7th international scientific conference
RURAL DEVELOPMENT 2015
Towards the Transfer of Knowledge, Innovations and Social Progress
19-20 November, 2015, Aleksandras Stulginskis University, Lithuania

Proceedings of the 7th International Scientific Conference Rural Development 2015

Edited by prof. Asta Raupelienė

ISSN 1822-3230 / eISSN 2345-0916
eISBN 978-609-449-092-7

Article DOI: http://doi.org/10.15544/RD.2015.052

FACTORS INFLUENCING CITIES PEDESTRIAN STREET FUNCTIONALITY AND SUSTAINABLE LAND USE

Vida MALIENE, School of the Built Environment of Liverpool John Moores University in the UK; School of the Built Environment, Liverpool John Moores University, Byrom street, Liverpool L3 3AF,United Kingdom; Institute of Land Management and Geomatics, Faculty of Water and Land Management, Aleksandras Stulginskis University, Universiteto g. 10, Akademija, Kauno, raj., LT–53361, Lithuania, v.maliene@ljmu.ac.uk .
Ruta DICIUNAITE-RAUKTIENE, Institute of Land Management and Geomatics, Faculty of Water and Land Management, Aleksandras Stulginskis University, Universiteto g. 10, Akademija, Kauno raj., LT–53361, Lithuania, diciunaite200@yahoo.com *(corresponding author)*

The public space encourages social exchange, develops and maintains social groups and allows the exchange of public messages. When the public space and public life are not supported in the community, there is no one to communicate with, people become isolated, less inclined to help or support each other. Public space is the scene of public life that promotes a sense of community, sense of place, human connection and communication as well as dependence sensation. High-quality and well-managed public space is a benefit to the city's economy, creating shelter from the car-centred life and move to a more natural environment as well as significant urban land use. Therefore, in recent times, in order to establish the right conditions in cities for different human needs, great attention is paid not only to the development of physical infrastructure, but also to other aspects that will help to create sustainable balance of social, economic and environmental aspects. One of the quality of life in the city return ways is the release of urban spaces for pedestrians. Until these days the pedestrian zones are extended little by little, resulting in disposal of the car parking-lots and improved cycling and other transport facilities. Sustainable use of urban pedestrian zones would provide economic, social, environmental and cultural benefits only if these aspects are combined with each other. The aim of the article is to distinguish and critically analyse (on the basis of a literature review) factors influencing the functionality and sustainable development of pedestrian streets. Article object – cities pedestrian street. The study was conducted using scientific publishing content analysis and synthesis techniques. This article is an overview.

Keywords: city, functionality and sustainability, pedestrian street.

INTRODUCTION

In 1992, in the Rio de Janeiro meeting of the United Nations Conference and after the adoption of Agenda 21, more and more often sustainable development strategy replaces traditional strategic city planning (Keivani, 2010). In addition, the signing of the European Charter for Sustainable Cities (Aalborg Charter) in 1994 Europe began to implement the Local Agenda 21 (Ciegis and Pareigis, 2010), and in 2007 the main urban development goal was identified in the Leipzig Charter on Sustainable European Cities adopted by European Ministers – to return back people, activities and investments to the urban centres, (Leipzig Charter on Sustainable European Cities, 2007).

It is noted that in the city's public spaces institutions are strongly influenced by profit-oriented businesses (Grazuleviciutė-Vileniške and Urbonas, 2010), therefore fast erosion of public spaces occurs due to the commercialization of public space (Samalavicius, 2010). Another problem can be the fact that advances in technology and the increasing number of measures allowing the exchange of information reduce the need to be in space and this affects urban suburbanization processes, and potentially causes public spaces crisis. In addition, in Lithuania, shopping centres stimulate public space crisis and they are shaping a new culture of spending leisure time - attract more and more visitors and thus divert the flow of people from the city's cultural and community centre. The city centre is losing its attraction, social function, residents here cannot find entertainment, recreation and services, so they prefer more remote attractions and shopping centres, and tourists do not have the possibility to see the city life, to feel the mood of the city. After all, city centres have to do their best to serve people, to represent the city, to provide information, to create a favourable environment for social interactions. The renovation of the physical structure of the city centre, i.e. to reconstruct or renovate buildings, to clean up public spaces or upgrade infrastructure, is not enough to ensure the success of the city centre. Therefore, in order to revitalize the gravity of city centre, it is necessary to improve the city's

image, to focus on the city's main pedestrian streets' sustainable pedestrian street development. The development of pedestrian zones infrastructure should be seen as an investment in an integrated solution of problems, including economic and social, health and environmental protection, urban development and other aspects.

