PPP Procurement Methods in Malaysian Construction Industry

Ismail Abdul Rahman, Aftab Hameed Memon, Nora Sheda Mohd Zulkiffli

Faculty of Civil and Environmental Engineering, University Tun Hussein Onn Malaysia
aftabm78@hotmail.com

Abstract: Public Private Partnership PPP procurement method is being popularized worldwide. It is very useful for handling very large public projects through a joint venture arrangement between government and private sector. This paper is a review paper focusing on understanding of PPP mechanism and its modes of application. It also explores various contractual arrangements being adopted in Malaysian construction industry.
[Rahman IA, Memon AH, Zulkiffli NSM. **PPP Procurement Method in Malaysian Construction Industry.** *J Am Sci* 2014; 10(7):91-97]. (ISSN: 1545-1003). http://www.jofamericanscience.org. 13

Keywords: Private finance initiative, Public Private Partnership, Malaysian Construction

1. Introduction

PPP is a joint venture effort between government and private sector for accomplishing any project. Sanjeed (2008) defined that PPP is a type of agreement between the public and private sector to work together, sharing resources, risks and rewards between the partners. PPP starts from a joint risk acceptance, estimated costs and expected returns, and also aims to achieve all the construction objectives through both parties cooperation (Loosemore and McCarthy, 2008). It is regarded as a general term which covers all contracted relationships between the public and private sectors to deliver a service (Chan et al, 2011). It is a form of collaboration between public authorities and private sectors to bring their skills to a project, with different levels of involvement and responsibility for the sake of providing services more efficiently (Hong Kong Efficiency Unit 2008) where Private enterprise takes part in the government projects in the form of management expertise and/or monetary contributions aimed at public benefit (Business Dictionary 2012). PPP aims to ensure that private entities provide funding, accomplish construction, renovation, management, and maintenance of an infrastructure project (European Commission, 2004). In PPP arrangements, private sector supplies infrastructure assets and services (International Monetary Fund 2006, World Bank, 2007) while the public sector purchases an asset from private sector contractors and consultants, who are capable in design, construct the asset, provided financial and take up operational risks (Jin and Zhang, 2011). In essence, PPP is a contractual agreement among partnering parties for achieving value for money in term of reduced life cycle cost of the project, increased quality and profit, equitable risk distribution among practitioner, understanding working objective and scope of both parties and build the trust to bring success of the project.

2. Espousing PPP in Malaysia

During last few decades, privatization has been increased and practiced with different terms and conditions. In construction industry, participation of private sector has been promoted. However, the word privatization is often expressed by two different mechanisms of procurement known as Private finance initiative (PFI) and Public Private Partnership (PPP) which are widely adopted in Malaysia also. During 2005, in 9th Malaysian Plan (9th MP), PFI approach was introduced for development, operation and maintenance of the facilities (Syuhaida, 2009) to ensure that the Government assets are managed efficiently and innovatively in achieving value for money (Takim et al, 2008). In PFI, private sector arranges capital investment and provides service. All the responsibilities of execution of project which include financing, construction, management, operation and maintenance are taken over by private sector. In return of these, public sector pays rental charges to the private companies in the form of lease through the concession period (Economic Planning Unit, 2006). PFI has offered several benefits such as reduction in project construction time, control of budget and reducing substandard work (Syuhaida, 2009). Hence, PFI is day by day increasing procurement strategy which is adopted to facilitate the delivery and services of Mega projects between public and private sectors (Norwawi, 2006).

Now days, Public Private Partnership (PPP) is also widely adopted procurement strategy worldwide. PPP is a procurement method where government invites private for a legal contractual relations in order to design, construct, finance, manage and take the operational risks of the public sector infrastructure facilities (Darrin and Mervyn, 2002; Jin and Zhang 2011). A careful design and management of PPP contract, is very effective in sharing the financial burden and operational risk of

the project between public and private sector, increasing value for money and reducing development cost (Li et al, 2005).

Government of Malaysia in promoting the participation of private sector for development of country has focused on PPP implementation in tenth Malaysian plan (10^{th} MP). It will reduce government's financial burden and also deliver quality projects within the shortest possible duration.

3. Comparison between PPP and other procurement Method

Success of delivery of any construction project depends on the type of procurement method. Hence, the suitable selection of the procurement is very important. The selection of PPP procurement depends on the features. The summary of distinctive PPP with other procurement methods as depicted from Public PPP Malaysia Guideline (2009) is presented in Table 1.

