



# ***AR0771 - Introduction***

Introduction to AR0771 - Beyond 3D Computer Visualisation

*Chair of Design Informatics*

# Why this course?

What you imagined:



What you got instead:



## Artist's Impression

Goal: Create an well balanced A1 poster.

You will create one artist impression render which shows an atmospheric architectural setting.

Base this setting on a already designed building. This can be either your own design or an already existing building.

You can also use a favorite quote from a movie, poem or book as inspiration.

The poster should be interesting to look at for at least 2 minutes.



# Where it all begun

“In the year it was released, the Motion Picture Academy refused to nominate Tron for special effects because they said we ‘cheated’ when we used computers....”

Steven Lisberger 1982



# Computer Generated Imagery

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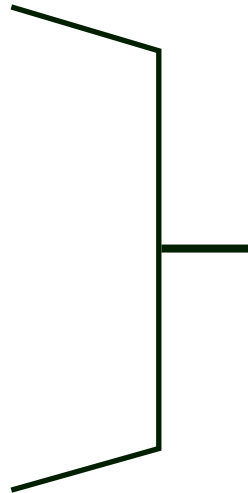
The science and art of creating a 2D image using computers

This image contains the 4 most important aspects of CGI from a 3D model



Design Informatics

- Model
- Lights
- Materials
- Camera

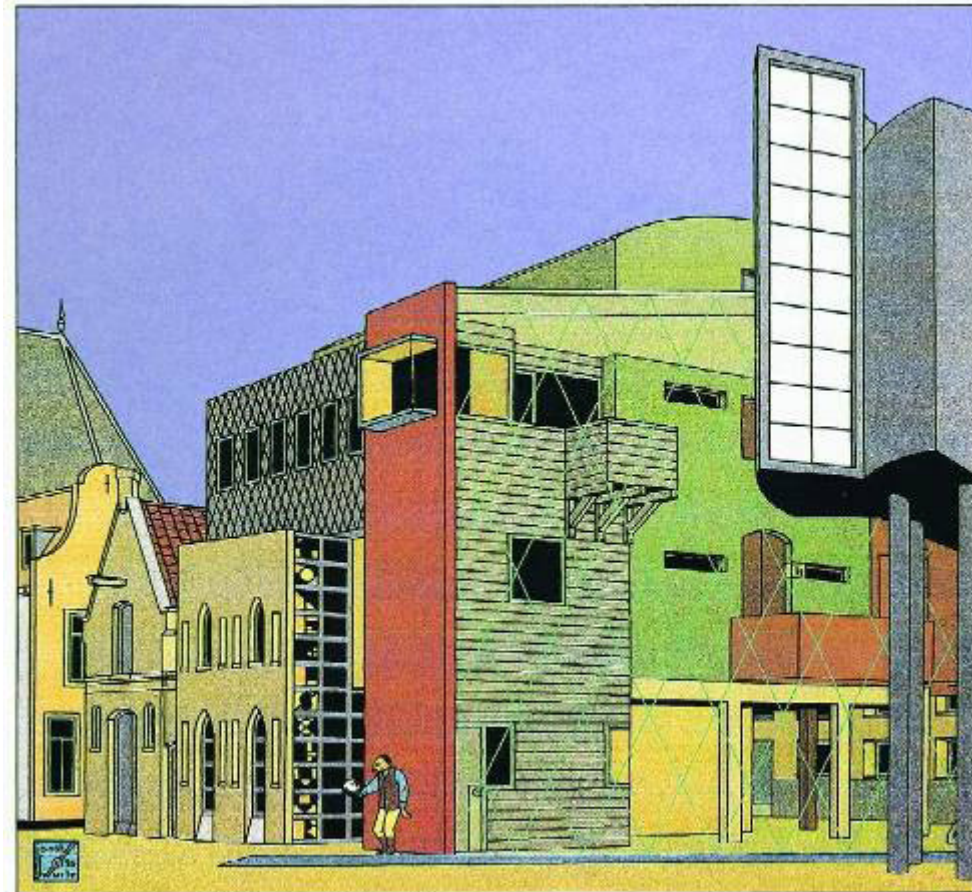


These are all combined  
into a 2D image  
in a process called rendering



# Forget the box

Think and step outside the box



# Experiment

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# Try something new

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# Be Unique!

Introduction  
AR0771



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# Be Unique!

Introduction  
AR0771

*K*loosterhoeve  
Ervaar de levensstijl van Hillegersberg

**8 luxe stadsvilla's**  
met garage op eigen grond en uniek ontwerp  
Koopprijs: vanaf € 620.000 v.o.n.

**G.KOK** B.V.  
Makelaarskantoor voor Huis, Hypotheek en Taxatie  
Burg. F.H. van Kempensingel 12, 3055 BJ Rotterdam-Hillegersberg  
Telefoon: 010 - 418 11 08, E-mail: info@gkok.nl, www.gkok.nl

**NVM**  
**AJF Makelaars B.V.**  
Rotterdam  
Telefoon: 06 - 293 582 27

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# Be Unique!



# Be Unique!



# Be Unique!

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Model only what you see

- Saves time modelling
- Saves time materializing
- Saves time rendering

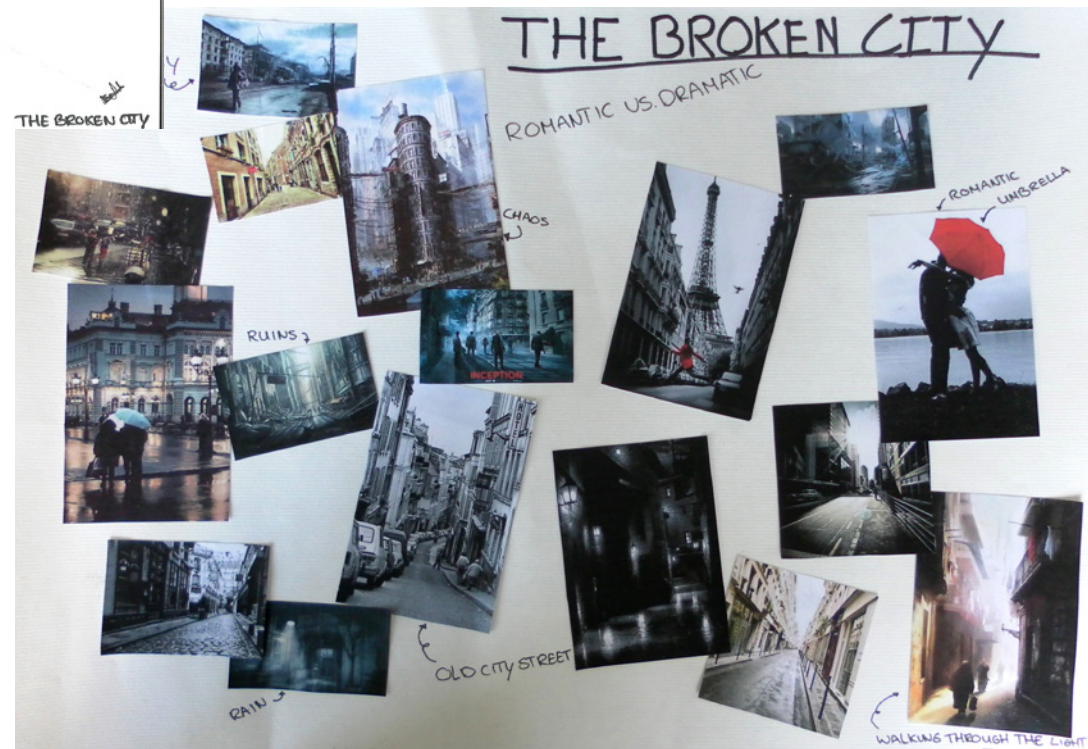
Start by defining composition and point of view!



