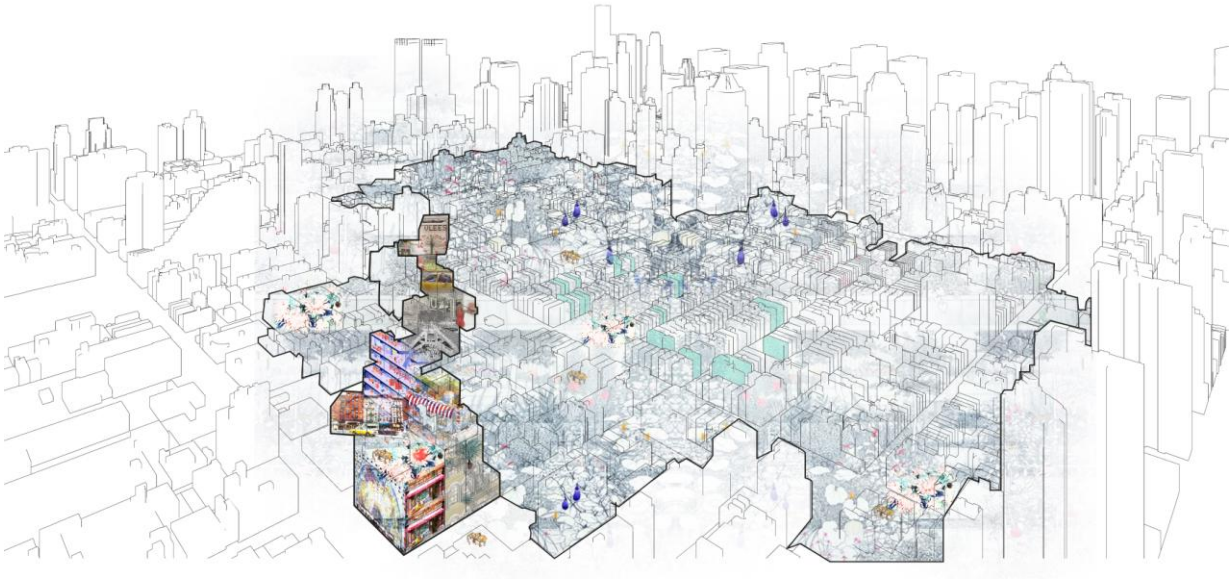
CROSS-DISCIPLINARY RESEARCH AS A KEY TO COMPLEXITY
Social Sciences in Architectural Research

Student
Liubov Viller (4927869)
Chair of Complex Projects, “Complex Projects. New York Midtown”
Thesis “New York Foodscapes”



RESEARCHING NYC FOODSCAPES

Heuristic techniques are seemed to be overlooked by architectural practitioners in general, however, the choice of 'methodology' even if it's unconscious pre-determine the character of gathered information which later results in design. From my observation TU Delft BK offers a range of various studious each of them has a completely different approach. Some methodologies might be radically abstract such as Borders and Territories studio 'Mental Mapping' and thus lead to unexpected design decisions. The awareness towards heuristic techniques helps to a certain degree to avoid confusion in a twisted process of thesis research. In the modern world where access to data and scholar sources is almost unlimited architectural professionals and academics are constrained to use systems of knowledge and coordinates to succeed in their research.

Perhaps one of the most sticking moments of the course was, on a first glimpse, 'basic' notion by Mejia Hernandez J. on what the 'Master of Science' is and the following discussion concerning the acquisition of architectural knowledge.[1] In general, the course helps to realize the significance of professional self-reflection and to raise awareness of my own design/research process. Another eye-opening moment was the lecture by Eireen Schreurs 'Material Culture'. Her analyses of Bibliothèque Nationale de France designed by Henri Labrouste show how much material culture influences the design process and aesthetics.[2] Although Schreurs's research methodology is a very inspiring example I didn't take it into account for my thesis research technique because my research methodology and topic are intended to follow a general approach of Complex Projects studio.

One of the course readings by Tom Avermaete is a reflection on the architect's changing role in relation to the public.[3] The Complex Projects studio encourages graduation students to try on different roles such as a 'planner, organizer, politician, economist, philosopher, strategist, humanitarian'[4] in the attempt to grasp the complexity of contemporary cities and to realize it into a narrative resulting in design. The strong and clear narrative of research and presentation is one of the main tools for communication between an architect and public as well as a base to advocate a certain architectural design.

