REINTERPRETING VERNACULAR AS A STRATEGY FOR CAPACITY-BUILDING IN THE URBANIZING SOUTH: ARCHITECTURE & LABOUR POLICY-MAKING

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Abstract

Over the last 30 years, many countries in Asia, Africa, and Latin America have experienced a strong expansion of their urban economy, irreversible changes to their rural economy, an increase in urban land values, internal migration, and the urbanization of the poor. Today, in many large cities of the region, these factors have facilitated and intensified the fragmentation of construction activity into almost separate spheres of production, with little or no reciprocal connections in training, know-how, and career-development paths, and consequent limitations in cross-system application of technology transfer.

In such context, the discursive references of vernacular to create technically and culturally exclusive niche markets for architectural production could only reinforce the cross-market compartmentalization of building knowledge, and the subsequent inability of architecture to engage in social building production activities. Instead, this paper looks at the vernacular from a labour policy-making point of view, that is to integrate its 'on-the-job' training conceptions within a design and technological vocabulary that envisages real building projects as training grounds, thereby projecting the latter as a vehicle through which labour development opportunities are created and linked.

The realm of 'vernacular' in the 'regionalist' architecture: Ideological 'products', cultural 'processes' and social intent

Judging by the plethora of architectural monographs and research papers published over the last two decades under various themes coalescing the notions of 'architecture' and 'vernacular', it is evident that the search for a 'new vernacular' has become increasingly significant to the contemporary architectural debate in the urbanizing Asia, Africa and Latin America. The origin of such approach to architecture in the South can be traced back to the era of quasi-industrialization in 1960s and 1970s, where the inward-oriented economic models based on import substitution forced the building industry to experiment with new forms of construction using local materials and methods. Under the banner of 'critical regionalism', however, the use of vernacular building methods for architectural production – in particular, those representations from the past - was later promoted as a 'style' to reinforce the reconstruction of national cultures and identities, seemingly threatened by the forces of globalization. The local practitioners of this approach tend to rely on cultivated clients to produce their architecture, and are informed by ethos that seek to construct meanings to their work through 'identity', appropriate 'style', and the phenomenology of 'place'. Although the self-imposition of boundaries is understandable from an operative and intellectual point of view, such a limiting position has led to a cultural avoidance of commercial and social building production spheres, thereby creating a restrictive framework for architecture to discuss the problems of mass housing, de-skilling, and urbanization.

In introducing the notion of 'critical regionalism', Tzonis and Lefaivre (2001) claims that the concept of regionalism needs to be 'critical' – as in the Kantian notion of 'test of criticism' – in order to distinguish from its sentimental, prejudiced, and irrational use by previous generations. On the contrary, its current application in the urbanizing South has transported the idea of 'regionalism' back to its obsolete, commercial, and chauvinistic campaigns. Incidentally, not only the ideological basis of regionalism, but also its technological framework has failed to respond to the shifting social landscape of highly urbanizing nations. The insistence of labour-intensive building systems, the dependence on scarce local materials and the reliance on highly skilled craft traditions have allowed 'regionalism' to develop a place-based language of aesthetic seduction, but it lacks the necessary dose of realism to discuss the 'critically-regional' problems concerning the physical, cultural and technical degradation of the society and its building sector.

In order to delineate an industrial response that is inclusive of the social program, it becomes necessary to overcome this discursive monopolization of architectural production, and develop regional practices that produce 'meaning' to their work through social intervention. This will require a change in approach, attitude, and understanding of the way vernacular knowledge structures are incorporated into the contemporary

architectural practice. In particular, alternative strategies must be developed to bring together the socio-cultural and socio-technical underpinnings of the vernacular practice and architectural production, which however, must deviate from the idea of 'regionalism' that projects traditional histories and technologies as a way of legitimizing ideological and cultural boundaries. Instead, a subsequent approach to architectural design must be derived out of its ability to discuss grass-root problems of the society at large.