# Workflow - example



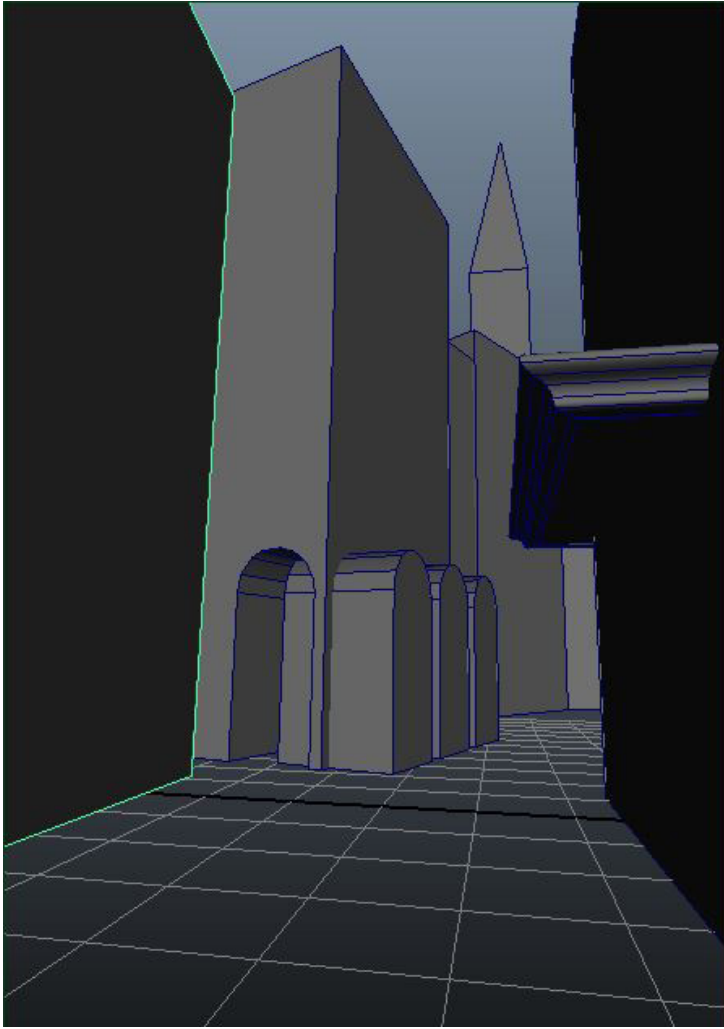
Idea and Composition Sketch



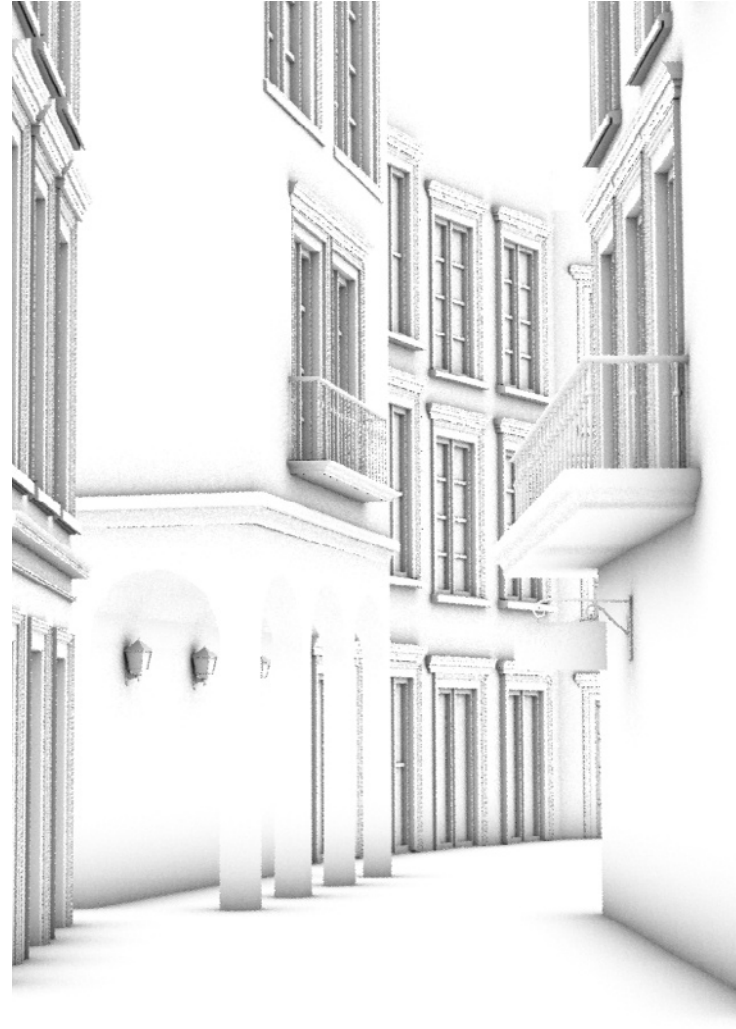
Moodboard



# Workflow - example



3D model (sketch)



Ambient Occlusion

# Workflow - example



Lighting and  
materialization



Final poster with post-processing

Not everything needs to be modeled

- Photoshop is your friend
- Saves time modeling
- Saves time materializing
- Saves time rendering
- Often even looks better



# Schedule

The complete AR0771 course consists of a lecture and a group session in each week.

