

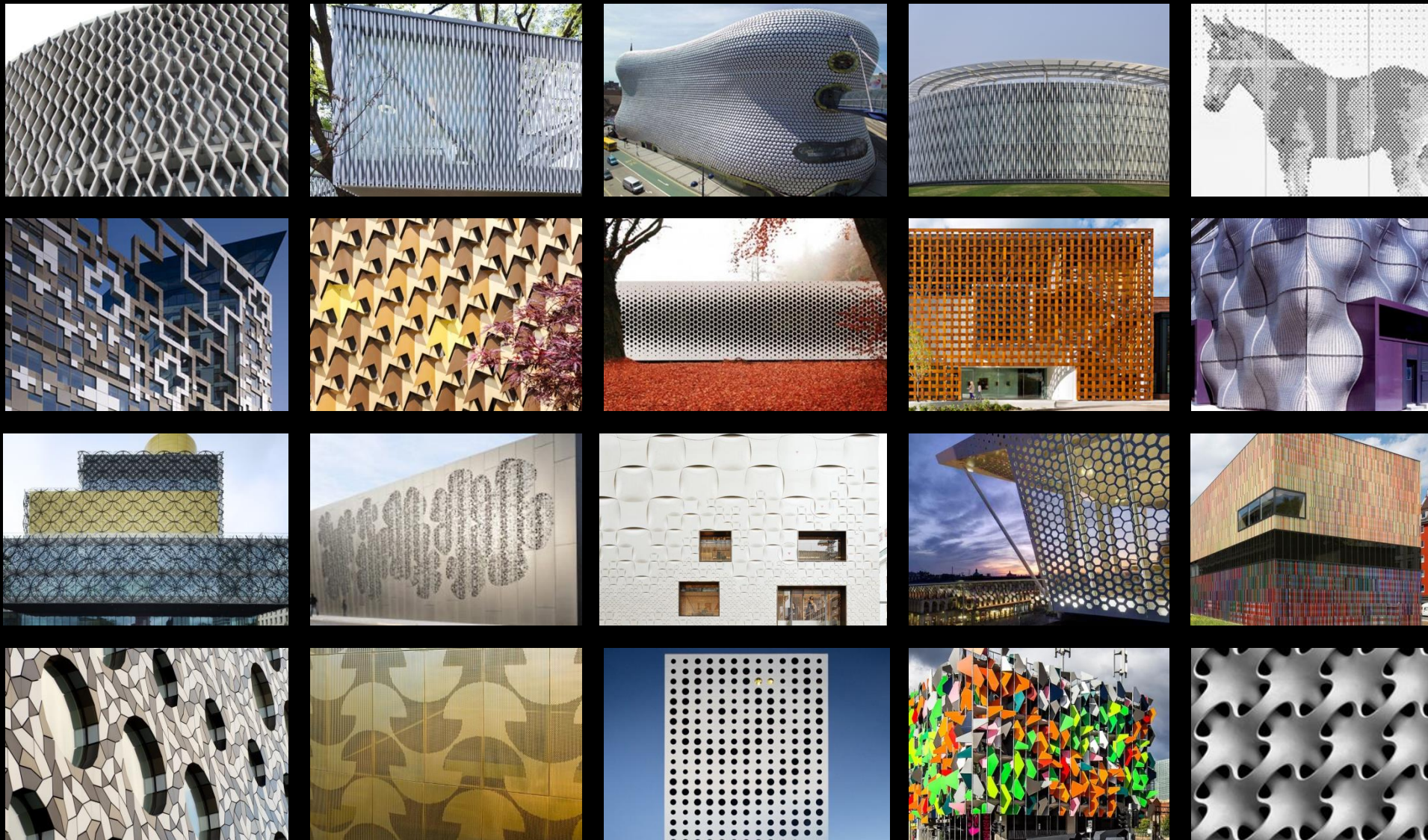
From Idea to Shape. From Algorithm to Design

A Framework for the Generation of Contemporary Facades

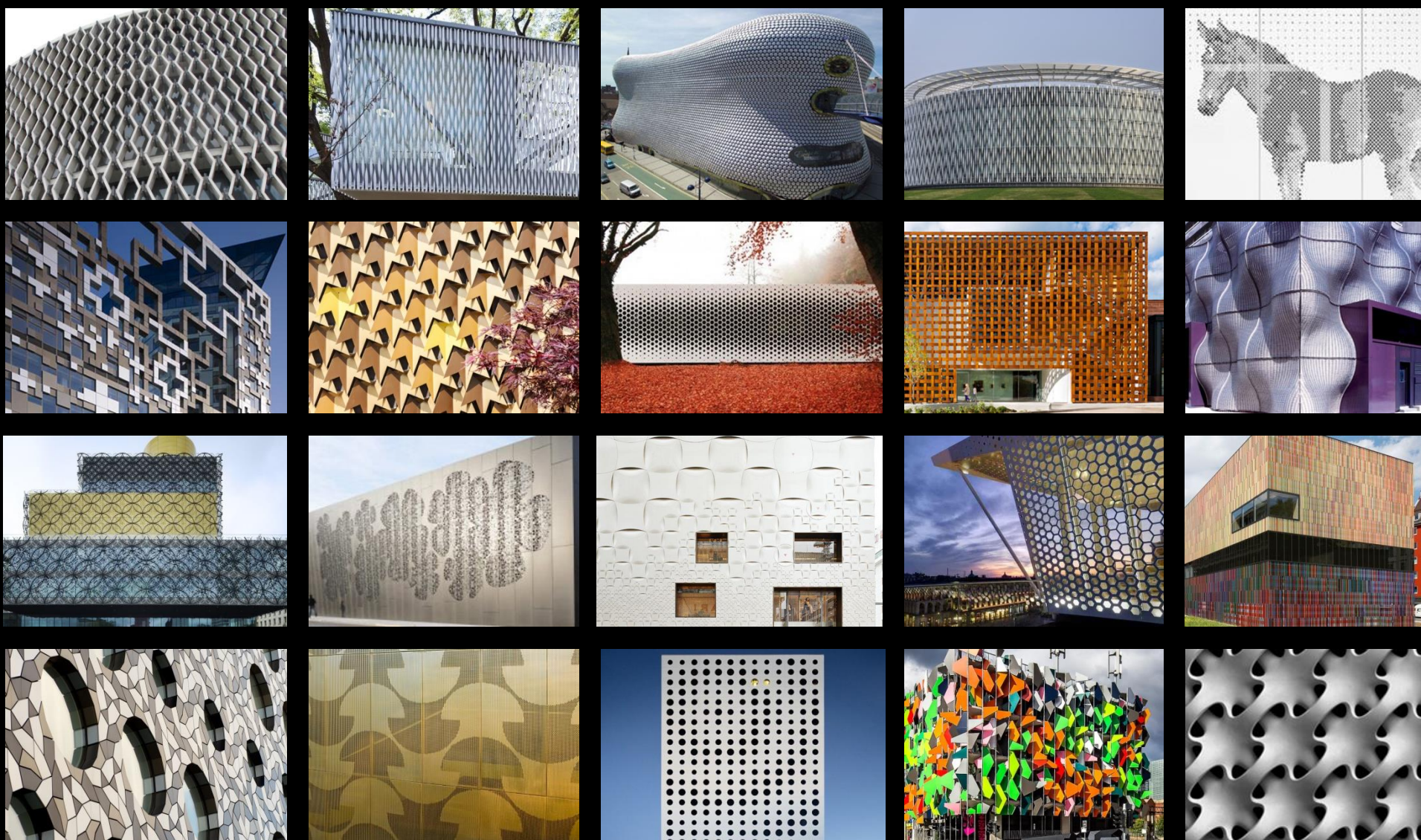
Inês Caetano, Luís Santos, António Leitão

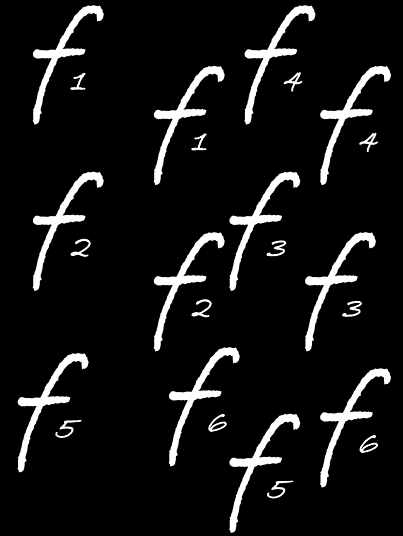
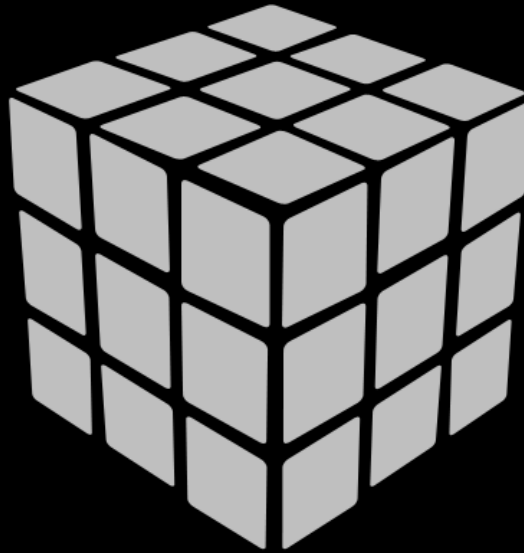
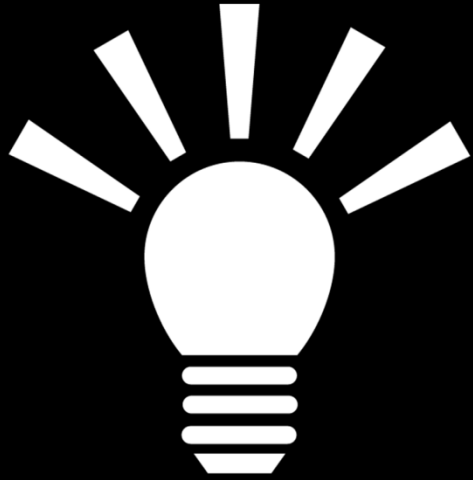
INESC-ID/Instituto Superior Técnico, Universidade de Lisboa

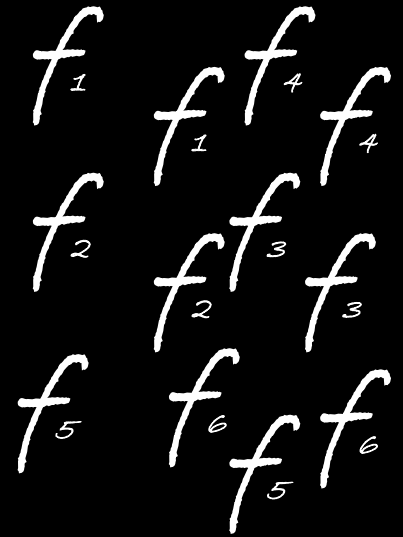
UC Berkeley - College of Environmental Design



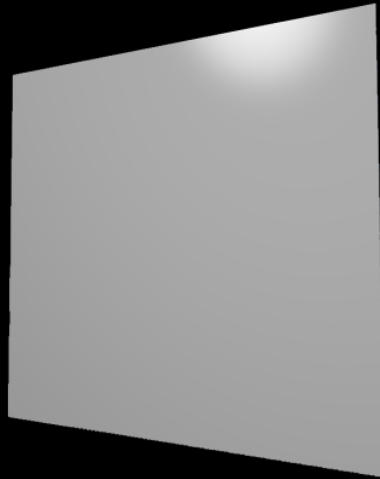
Background | Framework | Practical Application | Conclusion & Future Work



