**From:** Lewis Knight (Bioregional)
**Sent:** 26 April 2016 16:13
**To:** Leanne Turner
**Cc:** Caroline Ford; Nicole Lazarus
**Subject:** NW Bicester Exemplar Phase 2 Condition 8: Daylighting

Hi Leanne,

Please find comments on Condition 8 – Daylighting below:

1.    There is no reference to how the ADF values have been calculated i.e. what standard and software has been used. We would expect this as a minimum. The inclusion of a sample calculation or worked example as an appendix would also help

2.    The 71 dwellings on phase 2 have either been modelled themselves or relate to a house type that has been modelled. E.g. house 229 relates to house 230 for its daylighting modelling. In some instance these house types do not match. We are not sure how these change in house types could affect layout and therefore daylighting i.e. have windows been moved? We acknowledge the house type revisions could just be material.  A list of the specific houses are provided below:

-      Unit number 249 (house type T202) – modelled on unit number 237 (house type T200)

-      253 (house type T202-A) – modelled on 237 (house type T200)

-      259 (house type T202-B) – modelled on 237 (house type T200)

-      262 (house type T202) – modelled 237 (house type T200)

-      263 (house type T202) – modelled 237 (house type T200)

-      268 (house type T202-C) – modelled 237 (house type T200)

-      274 (house type T202-C) – modelled 237 (house type T200)

-      275 (house type T302) - modelled on 273 (house type T301-A)

-      285 (house type T202-C) – modelled 237 (house type T200)

-      291 (house type T202-E) – modelled 237 (house type T200)

-      293 (house type T202-F) – modelled 237 (house type T200)

-      294 (house type T300-D) – modelled 237 (house type T300)

3.    Similarly to point 2. The sqm of each home and the home modelled sometimes differs. Although only minor in most cases, this difference could have some impact if the difference is one room. This is especially relevant where some house types have only just made the accepted ADF (e.g. house 287). A list of the specific houses are outlined below. Three houses are in bold where the differences are considered more than negligible.

-      Unit number 239 (sqm 95.5) modelled on unit number 287 (sqm 92)

-      260 (sqm 95.5) - modelled on 287 (sqm 92)

-      261 (sqm 95.5) - modelled on 287 (sqm 92)

-      264 (sqm 95.5) – modelled on 287 (sqm 92)

-      **266 (sqm 83) – modelled on 265 (sqm 118.9)**

-      **268 (sqm 92) – modelled on 237 (sqm 81.9)**

-      **274 (sqm 92) – modelled on 237 (sqm 81.9)**

-      290 (sqm 81.9) – modelled on 287 (sqm 92)

-      293 (sqm 80.3) – modelled on 237 (sqm 81.9)

-      294 (sqm 95.5) – modelled on 238 (sqm 92)

-      295 (sqm 81.9) – modelled on 238 (sqm 92)

4.    In addition to these inconsistencies, you could have the same unit type but facing a different way, and presumably you’d get a very different result. We would like clarification on how this has been accounted for in the daylighting analysis.

5.    In Table 1 (summary results) ADF ref. 7 is listed as 2-bed 3 people but  in Table 2 it is listed as 2-bed 4 people. The same is true of ADF ref. 15

6.    We would like clarification on whether the design alterations submitted within the Overheating Analysis (spandrels and overhang) for Unit 281 have been taken into consideration within the daylighting analysis.

7.    **Of interest:** The daylighting calculation do show that all of the house types modelled have achieved the minimum 2 credits from HEA1 from the Code for Sustainable Homes (2010). However, the strategy on how this has been achieved differs from phase 1 of the Exemplar. On phase 1, **all** of the homes achieved 1 credit for minimum 1.5% ADF in living room/office and 1 credit for the View of Sky analysis. 5 house types achieved the 3rd credit for minimum 2% ADF for the Kitchen.

On phase 2 the approach has been different. The majority of house types follow the same approach as in phase 1 (15 of 23 types modelled). However **2** house types do not achieve 1 credit for 1.5% ADF in living room/office so therefore must achieve both View of Sky and 2% ADF credit for the Kitchen. **4** house types do not achieve the 1 credit for view of the sky so therefore must achieve both credits for living room/office and kitchen. Only **2** house types achieve all 3 credits for daylighting

Many Thanks

Lewis

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