behavior.

C8. Noise Group Interview (Susan and Helen)

Parks in paris don't allow alcohol around Eiffel tower park

Trashcans are cool

More restrictions and laws

When did the problem begin in this area?

10 years ago, politicians wanted Copenhagen, "Let's have some action in Copenhagen'

Problem has escalated since. Money making machine getting people into this city

The winter is much quieter than when in summer

Out of parks, May through september risk a lot of noise

Park issues

Noise from speakers while people are drinking

Rarely use park anymore, not tempted to go down due to noise

Politicians

Live away from noisy areas

Moving away from here?

Looking to move out, trying to get out of here

Leaving what they enjoy, will miss this area of city

Summer houses, so the escape the problem during the summer

Again, really attempting to get out of city during summer

It's just too loud

Houses

Double pane glass not enough since bass vibrates buildings

Police won't help due to resources

Noise guard

9pm to 3am

Health

Stressful

Alcohol is unhealthy for youth

Heavy consumption of drinks

Bad future for youth due to heavy drinking

Municipality in charge of noise complaints

Plan to regulate the noise and complaints about the nightlife about restaurants and bars

Better cooperation between police and municipality

Police efforts are stretched thin from immigration, etc

Would try to get signs put up in park

Event

Would need more people, won't be effective

Play speaker outside police department

Noise Group history

Letter by doctor wrote about noise

People joined, was small and it growing

Young group joined in 2014

Want to stay here, so they are trying to fight back on noise

Restricted by job, so young people don't have time

Municipality

We understand you, but they don't do anything

Supplied individuals with materials to deter bad behavior

But hard to work with

Want to try to get signs for no loud speakers, no enhanced music

Don't bother the people around

Really for police to uphold the law

Sent documents

Noise produced impacts sleep

'Get better windows' but it won't work

Bring suggestions

App to report discrimination -> modify to noise complaints

Attempted to change laws, but gov't doesn't care

November is an election month

Night patrol (govt)

This year the city has been doing better

Some effort

Up to 60 dB from speaker

Time limit till midnight

Not enough people look at the rules and schedule for noise

Can regulate the "official things"

Bothered by spontaneous noise

Ok with regulated planned events

Trashcans

Filled completely with trash here, overflowing

In Paris they have sunken trashcans so hold lots of trash

How many people currently are a part of this group?

Max 20 during meetings, but more backing exists

Do you have noise at night time around here?

Yes

Do you ever contact the noise guard? If so, how often?

Not really, only at night for official events

What do you think about Youth's behavior? *

Spiractic behavior

Heavy drinking

Kids entering high school

Entering college

Drink themselves sick

Leave all this trash on the streets

Have to get drink in order to socialize

Do you have children? How old..? *

First, where are the parents?

Working, busy doing things

Limited interaction

Leniency with their kids due to lack of seeing them

Spoiled with material things, can't respect others

Lack of consideration

Want to be friends with their children, not parents

Why don't they respect other people?

Make so much noise people don't want to be near each other

Lack of limits again

Parents just aren't stating rules

Given to much authority

Trash hotels in other countries..

C9. Government Official Interview (Martin Gyldstrand)

Been working here for about 2 years, done a lot of research but not a lot on the kids, have talked to many of the restaurants, but not the kids. Just got a plan approved called the restaurant and nightlife pla, it's about stopping the current development and trying to reduce the current harmful effects, first step is to hold back on further regulation but its complicated because once you have a large concentration of bars in one area it's hard to hold back, youth has not been analyzed so it's very interesting

We are very much aware of the problem areas including Nørre Kvarter and gothersgade but it's spreading because those areas there will be no more licenses till 5 o'clock but now it's spreading to different areas, restaurants are not the problem inside it's the people gather outside and crowding outside. Now we see people using the spaces in the city differently, we see people carrying bottles around with them, it's attracting people outside just hanging around having a good time all of a sudden you can have parties all the time slowly you are seeing a picture representing Amsterdam it's causing people in the city carrying kids to school, now the politicians are starting to have a problem. You need certain criteria to sell alcohol but now we're are getting much more critical about it. It's about finding the balance between what we want in the nightlife and what the citizens require which we are trying to restore.

We are increasing our noise patrol that controls all the bars. Only authority to control the noise in the bars and measure the noise from bars and festival. The normal noise from crowding is not their department it's a police matter, but the police don't consider it important enough for them to deal with when there's shootings and what not. But also we are treating the symptoms by increasing cleaning in the streets and adding additional patrolling but now we are trying to make the larger part of the city in here a restricted alcohol practice. But the bars that currently exist can renew their licenses. There is a strong pressure from the inhabitants to do more all the time we have meetings around this table with inhabitants from around the restaurants but we are trying and i think we have made a lot of progress with documentation and what not, what was wrong before was that we could not document anything, during a lawsuit we hired a good law firm. They told us in order to do anything we need to properly document everything. We have different indicators and we have drawn different stats from the police and you can see there is a lot more felonies where it is concentrated which is obvious because more boozing means more crimes. By law you have to consider this when you give permits. We have stopped giving a lot of permits and will keep from giving these permits

Who gives out licenses?