Monday 15:45-17:30 Lecture

There are weekly workshops, 4 hours each.

Workshop schedule:  
TO BE DETERMINED!

During the 4 hour group sessions you will discuss your work with your tutor.

					self-study	workshops	lectures

It is recommended to go to lectures, a broad variety of new topics will be discussed. In the workshops we'll assume that you are familiar with these topics.

**NOTE: this schedule may be subject to change**

Week 1	Week 2	Week 3	Week 4
Introduction Style	Composition Cameras	Modeling	Lighting Materials

Week 5	Week 6	Week 7	
Texturing Text. Mapping	Rendering Render Layers	Post- Production	

# Workshops & Deadlines

Week	Workshop	Assignment
1	workshop 1	1. Tutorial
2	workshop 2	2. Concept: Moodboard, Sketch
3	workshop 3	3. 3D Model
4	workshop 4	4. Light Setup
5	workshop 5	5. Textured Model
6	workshop 6	6. Improved Textured Model
7	workshop 7	7. Composited image
8	finalizing	
9	final check	
10		Final poster (print + digital)

The AR0771 course is 6 credits and runs for 10 weeks.

1 credit (ECTS) equals 28 hours of work hence, 6 credits amounts to 168 hours or 17 hours a week.

There is room for your own planning. You can shift the workload to accommodate other deadlines.

But you have to put in the hours to get a good result. It's very much a hands-on course.

There is room to experiment and try. We expect you to do so!



# Course Information

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AR0771

The course description and general information is available on:

<http://toi.bk.tudelft.nl/ar0771>

The screenshot shows the website for TOI: Technisch Ontwerp en Informatica - Design Informatics. The page is titled "AR0771" and features a navigation menu with options like "Dechelor", "Master", "Information", "Downloads", and "About TOI". The main content area includes a "Quicklinks" section with links to "Bekijk je cijfers", "List my grades", and "InfoBase Studentwork". Below this is a "Downloads" section with links for "General Downloads", "Maya MEL Scripts", and "Software for Students (login)". A "Maya Scripts" section features a "libVector (2006-03-07)" script. The "Renderfarm" section displays a progress bar and statistics: "0 jobs running, 0 queued, 13 servers idle, 13 online, 0% CPU usage (0 GHz), last updated: 14:50:15". A "Contact" section provides the address: "TOI, TU Delft, Faculty of Architecture, c mail: toi\_bk@tudelft.nl, student mailpolicy". A "Visit" section lists the location: "room 014-West.040, Faculty of Architecture, Building 0, Julianalaan 134, 2628 BL Delft". A "Postal address" section lists: "TOI, room 01.West.130, P.O. box 5043, 2600 GA Delft". The main text describes the course as focusing on generating a high-quality digital A1 size image using Maya and Photoshop, emphasizing visualization and communication. A "TOI Pedia" section offers a "Digital course materials and tutorials library". An "FAQ" section lists common questions like "Wat is m'n cijfer?" and "Vragen over herkansingen". A large image of a fantastical landscape with a dragon-like creature is shown, credited to "Image created by J Westgeest".

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# Course Material

All course material, manuals and tutorials:

<http://wiki.bk.tudelft.nl/toi-pedia/ar0771>

The screenshot shows the TOI-Pedia website interface. At the top left is the TU Delft logo. Below it are navigation tabs: 'by Subject', 'by Software', and 'by Course' (which is selected). To the right of the tabs is a search bar with a 'View' dropdown and a search input field. The main content area is titled 'Browse by Course'. Below this title is a breadcrumb trail: 'AR0771 > Modeling an orthogonal pavillion > Main Page > Browse by Course'. A text block states: 'A list of courses that are covered in the TOI-Pedia:'. Below this is a grid of eight course cards. Each card has a colored header with a course code and a title. The cards are: 1. Design (BK2OV2) - Computer Aided Design, 2nd Bachelor. 2. Performance (BK3OV3) - Performative Design, 3rd Bachelor. 3. Bim (BK4ON4) - BIM, 4th Bachelor. 4. CAD (AR1AE015) - CAD, 1st Master (BT). 5. Beyond3D (AR0771) - Beyond 3D visualization, Master Elective. 6. Portfolio (AR0051) - Digital Presentation Portfolio, Master Elective. 7. The Why Factory (T2F) - The Why Factory, Master Elective. 8. Berlage (Postgrad) - Derlage Postgraduate, Postgraduate. Each card includes a brief description and a link to the course website.

Course Code	Course Title	Semester	Description	Website
BK2OV2	Design	2nd Bachelor	Computer Aided Design	Computer Aided Design website
BK3OV3	Performance	3rd Bachelor	Performative Design	Performative Design website
BK4ON4	Bim	4th Bachelor	BIM	BIM website
AR1AE015	CAD	1st Master (BT)	CAD	CAD website
AR0771	Beyond3D	Master Elective	Beyond 3D visualization	
AR0051	Portfolio	Master Elective	Digital Presentation Portfolio	
T2F	The Why Factory	Master Elective	The Why Factory	The Why Factory website
Postgrad	Berlage	Postgraduate	Derlage Postgraduate	Berlage Postgraduate website

1. Go to the AR0771 TOI-Pedia website  
<http://wiki.bk.tudelft.nl/toi-pedia/AR07711>.

Trwelman Talk Preferences Watchlist Contributions Log out

by Subject by Software by Course

View ☆ Search

## AR0771

AR0771 > Modeling an orthogonal pavillion > Main Page > Browse by Course > AR0771

Contents [show] [1 2 3 4]

### Course description [edit]

In the AR0771 course we will focus on the techniques and methodes used to generate a single high quality digital A1 size image with the use of Maya and Photoshop.

More information can be found on our main website [↗](#).

### Week-by-week reading material [edit]

#### Week 1 - Preparation [edit]

- [Maya Installation manuals by @Ilok](#) for students of the TU Delft
- [Quick start with Maya - Maya introduction and theory](#)
- [Tutorial - First steps in modeling by making a pavilion.](#)

#### Week 2 - Concept [edit]

- [Basic rules of composition](#)
- [Cameras](#)
- [Conceptual Architectural Visualisation](#)

# Preparations

## 2. Install Maya from students.autodesk.com

manual: <http://adhok.bk.tudelft.nl>

Student ICT Support

Home About Info Manuals Resources

Prepare your Rhino Model for 3D Printing

Posted on June 24, 2014 by aytac in News, Software

Check <http://wiki.mcneel.com/3dprinting> for information and resources on preparing your Rhino model for 3D printing.