SUSTAINABLE URBAN DEVELOPMENT CONCEPT AND ELEMENTS

Recently, in order to form suitable conditions for the different needs of the people in the cities, great attention is paid not only to the development of physical infrastructure, but also to other aspects that will help to create sustainable balance of social, economic and environmental aspects. There is no single opinion, what should be a sustainable city, but in the United Nations Conference in Rio de Janeiro, Brazil in 1992 it was decided that the territorial development must be sustainable – covering economic, social and environmental urban aspects of life together (Freytag et al., 2014; Elgerta et al., 2012; Lidskog et al., 2012; Veis et al., 2012; Zaleckis, Matijosaitiene, 2012). However, "urban sustainability" attracted a lot of criticism, as Rees (1997, 2012) states that "sustainable city" concept is an oxymoron, because cities are inherently unsustainable, due to the relative intensification of economic and social activities in those areas (Green et al., 2005), in addition, there is a strong negative correlation between the human welfare and environmental well-being (Kaivos-Oja et al., 2013).

The concept of the sustainable city itself is broad and covers "compact cities" (Westerink et al., 2013; Howley, 2009), nature's "cities" (Davidson and Arman, 2014), as well as "cosmopolitan cities" (Fainstein, 2011), "good cities" (Gleeson 2012), eco cities (Chang and Sheppard 2013), and urban improvement ideas include a range of "green cities" concepts, development of new green cities and renovation of existing cities (Beatley, 2011).

European Urban Charter states that the city's main development objective is considered to be operational and investment return, but one needs to return back people to the urban centres (Leipzig Charter on Sustainable European Cities, 2007), so downtown high-quality economic, community-based, three-dimensional, natural and physical environment creation must be regarded as a key downtown development purpose (Gul and Dulupcu, 2010; Winston, 2014), and the Brundtland report (World Commission on environment and Development, 1987) states that sustainable development is to ensure that sustainable development should meet human needs of today and should not create a menace to future generations to meet their own needs (WCED or Brundtland Commission, 1987, p. 8).

Most authors define sustainability and sustainable development as a set of characteristics that includes economic security and growth, environmental quality and integrity, social cohesion and quality of life (Turcu, in 2013; Åhman 2013; Scerri and Holden 2014; Dale et al., 2009; Haeseong 2013; Ciegis et al., 2009; Newton, 2012; Sepe, 2013), but some scientists argue that sustainability should be extended to include other aspects than just ecological, economic and social ones. Other authors distinguish importance of institutions (Ciegis and Pareigis, 2010; McManus, 2012; Theurillat and Crevoisier, 2014; Zhao et al., 2013), urban residents, businesses and other organizations which ensure participation in decision-making (Veisi et al., 2012; Landorf, 2011; Boonstra and Boelens, 2011; Ciegis and Zaleviciene 2012, Romano, 2014), and Bossel (1999) considers that sustainable development should be seen as a "total human and natural development of the system", which consists of six main elements: personal development, social system, government, infrastructure, economic system, resources and environment. Missimer et al. (2010) has argued that economic sustainability should be seen as part of ecological and social sustainability, stemming from these two definitions. Harmony in its social, economic and environmental sense means the conditions that are equally important and inter-related due to the sustainability of cultural resources, which is a key factor in the development of creative urban success regeneration process (Sepe, 2013).

Thus, a healthy environment, a vibrant economy, responsible society and investments are components of sustainable city, that interact with each other and are inseparable (Hansmann et al., 2012; Santana et al., 2014; Ciegis and Zaleviciene, 2012). Sustainable urban development promotes investments and a competitive economy, yet not only investments are important, so the city must improve the quality of life (Rangarajan et al., 2012) and seek to ensure the local population's living conditions (Ciegis and Zaleviciene 2012; Keivani, 2010), meeting current population's needs without harming future generations (Ciegis and Zaleviciene 2012; Streimikiene and Barakauskaite-Jakubauskiene, 2012), without wasting natural resources and without compromising the ecological balance (Juskevicius and Valeika, 2007) and to create sustainable living community (Maliene and Malys, 2009), to protect health while developing the safe and pleasant environment, to preserve natural diversity, to meet the cultural needs, rest and recreation and to respect the fundamental environmental interests (ODPM, 2005).

URBAN PUBLIC SPACES – CITY CENTER – THE IMPORTANCE AND FEATURES OF PEDESTRIAN STREETS

The concept of public spaces (for public use) is quite broad. This is a common use areas designated for public needs, they are formed by streets, roads, trails, corridors of engineering communications, recreational areas, sports fields and other spaces (Jankauskaite et al., 2014; Dringelis, 2011), as well as sidewalks, public buildings and other types of gathering places – where converge the city's, cultural and social events, it is - a living environment (Jakovlevas - Mateckis, 2012), "living rooms", where citizens can socialize (Arslanli et al., 2011), interact with each other, watch and be visible (Walljasper, 2012; Brunnberg and Frigo, 2012), to share different perspectives, stories, information (Lavrinec, 2013; Mehta, 2014) and has an important role in describing the community identity. We can say that the public space is a mirror of community values, traditions and culture (Sepe, 2013; Kratochvíl, 2013; Urbonaite, 2013),

which, as a reflection of the interfaces between the physical, social, political and economic indicators. They symbolize the majority of society, values (Lubyte, 2011) or culture in which people exist (Johnson and Glover 2013).

