Roaming the Boundaries: The Less Explored Roles of Architects in the Low-Income Settlements of Texas.

CARLOS REIMERS
Catholic University of America

INTRODUCTION

Growing poverty and its consequences are one of the most difficult global realities increasingly affecting contemporary America. Rural Texas has been familiar with this reality for years. Low-Income peri-urban development in rural land with limited access to services, facilities, and infrastructure is characteristic around several cities in Texas. Known more for its relationship to the Texas border, records of this type of development in the US date back to the beginning of the 20th century.

This paper supports that the effective participation of professionals of the built environment in housing the growing poor sector relies in: a) a better understanding of the issues that stimulate low-income groups to seek for alternatives to conventional housing, b) the incorporation of the strengths of low-income groups to participate in producing their housing, and c) the need for novelty and entrepreneurship in the ways strategies can be articulated to contribute to this process.

BACKGROUND

This paper is based on a larger study on low-income housing in the unincorporated residential areas of the Texas border known as "Colonias." Colonias are peri-urban settlements developed by landowners and land speculators in rural land without infrastructure or services in the four border states of the US. Due to their unincorporated status construction codes, development standards, and health and safety regulations that are common to cities have no legal backing and are not enforced in rural land. When the problems originated by this kind of extra-legal development became evident, colonias were already in an advanced state of expansion housing close to half million people only in Texas. Much has been done during the last decades to stop the growth of new colonias and to regularize infrastructure and housing in the existing ones. However, success of these efforts is meager and mostly driven by federal and state legislature and funding. Meanwhile, low-income families have found in colonias affordable alternatives to housing and home ownership that were not available to them in conventionally developed housing. For many years, colonia inhabitants have improved considerably their housing conditions by enlarging, consolidating and servicing their homes as their socio-economic status has also improved. The study was an assessment on how colonias in general, and in particular their housing, developed from their initial stages to their current state.

ARCHITECTURE AND LOW-INCOME HOUSING

There is a longstanding interest among architects and scholars of the environmental design disciplines for issues related with housing the poor. In the United States, contemporary interest dates back to the early work of Charles Abrams (1946 and 64) on the problems created by public and mass subsidized housing production during the first half of the 20th century.[1] Research by social scientists, anthropologists, planners, and architects about the effects of rapid urbanization created a momentum that kept active the housing movement for several decades. Almost simultaneously, a renewed curiosity for contemporary expressions of vernacular building forms and other "architectures with no

Figure1: Example of Colonia showing different housing structures at various stages of development (Webb County)

pedigree" became also manifest among architects. The exhibition "Architecture without Architects" at the MOMA of New York (1965)[2] exposed the strong connection between popular building expressions of societies and the singularity of this "anonymous" architecture (Rudofsky 1964). In a moment in which conventional modern mass housing projects were plagued by innumerable administrative, financial, social, and cultural problems to house a growing urban population, the idea of a less "formal" housing involving the participation of people since its creation found ground in professional, academic, and economic circles.

Scholars and practitioners around the world turned their attention to the poor squatters and informal settlements in the urban peripheries of developing countries looking for insights that could inform housing strategies and policies. The work of William Mangin and John Turner on the squatter settlements of Peru initially published in Progressive Architecture (1968) became turning point.[3] The study of the relationships between cultures and vernacular expressions of housing (Rapoport 1969, Alexander 1969)[4] and the development of experimental housing practices emphasizing traditional technologies and low-cost local materials (Fathy 1973)[5] found space in the global architectural arena. Learnings on the participation of people in the housing production process found connections with industrialized construction, participative housing schemes and user-responsive housing on developed countries in the work of Habraken's theory on "Supports" and the SAR.[6]

The following decade was fertile for the development of conceptual frameworks for community participation and self-help and self-assisted housing (Turner, J. 1976; Alexander, C. 1977, 1985).[7] Experiences were also developed in massive self-help housing strategies (Caminos and Goethert 1975)[8] and flexible basic housing programs (Laquian 1983)[9] for the developing world. However, the impact of these efforts was very limited (Patton 1988; Hardoy 1989; Tipple and Willis 1991)[10]. In developing countries, the unstoppable growth of urbanization was far beyond the technical capacity to plan and build the amount of housing needed by new urban inhabitants. International agencies such as AID and the World Bank moved to alternative strategies by stimulating the economic environment to promote development in what became labeled as "urban management." These strategies pushed even further away architects and urban planners and put economists to lead a problem that was essentially environmental.

