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ESTABLISHING A VIDEO GAME STUDY AREA

Interactive Qualifying Project Report completed in partial fulfillment
of the Bachelor of Science degree at
Worcester Polytechnic Institute, Worcester, MA

Submitted to:
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Abstract

The goal of this project was to create a video game lounge area to be used by Interactive Media and Game Development students. Extrapolating upon recommendations from faculty, we designed several layouts and drafted multiple proposals to the IMGD Steering Committee to secure funding for the necessary items. After approval, we obtained furniture and video game equipment and ultimately established an area where current video games can be played.

Acknowledgements

We would like to extend our thanks to Professor David Finkel for advising our project. We would also like to thank Margaret Anderson for assisting us with assessing the equipment in the Gordon Library archives.

We wish to thank Professor Dean O'Donnell for not only assisting and guiding us throughout the project, but for also providing numerous pieces of artwork and games for the Pit.

We would like to thank the following faculty of Worcester Polytechnic Institute for contributing to our project: Professor Mark Claypool, Professor Robert Lindeman, and Professor Brian Moriarty.

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1. Introduction

Although it started as a project focusing on the video games in the Gordon Library special collection, the Video Game Archive Interactive Qualifying Project (IQP) became an attempt to establish a lounge area where students of the Interactive Media and Game Development (IMGD) program could play current generation video games for their classes and just for fun. During the second term of the project, the IMGD department acquired an empty space adjacent to their new office space on the second floor of Salisbury Labs that was formally a computer lab for the Biology department. The faculty hoped to use this space to create a much desired video game lab. The main goal of the lab would be to provide students with the ability to play the most recent video games for the major game consoles to keep them up to date on the workings of the video game industry. The lab would also allow students who do not own some, if not any, current games to not be left out of current game industry happenings.

Even though our focus shifted from the library archives to setting up what would be known as "The Pit," we visited the archives on a regular basis during the first two terms of our project to take inventory of and test the games and systems that the library owned. The equipment in the archives was previously organized into separate boxes, but none of the equipment was recorded into an inventory and no one knew what exactly was there or if it worked. For two hours each week during A and B term of the project, we made note of the systems, games, and accessories that were in the archives and also the results of our testing of the equipment. We were unable, however, to test and catalog everything in the library archives. Despite having an incomplete inventory at the conclusion of the project, we were able to give the library a fairly comprehensive list of the video game items they have.

Over the course of the first two terms of the project, we designed multiple layouts for the newly acquired IMGD space and drafted proposals to the IMGD Steering Committee. The layouts started elaborate and expensive, and we gradually cut back furniture and equipment until we reached a reasonable cost that fit within the constraints of the IMGD budget. To create layouts, we first measured the space and then used Microsoft Excel and an online room designing program to place furniture in the area. We originally overestimated the size of the space and the IMGD budget, so our first designs were overly ornate. After suggestions from the

IMGD Steering Committee, we created a final layout that consisted of one play area and was approved by the IMGD Steering Committee.

When we had a final plan that we could act upon, we obtained the necessary furniture and video game equipment and set up everything in the Pit. An entertainment center was built and delivered for us, but we needed to pick up and assemble a cabinet for storing games and accessories. Since the game consoles that we needed were donated by IMGD faculty, we only needed to purchase games and a television. Prior to setting up, we stored the television, games, and disassembled cabinet in Professor Finkel's office and transported everything to the Pit when necessary. For security, we tied down the consoles and television with cables and talked with Campus Police about the possibility of security cameras and installing card swipe devices.

To inform students of the new video game lounge, we held a Grand Opening Celebration. With assistance from the Game Development Club and the Gordon Library archives, we were able to have Rock Band and a Virtual Boy at the Grand Opening for students to play. We were able to tell attendees that the Pit was officially open, and had specific hours of operation for the current term, and that they could relay any suggestions to the IQP group via a mailing list we created.

For the remainder of the project, we monitored the Pit and made note of the students who used it from the Grand Opening to the end of the term. Our evaluation results show that students know about the Pit and are willing to use it, whether it is for IMGD classes or just for leisure. We hope that students will be able to take advantage of this new installation of the IMGD program and that it will be augmented and improved even after the conclusion of this project.

2. Background

To begin our IQP, we were each assigned one report from a past project with which to familiarize ourselves. These past projects looked into starting and expanding the video game collection in the Gordon Library archive and proposing a game suite area where these games could be played.

2.1 Establishing a Collection of Video Game Ephemera

The first IQP to establish a collection of video games for the Gordon Library archives was split into two groups: a game and hardware group, which was in charge of collecting old games and systems, and an ephemera group, which was in charge of collecting video game-related items that were not games themselves. The ephemera group consisted of Matthew Arnold, Nikki Benecke, and Brendan Perry and took place during the 2005-2006 academic year.[i] The main goals of the ephemera group, as laid out in their mission statement, were to preserve games and ephemera in the archives, to provide cultural information surrounding games to future viewers, and to provide an educational resource for the Interactive Media and Game Development program. In order to determine which donations to accept, the group created a tier system to use for reference. This priority system has four levels: the highest level is for the most sought after items, unique items, items over twenty-years-old, rare items, and famous/infamous items; the second level is for games, consoles, and peripherals that are not necessarily as rare or revered as items in the first tier; the third level is for useful ephemera, such as strategy guides and cheat devices; the bottom level is for all other ephemera such as posters and toys. The protocol that was established for acquiring donations was simply to have a potential donor contact the IQP group and, if the donation was deemed suitable to be accepted, the group and donor would arrange to meet and the donor would receive a receipt upon transfer of the donation. The IQP group advertised the archive and their acceptance of donations by posting flyers, table sitting at the Campus Center, articles in the school newspaper, and talking to people in the video game industry such as Steve Meretzky, Boston Postmortem attendees, and the IMGD Advisory Board. The results of the ephemera group's efforts were a mission statement for the archive, collection and donation guidelines, advertisement of the archives, connections with people in the game industry, and some donations. The group, however, was unable to create preservation

guidelines or protocol for how to use the items in the collection. Although they did not receive as many items as the games and hardware group, the ephemera group was able to secure some items, but the exact number of items or which items was not mentioned in their report. It is mentioned in the report that the group obtained some game design documents from local game companies; the complete list of items acquired may be located in the other group's report, which we were unable to obtain and gain information from at the time of our project.

2.2 Library Game Suite Proposal

In 2008, Dana Asplund, Khemarith Kang, Chris Moniz, and Jason Stasik proposed installing game suites in Gordon Library.[ii] A game suite, as defined by them, would be an area where students and faculty could play video games safely for academic purposes. During that time, there was no place on the WPI campus where students could play these classic games safely, so this group proposed the suite to fulfill this goal and to utilize the games stored in Gordon Library's video game archive. This group researched other libraries and universities that had dedicated gaming areas to learn their methods and policies when it came to playing or loaning games. They also looked into options for computer games, including online gaming services like GameTap, and legal issues surrounding game emulators. In the end, this group proposed several designs for a gaming facility where students and faculty could study games for class assignments or house events to help promote game-related clubs on campus and the library. This report, however, was merely a proposal and had not been acted upon for two years.

2.3 Video Game Archives: Massachusetts

This report was done by Josh Brunelle in 2009.[iii] In an effort to expand the already established Video Game Archive at the Gordon Library, the most recent IQP group to work on the Video Game Archive decided to focus on games developed in the Greater Boston area. Some of the companies mentioned in the report include: Infocom, who created the *Zork* series of games; Turbine, who created *Asheron's Call*, *Lord of the Rings: Shadows of Angmar*, and *Dungeons and Dragons Online: Stormreach*; Harmonix, who created both *Guitar Hero*, and *Rock Band* series of games; 2K Boston, who created the hit *Bioshock*, and its sequel.

In addition obtaining more items for the collection, another goal for the project was to research local game companies to give graduating IMGD Majors a more in depth look into some

possible employers. The project attempted to not only obtain copies of games produced by local game companies, but to solicit donations of game design documents and any other paraphernalia the companies would be willing to donate. Unfortunately, even after electronic and paper mail was sent to every contacted company asking for donations, the report did not explicitly state that any donations were made. Although there were presumably no donations made to the archive due to this project, the history report on game companies in the Greater Boston area still has the potential to help IMGD students learn about companies close to home.

3. The Archives

As mentioned in the introduction, Gordon Library houses a Video Game Archive in its Special Collections section. This archive contains various video game consoles from the past few decades, as well as a multitude of games to play on them and the equipment needed to use them. The full inventory of games and consoles contained in the video game archive can be found in Appendix A1.

One of our goals initially was to play the games in the archive. While simply having the collection might be interesting to certain people, games are primarily meant to be played.

We want to make use of the archive, so we decided that it was a good idea to take inventory and perform testing. For the first two terms of this project, we met at the archive once a week to verify what games and consoles were in the collection and what condition the equipment was in. First, we would decide what console we would test that day, find that console and its appropriate equipment, and set it up. Luckily, there were two televisions in the archive that we could hook the consoles into to play them, though one would later be removed from the archive. If we had not used the console before, we made sure that it turned on to verify that it was working. Once we had a working console set up, we then picked games out of the box, usually in the order we found them stacked, and tested each game one-by-one to make sure it was working. Checking to make sure a game worked could take anywhere from two minutes to about fifteen minutes, depending on the nature of the game. For example, you can play a typical platformer or space-shooter made in the 1980s, such as *Super Mario Bros.* or *Yar's Revenge* just a few seconds after pressing Start. Other games, such as role-playing games like *Final Fantasy VII*, often play a long cutscene before you can actually play it. If we had many controllers, we would swap out the controllers every now and then to make sure all the controllers work. We would do this for about two hours every week. If we did not finish everything for our console that day, we would either continue that console the next week or move on to something different to cover more ground. Detailed below are our reports of the condition of each console and its corresponding games.

3.1 Nintendo Entertainment System

One of the first consoles we tested was the Nintendo Entertainment System (NES). The NES, released in 1985, was the American version of Nintendo's first home video game console.

It is the Japanese equivalent of their Family Computer, or "Famicom", which was released a year earlier in Japan and had sold 2.5 million systems. It was released during a time when the home video game industry had crashed due to oversaturation in the market and had successfully rekindled interest in the industry.[iv]

Because we originally aimed to include equipment from the archive in the Pit, we wanted to start testing on a console we had multiple copies of, in case the one in the Pit broke. The archive houses three NES consoles. Two of them are in great working condition; the third also runs the games and allows you to play them, but there are lines on the screen when there should not be. We have not taken the time to really clean these consoles, but the graphic glitches of that NES might be solved with a cleaning.

Most of the accessories and games included in the archive that we tested worked very well, although we could not test all the peripherals available. The Power Pad and Robotic Operating Buddy can only be used with specific NES games, and those games are not available in the archive. The Power Glove, on the other hand, can work with most NES games, but it requires the player to input a code from the glove to make it work with a specific game, and we did not have any such codes to test it.

3.2 Sony PlayStation

The Sony PlayStation, released in Japan in 1994 and in America in 1995, was Sony's first home video game console. Nintendo had been dealing with Sony in the early 1990s to develop CD (compact disc) games. However, the president of Nintendo found their contract unacceptable and turned to another company for CD technology. Instead of abandoning their prior research, Sony used such research to develop their own console, cutting their ties completely from Nintendo.[v]

There are four Sony PlayStations in the archive, including a smaller "PSOne" model with an attachable screen. Because of the multiple consoles, this was another console we considered including in the Pit. We could not test the PSOne because the archive lacks an appropriate power supply for it. We could, however, check the other three PlayStation consoles. Two consoles function as they should, but the other one would skip the discs in the console.

Like the NES, most of the games and accessories that we could test worked on the PlayStations. *Oddworld: Abe's Odyssey*, however, had trouble playing its introductory movie.

There were also a couple of cases where the archive had cases for PlayStation games, but the game discs are not in those cases. Many of the discs for the PlayStation in the archive are demo discs, similar to the ones stores used to advertise the PlayStation's lineup in the days when it was on the market. We did not test most of those; we did not think they would be of any interest to most students or faculty.

3.3 Nintendo 64

The Nintendo 64, released in 1996, was the third home console Nintendo had developed. The console was named the Nintendo 64 because of its 64-bit CPU, as opposed to the 32-bit CPU of its current competitors: the Sony PlayStation and the Sega Saturn. It was the only one of those three consoles that still used cartridge games as opposed to CDs.[vi]

The archive only contains one Nintendo 64 console and five games. The console works, and most of the games that we tested were playable. We did not test *Blast Corps* because it is still sealed in its box.

