Appendix II: Interpretation of Whole-Site Models

The following provides a detailed interpretation of the results of the Visibility Graph Analysis of Nebelivka’s models of development. Previous VGA examinations of Nebelivka focused on specific neighbourhoods, while this appendix discusses the results of Visibility Graph Analysis across the entirety of the site.

Permanent Large-Scale Model

Stage 1

There is a contrast between the Inner Open Area (IOA) and the Outer Zone (OZ) in 3/4 measures. In all measures, the IOA has high scores for Public Space (CONNECTIVITY), Easy Movement (MEAN DEPTH), Simple Space (VISUAL), and High Permeability (VISUAL INTEGRATION-TEK), while, in the OZ, the contrasts between Medium and Low values play out in different scores for CONNECTIVITY (Intermediate > Private Space), Mean Depth (Circumscribed > Intermediate Movement, VISUAL ENTROPY (Intermediate = Complex Space) and VISUAL INTEGRATION-TEK (Low > Intermediate Permeability). Only in VISUAL ENTROPY does the dominant IOA mode of Simple Space spill over into the OZ, reflecting the dispersed nature of building there. What stands out as a minor difference in all measures is the small effect of Nebelivka Square (SE corner of IOA).

Meaning:

The IOA has a highly visible, permeable space with very good connectedness and easy pedestrian movement, which is exactly what people needed for a ceremonial area for large performances. The building of the house ring separates the IOA from the OZ, reducing overall connectedness, permeability, and integration. Nonetheless, the tension between the number of buildings seen (often another key innovation — the new Assembly Houses) and the fair amount of complex space shows the balance between nucleated and dispersed building that characterizes the OZ in this Stage. OZ practices were more compatible with private space mixed in with some public areas (as could have been used for ‘Beating the Bounds’-style processions).

Stage 2

The major architectural difference is the creation of a second House Circuit (OC) and therefore an inter-circuit area (I-CA); a secondary feature was the building of even more Assembly Houses. This stage resembles Stage 1, especially in the IOA, except for the distinct scores found in all measures for the new I-CA, which is a Private zone (CONNECTIVITY) with Circumscribed Movement (MEAN DEPTH), a mixed kind of space (VISUAL ENTROPY), and low Permeability (VISUAL INTEGRAGTION-TEK). The I-CA aligns more with the OZ than with the IOA. The OZ is most similar to the I-CA in terms of its Simple Space, low Permeability, and low integration of space (MEAN DEPTH). There are varied scores for Private Space (CONNECTIVITY) and the tension between Simple and Intermediate Space (VISUAL ENTROPY).

Meaning:

The well-integrated, highly permeable IOA is preserved more or less intact from Stage 1, which was important for continuity of the performance space at the heart of mega-site social life. The build-up of houses and Assembly Houses created a wider range of spaces — partly public and partly private — in the I-CA and OZ, with increased tension between dwelling space and processional space in the I-CA.

Stage 3

The most striking architectural development was the creation of the Inner Radial Streets (IRS), which introduced a tension between their structuring role for access to the IOA (including processions) and the shrinking size of the IOA itself. The effects of the IRS are strongly reflected in all measures, bringing practices previously typical of the I-CA and the OZ into the IRS area, which takes over twenty per cent of the Stage 2 IOA. Yet, in 3/4 measures, especially in the MEAN DEPTH, a distinctive form of the IOA is preserved, even if shrunken. What breaks the mould is the VISUAL ENTROPY pattern, in which a large part of the IOA is no longer Simple Space but becomes largely an area of Intermediate Space, apart from the residual and oddly-shaped Simple Space (running SE–NW). This shows the impact of the IRS’ added complexity on the previously Low Entropy IOA, as also the inward expansion of Circumscribed Movement and Intermediate Permeability into the former IOA.

Meaning:

The development of the IRS represents both positive and negative effects on the core performance space of the mega-site — the IOA. The positives include better access (including processions) to the IOA, with the possibility of more control over access (who does the controlling? To whose benefit?) and more dwelling space for the expanding number of visitors. The negatives include an impact on the size, scale, and visual magnificence of the meeting space and therefore the meetings themselves (in comparison with Maidanetske, this is only the start of the trend at Nebelivka). The result is a site more evenly divided between the meeting area, with all of its traditional spatial characteristics, and the dwelling area, with its expanded practices — viz., a consolidation of both kinds of space. The creation of more buildings brings more visual and spatial complexity, which is harder to navigate. Thus there is a tension between practices conducive to meetings and ‘local’, private dwelling practices, which, of itself, increases the spatial complexity of the site.