For architecture like for all the environmental design disciplines, this was a new call to review the functions to perform in this context. Turner had already predicted this when he described his own process of reeducation as an architect as he became more involved in housing the poor (Turner 1972).[11] However, for some practitioners the task seemed beyond the participation of architecture in low-income housing. The idea of design as the physical manipulation of space with the ultimate objective of improving the lives of people, but not necessarily with clear (or immediate) connection to an aesthetically pleasing result never permeated throughout the discipline.

> … few architects and few clients in history managed to connect what architects did or what their art had to offer to the task of improving the conditions of the working class. Many architects were far too busy to notice 'the humble attempts to house design' that engaged small builders and self-helpers and were appearing all over, whether in the growing industrial cit-

> ies or in the plotlands of southeast England (Hamdi, Nabeel 1991:169)

During the last three decades, a small but consistent work by a reduced group of architects has increasingly attracted a limited interest from professionals, both in the developing and developed world. Hamdi (1991)[12] promotes the inclusion of the common elements provided by research in housing: flexibility to allow the process of change brought by incremental construction and progressive development to unfold ensuring user fit, user participation to reestablish the connection between people and housing, and enablement which involves designing to allow change and growth. Others do not ignore the knowledge that research has brought to the field, but insist that architects working in housing need to develop an "advocacy role" by active political engagement in seeking and promoting funding for low-income housing by governments and non-profits (Gutman 2001).[13] A number of experiences have become more popular supporting the incorporation of these notions early in architectural education in schemes of action-research, design-building, community design participation, and the like. Such are the cases of Auburn University's Rural Studio (Dean and Hursley 2002)[14], Rice University's Building Workshop (Neuscheler 2004)[15], the Design Corps at Raleigh NC (Bell 2004)[16], the Pontificia Universidad Catolica's Elemental Housing Initiative in Chile (Murphy 2006)[17], and many others. Payne (2004)[18] has also addressed governments at all levels offering practical tools to review regulatory frameworks in ways that both, enable the participation of people in the production of their environment, and guide development preserving safety and health.

As the flow of old and new ideas becomes part of our globalized reality, it is important keeping up with the work of understanding the issues concerning housing for the poor as these issues also become more complex. As poverty keeps transcending geographic boundaries associated with broader phenomena that involve cultures and societies as well as economies and political systems, the chances to make even a small contribution from the architectural perspective also increase.

TEXAS LOW-INCOME SETTLEMENTS: COLONIAS

Colonias have been on the spot in Texas for several decades and yet there is no clear definition for them. A general idea is given by the Office of the Secretary of State, which defines them as *"unincorporated settlement[s] along the Texas-Mexico border that may lack basic water and sewer systems, electricity, paved roads, and safe and sanitary housing."* However, there are inconsistent definitions of what exactly constitutes the border region, indetermination in what are the standards for services and housing in rural land, and so on. Twenty yeas of legislation on colonia assistance have contributed a great deal to the ambiguity and inconsistency in defining colonias. Most definitions on colonias are simply 'operative' statements that lay out the scope of problems targeted by agencies involved in colonia assistance. These definitions are generally descriptive of the location, characteristics, perceived problems and needs of colonias. Martinez et al (1999) summarizes this view stating, *"border colonias are defined primarily by what they lack, such as safe drinking water, water and wastewater systems, paved streets, and standard mortgage financing."* [19] However, this type of definitions contribute very little to understand colonias comprehensively or differentiate them from other semi-rural low-income setlements in Texas or other border states.

