

WILMOT ROAD HOUSING PROJECT

NATURAL
AREA

BUILDING
LINE



ORIENTAL HOUSING DEVELOPMENT CORP.

PARCEL 2A

WILMOT ROAD HOUSING SITE DEVELOPMENT
AREA

NEW HAVEN REDEVELOPMENT AGENCY

DEC. 1969

HANDEN
NEW HAVEN

**Rudolph's
new haven
trailer housing**

**a case study
tuesday 7:30
m. 20
A&A**

28 Jan 1971
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THE WILMOT ROAD HOUSING PROJECT: A PARTIAL CASE STUDY

W A BRENNER CITY PLANNING YALE UNIVERSITY JAN 1971

The Wilmot Road Housing Project (now officially the Oriental Masonic Gardens) is a moderate income, 236 nonprofit sponsored, housing cooperative with 148 dwelling units clustered in a high density planned development unit. This study covers the project from its inception in 1967 to the beginning of construction in 1970. It has not been possible to obtain, despite repeated efforts, the details of construction, other than those publicly evident. It remains to be seen the measure of success or failure this project will endure as judged, finally and most importantly, by its occupants. Therefore, the primary concern of this study has been to examine the processes by which the development of this project came about, the political, social, economic, design, and time-factor nuances that shaped and continually changed the nature of the project to its final form.

Thanks to Harry Wexler, Jim Drazen and Alice Oliver, Larry Silvestri, and Richard C. Lee.

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"Fifty years after all the theorists made very clear the possibilities of industrialization of structure, we have - without any help from architects - a truly industrialized organization of the utmost importance - the mobile-house industry.

"Now, the mobile-house industry is extremely naive: They are littering the countryside with the ugliest things imaginable; they pull themselves up by the bootstraps; they are outlawed in most municipalities; their things are incredibly ugly. But the fact remains that the mobile-house industry accounts for one out of every five new housing starts in the United States today and the graph goes up and up and up. Their power lies in the fact that they can produce a quite decent equivalent of a two-bedroom house, air-conditioned, for \$6000. They also produce a \$3000 house. Now where else can you buy this kind of thing? And it isn't that technically they're advanced, because quite the opposite. If you go through a mobile-house plant, you're amazed at the level of sophistication, you really are. But it's the buying power."

Paul Rudolph, 1968

BACKGROUND

The Housing and Urban Development Act of 1968 set a goal of 26 million dwellings including six million subsidized units to be built or rehabilitated in the next decade. At the present time, this country is producing only about half the housing units needed to achieve parity with that schedule. However, it is clear that the construction of housing units on a large scale is a national priority (although differences of opinion do exist about the relative position of that priority).

The goal has been justified on many grounds, among which have been the liberal rhetoric of "keeping the cities cool" and "calming black rage" and providing a "decent home" for all Americans as birthright. Others simply see the large scale production of housing as the only way to match the market forces of supply and demand. And finally, a vast push to solve the housing "problem" may excite the American imagination to some extent and provide a tangible goal for yet another "crisis." Certainly the goal is innocuous to all but the building trades unions and those who have serious "eco-systems" considerations, such as overpopulation, resource availability, and ecological balance - in general, the long range results of such an ambitious project.

The determination of our 10-year goal was based in part on the belief that materials technology combined with imaginative design and large scale production management could in fact bring this goal within the realm of achievement. The existing paradigms of "component," "modular," or "prefabricated" construction, although largely in their infancy¹, provided material for optimistic forecast. The construction of Habitat at the World's Fair in Montreal in 1967 popularized this optimism, although America overlooked for twenty years the much more sophisticated but less visually exciting European building systems developed after the Second World War.

The genesis of the Wilmot Road Housing project was due largely to the optimism about this "component," "modular," or "prefabricated" construction (currently and popularly called "systems building"²). Its designer, Paul Rudolph, who used house trailer sized units as components for the project, was widely publicized in the mid-sixties as declaring that "the mobile-house is the 20th century brick"³, and costs per dwelling were estimated as a fraction of those built by conventional construction (see Rudolph's quotation at the beginning of this study). Made at a time when the need for low cost housing seemed

imperative, this argument induced Alan Glen (a private developer), the City of New Haven, and the Federal Hsg. Administration to construct a large scale project using modular components factory-built in the manner of mobile-houses.

¹Except for the mobile-house industry which has been in existence since World War I. An excellent analysis of the history and success of the mobile-house is Margaret Drury's, Mobile Homes

²"Systems building" has become a misleading phrase, which originally embodied construction as a system made up of subsystems (structure, financing, etc.) but has since become a catch-all for anyone promoting a component-type product, such as wall components. The Wilmot housing is not systems-built since most of the work is conventional except for the modular box design.

³Plans of several of Rudolph's projects using mobile-houses as components are illustrated and explained in "Progressive Architecture," June 1968, with several other interesting schemes of that time.

STRUCTURE

The Wilmot Road Housing Project included the following principal organizations and their representatives:

REDEVELOPMENT AGENCY, which acted as project coordinator and go-between for the City of New Haven (see following Redevelopment Agency/ City Departments chart)

OFFICE OF PAUL RUDOLPH, the architect and originator of the project's concept:

Rudolph
Wallace
Noga
Brown

GLEN DEVELOPMENT CORPORATION, (also "MSI," MODULAR STRUCTURES INCORPORATED, and later HERCOFORM CORPORATION), the developer and original promoter of the project:

Glen
DeVore
Berdan
Corrado
Wiggins

COSTAL TRAILERS, of Baltimore, the module subcontractors:

Frye

TECHNICAL PLANNING ASSOCIATES, the site engineers:

Sacco

ORIENTAL LODGE, GRAND PRINCE MASONS, the nonprofit sponsor:

Vann

DEPARTMENT OF COMMUNITY AFFAIRS, the State agency who funded the State's share of the site development work and parts of the planning fees:

McCulloch

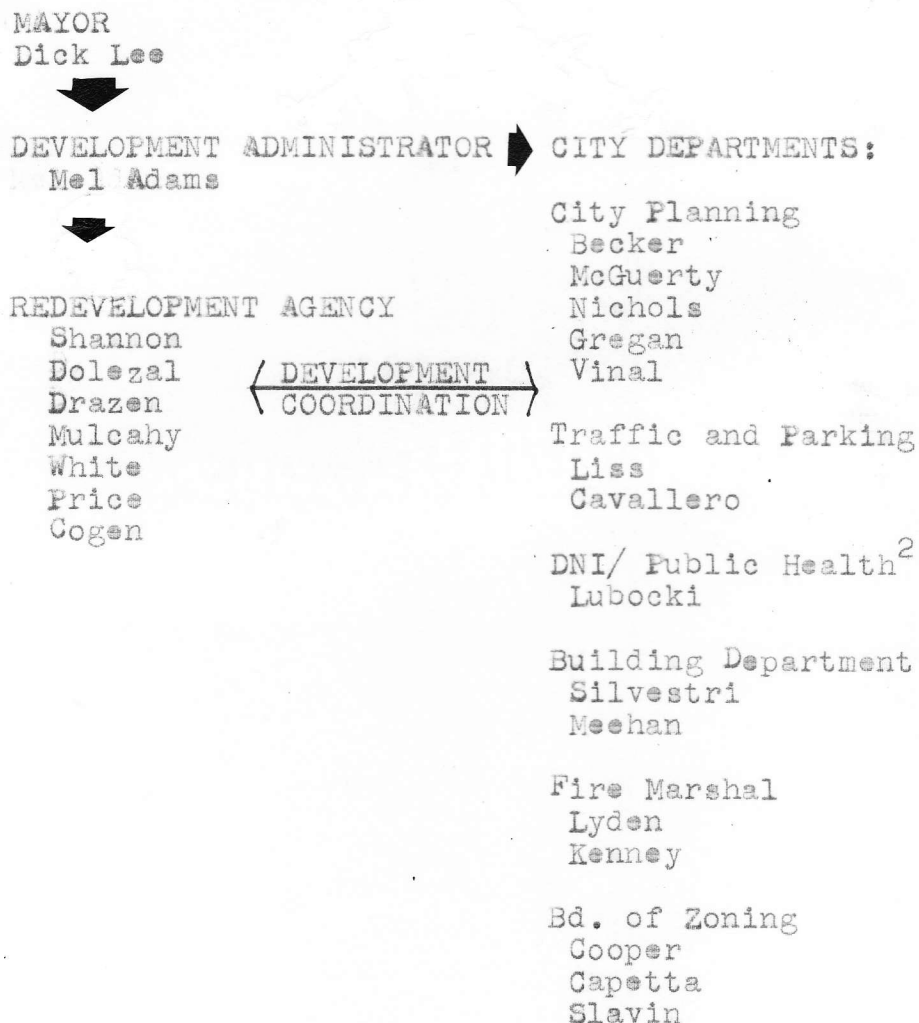
HARTFORD FHA, who was the Federal Housing Administration's local representative:

Carr

WASHINGTON FHA and HUD, the Federal agencies who funded the construction and promoted the project, giving it top priority at a time when funds were being generally withheld. Glen and Rudolph and Mayor Lee were all influential, at one time or another, with these agencies (the model of the Wilmot Road Project was placed for a time in the lobby of HUD Headquarters about the time of the beginning of Operation Breakthrough).