3.4 Super Nintendo Entertainment System

When the Sega Genesis began to upstage Nintendo's sales in 1990, Nintendo decided to develop their own 16-bit console to compete with Sega. They wanted to do this with their original Famicom, but prices for components that would let them do this were too expensive at the time. This is why the Famicom and the NES are 8-bit consoles. Prices had dropped by 1990, however, so they developed the Super Famicom and (nine months later) its American counterpart, the Super Nintendo Entertainment System (SNES).[vii]

When we tested the SNES games, there was no SNES console in the archive. In order to test these games, we brought a console into the archive and played the games on that. Most of the SNES games turned on and could be played. *Mario Paint* turned on, but that game requires a special mouse controller that was not available in the archive in order to play it. Since that evaluation, the archive has acquired its own SNES console and two more games, none of which have been tested.

3.5 Game Boy

There was a box filled mainly with various Nintendo handheld gaming systems: Game Boy, Game Boy Color, and Game Boy Advance (released in 1989, 1998, and 2001,

respectively).[viii] Though they share similar names, some Game Boy Color games will not work on the original Game Boy, and games made for the Advance version cannot even fit in their predecessors, let alone run in them. However, each model is capable of playing all the games that worked on its predecessors. In short, the Game Boy Color can run Game Boy and Game Boy Color games but not Game Boy Advance games, and the Game Boy Advance can play games for all three systems.

AA batteries are not readily available in the archive, so we had to bring in batteries from an outside source. The Color and Advance models both require two AA batteries to run, but the original needs four. Because of this, we did not have the power to test the original Game Boy (the larger grey model). Every other Game Boy, however, functioned properly given proper power. Every Game Boy game tested was working. We did not test *Gradius Galaxies*, however, because it was sealed.

3.6 Sega Dreamcast

The Dreamcast, released in 1998 in Japan and in 1999 in North America and Europe, was Sega's last attempt at a home console. When Sony announced plans for a second iteration of its PlayStation, Sega tried to get a head start on them by abruptly ending the lifespan of their current console, the Sega Saturn. Despite its lifespan ending in early 2002, the Dreamcast was ahead of its time, including a built-in modem and far more storage space than the PlayStation and Nintendo 64.[ix]

Like the Nintendo 64, there is only one Sega Dreamcast in the archive. However, there are far more games available to play, and they mostly work well. The Web Browser cannot be tested without an Internet connection. There are cases for two *Sonic Adventure* games in the archive, but the games are missing.

3.7 Virtual Boy

The Virtual Boy is Nintendo's first gaming flop. When the Virtual Boy was first released in the summer of 1995, it was billed as a portable system with three-dimensional graphics. It displayed the games on a front screen and a back screen using black-and-red graphics. The system was not quite portable; the screens were located inside a binocular-shaped unit that did not attach to the player's head, while the controller is a separate piece of equipment that must be

held in both hands. A more serious issue with this system was the rumors of the system damaging the player's eyes if he or she played it for too long. Nintendo pulled the Virtual Boy off the market only six months after its release, and only fourteen games were made for it in North America.[x]

Prof. Finkel donated one to the archive, as well as three games that could be played on it. This system and the games were in working condition. When the Pit opened on February 9th, we featured the Virtual Boy.

3.8 Sega Genesis

The Genesis was the second home video game console Sega produced. Their first console, the Sega Master System, could not wrestle the grasp the NES had on American markets, so Sega developed and released the Genesis (known as the "Mega Drive" in Japan) in 1989 as an attempt to usurp Nintendo's lead. The Genesis remained a strong competitor in the video game market even when Nintendo released their SNES.[xi]

There were three Sega Genesis consoles in the archive: two commonly-seen Genesis consoles and a smaller model. One large model worked very well, so we used that one to test everything else. The other large model gave us an odd screen telling us that this console was made by Sega, even when we had a game in there. The smaller version was hard to test because we did not have the proper power adapter in the box containing the Sega Genesis equipment. We could get power to the small console using the AC adapter for an NES, but we could not play any games on it because the screen was snowy.

Most of the games we tested for the Sega Genesis would run and could be played, with the exception of *Ecco the Dolphin*. In addition to the controllers, there were also two baseball bats that were compatible with *Tommy Lasorda Baseball*, and they worked as well. However, we did not have the time to play every Sega Genesis game that the archive has. Those which we have not tested are left blank in the inventory list, which can be found in Appendix A1.

The archive also houses add-ons to the Sega Genesis: the Sega CD and the Sega 32X. There are certain games that only work if you hook these accessories onto the Sega Genesis and run the games from these add-ons. The Sega CD and 32X also required their own power supplies separate from the Genesis, and they need to be hooked into the Genesis through another cable. Setting these additions up is no easy task, and we did not have the proper hook-ups needed to run

them. We could not test these add-ons, much less the games that worked with them. Even if we could test the Sega CD, however, some discs for that console are scratched up, so they might not even run.

3.9 Atari 2600

Released in 1977, the Atari 2600 is arguably one of the most popular video game consoles. In its lifetime, about 25 million systems were shipped, and its library reaches around 900 different games. Even after the home video game industry crashed in the 1980s, caused in some part to disappointing games on the console, Atari 2600s continued to sell once the industry got back on its feet until 1989.[xii]

The Atari was the last console we were able to test. Both consoles in the archive would turn on, but only one of them was working properly. In order to start many games on the Atari 2600, one first had to flip some switches on the console to adjust the game settings and then push the reset switch. However, the reset switch on one of the Atari consoles would not reset or start the game, so we could not actually play games on that console.

The Atari games are not all in good shape, either. The archive held many Atari games, but about a third of them would not work. Many of the non-functioning games have a piece of their cartridge missing: a spring-loaded cap. The rest of the games will run, however, and they are playable if you have the right controllers. Most of the controllers in the archive function, aside from the Paddle controller, which is missing its dial.

3.10 What Has Not Been Tested

We did not have time to test everything the Video Game Archive held, so there is a fair amount of games and equipment whose status is currently unknown. We have already listed several examples of untested equipment above, but there is other hardware and software that we did not find time or resources to run.

The archive holds a Commodore 64 and an Intellivision within it, as well as several games for both consoles. The Commodore 64 was a home computer released by Commodore in 1982.[xiii] The Intellivision was a home console sold by Mattel in 1979.[xiv] We did not have time to verify how well these consoles work. The Commodore games are not all packaged with the console. The Intellivision, however, is packaged with its games.

We lacked appropriate equipment to test certain consoles. The archive contains a Microsoft Xbox (released 2001) and a few games for it, but we could not test this console out because it lacked the cables required to power it up and allow us to see the action on a television screen. There is a Nintendo GameCube (released 2001) in the archive and a controller for it, but there are no games that we can test on it. We can provide power to the Yamaha MXS Basic, a home computer sold in 1983 by Yamaha. However, it requires a computer monitor in order to use it, which was not available in the archive. Appropriate wiring required to make these consoles work might be available at an electronics store or hobby shop that deals with game equipment.

When we first saw that there were Sega Saturn games, we assumed that there would be a Sega Saturn console in the archive somewhere. Saturn was Sega's 32-bit console, released to compete with the PlayStation in 1995.[xv] We later discovered that there is no Saturn console in the archive. After we started testing the Genesis games, we also discovered that the Saturn game cases do not even contain their discs.

Finally, there are several boxes in the archive containing personal computer (PC) games. We did not test any of them because we did not have a PC prepared to play those games. There are no PC's readily available at the archive, and we did not want to remove the games from the archive to try to install the games on our own computers. If anybody wishes to test these games, that person will want to provide a computer that can run them.

4. Layouts and Proposals

During A-term and B-term of our IQP, we created and altered several different plans for the newly acquired "Pit" area. We started by creating multiple layouts for the IMGD video game lab space and gradually reduced the necessary items so that the total costs would fit within the boundaries of the IMGD budget.

Our first three plans were rather elaborate but gave us a basis from which to create our next plans. The first three plans and the ones that followed can be found in Sections 4.3 and 4.4 respectively. We decided to split the lab space into "play areas", where each area would have a television with game consoles, an entertainment center, and a sofa. The maximum number of play areas that seemed reasonable was three, and the minimum was one play area with multiple game consoles. We devised plans for one of each set of play areas (three, two, and one) and calculated the cost of the necessary furniture in the later plans. Although we did not find the total cost, the three-play-area plan seemed too expensive, so we reduced our plans to two-play-area layouts with varying pieces of furniture. When we had some two-play-area plans that seemed reasonable, we presented them to the IMGD Steering Committee and were told that the plans were still too expensive. Finally, we created a final layout, followed by a "bare-minimum" plan that was approved by the IMGD faculty. These plans were single-play-area layouts with consoles, one flat screen television, one entertainment system, one locking game and accessory cabinet, and seating.

4.1 Goals for the Pit

We had numerous goals for what would become the IMGD video game lab. The main goal was that IMGD students should be able to use the lab for playing games for their classes as well as just for fun. Since our IQP was initially geared towards the video game archive in the Gordon Library, we thought that some archive systems and games could be put in the IMGD video game lab so students could experience and learn from classic and historic games. We also wanted to have one of each current generation system (Wii, PlayStation 3, Xbox 360) so students could play the newest games and learn about the current status of the video game industry. We talked with Professor Brian Moriarty about which games to choose for the game lab. As sort of an extension of the new IMGD lab in Fuller Labs, we wanted to have some quality PC's in the game lab for students to play PC games, rather than just console games. We figured these PC's

could have similar, or the same, software that the computers in the IMGD lab had installed on them. Unfortunately, we were unable to include PC's in the final plan due to budgetary constraints. Another one of our more important goals was to create a social space for gaming and learning. Since gaming and game development are social activities, students would benefit greatly from having a social area where they could play games. A smaller goal that we developed later was to maintain the lounge area outside of the IMGD professors' offices; we initially thought about extending the game lab out into that space, but learned that professors use the area for meetings with students. With these goals we set out to create an educational and enjoyable game playing space that IMGD majors could use for years to come.

4.2 Creating Layouts

To begin laying out the area for a video game lab, we needed to measure the physical space of the lab area. We went to Salisbury Labs with a measuring tape and measured the lengths of the walls and the locations of the doors, and later noted the locations of power outlets and Ethernet ports. The original drawing with the dimensions of the space can be found in Appendix A3. We then created a top-down view map of the room in Excel; we created one layout in Excel and then printed two blank maps on which we could draw alternate layouts. The three initial Excel layouts can be found in Appendix A3. Later, we used an online Flash application to create more formal looking layouts to present to the IMGD faculty.

4.2.1 Choosing Furniture

When looking for furniture for the Pit, our goals were to find items that were somewhat cheaply priced but would hold up for a decent amount of time. The thinking behind our choices was that since we were operating under a tight budget, we could purchase cheap, temporary furniture now and then future IQP groups or IMGD professors could purchase nicer furniture later when the money was available. The main pieces of furniture that we decided we needed were a flat screen television, an entertainment center for the television and game consoles, a locking cabinet for housing games, controllers, and accessories, a sofa for seating three to four people, and some extra small chairs for additional seating. We visited P.W. Sherman, Inc., a furniture store in Worcester where WPI purchases most of its furniture, to scope out prices and measurements for sofas, entertainment centers, and locking cabinets, but ultimately only

purchased an entertainment center there. We also looked on IKEA's website for cheaper furniture, and purchased a rather inexpensive but decent locking cabinet at the IKEA in Stoughton, MA. For seating, we were unable to purchase a sofa and asked Michael Voorhis in the Computer Science department about where to obtain chairs for free. He was able to secure four chairs for us at no cost.

