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LOW-COST HOUSING:
THE NECESSITY OF INTERDISCIPLINARY SKILLS

By

Margaret K. Thorpe* and Dwight D. Zeck**

"Can you help?"

A letter came from a small city far removed from metropolitan life:

The city is much in need of low-cost homes for either purchase or rental. The Chamber of Commerce is interested in forming a development corporation for this purpose, but they need help. With the enlargement of our hospital facilities we have new personnel coming in and can find no housing for them. The exodus from the cities is also causing a need for more homes. We are looking for a solution. Can you help?

Had it been the only letter of its kind, it might have said less. But there were many, and each made it clear that a housing problem existed --and that the people did not know how to initiate a solution. If you were a concerned citizen or elected official, would you know? Would you know who to call or where to go or how to mobilize the needed resources? If so many are requesting help, why is so little happening?

First mentioned as a response is lack of financial resources. The availability of capital, however, depends upon the existence of a network of people capable of securing and utilizing it. To produce low-cost housing that is livable for residents and satisfying to society requires a diversity of skills ranging from psychology to landscape design.

"Thirty-five separate specialties...could easily reach one hundred"

For example, follow the process of developing Turnkey public housing, one source of the small amount of low-cost housing existent in the United States today. The first step is the organization of a local housing authority, which requires action by political leaders, local administrative personnel, and an attorney. Next the authority must apply to the federal government for a reservation of funds to develop the housing project. Preparing the application at the local level and verifying it at the federal level will involve demographers, economists, labor market specialists, building inspectors, housing inspectors, realtors, relocation officers, and social workers as some of the contributors. The political leaders, local administrative personnel, and attorneys will continue to be involved.

Once the application is approved, the private sector becomes active as selection of a turnkey developer occurs and project planning begins. Contributing at this stage will be surveyors, soils engineers, architects, landscape designers, structural, mechanical, and electrical engineers, financiers, real estate appraisers, and cost estimators. These private participants will interact with additional governmental personnel, including zoning administrators, city planners, and municipal engineers. As the project is further designed and evaluated, social psychologists, race relations experts, transportation planners, prospective tenants, home economists, and budget analysts are likely to participate. In the final stages of development, municipal bonding specialists will enter the program. And construction has not yet begun. When it does, the general contractor and his sub-contractors, with their attendant union-represented carpenters, plumbers, electricians, cement masons, roofers, and iron workers, become involved. Cited in this process are thirty-five separate specialties and the list could easily reach one hundred if a single project were followed from beginning to end.

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Private residential development involves most of the same diverse personnel as the builder interacts with governmental agencies to secure necessary permits, and with financial institutions to secure capital.

Missing would be some of the socially-oriented specialists, such as race relations experts and social psychologists. Likely to be less directly involved would be demographers, economists, and labor market specialists; however, the builder of multi-unit housing developments may well use information generated by them in deciding where and what to build. The creation of an individual single-family home would not require some of the technical personnel and craftsmen needed in larger projects. But low-cost housing, in quantities sufficient to meet the nation's housing needs, cannot be produced on a unit-by-unit basis. The trend is instead toward even larger developments than those which have been built in the past. Increasingly, thought runs to new communities--such as Reston, Virginia, and Columbia, Maryland--and to suburban subdivisions that are more than bedrooms to a central city. Such development may include new industries, shopping centers, schools, total water and sewerage systems, extensive networks of streets, open space, and mass transit systems, all as part of one integrated project. Even greater numbers of separate skills are required to produce such communities.

The desire to create new communities and large residential centers comes as a result of realization that the present system of producing housing on an unplanned, small-scale basis has been unable to provide adequate shelter or to meet the required quantity of new housing construction. Familiar obstacles to large-scale production of residences in the United States are the fragmentation in the home construction industry, and the chaotic network of local building codes and zoning regulations that necessitate arbitrary design and materials specification. Less familiar is the institutionalized lack of coordination and fragmentation among the various agencies and specialized personnel required to produce housing on a large-scale basis. Along with the entry of larger corporations into residential building, and the efforts to create uniform codes, conscious action is needed to create an interdisciplinary social structure with a comprehensive approach to housing. Without reorganization of essential human resources, society lacks the ability to guide successful large-scale residential developments.

