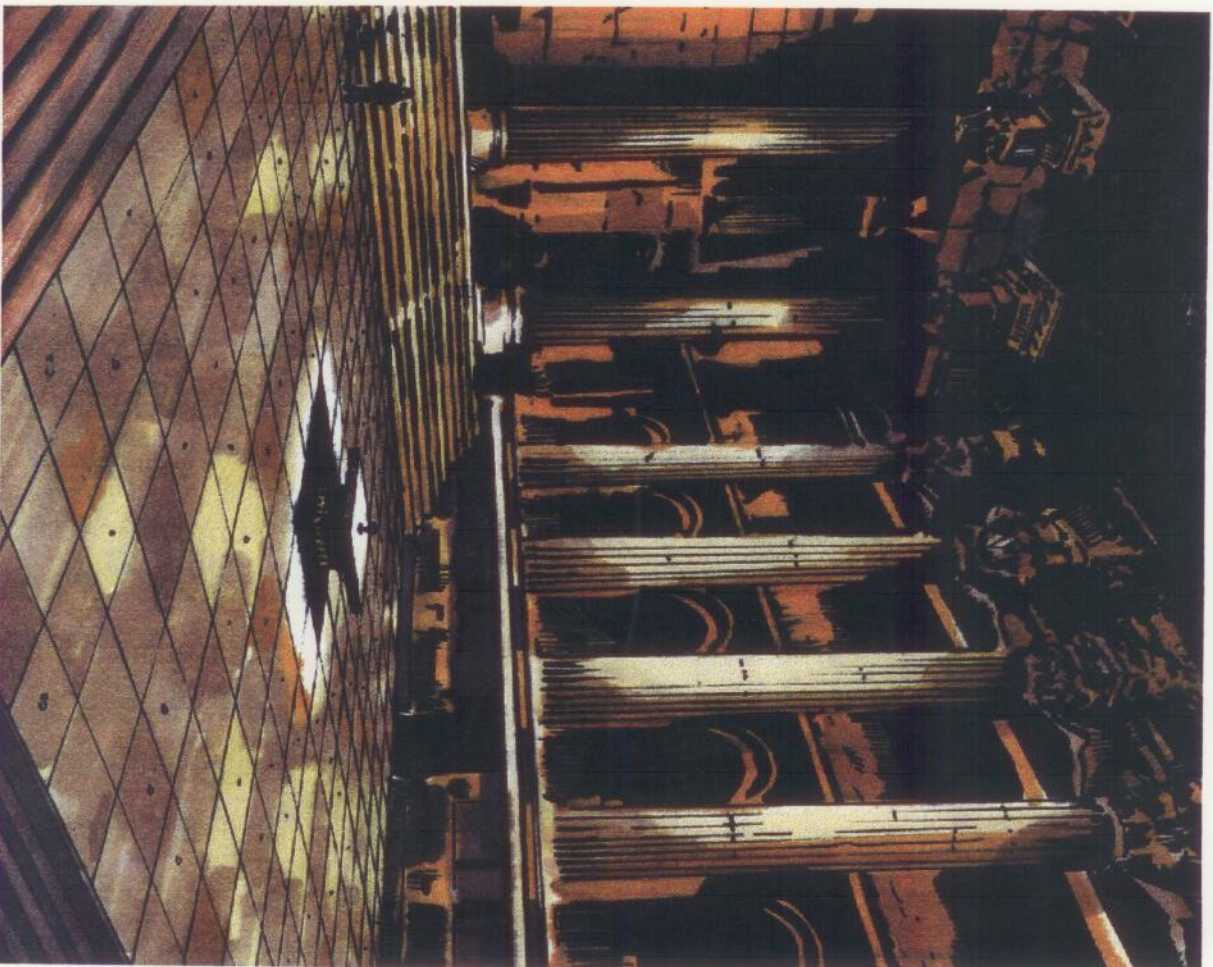



Raptor Proposal

A GAME PROPOSAL BY INTELLIGENT GAMES

DESIGNED BY KEN HAYWOOD
IMPLEMENTATION BY INTELLIGENT GAMES
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Introduction

Raptor is a CD-ROM based adventure game which will place the player in the role of a plunderer in search of the Holy Grail. The player will be able to select a character to play from a list of eight characters, comprising both men and women. Three of those not chosen will appear in the game as non-player characters, all with the same objective as the player.