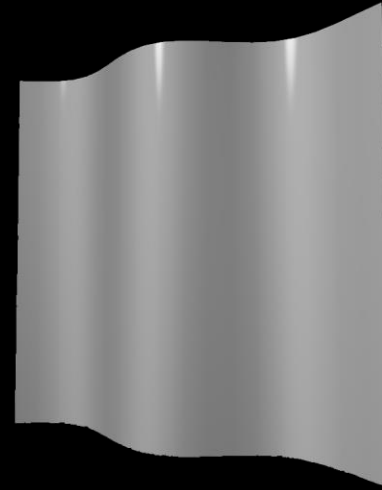




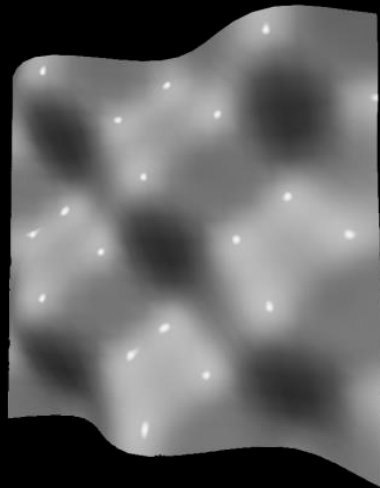
Dimension 1: Facade's Geometry



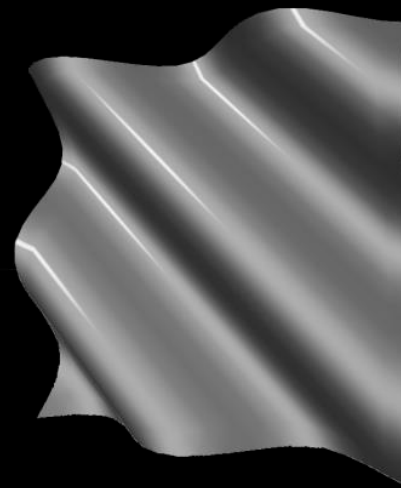
Straight



Horizontally
Undulated



Co-sinusoidal

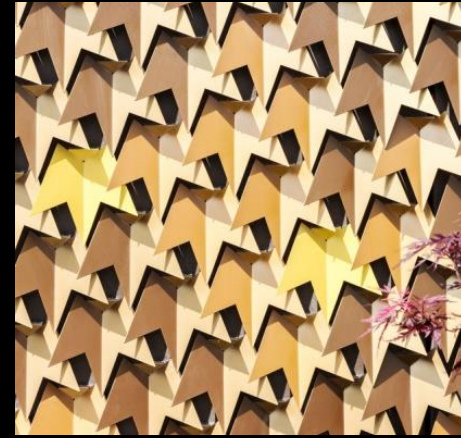


Diagonally
Undulated

Dimension 2: Elements' Geometry



Hexagonal



Pictorial



Triangular



Squared

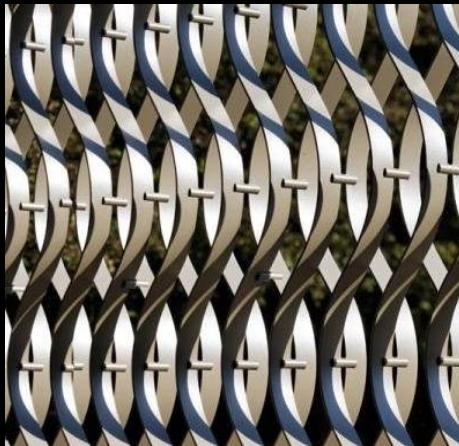
Dimension 3: Elements' Distortion



Twisted



Bended

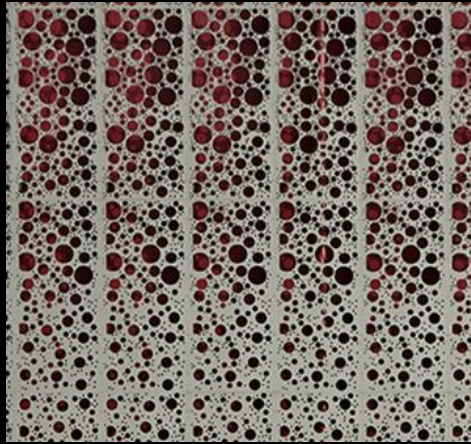


Undulated



Interlaced

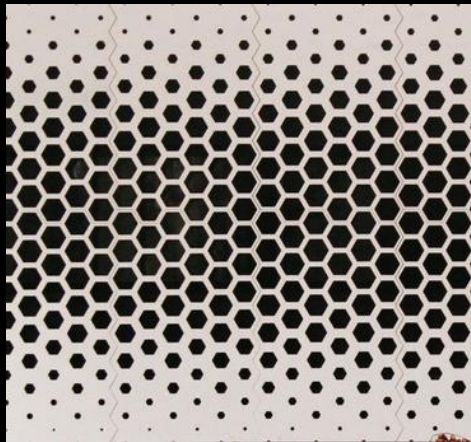
Dimension 4: Elements' Size



Increasing



Random

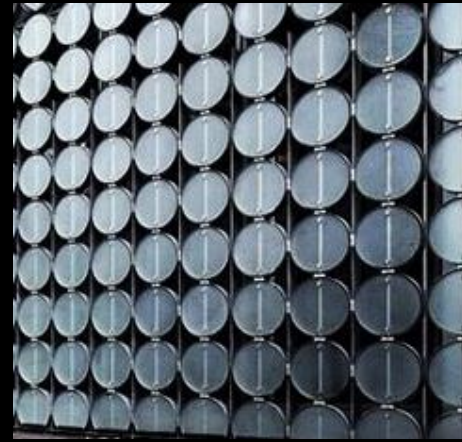


Attracted



Pictorial

Dimension 5: Elements' Distribution



Dimension 6: Elements' Rotation



Vertically



Horizontally



Random



Pictorial

Dimension 7: Facade Articulation



Perforated



Web



Printed

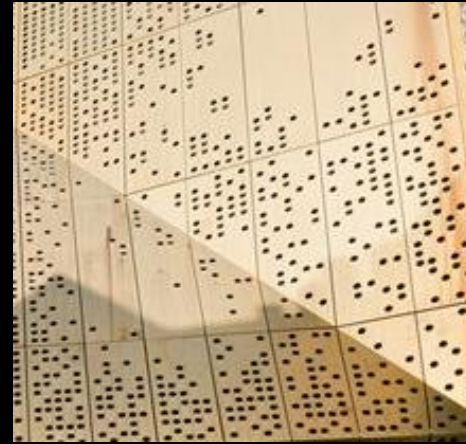


Layered

Dimension 8: Material & Color



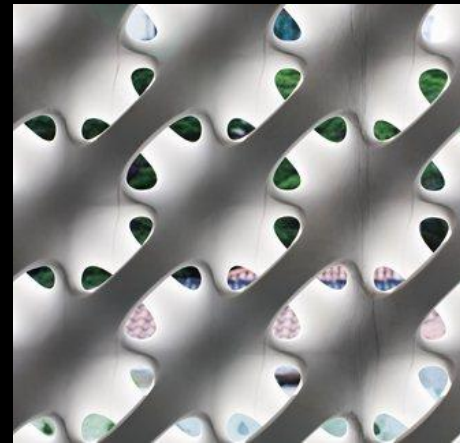
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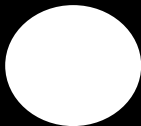
Metal