Table 1 highlight that, though the features for each procurement method are different but at some extend they have similarity which reflects the strength and weakness of each procurement method in delivering a project which helps the practitioners in selecting suitable procurement method for a particular project.

Table 1: Distinctive PPP with other procurement method

Features	Conventional	PPP	Privatization
Finance	Client provides funds for procurement which has significant effect of financial status of the government	Private sector arranges funds which strengthens government's financial position throughout the concession period	Private Sector is responsible for arranging funds and hence there is no effect of government's financial position
Risk	Public sector is responsible for all the consequence and associated risks	Risks is shared by all partied involved in the project	Risks are entirely borne by the private sector.
Involvement	Extensive public sector involvement at all stages of project life.	Public sector's involvement is through enforcement of pre-agreed KPIs.	Government acts as regulator.
Relationship	Short term relationship between client and contractor.	Long duration relationship between client and contractor	Long duration relationship between client and contractor
Applicability	Suitable for projects with high rate of socio-economic returns	Suitable for commercially viable projects where public sector is the main purchaser of the output.	Suitable for projects with high commercial viability where public sector is not the main purchaser of the output.

4. Principles of PPP

According to Oxford dictionary, principle is a general idea or plan, used to indicate something is theoretically possible which in reality may not actually happen. There are several principles to be considered when applying PPP. Key principles for applying PPP are competition tender bidding, value for money, output specification and key performance index (KPI), and equitable risk distribution.

4.1 Competition tender bidding

The most important principle in PPP is the competitive bidding. It is very important that bidding process must be transparent, clearly spelt out where short-listed company is invited for negotiation to get the project. But in Malaysia, open tender is not fully applied and there are several companies which have already been awarded projects under the PPP procurement without any competitive bidding (Khaderi and Aziz, 2010). For example; Penang Second Bridge was awarded to UEM Builders Bhd under PPP procurement without any open tender process. Ekovest Bhd and Faber Group also got the tender to build a National Institute for Natural Products, Vaccines and Biotechnology for the Ministry of Health in a joint venture but it was not exposed that how Ekovest Bhd won the project (Khaderi and Aziz, 2010). It is very important that open competitive tender process is adopted to select the most qualified contractor based on their expertise and experience.

4.2 Value for Money

Value for money (VFM) is another key aspect to ensure that PPP is able to maintain good performance over the contract duration. VFM reflects the life cycle cost and quality requirement of the user's needs which can be achieved by following measures as described in (Public PPP Malaysia Guideline, 2009):

1. Risk transfers equally between the public and private sectors. For example; the government manages the problems of land acquisition and private sector manages the issues related to finance and maintenance the facilities.

2. To avoid losses, long term contracts are planning by including whole life costing for the project.

3. Competition in tendering process is used which provides fair value of the project and transparency in selecting the concessionaires to make sure that the practitioner can deliver their good work in the project.

4. Project is evaluated using performance-based payment mechanism through KPI to avoid poor quality of works and delay in the project progress.

5. To achieve VFM in project, selected private sector must have expertise and skills to deliver the project.

In essence, achieving VFM is the main objective for PPP project. VFM can be obtained through a combination of service quality, cost reduction and equitable risk transfer (Takim, R., et al, 2008). Value for money can only be achieved if the procurement is properly implemented.

4.3 Output Specification and Key Performance Index

Output specification and key performance index (KPI) is another key principle for delivering PPP projects. Through KPI, the government is contracted to pay for the services but not the assets. As the private sector invests the capital, they have the incentive on delivering work on time and within budget. Hence, there are less chance for late deliveries, no shoddy workmanship and definitely no abandoned projects. This is due to the payment for services, which is linked to their performances. Besides that, the responsibility of the private company is to perform well in PPP project because; with their expertise of managing, financing, designing and maintaining the facilities; it contributes to success in deliver the projects (Khaderi and Aziz, 2009).

4.4 Equitable Risk Distribution

Risk distribution is another key principle in PPP. Risk sharing among the Government and private sector is necessary to obtain VFM (Khaderi and Aziz, 2010). There risk should be optimal and equally transferred to the private sector. The fair role of risk allocation is transferring risks to the party who is capable to bear the risk.

