I

In modern architecture, I pointed out in my first article, the emphasis has shifted from building to manufacture. Since the parts of a building have been industrialized, it has naturally occurred to certain intelligent designers that the whole might eventually be treated in the same manner: hence various schemes for single family unit houses, designed for greater mechanical efficiency. Those who approach the problem of the modern house from this angle suggest that the mass house may eventually be manufactured as cheaply and distributed as widely as the cheap motor car.

Although this development holds out promise for definite improvements in functional relationship and design, there is some reason to doubt, I pointed out, that costs could be cheapened as radically as the advocates of a purely mechanical improvement have supposed. A good part of the total cost of housing is represented by factors which, like the cost of money or land, are outside the province of factory production, or, like the numberless constituent parts of the house, are already cheapened by mass production. The mass house promises a better mechanical integration. That would constitute an advance; but not an overwhelming one; and the mere ability to purchase such houses easily and plant them anywhere would only add to the communal chaos that now threatens every semi-urban community.*

We have now to see whether there is not a different line of advance which rests upon more thorough comprehension of all the social and economic as well as the technical elements involved. Without abandoning a single tangible gain in technique, there is, I think, a more promising road that, so far from eliminating the architect, will restore him to a position of importance.

II

Taking the individual house as a starting point, it is by now hopeless to attempt to restore it to a central position in domestic architecture. The individuality of such houses is already lost. Except for a bare ten or fifteen per cent of the population, such houses cannot be produced by individual architects, attempting to meet the unique wishes of a special client. The words Colonial, Cotswold, Tudor, in suburban architecture are mere attempts to cover by literary allusion the essential standardization that has taken place; and as soon as we approach the price level of the ordinary run of house dwellers, clerks, salesmen, skilled industrial workers, to say nothing of the more unskilled operations and the more poorly paid trades, the game is already lost; the manufactured shingle, the roughly turned colonial ornament, or the plaster “half-timber” show the strain on the purse.

Admirable as is the layout, the pervading conception, of our first American attempt at a “town for the Motor Age,” for example, no candid critic can pretend that the individual one-family houses are particularly triumphant examples of modern architecture; and the reason is that even with large-scale organization and limited dividends, it is impossible to isolate such houses sufficiently and lavish upon them the attention that so graciously humanized the traditional house even as late as 1890. Architecturally, these studiously suburban types fall down badly beside the finer rows and quadrangles of Sunnyside, the work of the same architects; and if anyone thinks he can do better with the cheap free-standing house, let him try it.

*Mr. Buckminster Fuller already perceives this danger. “The Dymaxion Houses,” he writes me, “cannot be thrown upon the world without a most adequate ‘town plan,’ really a universal community plan.
The isolated domestic unit cannot be made sound, beautiful, and efficient except at a prohibitive cost. If we wish to retain the single-family house, we shall have to accept it as a completely manufactured article; and in this event, we must throw overboard every sentimental demand. The advocates of the single-family house have never faced this dilemma: they dream of universalizing the work of Mr. Frank Foster or Mr. Julius Gregory; but the sort of domicile that their ideas actually effectuate for the majority of the population are the dreary rows of West Philadelphia and Astoria.

III

Now, a careful economic analysis shows that there are four possibilities from among which we must choose, if we are to have the renovated domestic architecture we so badly need, namely:

We may reduce the cost of housing from thirty to forty per cent by foregoing all the mechanical utilities we have introduced during the last hundred years. This would enable us to spend enough upon the structure and the materials to produce a fairly good looking traditional house. As a practical feat, this could be accomplished only in the country; and nobody would regard it as a serious remedy for the housing problem; so we may dismiss it.

Or, second: we may raise the wages of the entire industrial population to such an extent that they will be able to make a demand for houses of the same grade that the upper middle classes now create. This is not entirely outside the bounds of possibility; but it
But community planning at Sunnyside, Long Island, has so rearranged the same type of block that the building space regained permits economical removal of cluttering garages to another block; there is

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There is no guarantee that this condition will be remedied by mass-production. The problems which most affect this community might be left untouched, or aggravated by the addition of more random contraptions.
would necessitate an economic revolution, not alone in the distribution of incomes, but in a maintenance of the entire industrial plant up to the pitch of wartime productivity. Since we cannot create decent single houses for the relatively comfortable middle class today, it is doubtful if this could be accomplished even under an energetic and efficient communism. In order to make good housing practicable, the wages of the lower income groups will indeed have to be raised, either directly or under the disguise of a subsidy; but no rise will bring back the one-family house in an urban area that possesses a complete municipal and civic equipment, including waterworks and sewers and schools.

Or, third: we can preserve the individual isolated unit at the price of accepting all the limitations that now accompany it: lack of open spaces, scantiness of materials, lack of privacy, rapid deterioration of equipment, and lack of esthetic interest. Some of these evils would be mitigated or removed completely in the ideal manufactured house; but others, as I showed in my first article, would remain under our current system of commercial production.

