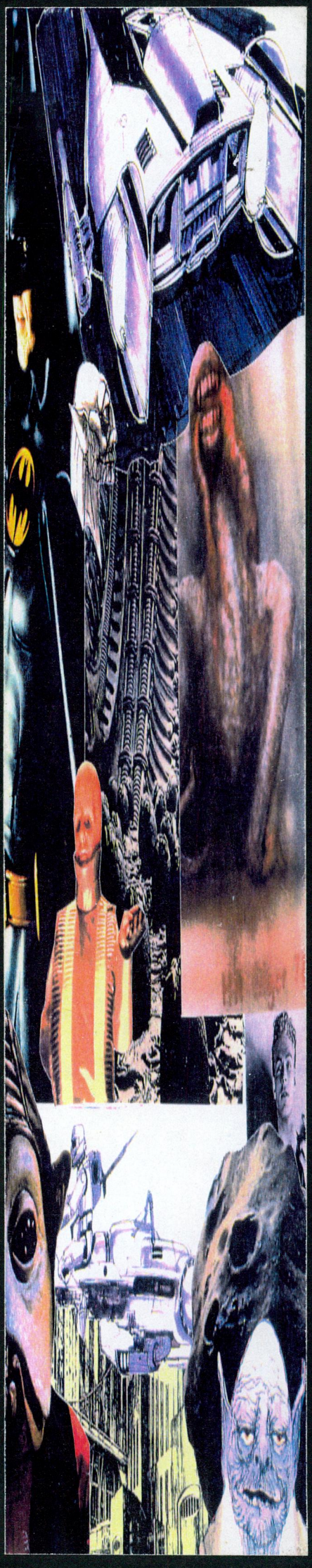
SCIENCE FICTION DESIGN

- An exploration of the areas of visual design in science fiction movies. -



FERGAL T. LAWLER

- Dept. of Industrial design. -

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NATIONAL COLLEGE OF ART AND DESIGN

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DEPT. OF INDUSTRIAL DESIGN

SCIENCE FICTION DESIGN.

An exploration of the areas of visual design in science fiction movies.

by **Fergal T. Lawler.**

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1993

A C K N O W L E D G E M E N T S

Special thanks to Gerry Walker (Thesis Tutor) and Colm and Justin Greene (Experts in the field of sci-fi movies).

C O N T E N T S

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> Science fiction is that class of prose narrative treating of a situation that could not arise in the world we know, but which is hypothesized on the basis of some innovation in the science or technology, or pseudo technology, whether human or extra-terrestrial in origin.
>
> (Kingsley Amis, New maps of hell, London, 1960, p.17)

INTRODUCTION

Science fiction has become an area of great interest in the last twenty years. It is expressed through various mediums which include the written word and film. Up until recently it has been most popular with a younger audience. However, it would be wrong to look at science fiction with the stereotypical view that it is merely an area of literature and film for comic crazed kids to indulge in. Now more than ever there is a wider range of people interested in the area of science fiction. Professor Thomas D. Clareson, Wooster College, Ohio has been putting out a scholarly periodical devoted to science fiction. North east London Polytechnic has been publishing the Foundation Journal since 1972 and this deals with the Area of Science fiction. More recently there is the Science fiction studies published by the Indiana state University.

Literature has been the main source of science fiction but film has proved, in recent years especially, that it has new ways to work with science fiction stories. Film has taken science fiction and has brought it into another dimension. It has taken strange worlds and civilisations from our imaginations and has made them real. Science fiction films have become more popular than ever in recent years. In 1990 seven out of the top ten films were science fiction films. This is due to the ever increasing standard at which these films are being made.

Science fiction films of today depend heavily on visual effects. Special effects may make an otherwise boring film a little more exciting. In recent years the technology in this area has made terrific advancements. Films of the early 90s such as *The Lawnmower Man, Terminator 2* and *Alien 3* are proof of the power of special effects in cinema today. However, before the special effects people can make starships fly and make humans

metamorphosise into creatures they must be firstly designed by artists and designers. This is the area of production design. A film may contain amazing special effects but this does not make it a good film. If a film is going to survive the passage of time and still look fresh after several years then it needs to have a good plot and good visual design. We must also consider the fact that special effects in science fiction movies date easily. Every day old techniques are being improved and new ones are being created. Films which we look upon today as being brilliant special effects films like *The Lawnmower Man* may seem ridiculous in ten years because they depend so heavily on special effects for their box office success.

If a science fiction film incorporates up to date special effects there is no guarantee it will be a success. The first extensive use of computer special effects in a movie was seen in 1982 in Disneys *TRON*. Jeff Bridges plays a disgruntled programmer who is dropped into an animated world inside a computer. Spectacular though the graphics were, They did not bring box office success. In 1984 *The Last Starfighter* created starships and bases in the computer, using technology that had been developed from army simulators. This was intended as a cheaper alternative to traditional model work, but the film was still a commercial flop.(Bacon, 1993, p.10) On the other hand films such as *Star Wars* or *Alien*, both of which were made over a decade ago are still visually exciting even though some of the special effects from these films have dated. The fact that they can be judged as being visually exciting today, 15 years later, is due to the amount of detail paid to the area of production design. " A special effect without good design and a good story to back it up is a pretty useless thing." (George Lucas, 1983)

The common factor between all the classic science fiction films to date is that the have had enormous attention paid to detail in the area of visual design. This thesis will explore the separate areas of visual design and look at the attention paid to detail and at the ways in which some designers have handled design for a science fiction movie.

In Chapter 1 the whole area of production design will be dealt with and the key factors which lead to good visual design in a science fiction movie will be discussed. This chapter will show that the classic science fiction films are those which pay appropriate attention to production design.

Chapter 2 looks at set design and discusses various designers and films in relation to this area of production design and shows the importance of designers knowing the story and characters before they set out to design a set. It also looks at the importance of outside influences on the work of the designer.

In Chapter 3 of this thesis the area of creature design will be looked at. Again various designers and films will be discussed in order to understand the design process and how the final designs were reached.

Chapter 4 deals with prop design. The history of spaceship design will be looked at, along with the work of various designers in this area. This chapter will show the minute detail into which the designers have to go in order to achieve design of a high standard.

The slightly separate area of costume design will be discussed in Chapter 5. This chapter will look essentially at the work of Bob Ringwood and his work for *Batman*. The whole design process is looked at in relation to costume design.