Players will encounter many strange creatures — some helpful, some hostile. Each character and creature in the game will have its own personality and will act independently, responding to the players' moves and the state of play. This will enable Raptor to develop areas of its plot algorithmically, giving a more real, living game world than has been achieved before in an adventure title. Raptor will have many solutions, and many outcomes. It will be a living story for its players.

Raptor will be presented using a mix of stunning photorealistic 3D graphics and live action video. All user commands will be intuitive, making the game very easy to learn. The game's characters and story, however, will be of such depth as to give the game long term appeal.



Key Points

Strong visual presentation

- First person with full light source and textured locations
- 3D world smooth scale movement linked to player's control
- HUD overlaid on main view for combat and helmet systems
- Medieval catacombs with great architectural detailing
- Light effects with IR, shadows, flares, depth cueing
- Mixes live action and 3D using *VideoWrap*

Atmospheric sound and music tracks

- Dripping catacombs with shuffling, decaying knights templar
- Directional sounds and effects/speech in stereo
- First person sounds: heartbeats, footfall and breathing

Detailed character interaction

- Multi-character race to find the grail
- Intelligent non-player characters to fight or team up with
- Characters develop as the story unfolds

Serialisation potential

- VR potential (dependent on hardware)
- Multiplayer link potential (depending on hardware)
- Other angles: board game, TV show - like *Knighmare*
- Production paths open to 3D0 and Mac CD-ROM versions

Intelligent Games

- Design rich game worlds, plots and puzzles
- Strong development team (working for Virgin, Maxis & Phillips)

Scenario

One hundred and fifty million years ago a meteorite entered the Earth's atmosphere. Blazing toward the Earth's surface it broke into two segments, one impacting with the area that eventually came to be called Istanbul, the other in the place we now know as Dunstanburgh, England. The Dunstanburgh segment survived the initial impact but fragmented deep underground, scattering itself into an existing cave system.

Time passes. Creatures find their way into these deep caves, and find themselves nurtured and changed by the meteoric rock that surrounds them; they no longer age or sicken, and any wounds are rapidly healed. The creatures were no longer hungry - their metabolic rates had slowed to decrease the need for food, and they were now able to evolve rapidly to suit their new environment.

Those creatures that leave their subterranean zoo quickly sicken and age - they must return or die. Millennia go by.

2000 BC Druid priests passing through Istanbul use divining methods lost to us now to detect and unearth one kilogram of this rock and, discovering its miraculous healing powers, fashion it into a goblet. Two thousand years later, this goblet would become known as the Holy Grail.

1146 AD An order of knights known as the Templars uncover the Holy Grail in Jerusalem, and smuggle it to Paris, arriving safely with an escort of 12 knights. Some years later, the knights take the Holy Grail to Dunstanburgh where they use slaves to build the subterranean

temple 'Aeturnis'. The construction takes 47 years. Over time the concentration of grailstone dilates time. By the present, one year above ground takes one hour in the caverns. The Templars remain in Aeternis, guarding the Grail.

The Templar plan is to use the temple, and to train a new, immortal religious order to cement and control medieval Europe. Its secondary function is to safeguard and eventually collect the scattered grailstone vital to their plan.

1753 AD Centuries spent underground have affected morale among the guardian knights, with heated arguments leading to the formation of a splinter group known as 'the Three', who believed that the Grail should be returned to the service of mankind. Eventually, the other eight knights become suspicious and greedy, emotions which the grailstone adapts and exaggerates to the point of madness. They treacherously attack the other three. Just one of the Three, Sir Richard of Bramley, escapes to the surface and within weeks dies of old age, leaving behind him a clue which will one day lead to the rediscovery of the Grail.

1996 AD A professional plunderer receives a letter from an old friend, Colin Neale, who has discovered Sir Richard's grave, and with it the path to Aeturnis. The letter includes all the information Colin has acquired, along with copies of the documents buried with Sir Richard. You are that plunderer and you prepare to enter the temple.