NEW HAVEN AND THE REDEVELOPMENT AGENCY

During New Haven Mayor Richard C. Lee's sixteen year term of office (1953 to 1969), a highly responsive relationship was developed between the Mayor and his Development Administrator, the Redevelopment Agency, and the various City departments¹. For the purpose of this study, the relationships were as follows:



Mayor Lee's effectiveness in coordinating the Redevelopment Agency, who depended upon the pro-

fessional judgement and rulings of the City departments for its operation, with those departments made possible communication directly and efficiently between the two. From all evidence, there was usually a positive relationship in the administrative dealings on the Wilmot Road project that helped to overcome the many serious problems between project inception and construction.

¹ For an excellent account of the New Haven administrative arrangement, see Robert Dahl's, Who Governs, New Haven: Yale University Press, 1961, or its condensation in Urban Renewal: People, Politics and Planning, Bellush and Hausnecht, Anchor Books, pp. 225 to 238.

² DNI is Division of Neighborhood Improvement

OVERVIEW

According to Dick Lee, his administration had been exploring the possibilities of systems building for several years before Alan Glen first brought Paul Rudolph's housing scheme to the attention of Lee's Development Administrator, Mel Adams, in the fall of 1967.¹

Glen was a developer who had previously built modular housing units at Pufton Village in Amherst, and was apparently eager to further explore the possibilities of systems building. It seems probable that Glen met Rudolph in the mid-sixties and was impressed with Rudolph's 1967 scheme for married student housing at the University of Virginia in Charlottesville (see enclosure 1). This was a proposal to place mobile-house type boxes at varying levels up to two stories high and to overlap the units down a sloping site. Code and labor problems were said to be solved with the Charlottesville authorities but City officials finally vetoed the project on aesthetic grounds. Glen and Rudolph must have looked to the City of New Haven as a logical place to reintroduce this modular scheme. Rudolph had designed several projects in the city already² and was familiar with City officials on a professional basis as well as an academic basis (he had been head of Yale's

School of Architecture for several years earlier in the decade); also, he was then working with the City on a scheme for a downtown government center.

After initial inquiries from Glen and Rudolph, the City responded positively and began preliminary planning investigations. The project site had three physical limitations, (1) that it be out of the fire zone (so transportable wooden structures could be used), (2) that it be of sufficient size to locate 150 to 200 dwelling units with ample parking and recreational space, and (3) that Rudolph himself should have a strong say in picking terrain suitable for the project scheme. There were only two sites owned by the City that met the first two requirements, one on Middletown Avenue and the other on Wilmot Road near the Rockview-Brookside area. Rudolph chose the latter as the site he preferred, and Lee gave that site his recommendation since it would cost less to develop.

The City, meanwhile, did several planning studies on the Wilmot Road area, including investigation of available commercial, educational, and transportation facilities. It also called several meetings with the Rockview-Brookside residents, which Rudolph attended and explained the scheme for his housing.

The neighborhood⁵ responded unfavorably (although

there never seemed to be serious argument against the proposal) for several reasons, (1) it would add additional children to the already filled neighborhood school, (2) it would bring more low income and welfare people in the area when the existing residents wanted more middle-class neighbors (and, incidentally, single-family detached houses), and (3) the City's priorities were questioned when there were already inadequate commercial and neighborhood services in the area. The last issue was one that was almost as old as the Rockview-Brookside housing: neighborhood commercial attempts had continually failed, due in part to the area's isolated location, thus making the residents endure a trip of several miles for day to day conveniences (often by bus). The neighborhood was adjacent to the Hamden town line, but Hamden had refused to build connecting roads to Brookside, thus limiting the commercial market to Rockview-Brookside. The strangled commercial market, together with vandalism problems, precluded the existence of adequate neighborhood commercial facilities.

The City responded by promising: to build a new neighborhood school (construction will begin on this school in the summer, 1971), to try to obtain as many moderate income units as the financing laws could be stretched,

and to investigate bringing more and better commercial services to the area (the City did investigate, but could not induce at that time more commercial variety). Especially after the City promised a new school, the neighborhood dropped serious opposition to the plan. Shortly thereafter, a community center was added to the housing project as a part of Glen's commitment.

Reaching tentative agreement with the involved parties, the City made the commitment to develop Parcel 2a on Wilmot Road.

Rudolphs first preliminary site plan was received by the City in September, 1968, about one year after Glen approached the City for the first time. Housing on the site plan was arranged in cruciform planned clusters, with four dwellings per cluster. These units were arranged in such a way that one unit opened on each inside corner of the cruciform, giving it a ninety degree semi-private yard. Although the cluster arrangements were changed many times before a final site plan was approved by the City in April 1969, the cruciform plan remained essentially as it was designed. (See cover.)

The site planning phase was the first in which the various City departments were involved; they set requirements, established criteria, and gave final approval. In many respects, the site planning phase of the project was the primary design phase since once

the cluster arrangement was finalized the only major design remaining consisted of planning the two, three, four, and five bedroom prototypes that would be repeated fairly identically throughout the project. Thus a great amount of interaction between the architect and the City occurred at this period. This involved the Fire Marshal, the Traffic and Parking Department, DNI/ Public Health, the Building Department, the City Planning Department, and the Zoning Board of Appeals.

No serious problems were encountered with Traffic and Parking, City Planning, and Zoning: what problems there were were solved by the routine exchange of comments on design submittals (except for the objections raised by the landscape architects in City Planning who were concerned about some ecological aspects of the site, part of which were eventually lost due to Rudolph's insensitivity to some of the natural features of the site, the high cost of preserving some elements, and the site contractor's leveling of some areas previously noted to be saved).

However, graver problems arose with the Fire Marshal and the Building Department.

The Fire Marshal was limited by code to two-hour fire rated materials between each housing unit. The code requirement was based upon earlier rules for row housing, and was not in intent designed to re-

gulate houses on a cruciform plan. Glen fought this ruling until the time of construction, but was never able to convince the Fire Marshal to require party walls of lesser fire rating. This meant that on party walls fire retardant material would have to be added that would interfere with container shipping from the manufacturers in Baltimore. The extra material was finally added on-site at a great expense to Glen. (\$80,000. See enclosure 2)

Problems with the Building Department were expected since the housing modules were to be built in another State. This made normal construction inspection procedures impossible, and a great amount of time and effort was spent in finding a solution to the inspection problem. The Plumbing Inspector in due course agreed that panels covering plumbing connections, if removable, could allow for adequate inspection once the modules were delivered to the site. However, electrical inspection was more difficult since, (1) Connecticut licensed journeymen had to connect the on-site electrical wiring, (2) the nature of concealed electrical wiring made it impossible to inspect after construction, and (3) the use of non-skilled labor for parts of the module construction made the idea of professional quality, and hence safe wiring, more tenuous. The details of

electrical inspection procedures were never completely worked out to everyone's satisfaction, and as of this writing, occupancy is being delayed due to the lack of assurance on the part of the Electrical Inspector that the electrical wiring is wholly adequate (it must be remembered that the Building Inspector is criminally liable for inadequate inspection safeguards, and injury or death resultant therefrom).

The potential problem of construction Trade Unions was best expressed by a memo to Mel Adams,³ "If the construction Trade Unions turn their back on this project, their opposition might be expressed through the Board of Aldermen or by boycott. Approximately 30% of the construction work for this project will be performed on the site, including electrical and plumbing hookups. This work (as distinguished from the assembly of the units in an out-of-state factory) is covered by the State Building Trades Licensing Law, and therefore must be performed by a licensed journeyman. An electrician or plumber solicited for this work in the event of union opposition might fear loss of license or union sanction; Glen faced this problem in Amherst and hunted a long time before turning up plumbers and electricians to perform the on-site work (for big fees)."

However, this problem never developed, partially due to

Mayor Lee's informal talks with union representatives⁴ and partially due to the fact that the module fabricator ran a union plant.

