Cost Analysis of the Updated
Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities

Department of Housing, Planning and Local Government
March 2018
**Context**

In 2017, the Department undertook a detailed analysis, in conjunction with the construction sector, of housing delivery input costs in Ireland, *Review of Delivery Costs and Viability for Affordable Residential Developments*.

A working group chaired by the Department, explored each of the input costs associated with affordable residential delivery, it reviewed initiatives already implemented to reduce costs and made recommendations for further actions to achieve more sustainable, viable and affordable housing delivery.

The working group also carried out a viability analysis of two sample models - an urban apartment development and a suburban housing estate - to assess viability at affordable sale prices. This analysis highlighted the viability of affordable apartment schemes as being extremely challenging.

Apartment development is specifically required, not only to meet much needed housing demand, but also to give effect to national planning policy priorities that seek to focus on increased construction of new residential supply in our cities and urban areas.

Subsequently in October 2017, a review of the existing DHPLG apartment planning guidelines - *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities* (2015) was commenced. The focus of the review was to consider potential revisions to the planning guidelines in the light of the housing priorities of the emerging National Planning Framework, demographic changes arising from the 2016 census and measures to make affordable apartment construction more viable generally in the interest of increased housing supply.

Accordingly, a Technical Working Group (TWG) was established by DHPLG in October 2017 to consider potential revisions to the 2015 apartment planning guidelines. This group comprised of the relevant professional institutes (RIAI, SCSI, IPI, etc), local authorities, developer representatives, industry participants and apartment residents group including DHPLG staff from the relevant sections (planning, building standards, architecture, etc.) A draft of updated planning guidelines for apartments was published for consultation in December 2017. Subsequently, a small sub-group of the TWG was formed to consider the effect of the proposed changes contained in the draft of updated planning guidelines on the costs of construction of an apartment development.

The group comprised of internal and external representatives with expertise in the areas of planning, architecture, quantity surveying, building standards, fire, financial, structural and mechanical and electrical backgrounds. The sub-group included representation from the RIAI and SCSI.

The group met on a number of occasions during January 2018 to consider in a technical manner the implications of the proposed updated guidelines from a project development perspective. The purpose was to estimate the potential construction cost savings associated with the changes in the DHPLG apartment planning guidelines.
**Cost Analysis**

The sub-group based its analysis on the urban apartment development model used in the *Review of Delivery Costs and Viability for Affordable Residential Developments*. However, this work considered only the construction costs pertaining to the 6-storey apartment block on a 1 hectare site in Dublin 8. The previous cost exercise example had provided for the requirements of the 2015 apartment planning guidelines—e.g., in terms of minimum unit size, unit mix, ratio of dual aspect units, maximum number of units per lift/stair core, etc.

The sub-group revisited the feasibility stage design and developed a new layout that applied the proposed changes of the draft updated planning guidelines. Given the time constraints involved, the group focused their work on this single theoretical apartment development. This work resulted in a revised apartment design for the development that reflected the key changes proposed in the draft updated planning guidelines:

- 37m² studio apartments;
- Revised dwelling mix requirements;
- Revised urban dual aspect ratio requirement.
- Increased number of units per lift/stair core permitted
- Changes to car parking provision requirements (implicitly linked to basement provision)

On a like for like basis, the revised design increased the number of apartment units by 33 from 252 to 285 (13% increase) in total due to applying the above changes. This increase resulted largely from the revisions to the apartment mix and the increase in the maximum units per core permissible in a development.

The revised design also replaced the full basement of the original model with a partial basement of 1,100m² which can be used for plant, storage, services or other ancillary uses.

In terms of the construction cost comparison exercise, the two major factors considered were a more efficient layout and the design flexibility around car parking provision.

This specific comparison exercise indicated that construction cost savings in the order of 13-15% (depending on the provision of sprinklers) may be generated as a result of applying the 2018 planning guidelines to the site referred to above. This translates to a construction cost saving per unit of c.23-25%.

Of the overall estimated construction cost savings c.3-5% are attributable to the reduced gross internal floor area, resulting from Changes to unit mix provisions; the reduced size of studio units, and the increased maximum number of units per core.