Location and main guidelines of research are set up by the chair of Complex Project in New York Midtown. A large part of the research is carried out as group work; however, there is a freedom of choosing the individual topic of interest which should be implemented in group strategy and vision. My research is focused on the north-west part of Midtown particularly Hell's Kitchen neighbourhood and investigates the social, political, environmental and architectural change of New York as an urban complexity. My thesis topic is specified as a study of the local community, food deserts and foodscapes in a rapidly changing area along the Hudson River. One part of Hell's Kitchen is in the process of transformation from a historical industrial to residential district another part is currently a vibrant residential neighbourhood however highly affected by gentrification thus threatened by the loss of affordability and distraction of stable local community. Hence, my research question is 'How can food infrastructure be integrated into the residential urban environment of Hell's Kitchen and soften the transition from the industrial past? How can local food manufacturing and distribution create new values for the community as well as provide green public spaces?'

CROSS-DISCIPLINARY RESEARCH AS A REFLECTION OF THE MODERN CITY'S COMPLEXITY

Research methodology applied in Complex Projects studio is rather strict and at the same time, it is a combination of few heuristic techniques. Every stage of research suggests a new role for an architect such as architect-urban planner, architect social scientist and economist, architect-strategist, architect–developer. Through all the metamorphosis of research, one coherent narrative should be created to reflect the complexity of modern cities. The term 'Complex' is deeply integrated into the studio's approach and even the studio's name. And can be understood on many levels, such as working with few disciplines and in different scales.[5]

The first phase can be defined as Quantitative research[6] carried out as a collection and analysis of a large amount of 'hard' data. This research exercise is group work. The data is visualized

as the series of unified and highly precise maps which help to draw verbal conclusions based on the facts and figures. The second phase of research is an individual work and methodology has a completely different character. It is rather Qualitative research[7] where it is 'legitimate' to use 'soft' data and to make interpretations. This part of the research has to be lead by personal motivation and interest however based on the conclusions of previous findings and 'hard' data. Methodologies used in Complex Projects aim for relatively realistic topics and analysis of the current situation in Midtown Manhattan.

My research can be described as an investigation of NYC food systems, every day practices such as grocery shopping in New York and the hidden notion of food and its supply routes in the city which to a certain extent shape the urban environment. The sources used for this research stage is not necessarily a scholar for instance to understand the current social and economic situation in Manhattan the use of hard data might not be enough to render a big picture. Interviews of local community organized on-site, articles in newspapers such as the New York Times, city council resolutions and documents, NYC food metrics or even reports by real estate agencies help to depict the context in full colour. The methodology can be described as studying Social Sciences within Architectural research or Cross-disciplinary research[8] which is multidimensional and includes such fields of knowledge as politics, economy, sociology and history. (Fig.2, 4, 5)

Figure 2. Graphs showing sociological part of research about Hell's Kitchen community. Illustration by Violeta Sanchez Sanchez

According to MSU professor Michael O'Rourke, Cross-disciplinary research 'allows us to meet complex problems with complex responses'. This type of research targets multiple disciplines which supposedly have mutuality. Disciplines have a 'mutual dependence' with each other and have to be understood as an 'epistemic technology'. All elements have a system of interrelation. The key factor of this methodology is integration: 'combining things into a "whole"'. To succeed in this, certain rules have to be established. For instance techniques such as Concept Mapping and Toolbox approach can be used.[9]

Figure 3. Maps and graphs showing quantitative research about urban agriculture in Manhattan. Illustration by L. Viller