There is a license, board carl christianson is the head and there's a police rep, noise center rep, some other appointed officials usually members of city council and they have to consider each case individually commission to keep open in the night time. If you only hav alc permit you have to close at midnight but you can get another license on top of that until 5 o'clock. If you have the 5 o'clock in principle you can serve alcohol 24/7.

When there is a renewal it is just a formality in every case our secretary will have a hearing, the center of environment will give a case against any place with a lot of problems, same with the police (drug dealing) but it's very seldom that they report anything buts its also what we are trying to do more carefully, more reports on each renewal and the police have a lot of stuff to do so it's not top priority. I cannot think of a single one that hasn't been renewed. Unless it's the subjective things such as not paying taxes but that's because it is in the law that you cannot have debt to the tax collectors.

Why can't Noise Guard stop street noise?

They only address by law what comes from businesses and they have certain standards with noise, smell, and specific standards of what is legal. If you take a measure of a certain bar you have to hold your noise meter and if there is a lot people in front of the bar then the validity is not assured and they won't report anything. It's not about practice and how departments work and what they used to practice and what they think by the law they will do and nothing else, extremely by the book. We can do examinations of noise in the street if we want but it has to be done carefully and by authority or maybe a tech university or tech company and there needs to be measure all around the city and the peaks points. We'd use this data to show to the politicians that there's serious amounts of levels in the streets.only showed restaurants. Politicians don't know about noise in streets. They know because people talk to them but they don't know when all the new areas pop up and it's hard to make a decision that is not legal and on paper. Branches of gov are very careful of them and the cost of that is long processes.

Cultural thing, goes way back in s europe you have different alc culture don't get drunk in public, but in northern countries you get completely pissed. D culture about hanging in parks and having good time you don't need to hide anything. NO politicians want to change that. Could make certain areas dry but people don't want cope to be like that, they want to keep it liberal, don't want to hide their bottles.

Alcohol being sold in grocery stores:

Very diff system in sweden, systembolaget we don't have that. There is def a problem and an awareness about the 7 eleven and netto that are open 24/7 but the liberalization of the closing law they can have open all the time, has an affect when they are so close to the bar area all the time. There's a difference between age for purchase in bars and in stores, should go down to 16 in bars? Or up to 18 in shops? Alc is rooted, in the 80s alc and smoking was common in work place, now this is uncommon. However nightlife and night scene is much more intense.

Health problem 500 people dying a year.

Don't think they have been presented this, they need to be shown how it is a health risk. Old plans haven't even shown how health is at risk. In the new plan we have a chapter called responsible serving. 10 shots 100kr doesn't have any sense for health. There is a lot newcomers, the old bars and restaurants had more interest in hearing the neighbors but the new are much more aggressive idk how you can get data on accidents, maybe records from hospitals or police, if you can get data from different types of alc related accidents.

Some residents blame the municipality

Lenient is, not strict following them up I agree because once you have a permit it usually runs 8 years, you really need to step over the lines to get it taken away. If it's the same bar doing the same thing 3 times it must be lifted to the board again. Because there is no follow up on the different restrictions. If there is no follow up there's no point in making them in the first place 2 thou bars is a lot to regulate. Oh everyone needs a door, that's a lot of resources to check up on. When getting a license it says everything you need to follow to keep it. Most of the bars id assume are doing the right thing and we see that, if someone from the muni come and say something they will do it immediately and be very compliant. But that when we are out there but i don't know if that's all the time. There is no practice of reporting about irregularities. Only when they are being renewed, its not like something really bad can go through if there's things going on with gangs. The residents have been much more down the priority list.

Level Of noise

Really depends on when and where. Places that are very quiet, and maybe you will find 2 guys crossing but there is nothing you can do about that. In court it is very loud but we have very few complaints, maybe because it's hopeless. They complain to police if it is noise in the city. In the bars, they call muni. Everyone knows what is going on.

You have the perspective also of the old guard but they cannot deal with the externalities with that. What's their goal? Shut down city completely? Not reasonable to think that

But people want to live there even with the nightlife. You can find areas just out of here that is very quiet. Can't listen to the most high voices. 40000 people live there only 150 answered our surveys. They are a little cliquey and always are pushing their agenda and have connections. But some might actually like it, making the city lively. But it's finding the balance between keeping the city lively and keeping residents happy

How can we as a municipality do anything about people drinking too much? Its also about the culture and youngster and their parents, we feel that they place a lot of blame on us. But it's difficult to do things about something you can't regulate. Totally open to any suggestions. Some of the rough initiatives have been denied. Ie banning alc in certain places. Maybe it would change something.

We wanted something like that (nightmayor) but in Amsterdam it is very problematic, worse than cope i think, also wanted to have meetings with the seer czar about the 7 eleven and netto. Its ridiculous that they have large packs of breezers and posters, maybe they can be responsible, but they just want to make the money

There's a lot of different components, the law, all the actors, res bars us police, and it's all diff branches so it's difficult, very interesting, but we are on the right way at least to document, but we shall see. Should that be co-financed with bars? Partnership between public?

