

TECHNICAL BULLETIN

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A Comparison of Street and Backyard Character of Small Lot Single Family Residential using Front Access Driveways versus Rear Access Lanes

I. Introduction

There is much interest, as well as debate, regarding the relative benefits of providing lane access versus driveway access for family cars owned by residents of homes on small lots. Issues include:

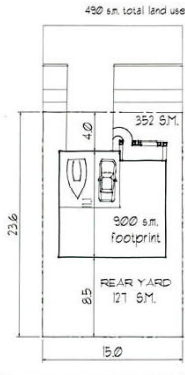
1. the effect on the appearance and safety of the street;
2. the effect on the utility and privacy of the backyard; and
3. the amount of impervious surface attributable to each type.

In this technical bulletin, we provide a comparison of street and backyard characteristics of small lot single family residential with front driveway access versus rear lane access. We have employed a "total land use analysis" for this study that includes the proportionate share of street and lane space attributable to the parcel when computing the parcel size. Thus the total land use for a parcel might include 350 m² of lot space and 140 m² of lane and street space. Only by using this method can you get a true comparison of the land area requirements of a particular lot/street/lane arrangement.

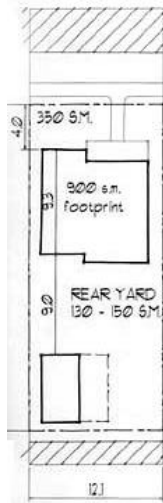
II. Driveway Access Streets

1. The effect on the appearance and safety of the street

With driveway access, the street and the sidewalk are frequently crossed by cars to allow direct access to a parking garage or carport. The direct access from a parking garage or carport to the home's entrance of the small lots is a convenience. Nonetheless, driveway crossings reduce the opportunities to plant trees along the roadside boulevard. The curb cuts of the driveway crossings also impact the drainage and infiltration potential of the grass boulevard.



For our analysis, we use a total land use of 490m² with a gross density of 8.25 units/acre for both the front loaded layout (above) and layout with lanes (below). This measure includes a 350m² lot plus the share of street, boulevard, sidewalk, and lane (where applicable) for each parcel.



*Figure 7-1(right)
Plan view of typical single family residential lot layout along a driveway access street front.*

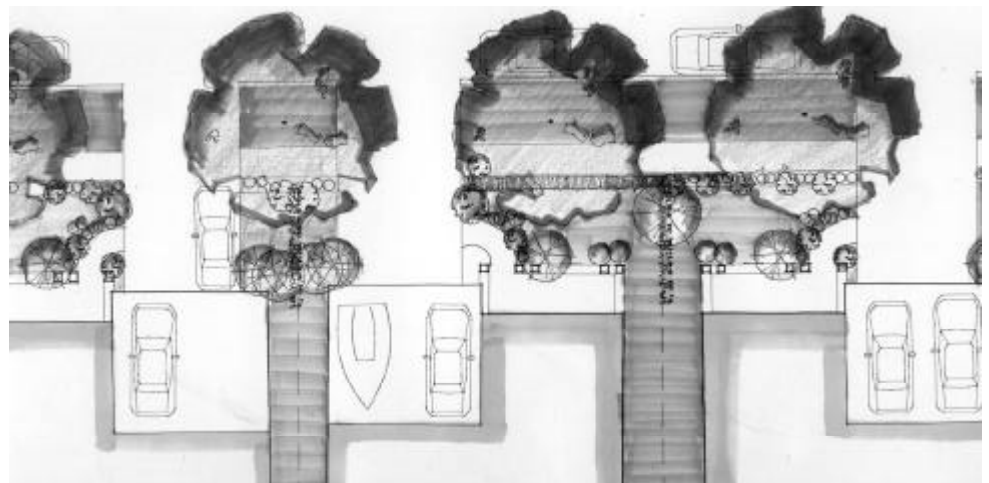


Figure 7-2
Typical view from a sidewalk of a street with front-access lots.



In driveway accessed homes, the garage and parked cars de-emphasize and often obscure the front door and front windows of the home. This can impede views from the house onto the sidewalk and street, reducing the overall sense of “eyes on the street.” Driveway crossings increase the level of vehicle/pedestrian conflict on the sidewalk, which leads to an increase in the number of accidents occurring in that zone.



Figure 7-3
Typically, rear yards of street access lots are aligned back to back and separated by a fence.

2. The effect on the utility and privacy of the backyard

For the 490m² total land use analysis shown here, the total backyard area of driveway accessed lots was 127m². Driveway accessed lots are aligned with rear yards and separated by a tall fence on the property line. Backyard views from one home to the next are direct. The elimination of rear yard entry impacts the opportunity to provide rental accommodation in the form of a second-storey coach houses or granny suites. The total distance between rear facades in this example is 17m.