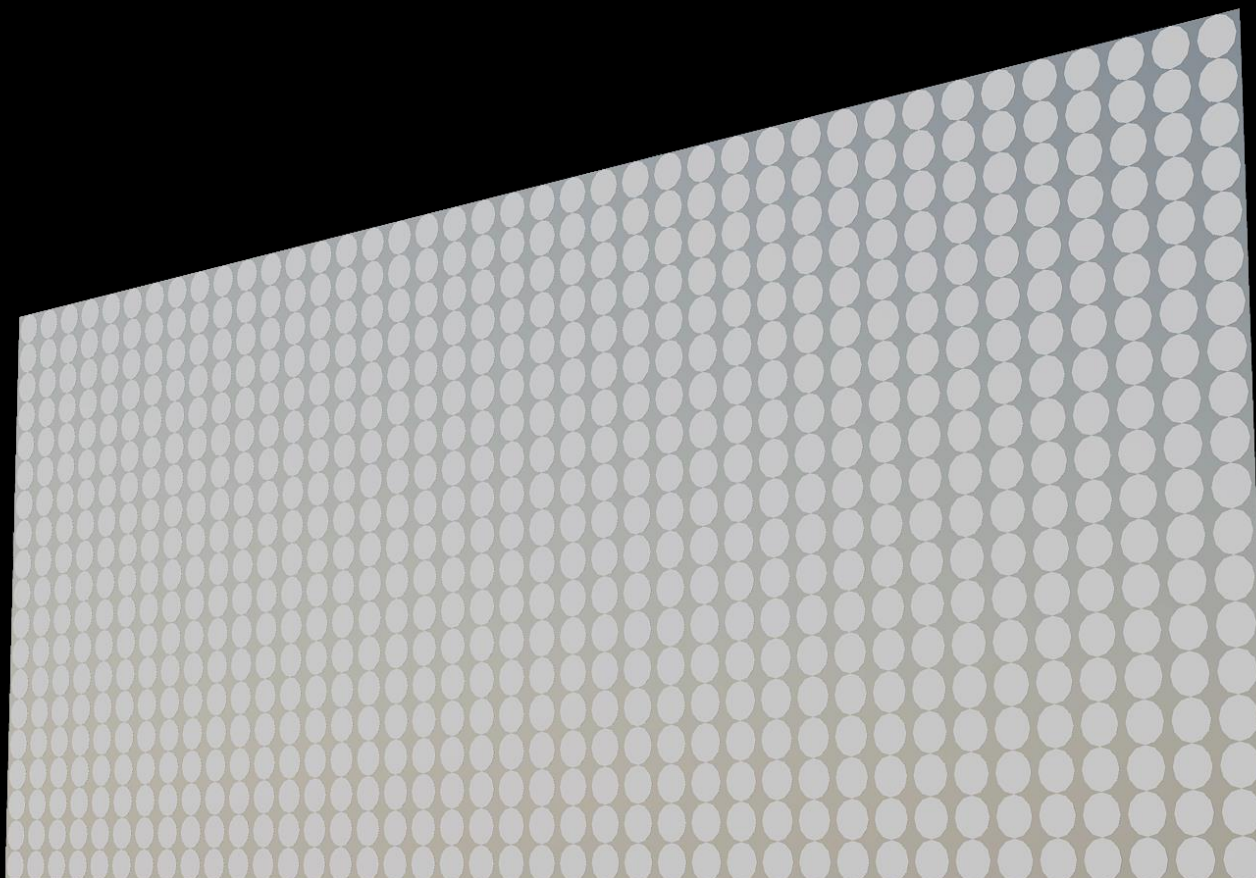


Masonry

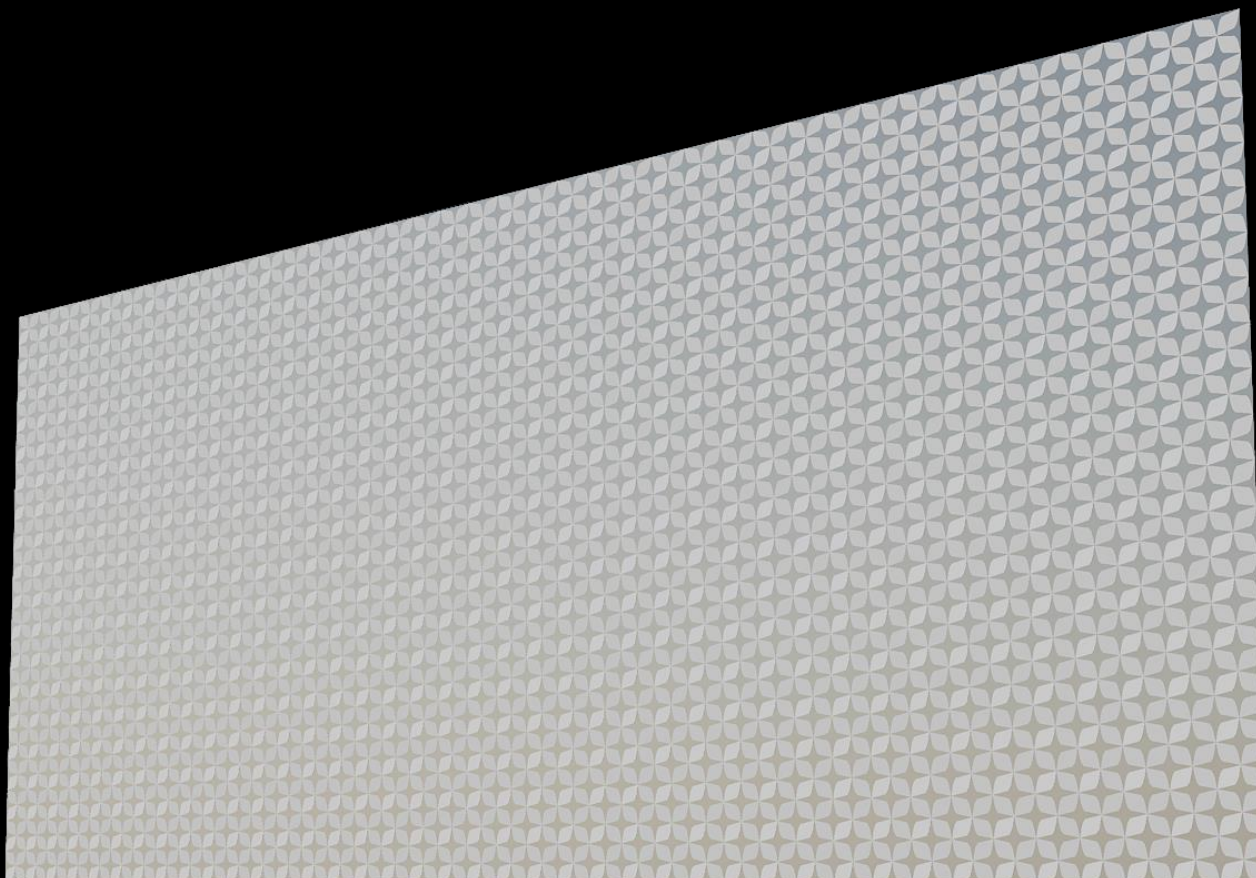


Composite

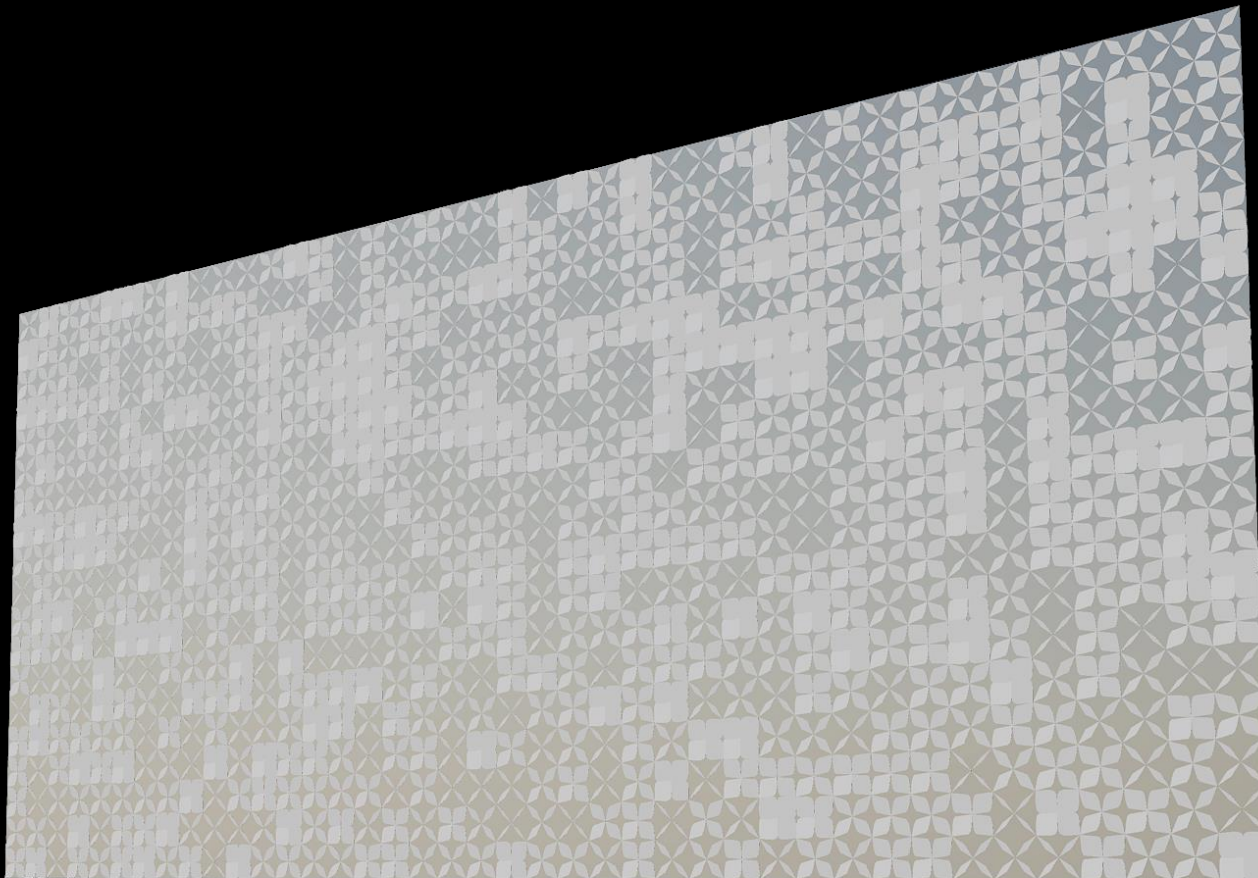
Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Fixed	Regular-Grid	Juxtaposed	White	Straight



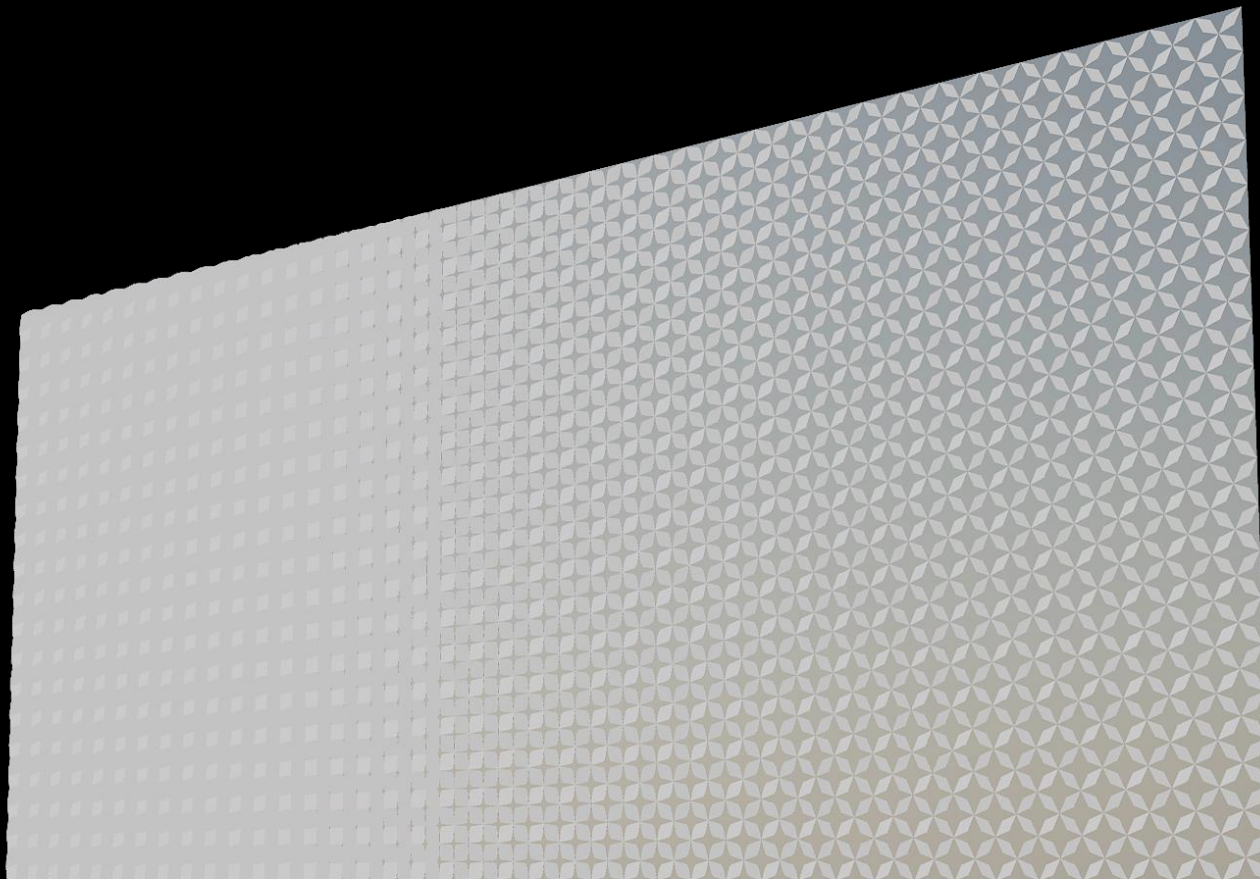
Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Fixed	Regular-Grid	Juxtaposed	White	Straight



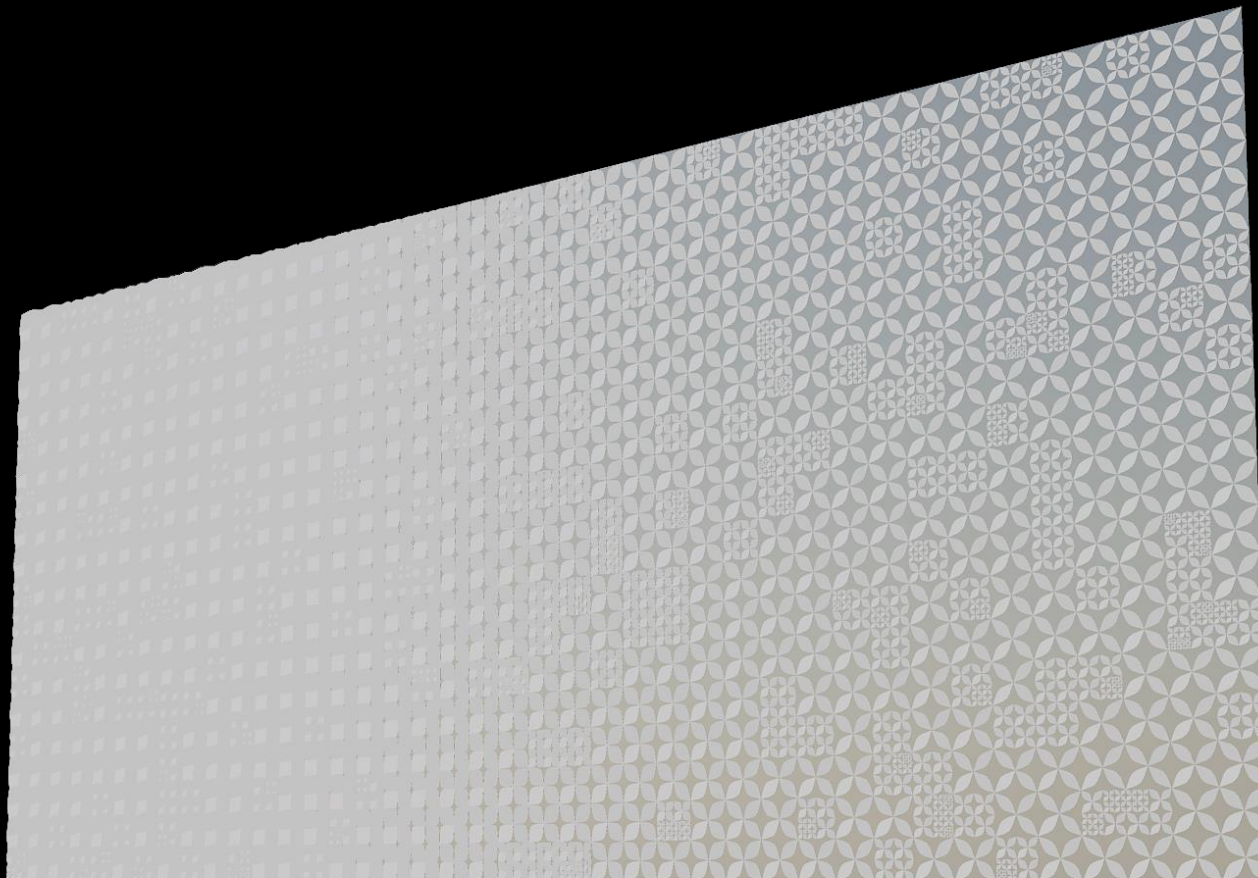
Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Random	Regular-Grid	Juxtaposed	White	Straight



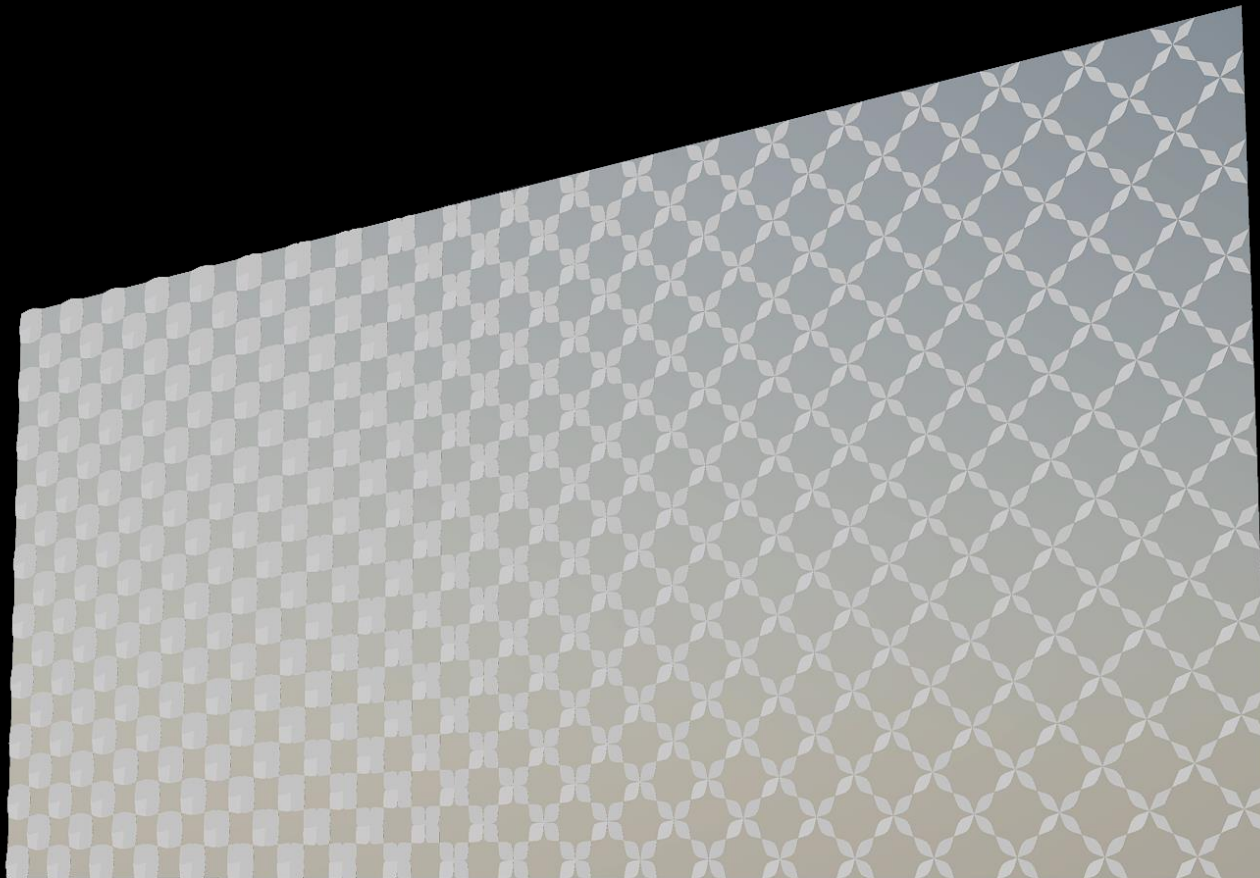
Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Increasing	Regular-Grid	Juxtaposed	White	Straight