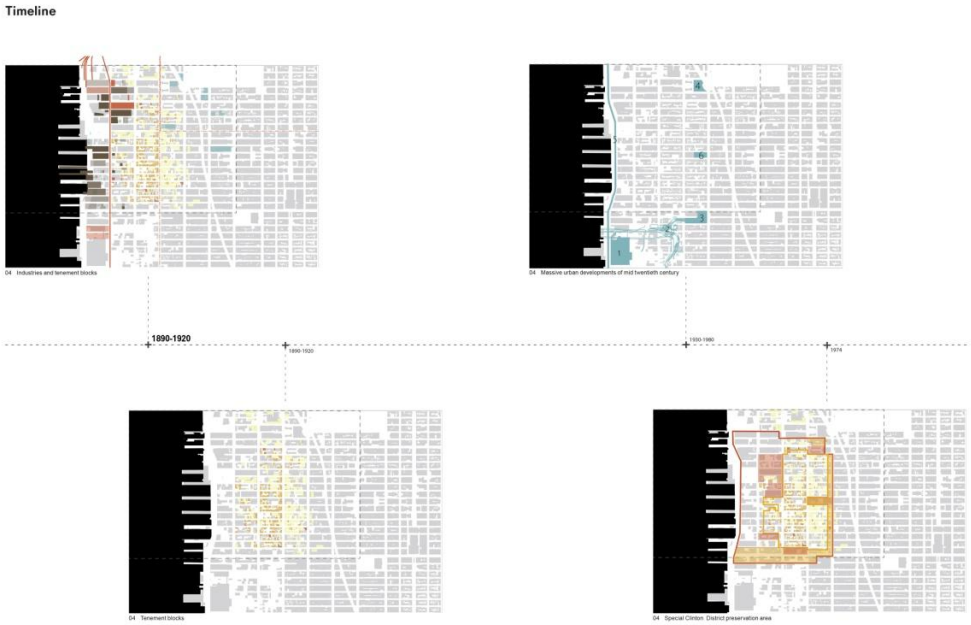


Figure 4. Timeline with maps showing historical part of research. Illustration by L. Viller

Another important factor in Cross-disciplinary research is the choice of disciplines and bibliography. This part is implemented into Complex projects studio strategy and is a study of academic sources in the fields of economy, political geography, social theory such as the book 'Global city' by sociologist and economist Saskia Sassen. S. Sassen describes contemporary social and economic conditions of NYC and mechanisms of global finance and real estate which are essential for understanding Manhattan architecture.[10] Another source of research of Hell's Kitchen community is the book 'Together: The Rituals, Pleasures and Politics of Cooperation' by philosopher and sociologist Richard Sennett. Sennett describes the complex notion of cooperation in American society which

helps to render the cooperation rules and systems within NYC communities.[11] Economic geographer David Harvey in his book 'Condition of Postmodernity' explains how politics and economy influence all cultural processes through the history of the twentieth century. [12] His book 'A brief history of Neo-liberalism' is in a way a parallel to S. Sassen 'Global City' and proclaims the crises of the neo-liberal paradigm. Architectural historian Carol Willis in her book "Form follows finance" describes how the city was shaped due to historical zoning which influenced urban tissue, how economical conditions influenced skyscraper's silhouettes.[13]

Figure 5. Maps and graphs showing real estate market in Midtown Manhattan. Illustration by Z. Zhao

FROM POSITIVISM TO EMANSIPATORY APPROACH

One can say that the use of Social Sciences within Architectural research as a methodology is relatively new. In the Modernist architectural agenda this approach was hardly applicable. Modernist's rhetoric had rather a Positivist character: 'A house is a living machine.'[14] One of the striking examples is Robert Mosses' 'tabula rasa' strategy towards designing NYC. R. Moses 'erased' NYC slums and old tenements block by block cutting through city's existing residential neighbourhoods and replacing them with massive infrastructural objects or modernist convention centers and using top to bottom approach. These drastic urban changes can be seen in today's Hell's Kitchen and Midtown. The revolutionary book "Death and life of great American cities' by Jane Jacobs in 1961 drastically changed the way urbanists and architects would approach their designs.[15] Through emphasizing the significance of ordinary life on the street and analyzing how people use this street J. Jacobs completely transformed architectural thought which triggered the process of evolving new architectural research methods. The shift towards the postmodern paradigm raised awareness to the importance of social issues and the use of Social Sciences in Architectural research and 'humanized' it.

It was a transition from Positivist research methods to Postpositivist. The possibility of studying from actual users of architecture instead of implying 'doctrinaire ideals' was proposed by an influential book 'Learning from Las Vegas' (Venturi, Scott Brown, and Izenour, 1972)[16] Learning from vernacular and sometimes kitschy popular design and landscapes reflected in a change in heuristic techniques: 'It was time, they said, to build for people rather than for Man.'[17] David Harvey in his book 'Condition of Postmodernity' describes postmodern relation with the notion of 'Complexity': 'shift from the kind of perspectivism that allowed the modernist to get a better bearing on the meaning of a

complex but nevertheless the singular reality, to the foregrounding of questions as to how radically different realities may coexist, collide, and interpenetrate.'[18]