The Trades Unions also eased the way for another potential problem, that of abiding by a serious equal employment opportunity program that the project's sponsor, a black group (to be mentioned later in this study), insisted be a part of the contract. About one quarter of the project work force was reportedly black.

While the Redevelopment Agency coordinated the site planning with the architect, and the City, and countered the aforementioned problems, it also sought funds under a newly enacted State Law (PA 522) for site development assistance. Under this law, the Connecticut Department of Community Affairs (DCA) paid for two-thirds of the site development cost, and the City paid one-third. The DCA funds, however, had income ceiling restrictions that favored a high ratio of low to moderate income units. This made it difficult for the City to fulfill the wishes of the Rockview-Brookside neighborhood who had indicated a preference for middle or moderate income housing⁵, but DCA was finally persuaded to reinterpret the low to moderate unit ratio to allow up to one-half the units to be moderate income.

The Redevelopment Agency had one other task at this time, that of selecting a non-profit sponsor.

Glen had originally agreed that he would act as both investor and sponsor, but Redevelopment thought that a local, nonneighborhood group might be politically more expedient as the nonprofit sponsor. This would hopefully improve the public image of the housing, as well as give a group of City residents some say in the project. Adams suggested that the Oriental Lodge, Prince Hall Masons, (who had already queried the City about sponsoring housing projects), and the Immanuel Baptist Church, were two organizations that could be contacted; both represented nonneighborhood groups. Neither group expressed initial interest in acting as nonprofit sponsor, probably sensing the political issues involved as well as the amount of work that would be inherent in sponsorship. However, Oriental Lodge finally agreed to the undertaking, and filed for nonprofit sponsor status in September, 1968.

Nonprofit sponsorship made the Oriental Lodge the legal owners and operators of the Wilmot Road Housing Project, with Glen under their contract. Due to the nature of their organization (they were a black middle-class fraternal group), they were not equipped to professionally deal with the details of construction; nor was this their desire. Therefore, the relationship between Glen and the City remained essentially as it had before. Unfortunately, the daily decisions and

previous design commitments precluded the Oriental Lodge from making initial basic policy decisions about the module design, and they were later to complain that they felt left out of the process. At the time of this writing, minor changes they have dictated to Glen and major changes in construction costs have amounted to nearly a quarter of a million dollars; therefore, the sponsor was able to effect changes in the construction stage, at least, but at added expense.

The Oriental Lodge, as sponsor, was also responsible for tenant selection and unit sale. The project is a technically cooperative residence, but those who qualify will pay no equity except for \$325 down payment. The monthly carrying charges (in effect the rent) will range from \$112 for a two bedroom unit to \$141 for a five bedroom unit,⁶ due to the FHA subsidy program lowering interest rates on the mortgage. (See enclosure 2)

The story of how Glen originally obtained the FHA loans can be only partially reiterated since Glen had political connections in Washington that, he said, helped him obtain money when mortgage money (236) was already oversubscribed. Glen did meet officially with the FHA for the first time in January, 1969, and "got an enthusiastic reception." FHA promised to go over the priorities of the regional New York FHA office and

find money for the Wilmot Road project. By June Glen got the requested amount, about \$2.3 million, and an additional \$300,000 that Lee had requested directly from Romney for cost price escalation (lumber costs had risen almost 50% the first half of that year). There are several probable reasons for Glen's success with the FHA, (1) the Rudolph design was popular with the architects at FHA, (2) the Rudolph design was exactly what HUD had in mind for their then just emerging "Operation Breakthrough," and (3) the political connections that Glen mentioned, as well as Lee's influence in Washington, helped push the project through, and (4) the project at this time was still under the maximum FHA funding limitations for its size and appeared to be a "good buy" for the money. As costs continued to escalate later in the project, both Glen and the City wished that they had requested, in retrospect, the maximum funding from FHA. By June, 1970, when site erection of the modules was underway, the modules cost \$9.50/sf to build at the factory, and the completed housing (including site work) cost \$17.50/sf. (As compared to Rudolph's first estimate in January, 1969 of \$13.36/sf.). By the project's end, costs will probably be between \$1.00 and \$2.00/sf higher than the \$17.50 figure. This may be equal to or even exceed the cost of conventionally built housing.

¹ At one time Lee had considered going to Europe to explore European progress in systems building, but eventually decided that rapid enough progress was being made in this country.

² The Macy's-Malley parking garage, Crawford Manor (housing for the elderly), Yale's Art and Architecture Building, Yale's Married Student Housing, and Yale's Greeley Laboratory.

³ The memo was from Jim Drazen, Redevelopment Agency, see enclosure 3).

⁴ Lee said that he appealed to the unions on three grounds, (1) that the Wilmot project was an experiment, (2) that there were plenty of jobs for union men anyway, (3) that the unions should show their altruism by assisting to provide low cost housing.

⁵ The term "the neighborhood" is used here as meaning those residents who attended the meetings about this project and were articulate enough to express their views. Since a small number of residents attended the meetings, there is no way of knowing if they do in fact represent the wishes of the majority of the neighborhood, that is, the residents of Rockview-Brookside.

⁶ Rents vary with family size, income, etc.; therefore these figures would be absolute minimums. Further, these figures were given in mid-1970; they may have increased slightly.

THE PROJECT IN DETAIL

The following is an outline of events taken from the New Haven Redevelopment Agency's records. Many diverse bits of information not directly relevant to the project overview are kept in the outline to show in detail the complexities of the Wilmot Road Housing Project and to give a better idea to the person not directly familiar with the redevelopment, design, and construction processes, the limitations imposed on participants in such a process. It must be kept in mind that this is not really an atypical project: most projects are similarly complicated. The one unusual aspect of the Wilmot Road housing scheme was its unique design, but despite the problems it caused, it often seemed to play a secondary role in the sum total of the development's problems.

OUTLINE OF EVENTS FROM PUBLIC RECORD

- 30 Sep 67 Glen (developer) to Adams (Mayor Lee's development administrator); suggesting idea of building housing modules with Redevelopment Agency
- 10 Oct 67 Paul Rudolph (architect) to Mayor Lee; references a letter from Mayor's office regarding low income housing; encloses plans for Charlottesville, Virginia which were rejected by city fathers but were approved before rejection by Charlottesville's building department, fire marshal, and FHA. Rudolph says that he is convinced that modular housing is due for next decade.
- 11 Oct 67 Bruggeman (redevelopment) to Adams; "Rockview-Brookside Planning Study: Problems." Contains brief overview and present problems:
1. physical isolation
 2. socio-economic homogeneity
 3. Hamden dump location (brings rats to projects)
 4. lack of shopping facilities
 5. lack of neighborhood facilities
 6. poor environmental quality
- 11 Oct 67 Bruggeman to McGuerty (city planning department); "Rockview-Brookside Project Study: Community Development Act Funds"
- 11 Oct 67 Bruggeman to McGuerty; "Rockview-Brookside Project: Shopping Center Market"
- 18 Oct 67 Meeting at Adams office with Glen and Mr. A. Sugar from FHA, Hartford to discuss funding possibilities
- 2 Feb 68 C.A. Dieman, Washington D.C. FHA to Adams; encourages New Haven to try projects employing "mobile home techniques"
- 14 Feb 68 Adams to Vincent Sarabella, CPI; encloses Dieman's letter (above) and says that "local labor" will do all site work and erection, and living units will be constructed at unionized factory
- 12 Mar 68 Joel Cogen to Hugh Price (Redevelopment Agency); minutes of meeting on Wilmot Road/Middletown Avenue sites of 8 March 68:

1. Parcel 2A (present site) should be developed due to lower cost of site improvements
2. new school facilities will be needed
3. add school funds to city's capitol budget
4. see if Federal funds are made available for site improvement on undeveloped land
5. draft Redevelopment contract with Rudolph
6. prepare architectural program
7. prepare for meeting with Board of Aldermen
8. prepare for meeting with Brookside residents
9. list of alternative solutions for meeting increased school enrollment

Then follows detailed review of meeting discussion:

1. Mayor recommended siting the project on Wilmot Road site because
 - a. land is already owned by New Haven Housing Authority
 - b. size of site is large enough
2. Middletown Avenue was other site considered, but rejected because it would require more extensive site work
3. both sites were zoned RM 1 (12 to 18 dwelling units/acre)
4. under this zoning parcel 2A could accomodate 250-375 units
5. Rudolph will study pre-fab methods for rapid construction
6. some residents of Wilmot Road area want middle-income housing (did not want low income) but project had to be low-income to qualify for State PA 522 assistance on site work
7. place emphasis on 3 and 4 bedroom units
8. school enlargement must take place to avoid overcrowding of children, but it will be difficult to synchronize school opening with housing occupancy
9. include 1/3 of cost of site preparation in 69 capitol planning budget (state will pay 2/3)
10. build more commercial facilities if possible

14 Mar 68

Meeting with Mrs. Collins, President of Brookside-Rockview Community Council, with Joel Cogen, Adams, Shannon

28 Mar 68

Price to Dolezal (Redevelopment Agency) about Civitello business operation on Wilmot Road

1. Aldermanic deal in 1956 for Wilmot shopping was upheld by Civitello - the small food store was still open, but his other rentals failed (a grocery store, laundromat, dry goods store, tile floor company, CPI office) due in part to small market, serious vandalism, and lack

of road connection to Hamden.