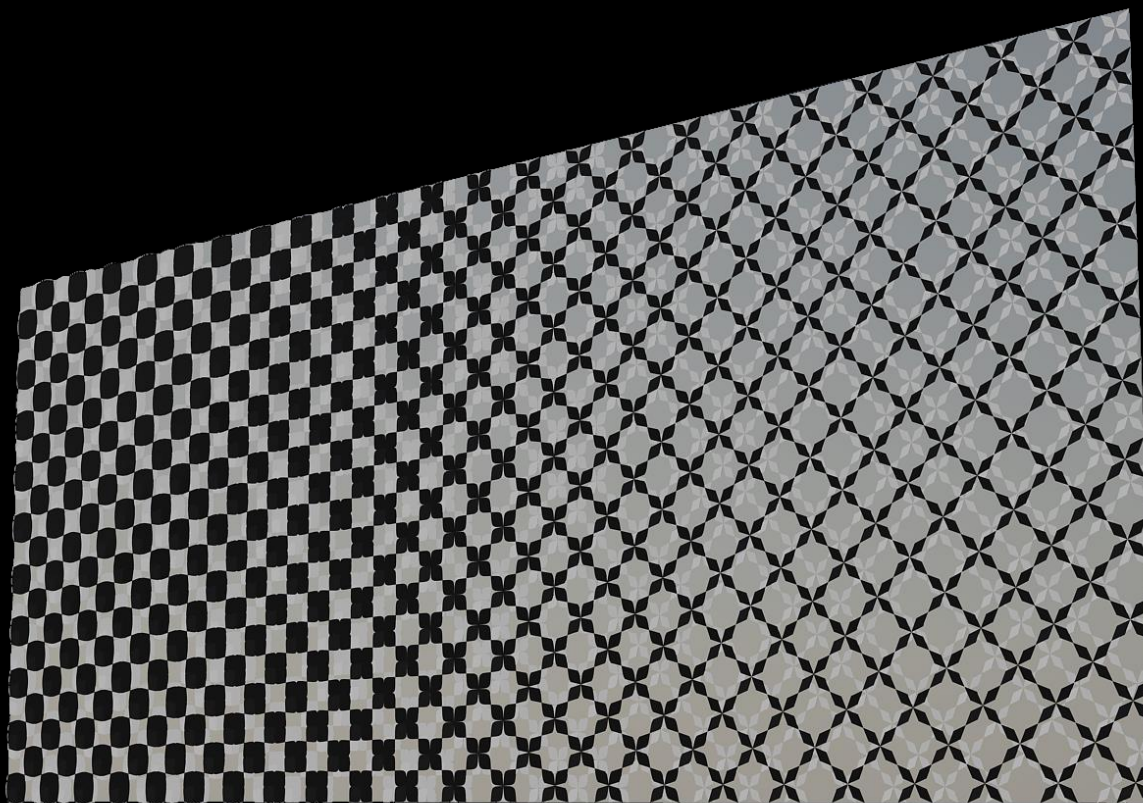
Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Increasing	Recursive-Grid	Juxtaposed	White	Straight



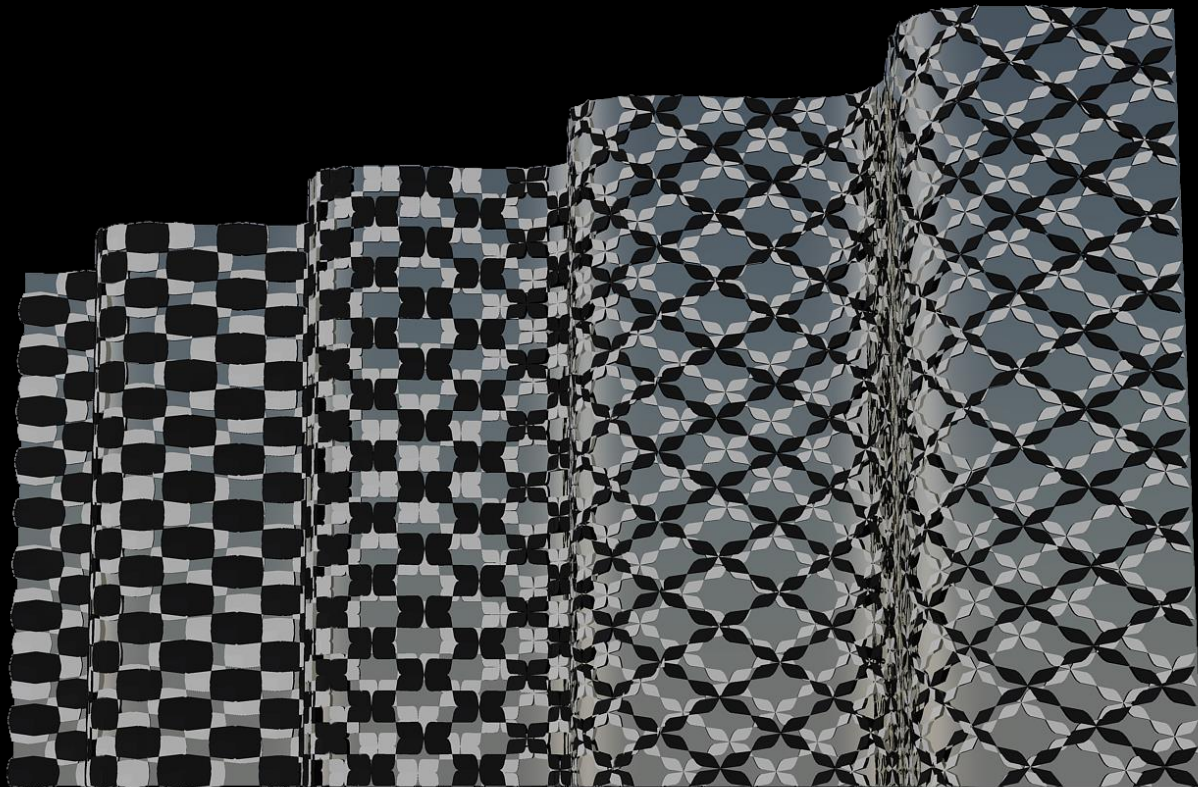
Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Increasing	Chess-Grid	Juxtaposed	White	Straight



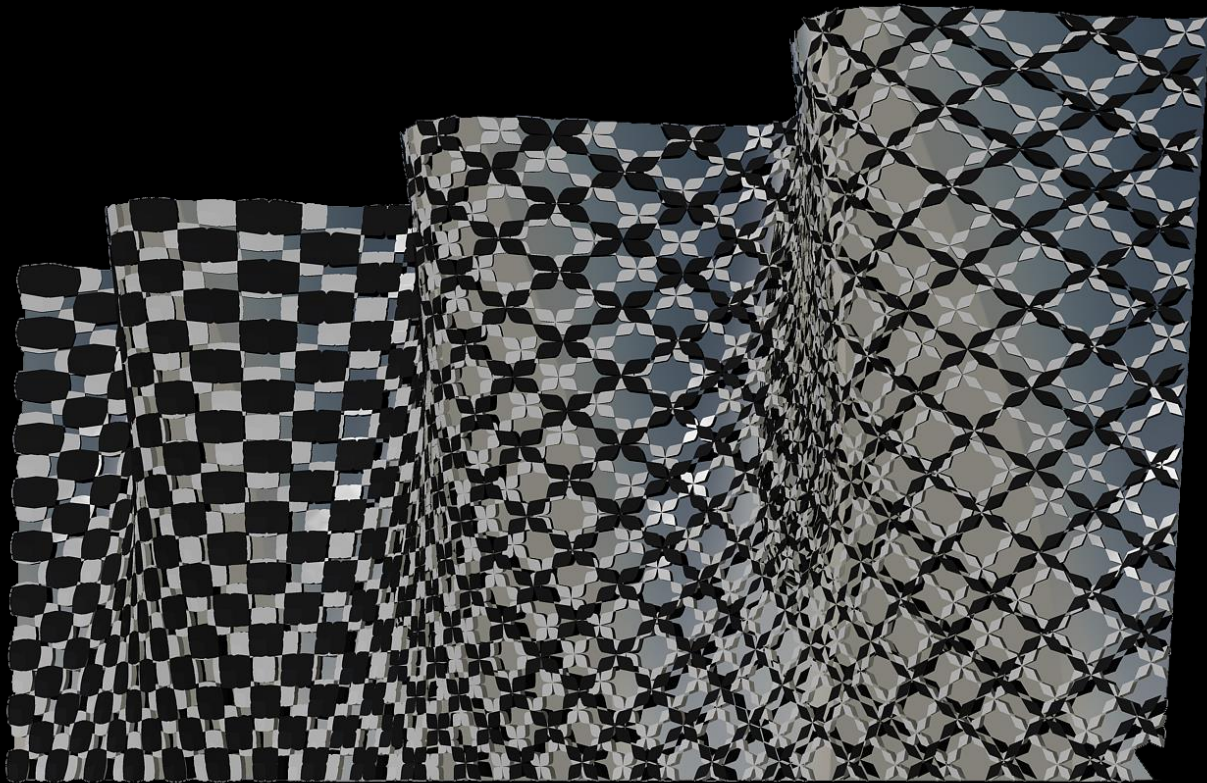
Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Increasing	Chess-Grid	Layered	1.White 2.Black	Straight



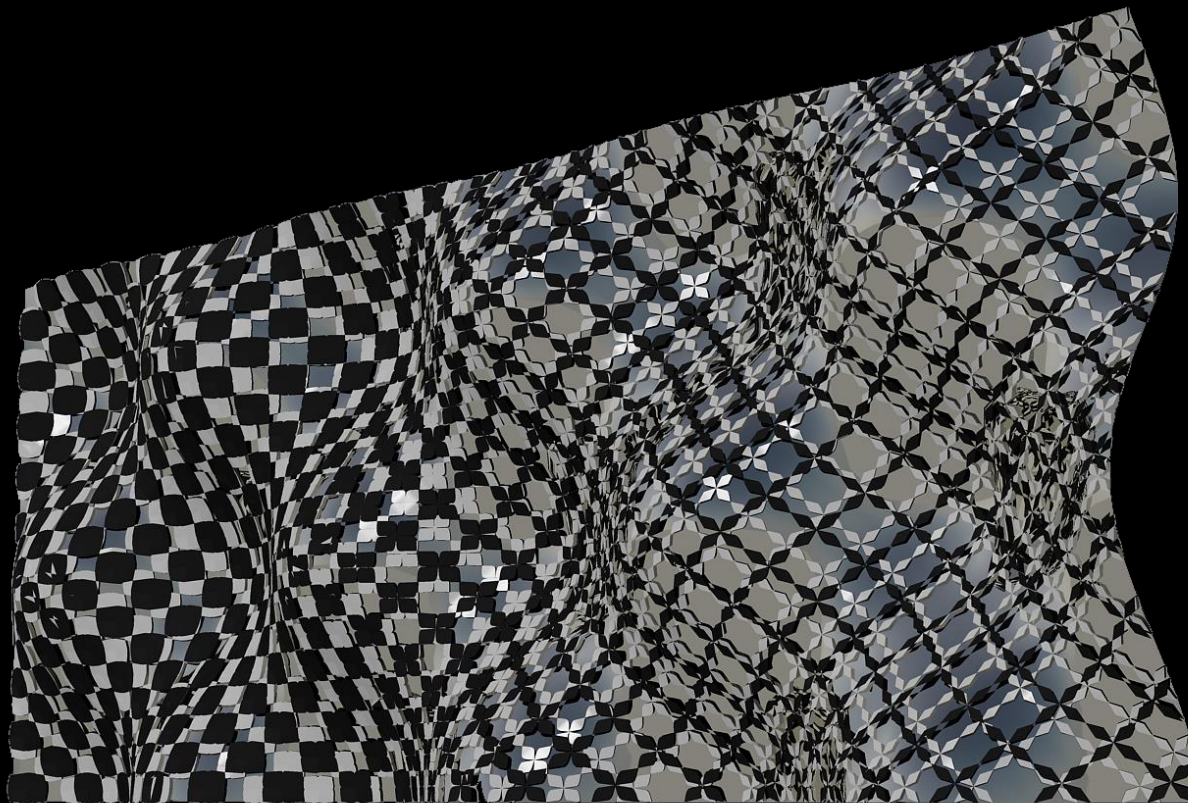
Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Increasing	Chess-Grid	Layered	1.White 2.Black	Horizontally Sinusoidal



Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Increasing	Chess-Grid	Layered	1.White 2.Black	Horizontally Sinusoidal B



Element's Geometry	Element's Size	Element's Distribution	Facade's Articulation	Material & Color	Facade's Geometry
	Increasing	Chess-Grid	Layered	1.White 2.Black	Co-sinusoidal