The actual monetary savings for any particular apartment development will depend on a multitude of factors and design assumptions, such as scale, planning constraints, site location, design, building regulations, market conditions. The figures above are based on an affordable apartment; a six storey residential block, utilising an economic form, a reasonable density, a partial basement carpark, competitive construction costs with limited abnormal costs. The specification was assumed to be based on a design solution that could be sold for affordable sales prices.
Conclusion
The findings of the cost exercise have shown that the new 2018 apartment planning guidelines will reduce construction costs on a “like for like” basis when compared against the 2015 apartment planning guidelines by a range of 3-15% depending on the nature of the apartment development itself.

In addition, to the construction cost savings, the 2018 guidelines will have a positive effect of reducing other related costs including:

- LA Development Contributions fees - due to overall floor area reductions, and
- Finance costs; due to
  - Shorter build programme as a result of partial rather than full basement provision and more efficient building form.
  - Reduced capital expenditure
  - Reduced risk profile as a result of smaller basement and reduced exposure to working below ground.

The updated apartment planning guidelines have also achieved a greater number of apartments on the selected subject site at the same 6-storey height – thus providing an increased supply of apartment units at a city location for the smaller households whose demand is greatest.
CONSTRUCTION COST COMPARISON SUMMARY

<table>
<thead>
<tr>
<th>Adjustments to reflect 2018 Guideline Revisions</th>
<th>Approximate Construction Costs</th>
<th>% Change in Construction Cost</th>
<th>Construction Cost Per Unit</th>
<th>% Change in Construction Cost Per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Changes to Car Parking Requirements (reduced basement)</td>
<td>c.€5.3m</td>
<td>(c.10.2%)</td>
<td>c.€205k/unit*</td>
<td>-</td>
</tr>
<tr>
<td>2 Changes to Layouts/Areas (see Note a below)</td>
<td>c.€2.55m</td>
<td>(c.4.9%)</td>
<td>c.€1.1m</td>
<td>c.2.1%</td>
</tr>
<tr>
<td>3 Where sprinklers are provided</td>
<td>c.€7.85m</td>
<td>c.€43.9m</td>
<td>c.€154k/unit**</td>
<td>(c.25%)</td>
</tr>
<tr>
<td>Revised Model to reflect 2018 Guideline Revisions - excl. sprinkler adjustment (1+2)</td>
<td>(c.€7.85m)</td>
<td>c.€43.9m</td>
<td>(c.15.1%)</td>
<td>c.€154k/unit**</td>
</tr>
<tr>
<td>Revised Model to reflect 2018 Guideline Revisions - incl. sprinkler adjustment (1+2+3)</td>
<td>(c.€6.75m)</td>
<td>c.€45.0m</td>
<td>(c.13.0%)</td>
<td>c.€158k/unit**</td>
</tr>
</tbody>
</table>

Notes:

a) Adjustment Item 2 above relates to changes to layouts/areas to reflect the following
- 37m² studio apartments
- revised dwelling mix requirement
- revised urban dual aspect ratio requirement.
- increased number of units per lift/stair core permitted

b) The above costs relate to the construction element only and exclude the following
- VAT
- Fees
- Land Costs
- Levies and Contributions
- Financing Costs

ACCOMMODATION SCHEDULE

<table>
<thead>
<tr>
<th>Storeys</th>
<th>Model Based on 2015 Guidelines (with Basement Parking)</th>
<th>Model Based on 2018 Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Units</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Studio</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>1 bed apartment</td>
<td>58</td>
<td>95</td>
</tr>
<tr>
<td>2 bed apartment</td>
<td>146</td>
<td>122</td>
</tr>
<tr>
<td>3 bed apartment</td>
<td>48</td>
<td>20</td>
</tr>
<tr>
<td>Overall Number of Units</td>
<td>252</td>
<td>285</td>
</tr>
<tr>
<td>GFA (sq.m)</td>
<td>23,045</td>
<td>21,273</td>
</tr>
<tr>
<td>Parking Spaces (surface)</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Parking Spaces (basement)</td>
<td>240</td>
<td>-*</td>
</tr>
</tbody>
</table>

* - partial basement included (plant, storage, etc.)