Fathoming the Property Line: Purvciems

Jānis Aufmanis and Max Sandred

PART 1

PURVCIEMS

Figure 1. Purvciems landscape photography showing
the state of buildings and public space. Jānis Aufmanis, 2025

Purvciems is one of many residential neighbourhoods in Riga, Latvia that are considered 'sleeping districts' due to their monofunctional program. These residential neighbourhoods were designed to host an influx of workers from across the Soviet Union as part of a Russification process of the country [fig. 1].

Before the Soviet occupation, Purvciems was an agricultural region with a complex network of private properties. Soviet governments considered all land government property, disregarding pre-existing divisions and building large residential building blocks called microrayons. After the collapse of the Soviet Union, Latvia, like its fellow Eastern-bloc countries, were on a path to reintegrate into Western capitalistic systems. In Latvia, this meant that all pre-occupation property divisions ignored by Soviet governments were reinstated.[1]

The revived historical property divisions of Purvciems were suddenly at odds with the present spatial condition [fig. 2]. Concrete buildings, hosting thousands of residents, crossed divisions, ignoring the administrative rules designed for a physical reality that no longer existed. This led to the advent of two types of ownership in this region – the ownership of land, and the ownership of the apartment buildings on the land.

Figure 2. Cadastral map showing property lines on a satellite image. Geospatial information agency of Latvia, 2016-2025.

VIRTUAL AND PHYSICAL REALMS

Property lines in Purvciems exist in a world of legislation, legal divisions and ownership configurations that can be considered a *virtual realm*. This realm has a logic that is separate from the physical realm we inhabit as human beings. It is multilayered, with overlapping rules implemented over time attempting to bridge the gap between the evolving built environment and the virtual, administrative systems that allow it to function in a capitalistic system.

The *physical realm* of Purvciems is defined by its tangible, material reality that we inhabit and experience with our senses.

THE "IN BETWEEN" REALM

The virtual and physical realms of Purvciems are contradictory since each derives from radically different political and historical contexts. Nonetheless, both are real, coexist in the same space, and influence each other. As such, we can speculate the existence of a realm between them, where the separate logics that define each of them merge and influence each other. This realm is simultaneously purely fictional; a speculated 'realm' that attempts to merge virtual systems and physical realities – and potentially our actual reality; the world we inhabit that is equally governed by imaginary rules and divisions as it is by physical, tangible entities.

RESEARCH THROUGH REPRESENTATION

The peculiar tensions between physical and virtual realities and their contradictions are an overlooked aspect of property. This vague, and indeterminate presence of property divisions are one of their defining characteristics, and as such, should be explored to better understand their true political, environmental and social implications.

As architects, we have a unique ability to study and question the world through architectural representation. Unlike many other fields, representation in the field of architecture has to, in order to be useful, represent reality concretely (for example: drawing to scale). This is different from other modes of representation such as written language, that fully abstract reality into symbols.

In this text we refer to representations that aim to deal with reality concretely as *representational artifacts*. Representational artifacts refer to any media (a drawing, object, digital space, sound recording) that in some way embodies what it represents.[2]

In Purvciems, we are interested in what can be referred to as the "in between" realm, of both the virtual dimension of property, and the physical, experiential reality of the site. In trying to concretely understand, or speculate, what this realm might be, we hope to render tangible the indeterminate nature of property divisions. Ultimately, this essay explores our intentions, dilemmas and considerations related to our explorative process that aims to understand the 'in between' realm through representational artifacts.

PART 2

READINGS

In order to understand Purvciems as a relationship between an intricate, complex, detailed physical reality - and an abstract, administrative system of rules and borders, we must find ways to read each of these realms. It is critical that in developing or choosing methods to 'read' that we avoid unnecessary reduction and strive for objectivity. We do not aim to make sense of the information we gather, rather, we focus on gathering it as detailed and unfiltered as possible. This implies the need for processes and tools to perform such 'readings.'

With physical reality, the challenge of reading lies within its complexity. Choosing which aspects to read involves human decisions and may produce errors of emotional or ethical nature. In contrast, machines, despite also raising ethical concerns, operate mechanically and process all information made accessible to them without discrimination. A 3d scanner will not decide which details in its line of sight to read. It will not distinguish valuable from invaluable information. Digital tools are rigid and true to their function and can process immense levels of detail that humans cannot. It is up to a reader to understand and choose the correct tools when reading.

Virtual reality has a different logic. It may be sparse in content or, conversely, densely layered with cultural and social meaning, as is the case with game environments or online forums. A virtual realm is

always a constructed condition. In the case of the Purvciems' property lines, they contain little additional data or inherent qualities beyond their geographical definition. To 'read' the property line therefore requires an act of conceptualisation.

Such conceptual readings of a virtual environment are subject to verification through repetition and comparison: some interpretations gain coherence and persistence across multiple readings, while others are abandoned when internal contradictions become apparent. Examples of these conceptualisations are: the line is identical at every point along its length; the line traverses and penetrates all material conditions without regard for them; the line is infinitely thin. Statements of this kind provide information that is as rigid and unambiguous as a 3d scan.