Or, finally, we may seek to establish an integral architecture. This means that instead of beginning with one aspect of the architectural problem, we will begin with the community first, and treat the problems of economics, community planning, technics, and architecture as one, seeking a solution not in terms of the individual “cell” but in terms of the larger unit. This last scheme would derive the character of the house or apartment from the particular social whole of which it is a part; and the solution would not be a fixed quantity, but a variable, adapted to soil, climate, landscape, industrial conditions, racial groupings, and the whole remaining complex that makes up a human community. Instead of crabbing our solution by asking before anything else how shall the single family house be preserved, we ask the broader question: how shall the fundamental requisites of domestic life be embodied in a modern community program—and that is a radically different matter!

The last course is the only one that really sweeps the board clear of preconceptions and inherited prejudices and faces the problem of the house as it comes before us in the Western World in the year 1930. Unfortunately, there is a considerable vested interest opposed to it: not merely the interest of the small builder, used to doing things in a small way, or the individual home-buyer who has been vainly dreaming of the twenty-thousand dollar house he will some day buy for a thousand dollars down and the balance in installments, but against it are such organized bodies as the “own-your-own-home” movement, to say nothing of the good many sincere and honest people who have concerned themselves with the evils of congested housing. We have “all these groups, to say nothing of the standard Fourth-of-July orator, to thank for the notion that the free-standing individual house must be preserved at any cost, as if “home” and America were inconceivable without it.

Most of the arguments that support this sentiment are specious and fundamentally unsound; but they still carry an air of respectability. The individual free-standing house was as much a product of the Romantic movement as Byronic collars: it was the formal counterpart of the completely free and isolated “individual,” and to look upon it as an immemorial expression of the “home” is to betray a pretty complete ignorance of human history—an ignorance that one can condone only because an adequate history of the dwelling house in all its transformations has still to be written. Spurred on by this romantic conception of the home, its partisans blindly cling to the poor mangled remnant of a free-standing house that remains in the outskirts of our great cities, rather than the fact that these dwellings are, in fact, sardonic betrayals of all the virtues they profess to admire, and possess scarcely a single tangible advantage. Under the cloak of individuality, personality, free expression, the partisans of the free-standing house have
accepted the utmost refinements of monoto-
ny and unintelligent standardization.

Unfortunately, intelligent planning and
design on a community scale cannot proceed
until this prejudice is knocked into a cocked
hat. It is not until the architect has the
courage to reject the detached house as an
abstract ideal that he will have the opportu-
nity to embody in his designs some of the
advantages and beauties that are supposed to
go with such a house. That is the paradox of
modern architecture: we can achieve individ-
uality only on a communal scale; and when
we attempt to achieve individuality in isolat-
ed units, the result is a hideous monotony,
uneconomic in practice and depressing in
effect. We have sometimes succeeded in our
synthetic buildings, the hospital, the office
building, the apartment house and the
domestic quadrangle: we fail, we will contin-
ue to fail, in the isolated house. In my first
article I pointed out the economic and
mechanical reasons for this failure; and I
have now to suggest in concrete terms a more
favorable program of work.

IV

The aim of an integral architecture, like the
aim of the purely mechanical and construct-
ivist architects, is to effect an economy
which will raise and spread the standards of
the modern house. Where is this economy to
be effected, and how is it to be embodied in
design? It is here that the difference in
approach between the two methods comes
out. Are we to attempt to incorporate in the
individual house all the improvements made
possible by a communal technology, dupli-
cating every item as we now duplicate radio
sets and vacuum cleaners, or shall the indi-
vidual cell be simplified and the costs of all
our new mechanical devices distributed
through the whole group of cells, careful
community planning being used to reduce the
cost of equipment?

A concrete example will perhaps make the
difference in approach a little clearer. Take a
matter like the supply of fresh air. Apart from
any human pleasure that may come from the
gesture of throwing wide the window and
taking in a breath of purer or cooler air, there
is no doubt that the problem of pure air can
be mechanically solved by means of an artifi-
cial ventilating system, which will clean,
humidify, and warm at the same time. In cer-
tain places and under certain circumstances
this system is highly desirable; but, however
practicable it is, no one can doubt that its
extension to the dwelling house would only
add one further element of expense to that
vexatious column of expenses which has
been lengthening so rapidly during the last
thirty years. Instead of working in this direc-
tion, an integral architecture, for the sake of
economy, would endeavor to secure through
site planning and site development, through
orientation to sunlight and wind, a result
that can otherwise be obtained only through
an expensive mechanical contrivance. In a
word: the mechanical system accepts all the
factors in house production as fixed, except
the mechanical ones: an integral architecture
looks upon all the elements as variables and
demands a measure of control over all of
them.

This demand may seem to pass beyond the
limits of pure architecture, and the architect
may be reluctant to make it. No matter: he
will be driven to it for the reason that the
The house itself has passed beyond the limits of mere building. The modern house functions as a house only in relation to a whole host of communal services and activities. The rate of interest, the wage-scale, the availability of water and electricity, the topography and the character of the soil, and the community plan itself, all have as great a control over the design as the type of building material or the method of construction. It is fantastic to think that adequate design is possible if all these other elements are determined by forces outside the governance of either the architect or the community. There are, accordingly, two critical places which the architect must capture and make his own if he is to solve the social and esthetic problem of the modern house: one of them is the manufacturing plant, and the other is the community itself. With the part that the architect has still to play in industrial design, I can not deal here; but something must be said further of the relation of modern architecture to the work of the community planner.