And finally Chapter 6 deals with the parallels between design in the real world and science fiction design and shows that the area of science fiction design is an important one.

CHAPTER 1 : PRODUCTION DESIGN.

There has rarely been a film which could make ones adrenaline rush. In 1977 such a film appeared on movie screens all over the world. From the sight of the first giant spaceship to the last explosion, this film was and still is one of the most visually powerful films ever made. It was *Star Wars*. The images created in this film evoked pure excitement from its audiences of all ages. Looking at *Star Wars* fifteen years later it would be easy to be quite critical of the special effects. There is no question that they have dated. However, whatever flaws may exist they are ignored due to the genius quality of someone like George Lucas, creator of *Star Wars*. He realised that a film must be well designed in order to be a good film.

Production design in a science fiction movie covers the areas of set design, creature design, prop design and the slightly separate area of costume design. As I have already mentioned production design must be implemented before special effects can be dealt with. Those films which depend more on special effects than production design tend to be boring. The classic science fiction movies are the ones which can be viewed over and over again and evoke some excitement every time. These movies are the ones with good visual design. Good visual design can overcome a poor story line or poor acting to a certain extent. "It wasn't the script, which was banal, or the casting, which was erratic (Jack Nicholoson's Joker excepted) which made *Batman* worth watching, but the design." (Streitburger, 1992, p.42)

In order to achieve a high quality of production design in a science fiction movie there are a few areas which should be regarded ;

Planning and Storyboards : In any science fiction film the key to success is the amount of excitement and enthusiasm which can be generated from the audience. Scenes from science fiction movies which evoke such feelings are not due to spontaneous decisions by the director. For the most part they are carefully planned. In creating a highly cinematic and visual film most directors believe in preplanning and story boarding all the scenes. Storyboards can be an essential part of production design in a science fiction movie. It is in the storyboards that the first images of the sets, spaceships, creatures etc. are born. the designers then take this idea and develop it until we get what we see on our movie screens. On the

storyboards the artists sketch their ideas in pencil and finish off with ink. Colour is rarely used in storyboards as they are often photocopied. The main advantage of story boards is that ideas can be designed and redesigned in sketch form before millions of dollars are spent on extravagant visual concepts which might not work.

Director and designer relationship : The relationship between the director and the designer is most important. In the films with a higher quality of production design there has obviously been a good collaboration between the director and the designer. For example George Lucas, Director of all three *Star Wars* films had a very close relationship with his team of designers. At the beginning of a film he would propose his ideas and the and the designers would go away to sketch up their interpretations of George's suggestions regarding spaceships or creatures or whatever. When the ideas were ready for developing sketch models would be made and painted and lined up for the director to inspect. He would state his preference for a particular idea and then may suggest further improvements to the designer. This method of interaction between the designer and the director has been proved to produce the best quality of work. However, there can be some temperamental designers who resent any input by the director. H.R. Giger the designer for *Alien* (1978) was such a designer. During the production he was often disappointed, confused, impatient and fussy. He admitted to giving his colleagues a hard time.

> I upset and infuriated my colleagues when I indulged in harsh criticism and insisted on my own designs. Ignorant as I was of the technicalities of big film production, I lacked the necessary breadth of view to see that what was also possible by improvisation.
>
> (Giger, 1979, p.1)

This was Gigers first time to work on a movie, so he was not used to the conventional ways of working with a director. He felt that the restrictions which Ridley Scott, director of *Alien*, had put on him limited him as an artist. Nevertheless he had to compromise and listen to suggestions put to him by Scott. In all cases the production design work for a science fiction movie is never 100% the work of the designer. There is always an input, especially in the early stages, by the director.

Influences : Apart from being influenced in their creations by the director and how he thinks the final product should look , the designer must have several other influences to draw from in order to have an interesting design. Usually on a production designers desk among the sketches and pens one will find cutouts and photos from old magazines, photos of architecture and classic paintings. For a science fiction movie the designers job is to create a whole new world and it can look like whatever he wants it to look like. So if a designer were to create a new city for example, as Anton Furst did for *Batman:The Movie*, he could take examples of architecture from the past and the present in order to create a city of the future. Often the result is a combination of different influences which form a whole new style for the designer.

Design for a science fiction movie can be split up as I mentioned before into a few separate areas; set design, prop design, creature design and costume design. In each of these areas there is one key factor which leads to a good science fiction film. This is the amount of attention paid to detail. Everything is planned, sketched, designed and redesigned. In *Star Wars* for example a starship, the Y-Wing fighter which only appears for about 60 seconds at the climax of the film is designed in minute detail and several models of different scales were constructed in order to get the exact look in a scene which the director wanted. No shortcuts were taken.

Everything in a science fiction movie, no matter how incidental it may be, is worthy of detailed designing. This will result in a film which can be watched over and over again and which will evoke excitement and enthusiasm every time.

CHAPTER 2 : SET DESIGN.

In any science fiction film one of the more important aspects of design is the set design. The sets in any type of movie have enormous impact on the audience. In science fiction movies the sets are a major part of the story. The mood of the particular scene is set by the feeling imposed by the sets. It can often be the case that a film might have a good story but the sets let it down. H.R. Giger, designer for *Alien* said that what he objects to in science fiction films is the 'rough and ready production'. They make the hero rush boldly through the same passages and try to kid the audience into thinking that there is a really huge, invisible network of corridors. This he says is cheap workmanship.(Giger, 1979, p.44) However, when a movie has to be made on a relatively low budget and in a limited period of time, as *Alien* had to be, rough and ready production can be hard to avoid. The only way to overcome such a problem is to employ someone with the artistic skill of H.R. Giger. Artists like H.R. Giger are a rare breed. Gigers' works, like those of Blake and Dali, are basically loving and raunchy-erotic. With Giger there is never room for compromise.

In 1978 the Shepperton studios in London were taken over by the production crew of *Alien* where they proceeded to build lunar landscapes and spaceship interiors. Gigers work is very organic and this is apparent in his sets.(see fig. 2.1 overleaf) His initial sketch models were constructed from bones and plasticine. This proved to be very effective and the end result was an alien ship which resembled the inside of a living thing. The film crew could not make the sets full size because this would have had proved too expensive. Some miniature models were used and some half scale sets were constructed. For a realistic look on these half scale sets the actors were replaced by children in spacesuits. So on camera the set looked twice as big. The sets were constructed mostly out of wood and plaster and then painted.