Public spaces are easily recognizable in older – traditional – parts of the city or center, as there are the majority of social functions and public spaces are being developed (Stauskis and Eckardt, 2011), where over five minutes you realize the spirit of the city (Kazakevicius, 2010). Public spaces do affect the city's image very much, and the viability of public spaces depends on the functions of public spaces and aesthetic quality (Grunskis, 2013).

Public spaces as cultural objects arise gradually, but over time, urban space takes on historical, social, cultural meaning, created by society (Young, 2014). Gehl (2010) considers that good public space is characteristic of protection from traffic and crime, as well as places for walking, coffee-klatch, observation, discuss opportunities, engagement in activities, enjoyment of good weather,..be characteristic of good aesthetic quality (Walljasper, 2012). Meanwhile, Mehta (2014) singles out 5 key features of successful public space: safety, comfort and convenience, meaningful activity, pleasure and involvement.

Meaningful activity – satisfaction of the main demands and the needs of shopping, eating, entertainment, opinion articles, discussions and the opposition (Mehta, 2014).

Security. In the context of public space security is the person's ability to feel safe at social and natural factors - crime and traffic – depending on how safe people feel like being in space at different times, under different physical circumstances and the supervision of space, as well as the existence of surveillance measures which promote them feel safer or not. Some studies have shown that public space perceived by people is a much safer place when there are more shops and other non-residential buildings in it (Mehta, 2014).

Comfort. A sense of comfort in the public space depends on many factors, including its perceived level of security, cognition of the environment and people, the air, physical conditions and convenience (Mehta, 2014). Comfortable climatic conditions, including temperature, direct rays of the sun, shadows and the wind are important for public spaces as well while engaging in some outdoor activities (Bosselmann et al., 1984 cit. Mehta, 2014).

Pleasure. Spaces become pleasurable when it is perceived that they have a high spatial quality. Lynch (1960) found that locations with a high ambient visualization, provide more comfort and are more pleasant. Most of the visual areas are those that some factors appear together with a clear emergence of the understanding of wonder. "This is the shape, colour or tool that facilitates the identification of vitality, structuring and the use of supposed environment" (Mehta, 2014).

So, the city centre – it is a living organism, a social space and that space should be allocated to the general public to interact and meet (Urbonaite, 2012). Historically, the public space in the city has been used as a place to satisfy the basic needs of life, communication and entertainment and carry out a number of political, religious, commercial, civil and social functions (Mehta, 2014). According to Stauskis (2010), it is very important that the urban public space would be appropriate to communicate, to rest, since namely the city's public spaces affect the quality of people's mental health.

The street has always played a significant role in ensuring public space in cities and is the most visible type of public space and the most important part of the city (Oranratmanee and Sachakul, 2014). Namely the street conveys the characteristics of urban areas and defines urban form and structure providing space for social interaction, exchange of commercial and outdoor activities (Shamsuddin, 2011).

Recently, the West is already beginning to realize that in order to revitalize urban centers development and quality of life, improvement of social resilience are necessary (Malinauskas et al., 2010). One of the ways of the return of the quality of life in the city, is the release of urban spaces for pedestrians as pedestrian zones highlight the city's historical and architectural values, use artistic lighting and other environmental elements. Only one problem is left, i.e. to solve the problem of how to reconcile the historical urban environment with the modern movement ideas. However, it is important that the environment would be formed maintaining and restoring streets, its historic identity and spirit (Jakovlevas-Mateckis, 2012). The development of the infrastructure of pedestrian areas is treated as an investment in an integrated solution of problems, including economic and social, health and environmental protection, urban development and other aspects (Mehta, 2007).

From ancient times to the end of the nineteenth century, the city square, the central street of the city generally met the needs of citizens. The public life of urban communities took place in them. Here people would come to meet, chat, shop, stroll, relax or take part in festivals and processions. Later, at the end of the nineteenth century, with the growth of industry and the rapid growth of population, these streets have frequently performed the role of trade and service, but they still retained the nature of community meeting and communication (Jakovlevas-Mateckis, 2012). Kashani Jou (2011) argues that the city's structure changed significantly due to automobiles. With the growing of cities motorization, urban centres were overcrowded with vehicles, resulting in street noise and pollution, where people feel unsafe, so all attention should be paid to the elimination of the cars from the main downtown public spaces and regarding public interests and the needs of the population to create pedestrian streets and zones (Jakovlevas-Mateckis, 2012), and already in 1960 and 1970 most of the streets in the cities were adapted to walking pedestrians only. In the United States, streets for pedestrians were named alleys-C which were used for walks and shopping. And in 1980 the traffic reduction concept was encouraged instead of a full banning of cars in those streets. In 1990 streets recovery concept was introduced as a traffic calming concept: it points out the social space recovery process (Kashani Jou, 2011).

