

Site Selection for Temporary War Housing

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TO: Holders of Bulletin No. 2 - Standards for Temporary
War Housing

SUBJECT: Bulletin No. 25

Bulletin No. 25, Site Selection for Temporary War Housing,
is being issued to the regions for use in site selection on
all temporary war housing projects.

for W. P. Seaver
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Assistant Commissioner
for Development

BULLETIN NO. 25

SITE SELECTION FOR
TEMPORARY WAR HOUSING

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NATIONAL HOUSING AGENCY
FEDERAL PUBLIC HOUSING AUTHORITY

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SITE SELECTION FOR
TEMPORARY WAR HOUSING

GENERAL

The prime considerations in the selection of a site for temporary war housing are: convenience of location to the war activity or activities to be served; availability of welfare and recreational facilities for the inhabitants; and particularly, economy in the use of critical materials. Sound site selection depends on realistic accumulation of detailed and correct information covering all aspects of all relevant sites.

WORK-MATERIAL FOR SITE SELECTION

Maps

Most commercial city maps are badly printed, out of date, inaccurate, and do not distinguish between improved and "paper" streets. City and county engineering and planning offices, drainage commissions, etc., often have good maps reproduced by blueprinting or other methods. Utility companies often have good maps in small sheet form, showing their distribution systems. City planning, zoning, park and school authorities have specialized map material. A land use map, if available, is helpful. Existing pattern of racial occupancy should be indicated.

Air maps are exceedingly useful and an immediate effort should be made to secure them if readily obtainable. Large areas have been mapped by the Department of Agriculture, air mail service, Army Air Corps, etc. Many cities have had aerial surveys made, for the study of school locations or other purposes. These are of value, even if not recent, if they can be corrected by inspection or comparison with recent maps. Prints from negatives (not assembled into mosaics) are satisfactory for individual sites. Photostat (or preferably photographic) enlargements can be made from good mosaics. Two hundred scale is recommended. In some areas issuance of air maps is restricted. The following agencies may be able to supply maps or prints:

- (a) District Engineer Department.
- (b) Agricultural Adjustment Administration, Old Post Office Building, Washington, D. C., (for areas east of the Rocky Mountains) or Salt Lake City, Utah (for areas west of the Rocky Mountains).
- (c) Forestry Service, Department of Agriculture, South Building, Washington, D. C.

(d) Department of Agriculture, Soil Conservation Service,
Cartographical Section, Beltsville, Maryland.

Topographic maps are very useful. Always check with USGS, state survey commissions, county surveyors, etc., to find out whether topographic maps exist. Several cities had excellent topographic maps made under WPA. Even the small scale USGS maps give relative elevations of sites and form a basis for more detailed sketch topographies of properties.

Maps of Sites

The best means of recording information concerning sites under consideration are sketch maps, at uniform scale. Material for maps can be assembled from county surveyors', recorders', and underwriters' maps, and title deed description. On such maps all information derived from air and topographic maps, utility surveys, etc., can be assembled. Buildable areas can be marked off and site plans can be sketched as a basis for calculation of densities. These maps are useful to engineers or consultants who may visit the sites, as a basis for surveying contracts.

Procedure for Rating Sites

A system for rating sites, dated September 1942, has been distributed to the regions and may be used at the option of regional directors. This procedure provides a mechanical method for comparing sites, insures comparison of important site factors, and serves as a permanent record of the reasons for the selection of a site. Specific factors influencing site selection, based on the organization in this procedure, are set forth below.

SPECIFIC FACTORS INFLUENCING SITE SELECTION

ACCESSIBILITY TO PLACES OF EMPLOYMENT

The critical need for conserving rubber and gasoline must be considered in selecting sites for temporary housing. Transportation of people and commodities by passenger automobile, truck, or common carrier must be reduced insofar as possible. Avoid sites so far from employment that private cars must be used, or that public transportation will need extensions or added equipment. Take into consideration the transportation of construction labor and materials. Give preference to sites within walking distance of employment.