Another key factor which influenced such methodology as Quantitative research used in the first part of my thesis is a technological advantage of digitalization. The way big data can be collected, analyzed and visualized can strongly affect design outcome. For instance, the World Game by Buckminster Fuller's was an ambitious idea and a utopian visionary of managing world resources and 'a form of environmental adaptation requisite for planetary survival.'[19] (Fig.6) The World game was meant to deal with resource and energy depletion and distribution, rebalance ecological systems and change the global political attitude towards these issues. B. Fuller intended to use 'supercomputer' for a big data analysis however this experiment was hardly possible at the end of 60-s due to underdeveloped computer technology and his World Game had a form of a simulation game. Modern research capacities of analyzing big data have grown exponentially since 1969. One of the bright examples is the Senseable City Lab by Carlo Ratti at MIT. Ratti says that the new data analyzing technology help us to understand much more about the world we live and strongly influences the design outcome.[20]

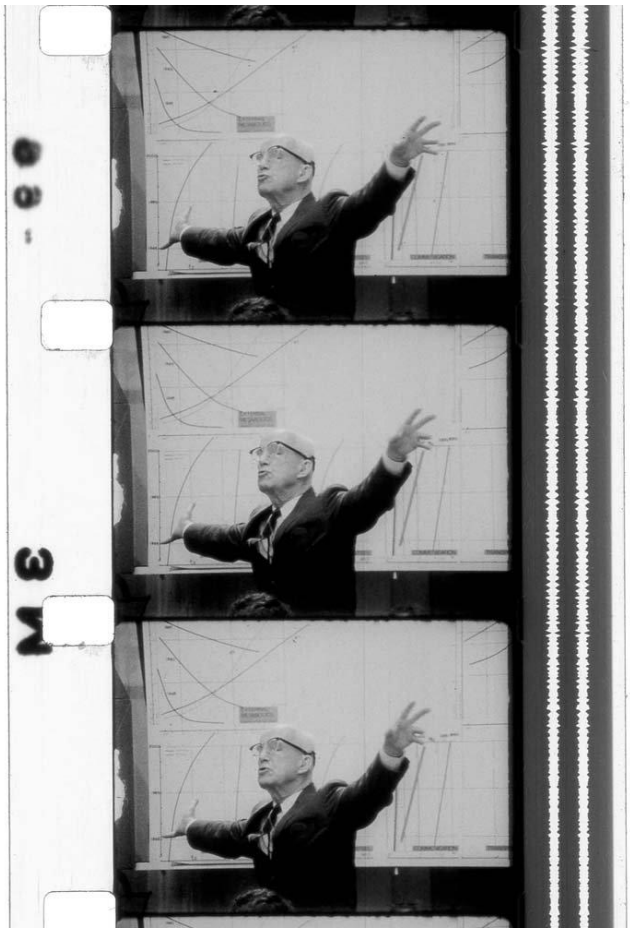


Figure 6. Buckminster Fuller leading World Game Seminar, New York Studio School for Drawing, Painting, and Sculpture, 1969, image courtesy of Alex Matter

New shift in heuristic techniques such as Social Sciences within Architectural research is perhaps from methodologies of investigating and describing social mechanisms to the concept of 'Futurecraft' invented by Carlo Ratti in his book 'The city of tomorrow'. It is a transition from Postpositivist methods towards Emancipatory approach. Futurecraft is a new way of interaction between architect and public referring to Avermaete's article. It makes research and design even more closely knit and shifting research idea from portraying to creating: 'Like medicine, the design must

move from the curative to the preventive.'[21] A contemporary environment that 'talks' to its users and reacts to changes allows to a more inclusionary approach and triggers public debate as design and research tool: 'Methodologically, Futurecraft dissolves prediction anxiety and opens up new avenues of research rather than delivering products and systems.'[22] Objects that directly interact with people are very powerful because no matter how good our research analysis might be, reality would always be different, unpredictable and playful. One of the projects by Senseable City Lab called Trash Track (2009) investigates the routes of waste in the world (Fig.7). Tracking technology which was not available at the time of B. Fuller's World Game can now help in optimization of the waste distribution and reduction of environmental pollution. Moreover, visualizations produced within this research enabled wide communication with the public and change people's behaviour, influence waste managing companies to improve their systems.[23]