Because local, regional and federal policy efforts to isolate and reduce colonias had framed the way colonias in the US are understood and perceived, the phenomenon still shows aspects insufficiently assessed and unknown. Critics argue that the excessive attention to colonias' health and safety and the prevention of colonia expansion has diverted attention from the more important issue of the shortage of conventional low-income housing alternatives for colonia inhabitants, which is what caused colonias to begin with (Davies and Holz 1992; Ward 1999)[20]. The consequence is that, despite all efforts, colonias are likely to prevail because no conventional housing offers a competitive affordable alternative to the poor (Chapa and Eaton 1997)[21].

Consequently, understanding the housing processes that operate in colonias can provide relevant information to seek housing alternatives to improve the living conditions of colonia residents.

BEYOND THE REGIONAL PERSPECTIVE

The need for a better understanding of colonias has been a good argument favoring their inclusion into a larger framework of extralegal settlements tran-

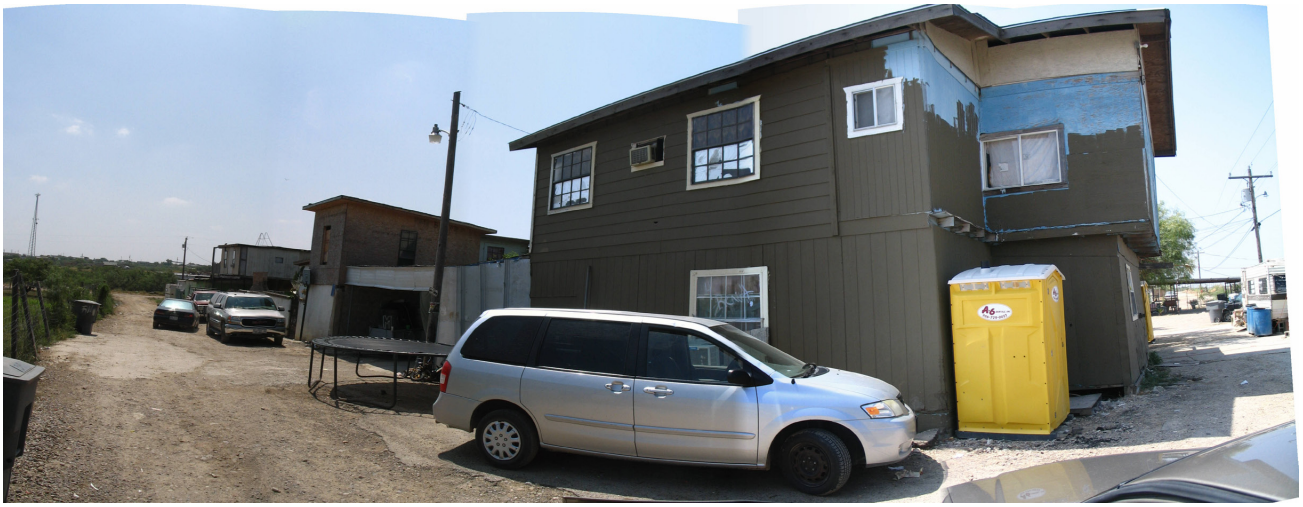

Figure 2: Multifamily compound showing several housing structures built incrementally over a long period of time.

scending regional boundaries within the US and even other countries. The idea further evolved into the insertion of colonias into new classifications for this kind of extra legal settlement in the US (Donelson and Holguin 2001; Harris 2001; Ward 2001; Ward et al 2001; Koerner 2002). [22] Harris includes colonias among North American irregular settlements. He defines these as settlements located beyond urban fringes *"where land was cheap [and] settlements were hidden from the public view"* developed in the US and Canada as early as the beginning of the 20th century. This type of irregular settlements was common in small and mid size urban centers such as Peoria in Illinois, Flint in Michigan, and Modesto in California. But they could also be found in the outskirts of big cities such as South Central Los Angeles, north of Detroit, south and southwest of Chicago, and north and northeast of Toronto (Harris 2001)[23]. These settlements were promoted by land subdividers as a cheaper alternative than land furnished with rigid building regulations in exclusive neighborhoods of cities. Unregulated settlements were very common all throughout the first half the century until the rise of suburbia, when these settlements ended up being pushed well beyond peri-urban areas. These broader perspectives on colonias helped to define a new framework for this study.