2. Civitello cannot get anyone to open a drug store and is trying to get a gas station to locate in area

- 8 Apr 68 Board of Zoning Appeals approved establishment of Planned Development Unit for Wilmot site
- 16 Apr 68 Minutes of 15 April meeting on Wilmot Road Housing:
1. take test boring on Parcels 2 and 3 as soon as possible
 2. Rudolph and Glen will be informed that site and unit planning can begin once test borings are complete
 3. arrange meeting with residents about unit locations on site
- 16 May 68 Meeting: Constantine Wallace (Rudolph's office)
Joe Carrado (Glen)
Drazen and Becker
- Morning meeting: with Fire Marshal (Lyden and Kenney), went over State guidelines
- Afternoon meeting: with Building Department (Silvestri), discussed problems:
1. no existing Building type category for Rudolph's plan
 2. Problems of inspection of prefab units and extra cost of factory inspection
 3. state regulation that all mechanical work must be done by state licensed tradesmen -
 4. check with Connecticut licensing board
- 14 Jun 68 Dolezal to George McCulloch, state DCA; requests assurance that DCA will reimburse city for costs incurred for engineering and architectural services once budget is approved
- 25 Jun 68 Dolezal to Vinal; says DCA will reimburse city
- 24 Jun 68 Glen to Drazen; recaps 20 Jun meeting with Building Inspector, Fire Marshal, and Electrical and Plumbing Inspectors; Fire Marshal: need 2 hour fire rating between party walls
Electrical Inspector: inspection periodically at plant
Mechanical Inspector: leave a chase so plumbing inspector can visually check joints
- 25 Jun 68 Glen to Dolezal; regarding 221d3 and 221d4 -says he recommends d3 financing since simpler process and less expensive (lower interest rates)
- 25 Jun 68 Shannon to LeRoy ^{Jones} DCA; requests that State put in a sewer on Middletown Avenue so site develop-

ment schedule can be planned

- 3 Jul 68 Dominic Panagrossi to Mel Adams; says the New Haven Building Trades Council interested in meeting with city about prefabs and states that they oppose this type of construction
- 3 Jul 68 Glen to Adams; wants assurance that changes in City personnel and State Federal personnel won't hurt him and is worried about time and delays due to complicated processing times
- 9 Jul 68 Slavin (zoning administrator) to Drazen; zoning considerations on first site plan submittal:
1. parking: special exception needed because within 20' of street
 2. front yards too close (less than 20')
 3. windows less than 50' apart face each other (in violation of Zoning Ordinance) in 17 instances. Recommends different orientation of these windows
- 9 Jul 68 Lubocki (Traffic Department) to Drazen; comments on Health aspects:
1. curved stair not advisable
 2. request second means of egress on large units
 3. long, dark interior hallways
- 10 Jul 68 McCulloch (state DCA) to Dolezal; assures reimbursement for title searches and first appraisals, but not for architectural site planning and engineering
- 11 Jul 68 Dolezal to Adams about above Mc Cullock letter:
1. city will pay for 35% of Rudolph's fee
 2. give Glen assurance that city won't back out
 3. let Glen know that city is taking risks with this project too
- 11 Jul 68 Cooper (zoning administrator) to Drazen; follows up Slavin's letter of 9 July confirming it and outlining methods of requesting zoning relief - gives a closing date for filing of 13 September 1968
- 11 Jul 68 First review comments on Rudolph's site plan (unsigned memo):
1. density should be higher (12.5 vs 18 units/acre allowable)
 2. parking in too few lots
 3. some units too far from public streets to services for garbage collection, fire, mail, etc.
 4. need for common play areas
 5. roads too narrow

6. requires zoning relief for front yards and parking
 7. facing windows a problem - reorient them
 8. generally, the yard spaces should follow "small private yard/ high density cluster/ open space" arrangement
- 15 Jul 68 Second preliminary site plan presented by Rudolph
- 16 Jul 68 Dolezal to file; references 15 July 68 meeting with Glen and Rudolph:
1. Glen would put up 35% of architects fees to do preliminary working drawings
 2. Glen going to FHA in Washington in August - will decide if he wants to try this project with this administration or next
 3. Rudolph says working dwellings will take four months
- 18 Jul 68 White (Redevelopment Agency) to Adams; summary of Wilmot-Rudolph Meeting:
1. Residents would like to have single family detached homes.
 2. Residents wanted better transportation facilities and more supporting facilities before more housing
 3. Residents were told that middle income units couldn't be funded
 4. new housing would have as many private spaces as possible, including private open space, individual laundry, private porches, acoustical privacy, small housing clusters, low rise
- 23 Jul 68 Adams to Dolezal; possibilities of Glen only being the investor, and for community reasons, getting a non-profit sponsor. Suggested that Prince Hall of Masons be first considered (they had already asked to sponsor housing) with Immanuel Baptist Church as a second choice. The idea was to get a non-neighborhood group as a sponsor.
- 28 Jul 68 Third site plan presentation by Rudolph
- 29 Jul 68 White to Dolezal; says DCA is considering favoring middle-income housing in site development areas.
- 30 Jul 68 White to Shannon; says building trades uneasy about Rudolph's prefabs - suggests bringing them into the project
- 31 Jul 68 Progress report to Mayor Lee from Adams; mentions

Glen's modules in Amherst, Mass. and:

1. building trades have raised objections
2. only 15 residents met Rudolph at neighborhood meeting - they wanted middle-income housing - did not want poor people - they viewed City's role as negative
3. need for selection of a sponsor and preparation of a site development plan (required by state law for sale and new development)

- 31 Jul 68 White to Dolezal; neither group (Lodge or church) anxious to support housing
CPI also says that they won't sponsor Rudolph housing
- 2 Aug 68 Transmittal of site plan and details to Drazen from Rudolph
- 16 Aug 68 Dolezal to Adams; State Bond Commission has approved \$150,000 for the site development planning.
- 23 Aug 68 Glen to Adams
 1. discusses Glen's meeting with Porter Driscoll, Chief Architect of FHA and Drazen; the people impressed by the project
 2. Glen wants to file with FHA within 30 days
- 26 Aug 68 McCulloch to Dolezal; authorizes \$20,000 for planning contract with Rudolph
- 17 Sep 68 Dolezal to McCulloch; requests that DCA begin processing funds for site development
- 19 Sep 68 Becker to Drazen; "Program for a Community Building for Wilmot Road Coop"
- 26 Sep 68 Oriental Lodge, Grand Prince Masons; files for non-profit sponsor status
- 7 Oct 68 Dolezal to Adams; Glen will use union drivers and production of units will be in a union plant
- 10 Oct 68 Drazen to Adams; says Glen wants to file Tuesday with FHA. Thinks "firm committment" status (fee of \$8,800) would be best to file for, but Glen wants city to pay him fee costs if they fail to come up with the land.
- 14 Oct 68 Glen to Drazen; Glen will pay fee of \$8,800 if city will reimburse it if it defaults
- 15 Oct 68 Dolezal to Adams; McCulloch said ~~sta~~ will pay for relocation of water main under 5 or 6 of Rudolph's proposed buildings