Note: Walking distance is not a definite figure. It varies with the physical condition of the walker, the nature of his work, the weather, and the topography. At two miles from employment, walking will reduce the

transportation load in good weather and interruption of transportation will not usually stop the tenants from getting to work; regular public transportation will however be needed. At three quarters of a mile from employment and shops, (by a lighted and policed route) it can be assumed that everyone who is able to work will be able to walk and that scheduled public transportation will not be needed. Intermediate conditions will reduce walking in various degrees. Projects should be as near to employment as other limiting conditions will permit. Even when entire independence of wheeled transportation cannot be assured, it is desirable to reduce the load--of both people and commodities--on existing or new transportation facilities.

Transportation cost to worker should not be greater than 40 cents a round trip, and the round trip should not require more than two hours.

If possible, location of site should be such as to make possible the use of vehicles returning from peak load trips. Extension of feeder lines should not be assumed; definite assurances should be secured.

Other considerations are also involved, and should be considered in the following order:

- a. It is preferable in locating a project on existing street railway or commuting train routes to locate it so that the flow of traffic from the project to the plant is in the opposite direction to the peak hour passenger flow already handled by the service, so that additional equipment would not be required.
- b. If location cannot satisfy condition (a) above, the project should be located on or within walking distance of a street railway or commuting train route regardless of direction of traffic.
- c. If sites along or near rail routes are not available, the project should be located on an existing bus or trolley coach route so that the flow of traffic from the project would be in the opposite direction to the peak hour passenger flow already handled by the service.
- d. If the location cannot satisfy condition (c) above, then the project should be located on an existing bus or trolley coach line regardless of the direction of traffic.

The location of projects just beyond reasonable service area of existing transit routes should be avoided. It should not be anticipated that an extension or feeder line will reach the project, as line extensions will be increasingly difficult to obtain.

Accessibility of Sites on Military Installations

Ordnance plants and similar enterprises, which operate under U. S. Army jurisdiction or supervision, as well as army posts, reservations and bases, are considered military installations as far as war housing projects are concerned. These present a special problem because a military installation is usually fenced and guarded and freedom of egress and access is normally limited. For this reason, on-installation sites should be located along perimeter highways or on access roads within the reservation to permit unrestricted ingress and egress for tenants insofar as possible. If a site lies within the fenced-in installation area, a means of separating it from areas of military activity, including provision for a guarded gate, if required by the commanding officer, must be provided.

PHYSICAL CHARACTERISTICS OF SITE

Topography

Access to the site should be by practicable gradients.

Moderately sloping sites are preferable to steep land, also to level areas which have no general fall upon which to base surface drainage and sewerage systems.

Site improvement costs rise sharply when buildings must be located on slopes over 8%, especially when the ground is broken as well as steep.

Readily-Usable Area

Shape of site preferably should be compact, but practicability of laying out economical street and sewer system takes precedence over regularity of outline. "Exceptions" to avoid high-cost property or the demolition of housing are permissible if wasteful land shapes or uneconomical utility layouts do not result. In general, no demolition of housing should be contemplated. Sufficient land should be obtained to permit the use of standard buildings and standard building assemblies. (See "Site Planning", Part 2 of Bulletin No. 2 - Standards for Temporary War Housing).

Existing sewers traversing the site, or other utility lines, easements, or rights of way, should be mapped and their effect upon buildable area estimated.

Drainage

It is important that sites be free of excessive drainage problems, in order to speed up construction and keep construction costs down, in scale with the temporary character of the investment. Avoid sites with extraordinary drainage problems such as extensive marsh or swamp areas or pockets which cannot be drained at reasonable cost.

Sub-grade

Permeable well-drained soils are most sanitary and favor economical constructions.

Deep cultivated soils are favorable for gardening.

Bearing value of soils should be investigated thoroughly. Data should be obtained from local municipal and utility engineers as to whether the site has ever served as a dump or has otherwise been filled, whether there is underlying rock, and whether the ground water is so high that it will flood utility and foundation trenches. Question residents, and inspect neighboring buildings for evidence of excessive settlement. Test pits and borings provide valuable construction data which is often essential; such sub-soil investigation should be made.

Grading

Grading costs money and consumes manpower and mechanical equipment, often without commensurate return in housing value. Sites that have been heavily graded are subject to settlement and erosion and often delay other construction field operations during wet weather. Therefore, it is important to estimate the grading factor in comparing sites, and to select the site requiring the least grading insofar as other considerations permit.