The pedestrian street is a public urban space, characterized by full or partial restriction of vehicular traffic and is the basis for people walking, cycling or walking with strollers. Pedestrian zones are an effective tool to educate future generations, to pass on ecological and oral culture and promote interaction face to face (Kashani Jou, 2011). Review of various studies has shown that people depend on street provision of functional, social and recreational activities. The organization "Projects for Public Spaces" states that the place where people gladly choose has four characteristics: sociability, activity and use, accessibility, convenience and appearance:

- *Comfort and image*. Does the space itself is comfortable and looks good – has good image – is the key to its success. Comfort includes an awareness of the safety, cleanliness, and places to sit and accessibility.
- *Use and activity*. This activity is an essential local basis. The ability to do something gives people a reason to come to a specific place – and return to it. When there is nothing to do, the space is empty, which basically means that something is wrong.
- *Sociability*. It is difficult to reach place quality, but once you achieve it, it will definitely become critical. Some people seem friendly, meet, greet, and feel comfortable communicating with strangers, they tend to feel a stronger sense of place and attachment to the community – this is a place that promotes these social activities.
- *Accessibility* includes not only access road to pedestrian zones, but also links to where to build the car, how to get to various attractions.
- *Convenience and appearance* – depending on how public space is arranged: a high quality coating for walks, a place to sit, attractions and entertainment, ie. this is what will encourage people to come back (Kelly, 2012). Sisman (2013) supplements and claims that the pedestrian zone should be safe. Sidewalks, pedestrian walkways and crossings must be designed in such a way that as much as possible minimize collisions with motorized and non-motorized vehicles, to reduce the risk of tripping and protruding objects, and promote personal safety awareness and implementation; also it should be available to everyone. To pedestrians of all ages and abilities it is important to ensure a safe and comfortable traveling by foot or mobile means. It should ensure a direct and easy access and provide a pleasant place for a walk, improve communication between communities, economic vitality and image of the city. Good design should improve the city's image and enhance the feel of pedestrian environment. The pedestrian environment includes such areas as squares, courtyards, squares, as well as buildings that give form to streets. Facilities, such as street equipment, desks, art, plants and special paving along with historical elements and cultural links should promote a sense of place. The pedestrians-oriented improvements should be cost-effective and financially sustainable. Also, pedestrian environment should be a place which promotes social activity. Commercial activities, such as catering, slot-machines and advertising should be permitted, if it does not jeopardize the security and availability.

Criteria of the pedestrian streets functionality and sustainable development

Having reviewed statements of various authors, we can conclude that the benefits of the pedestrian zone are as follows:

- the improving social atmosphere. Urban pedestrian streets not only improve the quality of life, the developed infrastructure attracts more tourists (Newman, 2007; Kelly, 2012).
- economic benefits – additional revenue from tourism, increase of real estate value in the pedestrian zone, the creation of new business (Jakovlevas-Mateckis, 2012).
- social benefits – safer space for pedestrians, cyclists, reduced crimes, promotion of healthy living, promotion of public life, the children, their parents and older people's employment increase (Sinkiene et al., 2012).
- effects on the environment – by reducing motor vehicle movement, reduces air pollution, improves the ecological balance support (Sinkiene et al., 2012).
- cultural benefits - the city's image and tourism attractiveness improvement, visitors and tourists with a possibility to get to know the city.

In order to create sustainable and attractive places in city, all components of sustainable urban development (economic, social, cultural and environmental) interact with each other and are inseparable (Mulliner and Maliene, 2011). Therefore, in order to get people back to downtown, you need to pay more attention to the city's main pedestrian street sustainable pedestrian street development, taking into account the characteristics of successful public space (Figure 1).

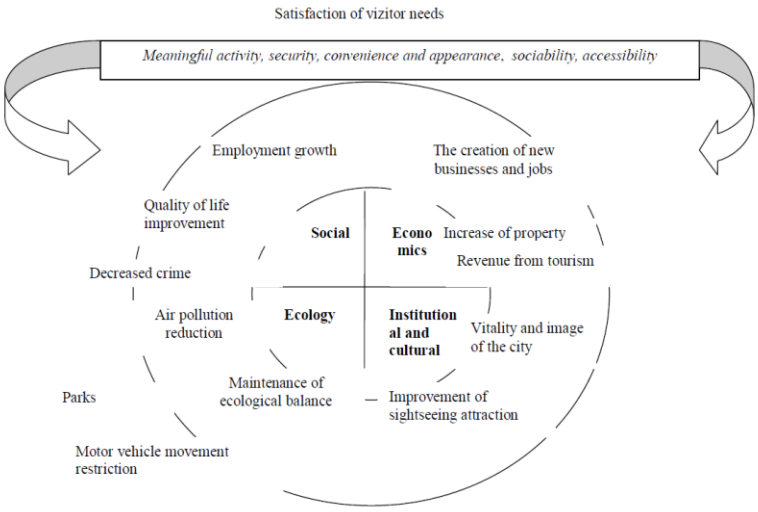

Figure 1. The criteria of pedestrian streets functionality and sustainable development

Sustainable development will create a healthy environment, a vibrant economy, social well-being and an active community, but in order to achieve the development of sustainable city, it is necessary to combine both social and economic interests, and those interests must be coordinated with environmental and cultural interests.