As example of fair risk distribution; the Government invests in the form of land or soft loan, provides social responsibility, environmental awareness and an ability to mobilize political support. Private sector uses expertise and innovations for financing, managing and running the business efficiently (UKAS, 2010). The categorized PPP equitable risk allocation is as in table 2 below.

Table 2: Risk allocation among PPP practitioner

Risk allocation group	Risk Factor	Preferred Allocation
Political	Political conflicts Poor decision making process Political opposition to project	Government Government Government
Economic	Poor financial market Inflation rate	Government Primarily to private
Legal	Legislation change Tax regulation change	Shared Primarily to private
Social	Public opposition to project	Dependent upon project
Natural	Force majeure Geotechnical conditions Weather	Shared Private Private
Project Selection	Land acquisition Level of demand for project	Public Primarily to private
Finance	Financing capacity Financial attraction to investors Less revenue generation than expected	Private Primarily to private Private
Design	Delay in project approvals and permits	Dependent upon project
Construction	Construction cost overrun Construction delay Low operating productivity Maintenance costs higher than expected	Private Private Private Private
Relationship	Inadequate experience in PPP Inadequate distribution of responsibilities and risks Difference working method Lack of commitment	Dependent upon project Shared Primarily to private Shared
Third party	Staff crises	Primarily to private

5. Mechanism of PPP

Mechanism refers to the theory that completes the explanation of the implementation of any process. This section discussed on the participant involved in PPP projects and the process of PPP procurement.

5.1 Parties involved

There are eight participants involved in PPP process as in Figure 2.1. From figure 1 it can be noted that civil engineers (CEs) are represented at the intersection of the different participants. This means CE should represent as good leader to conduct PPP project. So, they should be able to communicate very well, understand the positions and also can solve arguments from the other team members. It is not expected that CE will be experts in all the domains involved with PPPs, however, CE should be Knowledgeable and skilled when interacting with the participants from the other disciplines. On the other hand, Table 3 summarizes the major role of participants and the interaction of participant with CE.

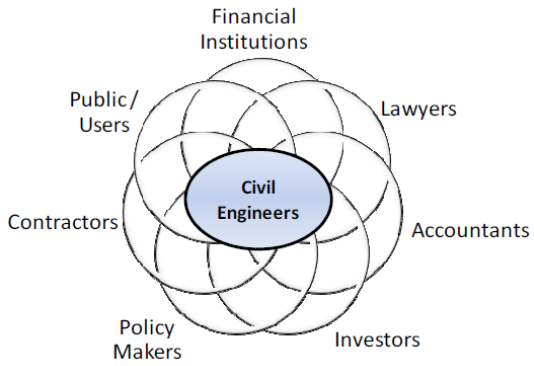

Figure 1: Participants in the procurement process of PPP (Source: Arboleda and Ricaurte, 2008)

Table 3: Interaction between Civil Engineers and other participants in PPP transactions

Participant	Major Role	Interaction with Civil Engineers (CE)
Financial Institutions	The institutions provide loan to finance the project	CE should have knowledge about interest rates, debt term, credit guarantees, service fee and documentations related with financial issues
Lawyers	They develop the legal framework for PPP	CE needs to understand the memorandum of project sponsors. Besides, clarify the mechanism to allocate the risk and dispute between the private and public parties
Accountants	Major roles in the rules for depreciation, asset valuation, and taxes	Have knowledge in tax calculations and dividend distribution policies.
Investors	Evaluate the risk and return for equity investments from private investors.	Have knowledge in dividend distribution policies and alert with schedule of equity payments.
Policy Makers	Act as project's motivator and the regulatory framework for PPPs.	Understanding the motivations and background of the public entity for the PPP project and have awareness in safety and environmental regulations.
Contractors	Carry out construction works according to the contract with the SPV.	Must be familiar with capital investments, quality assurance or quality control, bond and insurance and how to operate and maintain the facilities.
Public / Users	Users support and participant in infrastructure development.	CE should consider about users perception of the PPP and socio-economical conditions of the users.

Based on table 3, it is important to note that CE must be familiar with PPP when preparing the technical and financial proposal prior to submitting to the public entity. For example, CE should be able to discuss about loans with the financial institutions based on the project risks and guarantees as a representative of the special vehicle purpose (SPV) to be created to manage the PPP.