Re-interpreting vernacular: Constructing a socially-relevant standpoint

The point of departure to such analysis naturally requires emphasizing a conception of 'vernacular' from a socio-cultural point of view, as opposed to the general elucidations that see it as an idea belonging to a past tradition, thus bringing upon a nostalgic and parochial meaning to the word. In 'The New Fontana Dictionary of Modern Thought', for example, Michael Brawn (2000) defines 'vernacular' as an indigenous style of building "... of considerable virtue and, to some extent, associated with a golden past". Alexander (1976), while admitting that the vernacular is extremely practical and has a balanced view of economy, calls it a 'timeless way' of building that is universal and therefore, 'spiritual'. In the book "The architecture of an island", it is even claimed that the sensible building processes represented by vernacular has ceased in Sri

Lanka (Lewcock, Sansoni & Senanayake, 1998). A more candid definition of 'vernacular' calls it a rudimentary building of shelter and an activity that exhibits reason, efficiency, economy, and durability (Porphyrios, 1982). The idea of vernacular, as such, has not much to do with intuition, style, or spirituality; it rather points to ethos of constructing a building under the conditions of scarcity of money and materials, and operative constructional techniques disseminated through tacit and empirical knowledge platforms. In other words, it is a self-conscious process that responds to specific social, economic, and cultural dimensions of a given time and space. When compared with the lifespan of a vernacular framework, however, the evolvement of such self-conscious responses can be considered as insignificant to be recognized; with the failure to identify the origin of such processes, they are being received as intuitive responses.

On the contrary, if the socio-economic and socio-cultural reasons behind the formation of vernacular concepts can be identified – particularly, from a technology transfer point of view - they can then be reinterpreted within a design and technological framework that acknowledges the empirical knowledge structures and skill dissemination as key imperatives of the building process. Critical to this approach is the recognition that, although the historical associations are important to the development of a vernacular structure, it is an evolving socio-technical phenomenon; due to the changing economic and spatial conditions in urbanizing economies, the contemporary vernacular can be seen as having forms that are not reminiscent of a past tradition. Yet, as it was with the traditional societies, the

vernacular of nowadays produce solutions that are pragmatic, climatically responsive, and achievable inexpensively. On the other hand, however, certain transformations have led to deficiencies in performance and application of vernacular building practices, culturally as well as technically. One such problem lies in its knowledge dissemination.

Within the vernacular building traditions, transfer of knowledge and the subsequent development of specialized building crafts are manifested through a process of informal apprenticeship. This involves trainee-workers working on a task with someone knowledgeable – often the master builder - *"... by observing their methods, investing in the tools of that trade, absorbing their culture, and practicing under their scrutiny"* (Groak, 2001). During this apprenticeship period, it is expected that the apprentice will encounter most of the practical situations of the trade, and will learn not only from the master, but also from their own experience, thus inhabiting a self-learning capacity. Moreover, the simulation of practical tasks is done through sample tests and mock-up systems, which give an opportunity for discussion, reflection, and training on the work without the cost or penalties of unacceptable work in a real situation. The site-specific and team-oriented nature of vernacular production means that learning opportunities can also be created by merely observing others at work. In-fact, with reference to the volatile nature of building process, Groak (2001) claims that the best place to understand and learn about the ways of building is at the point of production – i.e., on the site or in the factory.

Barriers for cross-industry technology transfer: Pigeonholing of construction knowledge

However, the above process of knowledge dissemination based on a close association between master craftsmen and their disciples is increasingly threatened by the recent restructuring trends that have been taking place in the construction sectors of urbanizing economies. In traditional construction activities, the master craftsmen were responsible of organizing and engaging their labour gang, which often consisted of members from the same village, thus leading to the formation of artisan villages. With the recent introduction of labour out-sourcing practices, however, the workers now tend to transfer their allegiance to the person who finds them work and pays their wages – i.e., the labour sub-contractor – as opposed to the master builder who could potentially pass them the operative knowledge of the trade. This has diminished the traditional loyalty structures and hindered the opportunity for informal skill formulation.