CONCLUSIONS

Pedestrian areas must be functional in all three aspects of sustainability, economically, socially and environmentally, in order to meet the comfort, relaxation, passive and active interaction needs. Functional, physical, social, convenience and security issues must be solved in order to ensure the city's main pedestrian zone vitality and a better quality of life for citizens. Also, a pedestrian zone must have its own image, a well-designed environment that thrives on art, culture. Community spirit should be felt as well. The use of pedestrian zones in sustainable city will provide with economic, social, environmental and cultural benefits only when all the listed aspects will be combined with each other.

REFERENCES

1. Åhman, H. 2013. Social sustainability – society at the intersection of development and maintenance. Local Environment. *The International Journal of Justice and Sustainability*, Vol. 18, Iss.10, pp. 1153–1166.
2. Arslanli, K., Unlukara, T., Dokmeci, V. 2011. Transformation of Public Spaces in Istanbul. *European Planning Studies*, Vol. 19, Iss. 6, pp. 1061–1089. http://dx.doi.org/10.1080/09654313.2011.571434
3. Beatley, T. 2011. Biophilic cities: integrating nature into urban design and planning, Island Press, Washington, DC. http://dx.doi.org/10.5822/978-1-59726-986-5
4. Boonstra, B., Boelens, L. 2011. Self-organization in urban development: towards a new perspective on spatial planning. *Urban Research & Practice*, Vol. 4, Iss. 2, pp. 99–122. http://dx.doi.org/10.1080/17535069.2011.579767
5. Brunnberg, L., Frigo, A. 2012. Placemaking in the 21st-century city: introducing the funfair metaphor for mobile media in the future urban space. *Digital Creativity*, Vol. 23, Iss. 2, pp. 113–125. http://dx.doi.org/10.1080/14626268.2012.709943
6. Bossel, H. 1999. Indicators for sustainable development: theory, method, applications. Winnipeg: International Institute for Sustainable Development (IISD).
7. Chang, C. C., Sheppard, E. 2013. China's Eco-Cities as Variegated1 Urban Sustainability: Dongtan Eco-City and Chongming Eco-Island. *Journal of Urban Technology*, Vol. 20, Iss. 1, pp. 57–75. http://dx.doi.org/10.1080/10630732.2012.735104
8. Čiegis, R., Pareigis, R. 2010. Darnių miestų ekonomika. Vilnius, Vilniaus universiteto leidykla. (In Lithuanian)
9. Čiegis, R., Žalevičienė, A. 2012. Darnus miestų vystymasis ir Europos Sąjungos investicijų įsisavinimas. *Management theory and studies for rural business and infrastructure development*, Nr. 1 (30), pp. 29. (In Lithuanian)
10. Čiegis, R., Ramanauskienė, J, Martinkus, B. 2009. The concept of sustainable development and its use for sustainability scenarios. *Inzinerine Ekonomika-Engineering Economics*, Vol. 20, No. 2, pp. 28–37.
11. Dale, A., Lenore, L., Newman, L. 2009. Sustainable development for some: green urban development and affordability. *Local Environment: The International Journal of Justice and Sustainability*, Vol. 14, No. 7, pp. 669–681.
12. Dringelis, L. 2011. Town squares: experience and results of the reconstruction. *Town Planning and Architecture*, Vol. 35, No. 3, pp. 200–211. (In Lithuanian)
13. Davidson, K., Arman, M. 2014. Planning for sustainability: an assessment of recent metropolitan planning strategies and urban policy in Australia. *Australian Planner*, Vol. 51, Iss. 4, pp. 296–306. http://dx.doi.org/10.1080/07293682.2013.877508
14. Elgert, L., Krueger, R. 2012. Modernising sustainable development? Standardisation, evidence and experts in local indicators. *Local Environment: The International Journal of Justice and Sustainability*, Vol. 17, No. 5, pp. 561–571.
15. Fainstein, S. 2011. The Just City. Ithaca: Cornell University Press.
16. Freytag, T., Gössling, S., Mössner, S. 2014. Living the green city: Freiburg's Solarsiedlung between narratives and practices of sustainable urban development. *Local Environment: The International Journal of Justice and Sustainability*, Vol. 19, No. 6, pp. 644–659. http://dx.doi.org/10.1080/13549839.2013.868872
17. Gehl, J. 2010. Cities for People. Island Press.
18. Gul, H., Dulupcu, A. 2010. Local Economic Development, Urban Change and Regeneration in Turkey. Urban Regeneration Management, Routledge, p. 154–171.
19. Romano, G.C. 2014. Strategies for sustainable urban development: towards green(er) Chinese cities? *Asia Pacific Journal of Public Administration*, Vol. 36, No. 3, pp. 233–247. http://dx.doi.org/10.1080/23276665.2014.944748
20. Gleeson, B. J. 2012. Critical Commentary. The Urban Age: Paradox & Prospect. *Urban Studies*, Vol. 49, No. 5, pp. 931– 943. http://dx.doi.org/10.1177/0042098011435846
21. Gražulevičiūtė–Vileniškė, I., Urbonas, V. 2010. Miestų centrų atgaivinimas socialiniu ir architektūriniu aspektu, užsienio patirtis. Mokslas – Lietuvos ateitis, T. 2, Nr.3.p. 11. (In Lithuanian)
22. Grunskis, T., Mankus, M. 2013. The system of urban public spaces in the postcommunist sociocultural context. *Journal of Architecture and Urbanism*, Vol. 37, Iss. 3, pp. 210–217. http://dx.doi.org/10.3846/20297955.2013.840074
23. Green, G., Grimsley, M., Stafford, B. 2005. The dynamics of neighbourhood sustainability. York: Joseph Rowntree Foundation.
24. Hansmann, R., Mieg, HA, Frischknecht, P. 2012. Principal sustainability components: empirical analysis of synergies between the three pillars of sustainability. *International Journal of Sustainable Development & World Ecology*, Vol. 19, pp. 451–459. http://dx.doi.org/10.1080/13504509.2012.696220