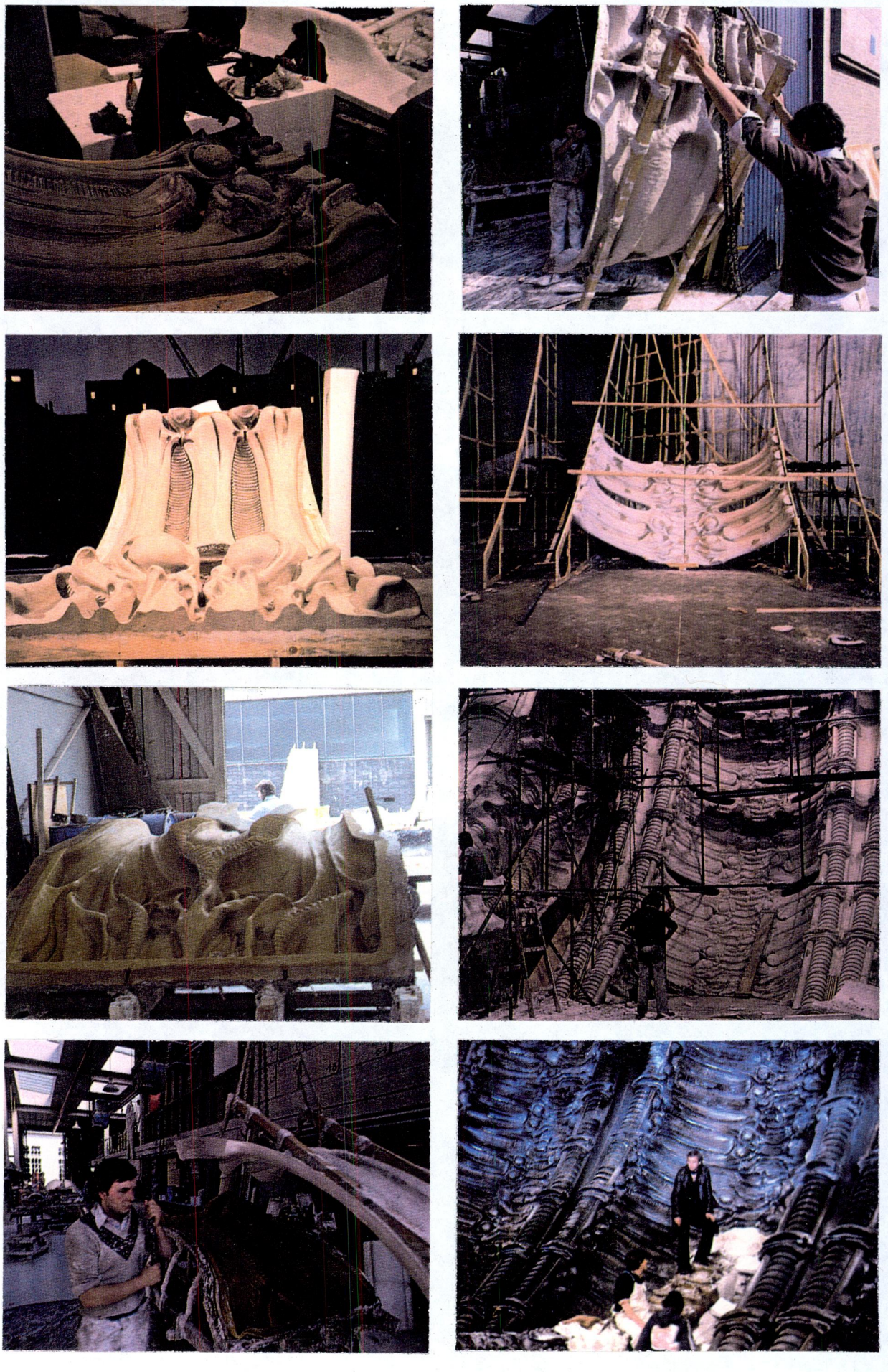


Fig. 2.1 Constructing the sets designed by Giger for *Alien*

For some science fiction films enormous sets are required. These are filmed mostly by using miniature model sets or alternatively, matte paintings are used.(see fig. 2.2 below) Instead of using huge sets, a painting of the specific view is used. A small section of it is left blank and in this area the real life action takes place. The film and the painting are composited together. Matte paintings not only reduce the cost of the overall design but they also introduce scenic views which would otherwise be impossible to create.

