SUPPORTING SUBMISSION

MEDIUM DENSITY HOUSING CODE

5 December 2016

Director, Codes and Approval Pathways
NSW Department of Planning and Environment
GPO Box 39, Sydney, NSW 2001

Dear Sir/Madam,

This letter is in support of the intent to enable code-compliant medium density housing, particularly terraced housing. Dense, walkable neighbourhoods contribute to social cohesion and healthy lifestyles, and are efficient for organic infilling of existing suburbs with local residents participating, rather than being displaced. Terraced housing combines high thermal stability with good cross-ventilation, making it more climate-appropriate. Medium density development is also within the reach of individual landowners and small builders, a key untapped force in housing supply, less prone to land speculation and more likely to build better, the product being their own new homes and neighbours. Development that allows each neighbourhood to change slowly and retain individuality is also preferable to mass consolidation and redevelopment.

However, the Guide itself is not well drafted, and **the Code falls short of the stated ambition of medium density, as it can only achieve a density of 28 dw/h (for semis and terraces) and 37 dw/h (for manor houses)**[1] - and less in practice, due to site controls. There is a risk that the Code entrenches these lower-than-intended densities, as councils must continue to assess all true medium density housing through planning applications, whether or not the Code is adopted (even if a council prefers the tighter forms of terrace housing in the Guide). Developers opting for a maximum yield, no hassle product are likely to build manor houses to the exclusion of terraces, and if published in its current form, the best opportunities for quality infill may be lost before the code can be rectified.

Land area is a key metric, but width, FSR, height, setback and parking controls are also all too suburban and for the form sought by the code. Additionally, the Code and Guide are too prescriptive, and increase the bureaucracy, and reliance on experts, in the housing process. This should be avoided as a general principle.

The key parameters that need to be changed are set out on the following pages.

[1] Lots average only 56% of total available land, per Cardew, 1996 in Landcom Residential Density Guide, May 2011, p10. At an area of 200m^2 therefore, terraces can only yield 10,000 x 0.56 ÷ 200 = 28 dw/h. For manor houses of up to 4 dwellings on lots of 600m^2, yield is slightly higher 10,000 x 0.56 ÷ 600 x 4 = 37.3 dw/h - less than Sydney's terrace suburbs (45dw/h), more akin to the early 20th century Lower North Shore (25dw/h)

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A General Principles

Three broad changes are recommended to the way the Code and Guide operate:

1. Give Weight to Performance, not Rules

The Medium Density Housing Code should adopt a similar approach to the Building Code, which states fundamental Performance Requirements, followed by Deemed to Comply parameters for each requirement. This has two functions:

a) it clarifies the rationale behind the Performance Requirement, reducing arbitrariness and mis-application of details by assessors; and

b) it allows for evidence-based innovation.

For example, a Performance Requirement for 'medium density development', i.e. gross development density of 45 dw/h or equivalent net site density of 80 dw/h would provide the rationale for given site area, FSR and subdivision controls (and would reveal the mismatch between the Code ambition and its outcome).

2. Allow More Neighbourly Negotiation

Many Code and Guide controls are designed to protect neighbours, rather than an articulation of an ideal built form - matters that could be better arranged between private citizens themselves. Ideally, side setbacks should be zero, but this is only permitted under the Code if there is an existing boundary wall. If two neighbours wish to develop their lots into terraces, they would thus need consent or lot amalgamation, just because each lacks a 'boundary wall'. A better solution would be to allow the potentially affected neighbour to waive certain protections. Second storey and rear setbacks could also be subject to neighbour's agreement.

3. Aim for Simplicity

Much like the 'Plain English' test, changes to the planning system should seek to simplify building consents over time. In particular:

a) the Department of Planning should aim for a single clear document that describes good housing, similar to the interim *London Housing Design Guide (2010)*, rather than (slightly inconsistent) separate guides for General Housing, Medium Density Housing and Residential Flats;

b) the audience of the Code and Guide should be the owner-builder, and not require planners, builders/architects and certifiers to interpret the controls. A form-based code would allow better articulation of desired outcomes, and would not require intense study to assemble the 'whole' building from all the well-meaning but piecemeal encoded 'parts'. Again the form could be 'deemed to comply' and refined by more sophisticated developers.