In PPP, SPV is an entity which is responsible to attract long-term finance or sponsors to fund the project, make payment to parties that involved in the project, deliver the service in term of quality and ensuring the assets well maintain along the concession period (Public PPP Malaysia Guideline, 2009). Thus, SPV consists of financiers, bank or a consortium of several banks, credit corporations, insurance companies and other financial institution; design team; constructor; facilities manager and also insurers (Khairudin, 2007). For achieving success in PPP projects, each practitioner involved in the project has to understand own major responsibilities and CE is required to develop a wide understanding about their obligation and responsibilities when involved with PPP projects.

5.2 Procurement Process

The process of PPP projects required a complete systematic approach as compared to traditional procurement method. Thus authorities are required to define a clear picture of PPP process.

Basic arrangement of PPP process is shown in figure 2.

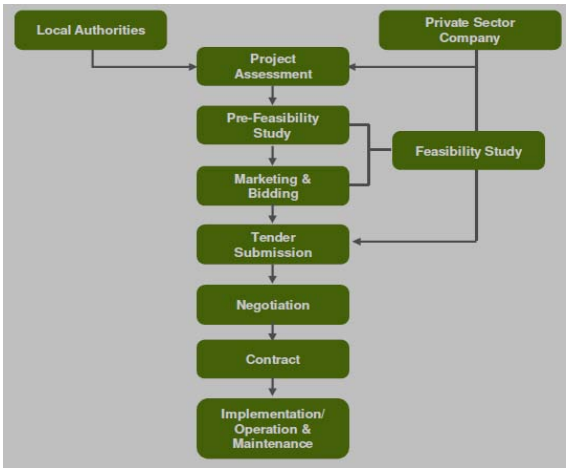

Figure 2: Basic steps in PPP project
(Source: CIDA, 2010)

Based on Figure 2, first of phase of PPP project is responsibility of the public authority. They are required to select a project management team; define the process for selecting private partner; obtain required approvals; define evaluation criteria; and establish public involvement strategy (Government Agencies PPP Malaysia Guideline, 2009).

Second phase of PPP process deals with project assessment where local authority is required to conduct assessment for ensuring that the potential PPP project is affordable to get value for money. It also includes pre-feasibility and feasibility studies, examining the true cost of the services and assessing contracting options. A pre-feasibility stage takes place before the bidding process. At this stage, projects are formulated and structured in terms of their technical design and financing. This stage is very crucial as it will determine the entire of PPP process, including establishing the risks of the project and structuring the public procurement (CDIA, 2010). In the feasibility stage, detailed feasibility study is carried out before projects reach the financial closure. In this stage, the analysis is performed in detail for final design and project financing. Besides that, a thorough study for technical, economic, legal feasibility of the project is done. Also, a demand analysis is carried out for determining the current and future demand for the services. So, the accuracy of feasibility stage will help in determining the appropriate PPP structure.

Third phase of PPP process deals with the marketing and bidding process of the project. Government applies a plan to attract the investors and participants to participate in the PPP project.

After the completion of the assessment and preparation of bidding process, documents related to request for proposal (RFP) are prepared which are issued to prequalified bidders. As suggested by CDIA (2010), RFP includes:

1. Instructions to bidders
2. Initial design, performance specifications and economic parameters such as discount rate, inflation factor and foreign exchange rate.
3. Draft contract document which reflect the contractual arrangement under which the project shall be undertaken.
4. Project estimate, conditions of contract, forms of bid and performance bond.
5. Applicable rules and regulations; and other necessary documents of authority concern. RFPs also include other project information such as financial models, spreadsheets, slide presentations, and photographs.

Technical proposals submitted by the contractors are evaluated based on preliminary technical data and forecasts including procedures for operating and maintaining the facility; and conditions for returning assets back to the authority in good condition. For the financial proposal, the evaluation does not only include the bid cost evaluation but also consider other factors, such as duration of the contract, tariff structure, fair profit rate, and profit sharing. Comprehensive detail on income sources such as the fare/toll price calculation and proposed escalation is also required to be provided together with all parameters set out in the terms of reference. Also, complete information regarding implementation, operation and maintenance costs is provided. It also includes cash flows, profit and loss for the duration of the entire project. Final financial report also includes details on interest rates, exchanges rates, inflation, escalation of prices, debt service and other relevant information. Besides, authorities must ensure adequate operation and maintenance throughout the life of the project.