4.2.2 Choosing Video Games

With the basis of having current generation systems in the video game lab, we thought about what equipment we wanted to purchase. We started with the three main home consoles, Wii, PlayStation 3, and Xbox 360. Then we began thinking about what accessories we would need, both the basic necessities to play and what would be needed for a full set up. While deciding, we learned that Professor Rob Lindeman had a PlayStation 3, the game Time Crisis 4, and a Gun Con 3 controller (as well as a PlayStation 2), which he used for one of his experimental courses. Therefore, we could eliminate the cost of a PlayStation 3 and a game for that system and save money. For the basic necessities, we figured two controllers for each system would be sufficient. For the full set up, each console would have four controllers and possibly additional controllers, such as the Wii's Classic Controller and Wii Motion Plus accessory. For each item, we determined the cost by searching online at GameStop.com and using our own judgment. We eventually had to cut the Xbox 360 and its accessories and games out of our proposal due to lack of funds, and we focused on the Wii and PlayStation 3 set ups. To assist us in choosing games for these systems, we talked with Professor Brian Moriarty. He suggested we pick current games, rather than older games. From his suggestion and our own experience we created a list of the most popular games for each current generation system. This list of games can be found in Appendix A2. In the end, we were only able to purchase Wii game (Super Smash Bros. Brawl) and two PlayStation 3 games (Uncharted 2 and LittleBigPlanet). The final list of video game items can be found in Appendix A4., along with the two other lists of items in the previous proposals.

4.3 Initial Layouts

For our initial plans, we tried to differentiate our layouts with different themes to see which one seemed more logical. We created an over-the-top plan that was the most elaborate and

expensive of the three, a computer lab-style layout, and a more casual and social layout. These three layouts can be found in Appendix A3.

4.3.1 The Luxury Suite Layout

Our most ambitious layout was one with four ceiling-mounted projectors, four couches, two to four game and accessory cabinets, four PC's, and extra seating. Along with being the most expensive layout, it would also have been the most congested set up for the small space that we had to work with. We did not calculate the costs for this layout, but we expected it to be far over the limit of the IMGD budget.

4.3.2 The Lab Layout

The most conventional layout we created was one that imitated the layout of a generic computer lab. Desks were arranged into rows and the televisions and PC's would be arranged facing rows of chairs. This plan also called for removing the cubicle wall that separates the lab area from the IMGD professors' office lounge. Although not as crowded as the luxury suite plan, this layout would have been quite stuffy and not a very social area for gaming.

4.3.3 The "Game Night" Layout

Using our experience with setting up game nights for the Game Development Club, we developed a layout that maintained the social atmosphere we were aiming for and was more relaxed and casual than the previous designs. This layout situated the televisions on the walls of the space, with seating in the middle of the room. It also included PC's on both sides of the cubicle wall and a possible projector. Although it was quite ambitious and did not end up fitting our set of goals, we used the basic layout and design choices to formulate our future plans.

4.4 Revised Layouts

With advice from Professor Finkel, we began cutting back our ideas and creating more reasonable layouts that we could present to the IMGD Steering Committee for approval. We maintained the "game night" theme of our designs and decided that two play areas were sufficient for a maximum, in regards to space and cost, for our layouts. The three main proposals that we drafted and sent to the IMGD Steering Committee can be found in Appendix A4. The PowerPoint presentation with images of the layouts can also be found in Appendix A4. For these

three layouts, the cost of video game equipment is separate from the cost of furniture. The initial total cost for video game equipment was between $1,345 and $1,105.

4.4.1 The Expensive Double

The expensive double play area set up contained two flat screen televisions, two entertainment centers, two couches, one game and accessory cabinet, and five or more chairs for extra seating. Both televisions and entertainment centers would be placed on the right wall of the space, with both couches next to each other and facing the televisions. Extra seating would be placed behind or next to the couches. The accessory and game cabinet would be placed between the televisions, so students playing at both set ups could access it without disturbing the other players. This layout seemed like the optimal set up if cost was not an issue. Students would have two areas with multiple consoles on each (both current generation and archive), comfortable seating, and extra chairs for observers. The furniture seemed like it would fit the area comfortably without much crowding, unlike our first designs. The total cost of furniture for this layout was $3,010.

4.4.2 The Middle Double

The middle double layout is almost exactly the same as the expensive layout but with cheaper equipment. Instead of 46” televisions, the middle double has two 26” televisions; instead of two 7’ couches, the middle double has two 5’ 6” armless couches. All other furniture and video games would remain the same, and the positioning of the equipment would also remain constant from the expensive design. This layout would not be as ideal as the expensive layout, but it would be roughly $900 cheaper at $2,118.

4.4.3 The Single

The single play area layout is the cheapest and most minimalist plan of the three. It contains the same furniture as the expensive layout, but only one of each piece rather than two. There would be one television, one entertainment center, one couch, one game and accessory cabinet, and extra seating. The total cost would have been $1,930. When we actually implemented our final plan, it closely imitated this plan.

4.5 Final Layout

After presenting to the IMGD Steering Committee, we were given more constraints and suggestions for the final layout. Because of budget constraints, we were told to create a single play area layout, similar to the single layout we presented, that would be cheaper than the one we presented. Professor Mark Claypool wanted to see some PC's included if it was possible, and Professor Moriarty expressed interest in having a surround sound system. With these suggestions, we created a layout with the same furniture and games from before but with room for four PC's and PC tables and a surround sound system included in the costs.

The total cost for this plan was still extremely high (between $4,242 and $4,767, including video games), so we were told to make cuts where we could to shrink the costs. Much of the high cost was coming from games and systems, so we decided to cut the Xbox 360 and its games and accessories completely and decided to focus on the Wii and PlayStation 3. For these two systems, we reduced our scope to the basic necessities, rather than aiming for a full set up. When our costs still exceed the given budget, Professor Finkel offered to send his Wii from California with some games and controllers, so we would only have to purchase a Wii Nunchuck controller, a Wii broadband LAN adapter, and some Wii games. Along with Professor Lindeman's PlayStation 3 came two controllers, which we could remove from the list and only need to purchase games. Our final list was a drastic decrease from our initial ideas, but we were still able to obtain a good amount of equipment for the Pit. We also needed to cut costs from furniture, so we decided to remove the sofa and just find chairs for temporary seating. The total cost for our final, bare-minimum proposal was about $1,500. The bare minimum proposal can be found in Appendix A4.

5. Setting up the Pit

During late B Term and early C Term, our plans finally came to fruition when we started purchasing equipment and started setting up the Pit. We started by ordering an entertainment center, going out to get a game cabinet, and purchasing a TV along with games for the consoles. We also picked up donations from Professors Finkel and Lindeman and stored the consoles with the rest of our purchases.

On Monday, February 1st all of our hard laid plans finally became a reality when we set up almost all of the equipment in the Pit. This included assembling the game cabinet, making sure all the consoles were properly cabled down, and that all systems were in working order and playable.

5.1 Furniture

As already stated, we only purchased two pieces of new furniture for the Pit due to a small budget. The two pieces are an entertainment center ordered through P.W. Sherman, Inc. and a game cabinet purchased at IKEA. Since the entertainment center came fully assembled, all we had to do was order it through P.W. Sherman and wait for it to be delivered. The IKEA cabinet was the exact opposite. Like most furniture purchased at IKEA, full assembly was required in addition to the fact that we had to drive out to Stoughton to pick up the parts. Luckily, the assembly was not complicated, and with 3 people to work on it, we quickly had the whole cabinet assembled and filled with games.

5.2 Game Related Equipment

There is a lot of equipment that goes into enjoying video games, from the games themselves, to the system that the games are played upon, to the controllers that interface with the console, to the television that the game is viewed upon. All these items were carefully deliberated until we believed that we had come to the best and most economical decision.

5.2.1 Games

To get an idea what games would we should buy for the Pit, we initially talked to a few of the IMGD faculty. We initially were hoping to get a specific list of games that were exemplary works in a few specific genres. Most of the faculty that we spoke with simply told us

to get good, recently released games. While speaking with Professor Moriarty, he provided us with some insight as to why most of the faculty wanted us to buy popular games instead of specific titles that show off certain aspects of good game development.

Professor Moriarty explained to us that the video game industry works on the basis of imitation: if a game is good, not only will it sell well, but whatever properties that make it good will be imitated by games that follow it. So no matter what game shows off a certain quality of the game making process, it will soon be imitated by other games that want be just as good, if not better, than the exemplar.

With that in mind, we decided the best way to find out games were good for each system would be to look at the top selling games according to Wikipedia. A list of what games were deemed the most desirable games for the Pit is available in Appendix A2.

5.2.1.1 Wii

The Wii that we set up in the Pit was donated by Professor Finkel along with a copy of *Guitar Hero World Tour*. We received another donation to the Pit from Professor Lindeman which included a Wii Remote, a copy of Wii Sports Resort, a PS3, a PS2 and games for both systems. So between the copy of *Wii Sports* that comes with every Wii, *Wii Sports Resort* from Professor Lindeman and Guitar Hero, we already had three games for the Wii.

Unfortunately, due to budgetary constraints, we were only able to purchase one additional game for the Wii. At that point, the choices came down to *Super Smash Brothers Brawl*, or *Super Mario Galaxy*. We decided to purchase *Super Smash Brothers Brawl* because we want the Pit to be a social place, and *Super Smash Brothers Brawl* is more conducive to social gaming than the single player *Super Mario Galaxy*.

5.2.1.2 PS3

As mentioned earlier, Professor Lindeman donated a PS3 and *Time Crisis 4* for use in the Pit. Since we had one less game for the PS3 than the Wii to begin with, we decided to buy 2 games for the PS3 to try to even out the number of games for each system. We decided to buy one single player game, and one multiplayer game. After much deliberation, we decided that the two games that we would purchase for the Pit would be *Uncharted 2: Among Thieves* for the single player game, and *LittleBigPlanet* would be the multiplayer game.

5.2.3 PS2

We actually did not know that we would also be receiving a PS2 from Professor Lindeman until the day we went to go pick up the PS3 from him. Since we had already gone out to purchase the games for both the Wii and PS3, and because of budgetary constraints, we decided that while we would still set up the PS2, we would not out and purchase any games for it. Fortunately, the PS2 came with *Lego Batman: The Videogame* included with the system. In future years, when the IMGD department has more money to invest in the Pit, we hope to see more games for the PS2 available in the Pit.

5.2.2 Peripherals and Other Console Related Equipment

In addition to the games purchased for the Pit we also got a few extra peripherals to supplement the equipment we had received through donations. From the donations of Professors Finkel and Lindeman we had a Wii, two Wii Remotes, and one Nunchuk controller. We purchased an additional Nunchuk to go along with the extra Wii Remote donated by Professor Lindeman. We also purchased a broadband LAN adapter since the Wii does not have built in Ethernet capabilities, nor is it able to connect to the WPI wireless network.

5.2.3 Television

At the same time that we purchased all of the games and peripherals for the systems, we also purchased the sole TV for the Pit. Since we went with one television instead of two, we were able to afford a much larger television which everyone agreed is much better than two smaller TVs. The item we decided upon is a Dynex 42” LCD 1080p HDTV.

5.3 Security

Since we first came up with the idea to set up the Pit, security has been a major concern. If we are going to have several hundreds of dollars worth of equipment available for public use, we will need to ensure that nothing is stolen. In our original discussion of how to secure the Pit equipment, we came up with three measures that were easily implementable and would cover most security threats.

First, we would use security cables to tie the consoles to an immovable or incredibly heavy object. We would also lock all smaller items (games, controllers) in a cabinet and

distribute keys to faculty members and IQP members. Lastly, we would look into getting a security camera installed so that if anything was stolen, we could possibly catch the thief and recover all stolen items.

Through the course of setting up the Pit we implemented most of these measures, and became aware of other measures that could be used in the future to further reduce the risk of theft in the Pit.

5.3.1 Security Cables

Our first idea for how to prevent theft was to buy security cables (steel rope) and tie all the consoles and the TV to the entertainment center. This effectively stops people from going into the Pit and *quickly* walking away with a system. We do realize that these security cables will not stop thieves if they are determined enough: The cables can be cut; The anchoring points to the consoles can be snapped off; The anchoring point to the entertainment center can be cut off. We want the security cables to be a part of an entire system that will keep honest people honest and delay thieves long enough for them to either be caught on camera, or by someone else.

5.3.2 Locking Game Cabinet

One of the main reasons we went with the specific game cabinet from IKEA is that it has a built in locking system. With that in place, we could store all games sorted by which system they are playable upon, and while the Pit is closed, the cabinet can be locked to prevent theft of all games and peripherals.

The cabinet came with two copies of the key to the locking system, so we decided that one key should be kept by the IQP group, while the other should go to one of the IMGD faculty that have their offices next to the Pit. This ensures that if any of the faculty wants to play in the Pit that they have unrestricted access to the games, and that if students want to use the Pit, one of the IQP members would not need to be called to unlock the game cabinet.