B Specific Actions

Irrespective, the Code has some particular flaws which need rectification, being:

- **reduce the minimum lot size to 100m^2** and **the minimum site width to 4m**
- **apply the Code to all land zoned R3 and R4, and any new land releases**;
- support employment in residential suburbs by **including a mixed use typology;**
- **incentivise better large terraces,** with higher ceilings and a third storey; and
- **eliminate the requirement for off-street car parking**, either criteria based (an offset for on-street parking frontage, or if close to transport), or altogether; and
- **reduce street setbacks, and allow neighbours to negotiate side setbacks**.

1. Reduce the Minimum Site Area to 100m^2

In order to mathematically achieve a density of 45 dw/h, an average lot cannot exceed 125m^2[2]. In practice, a minimum lot is usually less, to allow for boundary variation. UK terraced houses average 82.5m^2[3] which at 0.75:1 FSR would equate to an average terraced house lot of 110m^2 (although 1:1 is more typical, so lots are smaller again). In Paddington, Surry Hills and Redfern, lots of 100m^2 are common and this should be the minimum lot size in both the Guide and the Code. The Guide already shows a typology of 100m^2 (p184). Put differently, if a two bedroom flat of 75m^2 is considered acceptable, why shouldn't a 2 bedroom terrace on 100m^2 (at 0.75:1) also be considered an acceptable outcome?

Additionally, as manor houses achieve slightly denser development (4 dw per 600m^2 = 150m^2 per dwelling), terraces are rendered relatively unprofitable.

Figure 1 - Stanton's Subdivision of Careel Ocean Beach (Avalon Beach), 1922
The lots on the right are 60 foot (18.2m) the lots on the beach are ~45 foot (~14m).

[2] Cardew, ob cit, gives an average 56% gross development efficiency, so for 45 dw/h, lots must be 10,000 x 0.56 ÷ 45 = 124.44sqm

[3] http://www.savills.co.uk/research_articles/186866/188035-0

2. Reduce the Site Width to 4m

The Code assumes a standard 60' (18.2m) subdivision, admitting no room for site conditions, contrary to historic patterns (see Figure 1). This risks lost opportunities. Instead, minimum lot width should be mathematical - the product of the minimum room sizes plus party walls and setbacks. While 2L of the MDDG does not articulate room sizes, from the imagery and analogous Apartment Design Guide (Objective 4D-3), the minimum internal width is 3.6m. With a 270mm cavity brick wall, this gives a minimum lot width of 3.87m (centreline to centreline), ie. **4m**.

Even assuming a 'perfect' a quarter acre block of 20 x 50m (or imperial 60' x 180'), only three terraces in a row can be built on the street frontage - forcing the two remaining lots permitted by area controls to be placed at the rear (with rear lane access). A 4m frontage would allow five terraces fronting the street (the remainder becoming a rear bungalow). With both 4m wide and 100m^2 lots, the admired pattern of old Sydney terraces be reproduced entirely.

Figure 2 - Quarter acre blocks superimposed on terraces between Ridge St and Cleveland St, Surry Hills. The sketch shows (L to R) a typical suburban block, code compliant development, narrow frontage development, and development with both narrower frontages and smaller site areas (mirroring the historic pattern above).

3. Apply the Code to R3, R4 and New Land Releases

The Code risks being a dead letter because it requires adoption by councils to be effective. Those councils who want medium density may shy away from the Code for its low density outcomes - for inner Sydney, for example, the Code would be a retrograde step. Equally, councils who are less favourable to densification may resist the Code, as with ill-fated SEPP32 before it.

If the desire is for councils to define the areas suitable for medium density housing, then this can already be assumed for R3 (and R4) zones already, and the only discretion should be whether *in addition to R3 and R4*, it might apply to R1, R2 or RU5 zones. In the case of R4, while notionally earmarked for higher density, those zones could also benefit from a greater mix of forms, and 'relief' from the monotony of flats. Hybridisation of high density areas would be akin to the admired development patterns of Potts Point and Victoria Park.

Any new land release should seek dense, land efficient development. Most housing developers have already been developing smaller products and their own design guides. Bringing them under the fold of this Code would allow the industry to develop a desired typology at scale, thus allowing, in time, for them to offer an affordable, compliant product to home owners in existing suburbs. .