It may be preferable to divide the project into a number of separate neighborhoods in order to use land that does not involve heavy grading. Always investigate soil conditions, especially the presence of rock, quicksand, springs, dumps, fills, and other factors that may increase grading costs.

The present extreme shortage of grading equipment for non-military purposes has added to the normal cost of grading.

Clearing

Scattered existing trees are desirable, but heavily wooded, brushy or stony sites, requiring extensive clearing, are to be avoided in order to save labor, time and money.

Vacant Sites

A few sub-standard dwellings may be demolished, but Central Office approval is necessary if they number more than 3% of the proposed housing units. There is no limitation on demolition of old commercial and industrial buildings which cannot economically be remodeled for residential or other use advantageous to the war effort.

AVAILABILITY OF UTILITIES

No factor related to individual sites is more important than the availability of utilities: water, sanitary and storm sewers, electricity and gas. Competent disinterested professional advice is extremely important in this connection and if not available locally, the state sanitary and utility authorities should be consulted. The USPHS sanitary engineer consultant in the FPHA regional office should be requested to report on the availability of water and sewerage systems.

It should be emphasized that the presence of fire hydrants, sewer manholes and poles along a boundary street cannot be taken as meaning that adequate water, sewers and electricity are available.

If rights-of-way for off-site utility lines are needed, their location should be determined as early as possible, so that the land can be purchased or leased at the time the site is acquired.

The limitations of the War Production Board on the length of water and gas mains and on the weight of copper in electrical conductors, make it necessary to: (a) estimate "approach" (off-site) and "site" (on-site) requirements for utilities, before selecting any site which cannot be served by adjacent existing utilities, and (b) employ relatively high project densities.

Water

A map showing the size and location of all water distribution systems, through, around or near the site will aid in the comparative study of project sites.

The quality of the water, the source, and its freedom from pollution must be checked. An analysis of the water and the approval of the State Board of Health should be obtained. Other necessary information related to water distribution includes: working pressure at probable connection point, expected pressure at the high point, past shortages of water and recent increase in demands on water supply due to population increases or other expanded loads; and whether a storage tank will be required, and what amount of off-site construction will be necessary.

Sewers

A map showing the sewers in the vicinity of the site, with sizes and invert elevations at manholes, will aid in the comparative study of project sites.

In checking sewers it is necessary to find out whether the system is separate or combined, the method of disposal, and whether the

disposal system is adequate to carry the present and anticipated load. Existing sewers must be checked to determine whether they can carry the project load, and what amount of off-site construction will be required. In determining sewer and disposal plant capacity, possible overloading due to other proposed projects must be considered.

If no sewers serve the proposed site, it will be necessary to determine whether a disposal plant of sufficient capacity, to which connection may be made, exists in the vicinity. If the project may have to provide its own disposal plant it is important to determine whether the topography is suitable for the design of an economical plant, and whether such a plant would constitute a nuisance so that claims for damage might result.

Storm Sewers

Surface drainage is extremely important in temporary housing projects; the floor construction is sometimes more vulnerable to water than in permanent construction; roof water is discharged on the ground; walks and pavements are often less well built. Site selection study maps should indicate storm sewers and streams or other features into which the project surface drainage could be discharged.

Electricity

A map showing distribution lines in vicinity of site, with voltage indicated, will aid in the comparative study of possible sites. A statement should be obtained from the utility company as to the capacity available to carry the project load. (This should be satisfactorily confirmed or checked. In some cases initial statements on this factor are modified after the site is taken). Limitations on the critical materials in distribution systems, especially on off-site connections, greatly increase the importance of the proximity and capacity of existing wires. Rate negotiations should, when possible, be concurrent with site selection.

Gas

The severe limitation on the amount of metal per unit to be used for off-site and on-site gas distribution makes it necessary to know what mains exist and what pressure they could deliver to the project. For this purpose a sketch site plan--or a plan marked with buildable area and proposed density--is useful. Information secured from the utility company should be in writing, specific, detailed, and should include working pressure at relevant points.