5.3.3 Security Cameras

In addition to the locking game cabinet and security cables, our original plan included having Campus Police set up a security camera to monitor the Pit. When we spoke to campus police about getting a security camera installed, they had a few concerns over some of our security measures. On the use of security cameras, they were worried that one single camera

would not be able to cover an area as large as the Pit. Not only that, but apparently camera installations cost a lot more than we had budgeted for, so we would barely be able to pay for one camera, never mind multiple cameras.

5.3.4 Card Access

One way that we hoped to limit the number of people that would have access to the Pit would be to install swipe card readers on the doors leading into the Pit. This subject would be discussed and debated many time between Professor Finkel and the IQP group, trying to find the best solution to the problem. The main concerns are that the IMGD faculty that have their office next to the Pit like to keep the main door open so that any student who wished to visit and talk with them can just walk in.

If we were to install swipe card readers on the doors, the faculty would not be able to leave the main door open, and would have to rely on the hope that every student that wants to talk to them would have swipe access. We initially thought that giving all IMGD majors would be sufficient, but later realized that non-majors take IMGD classes. And beyond that, non-IMGD majors are commonly doing IQPs or MQPs that are run by IMGD faculty, and would thus need access to the offices.

When we spoke with Campus Police about the security cameras, we also tried to get their opinion on the best way to handle the problem of who has access to Pit and when they have access to it. Campus Police were able to give us two recommendations that should be looked into by future IQP groups when the IMGD department has more money to invest into the Pit.

The first solution suggested by Campus Police is to make the small cubicle wall separating the Pit from the lounge area into an actual wall, either with a door or not and make the Pit a separate room from the offices. Then the faculty could leave their door open so that all students could visit them and not compromise the security of the Pit. The Pit itself would have a card reader installed on its door so that only IMGD majors would have access to the Pit. An optional door could be installed in the wall between the offices and the Pit to allow the IMGD faculty access to the Pit without having to go out into the hall and back into the Pit. This seems like the optimal solution, but would obviously cost the most money.

We were also given another possible solution that would be a bit cheaper, but slightly less secure than walling off the Pit. A swipe card reader could be installed on the door adjacent to the

Pit and the door to the offices would remain the same. This would allow the IMGD faculty to open the door to the offices when they are around, allowing access to the offices and the Pit. When the day ended and the faculty went home, they would lock the door to the offices, and for the rest of the night, students would have access to the Pit through the card reader on the Pit door.

Although this will be highly dependent upon the future budget devoted to the Pit, we would like to make recommendations upon the best way to secure the Pit in the future. If budget allows, the most secure option would be to build a wall between the Pit and the lounge area, with card access on the Pit door. If that is not financially possible, then we recommend that at the very least, swipe access is enabled on the door to the Pit so that students can have access to the Pit after the IMGD faculty in the adjacent offices have gone home and locked up.

6. The Pit Grand Opening Celebration

On February 9th, 2010 we held a Grand Opening Celebration to inform IMGD students of the existence of the Pit and to play some games.

6.1 Planning the Grand Opening

6.1.1 Goals

We had some goals to achieve when planning the Grand Opening. Firstly, we wanted the Grand Opening to serve as an informative event for IMGD majors; many students had heard about the Pit from their professors but they may not have known the exact details about it. Secondly, we wanted to have the Pit serve its purpose for a large number of people to demonstrate how it should be used in the future: to play games. A minor goal we had was to advertise the video games in the library archives by having an archive system at the celebration.

6.1.2 Preparation

In order to prepare for the Grand Opening, we needed to pick a date to have the event, plan to have food, determine what games to have at the event, and advertise to IMGD majors. Having the event on a Tuesday evening, we thought, allowed more students to attend because of the possible lack of homework and Wednesday classes. We initially planned to have the event on February 2nd from 4:00PM to 6:00PM, but we pushed it forward a week due to lack of preparation and the occurrence of the Global Game Jam on January 29th, 30th, and 31st. We ultimately scheduled the Grand Opening for February 9th from 4:00PM to 6:00PM.

For food, we estimated that we would need to feed, at maximum, 50 people at the Grand Opening. We ordered 5 pepperoni and 7 cheese pizzas, as well as several bottles of water and liters of soda, from Chartwells on the first floor of the Campus Center. Instead of having the food out at the start of the event, we decided to delay the delivery to 4:30PM. This way, people would not just come for the food, eat or take some, and then leave.

Although the Grand Opening was meant to show what the Pit had to offer, we did not want only one play area for 50 people. We were all active members of the Game Development Club at the time of the project, so we planned on having another play area with *Rock Band* from the club. Therefore, the television in the Pit would be used by the Wii for *Super Smash Bros.*

Brawl and the GDC's television would be used by the GDC's PlayStation 3 for *Rock Band*. Since we wanted an archive system at the Grand Opening, we first had to choose which one would be the best. Professor Finkel suggested we showcase the Virtual Boy that he had donated to the archives, and it seemed like the most logical choice. The Virtual Boy is a very rare system that many students probably have not seen, let alone played, so it would surely pique the interest of the attendees. It is also a stand-alone console that does not require a television and just needs to be plugged in. Several days before the celebration we acquired the Virtual Boy from the library archives and stored it in Professor Finkel's office. We decided that we would set up the Virtual Boy on a table in the corner of the Pit and the members of the IQP group would keep an eye on it to make sure it remained safe.

To advertise the Grand Opening Celebration and the existence of the Pit, we wanted to create and hang up posters and send e-mail to IMGD majors. We created the poster found in Appendix A5 and printed several copies at the printing office in the basement of Boynton Hall. The posters were hung up in the IMGD Lab in Fuller Labs, on the corkboard in the basement floor of Fuller Labs, and on the corkboard in the Pit. Professor Finkel sent an e-mail to the IMGD-majors mailing list regarding the Grand Opening, and we sent a similar e-mail to the GDC-announce mailing list.

6.2 Results

Roughly 40 to 50 people showed up to the Grand Opening. Some came to play games and others just wanted to check out the new Pit area. All of the pizza that was ordered was eaten in half an hour or less, but many people stayed despite the lack of food. Others expected food at 4:00PM and left because it was not there until 4:30PM. Some of the IMGD faculty attended the celebration, too, including Professor Claypool, Professor O'Donnell, Professor Lindeman and Professor Snyder. The students seemed to enjoy the Pit but may have left with some misconceptions. Some students thought that the Virtual Boy would be a permanent system in the Pit when it was actually just for the Grand Opening. During the celebration we made several attempts to inform attendees that the *Rock Band* set-up was property of the Game Development Club and was only for the Grand Opening, but students may still have thought it was property of the Pit. Overall, the Grand Opening was a huge success and we were able to tell students that the Pit was up and running.

About a week after the Grand Opening we drafted an e-mail to send to the IMGD-majors and GDC-announce mailing lists to let them know that the Pit was officially open and that the Virtual Boy was returned to the library. We also wanted to inform students that we would be monitoring the Pit on Tuesdays and Fridays from 5:00PM to 8:00PM for the remainder of C-term, and that they could send suggestions and questions to the pitsuggestions mailing list that we created. More information about our evaluation of the Pit can be found in the next section, Section 7.

7. Evaluation

Starting after the official opening of the Pit, we evaluated the usage of the Pit to see how the fruits of our labor were being used. We were evaluating the Pit not only for our own personal satisfaction, but to be able to prove to the IMGD Steering Committee that the Pit will be used by the students in the future, and was a worthwhile investment of department money.

7.1 Physical Evaluation

The best way to see how and how many people are using the Pit is to go and observe them while they are using the equipment. This was facilitated by the fact that the game cabinet only came with two keys to unlock it. These two keys were in the possession of the IQP group and Professor Dean O'Donnell. We decided to give Professor O'Donnell the second key, because he seemed like the faculty member that was the most excited about the Pit. Since there are only two groups of people who unlock the equipment in the Pit, we only had to gather evaluation data from two sources: ourselves, and Professor O'Donnell.

7.1.1 Supervising the Pit

All members compared schedules after the Pit Grand Opening, and decided that Tuesday and Friday nights from 5:00PM to 8:00PM would be the best time for us to supervise the Pit. While supervising the Pit, we noticed that there was usually an average of two people in the Pit. Although this number is a bit lower than we expected, we were happy to note that we very consistently had people in the Pit, and would only go 30 minutes at most without anyone else using the Pit.

7.1.2 Talking to Professor O'Donnell

Apart from the IQP group, the only other person who had a key to the game cabinet was Professor O'Donnell. We had asked him to provide some rough evaluation numbers, such as how often people ask him to let them use the Pit and how many people are usually playing at one time.

There were three main conclusions that we could draw from talking with Professor O'Donnell. Firstly, he would only open the Pit when he was going to be in his office and could "supervise" the Pit or if he knew the student in question on a personal basis. While this is not an

optimal solution (not everyone can play whenever they want) it does ensure a higher level of security by only allowing students to play when supervised (or when deemed trustworthy by Professor O'Donnell).

The other two conclusions are statistical in nature: the average play time is 1-2 hours, and the average number of people is anywhere between 2 and 5. Professor O'Donnell also stated that he was very happy with these conclusions. He said that "Those numbers [2-5 students at a time] are actually nice for the size of the room and the amount of traffic [through the Pit]." It is also easier to supervise students if they are only there for an hour or two, so if a professor has to go teach a class, the students are most likely going to go to a class as well.

7.2 Electronic Evaluation

Since we could not spend all of our time in the Pit, we decided that we should have a way to evaluate the Pit without any of the IQP members being physically present in the Pit.

7.2.1 Suggestion Box

Our original idea was to set up a physical suggestion box and have people write out their recommendations for the Pit. We soon realized that having to come to the Pit and empty the suggestion box every few days would be a very slow way for people to relay their thoughts to us. So we decided to make a virtual suggestion box. We registered pitsuggestions@wpi.edu as an alias that forwards to our IQP group and Professor Finkel. This way, when people wanted to tell us something, we immediately knew about it, and could work to fix any problems immediately.

7.3 Conclusions

The Pit seems to be a greatly appreciated use of the extra space near the IMGD offices. Unfortunately, it seems to be getting less traffic than we would like. We have concluded that this is mainly due to the fact that the space is still so new, and has limited hours of operation. By next term, we expect attendance to increase as word spreads about the Pit and the possibility of Professors assigning homework to be completed in the Pit.

The only suggestions we can make to drastically improve usage of the Pit is to encourage Professors to assign homework that can be completed in the Pit, and to have them be sure to mention this fact. Not only will this force students to learn about the Pit and where it is, the students will realize how valuable an asset the Pit is to their education.

8. Conclusions and Future Concerns

8.1 Conclusions

This IQP has completed two major projects of note: We designed and set up the first video game lab on campus, and created an inventory of items contained in the Gordon Library's Video Game Archive.

8.1.1 The Pit

In the course of three terms, our IQP group went from idly talking about the merits of a video game lab on campus to the design and eventual implementation of the Pit. We went through many revisions and design changes to eventually come up with the best solution with the given constraints. From what we have seen so far from the Grand Opening Party and supervising the Pit, the space is greatly appreciated by the student body.

8.1.2 Archive Inventory

In Appendix A1 there is a list of items in the Video Game Archive and their operational condition. Although the collection is far from exhaustive, it is quite impressive and almost all items are in perfect working order. By having an inventory listing of what is in the archive, the Gordon Library can now know at a glance what items it has acquired and what items it needs to acquire if a certain set or series of games is desired. The inventory list will also facilitate any advertisement of the video game archive by providing a list of what is available to anyone who wants to know more about the archive.

8.2 Future Concerns

Try as we might, we were not able to do everything we wanted to make the Pit as good as it could possibly be. These are all the things that would have been done if we had been given more time/money. We believe that this is a great starting place for any group (IQP/MQP) that decided to continue what we have started with the Pit.

8.2.1 Pit Website

Having a site on the IMGD web space dedicated to informing people about the Pit would be a great way to attract attention, and thus get more use out of the Pit. Any group that works

with the Pit should not only put a site up about the Pit, but also make sure to update it with times the Pit is open.

8.2.2 Modern Consoles

Due to monetary limitations, we were not able to procure all the necessary equipment to fully stock the Pit. These items range from cables to whole consoles, so any investment into the Pit can be put to good use, no matter how small or large the donation

To complete the Pit's collection of current generation systems, an Xbox 360 is required. This should be the next large investment that is made into the Pit. Not only will the system be needed, but also extra controllers and games for it.