Next phase of PPP process is negotiation. After the selection of potential bid, local authority starts negotiation with the bidder on win-win rule. Negotiation is aimed to finalize the contract conditions which can protect the interest of government as well to support the private industry for making marginal profits (Government Agencies PPP Malaysia Guideline, 2009). In the process of negotiation, it is imperative that performance/quality measures and penalties for non-performance must be clarified. Once both the parties are agreed on contract during the process of negotiation, last phases of PPP i.e. implementation phase is started. In this phase, local government is responsible for monitoring performance and ensures that private partner complies with the conditions of contract. In this regard, the agencies must ensure that the physical

works meet the output specification, design concepts, compliance with relevant laws and implementation schedule as planning.

5.3 Various PPP procurement strategies

There are various types of contractual relationships regarding partnerships which reflect different project objectives, requirements, finance sources and ownership of properties. PPPs actually vary in terms of the sector involvement. In some cases, all aspects of the project fall under the responsibility of public sector while in other cases private sector carries all the responsibilities. Various types and description of PPPs contract practiced in Malaysia are summarized in Table 4.

As in Table 4, all PPP contracts have different contractual arrangements and successfully being applied in the PPP project in Malaysia practice. For example: projects executed on BOT contract in Malaysia include North-South Expressway (PLUS), Penang Bridge, KL Monorail and LRT project. While based on BOO procurement method, projects carried out are Paka, Lumut, Kuala Langsat and Pasir Gudang Power Plant. In addition, for lease-purchase example project is Klang Container Plan (Lee, 2011).

Table 4: Descriptions of various types of PPP contract

Types of PPP	Descriptions
Build-Operate-Transfer (BOT)	Private sector is responsible to finance, design, construction, operate, and maintain the project along concession period. Finally, the asset is transferred back to the government at the end of concession period (Kumaraswamy and Zhang, 2001).
Build-Own-Operate-Transfer (BOOT)	The private developer obtains exclusive permit to finance, build, operate, maintain, manage and collect user fees for a fixed period to pay back investment. At the end of the contract, the facility is transferred back to a public authority
Build-Own-Operate (BOO)	It is similar to a BOOT project, however, the private sector retains the ownerships of the asset in long period. The government only agrees to purchase the services produced for a fixed length of time (Chege and Rwelamila, 2001).
Lease- Purchase	This approach can be taken where local government requires a new facility or service but may not be in a position to provide financing. Thus, the private partner involves with design, finance and building a facility. Then leases to the Government for a specified period after which ownership is shifted with the local government

6. Summary

PPP is now days growing procurement method which can be beneficial in developing the countries if implemented properly. Thus, in order to understand the fundamental concept and requirements of PPP, this paper has discussed review of literature. It has highlighted the various procurement types together with the difference among procurement, principles. Mechanism of PPP also was discussed to improve understanding about practitioners involved with PPP projects and how the PPP process works from beginning until the end of concession period that is applied in Malaysia. In essence, PPP can be seen as the best alternative for Government to invite private entities involved with nation economic development.

Acknowledgements:

The authors would like to thank Universiti Tun Hussein Onn Malaysia for supporting this study under FRGS1222.

.

Corresponding Author:
Dr. Aftab Hameed Memon,
Faculty of Civil and Environmental Engineering, University Tun Hussein Onn Malaysia
E-mail: aftabm78@hotmail.com

References

1. Sanjeev A. Procurement Models in Agri Supply Chain Involving Public Private Partnership. Paper presented at FAO/AFMA/FCI Regional Workshop on Integrated Supply Chain Management, in Delhi, India, during 31 March – 4 April, 2008
2. Loosemore M, McCarthy CS. Perceptions of Contractual Risk Allocation in Construction Supply Chains. Journal of professional issues in engineering education and practice, 2008; 134(1): 95–105.
3. Chan APC, Yung EHK, Lam PTI, Tam CM, Cheung SO. Application of Delphi method in selection of procurement systems for construction projects. Construction Management and Economics, 2001, 19(7): 699-718.
4. Hong Kong Efficiency Unit. An Introductory Guide to Public Private Partnerships (PPPs). Second Edition. Hong Kong. March 2008: 16
5. Business Dictionary. Retrieved on April 7, 2012, from http://www.businessdictionary.com/definition/public-private-partnership.html.
6. European Commission. Green paper on public-private partnerships and community law on public contracts and concessions. 327 Final,