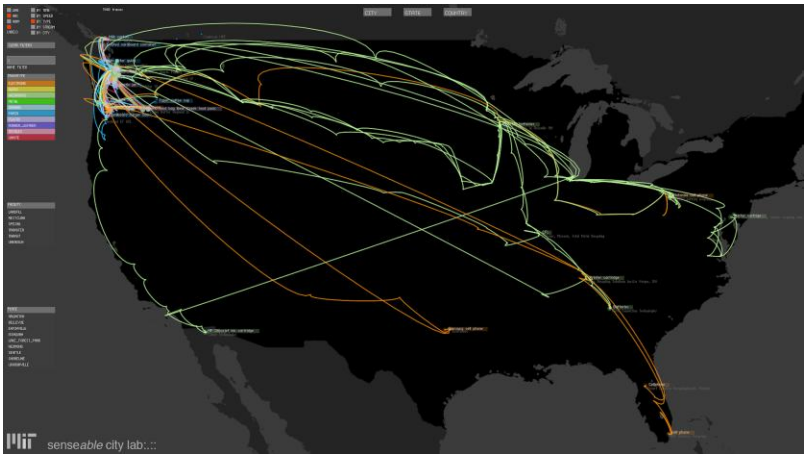


Figure 7. Trash Track by the MIT Senseable City Laboratory

EVALUATING CROSS-DISCIPLINARY RESEARCH

The use of Social Sciences in Architectural research as a A cross-disciplinary approach is perhaps the most suitable methodology applied to the investigation of the city's Complexity. To render a bigger picture of fragmented and multifaceted realities of modern cities architect might need to try on different roles such as of a 'planner, organizer, politician, economist, philosopher, strategist, humanitarian.'[24] as suggested by the Complex project's chair. Referring to T. Avermete's article "The Architect and The Public' [25] architect's role evolved according to different research paradigms from positivist to post-positivist and finally to emancipator.

The cross-disciplinary approach reflects another focus of Complex Projects studio an ambition to work on a different scale from urban to architectural design and detailing. It links my position to another key factor discussed within the course Complex Projects such as an emphasis on communication. A modern architect can be envisioned as a 'manager' who communicates cross-disciplinary specialists in one team. Engineers, landscape and urban designers can work together according to the narrative created by an architect-manager. The most important aspect in this process is communication, the ability of the architect to build a strong clear narrative which binds all design decisions together and can be easily understood by clients.

Although Cross-disciplinary research allows for 'complex responses towards complex problems'[26] it may easily become a misleading methodology. Firstly, there is a danger that the combination of various disciplines will not make a bigger and clearer picture but rather create more confusion for a researcher. Secondly, sources from different disciplines especially Social sciences might be strongly opinionated.[27] For instance, cross-disciplinary readings suggested by Complex Projects studio create a 'leftish' picture of the world. These opinions combined create a strong critique of capitalism, neo-liberalist politics, global finance and gentrification. On the other hand, research

showed that Manhattan is driven by real estate economy and that all architectural projects should follow market rules to succeed. In this case, the cross-disciplinary approach created various moral dilemmas and certain confusion.

This raises the question of how to evaluate Cross-disciplinary methodology. Taking into account that all disciplines, in particular, have their evaluation systems leads to a conclusion that an emphasis, in this case, should be on the integration of mutual disciplines: 'disciplines as intrinsically constituted and maintained a set of knowledge practices.'[28] Looking at this issue with epistemological lens implies that successful research and Cross-disciplinary research, in particular, should generate new meanings and fill in the 'knowledge gap'.[29]

To conclude with my position, an architect might try on different roles to engage with the complexity of the modern world but it is important to keep in mind our main motivation. Perhaps for architects, the main goal of the research is the following design outcome. So while flirting with other disciplines architect should stay an architect and don't pretend to be sociologist or economist. An adequate architectural lens with which we look at other fields of knowledge is the key.

BIBLIOGRAPHY

Avermaete T., *The Architect and the Public: Empowering People in Postwar Architecture Culture,* Hunch, The Berlage report on Architecture, Urbanism and Landscape, N 14, p.83-95, Delft, 2010

Groat L., Wang D., *Architectural Research Methods,* Wiley; 2 edition, 2013

Harvey D., *A Brief History of Neoliberalism,* Oxford University Press, 2007

Harvey D., *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change,* Wiley-Blackwell, 1991

Jacobs J., *The Death and Life of Great American Cities,* Vintage; Reissue edition, 1992

Le Corbusier, *Toward an Architecture,* Getty Research Institute, 2007

Mejía J. Lecture *Methods of architectural exploration, evaluation, and discovery*, September 13, 2019

O'Rourke M., *How to Facilitate Interdisciplinary Research*, MSU, 2019

Ratti Carlo, Claudel Matthew*, The City of Tomorrow : Sensors, Networks, Hackers, and the Future of Urban Life*, 2016