User Interface

Raptor will use a first person perspective to present information to the player. This view will be enhanced by selective use of sound effects. For example, when the player is running, the game will play sound effects for increased heartbeat, laboured breathing and footsteps, or when hiding, the computer will amplify the sounds surrounding the player. A third person view will be used very occasionally for dramatic effect, for example during fights.

The Helmet

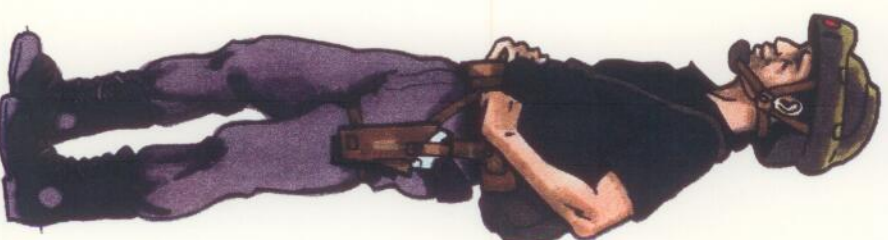
The player's character wears a MX-2 military issue helmet which provides information about the surroundings and the state of play, as well as a large window displaying the player's view of the game world.

The entire screen will be used to represent this *head-up display* (H.U.D.) with the graphical window remaining visible throughout the game whilst the remaining areas will present the player with context-sensitive information such as an inventory, the player's health, textual descriptions of objects and locations, as if this information were being presented by the player's military-style helmet. Non-player character dialogue is digitised and spoken, while the player can choose from a number of responses.

One special feature of the player's helmet is that it can display the view from another helmet of similar design as a picture within a picture.

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The player wears the latest high technology, military specification weaponry, webbing, backpack and virtual reality helmet.



USER INTERFACE

This feature is designed to help combat troops when in close proximity, so the system only works over a limited radius. Because the player's rivals, instead of their comrades, will be wearing these helmets this will serve as a device to raise the player's tension level and to give the player a 'third person view'. For example, the player can see when a rival is following them, or can use the information presented in the alternate window to increase his/her rate of exploration.

The Inventory

The game will also make use of an *inventory window* which can be opened at any time. This will be divided into two sections:

- The first section will show a picture of the player's character, with any objects being held or worn by the character displayed in their appropriate places
- The second section of the window will show any other objects currently in the player's possession. The player will be able to move items from one section to another (for example, to arm or disarm the character) as well as moving items to, or taking items from, the game world



Example of the main screen display showing different control buttons and information panels simulating the wearer's eye view of the head-up display.

Control Options

- The first interface option will be familiar to the majority of PC users. The mouse will be used to point to objects and locations in the graphical window. Clicking on a object with the left button allows the player to pick it up and drag it to the player's inventory
- The second option allows the player to interact with the game world directly using the keyboard or joystick. The game will interpret the player's input in a context-sensitive manner, allowing the joystick to be used mostly for movement throughout the game world but, where the situation permits, to control other functions such as manipulating objects in the inventory

Either method simulates the player's orders given verbally using a microphone in the helmet. When the player issues a command, a digitised voice will repeat the order, confirming it to the player and enhancing the illusion that the player really is wearing a combat helmet.

Combat

The player is equipped with special gun that uses brief bursts of high energy to accelerate small 'bullets' to very high speeds. It is the energy, rather than the impact that does the damage. This enables the

player to have an almost unlimited magazine because the bullets are very small. However, using the gun drains energy from the player's limited supplies. The player must distribute his/her power reserves between sensors and weapons and this gives combat a strategic element. The player aims the gun using cross-hairs on the screen. Other weapons, if available, work in the same way. In hand to hand combat, the player can choose between different tactics, such as kicking or punching, or can abandon the fight. In each case, once the fight has started it will be shown from a third person perspective. Reaction times and hand-eye coordination will be a factor in the success of a given fight. It is very difficult to kill any creature in the temple because of the healing effects of the surrounding grailstone. Shooting temporarily immobilises creatures.

This screen shows one of the characters that the player can meet - in this case, one of the Guardians.



Why Raptor?

Graphics Style. From the title sequence through to the end of the game, all of Raptor's graphics will have been prerendered. Live action video will be integrated using a proprietary techniques called *VideoWrap*.