@Hok Summer Holiday calendar 2014

Posted on June 13, 2014 by admin in ICT, News, TU Laptops

Wat voor laptop is geschikt voor Bouwkunde?

Posted on March 31, 2014 by aytac in ICT, News, TU Laptops

TU DELFT ICT ANNOUNCEMENTS

Campus-wide network failure August 31, 2014

Delays accessing e-mail, Lyric and data August 28, 2014

Difficulties accessing various web applications (among others SharePoint and Citrix) August 26, 2014

Service malfunction T-Mobile at Faculty AE & HD August 22, 2014

Password and E-service.audelft.nl unavailable August 18, 2014

ICT WEBSITE MANUALS

Creating PDFs

Webprint OS X 10.8/10.6

Webprint OS X 10.7/10.8

Webprint Windows 7

Webprint Windows 8

ICT WIRELESS EDUCATION MANUALS

Wireless Network Android

Wireless Network iPhone/iPad

Wireless Network OS X 10.6

Wireless Network OS X 10.7/10.8/10.9

Wireless Network Windows 7

Wireless Network Windows 8

Wireless Network Windows XP

SOFTWARE INSTALLATION GUIDES

AutoCAD 2013

Maya 2013 OS X

Maya 2013 Windows

Maya 2014 OS X

Maya 2014 Windows

Maya 2015 OS X

Maya 2015 Windows

NuBox 2015

April 2013

AUTODESK

PRODUCTS SUPPORT & LEARNING COMMUNITIES BUY STORE

Education Community  
FREE SOFTWARE

Education home

Free software

- Secondary students
- College & university students
- Secondary teachers
- College & university educators
- Institutions

Learn & teach

Competitions & events

Prepare & inspire

Support

About Autodesk Education

Autodesk software for students and educators

Imagine, design, and create a better world with help from Autodesk Education. Get free\* access to the software used to make the games, movies, buildings, and products that inspire you. Autodesk is a world leader in 3D design, engineering, and entertainment software for manufacturing, building and construction, and media and entertainment.

Secondary students  
College & university students

Educator software  
Inspire, engage, and prepare your students for success with free\* access to Autodesk design software and creativity apps.

Secondary teachers  
College & university educators

Institutional software  
Put professional design tools in the hands of students and educators with free\*\* software for institutions.

All institutions  
Academic Resource Center sign in

## 3. Read "Quick Start with Maya" for important background information and basics



The screenshot shows a web page with a navigation bar containing tabs for 'by Subject', 'by Software', and 'by Course'. A search bar is located on the right. The main content area is titled 'Quick start with Maya' and includes a breadcrumb trail: 'ARU // 1 > Modeling an orthogonal pavillion > Main Page > Browse by Course > ARU // 1 > Quick start with Maya'. Below the title is a 'Contents [show] [1 2 3 4]' button. The first section is 'Introduction [edit]'. The second section is 'Why using 3D digital data in the design process? [edit]'. This section contains text about the benefits of 3D models and a list of reasons for using Maya. The text includes: 'Technical drawings are the main form of communication of the design in the design process, at least they used to be and nowadays still are in most fields. These are 2D representations of objects that are 3-dimensional, which means these drawings are limited in what they can show and hard to interpret by the general public. There is also the risk that the 2D drawings are inaccurate or incorrect, which can cause major problems during the construction phase or when a project has been delivered. Capturing the design in 3D can avoid a major part of these problems. Besides communication, the most common application of the 3D architectural model is visualization of the design. Visualizations can be used for acquisition, but also as a tool for simulating architectural design decisions (e.g. the choice of a cladding material). 3D digital models can also be used as a basis for simulation and analysis. This can be extended to the manufacturing process: digital manufacturing of building components or rapid prototyping of design solutions. Maya is used at the Faculty of Architecture of the TU Delft for a number of reasons. The list below is a brief overview of some of the key reasons: it's by no means the complete account.'

- Maya combines several modeling options: Polygons, NURBS and Sub-D's making it very flexible
- Maya support history-based modeling, allowing parametric design methods
- Maya's extensive animation and dynamics supports allows advanced conceptual architectural design approaches
- Maya's open architecture allow the program to be extended using MEL and Python scripting and C++ programming

So what is Maya?



Highly accurate 3D digital model



Interior Render, S. Mulders

## 4. Do the "Modeling an orthogonal pavillion" Maya Tutorial (Parc de la Vilette)



by Subject | by Software | by Course

View ☆ Search

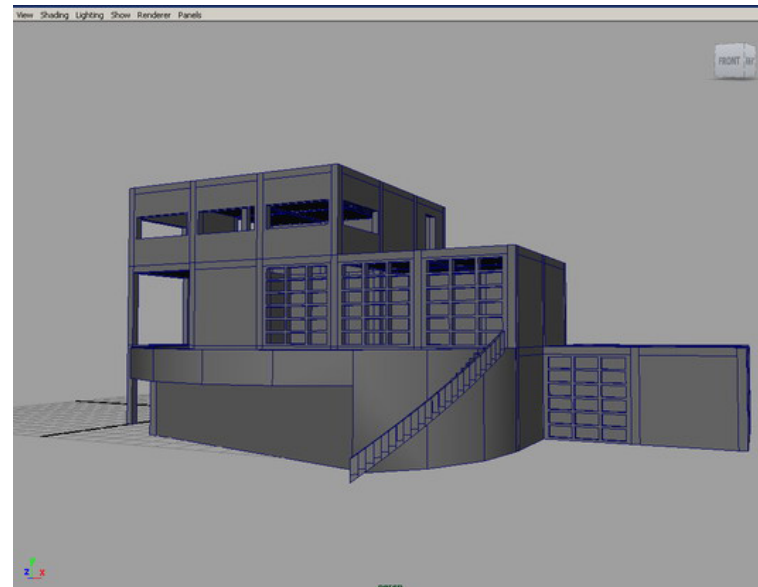

### Modeling an orthogonal pavillion

AR0771 > Modeling an orthogonal pavillion > Main Page > Browse by Course > AR0771 > Quick start with Maya > AR0771 > Modeling an orthogonal pavillion

Contents [show] [1 2 3 4]

#### Introduction [edit]

The building we will create in this tutorial is one of the follies of Parc de la Vilette in Paris.