People out and drunk that have to pee will pee wherever, we could place more mobile toilets, but they don't like that either, because we are accepting something and they don't like the sight of mobile toilets. What about noise from the cars? Could make it a no car zone would you like that? Well... no not

really, accepting the people walking in the streets.

We have increased housing of the streets for vomit, but that's solving a system and these kids drinks like berserks. Maybe this area, and the ones who visit the area are not from cope, they are coming from outside and they do not have the same respect for it as the people that live in the city. Maybe it's working but who knows. 7 eleven has very tiny sticker

C10. Objective 3 Discussion with Municipality

- Residents on Licence board: in processing as an observation post to take part in the process. Won't get a vote, politicians carry the vote, citizens can express opinions
 - Knowledge on how the process works can help with the qualifications of the decision
- Bigger trashcans: trashcans in the ground can hold more trash while remaining small, working on idea
- Night patrolling: everyone agrees with this one, can't find the money for it. Expensive pay. Only police can issue fines; noise guard doesn't have jurisdiction to fine people on the streets. Changing noise guard part of national parliament. Portion of police can be put on duty, occasionally the police do go out and give out fines, but it isn't top priority for the police. Police are completely busy with gang activity in Nørrebro, so they physically cannot do anything now. Can argue that it's their right to uphold the law and to aid citizens. Ongoing process with organizations. They know what to do, but its a big task
- Other solutions: focus on party in the streets than on the bars. No regulation on the streets so no group is actually doing anything. General night patrol, doesn't need to be by police, can tell people to quiet down. Go from 3am till 6am to patrol the streets when its the most busy to quiet down. Noise guard should have more special education to be safer.
- Possible in law to have better security past 12am, its not always enough. Bounces line the streets, but its still crazy. Hired security should have a uniform, can make regulation to allow doorman to be in uniform to show link between municipality and the bars themselves.
- Big problem is the retail stores selling alcohol 24hr for really cheap to 16yr kids. Want them to change policy based on how its the right thing to do. Stores change form on weekends to primarily sell alcohol. Changing the bar age down to 16yrs so they can go into the bars and not stay on

the streets. "Safer" in the bars than on the streets. Bars prices are driven down by retail sale of cheap alcohol.

- Toilets: Accepting the streets that it is a festival.
- Promote redistribution: Cannot just move the bars to another area unless they want to. Again they have a stop on the opening of new bars in the area. Can sell the bar for a high price and move on.
- Universal closing time for bars: Cannot force bars that already have licences to change the time, only when the licence is up then they can only give out 2am licences. Only a violation of the laws can make a bar close earlier against their licence. It cannot be a specific law from municipality, thats a by-law. Individual decision for each case, cannot make widespread and overruling individual cases. Cannot be done legally.
- High school education: completely agrees on events and such
- Age change is off the table at the moment: 16 in retail, 18 in bars.
- Fines from waste or noise on the businesses: very hard to do especially at night with so many people. Completely impossible to actually regulate. It would be to much for police to do, not worth it..
- Bars cleaning: good idea municipality can push action to make that a requirement in their licence. Possibly giving out fines since they are using municipality space.
- Likes the three step Campaign, regulations, enforcement idea
 - Key thing is the enforcement of the regulations. "Always as strong as weakest link", need follow up and enforcement.
 - Organizing bars would be good

Figur 17: Udvikling i antal støjklager, 2015 120 100 80 60 40 20 0 Jan Feb. Mar. Apr. Maj. Jun. Jul. Aug.

Kilde: CMB, 8. september 2015.

Noise complaints per month (Jan-Aug)

Appendix D: Pictures and Videos

 $\underline{https://photos.app.goo.gl/umBGWIqMS0TDtABl1}$

Appendix E: Additional Information, Research, and Recommendations

E1: Noise Complaints

Local authorities keep documentation of all complaints made by citizens. We were not able to obtain these documented records of noise complaints, due to time and privacy issues. We would have liked to compile data based on where the complaints were, what the complaints were about, when the complaints were made, if multiple complaints were made in regards to the same source, and what action could have had been taken about each complaint. With this data, we would have liked to be able to see how local authorities dealt with noise issues when residents feel as though intervention is necessary, as well as how often residents desire intervention.

E2: Data Tables From Municipality

Overview of Data Collection												
Location	High Activity	Pavement Cafes	night permissions	waste	urine/waste	open day shops	party bus	Events	police?	residents	street length	resident per 100m street
Vestergade	х	x	х	х	х	х	х			129(2016)	230	56
Norregade												
Gammeltorv		x	х	х		х	х			8	120	7
Studiestraede										311(15)		89
Sankt Peders Straede										301(15)		85

E3: Moving Average

A moving average takes the average over a period consecutively.

E4: Additional Maps



55 Restaurants of Nørre Kvarter



The 37 Nightlife Establishments of Nørre Kvarter

E5: Link to our Google Map

https://drive.google.com/open?id=1Xl8zCjrW3Fge0zoVElqJ3IfQSO4&usp=sharing