Non-Player Characters. Raptor's many non-player characters will all behave according to their own artificially intelligent algorithms, giving each one its own behaviour patterns. The characters will not follow linear, preset paths. The independence of the non-player characters will allow Raptor to avoid the traditional adventure game's pre-scripted branching storyline, instead using genetic algorithms and finite state machines to allow an evolving storyline, which will not be the same from one game to the next.

Depth. Raptor will be more than a mere role-playing game. Playing the game successfully will also require a combination of tactical planning and puzzle solving. Dramatic action sequences (for combat and confrontation) will surprise and excite the player, adding to the game's tense atmosphere and imaginative involvement with the gameworld.

Interactivity. Unfortunately, CD-ROM games have thus far had very little to offer in terms of gameplay. Even the most celebrated CD-ROM games have suffered from a lack of interaction - it is often all too obvious to a player that he or she is simply controlling a series of preset animations, a problem greatly compounded by low granularity movement. Raptor is different.

Smooth Movement. In Raptor, players can move from one section of a room to another and can rotate their view through 360 degrees, making for a truly interactive experience, which gives the impression that the player can go anywhere and look at anything.

Graphics Presentation: Raptor will build its screen image in layers - like Pollock's Toy Theatres - allowing independent animation in any plane. One use is to allow non-player characters to occupy a foreground plane, with a detailed background behind them, giving the effect of run-time chromakey and allowing encounters to occur in any location at any time. Instead of having a small number of non-interactive movie sequences, Raptor will have a large number of backgrounds, foregrounds, and characters that can be combined intelligently to give a more interactive and varied game.

Why Intelligent Games?

Technical Experience

Intelligent Games has developed considerable experience of designing and implementing this type of game over the past year while working on projects for Maxis, Virgin, Three-Sixty Pacific and Philips. In particular we have produced over an hour of computer generated 3D animation, dozens of still 3D rendered images and several minutes, using our *VideoWrap* system, of mapping live action into a 3D graphical model. We currently employ three full-time PC programmers, and plan to recruit two more within the next three months.

Resource Availability

Our technology and code resources are ours to use on any new title. We have six full time employees in 700 square feet of offices in Chelsea, with sufficient space to start another project and the option of an additional 350 square feet in the same office for further expansion.

Games Design

We have a reputation for creating and implementing complex and deep game designs. In addition, we are building the capability to add graphical polish and sophisticated user interfaces to our games. For example, we have designed and storyboarded a significant proportion

of a full CD-I title for Philips. We believe that good games can only be made by first creating a strong game design upon which to build the audio-visual shell. This will help us to produce a high quality CD-ROM title of far more substance than existing products.

Stability

We are a growing and thriving small business, with work commissioned into 1995 including three major PC titles in production now, and a CD-I basic design nearing completion. This steady stream of work and income gives us a degree of stability unavailable from smaller developers, and allows us to achieve economies of scale on generic, common code items. Additionally, we have fostered a creative and co-operative team environment which can only enhance any product we develop.

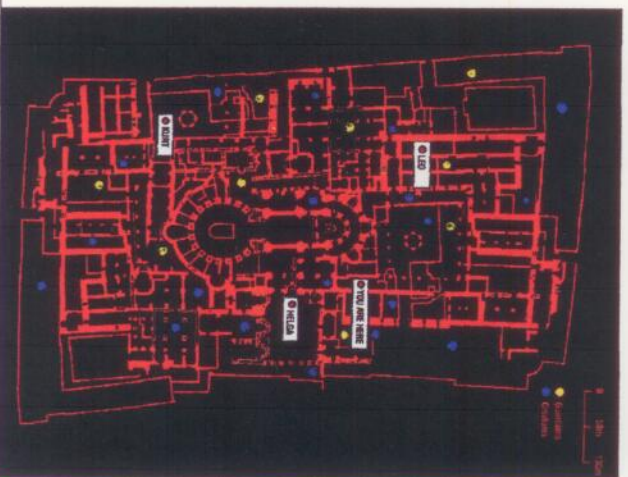
Intelligent Games Technical Resources

Intelligent Games has the following technical resources available for use in this title:

- OVM, a PC-based implementation toolkit consisting of custom-written assembly language drivers, collection classes (list, stacks, b-trees etc.), mouse and keyboard drivers, animation players for our own animation file format, sound drivers for SoundBlaster, Adlib, Adlib Gold and PC speaker, string and other resource management (for easy translation to foreign languages) and a virtual memory system for caching static data to disk, XMS and EMS on a most-needed, least-loaded basis. All this is ready now, and can be demonstrated.
- Utility programs to convert Macintosh-based animation, including QuickTime movies, to our proprietary PC animation format.
- A Macintosh implementation of our OVM library is underway, and will be completed by March 1994. A Windows version will be started later this year, and completed by May 1994.
- Techniques for integrating live action and 3D animation using chromakey and our *VideoWrap* system of incorporating live action as texture maps into a 3D model.
- We have a Macintosh-based prototyping tool for quickly designing and testing branching storylines, including dialogue and graphics

- A network of high-powered PC's for distributed rendering (currently seven 486 workstations and one file server).

- In addition to the above existing resources, we shall develop the following over the next year for use in other fully-funded projects: natural language processing for smart dialogue in multiple languages, evolving personalities, algorithmic interactive music generation and semi-autonomous agents.

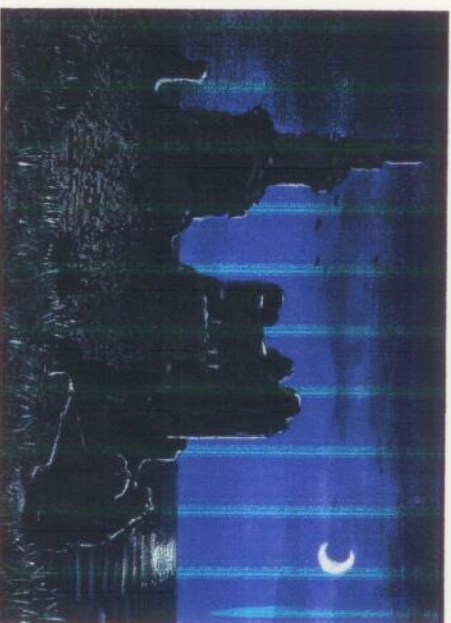


Strategic overview function showing temple floorplan and non-player character locations.

Art Direction

Raptor will use a combination of the following methods to generate artwork

- **Prerendered 3D graphics.** Locations and non-human characters can be generated using a three-dimensional modelling package (such as 3D Studio on a PC or Softimage on a Silicon Graphics platform).
- **Live Action Video.** Human characters will be played by professional actors, filmed in a studio against a blue background using Hi-8 video. The video images can be overlaid onto the backgrounds and will appear to exist in the game world.
- **Claymation.** Non-human characters can also be created with this conventional animation technique using models.
- **VideoWrap.** Intelligent Games' unique *VideoWrap* process allows the mapping of live action video onto a 3D model, maintaining audio and lip synchronisation. We are already using this process (in a prototype CD-I game) to map actors' faces onto computer-generated bodies within a 3D world, giving a feeling of realism never before associated with computer-generated characters. Raptor will take this process a stage further by mapping animated human faces onto 3D models of non-human characters, allowing such characters to appear as real and living as their human counterparts. Once a character has been created using *VideoWrap*, it



Picture one from the opening sequence – approaching the remains of the fortress.

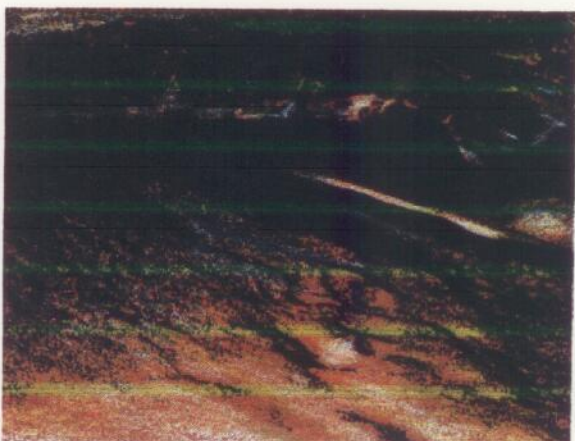


Picture two from the opening sequence – the cave entrance on the sea shore.