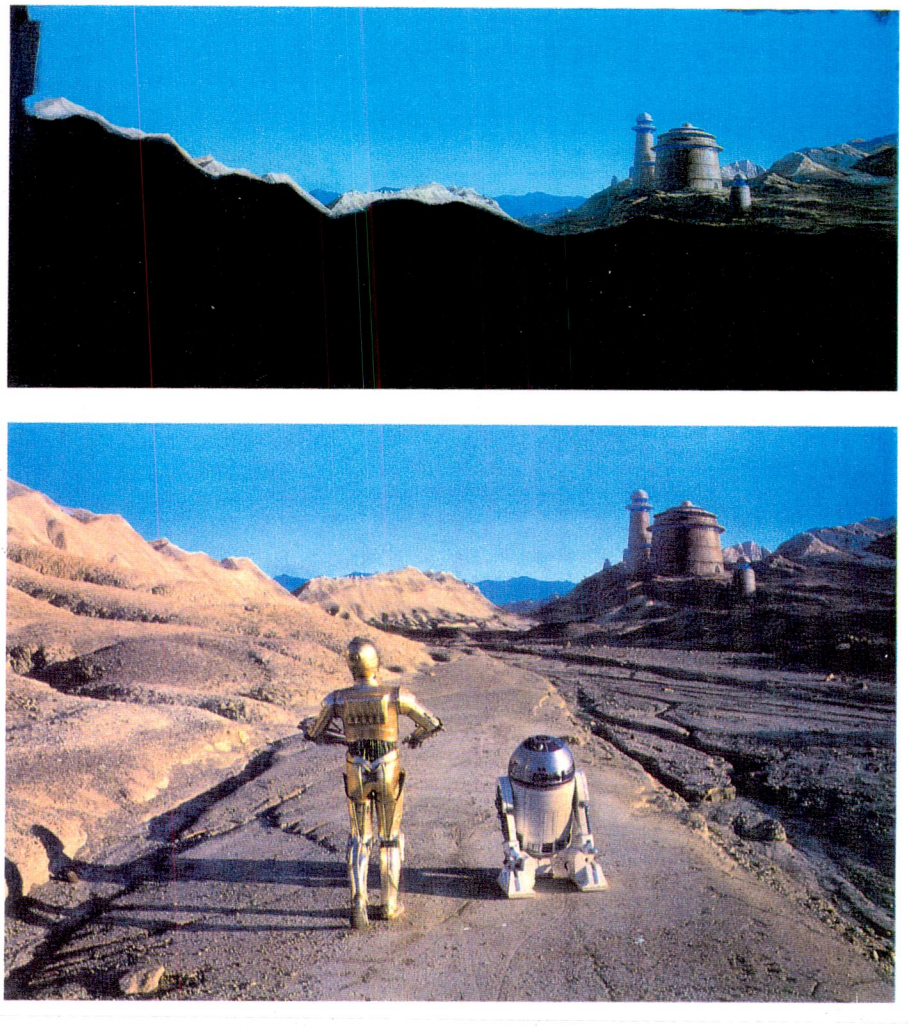


Fig. 2.2 Above is the initial matte painting and below it is the final shot with the film and painting composite.

As I said in chapter two, influences are a very important part of the design process and the end result can depend on where a designer draws his influence from. For set design this is no exception. Anton Furst, designer for the first Batman movie is a good example of a designer who is not afraid to be influenced by architecture, books and other designers. For *Batman* he created the black world of Gotham city. When he first set out to design a Gotham city he had to decide what direction he would take. The Batman character was fifty years old and had gone through various changes in the comics. Furst was most interested in the original Batman style created in the mid forties by the illustrator Bob Kane. He also used the modern illustrated novels *Dark Knight Returns* and *The Killing Joke*. Furst said that these had a strong look which he was looking for.(Pirani, 1989, p.34) He decided to go with a Gotham city that came from no particular period but had definite influences. He said that his Gotham city was heavily based on the worst aspects of New York. This resulted in his 'Gotham' being essentially an ugly city. He succeeded in getting a feeling of the buildings closing in over the streets allowing little or no light in. Another influence on this film was prison architecture which he stretched out into skyscrapers. He used ideas from Louis Sullivan (1856-1924), a Chicago based innovator in skyscraper construction. He mixed these with Zigurat structures and Facism design and he came up with massive vent structures. If this was not enough Furst then put in some modern architecture just to confuse the issue. This was in order to draw it away from looking like a complete period piece. After such an incredible anomaly of styles, all mixed together and each one apparent, Furst found that he had developed a unique style of his own. The resulting Gotham city illustrates how effective a combination of influences can be when designing for a science fiction film. Furst had previously worked on *Full Metal Jacket* (1987) and *Company of wolves* (1984). He brought his rich visual instincts from these films to *Batman*. Successfully creating an architectural style which is unique yet recognisable, he has mirrored the black world of Gotham city in the stylised savagery of his buildings.

The cathedral at the climax of the film is the key dramatic device in the film.(see fig. 2.3 overleaf) Furst was primarily influenced in his design by Gaudi, the now-feted Spanish architect who is best known for his cone-shaped cathedral in Barcelona. There is no Gothic, Norman, or any other cathedral reference in Gaudi's masterpiece, so its timelessness appealed to

Fig. 2.3 A sketch of The Cathedral, a key dramatic device for *Batman*, designed by Anton Furst.

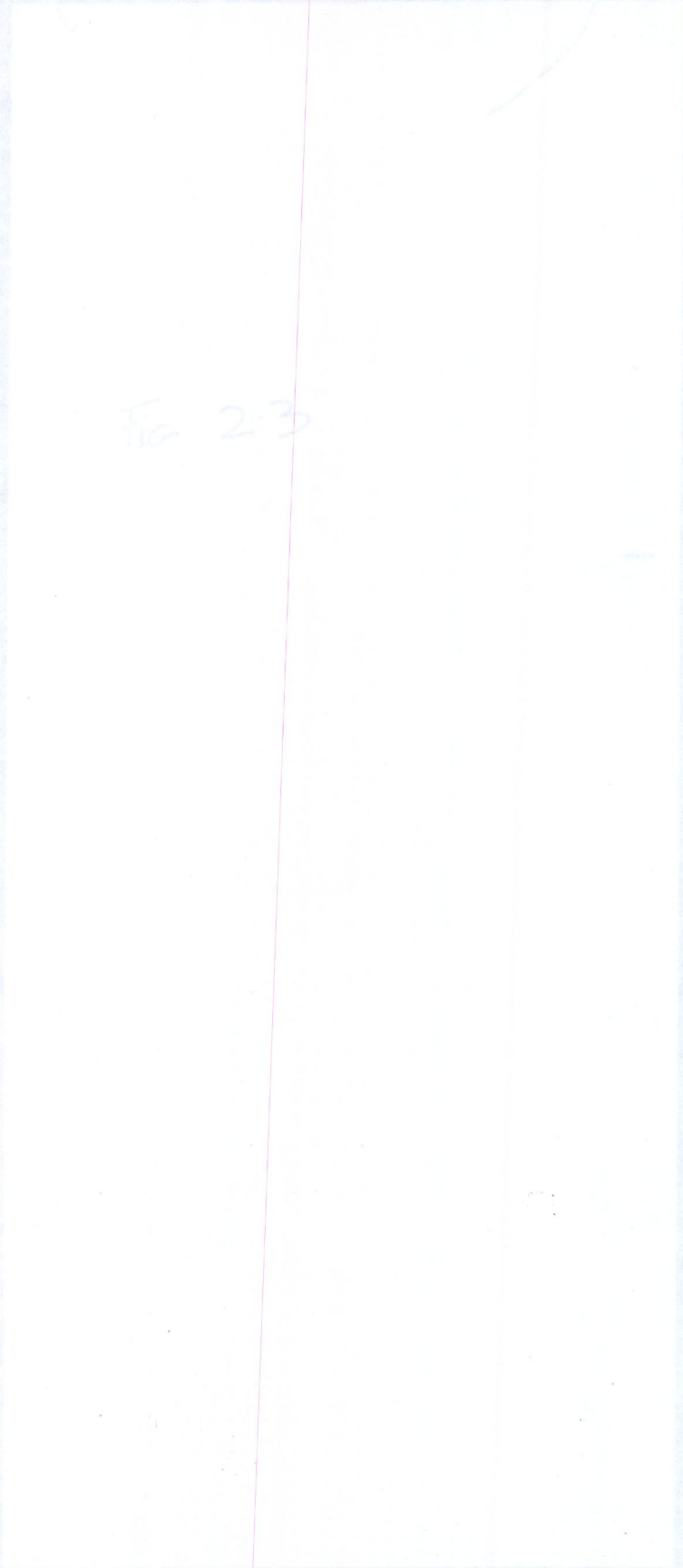


Fig. 2.3

When sets for a science fiction movie are being designed the designer must take into account the basic function of the set. They are essentially a backdrop for the characters. In most science fiction films the sets should interact with the characters. In *Batman* the sets reflect the Batman character. Not only is Gotham city designed to camouflage Batman's physical appearance but it also reflects his whole vigilante persona.