Most of the systems in the Pit not have one or two controllers when they can support up to four. We would like to see bought for the Pit: two more Wii remotes and Nunchuks to accompany them, two more PS3 controllers, and four GameCube controllers to be used with the Wii.

We would like to have an HDMI cable for the PS3 and if acquired, the Xbox 360 so that people can play these systems in the highest definition possible. On the same note, if possible, we would like to see the Wii equipped with component cables, to allow higher definition output than the standard RCA cables.

There are always new games coming out for every system. We want the Pit to stay as up-to-date on current releases as possible, so any effort made to expand and update the Pit's collection of games will always be appreciated.

8.2.3 Archive Systems

Our original reason for inventorying the systems and games in the Library Archive was to hopefully devise a plan to allow students to play archival systems and gain insight into the early days of video games. Unfortunately, this never happened, so if any group could come up with a viable solution to this problem, we would love to see some older systems in the Pit.

8.2.4 PCs

Our original plan was to include PCs in the Pit to encourage PC gaming to happen in the Pit, thus leaving more PCs in the IMGD Lab open for students to do homework on. We looked into several services to provide PC gaming for the Pit.

There would obviously be the Steam[xvi] gaming platform installed on all Pit computers, but we also looked into a few options to be able to provide Steam games to student who might not happen to own certain games on Steam.

Steam offers a service called SteamU that is specifically targeted to colleges and universities. It provides not only the Source engine to be used in the classroom, but as a consequence, a few games made by Steam (Half Life series, Portal, Left 4 Dead series) that are playable by everyone.

Steam also offers a pay-per-computer Cyber Café service which provides 100+ games to anyone who logs onto the specific computers. Not only would this encourage people to game in the Pit, but LAN events could easily be run in the Pit due to the fact that the games are registered to the computers, not the people on them.

GameTap offers a pay-per-month service where you have unlimited access to past and current games. If we were to create an account for every computer installed in the Pit, people could play whatever games they wanted. This would provide a different and unique game library to any of the Steam based solutions.

8.2.5 GameFly Account

GameFly offers a pay-per-month, one game at a time for as long as you want video game rental service. We wanted to get a GameFly account to allow IMGD professors to assign required play of non-freeware games. That way, the professor would order the game through GameFly for the week of the assignment and anyone who does not already own the game could go to the Pit and be able to complete their homework assignment.

8.2.6 Archive Inventory

We unfortunately did not finish the inventory of all of the items belonging to the video game archive. Any future group should not only test the systems we did not get to, but should work on getting the inventory of the archive published somehow so that more people will not only be aware that there is a video game archive, but of its exact contents.

8.2.7 Security

As stated in the security section, there are many things that can be done to tighten security in the Pit. What we would most like to see in the Pit is to have a full wall installed

between the lounge and the Pit and the door to the Pit equipped with an RFID card reader. But if that cannot be done, any improvements to security are always appreciated.

8.2.8 Decorations

As of right now, the walls of the Pit are almost barren and quite devoid of color. The few posters that are hanging right now were donated by Professor Dean O'Donnell. Many of the Professors whose offices surround the Pit have suggested that he hang student art in the Pit to encourage a greater sense of community amongst IMGD majors.

Appendix A1. Gordon Library Video Game Archive Inventory

Video Game Archive	
System	Condition
Atari 2600	
811464167	Working
81958512	Working
Commodore 64	
P01981210	
Intellivision	
AT 1153604	
Nintendo Entertainment System	
N5965280	Grainy, but working
N23651507	Good
N11649593	A little glitchy
Super Nintendo Entertainment System	
UN808092108	
Nintendo 64	
NS103121183	Working
Nintendo GameCube	
None	
GameBoy	
Game Boy	
Game Boy Advance (Arctic)	Working
Game Boy Advance (Fuchsia)	Working
Game Boy Color (Atomic Purple)	Working
Game Boy Color (Atomic Purple)	Working
Game Boy Color (Grape, CG501308216)	Working
Game Boy Color (Grape, CG501308674)	Working
Game Boy Color (Kiwi)	Working
Game Boy Color (Strawberry)	Working
Game Boy Color (Teal)	Working
Virtual Boy	
VN102892312	Working
PlayStation	
PSone w/ screen	Power supply missing
U1873347	Working

U7292420	Working (maybe a little glitchy)
U2985186	Working
Sega Genesis/32X/Sega CD	
Genesis 16-Bit (30W56678)	Working
Genesis 16-Bit (020439534)	Not working
Sega CD	Untestable
32X	Untestable
32X	Untestable
Sega Saturn	
Sega Dreamcast	
DU969807078	Working
XBox	
3008575 41105	Untestable; no cables
Yamaha MXS Basic	Turns on; untestable

Video Game Archive	
Game	Condition
Atari 2600	
Air Sea Battle	Working
Asteroids	Working
Asteroids	Not working (401 on sticker)
Backgammon	Working
Battlezone	Not working
Berzerk	Working (clear sticker picture)
Berzerk	Not working (dirty sticker picture)
Big Bird's Egg Catch	Not working
Breakout	Working
Casino	Working
Chopper Command	Not working
Combat	Working
Cookie Monster Munch	Working, missing controller
Defender	Working
Donkey Kong	Working
E.T. The Extra-Terrestrial	Working
Frogger	Not working
Haunted House	Working
Laser Blast	Not working
Maze Craze	Not working
Missile Command	Not working
Moon Patrol	Working
Ms. Pac-man	Working

Outlaw	Working
Pole Position	Working
Raiders of the Lost Ark	Working
RealSports Football	Not working
River Raid	Working
Seaquest	Not working
Sneak 'n Peek	Working
Stampede	Not working
Star Raiders	Working
Starmaster	Working
Street Racer	Working
Surround	Working
Towering Inferno	Working
Trick Shot	Working
Video Chess	Working
Video Olympics	Not working
Video Pinball	Working
Word Zapper	Working
Yars' Revenge	Working
Commodore 64	
Defender	
Frogger	
Jungle Hunt	
Moon Patrol	
Music Machine	
Pole Position	
Q-bert	
Star Post	
Intellivision	
Advanced Dungeons & Dragons	
Armor Battle	
Astrosmash	
Auto Racing	
Bomb Squad	
Boxing	
BurgerTime	
Football	
Frog Bog	
Frogger	
Lock 'N' Chase	
Major League Baseball	
Night Stalker	
Pitfall	
Poker & Blackjack	
Sea Battle	
Skiing	

Space Armada	
Star Strike	
Sub Hunt	
Triple Action	
Utopia	
Nintendo Entertainment System	
Adventure Island	Working
Anticipation	Working
Back to the Future	Working
Castlevania	Working
Dragon Power	Working
John Elway's Quarterback	Working
Mario Bros.	Working
Metroid	Working
Ninja Gaiden	Working
Pac-Man	Working
Super Mario Bros. 2	Working
Super Mario Bros. 3	Working
Super Mario Bros./Duck Hunt	Working
Super Mario Bros./Duck Hunt (brown on back)	Working (glitch line sometimes)
Super Mario Bros./Duck Hunt	Working
Tetris	Working
The Legend of Zelda	Working
The Legend of Zelda II	Working, glitchy, mark on front
The Legend of Zelda II	Working
Wheel of Fortune	Working
Super Nintendo Entertainment System	
Desert Strike	Working
Donkey Kong Country	Working
Mario is Missing!	Working
Mario Paint	Working
Space Invaders	Working
Super Mario All Stars	Working
Super Mario World	Working
Super Mario World	
Super Mario All Stars	
Nintendo 64	
Blast Corps	Sealed
Perfect Dark	Working
Super Mario 64	Working
The Legend of Zelda: Majora's Mask	Working
The Legend of Zelda: Ocarina of Time	Working
Nintendo GameCube	

None	
GameBoy	
Battleship (GB)	Working
Centipede (GBC)	Working
Centipede (GBC)	Dirty sticker, working
Gradius Galaxies (GBA)	In box, sealed
Mega Man Zero 3 (GBA)	In box, working
Metroid II: Return of Samus (GB)	Working
Monopoly (GB)	Working
Ms. Pac-Man Special Color Edition (GBC)	Working
Mysterium (GB)	Working
Namco Museum (GBA)	Working
Nanoloop (GB)	Working
Pac-Man Collection (GBA)	Working
Pac-Man Special Color Edition (GBC)	Working
Pocket Bomberman	Working
Pokémon Gold Version	Working
Super Mario Advance (GBA)	Working
Super Mario Land (GB)	Working
Super Mario Land (GB)	Working
Super Mario Land 2: 6 Golden Coins (GB)	Working
Tetris (GB)	Working
The Best of Entertainment Pack (GBC)	Working
Virtual Boy	
Mario Clash	Working
Mario's Tennis	Working
Wario Land	Working
PlayStation	
Bust-a-Move 2 Arcade Edition	Working
Bust-a-Move '99	Working
Dance Dance Revolution	Case, no game
Final Fantasy VII	Disk 1 Working
Lunar: Silver Star Story Complete	Missing game
Monster Rancher 2	Working
Oddworld	Working gameplay, intro movie is glitchy
Oddworld: Abe's Exoddus	Working
Spyro the Dragon	Working
Vandal-Hearts II	Working
Warhammer: Shadow of the Horned Rat	Working
Official US PlayStation Magazine Nov. 2000	Working
Official US PlayStation Magazine Dec. 2000	
Official US PlayStation Magazine Jan. 2001	
Official US PlayStation Magazine Mar. 2001	
Official US PlayStation Magazine Nov. 2001	

Official US PlayStation Magazine No. 07	
Official US PlayStation Magazine No. 08	
Official US PlayStation Magazine No. 09	
Official US PlayStation Magazine No. 10	
Official US PlayStation Magazine No. 13	
Official US PlayStation Magazine No. 14	
Official US PlayStation Magazine No. 15	
Official US PlayStation Magazine No. 16	
Official US PlayStation Magazine No. 17	
Official US PlayStation Magazine No. 18	
Official US PlayStation Magazine No. 19	
Official US PlayStation Magazine No. 21	
Official US PlayStation Magazine No. 23	
Official US PlayStation Magazine No. 24	
Official US PlayStation Magazine No. 25	
Official US PlayStation Magazine No. 26	
Official US PlayStation Magazine No. 27	
Official US PlayStation Magazine No. 29	
Official US PlayStation Magazine No. 30	
Official US PlayStation Magazine No. 31	
Official US PlayStation Magazine No. 32	
Official US PlayStation Magazine No. 33	
Official US PlayStation Magazine No. 34	Working
GameShark Version 5	Working
Sega Genesis/32X/Sega CD	
After Burner III (CD)	
Air Diver	Working
Altered Beast	Working
Bram Stoker's Dracula (CD)	
Chuck Rock	
Comix Zone	Working
Contra Hard Corps	Working
Ecco the Dolphin	Not working
Ecco the Dolphin (CD)	Extremely scratched
Eternal Champions	
Fight Through Time Tyrants	
General Chaos	
Ghouls 'n Ghosts	Working
Jeopardy (CD)	
John Madden Football '93	Working
NBA Jam Tournament Edition (32X)	
Night Trap (CD 32X)	
Night Trap (CD)	
Road Blasters	Working
Road Rash	Working
Road Rash 3	Working
Road Rash II	Working

Shining Force II	Working
Sonic 2	Working
Sonic 3D Blast	Working
Sonic CD (CD)	Extremely scratched
Super Hang On	Working
Super Street Fighter II	Working
The Lost Vikings	
Tommy Lasorda Baseball	Working?
World Cup USA 94	
Sega Saturn	
NiGHTS into Dreams	Missing, case only
Panzer Dragoon	Missing, case only
Sonic 3D Blast	Missing, case only
Sega Dreamcast	
Chicken Run	Working
Crazy Taxi	Working
Demolition Racer: No Exit (Demo)	Working
Hidden & Dangerous	Working
Iron Ages	Working
Monaco Grand Prix	Working
Ready 2 Rumble Boxing	Working
Sega Dreamcast Generator Vol. 1	Working
Sonic Adventure	Gone
Sonic Adventure 2	Gone
Soul Calibur	Working
Spec Ops II: Omega Squad	Working
Suzuki Alstare Extreme Racing	Working
Vigilante 8: 2nd Offense	Working
Web Browser	Not Testable
Wild Metal	Working
XBox	
LEGO Star Wars: The Video Game	
Project Gotham Racing 2	
The Legend of Spyro: A New Beginning	
Official Xbox Magazine Demo discs 1-57	
Official Xbox Magazine Demo discs 72 and 72	
Official Xbox Magazing Final Fantasy XI Beta	
PC	
A-10 Cuba!	
Age of Empires Gold Edition	
America's Army: Special Forces	
Anachronox	
Ardennes Offensive	
Asheron's Call 2: Fallen Kings	