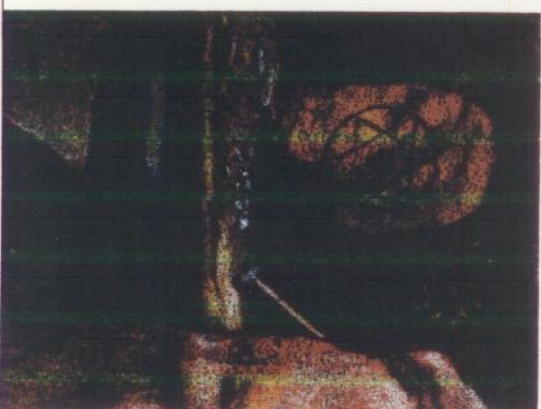
ART DIRECTION

can be manipulated in the same way as any other 3D model, allowing characters to fully interact with the game world with none of the problems often associated with chromakey techniques. This technique solves many of the problems of eye line, lighting, perspective depth and clashing graphics styles that arise when trying to mix photographic and rendered 3D material.

Graphics Style. The graphics style of the game is suggested by the artwork in this document: darkness punctuated by shadows, torches, and the ethereal glow of the grailstone. The non-player characters in the game are larger than life, and this is reflected in the slightly exaggerated portraits and character detail. Juxtaposed with the medieval world of the temple is the hi-tech equipment with which the player explores the game world. For this we will try to predict the future of computer equipment: wearable, voice activated, highly interactive, radio networks, access to large databases, natural language and graphical output, and some autonomous 'agent' capability. The head-up display forms the metaphor that will bridge the imaginative gap between the player and the game world, therefore, it must be as plausible and detailed as possible. Its graphic style will be extended into the game-specific areas like startup screens and file handling, giving the whole game a consistent feel. A standard graphics style, and a common interface will make future serialisation easier and more attractive.



Picture three from the opening sequence — the long, narrow passage.



Picture four from the opening sequence — forced entry into Aetumis.

Script Deliverables

If we are commissioned to produce a script for Raptor we will deliver the following key items:

Technical Demonstrations

- VGA / SVGA screen drivers.
- Adlib / Soundblaster sound drivers.
- Mouse and keyboard handling code.
- Tools to convert Quicktime to Flic to Intelligent Games' own animation formation.
- A PC based animation player.
- An interactive demo of 'high granularity' smooth movement.
- A basic proof-of-concept program to demonstrate layered planes of graphics.
- Complete documentation for all code demonstrations.
- Macintosh based story line prototyping tool.

Graphics / Storyline

- Animated examples of *VideoWrap*.
- 3D models of one location in the game world.
- DPaint mock-ups of all significant user interface screens and elements.
- Detailed map for entire gameworld.
- Storyboard, dialogue scripts, locations etc. for 10% of the game.
- Detailed storyline of the whole game.
- Pseudo-screen shots and description of a sample period of game-play.

Production Management

- A technical discussion of how we will leave open production paths to other platforms (3DO and Mac particularly).
- A detailed list of the resources required to produce the project.
- A Microsoft Project implementation plan (to be refined at TDR).
- A preliminary delivery plan, with list of deliverables.

About Intelligent Games

Intelligent Games is a small computer software company, specialising in computer strategy games. It has been operating on a full-time basis for the past year, although the company was started by Matthew Stibbe in 1988, and run by him in his spare time at university until August 1991. Since leaving college he has turned this hobby into a thriving small business employing six people.

Previous Work

- Imperium, published by Electronic Arts. Designed by Intelligent Games.
- 'Nam 1965-1975, published by Domark. Designed and programmed by Intelligent Games on Mac and PC.
- Microprose UMS II scenarios, published by Microprose in their 'UMS II Planet Editor'. Designed and implemented by Intelligent Games.
- Microprose consultancy, historical research, AI and game design for forthcoming Napoleonic wargame.
- Columbus, which was to be published by Domark. Designed and programmed on Mac and PC by Intelligent Games.
- Chronicles, a script for Electronic Arts.

- AutoRoute - programmed a Macintosh version of the popular PC electronic atlas.

Current Work

- Two projects for Maxis. One in production, the other in design to enter production in January.
- One project for Virgin games, currently in production.
- One project for 360 Pacific, currently in production.
- One 'basic design' for Philips - a fully functioning prototype of a CD-I adventure game