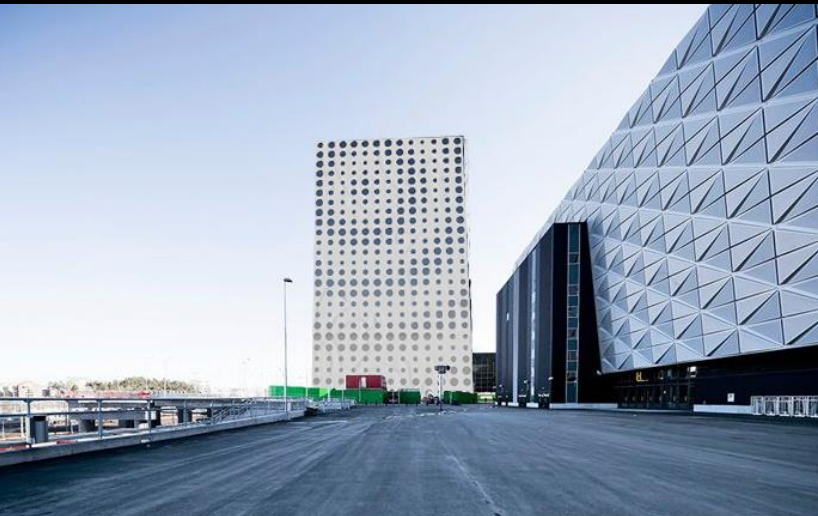
FACIM WaterFront

Bak Gordon + FVA + PROAP



Formstelle

Format Elf Architekten



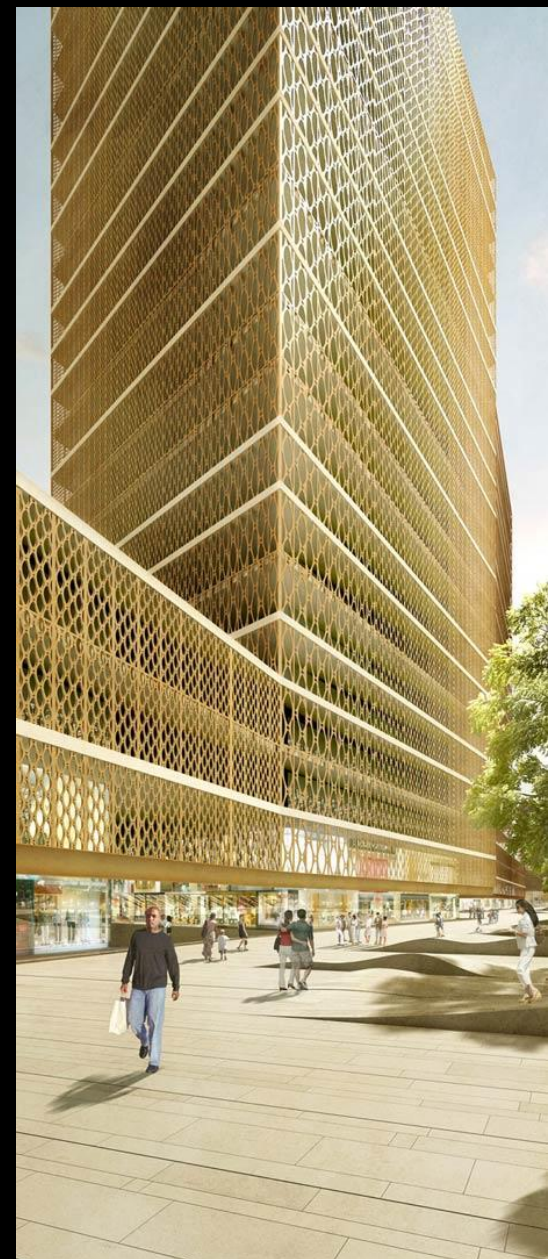
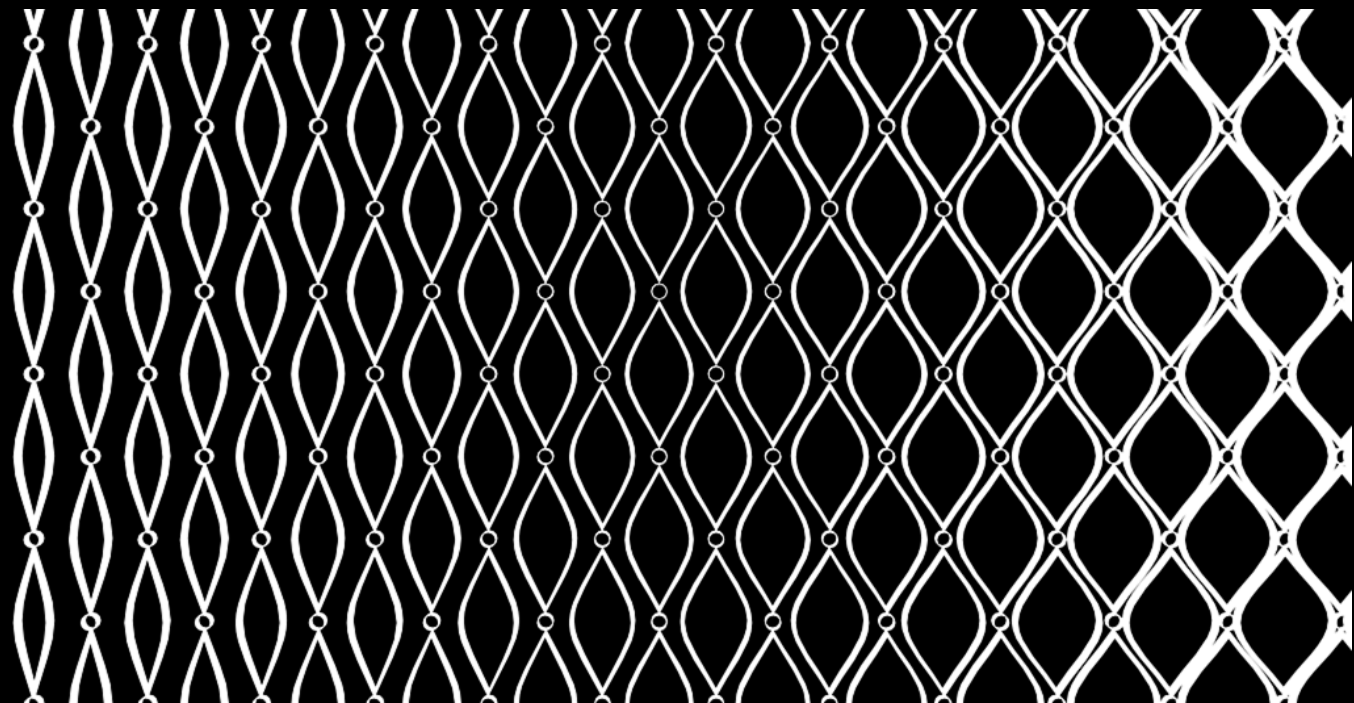
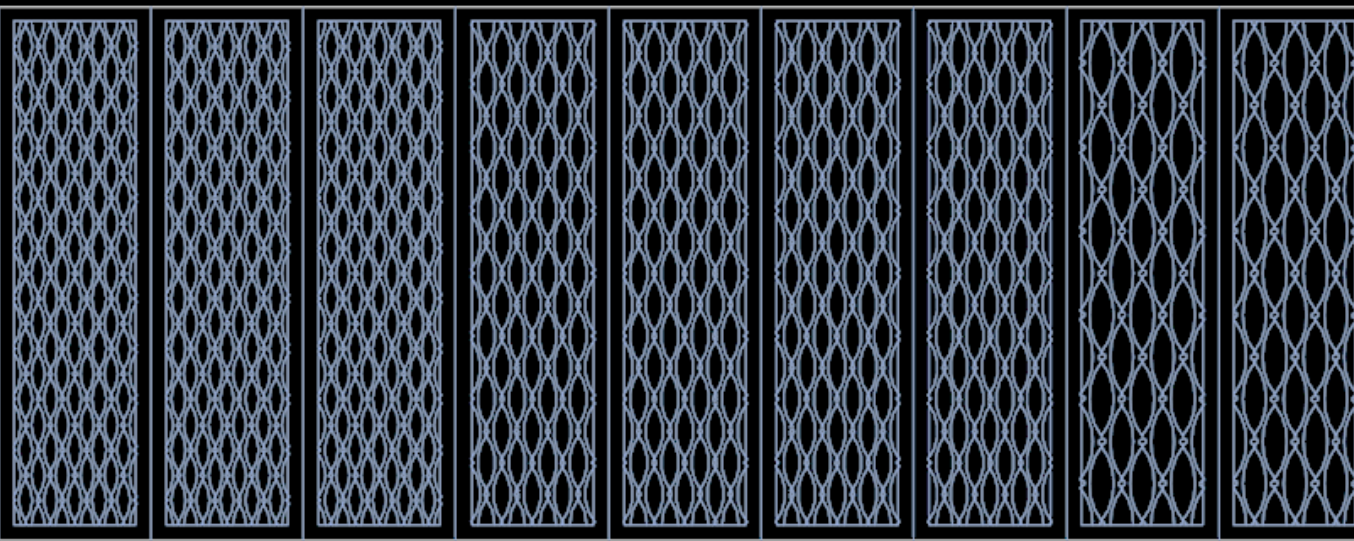
Hotel Quality Friends

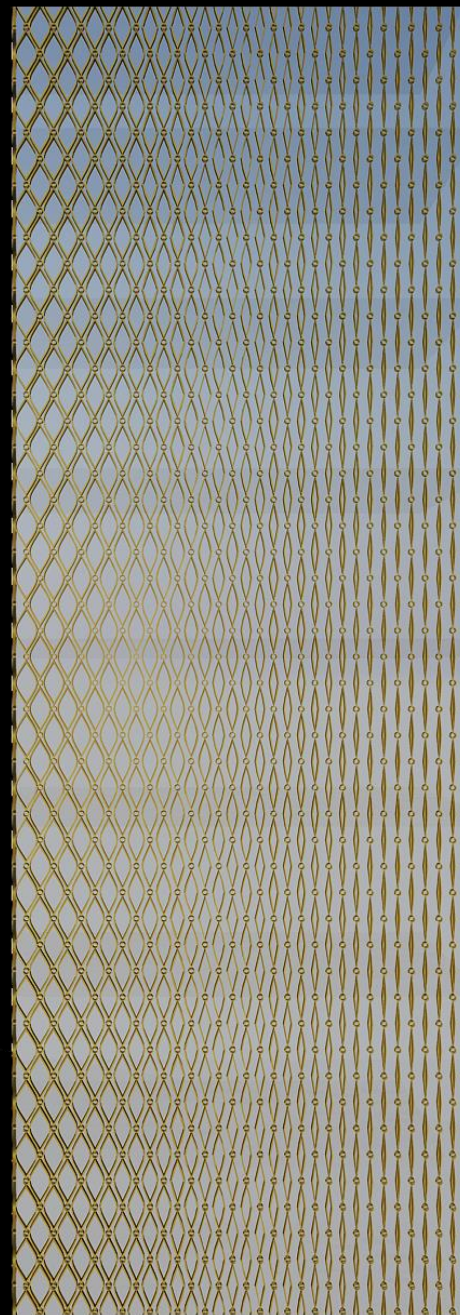
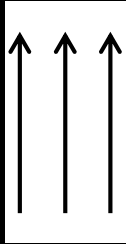
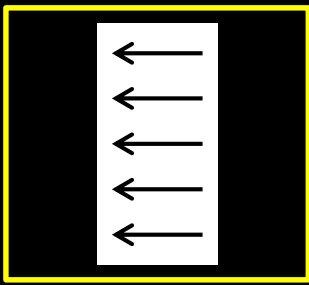
Karolina Keyzer + Wingardhs Architects

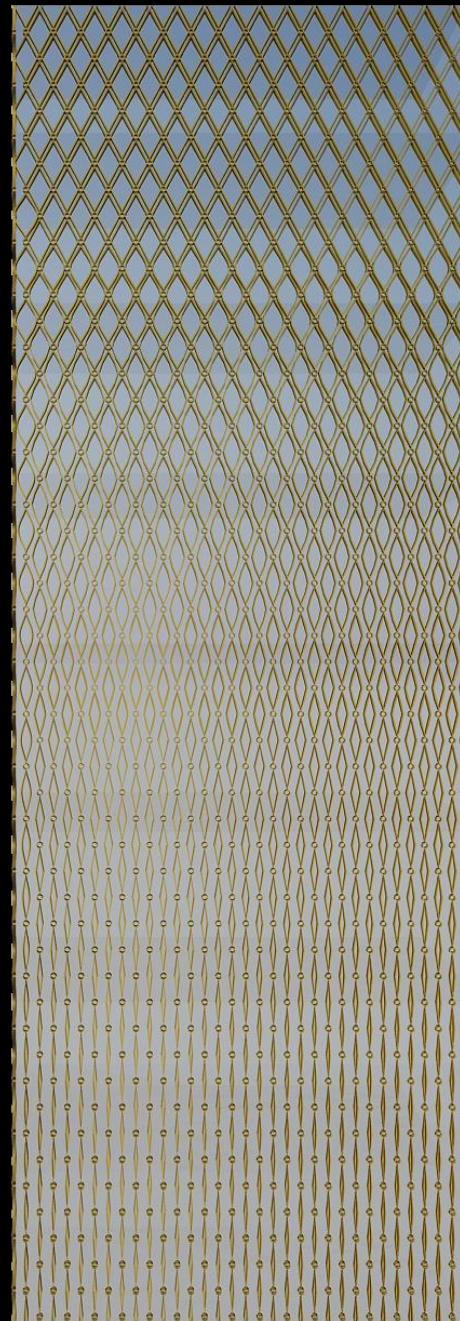
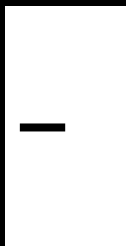
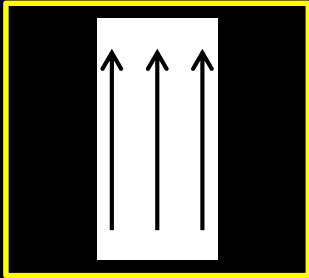
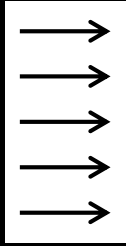