THE STUDY AND ITS FINDINGS

Research identified, documented, and analyzed the characteristics and ways in which housing was produced in Texas colonias over time. The hypothesis driving the study was that housing and households go through a process of incremental construction and change that leads to the consolidation of initially simple and even temporary forms of shelter into sound and lasting housing. Overall, settlements could be improved in this way up to what can be considered conventional urban standards (Graham and Pereau 1994; Davies and Holz 1992)[24]. Consequently, any attempt to provide support and assistance to low-income housing in the colonias would benefit from incorporating these notions in their conceptual frameworks.

The research was conducted in a group of 10 selected colonias in Webb County, Texas. Data collected included periodic aerial images of the colonias spanning a period of 18 years, information from the 2000 census on these colonias disaggregated at the block level, and information from a field survey and a semi structured interview made to a random sample of 123 households between February and June 2007. The data collected included information about the household (characteristics, composition, and motivations to build and improve their housing), and information on how the houses went from the initial structure built or set on the lot up to the present house forms. Data was compiled and analyzed using simple statistical methods and complemented by descriptive accounts of the observations collected during the survey.

Findings identified patterns by which house structures in colonias were initially built, enlarged in

Figure 3: Example of aerial sequence used in the study showing lots with incrementally built housing in colonias.

covered area, improved in quality and continuously consolidated towards completion. In terms of the housing, this research showed that:

1. Housing was built with identifiable patterns of successive changes to the initial housing structure. Small permanent structures that were enlarged with successive attached or detached additions, was the most frequently followed pattern. Prefabricated structures, such as trailers and manufactured housing, were also seen, although less frequently. Building temporary structures to be subsequently replaced by more permanent ones was much less common. After building enough covered area to protect all the members of the household, changes such as adding internal partitions to separate rooms, improving interior and exterior finishings, roofs, and exterior works such as pathways, driveways and fences became more frequent.
2. The process of housing improvement went on in identifiable stages and usually over extended periods of time. A small amount of housing was built immediately after land was acquired, while about a quarter took between 1 and 5 years to be completed. The remaining two thirds took between 5 and 15 years or longer to complete. Almost fourth fifths of all housing took its current form in 3 or 6 differentiated building stages. The remaining fifth was built in 1 of 2 stages or took more than 7 stages.
3. Many lots in colonias remained un-built for a very long period of time. Sadly, vacant lots contributed to the stereotyped image of scattered undeveloped housing that colonias have making them seem more rural, dispersed and disorganized that what they actually are. Vacant lots also prevented the creation of the economic base to support the provision of the required service infrastructure and were a serious limitation to economic and environmental sustainability of colonias.
4. Most of the land in colonias was used for housing and most lots had a main differentiable structure that housed one household (single, nuclear, or extended). A smaller number of lots had more than one main structure with a household living in each. Some of the latter were divided into sub-lots in a process of densification of large lots that could turn out to be beneficial for colonias development if it could contribute to create the base for the provision of infrastructure and services making infrastructure also more efficient as it could benefit more households. Any possible negative consequences of subdividing plots would need to be managed by developing and enforcing certain land development standards appropriate to the dynamics of colonias observed.
5. There was a small amount of economic and productive activity in colonias. This activity was often combined with the residential function and it was a positive sign of development of a local economy of services that brought certain level of autonomy to the residents.
6. The average household size was just below 4 members even though some reached up to 10 members. There was a number of single member households left after children grew up and moved out that was growing. However, an influx of new young households that found colonias an option for their housing needs was also ongoing. Many were sons and daughters of the original inhabitants of the colonia. As other residential areas, colonias are also subject to these demographic cycles.
7. Households showed preferences in the way the