- 18 Oct 68 Drazen to Dolezal and Adams; outlines Wilmot Road development problems of state licensing, inspection, state approval of development, disposition of building inspector, trade unions, neighborhood opposition, disposition of West Rock Convalescent Hospital.
see enclosure (1)
- 19 Oct 68 Dolezal to Adams; Bill Iovanna, Len Smith (staff engineer, Board of Education), and Dolezal met with Katherine Brennan PTA and discussed new school - there was a general feeling that the community accepted the housing and wanted to make constructive plans.
- 28 Oct 68 Drazen to Adams; outlines possible inspection procedures for electrical and plumbing
- 7 Nov 68 Allan Rubin; Arbor Homes, to Mel Adams; expressing interest in building modules for Glen and gives his background experience
- 12 Nov 68 Shannon to Glen; agrees that city will pay \$8,800 FHA filing fee if:
1. refusal to develop by Board of Aldermen
 2. Redevelopment disapproves
 3. if city cannot establish an inspection procedure that will work
 4. if disapproval by DCA
 5. if unfavorable action by Board of Appeals on decisions of building inspector
 6. if activity by local building trades prevents project
- 12 Nov 68 Glen to Drazen; size of units cut 10% due to escalating costs, especially wood products
- 13 Nov 68 Rudolph submits revised site plans
- 13 Nov 68 Mayor Lee to Adams; encloses housing article from Time Magazine of 15 Nov and writes "everybody is doing something like this. Let's go! go! go!"
- 14 Nov 68 Wilmont Road ^{planning} contract recommended and executed for \$65,000 in State money
- 15 Nov 68 Drazen to Adams; electrical inspection approval possibilities:
1. on-site Connecticut licensed journeyman
 2. on-site inspector
 3. Underwriters Laboratories inspection and approval
- 22 Nov 68 Drazen to Rudolph; 13 November site plan review:

1. road on site too close to West Rock Convalescent Hospital
 2. need estimates of public site improvement costs
 3. protective screening of play areas from parking lots
 4. parking area should be less than 300' from unit
 5. save all possible trees on Hamden line
 6. save all trees possible on northern boundary
 7. make outdoor patio wider
 8. indicate a trash disposal system
- 5 Dec 68 Drazen to Mulcahy; questions electrical inspector's authority to inspect outside the State of Connecticut and if he needs liability insurance in this case
- 9 Dec 68 Drazen to Rudolph; November 27 Site Plan Review:
1. light and cross-ventilation for bedrooms and hallway needed
 2. parapit walls minimum height of 3-6"
 3. stairways naturally lit if possible
- 10 Dec 68 Glen to Drazen; his costs are high due to fire requirements between every 2 units; this due to regulations based upon row housing, not presently planned crucifix plan housing. Requests a variance to reduce cost of fire walls to a minimum
- 27 Dec 68 Rudolph submits Site, Foundation and Unit Plans
- 31 Dec 68 Glen to Rudolph; comments:
1. high costs of circular storage units - suggests fenced-in unroofed area
 2. still 10% high in costs due to rapid increase (30%) in plywood costs, lumber in general, etc.
- 2 Jan 69 Barry Schuman to File; wants to use thermopane window to reduce heating costs
- 8 Jan 69 Drazen to Adams; Glen and Rudolph agree, by meeting of 10 January, to:
1. eliminate powder room in 3 bedroom unit
 2. reduce 21 square feet of glass in living room to 12 square feet to make it more rigid in shipping, reduce costs, and reduce heat loss. They will be fixed thermopane with operable windows on bottom
 3. reduce size of kitchen window and omit shelves on kitchen wall
- Also, Drazen says the National Housing Partnership will not participate in project due to uncertainty caused by change in Federal administration
- 16 Jan 69 Rudolph sends Glen budget breakdown:

Budget	\$2,431,000.00	
Gross Area	216,013.00	SF
GSF cost	\$11.36	
Actual area	182,045.00	SF
ASF cost	\$13.36	

- 27 Jan 69 Dolezal to Vinal; site plan has been formally approved by all but Fire Marshal and he's expected to approve soon
- 30 Jan 69 Aldermanic Hearing. Public hearing on Reuse parcel 2A, Wilmot Road Housing Site, Shannon submits on behalf of Redevelopment Agency proposed disposition for approval
- 31 Jan 69 Glen meets with FHA and says that he got an enthusiastic reception. 236 is oversubscribed at this time, but FHA says they will go over priorities of regional New York office and find money for this project
- 3 Feb 69 Aldermen approve of Redevelopment Agency's disposition plan for parcel 2A
- 5 Feb 69 Shannon to Carr, Hartford FHA; thanks him for processing assistance
- 12 Feb 69 Glen to Drazen; oil heat won't work with modular units - will have to go to gas heat
- 16 Apr 69 Mayor Lee to Secretary of HUD; due to lumber cost increases requests additional \$300,000 from HUD. Mentions enthusiasm by FHA Architectural Division (model and rendering of Wilmot Road project were on display in HUD headquarters)
- 8 May 69 Board of Zoning Appeals to Redevelopment Agency; grants necessary zoning variances
- 20 May 69 News clipping "HUD has given \$300,000 more on Wilmot Road Project"
- 21 May 69 Drazen to Dolezal; Costal Trailer will need 8 to 10 weeks to build prototype. Construction will be continuous after prototypes made
- 2 Jun 69 Drazen to Files; says Glen got \$300,000 from FHA but FHA staff will be absorbed by Operation Breakthrough and that their assistance is critical
- 2 Jul 69 News Clipping "Lee invites Romney to see Housing Plan"
- 8 Jul 69 Drazen to Dolezal; list of omitted items since project inception:

1. 10% reduction in unit size
 2. vertical circulation incorporated in box itself, taking further space
 3. eliminated second floor deck on 2 and 3 bedroom units
 4. amount of private enclosed outdoor space reduced to 370 square feet
 5. 21 square foot window in living-dining room made smaller by 9 square feet
 6. windows for cross ventilation in bedrooms eliminated
 7. portion of private courtyard fencing eliminated
- 15 Jul 69 Dolezal to Adams; schedule for site preparation and construction
see enclosure 2
- 29 Jul 69 Note from Sacco indicating that site preparation contract is out for bidding
- 30 Jul 69 DCA to Assoc. Mortgage Cos., Inc.; says processing is complete
- 6 Mar 69 Dolezal to Milton Abrams, Assoc. Mortgage Co.; questions about 221d 3 and 236 development guidelines as to income level of occupancy - residents want middle income families, as many as possible
- 28 Mar 69 Glen to Rudolph; final figures are \$250,000 high (\$2,684,506 vs. \$2,425,000). "I am most appreciative of your position of wanting to do the job right or not at all, but unless we are able to leave (next) Monday's meeting with a total job cost of \$2,425,000 we have only two choices as far as I'm concerned. One is to get the National FHA to overrule the chief underwriter in Hartford; the other is for my firm to abandon the project."
- 1 Apr 69 Drazen to Adams;
1. Costal Trailer's (module fabricator) estimate is \$250,000 high due mainly to increase in lumber costs. Will try to get FHA to increase allotment
 2. Rudolph and Glen can cut off \$150,000 by:
 - a. reducing vaulted roof area by 1/3
 - b. use temporary window protection panels for building storage units
 - c. eliminate some fencing, and lower its height in some places
 - d. eliminate indirect fluorescent lighting in living room
 - e. eliminate built-in shelving
 - f. eliminate some bedroom windows (which would eliminate cross-ventilation)
 - g. reduce sidewall width
 3. If Glen and Rudolph fail to get FHA increase in Hartford, city should try to make its best

effort in Washington to get money

- 7 Apr 69 Drazen to Silvestri; outlines inspection procedures:
1. all inspection except electrical will be performed on-site
 2. Jim Meehan or his staff will inspect electrical at Costal Trailer's plant in Baltimore, Maryland
 3. plumbing applicances shall not be connected to allow for on-site water test
- 8 Apr 69 Board of Zoning Appeals approves planned development unit (Rudolph's arrangement)
- 8 Apr 69 Nichols to Drazen; note on 31 March meeting with Rudolph and Glen:
1. Al Frye of Costal Trailers ready to start prototype - production would continue after prototype so there is little time to make changes
 2. Thus, working drawings should be submitted to New Haven building inspector soon to avoid costly changes
- 22 Aug 69 Rudolph signs Architect-Owner agreement with Oriental Housing Development Corporation
- 22 Aug 69 Drazen to Rudolph:
1. confirm that furnace installation includes humidifier
 2. don't use flat white paint - too hard to clean
 3. design against water damage in kitchen and baths by water resistant floor materials
 4. concern about landscape budget
 5. verify structure on vertical supporting members
- 24 Aug 69 Bid opening for site work
- 26 Aug 69 J.H. Richards of Middle Department Association of Fire Underwriters to Meehan; procedures for inspecting mobile homes:
1. prefer to inspect only concealed portion of work at factory and leave final hook-up and inspection to local contractors and authorities
 2. each unit must be separately identified by a serial number so separate certificates of approval can be issued
 3. local authority must get a copy of inspection certificate
 4. inspections are made on assembly lines as needed, usually daily
 5. all wiring must meet NEC standards