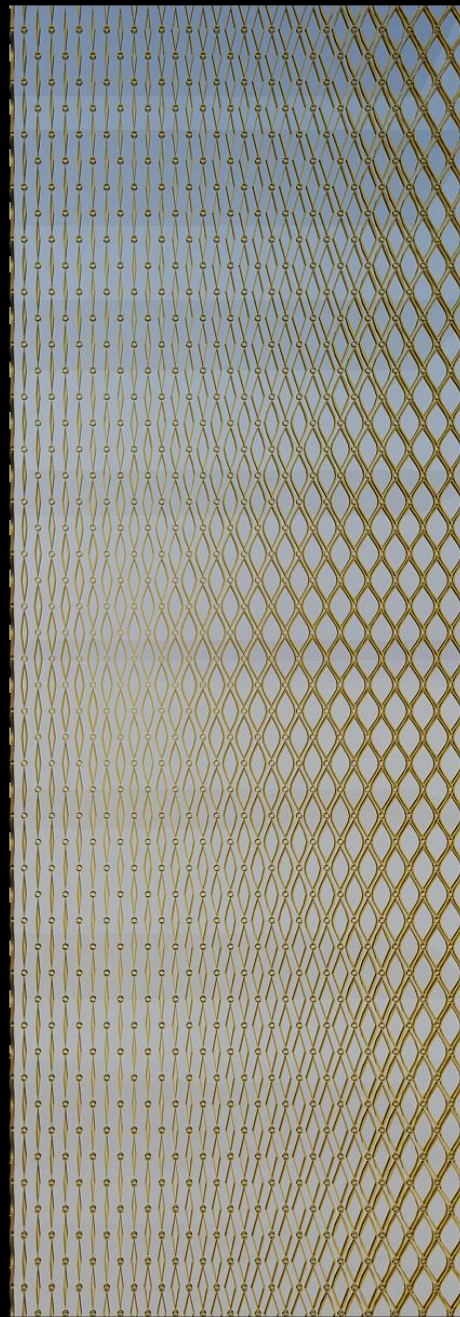
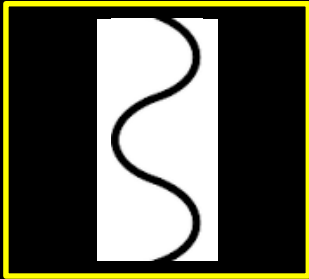
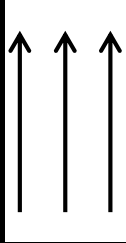
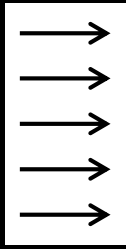
Gantenbein Vineyard

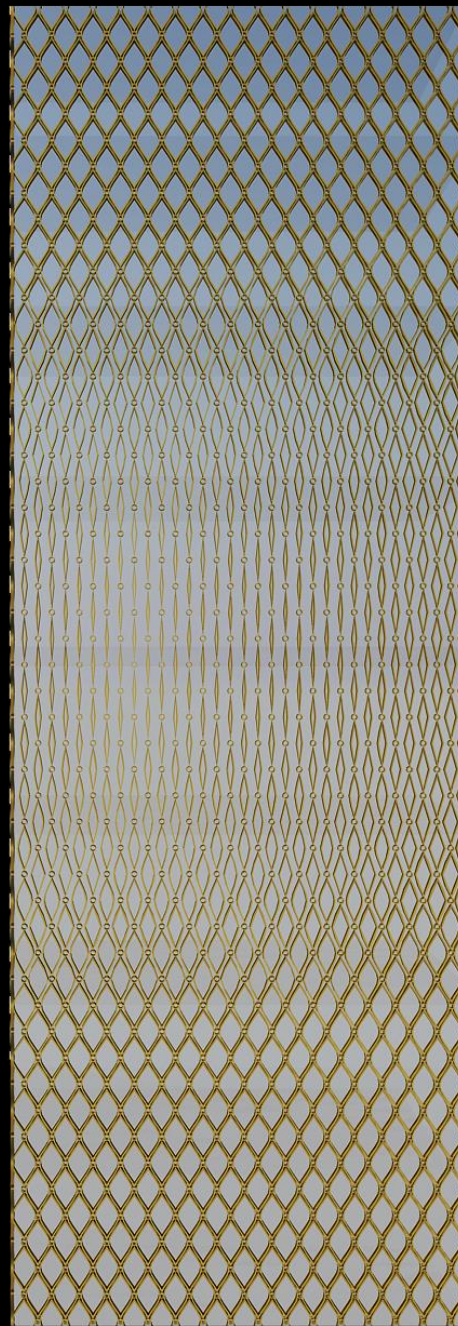
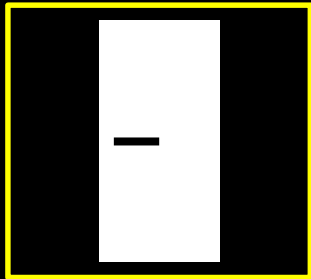
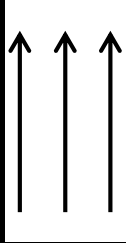
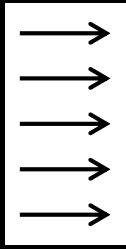
Gramazio and Kohler













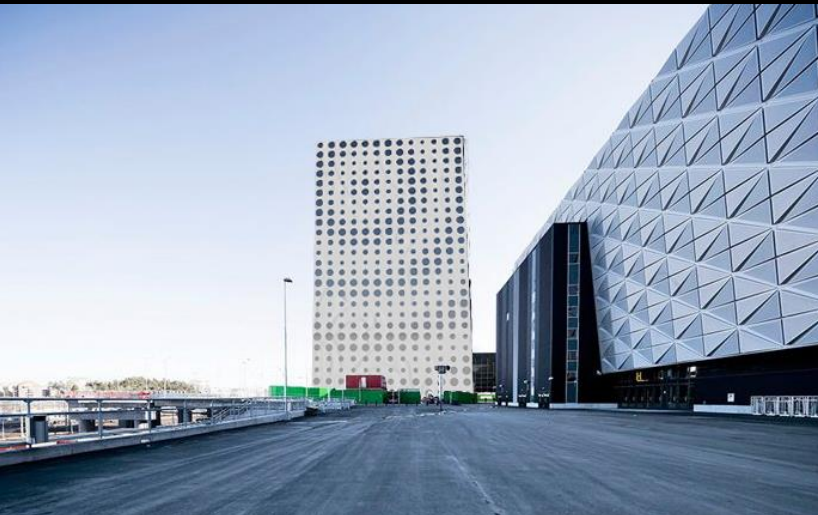
FACIM WaterFront

Bak Gordon + FVA + PROAP



Formstelle

Format Elf Architekten



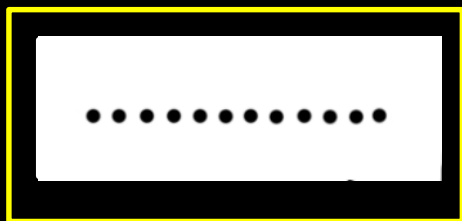
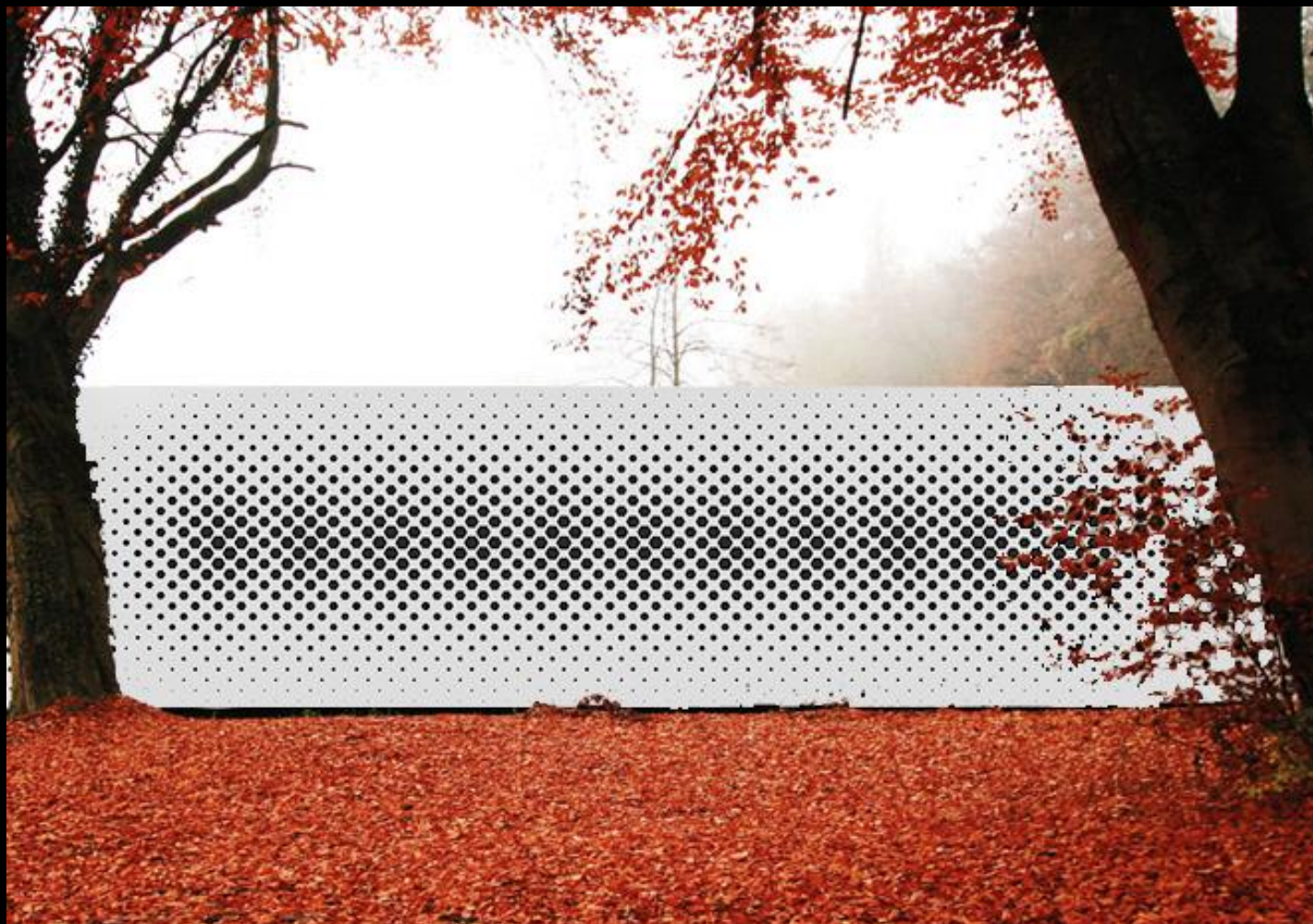
Hotel Quality Friends

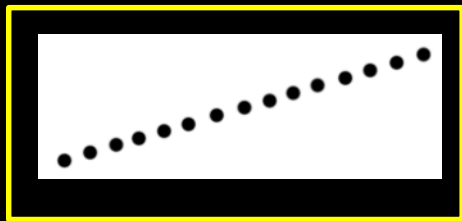
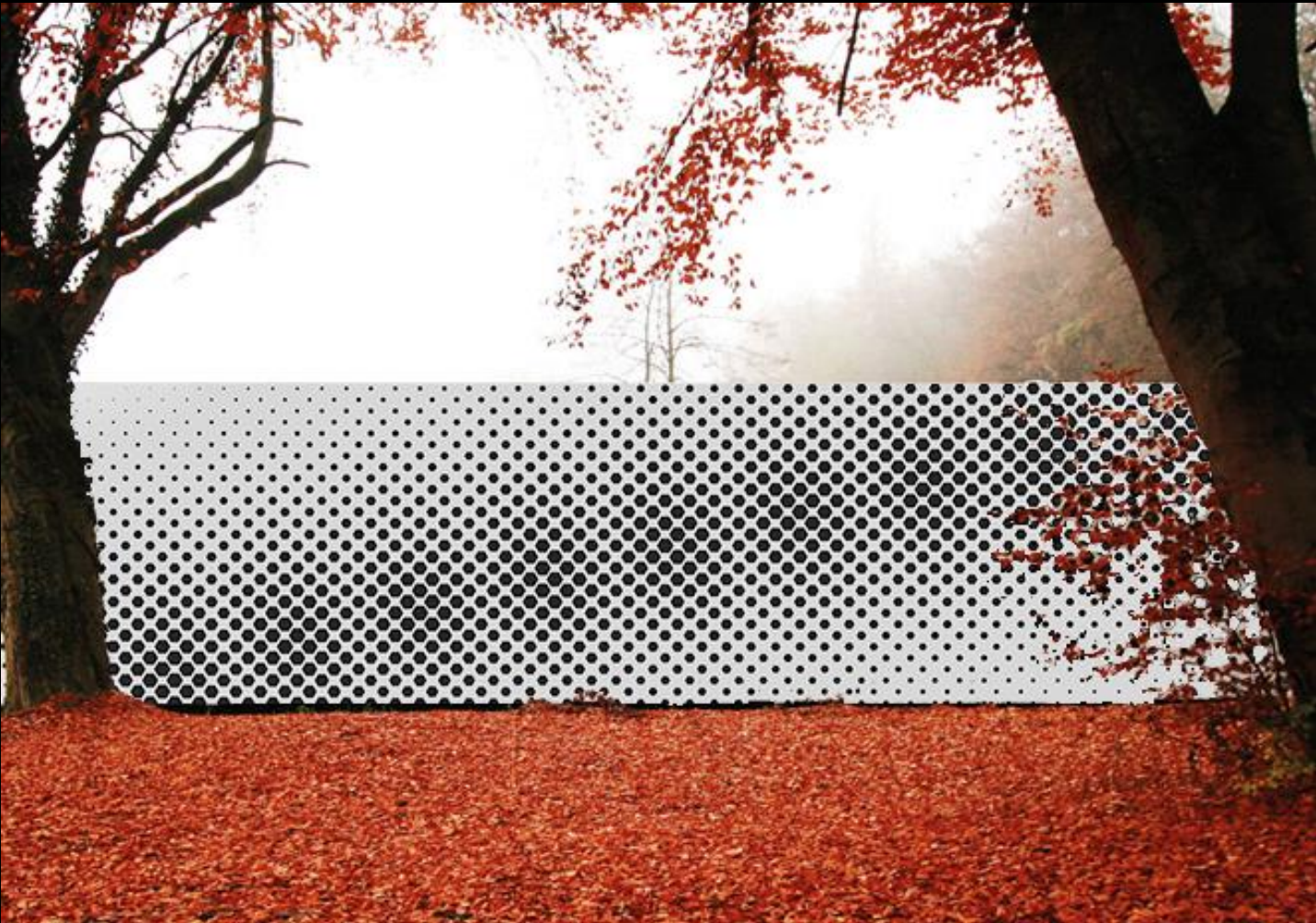
Karolina Keyzer + Wingardhs Architects