house structure was built. After the first structure was completed, attached structures were preferred more frequently. Attached structures were built to improve the living conditions of the household or to accommodate bathrooms and other services or facilities. Attached structures were also used to accommodate growing sons or daughters and other family members and, less frequently, to create outdoor shaded areas. Detached additions were also used to accommodate services and facilities, shaded outdoors, or to set up shops and workshops to generate additional income to the household. Trailers were mainly used as initial structures. Less frequently, trailers could be brought in to house enlarged households. Only after enough covered area for the household had been provided would households spend resources installing partitions to separate spaces and bedrooms and further aesthetic improvements.

8. Households also showed concern and sophistication in the spatial quality of their housing. Their houses showed complex relationships prioritizing areas of more household interaction and interesting spatial speculations. Elaborated staircases connecting second floors in double high spaces, kitchens connected to open social areas, and generous shaded outdoors were commonly seen in the housing built. All these contrasted with the typical standardized one-story housing with functional layouts of reduced areas and minimal outdoor porches characteristic of conventional low-income housing.

Several equally important additional findings challenging standard practices in conventional low-income housing have not been included here due to the limits of the paper. They consistently sustain that housing incrementally produced as resources become available and the household gains economic stability shows great differences with conventional low-income housing.

IMPLICATIONS FOR PROFESSIONALS IN THE DESIGN AND PLANNING DISCIPLINES

Although generalizations on these findings should be made carefully, it is desirable that consideration of their implications could be pondered to improve the development of colonias' built environment and contribute to the quality of life of their residents.

The process observed was fluid, diverse, complex, and not without difficulties and unexpected negative outcomes. However, there were many operational aspects worth considering that tilted the balance positively if these were adequately controlled. This consideration is important because conventional housing development, production, and financing, as they currently operate, are far from competing with the mechanisms that we see going on in colonias based on individual practices of self-management construction, capital accumulation and equity building through housing. However, stimulating the process of construction observed in these colonias could contribute to turn them in sustainable built environments. Other authors have already mentioned that less rigid standards, controls and regulations that give consideration to the process observed could promote consolidation. In turn, consolidation would bring a denser and more developed residential environment that would increase the demand for facilities and services. One of the most interesting implications that the process observed has is that there is great room for improvement that could come from the participation of the public and private sectors.

Regional and local legislatures, to begin with, have the possibility to stimulate the positive aspects observed in colonias by managing the variables that can promote consolidation. Unoccupied lots undermine the tax base to support infrastructure. Plans for service improvement and even the simple sight of active housing consolidation have the potential to attract new residents who would in turn create the tax base to pay for infrastructure and contribute to the revaluation of property. Land revaluation would contribute to build up equity and stimulate higher construction standards. Preventing the sale of vacant lots alleging their lack of services affects the overall development of colonias. Legislature could have a main role unlocking this process.

Local governments and counties can also contribute to colonias development through policies, programs and projects that stimulate housing construction. Again, developing infrastructure would be a positive sign of development. Policies that aim to improve and develop colonias ought to prioritize community needs in a similar way that housing is improved in colonias. That is, needs should be matched with resources, programs, and projects addressing these needs.

Figure 4: Housing incrementally built and consolidated.

The *housing industry* has also room to participate in colonias well beyond the market of second hand trailers currently available to colonia inhabitants. For instance, the manufactured housing industry could incorporate incremental construction notions to design and supply innovative housing systems that follow the patterns of the phased process observed in colonias. Housing was rarely built at once. Affordability in colonias relied on a close match between resources available and needs. Economic resources played a part in this equation, but there were other factors equally relevant such as the cost of labor, the household's management of the process, the cost of materials, etc. Designers and engineers of the manufacturing industry have a role proposing feasible alternatives to participate in this process. An open scheme of house parts identified by this study could be produced off- site and purchased when needed. Housing sections or pods that could be incorporated into the existing house form by small crews of workers could have a high impact in the development of colonias. Innovation in design strategies of this type could find base in the work that began in the 1970s with Harbraken's SAR in housing and that has evolved more recently into newer concepts adapted to more contemporary problems, such as open building strategies (Kendall 2000)[25].