- 4 Sep 69 Drazen to Rudolph; discusses proposed design changes of 22 and 26 August letters
- 5 Sep 69 Preliminary specifications submitted by Rudolph
- 8 Sep 69 Groundbreaking Ceremony
- 9 Sep 69 Drazen to Carleton Vann:
 1. money: project total \$3,381,500; dwelling units \$2,670,641
 2. land costs: estimated by the land residual method (what profits the land is expected to generate)
- 17 Sep 69 Site improvements bids come in very high
- 20 Sep 69 Redevelopment Agency meeting with Agency, City Engineer, Building Department, MSI, Tech. Planning Assoc. (Rudolph's engineer), Rudolph; discuss costs of site work and ways to reduce costs
- 7 Oct 69 Glen to Rudolph
 1. selected Macomber as site contractor
 2. still about \$60,000 short by latest estimate
- 7 Oct 69 Dolezal letter outlining site responsibility (see enclosure 3)
- 17 Oct 69 Drazen to Dolezal; full FHA commitment is \$3,381,500 (\$22,848 per unit total) - this is \$116,000 short of maximum mortgage limit - in retrospect they should have requested max limits in the beginning, but this would cause unbearable delays at this point.
- 24 Oct 69 Vinal to Shannon; problem of roof drainage across sidewalks - must have subsurface drainage
- 7 Nov 69 Glen to Drazen; Income - FHA max \$2,670,644
 Land refund 70,000
 Builders fee 120,179
\$2,860,820
- Expenses - Const. \$2,856,524
 40,000
\$2,896,524
- Therefore, \$35,000 short
- 17 Nov 69 Drazen to Adams; review of costs problems
- 2 Dec 69 United Illuminating to Carr, FHA; electricity is available on site

- 2 Dec 69 New Haven Water Company to Carr, FHA: will install a low pressure water main on site
- 2 Dec 69 Southern Connecticut Gas to Carr, FHA: gas is available
- 8 Dec 69 City Engineer to Carr, FHA: sewer service is available
- 15 Dec 69 Nichols to Drazen: sketch of a new kitchen arrangement showing a kitchen-dining room arrangement that neighborhood residents wanted
- 18 Dec 69 Drazen to Adams; prototype changes:
1. improve 2 and 3 bedroom unit kitchens including additional cabinet space
 2. make box skirting of treated plywood and include an access panel
 3. MSI (Modular Structures Incorporated - the model builder) should install a vapor barrier at grade level
 4. MSI should include drapes and shades
 5. MSI should add ducts and access panels to facilitate venting of washer and dryers
 6. MSI will provide large exhaust fans
 7. eliminate curvilinear entry unit to reduce cost
 8. reduce exterior storage unit size
- 23 Dec 69 Visit to prototype by Oriental Lodge (Vann, Rogers, Jones):
1. storage units too small
 2. emergency access windows in bedroom still too small to reasonably crawl out of
 3. relocate entry in 4 and 5 bedroom units to keep dining and kitchen areas unified
- 23 Dec 69 Landscaping meeting due to concern of City's landscape architects over poor landscaping preparations
- 26 Jan 70 Nichols to Drazen; buckling and fastening problems of exterior surface material presents problems (Upson board)
- 3 Feb 70 Final specifications completed and submitted to Redevelopment Agency
- 10 Feb 70 Gregan to Drazen; by inspection found that last remaining trees had been taken from site
- 23 Feb 70 Drazen to Gregan; landscaping comments good but only 1½ days prior to initial closing (after FHA initial closing, this would be out of city's hands and into the hands of sponsor)¹

26 Feb 70 Frye of Costal Trailers to Berdan of MSI; plant inspection procedure for units

4 Mar 70 Drazen to Dolezal; additional clearstory windows would add \$5,000 to cost

15 Mar 70 Nichols to Drazen; inspection of modules comments:

1. relocate thermostat away from front door
2. repaint vaulted ceilings
3. fix shelve details in kitchens
4. eliminate sharp metal partition corners
5. upgrade floor coverings in bathrooms
6. install dryer vents

8 Apr 70 Nichols to Glen; OKs community building plans and says that city finds them acceptable with a few corrections

15 Apr 70 Macomber plans to start erecting units on continuous basis, and first boxes due to arrive 19 Mar 70

18 May 70 Drazen to Carr; requests 20% limitation on FHA insured units be increased to 50% to allow more low income families to homes

2 Jun 70 Nichols to McGuerty; further expansion of 52 units possible in lower part of site

6 Jun 70 Carr to Drazen - waiver up to 40% of units for combined total of housing assistance and rent supplement families

24 Jun 70 Corrade to Vann; outline of agreement and procedure for Oriental Housing to inspect units on site

25 Jun 70 Jonesto Vann; forward list of families interested in 4 and 5 bedroom units for his selection

1 Jul 70 Nichols to McGuerty;

1. quality control in factory a big problem - inspection procedures have broken down
2. city inspectors are now making a 100% inspection on site! Costs about \$1,500 a unit extra for on -site corrections

21 Jul 70 Washington Post article
(enclosure)

1 Oct 70 Rudolph to Drazen; unit breakdown:

2 BR	37
3 BR	74
4 BR	22
5 BR	<u>15</u>
	148 units total

10 Nov 70 Field report by Rudolph; all boxes due on site
by 28 Nov

¹ Initial closing: start of construction and transfer of land
from the City to the Sponsor.
Final closing: completion of construction and Sponsor
sells units to cooperative or limited
dividend operator who incurs the mortgage.

COMMENTS

Although the primary concern of this study was to examine the processes of development of the Wilmot Road Project, one feels the need to make a few subjective comments.

First, Paul Rudolph made a difficult, if not bad, job of what seems to be a good concept. The rhetorical criticism of architects seems justified here: too much design for the sake of appearance, not enough participation in the design by those who would occupy it, lack of consideration for the natural advantages of the site, lack of familiarity with the limitations of the building technology that was used, lack of cost investigation to support a realistic idea of what cost limitations will do to the design.

Second, Glen was truly naive. This is a case where a simple economic model would have saved a lot of trouble. He could have identified his probable cost variables and made more accurate predictions of what alternatives could be taken. However, he undertook a bold task at considerable risk and personal involvement and had he a better architect, Glen might have had a more successful project.

Third, the myth of "systems building" as an overnight solution to construction time and cost needs dispelling. True systems building is a highly sophisticated technique and has only recently made significant inroads in this country. It may never reduce the costs of construction but it will probably reduce the "front-end" costs of financing (construction time will be reduced). Conventional builders such as Levitt, Schultz, and Arbor Homes are "systematizing" slowly but are still relying on primarily conventional techniques. They are consistently producing the lowest cost/sq. ft. houses in the country and are likely to continue to do so. Operation Breakthrough, however, will probably help pioneer other inroads.

Fourth, the Wilmot housing has one definite advantage: an abundance of four and five bedroom units. Large families are considered here.