4. Develop a Mixed Use Terrace Typology

The Minister for Planning has already given a s117(2) direction to encourage Home Occupations in dwelling houses without consent, and the Standard Instrument includes a range of compatible uses to residential, including Home Industry, Home Business and Neighbourhood Shops. The code should facilitate mixed use terraces for this - that is, by allowing terraces with a zero front setback for the ground floor, if that floor has a minimum 3.6m floor to ceiling height and a separately tenantable area of at least 30m[4] (or 80m[5] if for retail use), in addition to the 'space for the functions of contemporary living' under 2L of the MDDG.

The MDDG could also provide guidance on the desired form of these mixed use terraces, including a glazed facade, level access from the street and an accessible WC. Some guidance could also be given on the success factors for mixed use, such as fronting on to busy connectors and transit streets.

[4] Clause 5.4 of the Standard Instrument sets a minimum area for Home Businesses and Home Industries at 30 square metres, and Neighbourhood Shops at 80 square metres. No minimum size is specified for Home Occupation.

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5. Grander Terraces

Sydney's Victorian terrace stock, that yields an average 45 dwellings per hectare for inner Sydney suburbs, tends to vary from small lots of 14x80ft, (4x25m, or 100m^2) to large lots of 20x100ft (6x30m, 180m^2). Smaller lots tend to contain smaller terraces - two principal rooms deep, with lower ceilings and often two bedrooms. Larger terraces tend to be three rooms deep, are loftier and typically contain 3+ bedrooms. This range gives buyers more choice, providing a mix of affordable and family homes for better social cohesion.

By requiring 6m wide terraces, two stories (6m) high, the Code produces square buildings, wide as the grandest terraces in Paddington, without their proportions. To avoid this, rather than just allow smaller terraces, the Code should also seek to encourage more substantial homes where they are wider, to encourage "delightful examples of subtle variation within strict regularity" (Rassmussen, 1964)

This approach would reflect the pattern of the earliest Sydney street elevations, where wider terraces tended to have larger stories, and narrower had smaller stories, while following the same general proportioning system, even then.

Figure 3 - Extract from 'Sydney in 1848', showing similar proportions for small & large terraces

In order to retain large terraces' loftier proportions, while incentivising both small and larger terrace forms, two competing principles are proposed:

- increasing the minimum floor to ceiling height by 300mm per metre > 4m; and
- increasing the number of permitted floors to 3 storeys for terraces 6m wide.

This maintains the proportions of the terrace form, and provides a positive incentive for adopting loftier ceiling heights (an extra storey). Below is a diagram how verticality is helped by gradating floor to floor height and storeys.

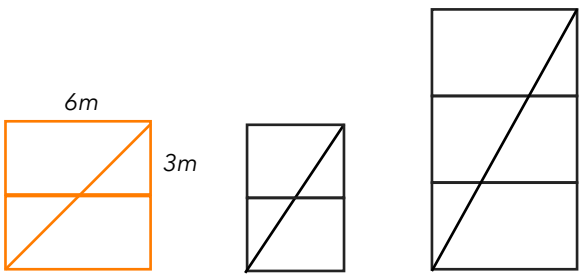


Figure 4 - a comparison of the current Code with a 4m wide terrace with 2.7m floor to ceiling heights (3m floor to floor, 6m overall), and a 6m wide terrace with 3.3m floor to ceiling heights (3.6m floor to floor, 10.8m overall).

6. Cars Parking and Walkable Neighbourhoods

The requirement for a single car space per dwelling should be removed.

Higher densities support viable public transport for commuting, and with mixed use allows short trips to schools, shops and for leisure to be made on foot or by cycling. This reduces pressure on the road network, by removing those who don't need to drive from the roads. Though better transport and amenities help people make healthy choices, the best single predictor of driving vs public transport, walking or cycling is whether the user owns a car[6], and car parking is an integral part of the decision to buy a car in the first place. To integrate land use and transport planning, **the requirement for parking should made contingent on the lot falling outside the catchment of 'good' public transport**, i.e. within 960m of a train station or tram stop, or within 400m from a 5bph (bus per hour) route[7].

Car ownership is also strongly linked to inactivity and obesity. More adults who catch public transport get their recommended daily exercise from walking to PT (or by walking or cycling all the way) - up to twice as many as car owners[8].

For those who do rely on cars to get around, Sydney's existing terrace suburbs already provide a model for this - the lack of off-street parking being offset by long continuous kerbs for on-street parking. In fact, each 6m wide terrace (without driveway) already equates to a single on-street car space.