> Having taken his cues both from the early 40s serials and the Dark Knight persona through which Alan Moore had totally deconstructed the caped crusader for a new breed of comic aficiondos, Burton, with evocative sets created by Anton Furst offered us a hero who was almost as sinister as his criminal opponents.
>
> (Streitburger, 1992, p.42)

The Joker character on the other hand with his loud suits goes the opposite way. Whenever you see The Joker his appearance shouts at you from a background of subdued tones. Furst was influenced by these characters and they helped him to orchestrate the drama of colour. In the same way Giger designed his sets as a backdrop for the alien. Like *Batman* and Gotham city, the sets in *Alien* become almost a part of the creature. Here again we see the importance of planning. The characters must be understood before the sets are designed.

It is hard to imagine the scale of which sets for a science fiction film are created. For the Barge scene in *Return of the Jedi* , which was a relatively small scene in the film, it took 100 workmen four months to build. This was done in the hot deserts of Arizona and was probably the biggest location set ever built.(Shickel, 1983) The sets for *Batman* were the biggest since *Cleopatra* (1963). With a construction team of two hundred people Main Street Gotham took five months to build. There are four stages to the construction. Firstly the frameworks of the set are built using wooden frames these are supported with scaffolding and are then clad in plywood. Following this a plaster or sometimes fiberglass covering is added and then finally painted. This would be the standard method for constructing sets.

Furst and thus fitted the tone of the film. "I basically stretched Gaudi's design into a skyscraper and added a castle feel which was especially influenced by the look of the Japanese fortress." (Furst, from Marriott, 1989, p.90). The top deck of the cathedral is strongly evocative of Hitchcock's house, a favourite image, as it happens of Tim Burton's, director of *Batman* (Pearce, 1992, p.33). The dangerous parapets, as well as the cantilevered belfry, fit the malevolent heart of a city which God left 100 years before. Yet the augmented and exaggerated design, whose unreality still had to be made credible, also suggests the comic absurdity which is evident in the film.

Another piece of classic set design by Furst was the Flugelheim Museum whose brutal exterior is more akin to locomotive design. Furst regards it as one of his most successful designs.(see fig. 2.4 below) "I wanted the museum to be a surprise, a new radical edifice which concealed an older building underneath and I think I got that look" (Furst, from Marriot , 1989, p.89) The radical broadstroke of the exterior conceals a style which borrows from Otto Wagner as well as brownstone housing. The locomotive look of the outside is balanced by a rooflight on top, through which Batman jumps to save Vicki. Having soft light inside was quite deliberate. Furst wanted to reverse the notion of a conventional building where you are normally happy to walk back outside into the light. Here, it is just the opposite.

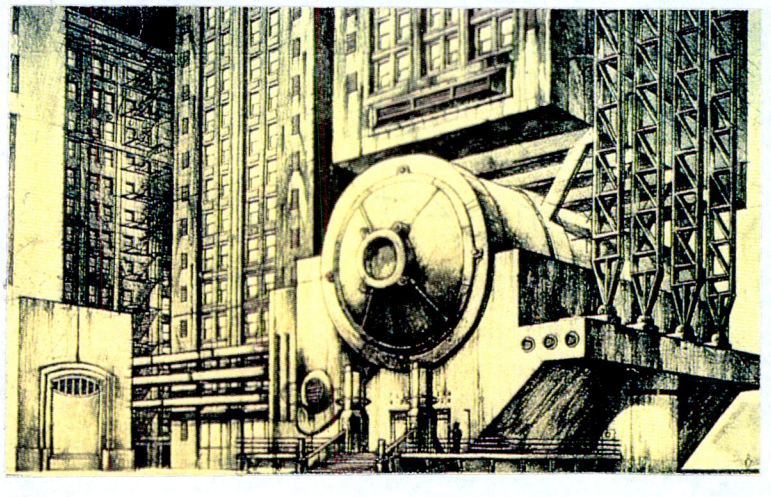


Fig 2.4 Sketch of The Flugelheim Museum by Anton Furst for *Batman*.

Fig. 24

CHAPTER 3 : CREATURE DESIGN.

Perhaps the most fun part of design for a science fiction film is the area of creature design, but it is a very important part of production design also. In almost every science fiction movie there is some character who is not your everyday, run of the mill human. As with set design, if the creature characters are designed and made badly they will not fool the audience into believing that they are real. It is essential for the success of a science fiction movie that the creatures in the movie cause an emotional in the audience, whether it be fear, laughter or sadness. This can only happen when the creatures are well designed and animated.

One cannot discuss the area of creature design without looking at the work of George Lucas and Industrial Light and Magic.(ILM) Lucasfilm has been at the forefront of creature design since the first Star Wars film in 1977. For this film and for the sequels to it (*Empire strikes back* and *Return of the Jedi*) Lucas hired Phil Tippet and Jon Berg, two experts in the field of creature design and animation, but never had they worked on a project as big or detailed as the *Star Wars* stories. For *Star Wars* the Industrial Light and Magic crew were really experimenting in the field of creatures but by the time *Return of the Jedi* was in production they had perfected the art of creature design. George Lucas was proposing ideas for *Return of the Jedi* up to a year before production started on the film. In all cases Lucas will have a general idea for what he wants a specific creature to look like. For example he wanted Jabba the Hutt to resemble a Queen termite in her nest, which resembled a large yellow quivering sack of slime. This idea was given to one of the creature designers and they made some rough drawings. There first Jabba looked too human-like, the second looked too snail-like, but the third is what we see on screen and this was just right. When the designer comes up with an idea that shows some promise a scale model is made and painted. This is shown to Lucas and after he suggests some alterations the creature is made up in full scale. If the creature is the same size as a human a suit will be made to be worn by an actor. When a creature is larger then a process of animation known as stop-go motion is used. This is basically where a miniature model is made and the object is photographed one frame at a time. In between frames the model is manipulated into another position. Where necessary this film of the miniature in motion is then super imposed onto a matte background.