# Assignment

Introduction  
AR0771

## This week (week 1)

Finish Parc de la Vilette tutorial

## Next week (week 2)

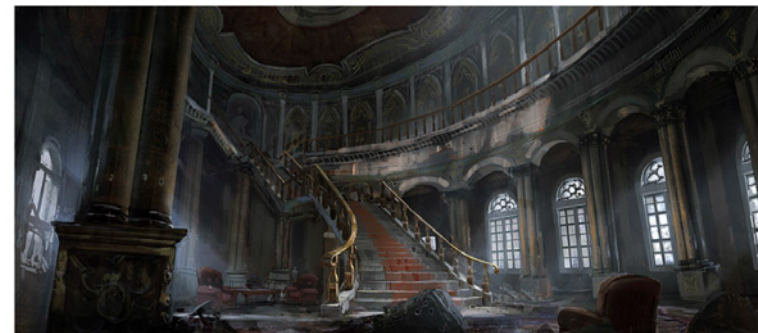
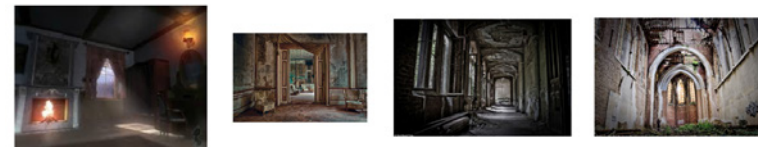
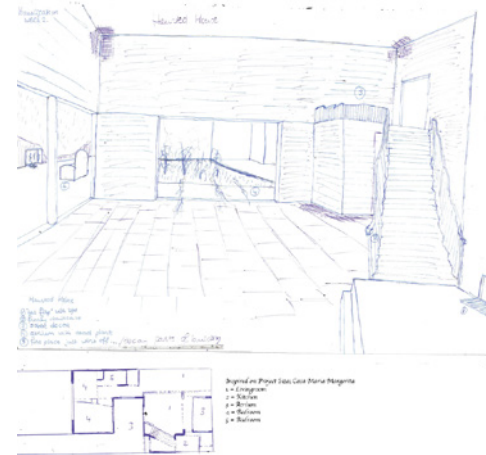
Choose the setting and building you want to use for the poster.

Bring images, plans etc. so you can discuss it with your tutors.

Make a preliminary sketch of the composition of the layout of the poster.

Bring it to the worksho. Final versions due on Sunday.

You are **only** allowed to use **pencil and paper!**



Sober colors - Dark and high rooms - Outdated materialization - greys/sepia light - dead plants

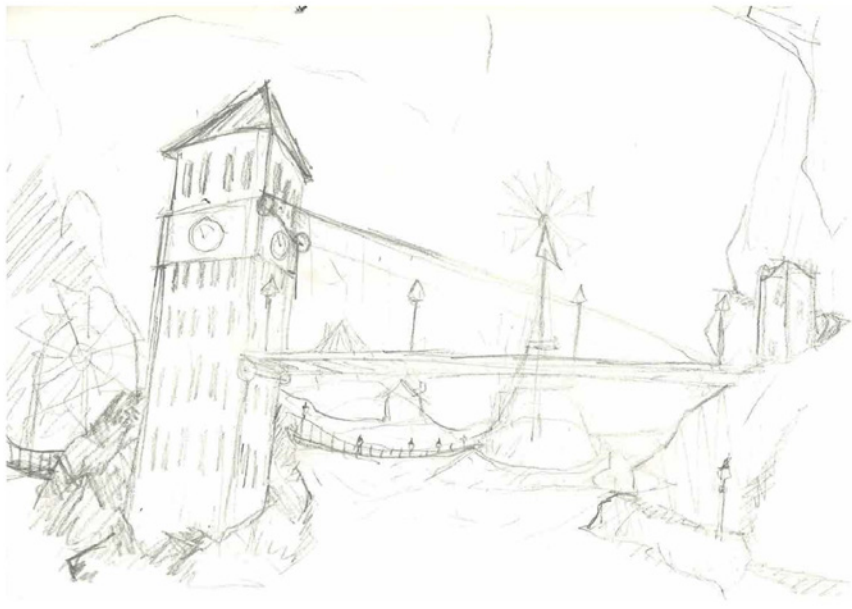
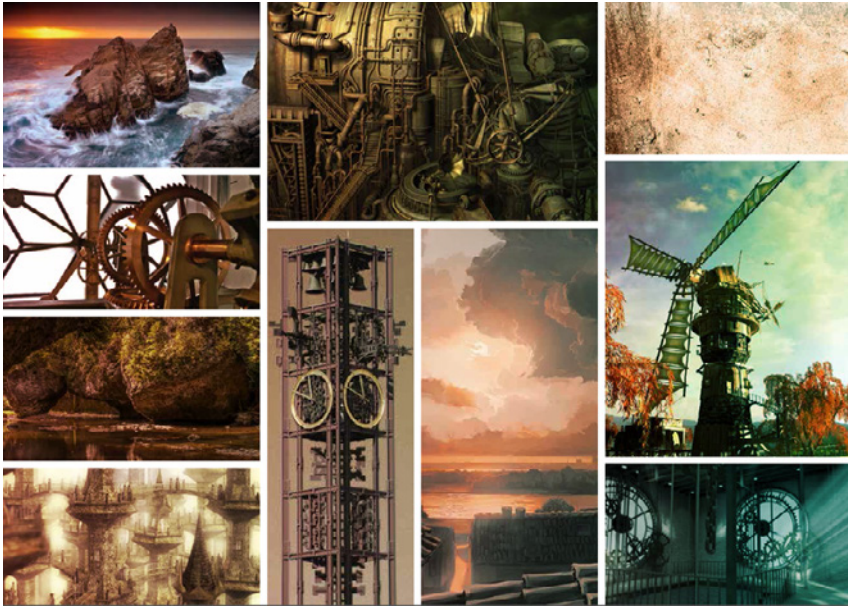
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 **TU Delft**

Delft University of Technology

# Assignment

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It violently divides into doom and salvation,  
retribution and reward, what has been and what will be.  
An abyss appears in the middle of its body  
between what instantly become two foreign shores.  
Life on one shore, death on the other,  
Here hope and there despair.