Baldur's Gate	Case, no game
Battle Zone	
Blair Witch Volume 1: Rustin Parr	
Civilization II	
Command & Conquer	
Dark Reign	
Dark Reign Expansion: Rise of the Shadowhand	
Decent: Free Space The Great War	
Descent	
Diablo	
Duke Nukem 3D	
EF 2000 V2.0	
Emperor of the Fading Suns	
Epic Pinball	Sealed in case
European Air War	
Fallout	
Fighter Squadron	
Heavy Gear	
iMIA 2 Abrams	
Independence War: Deluxe Edition	
Intellivision Lives!	
Magic Carpet	
Master of Magic	
Mech Comander Gold	
Mech Warrior 2	
Mech Warrior 2	
Mech Warrior 2	
Mech Warrior 2 Expansion Pack: Ghost Bear's Legacy	
Mech Warrior 2 Merchenaries	
Mech Warrior 3	
Myth: The Fallen Lords	
Nancy Drew: The Final Scene	
Nancy Drew: Treasure in the Royal Tower	
Nascar Racing	
Pharaoh	
Pro Pilot	
Quake	
Quake II	
Quake Mission Pack No. 1	
Relentless: Twinsen's Adventure	
Shogo: Mobile Armor Division	
Star Wars: Jedi Knight Dark Forces II	
Star Wars: Jedi Knight II: Jedi Outcast	
Star Wars: Tie Fighter	
Star Wars: X Wing	
Star Wars: X-Wing vs. Tie Fighter	
Syndicate Plus	

The Fallen	
Tom Clancy's Rainbo Six Mission Pack: Eagle Watch	
Tom Clancy's Rainbow Six	
Tomb Raider	
Total Annihilation	
UFO Enemy Unknown	
Unreal	
Viper Racing	
Warcraft II: Tides of Darkness	
Warcraft III: Reign of Chaos	
Warlords III: Reign of Heroes	
Wing Commander III: Heart of the Tiger Disc 1	
Wing Commander III: Heart of the Tiger Disc 2	
Wing Commander III: Heart of the Tiger Disc 3	
Wing Commander III: Heart of the Tiger Disc 4	
Wing Commander IV: The Price of Freedom	
Wing Commander Privateer	
Wing Commander Prophecy	
X-Com: Apocalypse	
You Don't Know Jack	
You Don't Know Jack Movies	

Video Game Archive	
Accessory	Condition
Atari 2600	Working
Joystick	Working
Joystick	Working
Joystick	Working
Joystick	Working
Joystick	Working
Joystick	Working
TAC Joystick	Working
TAC Joystick	Working
Wico Command Control Joystick	Working
Paddle Controllers	Not working
Commodore 64	
Cassette Player	
Intellivision	
Nintendo Entertainment System	
Controller	Yellow, working

Controller	Yellow, working
Controller	Working
Controller	Working
Controller	
Orange Zapper	Working
Zapper	Working
Zapper	Working
Power supply	
Power supply	
Power supply	Duct-taped
RF Switch	
RF Switch	
RF Switch	
Power Glove	
Power Pad	Untestable
Robotic Operating Buddy (R.O.B.)	Untestable
Super Nintendo Entertainment System	
Nintendo 64	
Nintendo GameCube	
Controller	
GameBoy	
Madness Gameware case	
Game Boy Color case	
Game Boy Color case	
GBA Link Cable (Pelican)	Unopened
Nyko GBC Worm Light	Unopened
Nyko GBC Worm Light	
Various cases	
Game Boy Game Pak Cases	Unopened
Action Video Monopoly Instruction Booklet	
Centipede Instruction Booklet	
Monopoly Instruction Booklet	
Ms. Pac-Man Special Color Edition Instruction Booklet	
Namco Museum Instruction Booklet	
Pac-Man Special Color Edition Instruction Booklet	
Pocket Bomberman Instruction Booklet	Cover ripped
Super Mario Advance Instruction Booklet	
The Best of Entertainment Pack Instruction Booklet	
Virtual Boy	
Controller	Working
Power supply	Working

Battery pack	
PlayStation	
Power cord	Working
Power cord	Working
Power cord	Working
Component cord	Working
Component cord	Working
"Performance GamePad" Controller	Working
"Turbo Set" Controller	Working
Green "GamePad Colors" Controller	Working
Sony Controller	Working, X button is sticky
Sony Analog Controller	Working
Controller extending cable	Working
Memory card	
Sega Genesis/Sega CD	
Controller 1	
Controller 2	Working
Controller 3	Working
Controller 4	Working
Batter Up Baseball Bat controller (K434018162)	Working
Batter Up Baseball Bat controller (No serial number)	Working
Sega Saturn	
Sega Dreamcast	
Controller 1	Working
Controller 2	Working
XBox	

Appendix A2. List of Current Games

Wii:
-Wii Sports
-Super Smash Bros. Brawl
-Super Mario Galaxy
-New Super Mario Bros. Wii
-Mario Kart Wii
-The Legend of Zelda: Twilight Princess
-Wii Fit
-Okami
-No More Heroes
-de Blob
-Super Paper Mario
-Zack & Wiki: Quest for Barbaro's Treasure
-The House of the Dead: Overkill
-Wii Play

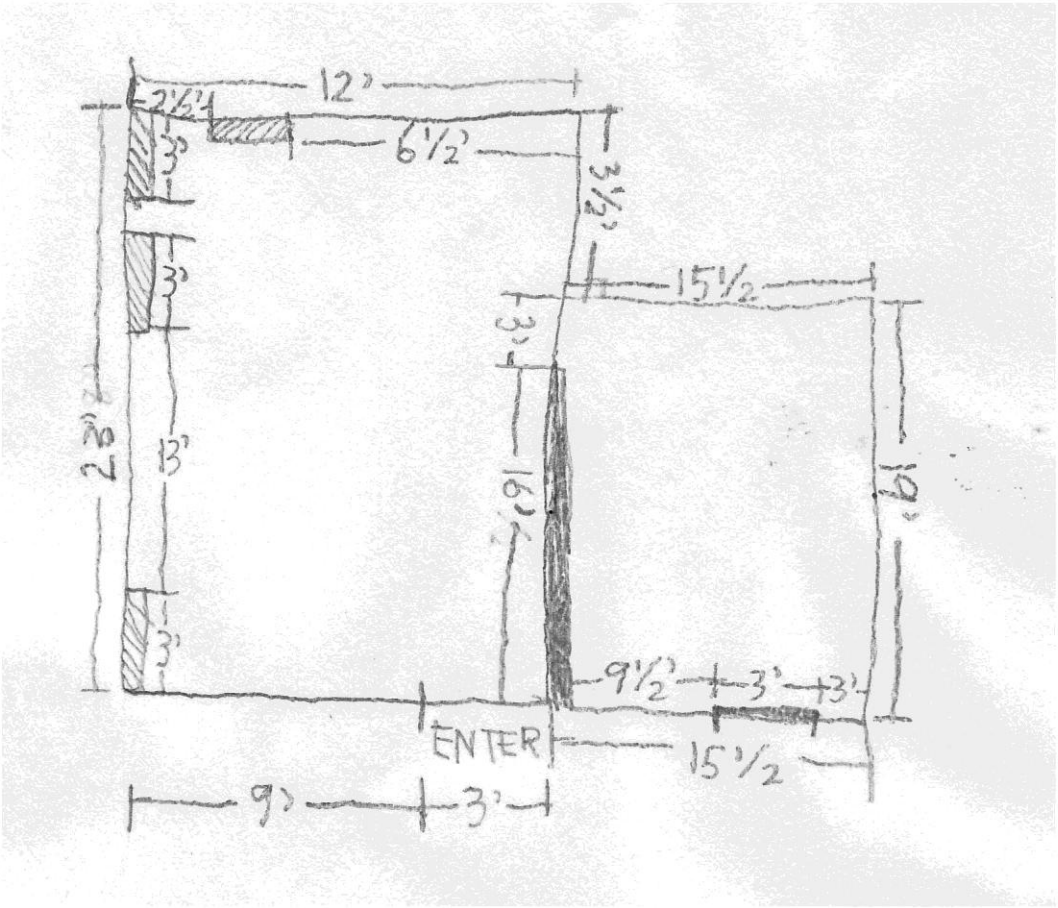
Xbox 360:
-Halo 3
-Gears of War (1/2)
-Grand Theft Auto IV
-Call of Duty (4: Modern Warfare, 2)
-Fable II
-Assassin's Creed
-Fallout 3
-Viva Piñata

PS3:
-Metal Gear Solid 4
-Uncharted
-Resistance
-Killzone
-Ratchet & Clank
-LittleBigPlanet
-The Beatles: Rock Band
-Bioshock

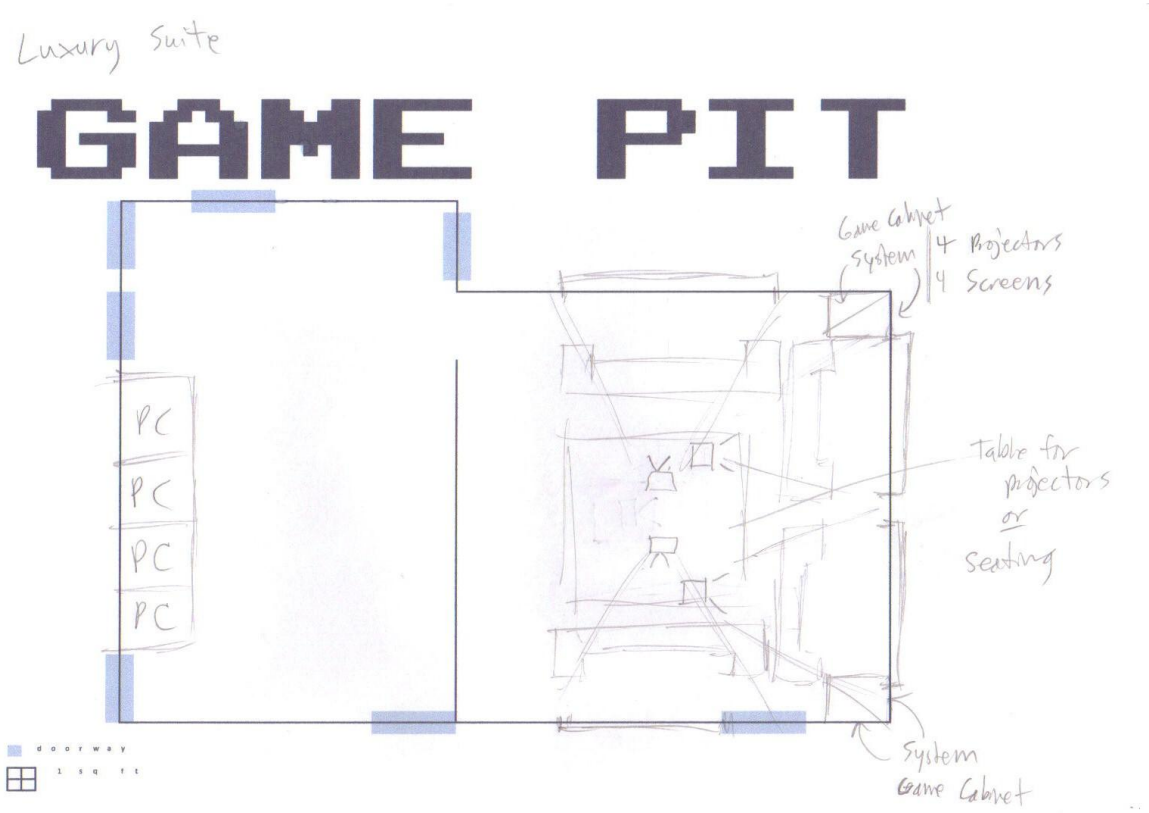
*Prof. Lindeman has a copy of Wii Sports Resort and Time Crisis 4 (PS3).