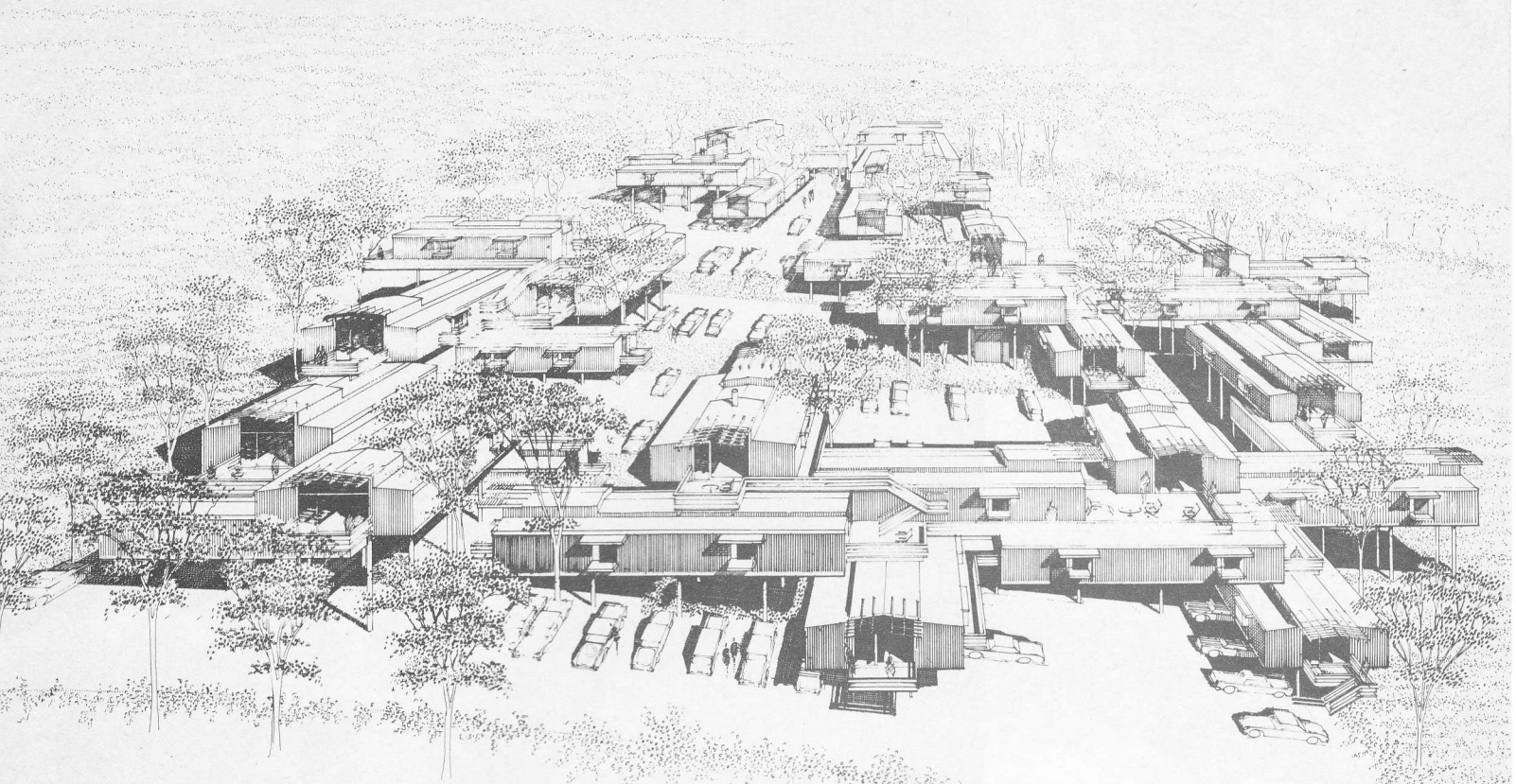
2 Bedroom	37
3 Bedroom	74
4 Bedroom	22
5 Bedroom	15
	<u>148</u>

Fifth, the traditional enemies of prefabricated housing, zoning, building codes, and trade unions were, except for electrical inspection, no problem in this case due largely to adequate planning by Redevelopment and political persuasion by the City administration. It must be said that few cities could probably have backed

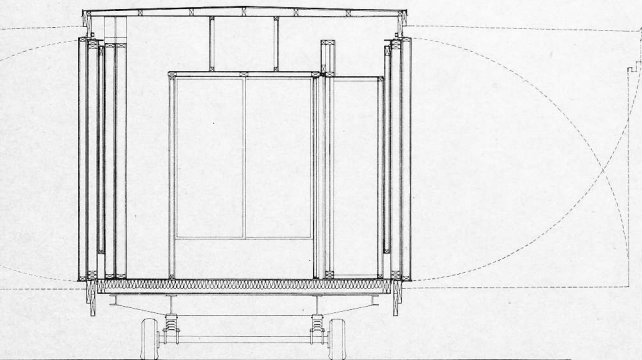
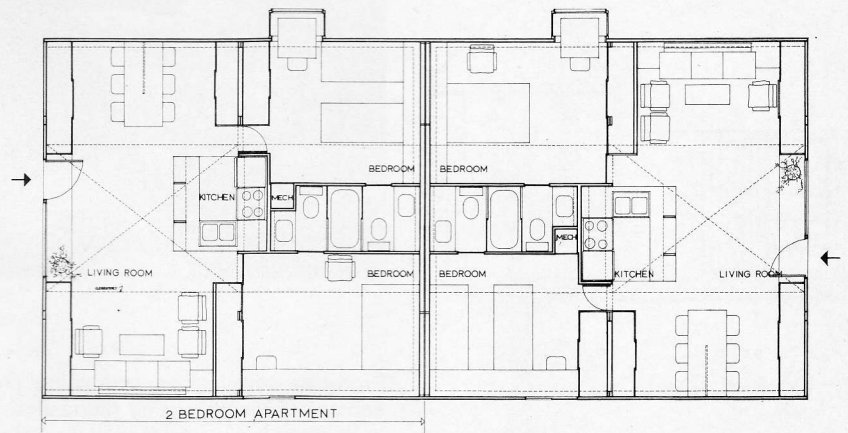
the project as effectively as New Haven.

Finally, one wonders what the success of the project would have been if Glen had built the project on the speculative market. Had he been able to find funds¹ and insurance, would he also have been able to overcome the problems of zoning, trade unions, and building inspection with the same relative ease that he did with the help of New Haven? If so, the project may have been much closer to what Rudolph had envisioned: low cost trailer housing with design "superior" to the conventional trailer court.

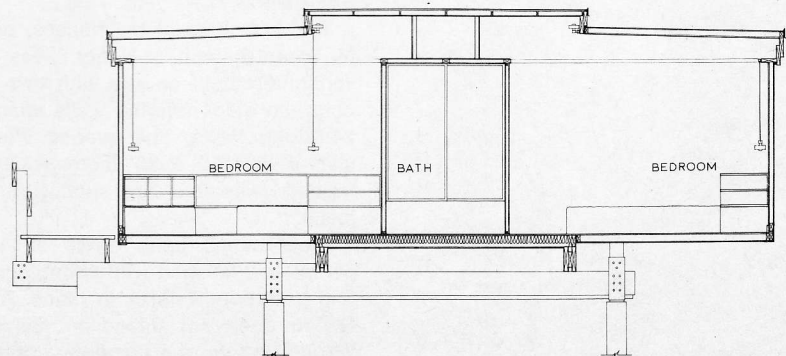
¹ It must be remembered that funding for a conventional trailer court is of a different magnitude than funding for a housing project; one involves only site preparation (the financing for the trailers is separate and on an individual, small scale) while the latter involves site preparation and the cost of all the units initially.



Paul Rudolph's scheme for married student housing at the University of Virginia in Charlottesville was a proposal to stack wood boxes two stories high on telegraph poles (or concrete poles) and to partly overlap the units as a response to the sloping site. At the basis of the scheme is a 12-ft-wide wood box that folds out to make a floor and ceiling 34-ft-wide. Walls shipped inside the unit are then slid out to support the fold-out panels. Furniture is also shipped inside and moved into place after the expansion procedure. Rudolph now feels that the fold-out idea is probably too tricky, and that it would be better to gang 12-ft-wide units together. In Charlottesville, code and labor problems appeared to be solved until city officials vetoed the project on "aesthetic grounds."



SECTION FOLDED UNIT IN TRANSIT



SECTION THROUGH BEDROOMS

Wilmot Project Shows Assembly

By PETER BRAESTRUP
The Washington Post

Carved out of a wooded hillside near West Rock is the half-finished Wilmot Road Townhouse Project, a federally-aided forerunner of the Nixon administration's "Operation Breakthrough" effort to test mass production methods as a solution to the nation's housing shortage.

The Wilmot experiment, by all accounts has made one thing clear, even in advance of "Breakthrough": Building good houses—or "modular" parts of houses—on an assembly line is no quick cureall.

But with lessons learned, Wilmot's developer, Alan Glen, of Bethesda, Md., is confident that factory-made housing will play a big role, especially in future federal housing programs.

George S. Romney, secretary of Housing and Urban Development (HUD), is no less convinced. "Operation Breakthrough" is the name he gave

to the HUD plan, announced in February, for the experimental construction of 3,000 units—apartments, townhouses, single family—on 11 sites, ranging from Seattle to New Castle County, Del. Romney wants \$35 million for the plan in fiscal 1971—with other HUD funds earmarked for "Breakthrough" as well.

The Wilmot Road Project was designed to provide housing for the city's poor, including welfare mothers with large families. Planning got under way three years ago with the backing of then Mayor Richard C. Lee, who wanted New Haven to be the first city with a city-sponsored "modular" project.

The announcement of the Wilmot Road project won city officials little initial applause from black residents of the nearby Brookview Public Housing Project, who wanted a new community school. The school is now being planned.

A dozen widely scattered or-

ganizations were involved in the project, each with certain interests or requirements—as in all publicly aided housing.

Alan Glen's Modular Structures, Inc.—now a subsidiary of Hercules Powder—was the developer, Paul Rudolph, New York architect and former dean of the Yale School of Architecture, was the designer.

Making its first venture into modular housing was a trailer manufacturer, Eastern Portable Buildings Corp. of White Marsh, Md., a subsidiary of the Kirk Corp. Eastern built the 333 modules which, assembled in various combinations, made up the 143 apartments.

