POSITION PAPER 1

REPLACING CURRENT DENSITY MEASURES
WITH CONTEXT-SENSITIVE FAR.

Center for Environmental Structure   Daniel Solomon and Associates
        Christopher Alexander   Daniel Solomon
        Artemis Anninou   Kathryn Clarke
                        with Phoebe Wall

It is our belief that the entire problem of multifamily housing must be understood as a problem of respect for existing fabric of the city, and for the character of existing neighborhoods.

This does not necessarily require downzoning, as some people fear. However, it may indeed, require a redistribution of the densities currently distributed in the RM16, 32 and 48 zones.

In particular, it certainly requires a closer connection between the density of a given project, and the density immediately around about it in the neighborhood. Obviously, a project cannot be respectful of its neighborhood, unless its density is approximately similar to the density of other projects near it.

In order to discuss this problem, we have decided to express all densities as floor area ratios (FAR's). We define the FAR of a given site, as the total built floor area, adding all floors, including stairs and hallways, but not including parking or parking structures.

To study the problem we selected 22 sites in the RM 16, 32 and 48 zones. These sites are presented in the following table. Four of the 22 sites are in RM16, 11 are in RM32 and 7 are in RM48.

After choosing these sites, we made a field assessment to determine what density appears intuitively to be appropriate for each of these sites.

We also made a calculation of the FAR in the surrounding sites.

TABLE OF DIFFERENT FAR CONDITIONS

Context gives the combined FAR of all adjacent neighborhood lots which have been mapped.
Intuitive gives our intuitive assessment of the best FAR for the lot.
Zone gives the maximum FAR permitted by the present zoning ordinance.

Address	Zone	Lotsize	FLOOR AREA RATIOS		
			Context	Intuitive	Zone
1402 N.Raymond	16	7,920	.38	.57	.36
California and Orange Gr	16	23,400	.75	.51	.36
1543/9 Locust at Hill	16	8,250	.18	.36	.36
1500 Corson	16	8,183	.37	.29	.36
1340 Locust at Holliston	32	16,884	.55	.59	.74
775 California at Hudson	32	14,000	.54	.57	.74
N.Raymond and Hammond	32	12,768	.37	.55	.74
278 Washngtn at Marengo	32	17,580	.34	.57	.74
285 Holliston	32	10,000	.63	.60	.74
580/590 Hollistn at Maple	32	23,000	.36	.52	.74
376 S.Oakland	32	7,956	.89	.50	.74
476 S.Molino at Calif	32	13,640	.76	.74	.74
509 Holliston at Villa	32	12,240	.44	.49	.74
520 S.Oakland	32	9,945	.82	.70	.74
517/531 Cypress	32	9,265	.25	.52	.74
105/131 N.Chester	48	30,030	.75	.75	1.10
1364 Cordova at Hollistn	48	15,000	.56	.80	1.10
200 S.Molino at Cordova	48	28,000	.76	.79	1.10
106/130 Chester	48	15,400	.31	.91	1.10
688/698 Villa at Maple	48	17,544	.34	.57	1.10
148/156 N.Chester	48	14,500	.20	.83	1.10
236/240 Oaklnd at Cordova	48	20,000	.59	.50	1.10

We may now compare three numbers for each project:

1. The context density.

2. The density suggested by our intuitive assessment.

3. The density permitted by current zoning.

Note: The density permitted by current zoning, is an FAR calculated for the permitted number of units, on the assumption that each apartment unit has 1000 sf of total built area (interior, plus hallways).

Under existing rules, RM16 allows 1 unit for every 2850 sf of site, thus giving 14,000 sf of built space, and an FAR of .35. Under existing rules, RM32 allows 1 unit for every 1360 sf of site, thus giving 29,000 sf of built space, and an FAR of .74. Under existing rules, RM48 allows 1 unit for every 910 sf of site, thus giving 44,000 sf of built space, and an FAR of 1.10.

We make the following observations:

1. In the RM16 zone, both the context FAR and the intuitively reasonable density are <u>higher</u> than the FAR permitted by the RM16 classification.

The zone density (permitted by the current zoning) is .36.

Average of context densities is .42. This would suggest the sites could tolerate at least as much as .46 (a 10% increase over the present context).

Average of intuitively assessed densities is .43.

In other words, it appears that RM16 zones can comfortably tolerate a higher density than the 14 units per acre currently allowed.

2. In the RM32 zone, both the context FAR and
the intuitively reasonable density are
<u>slightly</u> lower than the FAR permitted by the
RM32 classification.

The zone density (permitted by the current
zoning) is .74.

Average of context densities is .54. This
would suggest the sites could tolerate at
least as much as .59 (a 10% increase over the
present context).

Average of intuitively assessed densities is
.58.

In other words, it appears that RM32 zones
should have a slightly lower density than the
29 units per acre currently allowed.

3. In the RM48 zone, oddly enough, the average
context density is <u>lower</u> than the average
context density in the RM32 areas. In RM32
areas the average context FAR is .54. In RM48
areas the average context FAR is .50, lower
than the RM32 areas.