Appendix A3 . Initial Layouts

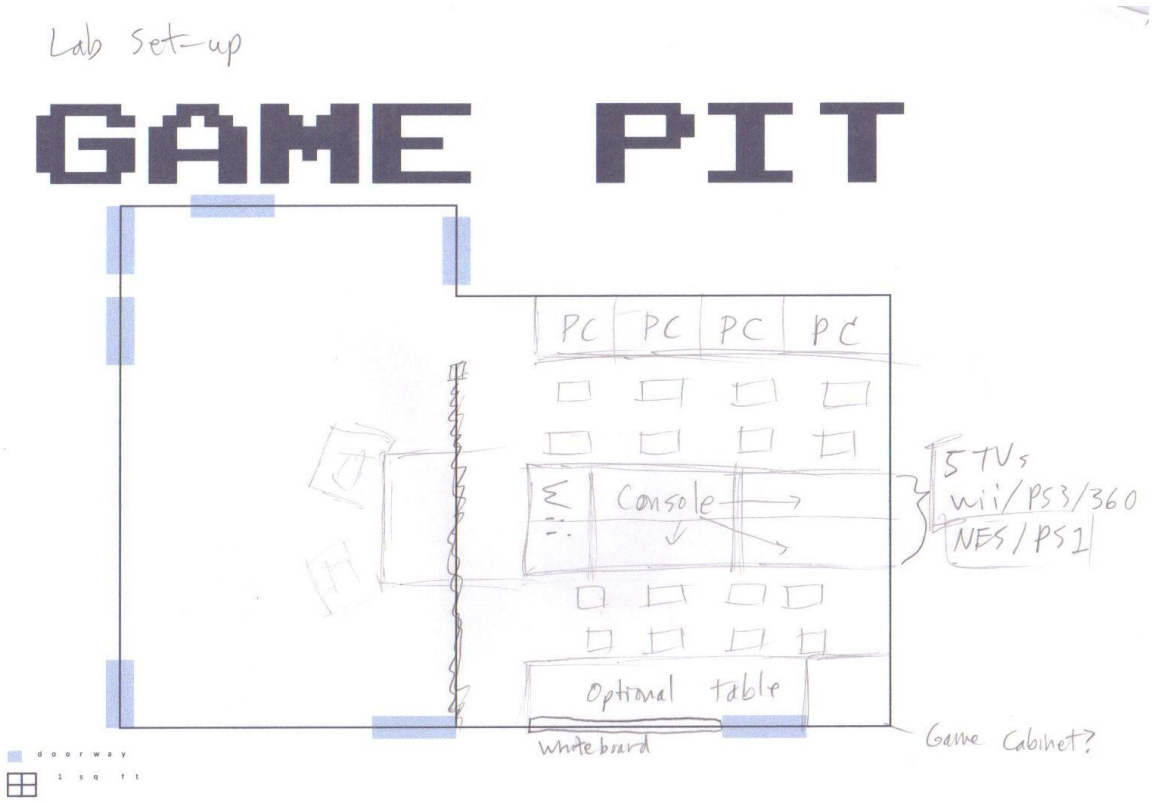
A3.1 Dimensions of The Pit



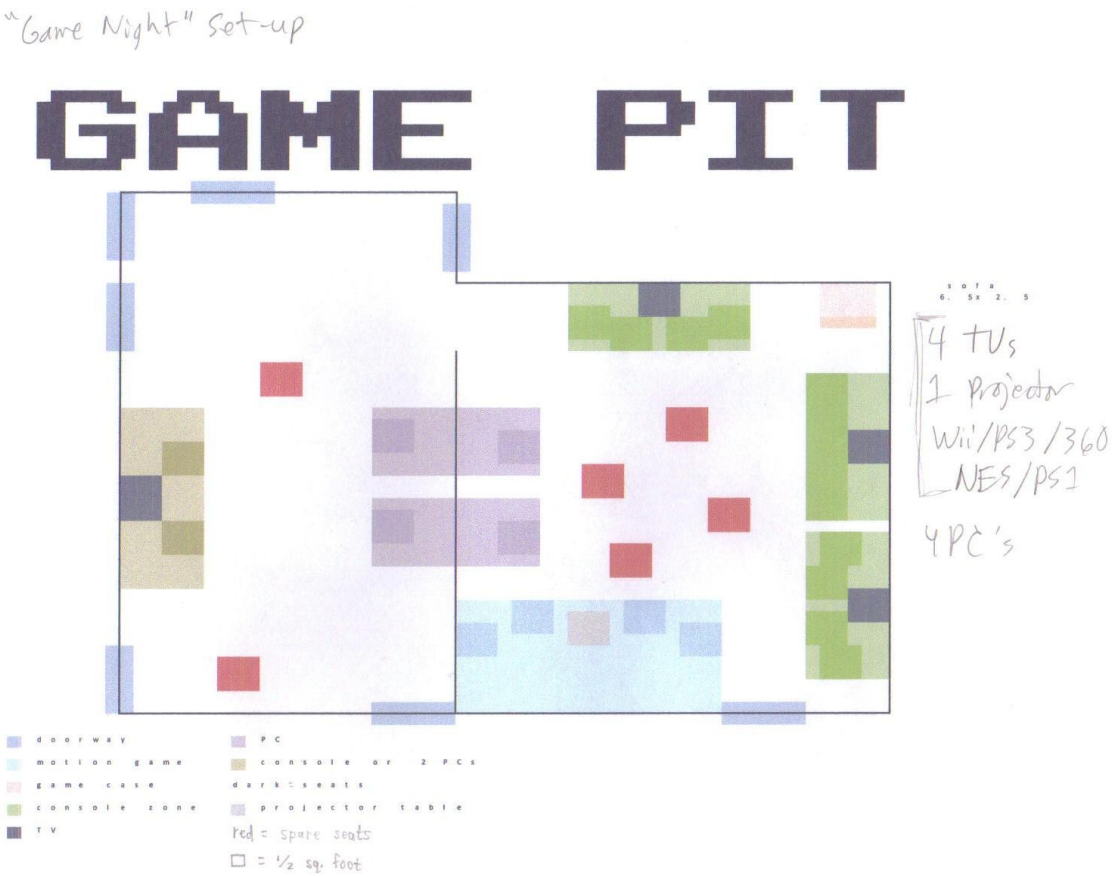
A3.1 The Luxury Suite Layout



A3.2 The Lab Layout



A3.3 The "Game Night" Layout



Appendix A4. Proposals

A4.1 First Proposal to the IMGD Steering Committee

Video Game Archive Proposal to the IMGD Steering Committee

We would like to propose to the IMGD Steering Committee our designs to take the newly acquired lounge area outside of the new IMGD Offices and install all the necessary equipment so the area can be used as a video game lab. The lounge (which henceforth shall be referred to as "the Pit") will have TV's and video game systems to hopefully accommodate any required playing assigned by any of the IMGD Professors. We have come up with three designs and general pricing for each of the layouts so that we could fully explore all options for the Pit.

Layouts

The first layout for the Pit is the most expensive layout consisting of two 46" flat screen TV's, two 7' couches, two entertainment center cabinets to house the TV's and game systems, and one cabinet for holding games and accessories.

The second layout is the middle of the three layouts consisting of two 26" flat screen TV's, two armless 5' 6" couches, two entertainment center cabinets to house the TV's and game systems, and one cabinet for holding games and accessories,.

The last layout is the cheapest consisting of one 46" flat screen TV, one 7' couch, one entertainment center cabinet to house the TV and game systems, and one cabinet for holding games and accessories.

We also plan on having 5 or more folding chairs or lab chairs for extra seating in each layout.

Games

We would like to have one of every current generation console in the Pit for students who do not have access to one or more of them to play current games. After current generation consoles, we would like to have one or two consoles from the library archives available to students so that they may play games from the past that have had an influence on the industry today. Here are the items and corresponding prices of the items we would like to see in the Pit.

Item	Price
Nintendo Wii Console	$200
Wii Remote	$40 each
Nunchuck Controller	$20 each
Classic Controller	$20 each
Wii Motion Plus accessory	$20 each
Broadband LAN Adapter	$25
Batteries for Wii Remotes	Varies
Games	$50 or less each
Xbox 360 Console	$200-$300
Controllers	$50 each
Batteries for controllers	Varies
Games	$60 or less each
PlayStation 3 Controllers	$55 each
Games	$60 or less each

Total cost (all items/necessary items, no games): $1,345-1,105

Furniture

To provide a social environment for playing games, whether it is for classes or leisure, we have chosen to go with an open "living room" type setting for the Pit. We feel as though this will allow students to play games for classes but enjoy themselves as well rather than have students play in a crowded lab setting. The furniture for our layouts is as follows.

Layout 1 (Expensive double):

Item	Cost
Couch (2)	$400 each
46" flat screen TV (2)	$600 each
Entertainment Center Cabinet (2)	$220 each
Game/Accessory Cabinet (1)	$150
Lab/Folding Chairs (6)	$70 each

Total cost: $3,010

Layout 2 (Middle double):

Item	**Cost**
Couch (2)	$304 each
26” flat screen TV (2)	$250 each
Entertainment Center Cabinet (2)	$220 each
Game/Accessory Cabinet (1)	$150
Lab/Folding Chairs (6)	$70 each

Total cost: $2,118

Layout 3 (Single):

Item	**Cost**
Couch (1)	$400
46” flat screen TV (1)	$600
Entertainment Center Cabinet (1)	$220
Game/Accessory Cabinet (1)	$150
Lab/Folding Chairs (8)	$70 each

Total Cost: $1,930

Security

Preventing theft of the equipment in the Pit is a major concern. Therefore, we have thought up several security options. They are as follows:

- Cables: Consoles and possibly controllers should be cabled to the wall or table to prevent theft.
- Cameras: Functional or non-functional, used to discourage theft and/or record activity in the Pit to possibly capture the identity of a thief.
- Signs: Clever but not offensive signs that discourage theft without being overly oppressive and ruining the social atmosphere of the Pit.
- Work-study: Hired student to watch over the Pit to prevent theft.

Other Options

In addition to the necessary game systems and furniture, we have thought about other options that may increase the quality of the Pit. These options are not necessary for an initial setup of the Pit, but may be good additions after the Pit's establishment.

- Sound system: 5.1 Surround Sound for one of the layouts for better sound quality of games. If there are more than one play areas, the sound system may disturb the players of the other play area.
- Game rentals: IMGD GameFly account. Students can request games to be rented out that are not available in the Pit. This would cut down on game purchasing costs in the future; games that may only be played once can be rented rather than purchased.
- Games on PC's: IMGD Steam Cyber Café/SourceU or GameTap account. Students can play classic and current games on the PC's in the Pit.
- Suggestion box: Students can suggest games, consoles, or other changes and additions that would make the Pit better.

Thank you for your time and considerations,

The Video Game Archive IQP Team
Steven Fanara, Joey Chipman, and Chris Chung

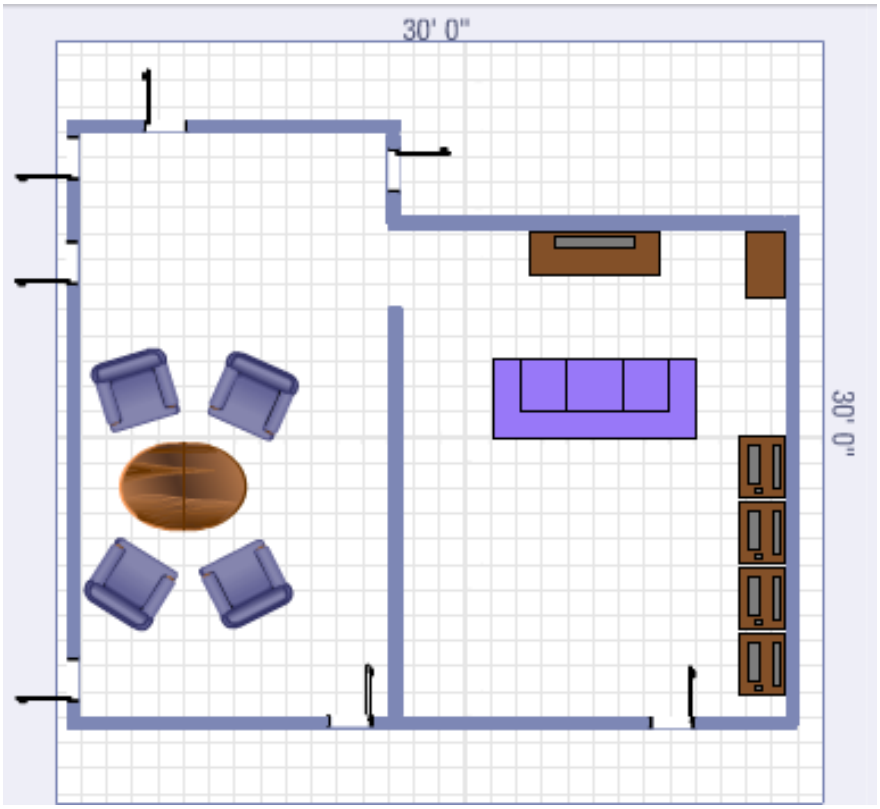
A4.2 Final, Single Play Area Proposal

Video Game Archive Proposal to the IMGD Steering Committee

Joey Chipman, Chris Chung, and Steve Fanara

We would like to propose to the IMGD Steering Committee our final layout for the lounge area outside of the new IMGD Offices and install all the necessary equipment so the area can be used as a video game lab. The lounge (which henceforth shall be referred to as "the Pit") will have a single game playing/movie screening area and video game systems to hopefully accommodate any required playing assigned by any of the IMGD Professors.