Developer Glen found it wise to put a quality control team at the factory to eliminate "fixes" that had to be made on the Wilmot site. The boxes are either 39 or 51 feet long and 12 feet wide—the maximum permitted for highway transportation. This makes for small bedrooms since a three-foot-wide ^{upstairs}

corridor is in the design. The ground floor box contains a living room, fully equipped kitchen, and heating and hot water installations. The second floor contains one or two linked boxes, depending on the number of bedrooms.

The state Department of Community Affairs and the city Redevelopment Agency shared the cost of the 15-acre site and its preparation. HUD's Federal Housing Administration insured the 40-year mortgage for the \$3.4 million overall cost.

In May 1968, Rudolph came up with his initial design: a set of wooden round-roofed "boxes" or modules, with four two-story units of varying size—up to five bedrooms—joined in the form of a cross, thus giving each unit a small yard of its own.

Rudolph had given the whole development a certain flair—with round roofs, bay windows and other variations from the usual poor folks barracks. But cost soon forced alterations—

Line Housing No Quick Cure

plain windows were substituted for the bay windows and the fenced around each unit's yard was reduced in size. But the high ceilings remain.

Moreover, as costs mounted, Glen had to get FHA approval to go up to the permissible cost ceiling, requiring more time and paperwork. Plans did not become final until Feb. 27.

Zoning—a headache in other sites—proved no problem. But one building code requirement did slow things up: a two-inch "firewall", to prevent the spread of fires, had to separate each unit. This could not be done at the Eastern factory without redesigning the "boxes". Since guiding limit of "modular" design is the 12-foot-maximum width, the fire walls were added on the site, at \$80,000 extra cost.

We figure that we made 55 changes," said Joseph Corrado, Glen's site boss. "In terms of dollars and time, the boxes came to us about 80 per cent finished at the factory."

The local building trades unions, Corrado said, had caused no problems over jurisdiction. "They wanted the boxes built in a union plant, and they wanted this a union job. We had no argument with that. They're all out there working."

Corrado also noted that the local unions had eased the way—complying with federal guidelines—to participation by blacks and subcontractors. About 25 per cent of the Wilmot Road project work force, he said, was black.

The non-profit "sponsor"—owners and operators of the project—is Oriental Lodge 6, Prince Hall Masons, a middle-class city Negro fraternal organization.

Selected in late 1963, the masons have felt left out of the process. Last week Corrado agreed to have a watch-dog committee from the group inspect the site every other Sunday.

"They're right," he said.

"They haven't been adequately involved."

So far, the masons, who have final power of approval, have insisted on two changes: a change to two-door refrigerators (at \$11,000 cost to Glen) and protective panels on the lower half of floor to ceiling windows.

"If we could start all over again with what we've learned," said Corrado out at the building sites, with boxes stacked up for placement by a \$1,200-a-day crane, "we could probably do it all for 5 per cent less. The cost now is still competitive with conventional housing in this area."

A spokesman for the factory building the modules said, "We have lost a little money on this project but not enough to kill us."

Measured in per square foot costs, the modules cost \$9.50 to build at the factory, and the completed housing cost \$17.50

per foot, including all development costs such as preparing the site. Plumbing for complete kitchens and bathrooms come in the box, just needing to be hooked up.

The actual on-site installation of modules began in April and will end in October. The first occupancy is scheduled for Nov. 1.

Although the project is technically a cooperative residence, those who qualify under the income limits will have no equity in their units except for \$325 down payment, which will be refunded if they decide to move on.

With the FHA subsidy program lowering interest rates in the mortgage, the monthly carrying charges (or, in effect, rent) will range from \$112 for a two-bedroom unit to \$141 for a five-bedroom unit. Without the subsidy, rents would run up to 100 per cent higher. Roughly 30 per cent of the tenants, city officials said, will be welfare recipients.

Mel Adams, Bob Dolezal

October 18, 1968

Jim Drazen pointed to

Willmot Road Development Problems

1. State Licensing

The State of Connecticut Skilled Building Trades Licensing Law (Public Act Number 789, 1967 Public Acts) requires that construction work in certain categories be performed by licensed journeymen. It is Gene Sosnoff's opinion, and this is concurred in by George Hastings of Robinson, Robinson & Cole, that Public Act Number 789 does not apply to work on modules outside of Connecticut for erection within Connecticut. (Larry Silvestri wants an opinion of the Corporation Counsel on this. I was unable to reach him today for discussion.)

However it is my understanding that the State Licensing Board includes members from the various construction trades and the Board therefore might choose to obstruct the erection of the modules from motives other than an impartial interpretation of the law.

Our strategy thus far has been to avoid raising the question of licensing with the Board in advance of a construction start.

2. Inspection

Larry Silvestri, Jim St. Clair, and Jim Meehan have seen versions of the preliminary plans and Larry Silvestri's cooperation and assistance is assured.

It appears that the requirements of the Plumbing Inspector can be satisfied by an inspection and water test performed on the site of erection. Most of the lines will be concentrated in a core area that will be accessible for examination behind a removable wall panel.

Larry Schaefer as developer and Charles Moore as architect are going forward with a proposal for a factory assembled development for the B-19 Parcel in Wooster Square. The Plumbing Inspector's position on B-19 is that he go to the plant at least once to examine plumbing fixtures and piping that will not be accessible by removing panels. The B-19 project involves only six units and Jim St. Clair may request additional visits for a 150 unit development.

Inspection problems, if they develop at all, will probably come from the Electrical Inspector. Electrical wiring will be dispersed throughout the unit and Jim Meehan requests (reasonably) an opportunity to examine it before it is obscured behind wall panels. In the course of several presentations made at the Building Inspectors office this summer, Meehan agreed to perform

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the required inspections at the factory on condition that another Electrical Inspector be appointed to his staff.

Meehan has since modified this position in response to a presentation of the Schaefer-Moore project. He is now willing to inspect one of the six Moore units in New Jersey if a Connecticut licensed journeyman will go to the factory during the assembly to oversee the remaining work and thereafter certify that all units have been constructed in the same manner as the inspected unit. The developer has agreed to this procedure.

3. Construction Trade Unions

If the construction Trade Unions turn their back on this project, their opposition might be expressed through the Board of Aldermen or by boycott. Approximately 30% of the construction work for this project will be performed on the site, including electrical and plumbing hook ups. This work (as distinguished from the assembly of the units in an out-of-state factory) is covered by the State Building Trades Licensing Law, and therefore must be performed by a licensed journeyman. An electrician or plumber solicited for this work in the event of union opposition might fear loss of license or union sanction; Glen faced this problem in Amherst and hunted a long time before turning up plumbers and electricians to perform the on-site work (for 'big fees).

The Prince Hall Masons are quite committed to generating employment for Black construction workers for the on-site portion of the work. A serious equal employment opportunity program will not make this package any more attractive to the construction unions.

4. Neighborhood Opposition

If the neighborhood goes against us on this project, they will have a lot of allies, including, I speculate, the Black Coalition. In July we indicated to the Brookview Community Council the feasibility of a new school, additional recreational areas, a teen lounge center and rehabilitation of the existing Brookside housing structures. New school facilities seem to be the most important of these items, but the neighborhood might go against us based on our inability to deliver any one of these or any other community facilities.

School related questions still to be determined include acceptability to the neighborhood of mobile classrooms and the willingness of the Board of Finance to appropriate \$180,000 for these facilities.

5. Disposition of West Rock Convalescent Hospital

Disposition of the Brookside Convalescent Hospital for a use considered "undesirable by either the neighborhood or sponsor could set off a row that might find its way into the Aldermanic Chambers. The sponsor is concerned,

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among other things, about allocating space in that building for the treatment of narcotics addicts.

6. State Approval of Plan of Development

Finally, to complete this catalog of horrors, the State Department of Community Affairs might disapprove our plan of development for the area. Or in the alternative, disapprove our application for early Land Disposition and thereby delay construction of the 150 unit development for a considerable period.

7. Application to the Board of Appeals for the Disposition of the Building Inspector

Because there is no category in the Building Code for pre-fab structures, it will be necessary for the sponsor to apply for relief to the Board of Appeals from decisions of the Building Inspector.

The Moore-Schaefer proposal for Wooster Square Parcel B-19 is before the Board now and Larry Silvestri believes that they will probably give a favorable decision. However, at the Moore-Schaefer presentation to the Board, the Chairman remarked that the Board of Aldermen was the more appropriate forum for introducing new building types into the City of New Haven. It is possible that the Board may fall back to this position in response to a second application for a factory assembled development.

CC Don Jones
Barry Schuman
Gene Sosnoff
L. Onofri

