

Project Progress Update

“The Black Hole”

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1. What has been done

- (a) Apart from a scene, which requires coordination of a third party, all filming has been accomplished.
- (b) A rough video has been edited, including the arrangement of the clips to be in the correct sequence. Having this allows us to have a clearer visualisation of the camera perspective which enables better modelling of the 3D objects.
- (c) Different black hole implementation techniques have been experimented to test which gives a more realistic effect.
- (d) 3D modelling of the COM1 building is currently in progress.

2. Difficulties Faced

- (a) One of the main difficulties faced is regarding the 3D modelling of the COM1 building with the use of 3D Studio Max.
 - Currently, the breaking down of the building into smaller pieces is unrealistic.
 - Another problem is the reflection on the COM1 building. When the model is static, a simple texture map suffices. However, when the pieces of the building is disintegrating and moving about, the reflection on the COM1 building is inconsistent and unreal.
 - Also, unreal lighting on the model renders the scene unbelievable.
- (b) Another problem is concerning that of the black hole. Current implementation of the black hole is still very rough and needs further improvement.
- (c) Lastly, the video is currently too lengthy.

3. Possible Solutions

- (a) Regarding the building break-down, particle systems can be used. But the problem with particle systems is that we have to define shape of small pieces by ourselves, or otherwise these pieces are automatically generated all in the same shape and size. If we can find a way to generate different shapes and sizes effectively, the next problem arises which is the proper movement of particles as

they are going towards the black hole. Currently different particle system manipulations like spiral wind is being learned and investigated.

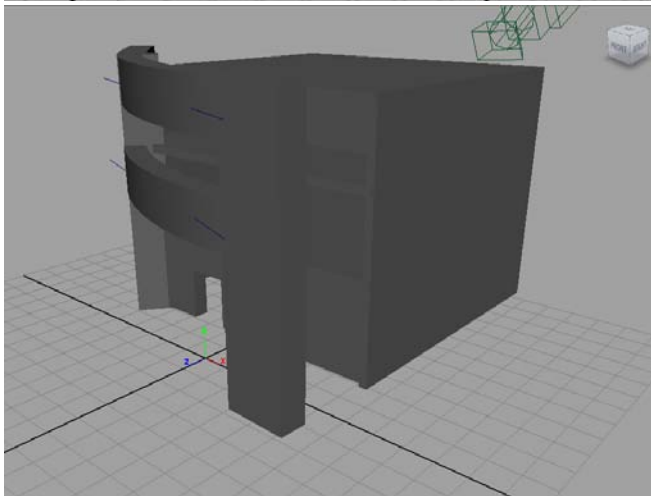
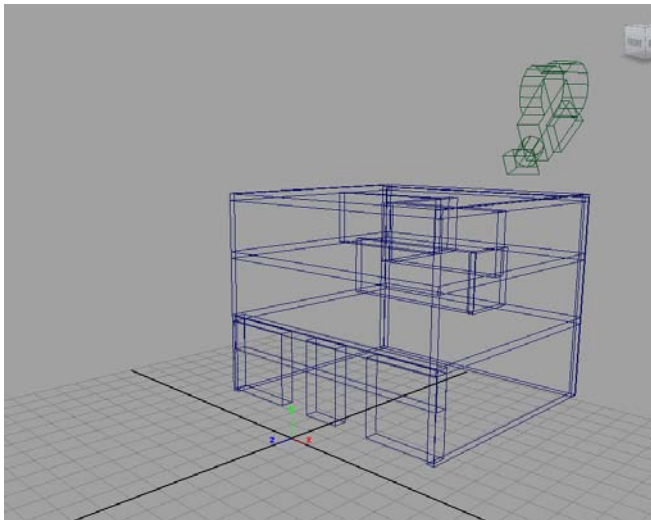
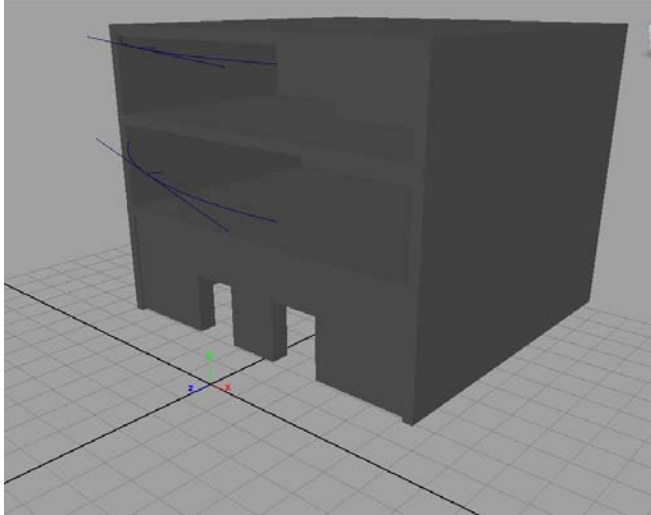
- (b) For the reflection problem, if the breaking down problem can be solved with a particle system, the reflection will be solved as well, because the resulting falling pieces are small enough to ignore the reflection. If the parts should be manually created, then we should somehow trick the human eye by adding a smoke effect to reduce the reflection visibility.
- (c) Finally, for the lighting system, sunlight system in 3DS Max will be used which will be learned.
- (d) More black hole effects will be experimented to achieve the best effects
- (e) Heavy editing on the video will be done

4. Schedule Ahead

Week	Activity
10 (26th March)	- Wrap up filming of remaining scene
11 (2nd April)	- 50seconds video without sounds, subtitles, effects
12 (9th April)	- Black hole effect fixed - 50secs video with sounds, subtitles, black hole effect
13 (16th April)	- Scene behind COM1 image-processed
14 (23rd April)	- Wrap up filming of " <i>Making of Video</i> " - 1 min video with sounds, subtitles, black hole effect and CGI COM1 building scene

5. Images and Videos of Work

(a) Three images of the model of COM1 with its three storeys, without texture.



(b) Black hole effect Video

Please refer to attached "*BlackHole1.mp4*".