Sassen, S., *The Global City: New York, London, Tokyo*, Princeton University Press, 2001updated

Sennett, R. ,*Together: The Rituals, Pleasures, and Politics of Cooperation*, New Haven: Yale University Press, 2012

Schreurs E., PhD Lecture, *Material Culture, 2019*

Smidihen H., J. van Zalingen, M. Triggianese *Complex Projects New York Syllabus 19 Fall semester,* TU Delft, Delft ,2019

Venturi R., Izenour S., Brown D. S., *Learning from Las Vegas - Revised Edition: The Forgotten Symbolism of Architectural Form,* The MIT Press; revised edition, 1977

Wasiuta M. , *The Persistence of Informational Vision: World Game 1969* , Worldometers, 2009

Willis C*., Form Follows Finance, Skyscrapers and Skylines in New York and Chicago,* Princeton Architectural

Press, 1995

LIST OF ILLUSTRATIONS

[1] Mejia H. J., Lecture *Methods of architectural exploration, evaluation, and discovery*, September 13, 2019
[2] Schreurs E., PhD Lecture, *Material Culture, 2019*
[3] Avermaete T., *The Architect and the Public: Empowering People in Postwar Architecture Culture,* Hunch, The Berlage report on Architecture, Urbanism and Landscape, N 14, p.83-95, Delft, 2010
[4] Smidihen H., J. van Zalingen, M. Triggianese *Complex Projects New York Syllabus 19 Fall semester,* TU Delft, Delft ,2019
[5] Smidihen H., J. van Zalingen, M. Triggianese *Complex Projects New York Syllabus 19 Fall semester,* TU Delft, Delft ,2019
[6] Groat L., Wang D., Architectural Research Methods, Wiley; 2 edition, 2013, p.220
[7] Groat L., Wang D., Architectural Research Methods, Wiley; 2 edition, 2013, p.215
[8] O'Rourke M., *How to Facilitate Interdisciplinary Research*, MSU, 2019
[9] O'Rourke M., *How to Facilitate Interdisciplinary Research*, MSU, 2019
[10] Sassen, S., *The Global City: New York, London, Tokyo*, Princeton University Press, 2001updated
[11] Sennett, R. ,*Together: The Rituals, Pleasures, and Politics of Cooperation*, New Haven: Yale University Press, 2012
[12] Harvey D., *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change,* Wiley-Blackwell, 1991

[13] Willis C.*, Form Follows Finance, Skyscrapers and Skylines in New York and Chicago,* Princeton Architectural Press, 1995
[14] Le Corbusier, *Toward an Architecture,* Getty Research Institute, 2007
[15] Jacobs J., *The Death and Life of Great American Cities,* Vintage; Reissue edition, 1992
[16] Venturi R., Izenour S., Brown D. S., *Learning from Las Vegas - Revised Edition: The Forgotten Symbolism of Architectural Form,* The MIT Press; revised edition, 1977
[17] Harvey D., *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change,* Wiley-Blackwell, 1991, p. 40
[18] Harvey D., *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change,* Wiley-Blackwell, 1991, p.41
[19] Wasiuta M. , *The Persistence of Informational Vision: World Game 1969* , Worldometers, 2009, p. 590
[20] Ratti C., Claudel M.*, The City of Tomorrow : Sensors, Networks, Hackers, and the Future of Urban Life*, 2016
[21] Ratti C., Claudel M.*, The City of Tomorrow : Sensors, Networks, Hackers, and the Future of Urban Life*, 2016, p.11
[22] Ratti C., Claudel M.*, The City of Tomorrow : Sensors, Networks, Hackers, and the Future of Urban Life*, 2016, p.8
[23] Ratti C., Claudel M.*, The City of Tomorrow : Sensors, Networks, Hackers, and the Future of Urban Life*, 2016, p.10
[24] Smidihen H., J. van Zalingen, M. Triggianese *Complex Projects New York Syllabus 19 Fall semester,* TU Delft, Delft ,2019
[25] Avermaete T., *The Architect and the Public: Empowering People in Postwar Architecture Culture,* Hunch, The Berlage report on Architecture, Urbanism and Landscape, N 14, p.83-95, Delft, 2010
[26] O'Rourke M., *How to Facilitate Interdisciplinary Research*, MSU, 2019
[27] O'Rourke M., *How to Facilitate Interdisciplinary Research*, MSU, 2019
[28] O'Rourke M., *How to Facilitate Interdisciplinary Research*, MSU, 2019
[29] O'Rourke