The above problem is further amplified by the rural-to-urban migration process, which has led to a progressive growth of the informal sector workforce by generating a steady supply of unofficial workers to the urban labour market. This workforce is generally characterized by low wage structures, low skill definitions, lack of protection, dominance of self-employment, easy entry and low productivity (Oberai, 1993). For most of these migrants, who have neither the educational qualifications nor the practical knowledge to find employment in the formal sector, the construction work has become the

natural entry point into the informal job market.

However, without adequate knowledge-building platforms – both formal and informal – these migrant workers tend to confine forever into insular activity pockets, characterized by the low-skilled, labour-intensive, and informal building markets that they serve and the original social status that brought them there in the first place. This has led to a technological fragmentation of the construction industry by establishing further restrains for training, know-how, and carrier development paths, and subsequent limitations in internal knowledge dissemination and technology transfer. Such type of industrial compartmentalization is detrimental to the social acquisition of skills, and restricts the operational frameworks of given technologies (Pathiraja and Tombesi, 2009).

Increasingly, labour policy-makers - such as the International labour Organization (ILO) - are projecting the building sector as an important seedbed for employment creation in developing countries. However, the subsequent socio-economic growth of the construction workforce would not be possible unless knowledge-building platforms can be set up to help workers overcoming the 'technological barriers' generated by their own skill limitations. In particular, adequate opportunities to 'bridge' the knowledge gaps between different construction markets must be in place, allowing workers to travel across the industry and participate in other – and relatively capital-intensive - work that may offer them higher wages. The bottom line is that, unless the technological environment is embedded with an inherent capacity for labour up-skilling, the advance of labour from low-waged, entry-level, informal workers to well-paid, skilled workers does not occur as smoothly as policy makers may have implied.

Robust technology: Imagining labour up-skilling through building process

A position taken up by this paper on workforce development looks at whether the above 'technological bridging' can be achieved through the building procurement process; in particular, can real building projects be used as training grounds for labour development, thereby re-visiting the on-the-job training conceptions of vernacular practice, but realized within a more formal and industrially-organized framework.