3. The amount of impervious surface attributable to front access lots

The total impervious surface (TIA) for the street access option is approximately 51%. Table 7-1 provides a summary of the impervious surface data for this type of lot.

III. Lane Access Streets

1. The effect on the appearance and safety of the street

Rear-lane lots offer continuous, uniform sidewalk and street fronts, as shown in Figure 7-4 and 7-5. The line of street trees provides continuous canopy cover and shade; the grass boulevard offers a natural surface for drainage and infiltration. The transition from the public sidewalk to the semi-private front yard, demarked in these examples by a picket fence, is clearly distinguished.



As shown above in Figure 7-4 and in plan view in Figure 7-5 (right) lanes in the back allow for a continuous uniform sidewalk and street front.

Lots with rear lanes provide space for large front porches, and ensure doors and windows are articulated along the sidewalk and street edge. Clear and unobstructed views from the house directly onto the sidewalk and street provide “eyes on the street.” The continuity of the street and sidewalk is not disrupted by driveway crossings, which eliminates a vehicle/pedestrian conflict on the sidewalk. The detached rear garage inhibits direct access from a parking garage or car port to a

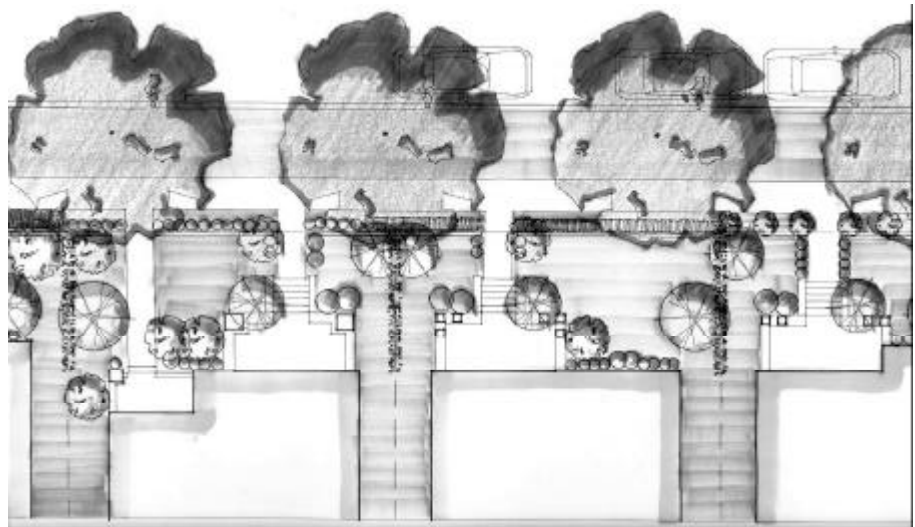




Figure 7-6
Pedestrian view from a sidewalk
along a 'pedestrian dominant'
street front.

home's entrance; and, especially during periods of poor weather, can be considered an inconvenience. Examples exist for lots with lanes where the rear garage carport is attached to the back of the home thereby eliminating this concern.

2. The effect on the utility and privacy of the backyard

The backyard area for the rear lane access option is summarized on Table 7-2. The rear lane identifies a boundary and provides a transition zone from one private yard to the semi-public lane, to the next private yard. The average distance between rear facades in these lots with rear lanes is 37m.

Lots with lanes offer access from the back of the property to the rear yard. This can be an important asset for accessing storage, maintaining the house, providing an additional avenue for fire fighters, and when moving. Rear lane lots also provide the opportunity for rental accommodation in the form of second-storey coach houses or granny suites.

3. The impervious surface attributable to lots with lanes

The average TIA percent imperviousness for the lanes options is 35% assuming a permeable, gravel lane. (A paved lane would increase the total impervious surface by 5%.) Table 7-2 provides a summary of the impervious surface data. In this lot layout, the boulevard between the sidewalk and the street enables infiltration of runoff from the site and provides a continuous planting area for street trees.

IV. Comparison Summary

Table 7-1 and 7-2 summarize the Lot Dimensions and Layout for Front Loaded Options and Lots with Lanes.

Table 7-1: Lot Dimensions and Layout for Front Access Lots

Lot Option without Lane (Typical Sites @ 8.25 UPA Gross Density)			
Front Yard Setback	4 m	13 ft	
Lot Depth	24 m	78 ft	
Lot Width	15 m	49 ft	
Lot Size	352 m ²	3789 ft ²	
Housing Footprint	90 m ²	969 ft ²	
Rear Yard	127 m ²	1367 ft ²	
Total Distance Between Rear Facades	17m	56 ft	
Total Land Use	490 m²	5274 ft²	
Impearmable Surface			
House	90 m ²	969 ft ²	
Two-Car Garage	39 m ²	420 ft ²	
Driveway	44 m ²	474 ft ²	
Associated Sidewalk	12 m ²	129 ft ²	
Associated Roadway	63 m ²	678 ft ²	
Total Impervious Surface Area	248 m²	2669 ft²	
Percent Imperviousness	51%		