"Exploration of obstacles essential to...remedy"

The need for a comprehensive approach to provision of low-cost housing may seem so elementary as to be unnecessary to discuss. Yet experience indicates that barriers to its achievement are formidable; exploration of the origin of these obstacles is essential to understanding their significance and possible remedy. In the late nineteenth century, the United States moved rapidly toward a highly complex industrial society. Surrounded by constant change and expanding areas of concern, citizens, elected leaders, industrialists, and social philosophers felt a declining sense of order in their lives. Most were united in a desire for growth and progress, but were concerned that it should be systematic. Efficiency and elimination of waste became the goals of a society that sought maximal production and minimal conflict.

Those who sought order turned to science, seen as precise and systematic, as the source of example. To adapt technology's mathematical objectivity to social organization was to achieve the ideal society. Social philosophers such as John Dewey, Thorstein Veblen, and Walter Lippmann verbalized the popular sentiment. Said Lippmann:

The scientific spirit is the discipline of democracy, the escape from drift, the outlook of a free man. Its direction is to distinguish fact from fancy; its 'enthusiasm is for the possible'; its promise is the shaping of fact to a chastened and honest dream.¹

The jurist Oliver Wendell Holmes echoed Lippmann's faith in scientific precision:

Very likely it may be that with all the help that statistics and every modern appliance can bring us, there will be a commonwealth in which science is everywhere supreme. But it is an ideal, and without ideals what is life worth?²

Emulating the structure of natural science in the social sphere meant classification of social functions into a system not unlike biological and geological codification of plants, animals, and rocks. Each function became a separate category, and generalists were discarded for numerous specialists. Holmes told the Harvard Law School Association in 1886, "I know of no teachers so powerful and persuasive as the little army of specialists."³ New occupational titles proliferated as the increasingly complex society sought to reorder itself into a comprehensible system. The creation of narrow fields of activity, and a proclivity toward the practical and concrete, reduced the numbers of people able to view large aspects of society comprehensively.

Only recently has this cultural direction been questioned. One hundred years of development of this nature has several implications for broad, interdisciplinary fields like housing. They are the institutional and cultural barriers to the achievement of the necessary multi-faceted approach to the housing problem. Areas like housing require a horizontal form of organization integrating several functions, rather than a vertical form covering different aspects of the activity. The obstacle: Such areas now have no trained leadership. As the narrow areas of activity grew older and more permanent, the participants in each came to communicate more with each other than with persons in other areas. Each field developed its own language. Occupational organizations, from professional societies to labor unions, developed to perpetuate and defend each specialty. The barrier: Inter-communication became increasingly difficult. The application of precise classification to functions of government produced numerous agencies which likewise became entrenched and concerned with self-perpetuation. The roadblock: Each is now jealous of the responsibilities assigned to it and resists ceding of its power to new structures. The cultural faith placed in scientists and engineers has tended to create among them a disdain for those participating in less exalted activities. Since the hope that an ideal society would emerge as the result of science-like order has not been realized, non-technologists now blame those in whom the faith was placed for the failure. The result:

A wall of poor relations between technologists and humanists. The goal

¹ Walter Lippmann, *Drift and Mastery*, 1961 (Prentice-Hall, Englewood Cliffs, N.J.), p. 151. (Originally published in 1914.)

² Oliver Wendell Holmes, "Law in Science and Science in Law," in *Collected Legal Papers*, special reprint (no date, no publisher), as delivered before the New York State Bar Association, 1899, p. 98.

³ Holmes, "The Use of Law Schools" in *Collected Legal Papers*, p. 51.

of disinterested scientific objectivity led its pursuers to view private entrepreneurs as self-seeking materialists. Traditional free enterprise suspects that disinterested means uninterested. The effect: A fence of suspicion between the private and public sectors. These barriers isolate from each other social elements which must cooperate if low-cost housing is to be a reality.