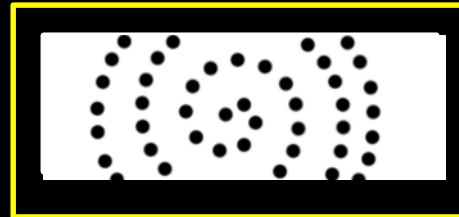
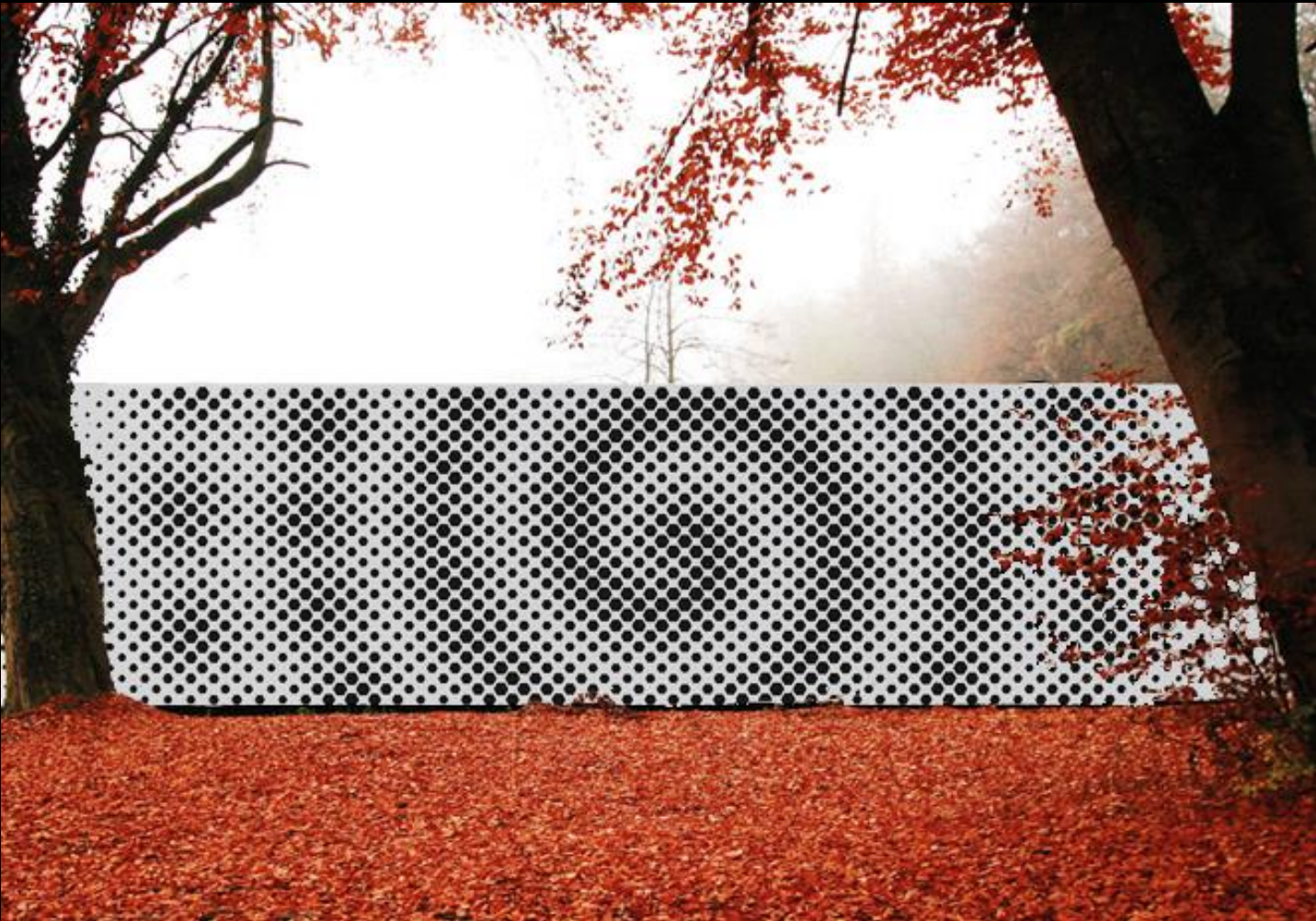


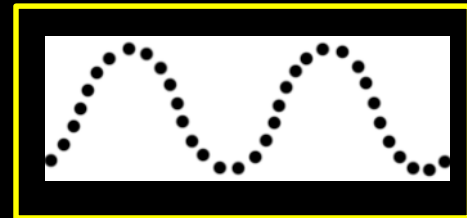
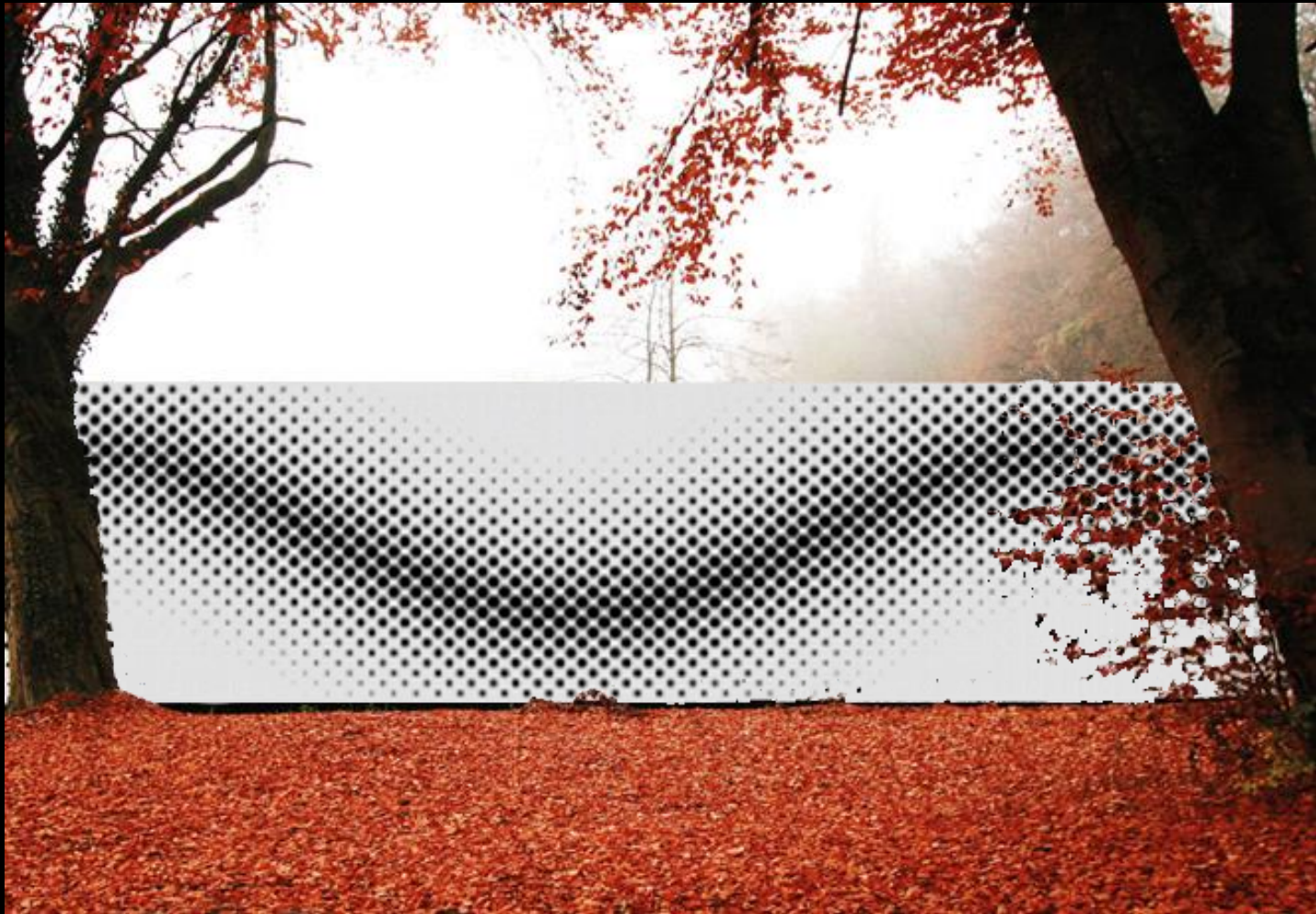
Gantenbein Vineyard

Gramazio and Kohler











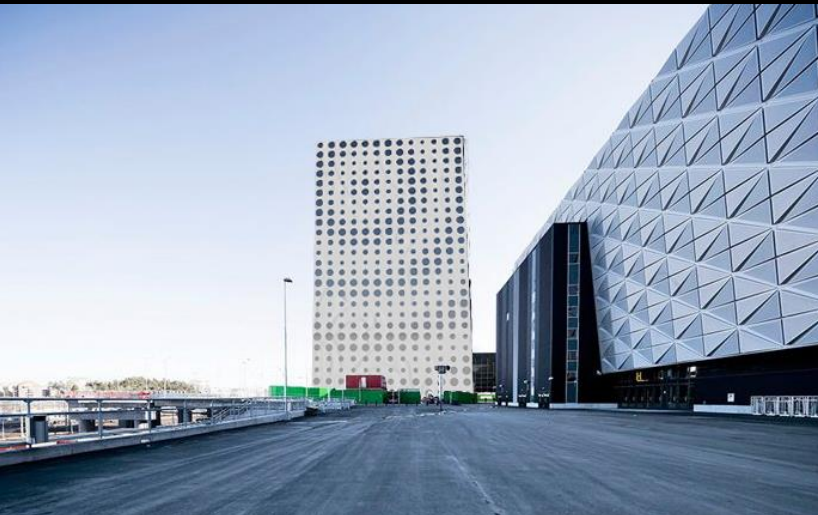
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Background | Framework | Practical Application | Conclusion & Future Work



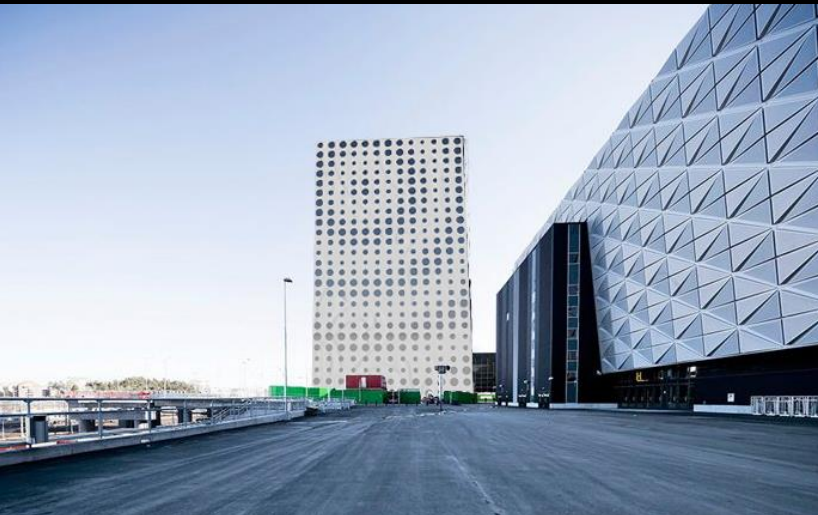
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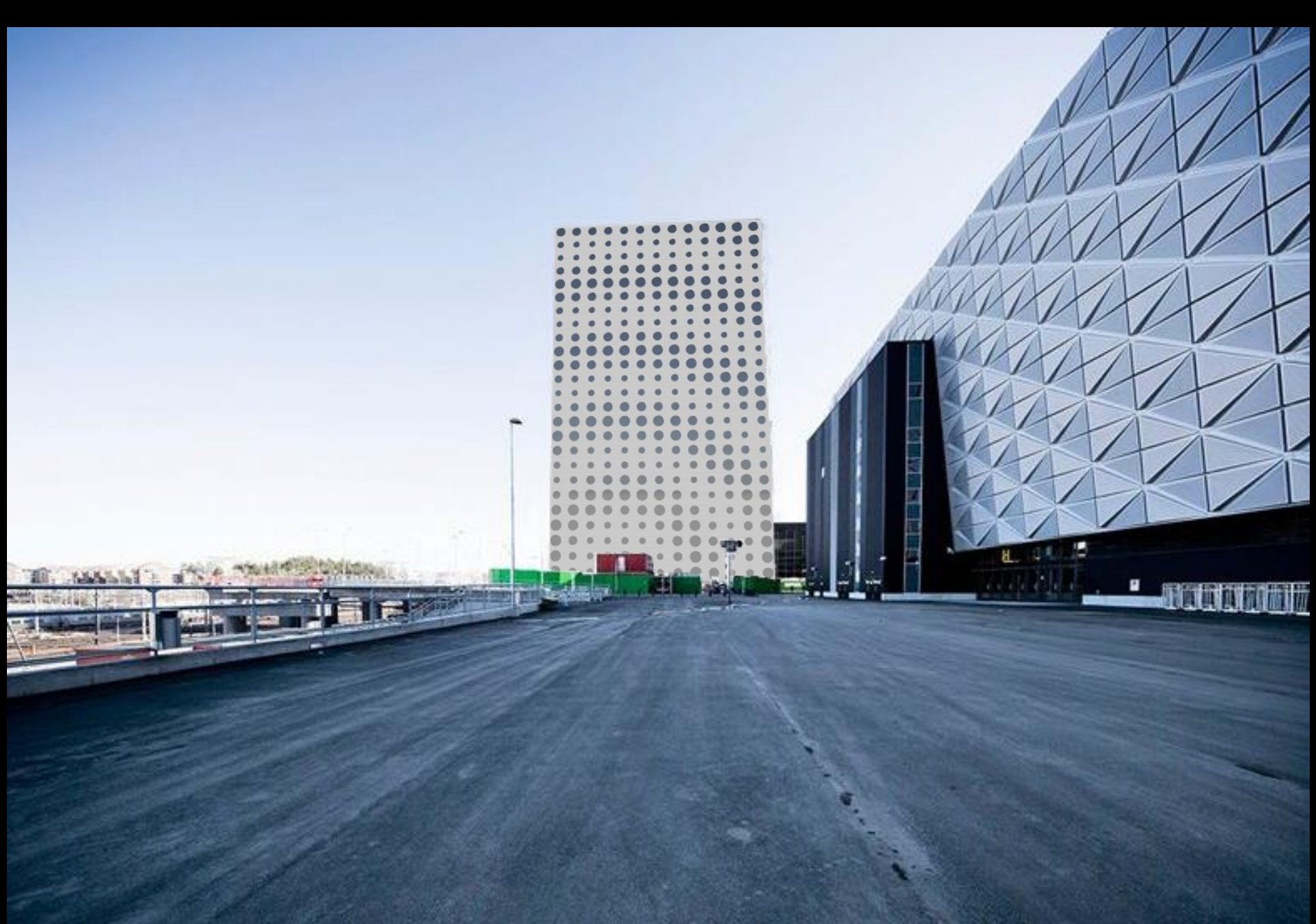
Hotel Quality Friends