On-street parking is also more flexible, as it has no land take and allows parking to be managed by councils at a neighbourhood level, responsively to demand. Driveways compromise the ability to provide on-street parking in front of them, and conflict with the terrace form sought by the Code. If the Department of Planning it still minded to require car parking, t**he Code should at least allow the parking requirement to be offset by any adjacent on-street parking**.

Figure 5 - Late 20th century terraced housing in Hackney, London. Wide frontages and off-street car parking have resulted in a poor urban outcome.

This kind of development is now discouraged in London in favour of simple terraced forms

[6] Health Impacts of Cars in London, September 2015, pp2, 13

[7] This would limit the Code to 'turn up and go' bus corridors (1 bus per 12 minutes, as defined by the TfL 'Guidelines for Planning Bus Services'), whose frequency also makes changes to bus routing unlikely, giving planning certainty. Densification in turn would create a virtuous circle for these bus corridors to operate more profitable and frequent services. Routes is here shorthand for multiple related services (ie a single timetable) on a common sector, for example, the 301, 302, 303 and X03 services on the Crown Street corridor in Surry Hills.

[8] Improving the Health of Londoners, Transport Action Plan, December 2013 p23 / Health Impacts of Cars in London, September 2015, p16

7. Setbacks Could Be Better

The most likely terraces build under the draft Code will be in short runs on corner lots, with development facing the secondary street. This is largely due to the interplay of various setbacks. For example the Code requires:

A. a Primary Road setback an average of neighbouring houses <40m away. In many suburbs detached dwelling setbacks are 12m, as deep as most terraces. In practice it would be easier to face terraces to a side road, where the Secondary Road setback is set at a fixed 2m. A better approach would be to restrict the 'average of adjacent dwellings' requirement to detached dwellings (incl. Dual Occupancy and Manor Houses), and **adopt the Primary Road Setback of 3m specified in 3.14(b)(i) of the Codes SEPP** for terraces. The Codes SEPP already provides a 3m setback, which is better than that proposed under the draft Code (3.5m).

B. Terraces facing a Primary Road generally do not have a Secondary Road setback, but are built to the boundary as if a side setback. This enables the terrace block to run to the street corner. **A 0m Secondary Road Setback should be adopted for Multi-Dwelling Housing (Terraces) up to 200m^2**.

C. Provisions on side setbacks are designed to protect existing neighbours, yet there is no mechanism for those neighbours to waive that protection even if, for example, both neighbours wish to build the new medium density housing. A zero setback is only allowed if there is a boundary wall on an adjoining lot. However, if two neighbours wish to build terraces in sequence, at no time can there be a relevant 'boundary wall' between them to build up against. **An additional provision should be added allowing a 0m Side Setback "by written consent of the adjoining lot owner"** (less than 12 months old). Likewise, the requirement for the 45° building plane should also be capable of waiver.

D. The allowance for abutting a rear lane for 7.0m suggests a double garage and may limit the building of laneway housing. Dual frontage lots should be encouraged to develop continuous lines on both streets - such laneways in central Sydney abound, and provide passive surveillance and housing choice. **The permission to abut the rear lane should be clarified to read that the 7.0m maximum width is applied 'per dwelling'**.

C Medium Density Design Guide

1. Remove Parts 1 and 2 of the MDDG

Part 1 (Introduction) is 10 pages of instructions, and Part 2 (Design Guidance) is 65 pages of vague, descriptive text of unclear weight, and both should be trimmed or omitted, to make the Guide clear on its face.

The Apartment Design Guide sets out similar 'background' guidance in Parts 1 and 2, as do parts of Step 4 of the NSW Housing Code. Each of these documents runs to about 200 pages due to this padding, and each takes subtly different approaches. There is no compelling reason why each document should adopt a new approach to measuring building height, or desired future character. The interim London Housing Design Guide (LDA, 2010) is half the length, avoids a long preamble and covers all forms of development in a single clear, tabulated format - this precision could be achieved in the MDDG by removing parts 1 and 2 into a guide to understanding development, and starting the MDDG at Part 3.

Document size aside, the Minister should take note of the problems with the original SEPP65 'guidelines' equivalent to Part 2 of the MDDG, which took on semi-legal status (such as Building Separation, meaning window separation, which was so poorly worded as to necessitating the clarifying sentence "*No building separation is necessary where building types incorporate blank party walls*" in the new Apartment Design Guide).