25. Haeseong, J. 2013. The new challenge of urban and architectural design for sustainable development. *International Journal of Sustainable Building Technology and Urban Development*, Vol. 4, Iss. 1, pp. 10–16. http://dx.doi.org/10.1080/2093761X.2012.745802
26. Howley, P. 2009. Attitudes towards compact city policy: Towards a greater understanding of residential behaviour. *Land Use Policy*, Vol. 26, Iss. 1, pp. 792–798. http://dx.doi.org/10.1016/j.landusepol.2008.10.004
27. Young, A. 2014. Cities in the City: Street Art, Enchantment, and the Urban Commons. *Law & Literature*, Vol. 26, No. 2, pp. 145–161. http://dx.doi.org/10.1080/1535685X.2014.888208
28. Jakovlevas–Mateckis, K. 2012. Some aspects of the formation of pedestrian streets and zones in the new public spaces of urban centre. Journal of Architecture and Urbanism, Vol. 36, Iss, 4, pp. 252–263. (In Lithuanian) : http://dx.doi.org/10.3846/20297955.2012.752928
29. Jankauskaitė, A., Olšauskaitė–Urbonienė, R., Abromas, J. 2014. Miesto viešųjų erdvių (aikščių) planavimo ypatumai po Lietuvos nepriklausomybės atkūrimo: Klaipėdos Atgimimo" aikštės pavyzdžiu. *Miestų želdynų formavimas*, Nr.1(11), pp. 90–98. (In Lithuanian)
30. Johnson, A. J., Glover, T.D. 2013. Understanding Urban Public Space in a Leisure Context, Leisure Sciences. *An Interdisciplinary Journal*, Vol. 35, Iss. 2, pp. 190–197.
31. Jou, K. K. 2011. Pedestrian Areas and Sustainable Development. *World Academy of Science, Engineering and Technology International Journal of Civil, Environmental, Structural, Construction and Architectural Engineering*, Vol. 5, No.5, pp. 228–235
32. Juškevičius, P., Valeika, V. 2007. Lietuvos miestų sistemų raida. Vilnius, Baltijos kopija. (In Lithuanian)
33. Edward, J. Jepson, J., Edwards, M.M. 2010. How Possible is Sustainable Urban Development? An Analysis of Planners' Perceptions about New Urbanism, Smart Growth and the Ecological City. *Planning Practice & Research*, Vol. 5, No. 4, pp. 417–437.
34. Kazakevičius, I. 2010. Viešosios miesto erdvės. Įženklinimas ar įmeninimas. Miestų viešosios erdvės. Kūrybiškumas ir meninė intervencija, pp. 4–6. (In Lithuanian)
35. Kelly, J. F. 2012. Social Cities. Grattan Institute.
36. Keivani, R. 2010. A review of the main challenges to urban sustainability. *International Journal of Urban Sustainable Development*, Vol. 1, No. 1–2, pp. 5–16.
37. Kaivo-oja, J., Panula-Ontto, J., Vehmas, J., Luukkanen, J. 2014. Relationships of the dimensions of sustainability as measured by the sustainable society index framework. *International Journal Of Sustainable* Development And World *Ecology*, Vol. 21, Iss. 1, pp. 39–45. http://dx.doi.org/10.1080/13504509.2013.860056
38. Kratochvíl, P. 2013. Urban public spaces in the Czech Republic. *Journal of Architecture and Urbanism*, Vol. 37, Iss. 3, pp. 173–181. http://dx.doi.org/10.3846/20297955.2013.832474
39. Lavrinec, J. 2013. Viešųjų erdvių potencialas. Miesto veidas yra ne pačios erdvės, o miestiečių veikla, kuri skleidžiasi tose erdvėse. *Statyba ir architektūra*, Nr.4, pp. 47. (In Lithuanian)