CIVIC, SOCIAL, AND COMMERCIAL FACILITIES

Give preference to sites that secure for the project the benefit of established public, institutional, and private social facilities and commercial services--such things as churches, hospitals, welfare institutions, movies and other means of recreation, communication and transport agencies, banks, laundries, coal yards, stores and other subsistence facilities.

Access to all of these facilities is especially important to immigrant families. They involve as much coming and going as does employment. As many as possible--at least those that are used daily--should be within easy walking distance. The cost, in labor and materials, of building (and the difficulty of operating) new institutions and stores should be kept in mind.

QUALITIES AND HAZARDS OF ENVIRONMENT

Quality of Neighborhood

The neighborhood environment should be reasonably free from undesirable land uses.

The location of the project should conform with the existing pattern of racial occupancy. However, the temporary nature of the project makes this factor less important than those considerations affecting site selection that are directly concerned with the promotion of the war effort.

Heavy Traffic and Noise

Careful attention should be given to physical and psychological factors such as freedom from noise and heavy traffic which will interfere with sleep and outdoor recreation.

Dampness, Smoke and Odors

Physical amenities of the neighborhood should be given careful consideration. These include:

Exposure and aspect - access of sun and wind, good views and interesting terrain, freedom from excessive heat.

Atmosphere - freedom from smoke, fog and offensive odors.

Flood

All low sites should be checked for liability to flooding. Flooding disrupts residence and travel, destroys or damages buildings and their contents, washes out pavements or covers

them with debris, erodes banks, silts up culverts and drains, and disrupts sewer systems - thus creating health hazards.

Many areas that look safe are subject to occasional flash-flooding. This may sometimes be corrected by digging water courses or by other measures.

In a site containing sufficient buildable area above flood height, land below that level may be used, with or without filling, for play, for allotment gardens, or (if no better land is available) for automobile parking.

Fire and Bombing

Proximity to likely bombing targets and to large tanks for storage of gas, oil and other highly inflammable materials should be avoided.

Policy on air raid protection necessarily recognizes variations in local conditions. In general, the best site is one that is far from bombing targets and from easily distinguishable landmarks and is adapted to camouflage--as by existing trees or a housing texture with which the project may be blended. Conservation of rubber, however, is also a military requirement. Therefore, precautions for air-raid protection do not take precedence over the need for a location close to the war industry to be served.

The judgment of military authorities as to future enemy strategy inevitably changes with changes in the war situation. It is not impossible that air raid protection may decrease in importance.

EASE OF LAND ACQUISITION

In order to expedite acquisition of land, preference should be given to sites where the required property is under single ownership. Multiplicity or complications of ownership make it difficult, slow, and expensive to acquire land. In selecting the site, consideration should also be given to the comparative cost of alternate sites and to possible difficulties and delays in obtaining the site due to opposition of the owners, neighborhood or community.

AVAILABILITY OF CITY SERVICES

Fire Protection

Give preference to sites served by an established fire protection organization. The present difficulty of securing fire fighting equipment gives this point more than usual importance.

Schools

Where adequate schools of sufficient capacity are not available near the site, they must be provided at the project. The higher cost and delay incurred when schools must be provided makes it desirable to give strong preference to sites served by existing schools.

When a site is not served by existing schools, and the project must provide land for one, the site acreage should be checked to insure that a sufficient area, acceptable to local school authorities, is available.

Waste Disposal

Many war housing projects set up their own waste collections, but preference should be given to sites within the area of an established municipal refuse collection and disposal system.

Clearing of Snow or Sanding of Streets

Preference should be given to a site where municipal services providing for clearing of snow or sanding of streets, both within and leading up to the site, assure adequate transportation and communication in the winter.

CONFORMANCE TO CITY DEVELOPMENT

War housing projects are not under a legal obligation to comply with local zoning ordinances and subdivision codes. Federal officials engaged in the selection of sites should be acquainted nevertheless with local zoning authorities and the zoning maps established by them. Questions of public relations may arise in this connection. When war considerations permit, preference should be given to locations conforming to zoning ordinances. Similar considerations govern conformance to regional and city plans, sanitary codes and building codes.