"Research in Wisconsin...found specific difficulties"

Research conducted in the state of Wisconsin indicates that these institutional and cultural characteristics form obstacles to comprehensive action aimed at solving the housing problem. The proliferation of occupational specialties and governmental agencies was found to have led to specific difficulties. First, few bodies have full responsibility in housing. Many individuals, agencies, and corporations treat it as one portion of their job; others treat some aspect of housing as their total job. A broad perspective is usually missing. For example, the housing inspector enforces the housing code, but gives little attention to personal problems of the resident of a substandard house. The social worker whose client lives in the substandard house sees the housing problem as one of many problems faced by the client. Neither the inspector nor the social worker has the responsibility or authority to deal with all of the implications of even one substandard house--much less all substandard houses in a community. The local housing authority, the one community agency whose only responsibility is housing, is concerned solely with low-income housing. Total residential development of the community is not part of its perspective.

Urban planning took its modern form during the same period that societal shapes were drawn from the models of applied science and was conceived as the field with broad community perspective. The practitioners responsible for this broad perspective, however, have not included housing. A brief survey was made of thirty-five comprehensive plans prepared by eleven different private consultants and public agencies for various Wisconsin communities. Only three of the plans gave detailed information about housing conditions; six did not even mention housing. Of the twenty-six others, eleven repeated 1960 census data, and fifteen gave only the vague, general comments of a casual observer, of which the following was typical:

The few multi-family dwellings which exist are mostly converted single-family structures. Most of the homes in Sharon are old, but in good condition. Although there is ample room for anticipated future residential developments within the village, some new homes have been scattered in the outlying areas in recent years.⁴

One study devoted eleven pages to parking needs, but made no mention of residential requirements. Since the inclusion of housing in community plans supported by the Department of Housing and Urban Development Section 701 Comprehensive Planning Grants, planning commissions receiving such grants have begun work on residential needs. Section 701 initial housing elements submitted thus far in Wisconsin, however, ranged from a sixty-six page printed prospectus with photographs, to a three-page mimeographed outline--clearly suggesting local officials' lack of certainty as to direction and responsibility. As will be discussed further, the perspective remains limited.

⁴ From a comprehensive plan prepared for a Wisconsin village in 1966 by a private planning consultant, charitably left anonymous.

Giving a second sign of the effects of societal specialization on housing, each agency asked to comment on the housing problem answered in terms of the interests of that particular agency. For example, a Community Action Agency noted racial and economic discrimination, and welfare departments cited low welfare allotments for shelter. The housing elements prepared by planning commissions placed attention upon local government responsibilities: dominant among items listed as obstacles to better housing were inadequate code enforcement staffs, lack of county housing authorities, lack of cooperation among local agencies, lack of development codes and ordinances, and lack of water and sewer systems. None of the agencies contacted perceived the problems which face the homebuilding industry. Fragmentation was cited only in connection with governmental units involved; private enterprise remained beyond their vision. All of the various causes suggested by respondents were unquestionably part of the housing problem, but each view remained isolated from the others because of the particular function of the source.

Communication among separate agencies in the same geographical area was poor, a third indication of fragmentation's results for housing. The Mississippi River Regional Planning Commission stated:

At the present time, little cooperation and coordination of activities concerned with housing in the region have occurred. Officials of the Office of Economic Opportunity, Rural Cooperative Housing, and the Farmers Home Administration all are involved with housing in the area, but these agencies have not as yet been able to dovetail their efforts with those of other local agencies....⁵

The awareness of a given source concerned with housing about the work of others appeared limited. For example, one county agency listed several persons who might have familiarity with a project of a particular community within the county, but did not mention the chairman of the local housing authority, known in the city as the prime mover of the project. Typical was the referral of one agency or individual to another; when the suggested source was contacted, that person would recommend the one who had recommended him. Neither had the information which the other guessed he might have. Local groups seeking to generate housing programs more often contacted state sources or like agencies in other communities rather than other local sources. The university systems presented a final scene of disciplinary isolation, perhaps a microcosm of the total society. Only two faculty members at The University of Wisconsin are known to be concerned solely with housing and attempting to view it in overall perspective. Both have been active for less than a year. Other individuals are involved with some aspect of housing, but do not collaborate with one another. They are scattered among the disciplines of urban and regional planning, extension education, engineering, sociology, home economics, law, landscape architecture, political science, agricultural engineering, commerce, and natural resources development. Asked to identify persons on the campus concerned with housing, two of the state universities referred only to the director of student housing. Another cited a local real estate agent. Clearly, housing has not been recognized as academically relevant within Wisconsin higher education.