When it is impossible to get an actor into a suit and when it is uneconomical to use stop-go motion the old idea of a puppet is used. For a full scale Jabba the Hutt as many as ten operators were used. Each person was responsible for a particular movement of the creature. It is most important that the movement of the creature be convincing.

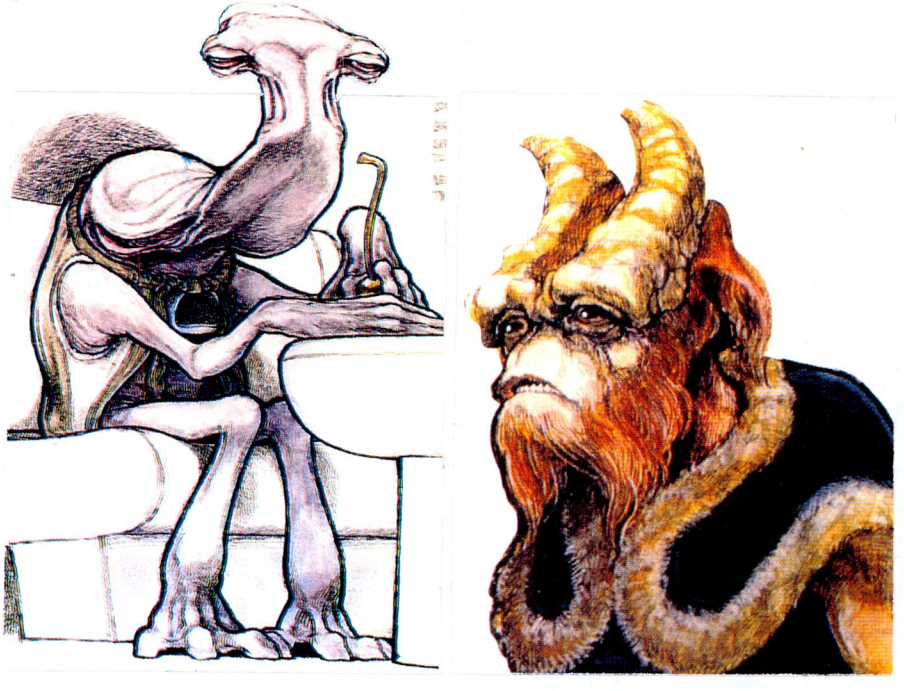


Fig. 3.1 Sketches of the creatures from the bar scene in *Star Wars* by Phil Tippet.

In a bar scene in *Star wars* several creatures appeared.(see fig. 3.1 above) They were all well designed however, most of these were background characters and they appeared to be very stiff. The budget for this film was not very big and Industrial Light and Magic could not afford to animate these characters to a high standard. George Lucas acknowledged this fact and so in *Return of the Jedi* he did the scene in Jabba the Hutts palace which was full of creatures. For this film Lucas had a much larger budget and he said he did this scene because now he could design and animate the creatures the way he wanted to but could not afford to in *Stars Wars*. Over 80 different creatures were designed for the Jabba scene. And there was well over 2 million dollars spent on creatures for this scene alone. Jabba himself cost over half a million dollars. (Shickel, 1983) We see the high quality of design in the character of YODA. (see fig. 3.2.1 below) This

character appeared in *Empire Strikes Back* and *Return of the Jedi*. The expressions on this characters' face are extremely real, yet they are actually controlled mechanically by remote. Hundreds of preliminary sketches were made before a final design was chosen. (see fig. 3.2.2 below) All the necessary movements have to be worked out before the creature can be designed. Here again we can see the advantage of storyboards.

Fig. 3.2.1 YODA, as we see him in the movie.

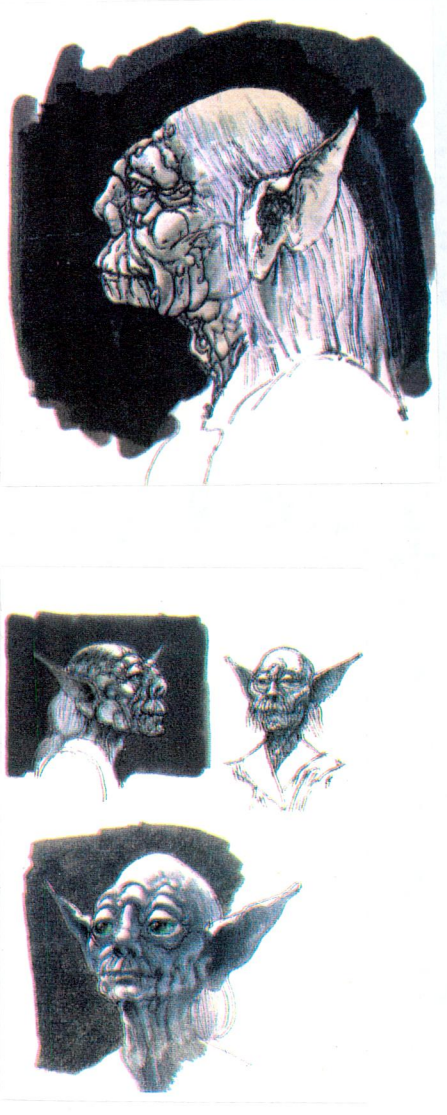


Fig.3.2.2 Early sketches of YODA.