The *private financial sector* could also contribute to colonias designing financial products and programs based in the type of small, short-term loans that characterize the incremental construction observed. The lower risk of smaller loans would be attractive to colonia inhabitants who would be more willing and able to meet short time financial commitments. NGOs and private development agencies -such as CDCs, would have more flexibility to implement this kind of financial programs than conventional financial entities and banks. Successful experiences from other countries, such as the Grameen Bank, could also serve as models on microfinancing for colonias (Muhammad 2007).

Joint *participation between private and public sectors* have also space in improving colonias housing. For instance, *small-scale builders* have a relevant participation in the construction of housing in colonias. Training forces of small-scale builders in meeting construction codes and regulations in improvements made in colonias housing could have a relevant impact in increasing construction standards. Both public and private educational sectors can organize and coordinate training programs for local construction workers around the importance of meeting construction regulations and safety codes. Alternatives to rigid standards could come out of combining the accumulated local experience and the objectives of building standards.

Any of the previous suggestions for improvement is a broad invitation for the participation of professionals from the environmental design disciplines, particularly architects and planners. There are no established paths or formulas for this kind of work. Like in any work, professionals working in this type of housing will require the capacity and technical knowledge to make proposals that can effectively work in these low-income environments. But there is and advantage to work with engaged communities with demonstrated capacities to assume their role as stakeholders. These professionals will need to understand these communities as potential clients with particular needs for specialized expertise and technical knowledge, but with the managerial

skills and local know-how to take an active part in the responsibilities involved in building their housing. Professionals like these will have a leading role in organizing the housing demand of these communities and seeking connections between the informal mechanisms of these low-income communities and the formal institutions working in housing. Legislation, funding and financing, planning and development, infrastructure, innovation in building technologies and systems, community building and organization are some of the areas that can contribute to create these connections. Work in any of these areas will require novelty and creativity in devising these connections, and a great deal of perseverance and resourcefulness from professionals in getting them to work well and efficiently. It is a great challenge and an exciting opportunity.

ENDNOTES

1 Abrams, Charles 1946, *The Future of Housing* Harper & Brothers, New York. Ibid 1964, *Man's Struggle for Shelter in an Urbanizing World* MIT Press, Cambridge, Massachusetts.

2 Rudofsky, Bernard 1965, *Architecture Without Architects* The Museum of Modern Art, New York.

3 Turner, John and William Mangin (1968) The Barriada Movement in Progressive Architecture Vol 49, May pp. 154-162.

4 Rapoport, Amos 1969 *House Form and Culture* Prentice Hall, Inc., Englewood Cliffs, New Jersey. Alexander, Christopher 1969 *Houses Generated by Patterns*. Berkeley, California.

5 Fathy, Hassan 1976 *Architecture for the Poor: An Experiment in Rural Egypt* University of Chicago Press. Chicago, Illinois.

6 The SAR stands for *Stichting Architecten Research* (Architecture Research Foundation) and was founded in 1964 by architects of 10 offices in the Netherlands to research in theory and method on Architecture. John Nicolaas Habraken was its first director and the SAR became housed in the Technische Universiteit at Eindhoven, when Habraken was appointed to create a new Architecture department in 1967.

7 Turner, John 1976 *Housing by People* Pantheon Books. New York, NY. Alexander, Christopher 1977 *A Pattern Language,* and 1985 *The Production of Houses* both of Oxford University Press. New York.