The existence of the U. S. Department of Housing and Urban Development and analogous state agencies might seem to contradict this picture of a fragmented approach to housing. Yet within these institutions, isolation

of one specialized division from another exists. Further, tension is known to persist between technical and non-technical personnel concerning which group has the right of final decision. More likely, then, the creation of these agencies was a superimposition of broadness upon a culture still pervaded by narrow specialization, as seen at the local level.

The overall view which emerges is that because everyone is part of the housing problem, no one is really part of the solution. Each of the isolated agencies and individuals continues working in his own specialty and thereby sees few results in solving the whole problem. The societal rejection of generalists for specialists created a network of institutionalized barriers which have clearly hindered efforts in housing. Housing has no trained leadership of wide perspective. The various specialists needed to produce living units do not communicate well with each other. Agencies involved with housing do not cooperate with each other. Tension exists between technical specialists and non-technical personnel, and between the private and public sectors. Old assumptions must be questioned and new directions found if the United States is to have an adequate supply of low-cost housing.

"Reorganization and cooperation of educational institutions, private enterprise, and government is essential"

Scientific discoveries of the last seventy years have taught the natural scientist that the physical world and technology required to utilize it are not the neat and orderly, black or white systems contemplated in 1900. The present concern over the environment has brought to everyone's attention the complex interrelationships of separate elements necessary for successful functioning of the whole. The social system, however, remains structured upon examples derived from the old view of science and continues to use the methodology of that view in its attempts to solve problems.

Developing a society capable of handling broad, interdisciplinary issues like housing first requires a recognition that simplicity cannot be generated from complexity and that perfect order is a false, diversionary goal that leads only to fragmentation and isolation, and eventually to inability to function at all. Drawing analogies is dangerous; social organization must derive from human characteristics, not from mechanical ones. Yet even a machine cannot function when it is disassembled; if the society is to assemble the capability to produce satisfying low-cost housing, it must first rebuild the interdisciplinary world which its ordering and classifying forefathers took apart.

Perhaps the first step is to cease asking small children, "And what do you want to be when you grow up?"--as if there were niches to be chosen instead of challenges to be met. Though an extensive critique of the educational system is not possible here, certain general guidelines are essential to developing the talent necessary to solve the housing problem. Establishing interdisciplinary degree programs in housing or urban affairs is a first step. Such programs will succeed only to the degree that faculty drawn from the traditional disciplines abandon parochialism. If the economist comes to the program believing that he will teach the architect the "real truth", a necessary breadth of perspective will not reach the student.

Next, the separation of general knowledge from specific skills should be re-examined. Liberal arts programs graduate generalists with little

⁵ Mississippi River Regional Planning Commission, "Initial Housing Element," 1970, p. 6.

preparation for activities in the outside world. Professional, technical, and vocational schools provide the opposite: training for the performance of one specific occupational role. In fact, the people needed to solve the low-cost housing problem must have both in-depth general knowledge and specific skills. Further, specialized education should equip students with clusters of related skills rather than single proficiencies. Closely related is the importance of recognition by those receiving occupationally-oriented education that a degree in architecture or social work is no more final in the process of personal development than a degree in history or English literature. Specialized training can be a base for broader responsibility, just as general education can be a base for a specific proficiency.

A final comment about educational philosophy related to the capability to handle the housing problem is drawn from the student movement and involves a current cliché. Education must be "relevant". Classroom learning should be continuously mixed with community and occupational experience, even beyond cooperative programs where credit is received for work off campus. To quote one professor who has applied his knowledge to the housing problem in his community, "Professors must stop talking about national averages and start talking about local realities."⁶ Knowledge of general abstractions alone cannot be applied to reality; it must be combined with specific information to be effective.