Distributed Governance Model

Stage 1

None of the measures shows the same values across the whole of the IOA, outwards to the House Circuit. In all measures, the larger part of the IOA has Public Space, Easy Movement, Simple Movement, and High Permeability, even though values for the outer parts of the IOA merge into the OZ values. OZ values show greater spatial/visual complexity, with more Private Space, Circumscribed Movement, Complex Movement, and Intermediate Permeability.

Meaning:

In this model, the House Circuit does not act as a boundary between IOA and OZ practices. Rather, the presence of buildings in restricted parts of the OC, IC, and IRS means greater visual/spatial complexity even in parts of the IOA. There is still a solid performance space in the IOA but elements of dwelling practices have been integrated into the space inside the House Circuit. However, this guarantees good access to the performance area from the beginning!

Stage 2

There are not so many changes from Stage 1, probably because there was still building in the OC, IC, and IRS but simply in different Quarters. The overall trend is an increase in intermediate values (CONNECTIVITY — Intermediate Space; Intermediate Movement in MEAN DEPTH, and Intermediate Permeability in VISUAL INTEGRATION-TEK). The only exception is VISUAL ENTROPY, where Intermediate Space shrinks a little in comparison with Stage 1.

Meaning:

Major continuity in spatial practices from Stage 1, with increasing emphasis on the flexible spaces denoted by intermediate categories.

Stage 3

The results are broadly similar to Stage 2, with an expansion in Public Space (CONNECTIVITY) and an expansion in the IOA’s Intermediate Space (VISUAL ENTROPY).

Meaning:

Once again, a strong degree of continuity from the earlier stage.

Assembly Model

Stage 1

In this Model, the House Circuit does not form a boundary between the IOA and the OZ; instead, OZ values expanded/migrated inwards across the House Circuit into the outer part of the IOA. However, the inner core of the IOA retained its distinctive characteristics suitable for a performance area (lots of Public Space (CONNECTIVITY), Easy Movement (MEAN DEPTH), Intermediate Space (VISUAL ENTROPY), and High Permeability (VISUAL INTEGRATION-TEK). Outside the inner core, the patterns are more varied, often with more complex space, stretching from the IRS to the OZ.

Meaning:

The building of the IRS means that the IOA is, to some extent, compromised, with more dwellings and related dwelling practices, as well as better access to the IOA. However, there is still a solid area of performance space in the IOA.

Stage 2

This stage is remarkably similar to Stage 1. The main difference lies in the VISUAL ENTROPY, where there is a different balance between two colours representing Intermediate Space. In Stage 1, there was a clear predominance of Brown, whereas, in Stage 2, there is more Red than Brown, meaning more evenly dispersed buildings.

Meaning:

This shows strong continuity in the spatial/visual practices for this model. There is no sign that the IOA is even more ‘compromised’ than in Stage 1, so the tensions between the performance area and the dwelling area are maintained.

Stage 3

Again, this stage is very similar to Stage 2, with the main difference in VISUAL ENTROPY, where there is reversal of the shrinkage of Brown Intermediate Space to expand further than ever (even more than in Stage 1!), stretching into the OZ on the W side. Importantly, this suggests a linear building trend on the W side.

Meaning:

Once again, strong continuity in visual/spatial practices for the Assembly Model.

Pilgrimage Model

Stage 1

The dominant pattern is the provision of a large area of Public Space embracing Easy and yet Complex Movement and Good Connectivity in all measures. The only measure where there is more variability in the IOA is VISUAL ENTROPY, showing the juxtaposition of Complex and Intermediate Movement. The zone outside the House Circuit shows opposing tendencies, making the House Circuit a significant, if permeable, boundary between inner and outer zones.

Meaning:

The key function of the provision of a large congregational space is well demonstrated. Whether this was intentional or not, the House Circuit acts as a permeable boundary between inner and outer spaces.

Stage 2

There is an overall continuity from Stage 1 in all measures, with some minor changes in the type of Connectivity in the IOA in the VISUAL INTEGRATION measure. The main change is that the relatively firm boundary between different spatial behaviours created by the House Circuit has been eroded, with the outer parts of the IOA now connected to aspects of the inter-House Circuit patterns. The increase in house-building in the outer parts of the mega-site has led to more private space, poorer Connectivity, and simpler movement.

Meaning:

The erosion of the House Circuit boundary meant that access to the IOA was much more straightforward (? less controlled) than during Stage 1 but the key mega-site function of the provision of a large congregational space continued to be met.

Stage 3

The construction of new IRS in this stage led to a strong contrast with Stages 1 and 2, with less Public Space, harder Movement, and poorer Connectivity in the IOA. This development led to a reversal of patterns in 3/4 measures from Stage 2. The similarity of the Pilgrimage Model Stage 3 plan to earlier Stages (1 and 2) for the Assembly and Distributed Governance Models shows the importance of the IRSs in structuring IOA space. The growing amount of Private Space with simpler movement and worse Connectivity in the outer zones showed the shifting balance between the congregational and the dwelling parts of the mega-site.