40. Leipzig Charter on Sustainable European Cities. 2007. Available at http://ec.europa.eu/regional_policy/archive/themes/urban/leipzig_charter.pdf (accessed on 10/12/2014).
41. Lidskog, R., Elander, I. 2012. Ecological Modernization in Practice? The Case of Sustainable Development in Sweden. *Journal of Environmental Policy & Planning*, Vol. 14, Iss. 4, pp. 411–427. http://dx.doi.org/10.1080/1523908X.2012.737234
42. Landorf, CH. 2011. A Future for the Past: A New Theoretical Model for Sustainable Historic Urban Environments. *Planning Practice & Research*, Vol. 26, Iss. 2, pp. 147–165. http://dx.doi.org/10.1080/02697459.2011.560458
43. Lubytė, E. 2011. Menas Viešosiose Miesto Erdvėse: Kūrėjo, Užsakovo Ir Publikos Vertybių Sandraugos Klausimas. *Town Planning and Architecture*, 35:1, pp. 38–50. http://dx.doi.org/10.3846/tpa.2011.05 (In Lithuanian)
44. Maliene, V., Malys, N. 2009. High – quality housing – A key issue in delivering sustainable communities. *Builing and environment*, Vol. 44, Iss. 2, pp. 426–430.
45. Malinauskas, P., Kalibatas, D. 2010. Racionalių statybos technologinių procesų parinkimas taikant Copras metodą. *Ūkio technologinis ir ekonominis vystymas*, T. 11, Nr. 3, pp.4. (In Lithuanian)
46. Mehta, V. 2007. Lively streets, determining environmental characteristics to support social behaviour. *Journal of Planning Education and Research*, Vol. 27, Iss. 2, pp. 165–187. http://dx.doi.org/10.1177/0739456X07307947
47. Mehta, V. 2014. Evaluating Public Space. *Journal of Urban Design*, Vol. 19, Iss. 1, pp. 53–88. http://dx.doi.org/10.1080/13574809.2013.854698
48. McManus, P. 2012. Measuring Urban Sustainability: the potential and pitfalls of city rankings. *Australian Geographer*, Vol. 43, Iss. 4, pp. 411–424. http://dx.doi.org/10.1080/00049182.2012.731301
49. Missimer, M., Karl-Henrik, R., Göran, B., Harald, S. 2010. Exploring the possibility of a systematic and generic approach to social sustainability. *Journal of Cleaner Production*, Vol. 18, Iss. 10–11, pp. 1107–1112. http://dx.doi.org/10.1016/j.jclepro.2010.02.024
50. Mulliner, E., Maliene, V. 2011. An introductory review to the Special Issue: Attractive places to live. *Urban design International*, Vol. 16, pp. 147–152. http://dx.doi.org/10.1057/udi.2011.11
51. Newman, L. 2007. The virtuous cycle: incremental changes and a process-based sustainable development. *Sustainable Development*, Vol. 15, Iss. 4, pp.267–274. http://dx.doi.org/10.1002/sd.317
52. Newton, P.W. 2012. Liveable and Sustainable? Socio-Technical Challenges for Twenty-First-Century Cities. Journal of Urban Technology, 19:1, pp. 81-102. http://dx.doi.org/10.1080/10630732.2012.626703
53. Oranratmanee, R., Sachakul, V. 2014. Streets as Public Spaces in Southeast Asia: Case Studies of Thai Pedestrian Streets. *Journal of Urban Design*, Vol. 19, Iss. 2, pp. 211–229. http://dx.doi.org/10.1080/13574809.2013.870465
54. ODPM. 2005. Sustainable Communities: People, Places, and Prosperity. London: ODPM.