MULTIPLE OR DISPERSED SITES

General Considerations. When no single site clearly meets the essential requirements of a proposed project, consideration should be given to developing the project on two or more separate sites. The use of multiple sites has increased recently, often with favorable results. Dispersed sites lend themselves particularly well to groups of approximately 25 portable shelter units (or multiples thereof) when such units are to be provided as stop-gap housing. Sites normally should be selected to permit safe and convenient pedestrian access from all units to the required project facilities.

Types of Sites. There are several types:

1. Two or more relatively large sites. These are frequently planned when no single site served by utilities and/or transportation is available.
2. "Infiltration" sites. Units are dispersed through an improved or partly built up community and arranged in groups without regard to lot lines within site boundaries. This type permits utilization of existing public and private improvements such as utilities, streets and walks, and community facilities.
3. Separate lots. Existing platted lots are utilized, each dwelling being placed on a separate lot. (This type is not well adapted to the normal FPHA war housing program.)

Advantages. Depending on local conditions, multiple sites may offer these advantages:

1. A wider choice in site selection, since dispersed sites are frequently located within walking distance of war enterprises to be served as well as schools, stores, churches and other community facilities.
2. Reduction of site improvement cost and amount of critical materials required, because of the existence of adequate utilities, pavements, and other improvements.
3. Reduction in necessary development costs for project facilities, owing to the more probable existence, adequacy and availability of local community facilities.
4. A minimum concentration of demand and overloading of utilities.

(Cont'd)

5. Early project occupancy, since smaller sites are usually served by existing surfaced streets, facilitating easy access for construction materials, affording greater independence of weather conditions and providing convenient access for tenants.
6. Local preference, since small housing groups are generally more attractive than large concentrations.
7. Reduction in the extent of necessary encroachment on platted or improved streets within site, since multiple leased sites permit greater flexibility in the placement of buildings and improvements.

Related Considerations. The following should be carefully investigated:

1. Cost of appraisals, surveys and architect-engineers fees. Additional time and cost may be involved.
2. Construction costs. Dispersion often increases construction costs, which should be evaluated in relation to possible savings in costs for site improvements and project facilities and in use of critical materials.
3. Cost of utility connections. This may exceed the cost (and possibly the use of critical materials) for normal, single site project installations, particularly if streets are wide.
4. Local public reaction. The economic scale of neighborhoods, dwelling types, appearance of housing and the degree to which projects reflect local regulations will influence public reaction. The problems involved should be worked out in advance with local officials.
5. Encroachment and maintenance costs. Increased costs may be anticipated.

Sub-grade

Permeable well-drained soils are most sanitary and favor economical constructions.

Deep cultivated soils are favorable for gardening.

Bearing value of soils should be investigated thoroughly. Data should be obtained from local municipal and utility engineers as to whether the site has ever served as a dump or has otherwise been filled, whether there is underlying rock, and whether the ground water is so high that it will flood utility and foundation trenches. Question residents, and inspect neighboring buildings for evidence of excessive settlement. Test pits and borings provide valuable construction data which is often essential; such sub-soil investigation should be made.

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It may be preferable to divide the project into a number of separate neighborhoods in order to use land that does not involve heavy grading. Always investigate soil conditions, especially the presence of rock, quicksand, springs, dumps, fills, and other factors that may increase grading costs.

The present extreme shortage of grading equipment for non-military purposes has added to the normal cost of grading.

Clearing

Scattered existing trees are desirable, but heavily wooded, brushy or stony sites, requiring extensive clearing, are to be avoided in order to save labor, time and money.

Demolition of Existing Structures

Where it is found necessary to remove existing dwelling units on a site, Central Office approval is necessary where the number of such units is in excess of 3% of the proposed number of dwelling units. There is no limitation on demolition of old commercial and industrial buildings which cannot economically be remodeled for residential or other use advantageous to the war effort.

1/ This page supersedes the corresponding page, undated, in Bulletin No. 25. The paragraph on demolition of existing structures has been revised.

AVAILABILITY OF UTILITIES

No factor related to individual sites is more important than the availability of utilities: water, sanitary and storm sewers, electricity and gas. Competent disinterested professional advice is extremely important in this connection and if not available locally, the state sanitary and utility authorities should be consulted. The USPHS sanitary engineer consultant in the FPHA regional office should be requested to report on the availability of water and sewerage systems.

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