Meaning:

Although diminished, the IOA continued to provide a sizeable, if smaller, congregational space for the pilgrims visiting Nebelivka. The structuring of access to the performance space through the IRSs led to the shrinking of the IOA, with possibly unintended consequences.

Comparisons of the Models

Stage 1

In the Permanent Large-Scale (PLS) and the Pilgrimage (PIL) Models, there are the greatest spreads of the IOA, all the way to the House Circuit. Neither the Distributed Governance (DG) nor the Assembly (ASS) Models have such clearly defined, distinctive IOAs as the PLS and PIL Models, with much greater variability on spatial/visual patterning in the IOA in the DG and ASS Models. Clearly, the main reason for this is the construction of IRSs in Stage 1, providing greater complexity further in towards the centre of the site. But even the DG and ASS Models have a distinctive IOA in the core area with characteristics that differ from their OZ.

Meaning:

The PLS and PIL Models offer the clearest and most explicit definition of a performance area as distinct from the House Circuit and OZ. The main overlap between the four models is in OZ, where complex spaces are found all round in the PLS Model and in parts of the OZ for the other models. These complex spaces arose because of the increased rates of building in OZ, with more private space to move in and more buildings — both houses and Assembly Houses — to navigate.

Stage 2

The PLS and PIL models continue to have the largest performance space of all four models, with the boundary of the IOA changing to the Outer House Circuit. Although the IOA size is reduced in the DG and ASS Models, it remains a sizeable performance area, with an expansion in the VISUAL ENTROPY measure all the way to the site edge on the W side in both models. The development of the OZ varies, with homogeneous space in some measures (MEAN DEPTH and VISUAL INTEGRATION-TEK for the PLS Model). Homogeneous space is shown in the MEAN DEPTH for the DG and ASS Models but not for the other three measures.

Meaning:

At whatever scale (and this varies), there is continuity in the performance space in the IOA in all four Models. The juxtaposition of Public and Private Space in the DG and ASS Models shows the continuation of variable spatial practices from Stage 1.

Stage 3

With the construction of the IRS (especially marked in the PIL Model), there is a convergence between the four models, with the PLS Model resembling the other models for the first time, with a big shrinkage of the IOA. This convergence is found in 3/4 measures, with (again) the exception being VISUAL ENTROPY, where each model produces differing scores. In the PLS and PIL Models, there is a large area of Intermediate Space with little Complex Space; in the ASS Model, there is a homogeneous area of Intermediate Space with both Simple and Complex Space in the OZ; while in the DG Model, there is a small core of Red Intermediate Space surrounded by a large halo of Brown space.

Meaning:

We can detect overall stability in the sense that there is still a distinctive, if appreciably smaller, core area for congregation and an almost equally large outer dwelling area of more varied space and visuals — essentially more complex because there were more buildings with private space, necessitating more complex movement and lower Permeability. The IOA has survived till the last stage, albeit in a modified, attenuated form, despite changes in building practices. Thus the core social practices of the Nebelivka mega-site have been preserved.

Overall Comments

In general, the PIL Model most closely resembles the PLS Model than the ASS and DG Models. There is an overall structuredness about the PIL and PLS Models, in which general planning decisions affect the whole site more or less evenly (viz., the creation of the first House Circuit; the building of the second House Circuit; and the creation of the IRS). The more organic growth of the site in the ASS and DG Models — based as it is partly on the development of separate Quarters — means that there were IRSs earlier in the sequence and the spatial implications of the IRSs were more gradually incorporated into the plan than in the ‘imposition’ of IRSs in the PIL Stage 3.

The absence of IRSs in PIL Stages 1 and 2 meant that there were no obvious architectural means of controlling access to the IOA. The IOA could be accessed in any way that was open around the entire circuit, perhaps leading to discord or even disturbance or ultimately chaos. The introduction of IRSs was a means of controlling access to the IOA through the provision of multiple processional routes, each linked to the groups living in the houses outside the IRSs and, especially, those living on the IRSs. But there was a price to pay for this assertion of control — the shrinking of the IOA and the loss of the ability of pilgrimage groups to choose how to access their most important social space. This can be seen most clearly at Maidanetske, least clearly at Taljanki and, in an intermediate way at Nebelivka. Perhaps the issues arising from the IRS development led the Taljanki Guardians to minimalize the construction of new IRSs. Perhaps the new tensions arising out of IRS building at Nebelivka were one of the reasons for the abandonment of the mega-site.