This approach, however, impinges on two key strategies. Firstly, for building projects to be used as training opportunities without compromising their productivity, technological systems with latitude for errors and non-optimal application must be employed - i.e., they must be inherently 'robust' as opposed to precise and therefore more 'sensitive'. To this end, it is considered advisable to recognize that technological contamination and compromise can increase the rate of participation of the labour force to their own progressive training. What is proposed, in other words, is the definition of a broad technological framework at industry level that is both flexible and adaptable, and can therefore be used to expand the options available within any given project, helping the
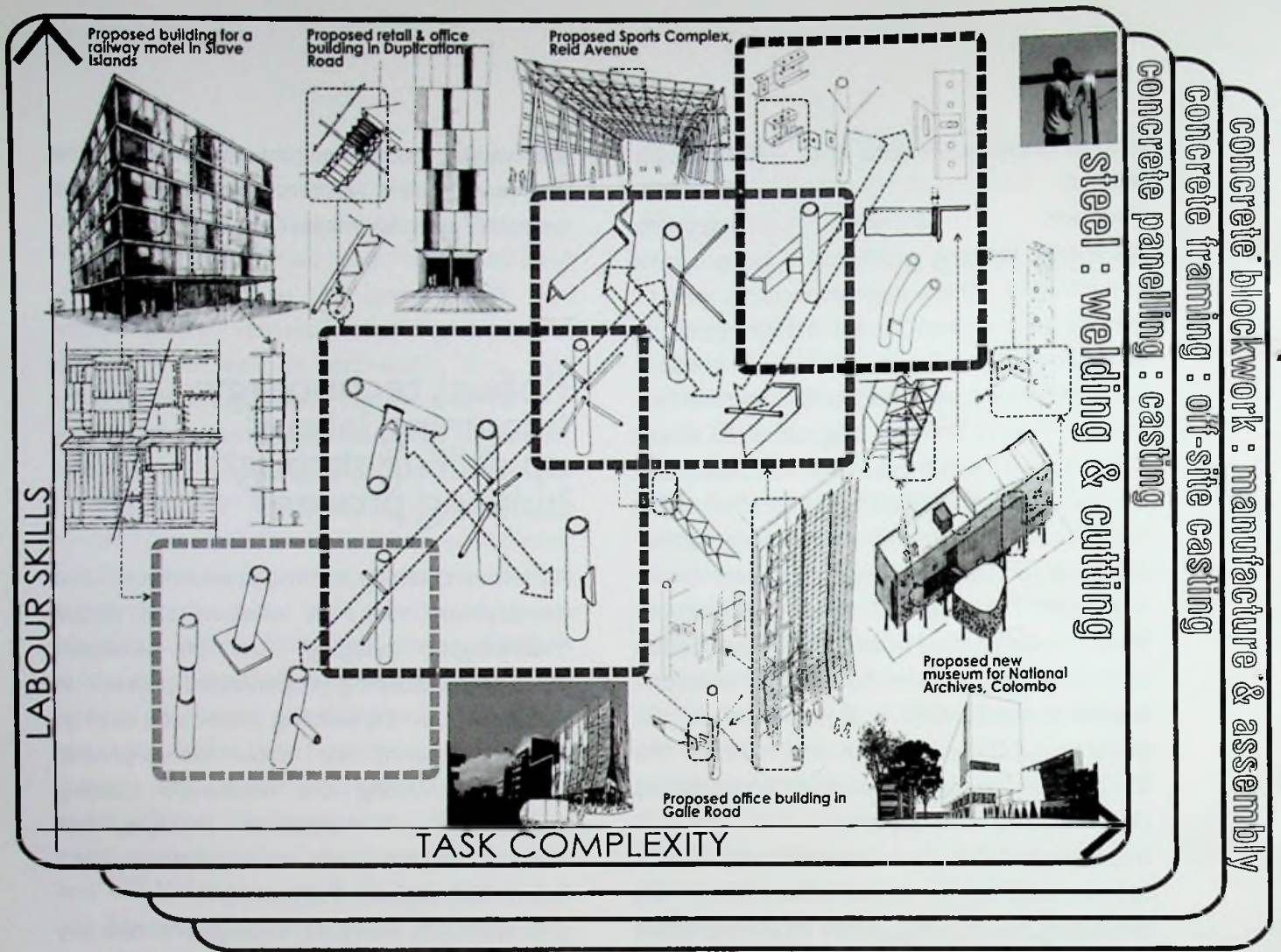
Figure 1: Cross-industrial labour up-skilling strategy for steel welding and cutting skills

latter perform as training grounds.

Secondly, the proposed training interventions should target specific skills necessary for workers to overcome the socio-technical *'barriers'* between insular construction markets. In particular, to help workers travelling from one construction market to another, the particular up-skilling applications should correspond to an incremental, cross-market knowledge-building platform. I shall explain this further by referring to a series of ideal-typical design projects undertaken in Colombo, Sri Lanka. These projects were set in construction markets of

different economic and technical complexities, so that a scalable intervention of proposed training opportunities – or *'socio-technical bridges'* - can be realized. The graph in Figure 1 illustrates the results of the above process with respect to the use of steel welding applications for training tasks.

The graph thus represents a social matrix where the skills and technical complexities built into a series of steel welding joints is epitomized in a scalable paradigm. Incidentally, all these welding joints are incorporated into building systems proposed for real building projects, thus denoting a possible

knowledge-building path where one could move from one project to another – and therefore, from one construction market to another - by using the welding systems as opportunities for incremental knowledge building. For example, one of the jointing systems considered for the lower end of the technical ladder focuses on welding a steel reinforcement bar to a steel tube using a 'tee' joint. Consequently, a façade screening system using the above welding joint is proposed for a motel building, thereby projecting the facade building process as a training opportunity. Then, in the higher up of the technical ladder – in the third socio-technical pocket to be precise - a joint that uses the same materials but welds four re-bars to a steel tube is conceived for a vertical truss that holds self-moving, sun-shading panels of a commercial building. In between these two joints, however, a series of other jointing systems have been proposed to work as 'technical bridges', so that the welder who works in the motel project can use the intermediate systems to acquire the necessary skills to move into the higher construction market and perform the joint for the commercial building.