8 Caminos, Horacio and Reinhard Goethert 1978 *Urbanization Primer* MIT Press. Cambridge, MA.

9 Laquian, Aprodicio 1983 *Basic Housing: Policies for Urban Sites, Services and Shelter in Developing Countries* International Development Research Center. Ottawa, Ontario.

10 Tipple, A. Graham and K. G. Willis (1991) *Housing the Poor in the Developing Word: Methods of Analysis, Case Studies and Policy* Routledge. London, U.K.

11 Turner, John and Fichter, Robert (1972) *Freedom to Build.* The Macmillan Company, New York.

12 Hamdi, Nabeel (1991). *Housing Without Houses: Participation, Flexibility, Enablement* Van Nostrand Reinhold. New York, New York.

13 Gutman, Robert (2004) *Two Questions for Architecture* in Good Deeds, Good Design: Community Service Through Architecture edited by Bryan Bell, pp. 14-20. Princeton Architectural Press, New York.

14 Dean, Andrea Oppenheimer and Timothy Hursley (2002) *Rural Studio: Samuel Mockbee and Architecture of Decency* Princeton Architectural Press. New York.

15 Neuscheler, Kim (2004) *Six-Square House* in Good Deeds, Good Design: Community service through architecture edited by Bryan Bell, Princeton Architectural Press. New York.

16 Bell, Bryan (2004) *Good deeds, good design: Community service through architecture* Princeton Architectural Press. New York.

17 Murphy, Diana (2006) *Design like you give a damn: Architectural Responses to Humanitarian Crises* Metropolis Books. New York.

18 Payne, Geoffrey K. and Michael Majale (2004) *The Urban Housing Manual* Cromwell Press. London, U.K.

19 Martinez, Zixta, Kamasaki, Charles and Dabir, Surabhi 1999 *The Border Colonias: A Framework for Change* in Housing in Rural America edited by Joseph Belden and Robert Wiener, Sage Pub. Inc. California.

20 Davies, C. S., and Holz, R. (1992) *Settlement Evolution of 'Colonias' Along the US-Mexico Border: The case of the Lower Rio Grande Valley of Texas* Habitat International, 16(4), pp 119–142. Elsevier.

21 Eaton, David and Jorge Chapa (1997) *Colonia Housing and Infrastructure* LBJ School of Public Affairs, University of Texas at Austin. Austin, Texas

22 Donelson, Angela and Esperanza Holguin 2001 *Homestead Subdivisions/Colonias and Land Market Dynamics in Arizona and New Mexico* in Irregular Settlement and Self-Help Housing in the United States edited by Angela C. Stuesse and Peter Ward, Lincoln Institute of Land Policy. Cambridge, Massachusetts. Harris, Richard 2001 *A Double Irony: the Originality and Influence of John F.C.Turner* Habitat International, 27, pp. 245-269. Pergamon Press. U.K. Koerner, Mona 2002 *Colonias in New Mexico: Rethinking Policy Approaches to Substandard Housing Problems* Paper at the 2002, Urban Issues Colloquium "Constructing Urban Space", LBJ School of Public Affairs, University of Texas. Austin, Texas.

23 Harris, Richard (2001) *Irregular Settlement and Government Policy in North America and the Twentieth Century* paper presented at the research workshop on Irregular Settlement and Self-Help Housing in the United States Lincoln Institute of Land Policy. Cambridge, Massachusetts.

24 Graham, Charles and Jana Pereau (1992) *Intermediate Technology: An Acceptable Standard for Self-Assisted Housing in the USA* in Making Environments: Technology and Design edited by Adele Naude Santos and M. Susan Ubbelohde, Association of Collegiate Schools of Architecture, pp. 138-144. Washington, DC. Davies, C. S., and Holz, R. (1992) *Settlement evolution of 'colonias' along the US-Mexico border: The Case of the Lower Rio Grande Valley of Texas* Habitat International, 16(4), pp 119–142. Elsevier.

25 Kendall, Stephen and Jonathan Teicher (2002)
Residential Open Building Taylor & Francis Group.
London, U.K.