READINGS TO REPRESENTATIONAL ARTIFACTS

In *Extrastatecraft* Keller Easterling describes how a captain of a steam boat on the Mississippi river sees ripples on the water's surface as information about the complex, dangerous features of the river bed below.[3] On their own, these ripples are mere beautiful landscape features, but if read properly, they can be understood as an interface between the captain and an invisible topography he navigates.

In order to productively work with readings of a context, we must similarly process and construe what we are reading. In the context of 3d scanning, it is only when a vast amount of numerical coordinates are translated into points in a digital space that they produce a novel, meaningful perspective on a physical space.

When making a physical space accessible through a digital medium, such as in 3d scanning, the process where a reading becomes a representational artifact is relatively straightforward. When similarly trying to construct representational artifacts that relate to the 'inbetween' realm in Purvciems, the task is not so clear. Processes where readings of the physical and virtual realms become representational artifacts of the 'inbetween"' must be carefully developed.

The question then is what are such processes? *Translation* refers to 'the activity or process of changing something into a different form'.[4] This word, often associated with language, is usually assumed to refer only to the handling of prescribed meanings of words. However, the concept of translation extends beyond language, and more broadly denotes a process in which an entity changes state. In the case of

language, this occurs when words in one language are replaced by words in another that carry the same meaning. In this sense, the medium changes while the contents remain the same.

However, contents in one medium are never the same in another medium. The expression 'lost in translation' alludes to the fact that the atmosphere and connotations of a sentence or word in one language are often impossible to reproduce in another. While this loss is a reduction in the resolution of the original content, it is also a generative moment, where new meanings emerge to compensate for the loss. This new, 'compensated' content is often very telling. For example, the fact that Inuktitut has multiple words that all translate into the English word 'snow,' and require a collection of English words to approximate (such as 'crystalline snow on the ground'), forces us to question and reexamine the various qualities and conditions of snow.[5]'

Although translation is clearly a form of transformation, it is unlike many other transformative actions that refer to complete re-imaginations in content. For instance, translation should be differentiated from the term *metamorphosis*, that refers to 'a complete change of character, appearance, or condition'.[6] When a caterpillar becomes a butterfly, it liquefies itself and then reassembles into a new form.[7] This evolutionary change is about moving beyond the source and leaving it behind.

Translation is of particular interest in the context of representation.

FICTIONAL PHYSICS AND INTERPOLATION
Unlike a 3d scan and its relationship to physical space, the 'in-between' realm in the context of Purvciems does not reside within any directly perceivable domain. It can therefore only be approached by juxtaposing the two realities it mediates.
The realm in which this 'in-between' condition emerges is thus inherently relational. It can only be fathomed as having qualities and features that are 'inbetween' features and qualities of the physical and virtual. For this reason, we work with the idea of *interpolation*, a term that refers to finding a point between two extremities. To develop ways of meaningfully interpolating, our work draws inspiration from historical scientific ambiguities. It is important to note that a property line is in fact, a property

plane: an infinitely thin two-dimensional construct. While it appears as a line in plan view, it is actually a plane.

When this absolute, unvarying plane intersects physical reality, it suggests a relationship between them that is distributed uniformly across heights and positions. We use the term *fictional physics* to describe speculations on how an interpolation between physical and virtual reality might occur. The notion of physics here is informed by an analogy to the Newtonian concept of gravitational forces. Accordingly, we imagine that proximity to the line determines the intensity of the force it exerts on physical reality.

EMERGENCE OF QUALITIES

When observing a context and processing it, as described in this paper thus far, phenomena that are unaccounted for and unexpected invariably begin to appear. As noted earlier, transformations involve not only change but also the emergence of new qualities and meanings.

In 1965 the American satellite Mariner 4 took the world's first closeup images of the surface of planet Mars[8]. This satellite was equipped with a digital camera that transmitted image data as black-and-white pixel values to be processed on Earth. At the time, digital image processors took hours to process a single image. Worried the initial image had been taken improperly, scientists decided to quickly draw the entire image manually using colour pastels. They printed the digital data as a grid of numerical colour values and coloured the grid pixel by pixel [fig. 3, fig. 4, fig. 5].

In this process, Mars' surface, read as a series of numerical pixel values, was translated into a hand drawn pastel grid. The resulting pastel drawing was the closest humanity had ever gotten to the surface of Mars. Although imprecise compared to its corresponding digital photograph, the incredibly detailed drawing retains an indescribable aesthetic quality and character inherent to both Mars itself, and to the unfathomable distance and fragile line of communication between human observers and another planet.