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# Inspiration

Introduction  
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# Inspiration

Introduction  
AR0771



# Inspiration

Introduction  
AR0771



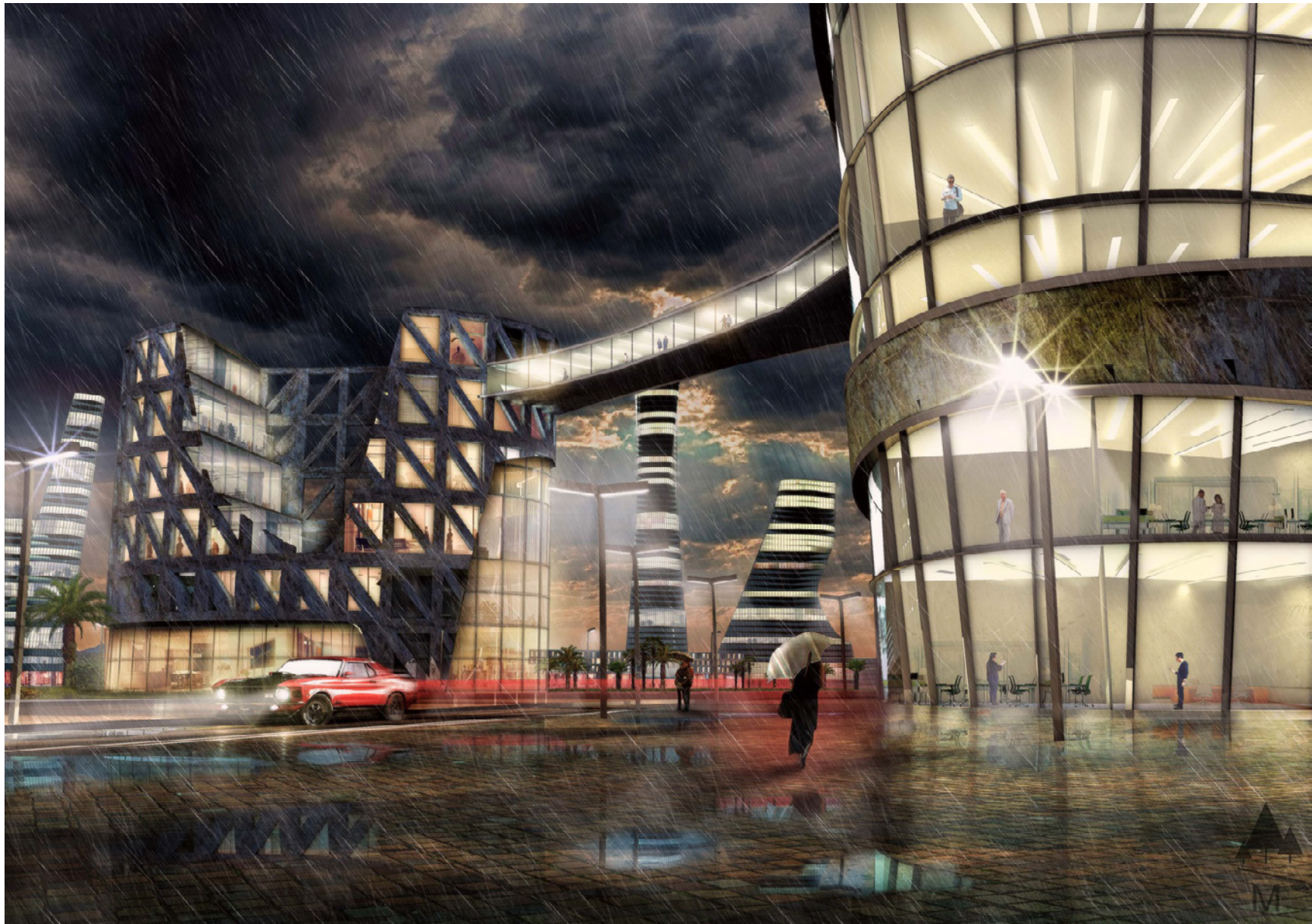