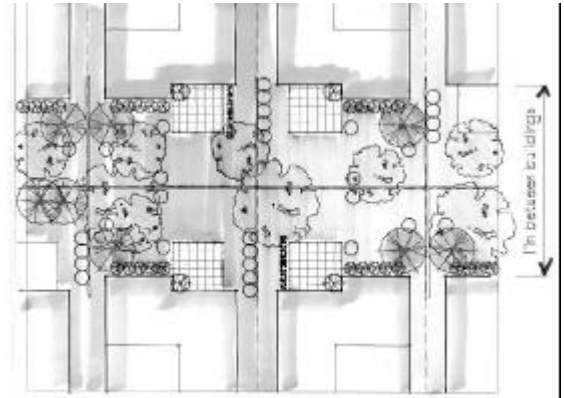


Figure 7-7 (above)
Plan view of typical rear yard
condition without lane.
The distance between rear
facades is 17m.

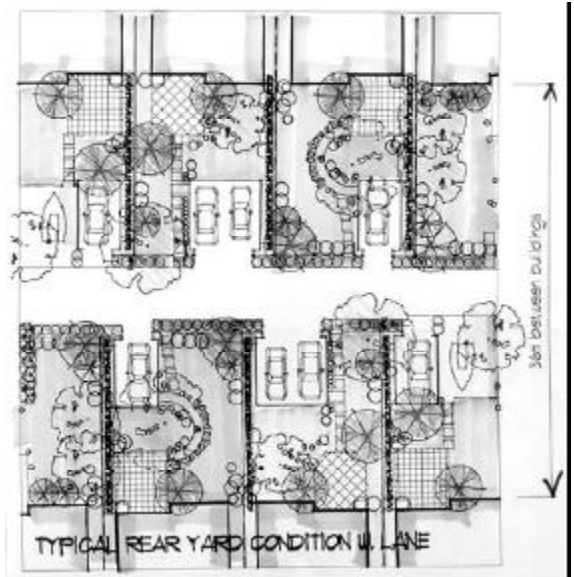


Figure 7-8
Plan view of typical rear yard
condition with lane.
The distance between rear
facades is 36 m.

Table 7-2: Lot Dimensions and Layout for Lots with Lanes (3 Options)

Lot Options with Lane (Typical Sites @ 8.25 UPA Gross Density)	Design A		Design B		Design C	
Lot Dimensions						
Front Yard Setback	4 m	13 ft	4 m	13 ft	4 m	13 ft
Lot Depth	29 m	95 ft	26 m	85 ft	35 m	115 ft
Lot Width	12 m	39 ft	13 m	43 ft	11 m	36 ft
Lot Size	350 m ²	3767 ft ²	340 m ²	3660 ft ²	368 m ²	3961 ft ²
Housing Footprint	90 m ²	969 ft ²	90 m ²	969 ft ²	90 m ²	969 ft ²
Rear Yard	130-150 m ²	1399-1614 ft ²	122-142 m ²	1313-1528 ft ²	132 m ²	1420 ft ²
Total Distance Between Rear Facades	36 m	118 ft	31 m	102 ft	45 m	148 ft
Total Land Use	490 m²	5274 ft²	490 m²	5274 ft²	490 m²	5274 ft²
Impermeable Surface						
House	90 m ²	969 ft ²	90 m ²	969 ft ²	90 m ²	969 ft ²
One-Car Garage (with pervious parking pad)	20 m ²	215 ft ²	20 m ²	215 ft ²	20 m ²	215 ft ²
Associated Sidewalk	15 m ²	162 ft ²	16 m ²	172 ft ²	13 m ²	140 ft ²
Associated Roadway (with gravel lane)	47 m ²	506 ft ²	49 m ²	527 ft ²	41 m ²	441 ft ²
Total Impervious Surface Area	172 m²	1851 ft²	175 m²	1883 ft²	164 m²	1765 ft²
Percent Imperviousness	35%		36%		33%	

V. Summary

Rear-lane lots offer uniform sidewalks and street fronts with continuous street tree plantings to provide canopy cover and shade, as well as a continuous grass boulevard for drainage and infiltration. Clear and unobstructed views from the house directly onto the sidewalk and street provide “eyes on the street.” The driveway crossings associated with front-loaded lots reduce the overall canopy cover of a street, and may impact the infiltration and drainage potential of the grass boulevard.

Front-loaded lots provide direct access from a parking garage or carport to the home’s entrance (which can be beneficial, especially during periods of poor weather) while the rear-lane lot examples (shown in this case with detached garages) do not.

The lots with lanes provide for a larger rear yard with greater distance from neighbouring backyard to backyard, offering a more functional, and private rear yard than those of the front-loaded lot. In summary, based on our analysis, lots with lanes are measurably more efficient, with less overall impermeable surface.

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