This makes it seem as if the RM48 zoning
is being used in such a way that it
intentionally violates the neighborhood
context in selected areas, in order to
increase development potential for the city.
We consider this a very dubious policy, and
that it would be better to modify the present
zoning, in such a way as top reflect present
contexts more sensitively.

In the RM48 zone, both the context FAR and the
intuitively reasonable density are <u>very much</u>
lower than the FAR permitted by the RM48
classification.

The zone density (permitted by the current
zoning) is 1.10.

Average of context densities is .50. This would suggest the sites could tolerate at least as much as .55 (a 10% increase over the present context).

Average of intuitively assessed densities is .74.

Combining these figures, it appears that RM48 zones should have a somewhat lower density than the 44 units per acre currently allowed.

DISCUSSION

On the basis of these investigations, we draw the following conclusions about the density problem.

1. We believe that FAR should be used as a measure of density, rather than number of units, since it more accurately reflects the overall felt, and experienced building density -- which is the main variable that affects peopesl perceptions of neighborhood quality.

2. In general the intuitive assessment of good density, and the existing context FAR, are in reasonable agreement.

3. In general, the present zone FAR is not in good agreement, either with existing context FAR, nor with intuitively reasonable FAR. It is too low in RM16, and too high in RM 48. In RM 32 it is slightly too high.

4. PROPOSAL A. It would be possible to formulate an an overall density rule, which defines the permitted density, on any given lot, as a function of densities on adjacent lots.

This rule might -- for example -- permit an
FAR of 1.1 x the context FAR. This would allow
for gradual upzoning of existing
neighborhoods, but in a way which always
respects existing situations.

It should be possible to forumalte such a rule
in a way that roughly matches what we have
called the intuitively correct density which
is best for the neighborhood.

5. PROPOSAL B. It would also be possible to
make a general zoning modification, which
increase density in RM16, leaves it more or
less the same in RM32, and decreases density
in RM48, roughly as follows:

RM16 permits 20 units per acre (FAR .5)
RM32 permits 26 units per acre (FAR .65)
RM48 permits 35 units per acre (FAR .88)

6. Constancy of overall Pasadena development.

Finally, we wish to draw attention to a very
important principle, which may help discussion
of both proposals A and B.

It is possible to formulate either proposal A
or proposal B in such a way that it improves
the sensitivity and preservation of
existing neighborhoods <u>without reducing the
overall amount of development permitted in the
city</u>.

In order to understand this principle, it is
necessary to consider the following
statistics. At present, areas deveoted to
RM16, RM32 and RM48, are distributed as
follows, in Pasadena:

RM16   24%   FAR   .35
RM32   61%   FAR   .74
RM48   15%   FAR 1.10

We may define a measure of the total permitted development (TPD) as follows:

$$(.24 \times .35) + (.61 \times .74) + (.15 \times 1.10) = .7004$$

This is a measure of the total amount of development which can occur in the city, by increasing existing FAR's to the FAR's permitted by the zoning ordinance. It is a measure of millions of square feet of construction allowed in the multifamily zones.

Now, we can adjust any proposed redistribution of these three zones, in such a way that this TPD remains the same. This means that although the individual amounts of construction in different zones may not be the same as that under the existing ordinance, the total amount of construction that can be undertaken in the city, remains the same.

For example:

$$(.24 \times .5) + (.61 \times .65) + (.15 \times .88) = .6485$$

This proposal will allow slightly less overall construction than the present zoning ordinance.

$$(.24 \times .6) + (.61 \times .70) + (.15 \times .90) = .7060$$

This proposal will allow slightly more overall construction than the present zoning ordinance.

It is therefore possible to readjust existing densities, in such a way as to improve the preservation and context of existing nieghborhoods dramatically but without reducing the total development potential of Pasadena at all.

DRAFT RECOMMENDATIONS

We are beginning to think in terms of three recommendations:

1. We may recommend that RM16 should be upzoned, RM48 should be downzoned, and RM32 should be left approximately as it is, perhaps with a very slight downzone. The mechanism for this redistribution is not yet decided, but might be along the lines of item three below.

2. It is possible to formulate such a redistribution of density in such a way as to leave the total development potential of Pasadena unchanged. This may or not be desirable, and should be discussed by thne task force. It would leave the total "development potential" of the city of Pasadena unchanged.

3. In addition, we may recommend consideration of a different approach to zoning, in which all multifamily zones are covered by a single rule that defines the allowed density on each lot as a function of surrounding density on nearby or adjacent lots. This will do the most to create harmony in neighborhoods, and preserve existing neghborhood values. Such a rule can be formulated to be effectively consistent with the principles 1 and 2 above.

The effect, would be that some lots, if surrounded by very low density development, would have a lower ceiling, while others, if surrounded by high density, would have a higher ceiling -- even within a given density zone. We believe that this kind of rule can be formulated in a way which guarantees equal protection. However, we have not yet come to any firm conclusions about the desirability of this approach.