# Inspiration

Introduction  
AR0771



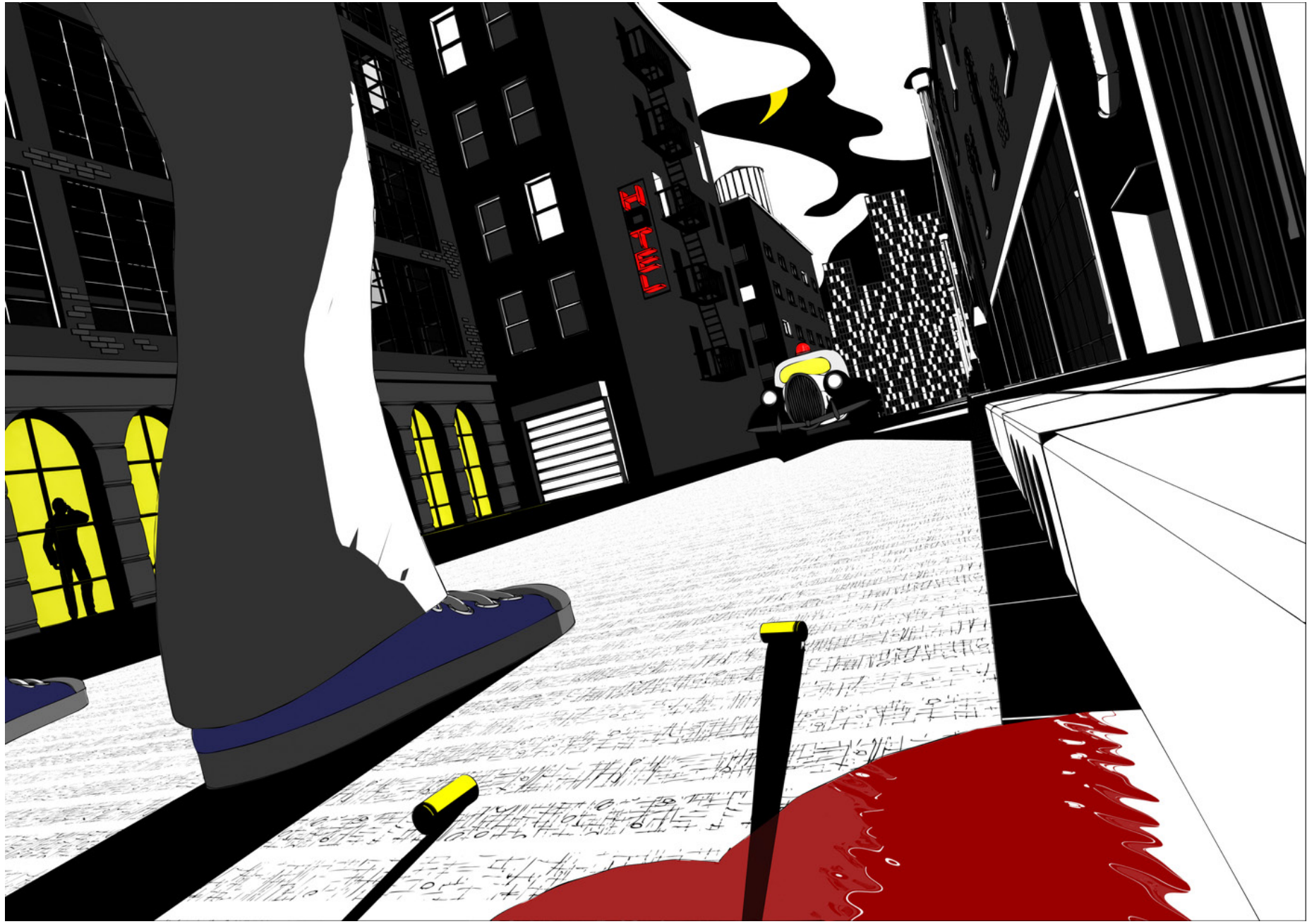
# Inspiration

Introduction  
AR0771



# Inspiration

Introduction  
AR0771



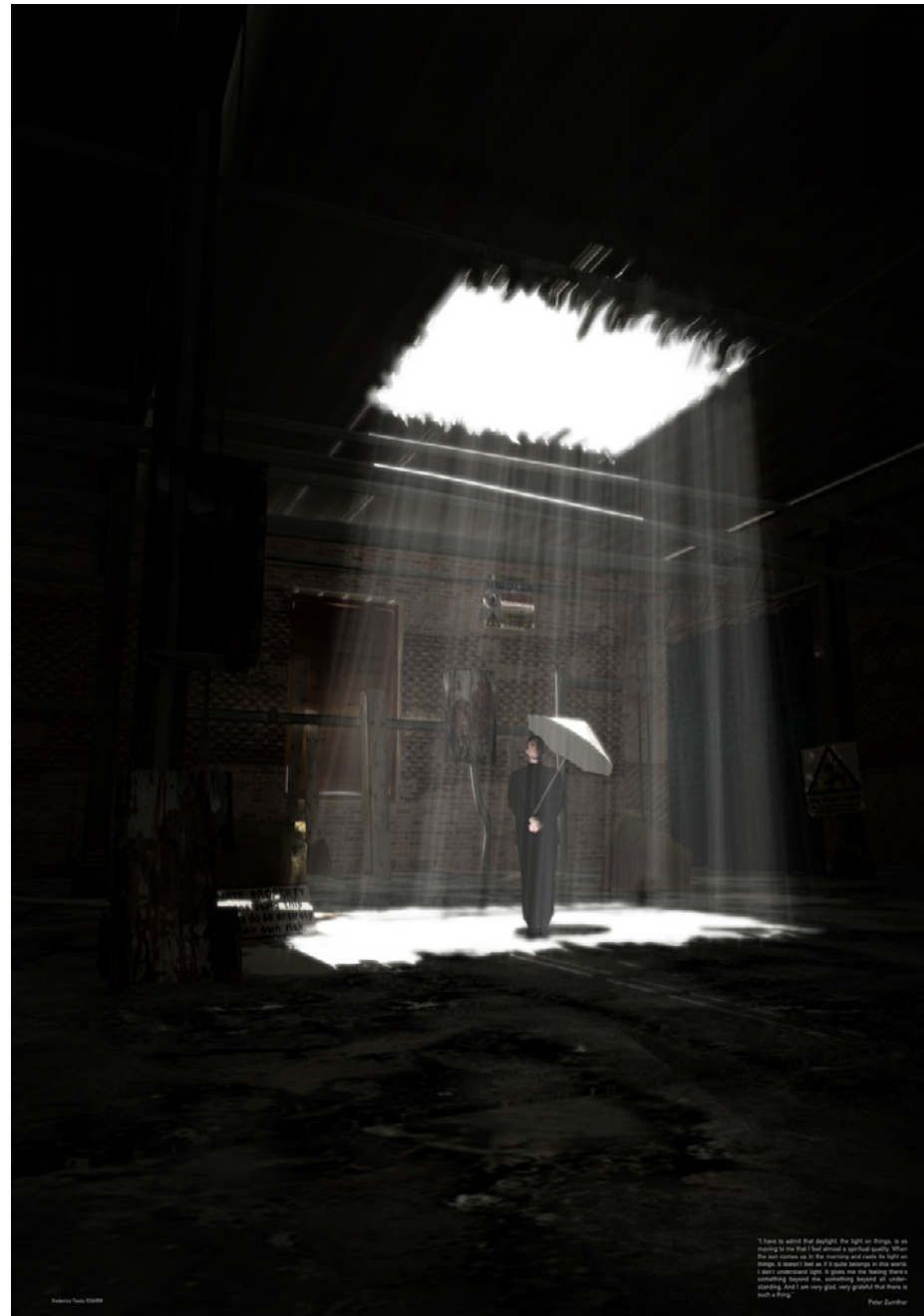
# Inspiration

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F. Testa (2007)