Anything irrelevant to the Design Verification Statement should be avoided, as it risks being interpreted as legally binding. Take for example the guideline floor depth of 0.4m (p17). When combined with the minimum floor to ceiling height of 2.7m, this gives a minimum floor to floor height of 3.1m. Does this mean that a design that achieves a shallower floor depth of 0.3m (3m floor to floor) is non-compliant? Even if this is standard practice? The guidance makes no distinction between the (amenity control) of 2.7m floor to ceiling height and the (rule of thumb) of 0.4m floor depth. One might argue 2.7m has weight due to 3.1K. If so, what weight does 2A have? This is court fodder, and risks perverse outcomes.

There are also many normative guidelines that describe instead of control. For internal streets (p33), we are told "*Streets should not have dead ends - they connect to other streets or lanes. They have a footpath on at least one side, include tree planting at regular intervals and have a carriageway of at least 5.5m*". Does this mean if a street is closed to cars at one end by a bollard to stop rat running, or for filtered permeability (cycle and walking), it is not a street under the MDDG? What if it has no trees? Why is a housing guide even dallying in masterplanning?

Figure 6 - Owen St, Islington

This one way laneway near former Mayor Boris Johnson's house was turned into a 4m wide two way cycleway, with widened footways, and is now one of the busiest cycle routes in London.

According to the MDDG, it is not a street, lacking both regular tree planting and a 5.5m carriageway.

2. Even if Part 2 is retained, remove or rewrite 2S Universal Design

2S Universal Design has the ostensibly noble aim of *all* housing "achieving Silver Level" accessibility. This is a compliance burden (as accreditation is required for 'levels'), but the major issue with this aim is that most traditional terraces fail step 1 "safe continuous step-free pathway *from the street entrance to the dwelling entrance that is level*". Terraces, close to the street, typically use a level change for privacy. This would be unacceptable under 2S, even if there was a level access by other means (such as a side or rear gate), or if some but not all housing was accessible, or adaptable, and some was not.

3. Even if Part 2 is retained, rewrite 2O Bicycle and Car Parking

The Bicycle and Car Parking section is particularly poorly written. It deals primarily with car parking but for a single provision (14), on secure cycle parking. There is no guidance on minimum provision of cycle parking, or maximum provision of car parking, the relationship between on and off-street parking, or the role of parking (beyond street appeal). This is also one of the example of the guidance slipping into masterplanning, with provisions on angle parking in the public domain (6).

Policies on parking should be strategic - they should limit off-street parking where there is good transport, or where equivalent on-street parking can be achieved. They should recommend rates of cycle parking. For example, this section could be modelled on the London Plan (Policies 6.9 and 6.13) and look to the standards in the Parking Addendum to the London Plan (Tables 6.2 and 6.3, and Policy 6A).

4. Harmonise the MDDG and the Code

While the MDDG applies more broadly than the Code to take in DAs and local LEPs, the principal controls it recommends (in Appendix 5) are substantially better the Code - 150m^2 site areas for terraces facing a Primary Road, 130m^2 for terraces with rear lane access, 100m^2 for terraces with basement parking[9] (and FSR up to 1:1). It is unclear why if this form is desirable in the MDDG, it is not reflected in the Code. All the relevant elements should be harmonised - FSR, area and width.

The MDDG and Code also have a number of other inconsistencies which should be resolved in favour of the better condition - for example temper the 3m separation between buildings on the same lot (3.1H of the MDDG, p88), with the Code's zero common wall setbacks. Conversely, a minimum front setback in the MDDG of 1.5m (p121), would be better than the 3.5m in the Code (or at least both standardised to the 3m set out in the General Housing Code).

[9] As off-street parking should be discouraged as set out previously, it would be a mistake to use it to determine lot controls as set out in Appendix 5. Nevertheless in principle the dwelling house itself (parking aside) is demonstrably able to be accommodated on lots as small as 100sqm.

5. Aim for a layperson's MDDG

Last, a key test for the MDDG should be that a landowner or small builder could complete Appendix 2 without having to resort to a planning (or legal) expert. Only if this is possible - that nearly anyone could pick up the document and turn their house into medium density, will the noble aims of this Code bear most fruit. This is particularly the case given the implementation of the Code is safeguarded by experts already - the certifier or planner checking the work.

For reference, the key recommendations relating to Multi Dwelling Housing (Terraces), have been tabulated and appended to this letter, as well as some examples of successful smaller terraces. If you have any questions relating to this submission, please do not hesitate to contact the undersigned.