V

The unit, bear in mind, is no longer the individual house, but a whole neighborhood or community; and the place where collective economies are sought is not merely in factory production, but at every point in the layout or development. In Europe, where a serious attempt has been made, particularly during the last ten years, to cope with the housing of the industrial worker, such schemes are usually fostered by an existing municipality, as in Amsterdam and London, since there are no constitutional limitations upon the housing activities of cities in most European states: in America, apart from dubiously paternal attempts at better housing, undertaken by mill towns, the integration of architecture and community planning has been the work of the limited dividend corporation, such as the Russell Sage Foundation of the new City Housing Company, or the more farsighted real estate developers, such as the founders of Roland Park in Baltimore.

The right political and economic form for modern community building is perhaps one of the most important social questions that architecture must face; all the more because there is no likelihood that private capital will enter the field whilst fabulous profits can be wrung out of less vital business enterprises. The instigation of such enterprises is not the private job of the architect; but it is a public matter where, the weight of professional opinion may legitimately be thrown on the side of the public interest. Plainly, the architect cannot solve by any magical incantations the problem of supplying new houses to families whose income is not sufficient to cover the annual charges. There is no answer to that question except, as I said earlier, in the form of higher wages or state subsidy: although a wilful blindness to this fact is almost enough to establish a person as a housing authority in the United States. An integral type of architecture, seeking economies at every point in the process, is possible only when the necessary corporate housing organization has been erected.

Economy begins with the selection of the site itself, since the modern city, with its underground articulation, cannot be cheaply produced on a rocky or extremely irregular terrain. The next step is in the design of the street and road system. Here the differentiation of domestic neighborhoods from commercial or factory areas, and their permanent protections through easements, restrictions, and zoning of the land, not alone keeps the land-values low—since there is no speculative temptation through possible changes of use—but reduces the cost of paving and utilities connections. Mr. Raymond Unwin made a great advance in community planning over twenty years ago, when he proved that there is “Nothing Gained by Overcrowding” since the burden of multiple streets beyond a definite point more than counterbalances the apparent economy of more numerous lots; and Mr. Henry Wright has more than once demonstrated that there is enough wasted street space in the average
American neighborhood to provide it with an adequate park—a demonstration which has now been effectively embodied in the plan of Radburn. The grouping of houses in rows and quadrangles, instead of their studied isolation, is a further factor in economy, not merely by making the party wall take the place of two exterior ones, but by reducing the length of all street utilities, including the paving of the street itself; and the result is a much bolder and more effective architectural unit than the individual house.

With control over these exterior developments, the problem of the interior economies is reduced and simplified; indeed, the two elements are co-ordinate in design, and if architects produced their work on the site instead of in the office, and did not habitually conceal the site costs from their clients—as “additional charges”—they would long ago have perceived this. Emerson said that one should save on the low levels and spend on the high ones; and one cannot improve upon this advice, either in living or in the design of houses. It is a mistake in esthetic theory to assume that the demands of vision and economy, of esthetic pleasure and bodily comfort, always coincide; and an important task of integral architecture is to balance one against the other. Where the means are limited, the architect must exercise a human choice between, say, an extra toilet and a second story balcony, between a tiled bathroom and a more attractive entrance.

This choice cannot be made on any summary abstract principle; it is determined by a multitude of local individual factors: the presence of mosquitoes or the absence of large open spaces may, for example, decide the fate of the balcony. If the architect be limited in such local choices, he may have to spend riotously on mechanical equipment; if he have a free hand in community planning, he may let nature take the place of an extra heating unit, an awning, or what not. Again: if a family is forced to look out upon a blank wall, as so many rich people must do on Park Avenue or Fifth, expensive mouldings, draperies, fineries may be necessary to relieve the depression of the outlook: if on the other hand, sunlight and garden-vistas are available, a wide window may take the place of much footling architectural “charm.”

In sum, mass production which utilizes all the resources of community planning is capable of far greater and more numerous economies than mass production, which only extends a little farther our current factory technique. Such a program for the modern house holds out no spurious promises of a quick, ready-made solution for the difficulties that have been heaping up in every industrial community for the last hundred and fifty years. On the contrary it isolates the problems of housing which are immediately soluble, from those that can be solved only through a drastic reorientation of our economic institutions; and it paves the way for necessary changes and adaptations in these institutions. If we are to modernize the dwelling house and create adequate quarters for our badly housed population—a far more important remedy for industrial depression than merely building roads—the architect must bring together all the specialized approaches to this problem, instead of merely trying to catch up with the latest specialty. The correct attack was initiated during the war in the governmental war housing program, it has been carried further during the last ten years, by architects and community planners such as Messrs. Stein, Wright, Ackerman, Kilham, Greeley, and Nolen; and although the designs of these men have so far kept close to traditional forms, their approach gives promise of a vital architecture which will in time surpass the work of the present pioneers as their own work surpasses that of the jerrybuilder.