55. Project for Public Spaces. Available at http://www.pps.org/reference/grplacefeat/ (accessed on 05/05/2014).
56. Rangarajan, K., Long, S., Ziemer, N., Lewis, N. 2012. An evaluative economic development typology for sustainable rural economic development. *Community Development*, Vol. 43, Iss. :3, pp. 320–332. http://dx.doi.org/10.1080/15575330.2011.651728
57. Rees, E.W. 1997. Is "sustainable city" an oxymoron? *Local Environment*, Vol. 2, Iss. 3, pp. 303–310. http://dx.doi.org/10.1080/13549839708725535
58. Rees, E. W. 2012. Cities as Dissipative Structures: Global Change and the Vulnerability of Urban Civilization. Sustainability Science. Ed. M. P. Weinstein, R. E. Turner, pp.247–273. http://dx.doi.org/10.1007/978-1-4614-3188-6_12
59. Samalavičius, A. 2010. Vilnius City: Urbanism Driven by Consumption. *Lituanus* (Chicago), Vol. 56, No 2, pp. 48–51.
60. Shamsuddin, S. 2011. Townscape Revisited: Unravelling the Character of the Historic Townscape in Malaysia. 1st Edition. Johor, Malaysia: Universiti Teknologi Malaysia Press.
61. Santana, N.B., Nascimento, Rebelatto, D.A., Périco, E.A., Mariano, E.B. 2014. Sustainable development in the BRICS countries: an efficiency analysis by data envelopment. *International Journal of Sustainable Development & World Ecology*, Vol. 21, Iss. 3, pp. 259–272. http://dx.doi.org/10.1080/13504509.2014.900831
62. Sinkienė, J., Stankevičė, I., Navickaitė, K. 2012. Creating Safer Cities through Urban Planning and Development. *Public Policy and Administration*, Vol. 11, No. 3, pp. 390–430.
63. Sisman, E.E. 2013. Pedestrian Zones. Environmental Sciences - Advances in Landscape Architecture. Available at http://www.intechopen.com/books/advances-in-landscape-architecture/pedestrian-zones (accessed on 05/05/2014).
64. Stauskis, G. 2010. Šiuolaikinės urbanizacijos iššūkiai ir Lietuvos gyventojų sveikata. Urbanizacija – nauji iššūkiai žmonių sveikatai. Vilnius: Nacionalinė sveikatos tarnyba.
65. Stauskis, G., Eckardt, F. 2011. Empowering public spaces as catalysers of social Interactions in urban Ccmmunities. *Journal of Architecture and Urbanism*, Vol. 35, Iss. 2, pp. 110–116.
66. Scerri, A., Holden, M. 2014. Ecological Modernization or Sustainable Development? Vancouver's Greenest City Action Plan: The City as 'manager' of Ecological Restructuring. *Journal of Environmental Policy & Planning*, Vol. 16, Iss. 2, pp. 261–279. http://dx.doi.org/10.1080/1523908X.2013.836962
67. Sepe, M. 2013. Urban history and cultural resources in urban regeneration: a case of creative waterfront renewal. *Planning Perspectives*, Vol. 28, Iss. 4, pp. 595–613. http://dx.doi.org/10.1080/02665433.2013.774539
68. Štreimikienė, D., Barakauskaitė-Jakubauskienė, N. 2012. Sustainable development and quality of life in Lithuania compared to other countries. *Technological and Economic Development of Economy*, Vol. 18, Iss. 4, pp. 588–607. http://dx.doi.org/10.3846/20294913.2012.708676
69. Turcu, C. 2013. Re-thinking sustainability indicators: local perspectives of urban sustainability. *Journal of Environmental Planning and Management*, Vol. 56, Iss. 5, pp. 695–719. http://dx.doi.org/10.1080/09640568.2012.698984
70. Theurillat, T., Crevoisier, O. 2014. Sustainability and the Anchoring of Capital: Negotiations Surrounding Two Major Urban Projects in Switzerland. *Regional Studies*, Vol. 48, No. 3, pp. 501–515. http://dx.doi.org/10.1080/00343404.2013.787160
71. Urbonaitė, I. 2013. Rekreacinių funkcijų raiškos transformacijos posovietinio miesto viešosiose erdvėse. Vilniaus atvejis. *Journal of Architecture and Urbanism*, Vol. 37, Iss. 3, pp. 194–209. (In Lithuanian) http://dx.doi.org/10.3846/20297955.2013.841338
72. Urbonaitė I. 2012. Apleistų teritorijų reikšmė formuojant miesto rekreacijos sistemą. Mokslas – Lietuvos ateitis, Nr. 4(2), pp. 97–105 (In Lithuanian)
73. Veisi, H., Liaghati, H., Hashmi, F., Edizadehi, K. 2012. Mechanisms and instruments of sustainable development. *Development in Practice*, Vol. 22, No. 3, pp. 385–399. http://dx.doi.org/10.1080/09614524.2012.664624
74. Zaleckis, K., Matijošaitienė, I. 2012. Kauno miesto erdvinės struktūros įtaka saugumui viešosiose erdvėse ir žaliosiose rekreacinėse teritorijose. *Journal of Architecture and Urbanism*, Vol. 36, Iss. 4, pp. 272–282. (In Lithuanian) http://dx.doi.org/10.3846/20297955.2012.752932
75. Zhao, J., Zheng, X., Dong, R., Shao, G. 2013. The planning, construction, and management toward sustainable cities in china needs the environmental internet of things. *International Journal of Sustainable Development & World Ecology*, Vol. 20, pp. 195–198. http://dx.doi.org/10.1080/13504509.2013.784882
76. Walljasper, J. 2012. Public Spaces Make the World Go 'Round. Available at http://www.shareable.net/blog/public-spaces-make-the-world-go-round (accessed on 05/05/2014).
77. Westerink, J., Haase, D., Bauer, A. 2013. Dealing with Sustainability Trade-Offs of the Compact City in Peri-Urban Planning Across European City Regions. *European Planning Studies*, Vol. 21, Iss. 4, pp. 473–497. http://dx.doi.org/10.1080/09654313.2012.722927
78. Nessa, Winston. 2014. Sustainable Communities? A Comparative Perspective on Urban Housing in the European Union. *European Planning Studies*, Vol. 22, Iss. 7, pp. 1384-1406. http://dx.doi.org/10.1080/09654313.2013.788612
79. WCED. Brundtland Commission, Report of the World Commission on Environment and Development: Our Common Future 1987. Available at http://www.un-documents.net/wced-ocf.htm (accessed on 05/05/2014).
80. World Commission on Environment and Development (WCED) (1987) Our Common Future (Oxford: Oxford University Press). Available at http://public.wsu.edu/~susdev/WCED87.html (accessed on 05/05/2014).