Figure 3. Richard Grumm and crew, The First TV Image of Mars (Hand Colored), 1965, pastel on ticker tape, NASA

Figure 4. Richard Grumm and crew, The First TV Image of Mars (Hand Colored), 1965, pastel on ticker tape, Princeton University Humanities Council.
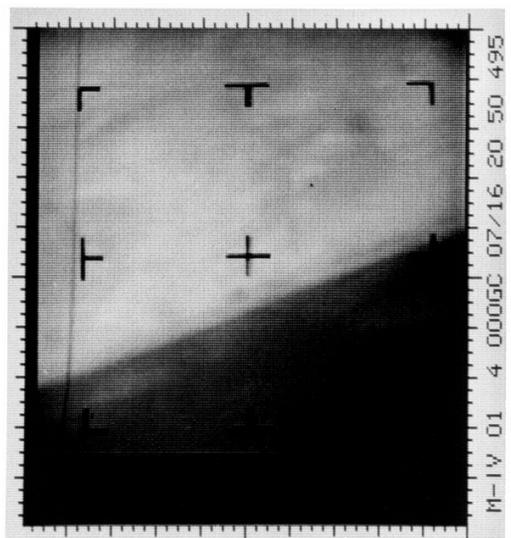

Figure 5. Mariner 4 team, The First TV Image of Mars 1965, digital image, NASA

Similarly, when a CNC cuts a topography into a material, the physical result is not only the prescribed line in the material but also the outcome of the ways the material reacts to the actions of a CNC fraise. It reveals an agency inherent to the line that remains invisible when it is only represented as coordinates in a computer.

It is difficult to describe the qualities that emerge in the process of creating representational artifacts. In the case of the Mariner 4 drawing, it is explicitly a moment when data begins to take on perceptual qualities. Pixel information, existing purely as conceptual numerical values are translated imprecisely to colours drawn by a human hand. A number becomes a colour, with a textural, material quality.

The significance of this transition from data, or information, to qualities, is perhaps better understood by referring to the ways humans perceive and appreciate natural phenomena. For example, the behaviour of a wave crashing on a beach can be expressed, understood and predicted logically using equations that consider an accumulation of forces. One could explore indefinitely how and why the wave behaves a certain way and represent it abstractly. Nonetheless, standing on a beach and experiencing the wave with all our senses, its sounds, its rich colours, its motion, profoundly expresses something aesthetic that transcends logic. It communicates something that, throughout human history, has been admired and recorded by artists and writers.

This difference between the mathematical representation of a wave, and the wave itself, encapsulates the difference between an idea existing conceptually, and an idea existing as an entity with perceptual qualities. The mode of perception through which we observe nature is an incredibly important and powerful way of understanding. In creating and studying through representational artifacts, the aim is to enable this type of perception when studying complex or unfathomable topics such as the property lines in Purvciems.

Notes

1. Jamie Rown, Arta Snipe, "The Promise and Perils of Urban Land Restitution in Latvia", International Journal of Transitional Justice, no.00 (2021): 10 (1-19)

2. See a further discussion of representational artifacts in Max Sandred, "Resisting Reduction: Spatial Perception and Occlusion," *Scaffold* Journal 2, no. 1 (2025): 387–391, Toronto, https://jps.library.utoronto.ca/index.php/scaffold/article/view/46382

3. Keller Easterling, Extrastatescraft (Verso, 2014), 13

4. Cambridge Dictionary. accessed 13. January 2026 https://dictionary.cambridge.org/dictionary/english/translation

5. Inuktitut Words for Sown and Ice, The Canadian Encyclopedia. Accessed 13. January 2026 https://thecanadianencyclopedia.ca/en/article/inuktitut-words-for-snow-and-ice

6.Cambridge Dictionary. accessed 13. January 2026 https://dictionary.cambridge.org/dictionary/english/metamorphosis

7.Walter, Mary, "The Life cycle of moths and butterflies" (1997). Thesis. Rochester Institute of Technology. 10

8. Dan Goods, "First TV Image of Mars (Hand Colored)", NASA, accessed 20 December 2025, https://science.nasa.gov/resource/first-tv-image-of-mars-hand-colored/

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BIOs:

Jānis Aufmanis is an architect working across design, artistic practice, and critical research. Educated at RISEBA University in Riga and KU Leuven in Brussels, his work bridges professional experience in Riga and Rotterdam with self-initiated projects grounded in social engagement and spatial critique. He has co-founded an NGO for public space in Riga, led civic forums, and organised a workshop to preserve modernist heritage. Currently, he is co-creating an international summer school exploring irony and architectural critique, engaging in design with his emerging practice, and organizing several other international informal education programs.

Max Sandred is a Canadian-Swedish architect/artist. Max has a Master's of Architecture from KU Leuven with a Flemish International Master Mind Scholarship, and a Bachelor of Environmental Design from the University of Manitoba.
Max's research practice has increasingly become centred on representation, particularly the capacity of both architecture and architectural representation to develop embodied, tacit understandings.
Max's work has been exhibited internationally at events and exhibitions such as the 2021Venice Biennale, the Uppsala Art Museum (Sweden), and the VIDEOPOOL Media Arts Centre (Canada) among others.