

[DIJON 3D](#) by [LORNET-DESIGN](#)

Web 3d 2011 demo showcase (Paris, june 21th 2011)

Hello everybody and welcome!

Let me first introduce myself: I am Francis Lornet, I am a freelance graphic designer by the nickname Lornet-Design, I am living and working in the small city of Dijon, mostly known all over the world for its incredible mustard, snails and the wines from Burgundy (they go well with smelly French cheese) ☺ and I'm going to try to entertain you with my humble and ambitious project : Dijon 3D.

As a background, one should know that I brilliantly (☺) succeeded in getting my master degree in History of arts and archaeology at the same time I discovered the Web and became very interesting in computer graphics.

The general idea that came up to my mind at that time was that computer graphics could be very helpful to archaeologists in showing in 3d what the past buildings or landscapes looked like, in order to disclose their mysterious knowledge.

Dijon 3D project surfs more or less on the same waves and is part of a wider ideal project.

I'm not at all a coder, even I'm sometimes forced to put my hands into greasy code lines, I consider myself more a user and a graphic content creator. Hopefully, I know skilled people ☺ and I'm part of a French VRML community called [Rêvemonde](#) for about 10 years.

Rêvemonde has been built around VRML lovers and builders and the now offline free Blaxxun public chat server.

The concept is to offer a cross-platform light 3d preview of the pedestrian area of the city of Dijon, which match the historical downtown part of the city.

Cross platform is a choice to be available to a broad audience through the Internet. This is done thanks to the developers of WebGL and X3D/X3DOM that made VRML/X3D possible in a web browser without plugins.

Light 3D means that, in order to show quite a lot of material, the work has to be done with very few polygons and has to emphasize on textures, as to show a recognizable and realistic product. It's a matter of balance between files weight and perceived rendering. It's also a manner not to show too much in a preview. The very aim is to attract people in the real world.

Dijon 3D project is limited to pedestrian areas that match historical and cultural heritage of the city: those very downtown streets are usually not accessible to cars in Europe because they're narrow and the usual policy is to preserve a certain social life and what's left from history available for tourists. This also means that automated 3d restitution using cars is not allowed.

This is all the very purpose of Dijon 3D: based on tourism statistics, tourists only stay few days in town. The 3d preview will allow foreigners to check what's interesting to see, if they have not much time to spend, or to decide to stay a bit longer because they find things to see and to enjoy.

Tourists will then become familiar with their new environment and will be able to locate any useful city features (hotels, shops, restaurants, cultural heritage and so on). As well as the benefits tourists from all over the world can take from a 3d ludic web preview of the medieval city of Dijon, local shops, restaurants, hotels and services providers can take a great advantage of being referenced in Dijon 3D.

This would be the matter of an exhaustive tourism portal, concerning not only the cultural heritage but also with advices from voluntary local people.

The working or building process is 4 steps:

- First step: a photo campaign which has to be done according to weather and light: pictures of façades have to be clear and do not need direct sun (over exposure) neither dark cloudy sky (under exposure)
- Each street side is ideally photographed at the same time
- Pictures are taken from a public pedestrian point of view, and privacy has to be respected (no pictures of people). Trashcans and others useless items are erased.
- The photos treatment is mainly a straightening and a colorimetric adjustment of original pictures, a resizing to a power of 2 textures then saved as jpeg files, gif or png files for transparency.
- Second step: the heights of the buildings are measured with a pointing laser in order to have 2 heights: one is the ground floor shops height, the other is the height of the rest of the façade, usually apartments. This can be useful in making separate geometries, for changing shops textures as they change quite often.
- Third step: the modelisation is based on the free public land registry. It gives a vectorial floor plan that has to be prepared and lightened for extrusion.
The heights of the roofs are not measured, but they are done according to satellite imagery and photos, in comparison with façades height.
- The façades are divided in two: ground level shops façades and rest of the building façade, for the sake of changing textures easily.
- Fourth step: the 3d textured model is exported as X3D or X3DOM (XML encoded X3D) thanks to the InstantReality exporter build by Fraunhofer Institute.
- Some attention is to be paid to 3D objects and textures names characters.
- The code is then lightened by hand (a bunch of useless zeros and some attributes). Features that are not available in the exporter are also written by hand (example is the 3d anchor link).

The final product results in a light 3d walkthrough embedded in a web page.

The demo you see is around 350 Kb xhtml page and textures weights 2 Mb. This is a lot, this is too much, I agree. But this is before using a tool like Chisel for VRML, that was very useful (InstantIO may do the trick in command line).

The files' weight will probably find a solution using inline files and visibility options.

Whats' new compared to existing solutions:

- Quality of the rendered buildings, focusing on textures from real
- Free walkthrough without plugin, easy access in a web browser
- Local work (no big brother globalization ☺)

The possible clients I'm targeting are shops owner, hotels, restaurants, services providers and of course tourism office as well as museums.

Sponsors maybe? I'm very open to any discussion ☺

The next step is to allow 3d viewers to get inside some of the remarkable buildings, done in the same light 3d, and maybe to allow chatting. It could be fun ☺

Conclusion:

This new manner of approaching web-marketing is actually based on primary original marketing: the first and critic element for a shop to run profitable business is the place where it is located and how attractive are the surroundings. With the coming of great commercial centers and malls, grouping all shops in a unique place, easily accessible and with huge free car parks, downtown small shops (and the social life running with it) are less and less a place to be. In Europe, downtown city centers usually have magnificent environment (historical buildings, a certain atmosphere and a rustling life) but still lack arguments to attract buyers.

People go where it's more practical and usually ugly, instead of enjoying beautiful and socialy valued environments.

Offering a ludic preview of a peaceful, cultural and soul pleasant environment could be a strong argument to attract people, as they can improve their minds at the same time they enjoy shopping and feel the typical life and atmosphere of cities deeply rooted in history.

And it's not a matter of "going back to the trees", but rather a matter of "keeping the trees alive".