Again, it is important to stress the amount of detail which goes into designing for a science fiction film. For the *Star Wars* movies every creature had to go through the design process. If we want to look at the design process of a creature for a classic science fiction film we should look no further than H.R. Gigers 'Alien'. This is probably one of the best designed creatures ever created for a film. Apart from having the task of designing all the sets for the film, Giger was asked to design the alien, the star of the film. There were four elements of the alien which Giger had to deal with. The first is the egg. When designing the egg Giger had originally designed an organic, vagina-like opening. "When I took off the plastic cloth in which my work was draped, there was a howl of laughter from the whole group. I had lovingly endowed this egg with an inner and outer vulva." (Giger, 1979, p.46). This design for the egg was short lived. The director of the film felt it would get them in trouble in catholic countries. When redesigning the egg Giger made a cross shaped opening. He said his reasoning for this was that this would be something the catholic countries are fond of looking at. (see fig. 3.3 below)

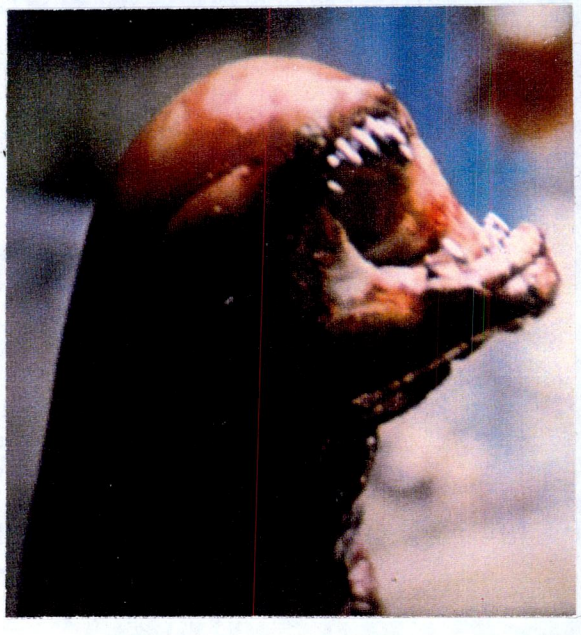
Fig.3.3 The Crossed opening of the Egg as Giger designed it for *Alien*.

The second element of the alien which he designed was the face-hugger. This is the creature which jumps from the egg onto the astronauts face. His design for this creature is very function orientated. It consists of two sets of four fingers which grip onto the head. (see fig. 3.4 below) It has a tail that is used as a spring to jump from the egg. The design process for each alien is extremely detailed, from early sketches to the finished model. With the face-hugger Giger works out how to get the fingers to move in the model. In the finished product the quality of the design is due to the intricate detailing. The quality of the facehugger surprises even Giger himself as he said that he was amazed how a material like latex, with a bit of jelly, and a few strings (to make it move like a puppet) can give the illusion of life. (Giger, 1979, p.54)

Fig. 3.4 The Facehugger on the face of John Hurt in *Alien*

Thirdly he had to come up with a design for the chestburster. In the film the face-hugger lays an egg inside the victim. This egg grows into a small creature which then bites its way out of the victim, Or as Giger puts it The alien wants to free itself from the 'womb'. It is interesting to note the way Giger chose to design the Aliens lifecycle with many parallels to the life cycle of humans, and especially the birth process. "Giger faces the trembly, slimy wonder of human egg production. Impregnation! Pregnancy! Oh, what a lover of the female Mia-Gaia is this Giger" (Timothy Leary, from Giger, 1979, p.6)

The embryo is planted and after a period of growth in the hosts stomach the creature leaves to begin its next stage of growth. Unfortunately for John Hurt in 'Alien' the birth process is slightly more messy than in real birth situations. In designing this phase of the aliens growth, Giger drew influence from Francis Bacons *Cruxifixion*.. He made the creature blind with a terrific set of teeth. (see fig. 3.5.1 below) Giger found it hard to come up with something that didn't resemble any known kind of animal. His early designs resemble a plucked turkey and others resemble various kinds of dinosaurs.(see fig. 3.5.2 overleaf) Eventually a larva type design was decided on. Giger found this scene the most horrible and the most impressive of the film. It was also the most difficult to accomplish.



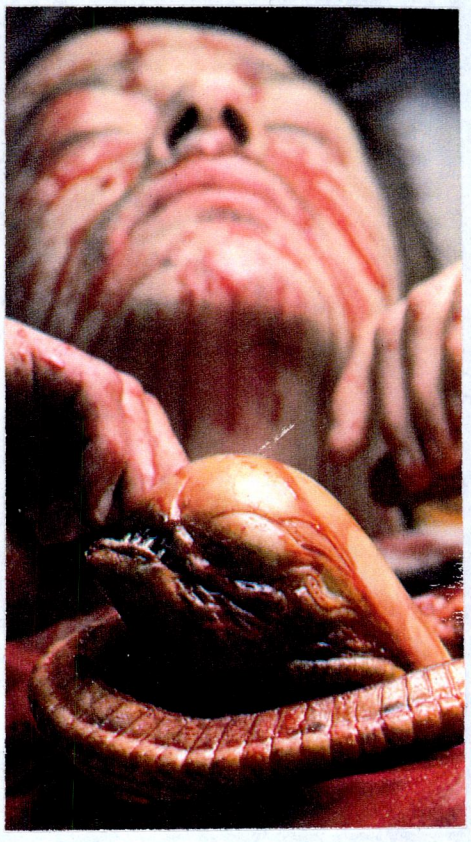


Fig.3.5.1 Views of the Chestburster as it appeared in the film.