Planning for on-site labour training: Strategic interventions to the building design process

Designing particular building systems to incorporate training interventions, however, requires strategic planning at broader conceptual level. In particular, specific formal and technological decisions must be taken at the building design stage, so that the subsequent skill building tasks can be assimilated to the building project without subjecting the latter to a failure chain.

A proposition put forward by this paper argues that this process of delineating the information required to set up the labour-training workshops must be organized under three reciprocal stages (Figure 2). In the first step, the 'physical outcomes' of the targeted building systems will be determined by acknowledging possible workmanship mistakes that may take place during the training interventions; crucial to this process is the definition of adequate tolerance levels to the building system. The second phase involves the task of identifying the 'factors of production' – physical, cultural and material – that are necessary to set up the subsequent training opportunities. The final stage explicitly outlines the fabrication 'process' that must be followed to erect the particular building system, thereby setting in motion the skill-building tasks.

These three design stages, in-fact, confirm to three key technical attributes that must be in place for a successful application of the proposed labour-training strategy. Firstly, the building design should incorporate technological applications that offer training opportunities to build targeted skills to a given labour group. Secondly, physical and cultural conditions necessary for the implementation of training tasks must be addressed during the initial project conception. In that respect, conditions such as the nature and extent of the training program, the physical site where the training task is to be performed, the minimum working module required to build the specific skills, the minimum work gang needed to

Figure 2: The three reciprocal stages of 'training-focused' building system design.
This particular example details a façade screening system proposed for a motel building in Colombo. The façade skin will be fixed to the motel balconies so that the latter can be used for outdoor lodging; during the construction phase, the balconies, in-turn, could be used as micro-construction sites, thus averting the need for additional capital input in terms of space and resources required for the fabrication and training process.

carryout the up-skilling tasks, etc., are all ought to be dealt with at the building design stage. Thirdly, the building design should be conceived in such a way that the overall outcome of the project is not compromised due to the on-site training interventions. In other words, workmanship errors that may transpire during the skill-building tasks should not lead to a chain of failures in the performance of the final product, neither formally nor environmentally or mechanically. Accordingly, the third stage is conceived to bring together the information developed at the previous two stages by building further tolerances, and delineating a fabrication process that can be executed well by unskilled labour following a modest up-skilling process.

Conclusions: Labour policy-making capacity in architectural design

By proposing such an organic knowledge-building platform, I argue that architectural design in general and real building projects in particular could constitute the intellectual and physical instruments through which labour development opportunities can be conceptualized, determined, and applied. The success of this framework, however, impinges in its ability to build organic links between various parties of the construction process by advocating of partnering and restructuring the networks of clients, design professionals, contractors, manufacturers, policy-makers, legislating authorities and consultant institutions. It, therefore, requires an institutional understanding and support of the framework in place.

In particular, governments can encourage this process through changes to their procurement regulations; clauses, for example, can be introduced at the tendering stage where only the actors who are willing to facilitate labour training are invited to bid for public works. Alternatively, tax and other economic incentives can be introduced to lure construction companies, clients, and professionals to facilitate the proposed labour-training activities through their own building projects. The authorities can also build incentives for workers to participate in their own progressing training by recognizing 'on-the-job' training as equivalent to suitable levels of formal education, and setting up appropriate grading structures to distinguish their qualifications in the job market.

The bottom line, though, is that architects must be the centre of gravity in this process because, not only that training tasks need to be planned, but the consequent possibility for workmanship errors has to be tolerated within the building design. What is crucial for such a depiction of architect's role is the function of 'design' in building production. In particular, building design ought to be thought as a problem-solving exercise, aimed at servicing the production process by intervening - physically and intellectually – in its different tasks and operations, including the design of 'training' tasks. This requires building systems to be designed without the need for care and precision in the making, and to ensure that the clarity of performance does not impinge exclusively on labour skills. Also necessary is a change in attitude and intent on the part of the

architectural profession; rather than using design to create far more segregated niche markets - as is the case with the current interpretation of 'vernacular' within the 'regionalist' debate - architects must find new ways to advance the society and expand people's access to better spatial and cultural solutions.

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