# Inspiration

Introduction  
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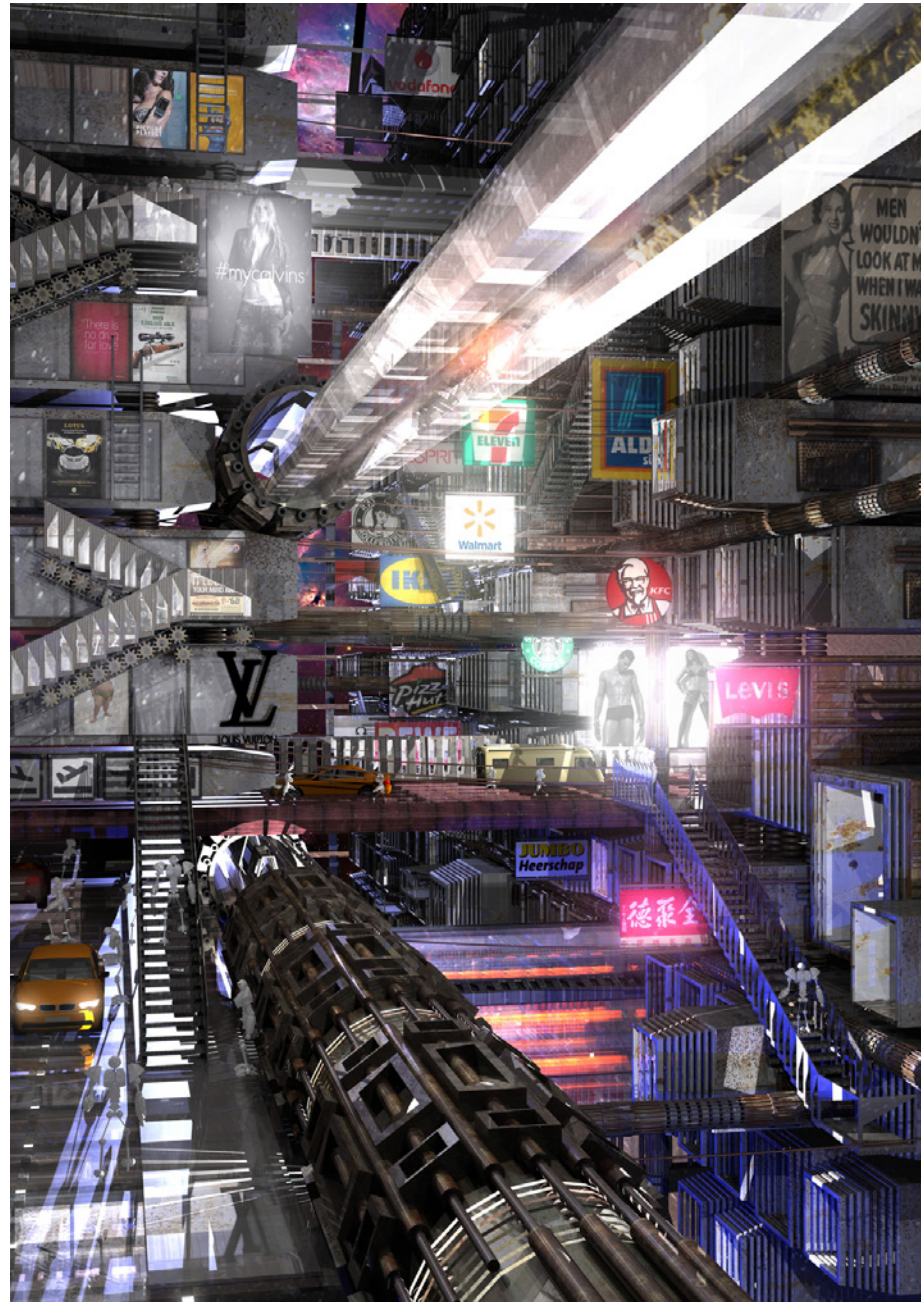


E. Reijnders (2007)



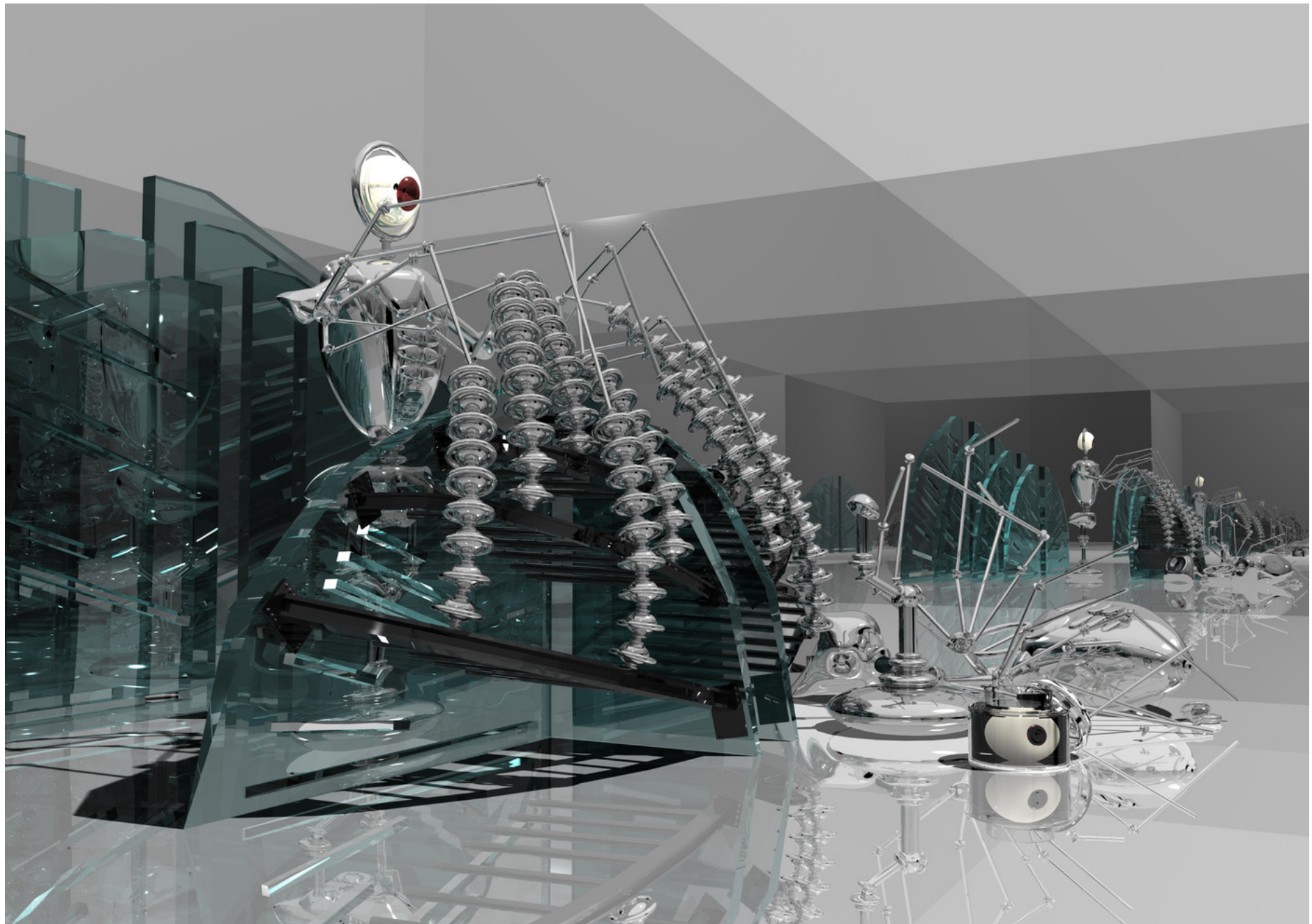
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# Inspiration

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L van der Oort  
(2008)

# Inspiration

Introduction  
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S. Poelman  
(2015)

# Inspiration

Introduction  
AR0771



N. Nymoen  
(2014)

# Inspiration

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