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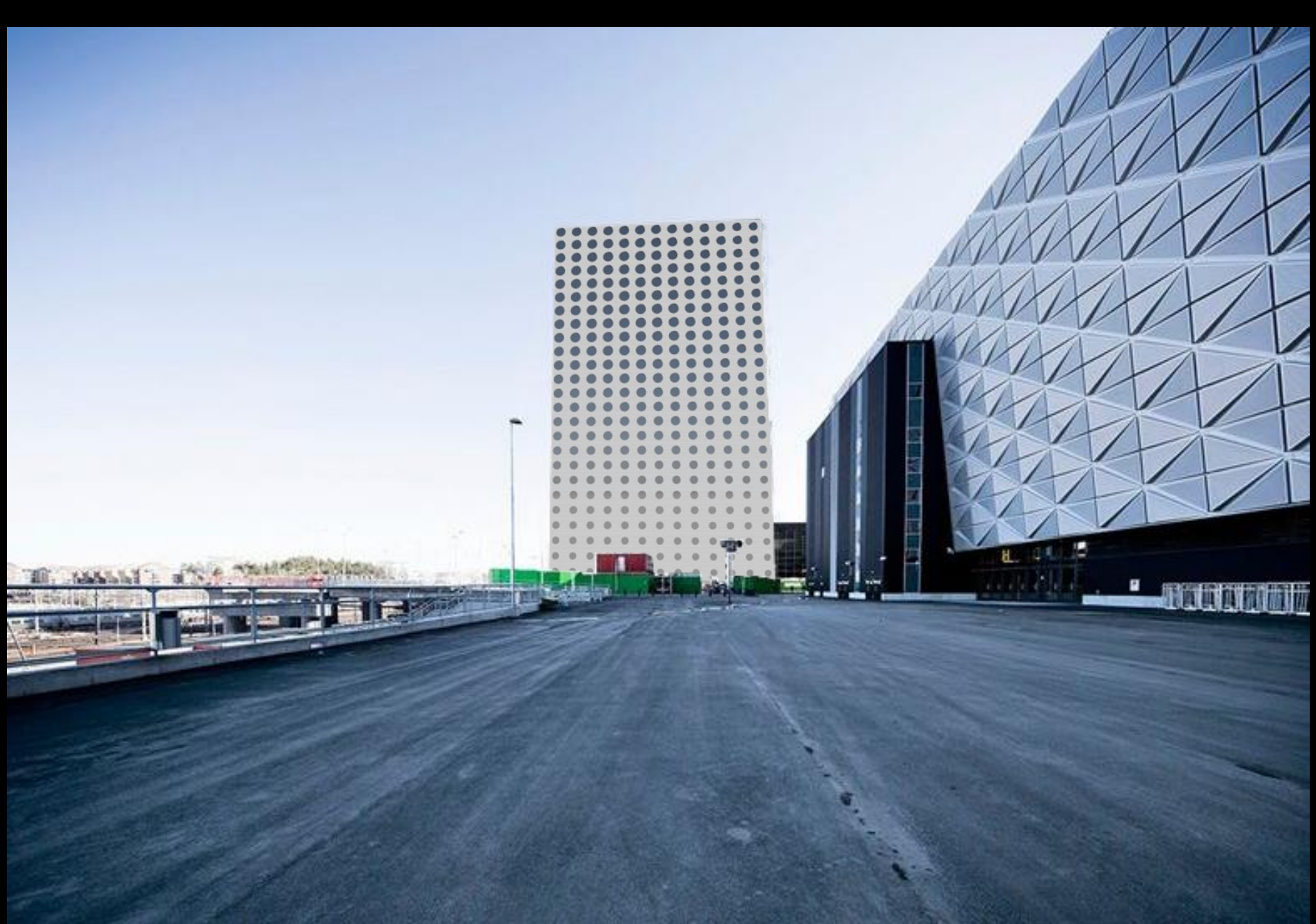


Gantenbein Vineyard

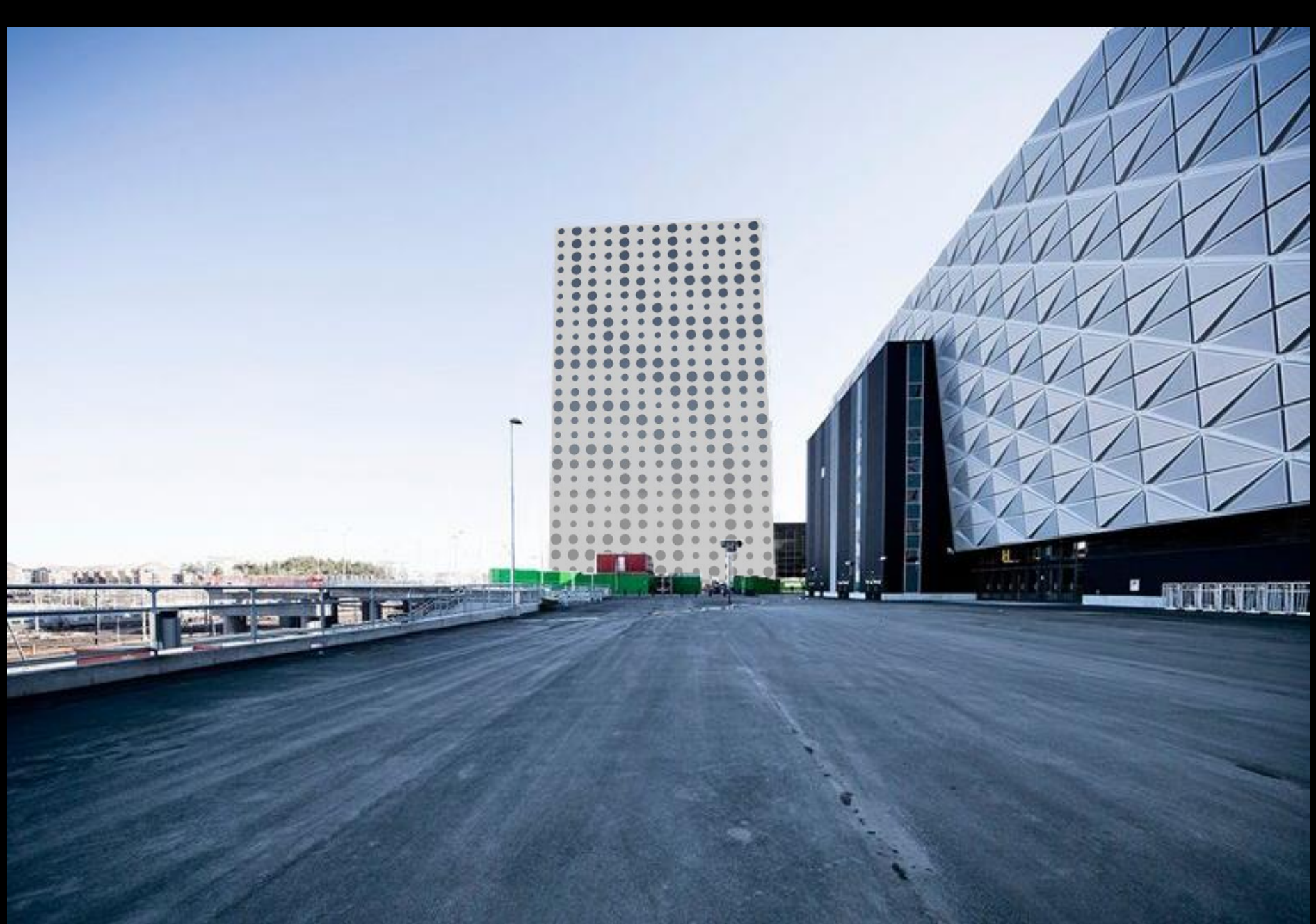
Gramazio and Kohler



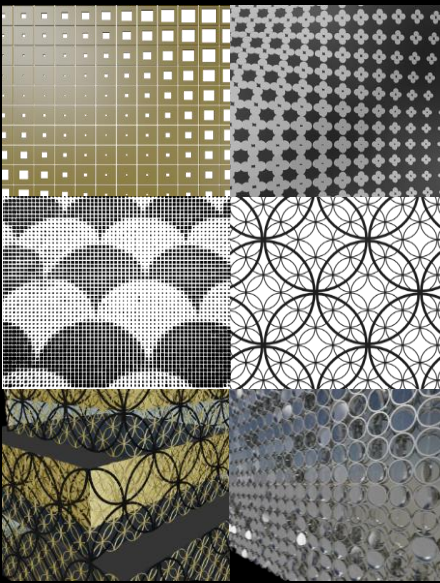
Background | Framework | Practical Application | Conclusion & Future Work



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Background | Framework | Practical Application | Conclusion & Future Work



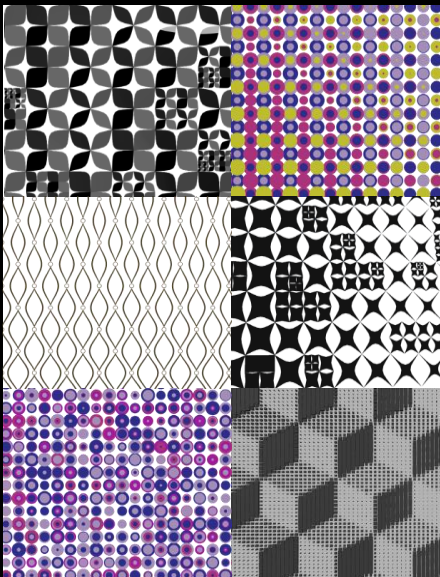
Flexible

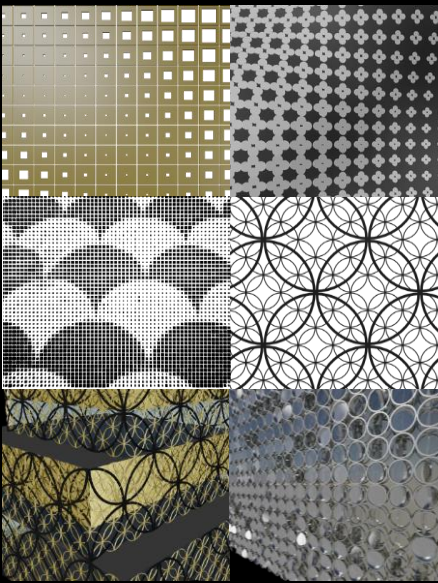


Easy to Use



Different Languages





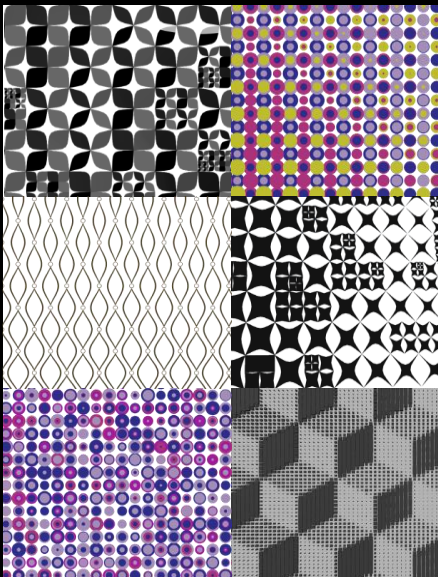
Flexible



Easy to Use



Different Software



Thank You!