The single layout of the Pit consists of one 46” flat screen TV, one 7’ 5” couch, one entertainment center cabinet to house the TV and game consoles, one lockable cabinet for holding games and accessories, and tables for four computers.



Games

We would like to have one of every current generation console in the Pit for students who do not have access to one or more of them to play current games. Later, archive games/systems may be able to be put in the Pit. Here are the items and corresponding prices of the items we would like to see in the Pit. The “Basic” quantity is just the necessary items for playing games (2 controllers for each system, no extra accessories) and the “All” quantity is the maximum number of needed items (4 controllers, all accessories)

Item	**Price**	**Quantity (Basic)**	**Quantity (All)**
Nintendo Wii Console	$200	1	1
Wii Remote	$40 each	1	3
Nunchuck Controller	$20 each	2	4
Classic Controller	$20 each	0	1

Wii Motion Plus accessory*	$20 each	1	3
Broadband LAN Adapter	$25	0	1
Games*	$50 or less each	4	4
Xbox 360 Console	$200 for Arcade, $300 for Elite	1 (Arcade)	1 (Elite)
Controllers	$40 each wired; $50 each wireless	1 (wired)	3 (wireless)
Games	$60 or less each	5	5
PlayStation 3 Controllers*	$55 each	0	2
Games*	$60 or less each	4	4
	Total	$1,280	$1,805

*Prof. Lindeman has Wii Sports Resort (Wii), 1 Wii Motion Plus accessory, Time Crisis 4(PS3), 2 PlayStation3 controllers, 1 Gun Con 3 controller, and a PlayStation 2

Furniture

To provide a social environment for playing games, whether it is for classes or leisure, we have chosen to go with an open "living room" type setting for the Pit. We feel as though this will allow students to play games for classes but enjoy themselves as well rather than have students play in a crowded lab setting. The furniture for our layout is as follows.

Item	**Price**	**Quantity**
Couch Model #: Coaster #500231CH0 Dimensions: 89.5"w x 36"d x 38"h	$618	1
46" flat screen TV*	$600	1
Entertainment Center Cabinet Model #: Coaster #700290 Dimensions: 59"w x 20"d x 23"h	$430	1
Game/Accessory Cabinet IKEA: ASPVIK Glass-door cabinet Dimensions: 19.625"w x 19.625"d x 68.875"h	$150	1

Lab/computer table Model #: Safco #1953MH Dimensions: 28.25"w x 22.25"d x 30.25"h	$241 each	4
5.1 Surround Sound System*	$200	1
	Total	$2,962

* TV and sound system prices are estimates; can be replaced.

Total cost: $4,242 - $4,767

Security

Preventing theft of the equipment in the Pit is a major concern. Therefore, we have thought up several security options. They are as follows:

- Cables: Consoles and possibly controllers should be cabled to the wall or table to prevent theft.
- Cameras: Functional or non-functional, used to discourage theft and/or record activity in the Pit to possibly capture the identity of a thief.
- Signs: Clever but not offensive signs that discourage theft without being overly oppressive and ruining the social atmosphere of the Pit.
- Work-study: Hired student to watch over the Pit to prevent theft.

Other Options

In addition to the necessary game systems and furniture, we have thought about other options that may increase the quality of the Pit. These options are not necessary for an initial setup of the Pit, but may be good additions after the Pit's establishment.

- Archive games: Older systems from the library archive. Students have the ability to play games from the past on the original systems. Smaller TV for a smaller play area can be put in the space near the whiteboard.
- Game rentals: IMGD GameFly account. Students can request games to be rented out that are not available in the Pit. This would cut down on game purchasing costs in the future; games that may only be played once can be rented rather than purchased.
- Games on PC's: IMGD Steam Cyber Café/SourceU or GameTap account. Students can play classic and current games on the PC's in the Pit.
- Suggestion box: Students can suggest games, consoles, or other changes and additions that would make the Pit better.

Thank you for your time and considerations,

The Video Game Archive IQP Team
Joey Chipman, Chris Chung, and Steve Fanara

A4.3 Bare Minimum Proposal

Video Game Archive Proposal to the IMGD Steering Committee

Joey Chipman, Chris Chung, and Steve Fanara

Games

Item	**Price**	**Quantity**
Nunchuck Controller	$20 each	1
Broadband LAN Adapter	$25	1
Wii Games	$50 or less each	4
PS3 Games	$60 or less each	2
	Total	$365

*Prof. Lindeman has Wii Sports Resort (Wii), 1 Wii Motion Plus accessory, Time Crisis 4 (PS3), 2 PlayStation3 controllers, 1 Gun Con 3 controller (PS3), and a PlayStation 2. Prof. Finkel has a Wii console, 2 Wii Remotes, and one 1 Nunchuck controller.

Furniture

Item	**Price**	**Quantity**
46” flat screen TV*	$600	1
Entertainment Center Cabinet Model #: Coaster #700290 Dimensions: 59"w x 20"d x 23"h	$430	1
Game/Accessory Cabinet IKEA: ASPVIK Glass-door cabinet Dimensions: 19.625"w x 19.625"d x 68.875"h	$150	1
	Total	$1,180

* TV price is an estimate; can be replaced.

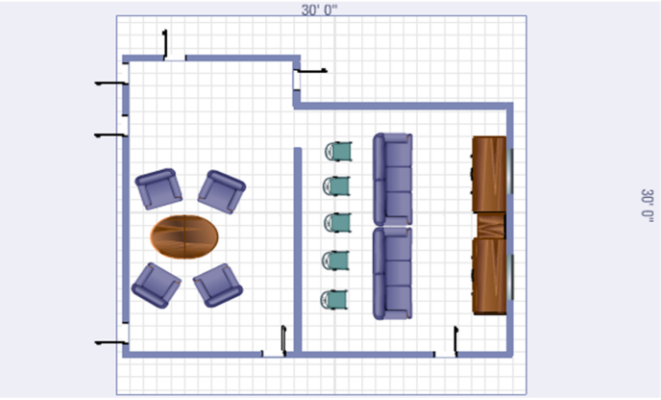
Security

- Cables: $24

Total cost: $1,569

A4.4 Steering Committee Presentation

Good Quality, Two TV Setup

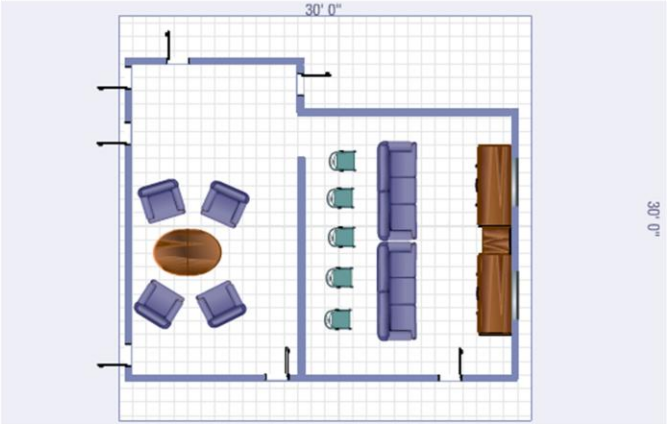


- 2 46” Toshiba TVs: $1200
- 2 7 ⅓’ x 2 ½’ IKEA couches: $800
- 2 6’ x 2 ½’ IKEA tables: $440
- 1 2’ x 2’ cabinet: $150
- 6 extra chairs: $420

- Layout’s Furniture Cost:
- $3010

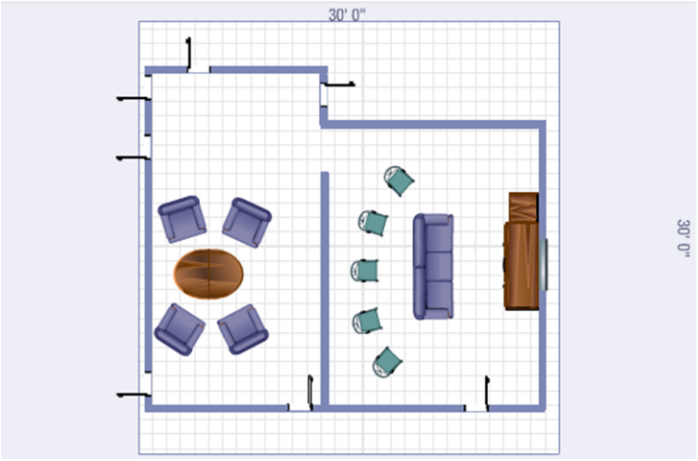
Cheaper Two TV Setup

- 2 26” Element TVs: $500
- 2 5 ½’ x 2 ⅝’ armless couches: $608
- 2 6’ x 2 ½’ IKEA tables: $440
- 1 2’ x 2’ cabinet: $150
- 6 extra chairs: $420



- Layout’s Furniture Cost:
- $2118

Good Quality, One TV Setup



- 46” Toshiba TV: $600
- 7 ⅓’ x 2 ½’ IKEA couch: $400
- 6’ x 2 ½’ IKEA table: $200
- 2’ x 2’ cabinet: $150
- 8 extra chairs: $560

- Layout’s Furniture Cost:
- $1910

Appendix A5. The Pit Grand Opening Advertising

A5.1 Grand Opening Poster

Endnotes

[i] Arnold, Matthew. Benecke, Nikki. Perry, Brendan. *ESTABLISHING A COLLECTION OF VIDEO GAME EPHEMERA.* Worcester Polytechnic Institute, Interactive Qualifying Project, Project Number: DXF-0618. March 13th, 2006.

[ii] Asplund, Dana. Kang, Khemarith. Moniz, Chris. Stasik, *Jason. Library Game Suite Proposal*. Worcester Polytechnic Institute, Interactive Qualifying Project, Project Number: DXF-0807. April 22, 2008

[iii] Brunelle, Joshua. *Video Game Archives: Massachusetts.* Worcester Polytechnic Institute, Interactive Qualifying Project. January 16th, 2009.

[iv] "Nintendo Entertainment System." ClassicGaming Museum. 2010. IGN Entertainment. 3 Mar. 2010 <http://classicgaming.gamespy.com/View.php?view=ConsoleMuseum.Detail&id=26&game=5>

[v] "Playstation." Answers.com. 2010. Answers Corporation. 3 Mar. 2010 <http://www.answers.com/topic/playstation-1>

[vi] "Nintendo 64 Console Information." ConsoleDatabase.com. 2008. Dale Hansen / BaseMedia. 3 Mar. 2010 <http://www.consoledatabase.com/consoleinfo/nintendo64/index.html>

[vii] "Super Nintendo Entertainment System / Super Famicom Console Information." ConsoleDatabase.com. 2008. Dale Hansen / BaseMedia. 3 Mar. 2010 <http://www.consoledatabase.com/consoleinfo/snes/index.html>

[viii] "Nintendo History." Nintendo of Europe. 2010. Nintendo of Europe. 3 Mar. 2010 <http://www.nintendo.co.uk/NOE/en_GB/service/nintendo_history_9911.html>

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