A good example of an educational development incorporating these principals was a two-quarter graduate-level course, "Housing and Urban Resource Development," conducted at Stanford University. The program involved twenty-two departments ranging from mechanical engineering to philosophy, and focussed upon social and physical characteristics of a real city. The students applied both general knowledge and specific skills in development of a comprehensive long-range plan for San Francisco and made a contribution to their community in the process.⁷

What about the rest of society no longer within educational walls? Both private industry and government should be responsible for contributing to a social structure capable of meeting diversified housing needs. The private sector shows signs of moving toward groupings of specialists. Firms employing architects, engineers, landscape designers, and urban planners are becoming increasingly common. Corporations with diversified abilities have entered the housing field, some as a result of the Department of Housing and Urban Development's "Operation Breakthrough" program. As a specialist with one broad-based firm pointed out, however, "Housing problems are at least as much social and economic as they are physical."⁸ Expansion of these design groups to include sociologists, psychologists, educators, and other humanists is still needed.

Corporations capable of producing livable low-cost housing need a combination of generalists and specialists. Top priority in personnel selection should be given to individuals with a variety of skills, and also to talented persons whose training may not have a direct relationship to the

⁶ Millan I. Vuchich, speaking at the "Wisconsin Governor's Conference on Mission 70," Stevens Point, Wisconsin, August 19, 1970.

⁷ For further information on the program, see Bruce Lusignan and William H. Hafferty, "A Systems Approach to Urban Engineering," Engineering Education, April, 1970, pp. 811-814.

⁸ Robert J. Hartsfield, "The Process is the Product," Public Management, June, 1970, p. 11.

position, but who are clearly able to contribute. Such persons can bring original and unexpected perspectives to the solution of complex problems.

Private enterprise must also recognize that issues related to the quality of life such as housing involve everyone. Creation of satisfying low-cost homes requires inclusion of the consumer and his needs and desires in the development process. At present the bulk of housing research and development is directed toward new materials, new methods of construction, and new management techniques. Firms capable of doing housing research and development should include intensive involvement with consumers of all housing types in order to plan residences that meet needs and desires. A two-month project conducted by The University of Wisconsin - Milwaukee School of Architecture brought together residents of areas slated for renewal to discuss and develop plans for their "ideal" living environment.

Government also reveals some indications of progress toward an interdisciplinary approach to low-cost housing. Comprehensive agencies such as the Department of Housing and Urban Development have entered the concept into governmental structure; understandably fragmentation and isolation continue to exist within them and need to ultimately be eliminated. At the local level, however, little change has occurred. Executive leadership must bring together personnel concerned with housing which are now scattered through separate agencies. Where no agency responsible for broad-based housing programs exists, the initial temptation to create one should be avoided. Instead the existing, but isolated, individuals concerned with aspects of housing should be assembled and encouraged to work together to develop solutions.

Private and public sectors alike have two additional responsibilities in developing societal capability to produce satisfying housing. The first is to create organization internal to an existing agency geared to the solution sought, rather than the skills required. Division of staffs by specialized proficiencies inhibits accomplishment of goals that require diverse talents working together. The communication problem is a second responsibility. The languages of each discipline must be translated into terms understandable to the others. To avoid future institutionalization of a professional elite that cannot communicate with building inspectors, social workers, carpenters, and consumers, the use of language derived from sophisticated technology must not be extended to the point where its users cannot communicate without it. Phrases such as "transform an operational need into a description system configuration," "has stochastic inputs," and "schematic output-oriented activity-system" may mean something to the user, but they will not mean anything to the city clerk or the home economist. "If urban design is to become useful as a concept," one writer said, "we must end its mystique and stop treating it as a wondrous remedy--administered in doses by an elite corp of professionals."⁹

"Can you help?": "Yes."

Low-cost housing requires a broad interdisciplinary effort. The historical trend toward narrow specialization has created barriers to this effort. The reorganization and cooperation of educational institutions, private enterprise, and government is essential if those barriers are to be torn down. Then it will be possible to say to the man who asks, "Can you help?": "Yes."

⁹ Hartsfield, p. 8.