Sincerely,

Marc Lane
BA LLB B(Arch) MUDD

Principal Urban Design Advisor
TfL Planning: Strategy & Policy
Transport for London

(in a personal capacity)

Appendix A: Proposed Amendments to Table 5, Division 3 - Multi-Dwelling Housing (Terraces)

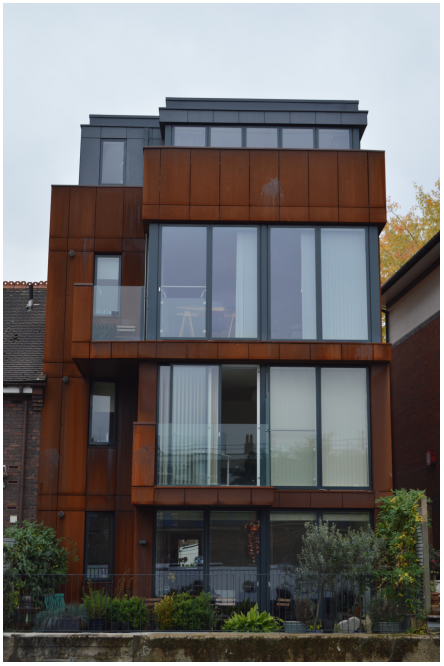
Principal Development Standards		
Minimum lot size for each dwelling	~~200m²~~ 100m² ~~6m~~ 4m wide	
Maximum Height of Building	~~9.0m~~ 10.8m	
Maximum gross floor area (for each lot)	100-200m²	1:1
	>200-300m²	0.8:1
	>300-400m²	0.75:1
	>400-500m²	0.65:1
	>500m² +	0.60:1
Minimum Landscaped Area for each strata lot	100-200m²	20%
	>200-300m²	20%
	>300-400m²	25%
	>400-500m²	30%
	>500m² +	35%
Landscaped Area forward of the building line	>18m	30%
Primary Road Setback	~~Where existing dwellings are within 40m - the average of two closest dwellings. Where no dwellings are within 40m then:~~	
	~~200~~100-300m²	~~3.5m~~ 3m
	>300-900m²	4.5m
	>900-1500m²	6.5m
	>1500m² +	10m
Secondary Road Setback	100-200m²	0m
	>200-600m²	2m

Principal Development Standards		
	>600-1,500m^2	3m
	>1500m^2	5m
Side Setbacks for development site	Front half of the lot up to 15m - 1.2m, or if there is a boundary wall on an adjoining lot or by written consent of the adjacent lot owner - 0m	
	Rear half of the lot, or distance >15m from front boundary - building envelope defined by 45° plane projecting from a height 3.6m above the boundary unless waived in writing by the adjacent lot owner.	
Common Wall	There are no side setback controls that relate to a common wall - even when subdivision is proposed as part of this development.	
Rear Setback	3m to a height of 4.5m	
	8m to a height over 4.5m	
for lots with rear lanes	Dwelling houses and ancillary development may abut the rear boundary for a maximum width of 7.0m per dwelling	
Building Separation between rear land development and dwelling house	6.0m	
Design Criteria	The development must comply with the design criteria listed in Part 3.2 of the Medium Density Design Guide. The minimum floor to ceiling height of a multi-dwelling terrace is equal to 2.7m plus 300mm for every metre of Primary Street frontage above 4m. A design statement is required to be provided by the person who designed the development that provides evidence of compliance with the design criteria. A template for the design statement is provided at the appendix to the Medium Density Design Guide.	

Appendix B: Examples of London Terraces
Under 6m / 200sqm / No Parking

Small Victorian Terraces, Islington - note the width of the terraces compared to the cars

Larger Victorian Terraces, Islington - note the larger floor heights and third storey on the grander terraces, to keep their vertical proportions (and offer a different housing product).




Modern Terraces, Islington and Hackney
LHS: In glass and Corten steel, the terrace is unashamedly modern, yet still retains the iconic terrace form through vertical proportioning and generous floor heights.
RHS: Squeezing in a third storey, the more likely long term outcome of minimum-standard ceiling heights and an ungenerous height control.

Modern Terraces, Islington

Despite their plain "New London Vernacular" form, these terraces are formal and functional heirs to their Victorian antecedents - a solid street wall, vertical proportions, and a compact urban form.