European Commission, Brussels, Belgium, COM, 2004
7. International Monetary Fund. Public private partnerships, government guarantees, and fiscal risk, Fiscal Affairs Dept., International Monetary Fund, Washington, DC, 2006
8. World Bank. Public Private Partnership Units: Lessons for their Design and Use in Infrastructure, Sustainable Development in East Asia and Pacific, World Bank, Washington, DC, 2007
9. Jin XH, Zhang G. Modelling optimal risk allocation in PPP projects using artificial neural networks. International Journal of Project Management, 2011; 29: 591–603
10. Syuhaida I, Key performance indicators for private finance initiative in Malaysia. Master Thesis. Universiti Teknologi Malaysia, 2009.
11. Takim R, Abdul-Rahman R, Ismail K, Egbu CO. The acceptability of Private Finance Initiative (PFI) Scheme in Malaysia. University Technology MARA (UiTM), 2008
12. Economic Planning Unit, 2006, Retrieved from http://www.epu.gov.my/en/ninth-malaysia-plan-2006-2010
13. Norwawi E. Keynote Addrees – the 2nd Annual conference on privatization, public private partnerships and private finance initiative, presented on 12-13 June 2006 at Mandarin Oriental Kuala Lumpur. Retrieved on 17 March 2012 from http://www.ppp-advisory.com/speeches1.htm
14. Darrin G, Mervyn KL. Evaluating the risk of public private partnerships for infrastructure projects. International Journal of Project Management, 2002; 20: 107-118
15. Li B, Akintoye A, Edward PJ. Critical success factors for PPP/PFI projects in the UK Construction Industry. Construction Management and Economics, 2005; 23(5): 459-471.
16. Public PPP Malaysia Guideline. Public-Private Partnership Unit Prime Minister Department Putrajaya, 2009. Retrieved on 10 Oct 2011 from http://www.ukas.gov.my/c/document_libray/get_file?uuid=d35ed011-75ef-4518-a01c-14db7ae32c34&groupId=15223
17. Khaderi SS, Aziz ARA. Adoption of Private Finance Initiative (PFI) in Malaysian Public Works Projects: Are We Ready? University Science Malaysia. Proceeding papers and postgraduate papers from the special track. Held at the CIB world building congress, at The Lowry, Salford Quays, United Kingdom on 10 - 13 may 2010.
18. Khaderi SS, Aziz ARA. An Overview Of Implementation Private Finance Initiative (PFI) In Malaysian Construction Industry Fifth International Conference on Construction in the 21st Century (CITC-V)"Collaboration and Integration in Engineering, Management and Technology", Istanbul, Turkey, 2009
19. UKAS, Economic Transformation Through Strategic Public Private Partnership Pamphlet. Public Private Partnership Unit/UKAS. Prime Minister's Department, 2010
20. Arboleda CA, Ricaurte JL. The Role of Civil Engineers in the Procurement Process of Public Private Partnerships. University of Illinois at Urbana-Champaign, Department of Civil and Environmental Engineering, 205 N Mathews Ave, Urbana, 2008.
21. Khairuddin AR. Private Finance Initiative (PFI). Concept and Method of procurement for construction projects (with specific reference to Malaysia. Kuala Lumpur. International Islamic University Malaysia, 2007
22. CDIA. Cities Development Initiative for Asia (CDIA), PPP Guide for Municipalities. CDIA Funding Agencies. Metro Manila, Philippines, 2010.
23. Government Agencies PPP Malaysia Guideline. Public-Private Partnership Unit Prime Minister Department Putrajaya. 2009. Retrieved from http://www.ukas.gov.my/c/document_library/get_file?uuid=87c8ab58-4a02-46c3-9211-b6cea8d92304&groupId=15223 on 10 Oct 2011.
24. Kumaraswamy MM. Zhang XQ. Governmental Role in BOT-led Infrastructure Development. International Journal of Project Management, 2001; 19(4): 195-205.
25. Chege LW, Rwelamila PD. Private Financing of Construction Projects and Procurement Systems: An Integrated Approach, in Proceedings of CIB World Building Congress, Wellington, New Zealand, April, 2001.
26. Lee C. Infrastructure and economic development. University of Wollongong. Policies and Issues in Economic Development, 2011.

5/10/2014