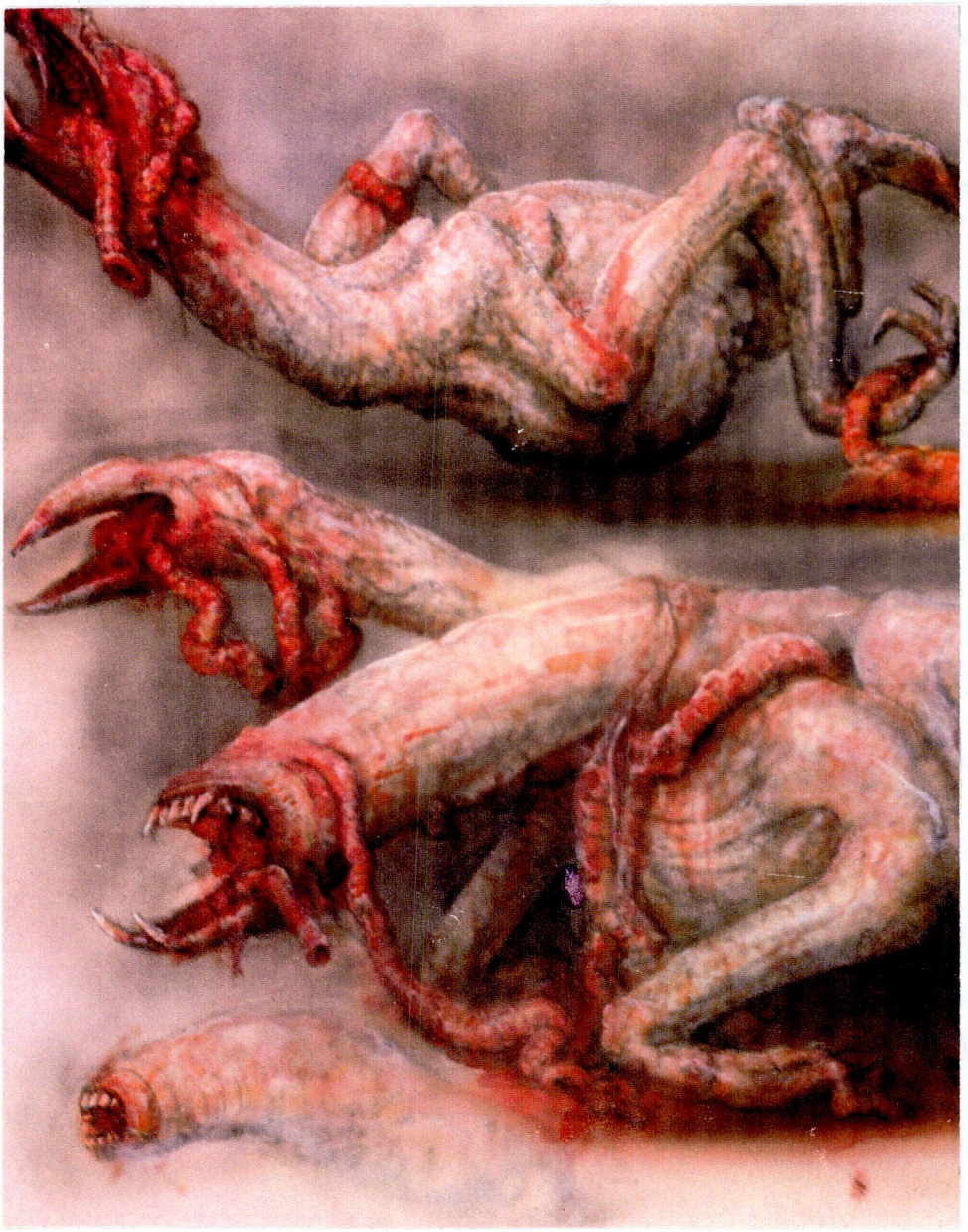


Fig. 3.5.2 Early sketches of the Chestburster by H.R Giger for *Alien*

The final element of the aliens growth is the adult alien itself. This is the monster, the title role of the film. In the early stages Giger did not know what direction to take when designing the alien. The writer of the story Dan O'Bannon originally suggested that the alien should resemble 'An oversized deformed baby' (Giger,1979, p.10). Another suggestion was to use a big man with children strapped to him and then the whole group wrapped up in rubber. This would produce a monster with a number of moveable extremities. In the end he decided to go with an elegant insect-like shape. (see fig. 3.6 overleaf) The head was designed a long shape and again Giger introduced functionalism into his design. The long head allows an inner set of teeth to shoot out. Giger also wanted the head to be transparent and full of maggots but this caused obvious problems in the manufacture of the head. Experts in creature design were called in to help Giger as he was falling behind schedule. Mostly model makers, some of whom worked on *Star Wars*. Gigers nerves began to fray as he came towards the end of his work on the alien. Various problems were arising. Moulds had to be remade. He had to remodel one of the aliens heads which looked too much like an apes head. He and his team made six alien heads. One mechanised, two unmechanised, one distance controlled by remotes, one partly mechanised and finally they made one from plastic foam. The stunt man wore this one. (Giger, 1979, p.68)

In his final design Giger was accused of being phallic. This is very much a part of his excellent and unique style. Giger won an Oscar for his work on *Alien* in 1980. This was one of the first times that Industrial Light and Magic did not win the award for visual effects. By looking at how Giger handled the design of this creature we can see that the whole process can be a difficult one. It can be very hard to make an inanimate thing look like it lives and breathes. The technology that is available for films today was not around for *Alien* or *Star Wars*, two films from the seventies, but they succeeded in creating terrifying and sometimes loveable creatures which are equal to, if not better than, those creatures created for modern science fiction films.

Fig. 3.6 The elegant insect like shape of the Alien as designed and drawn by Giger.

CHAPTER 4: PROP DESIGN.

The area of prop design is an interesting one because it is closely related to commercial industrial design. It is perhaps the most detailed of all the areas of production design. Most of the props in a science fiction film are of a futuristic nature and so the designer must consider this when he is going through the design process. There is one added advantage of prop design over commercial industrial design and this is the fact that the prop in a science fiction movie is not restricted by design for mass-production nor does the prop have to comply with any existing technology. Basically anything can be designed as long as it looks good.

For a science fiction film to remain fresh after some years, as I have said before, all it needs is good design. When the design is good the quality of the special effects can be ignored to a certain extent. If we look again at the *Star Wars* movies we see that in the area of prop design, the greatest of care was taken to produce a high standard of design. For the *Star Wars* project the main designer was Ralph McQuarrie. McQuarrie was a commercial illustrator. He did a number of technical paintings for NASA which served him well when it came to designing for *Star Wars*. The props for *Star Wars* consisted mostly of droids, weapons and spaceships. It was McQuarrie who came up with all the designs for The Millennium Falcon, The Imperial Walker and thousands of other props for the *Star Wars* movies. The interesting thing about the *Star Wars* movies was that for the first time all the space hardware had character. The ships looked space-worn, with holes and dents. This was not accidental. The designers and modelmakers were creating props with character because they felt that for a science fiction film like *Star Wars* the characters included the spaceships and other props. When the designers were designing the props they tried to give the impression that they had some kind of past that we cannot see in the short period of the film. It can be said that the imitators of *Star Wars* left out this detail when they were designing for their films and the result were props that looked like they came straight of the assembly line. During *Star Wars* we grow attached to the Millennium Falcon like it was our own.(see fig. 4.1 overleaf) It is often refered to in the film as 'a mass of Junk' and this is what it looks like to a certain extent. However, it also has a speedy look to it and this is what gives it its charm.

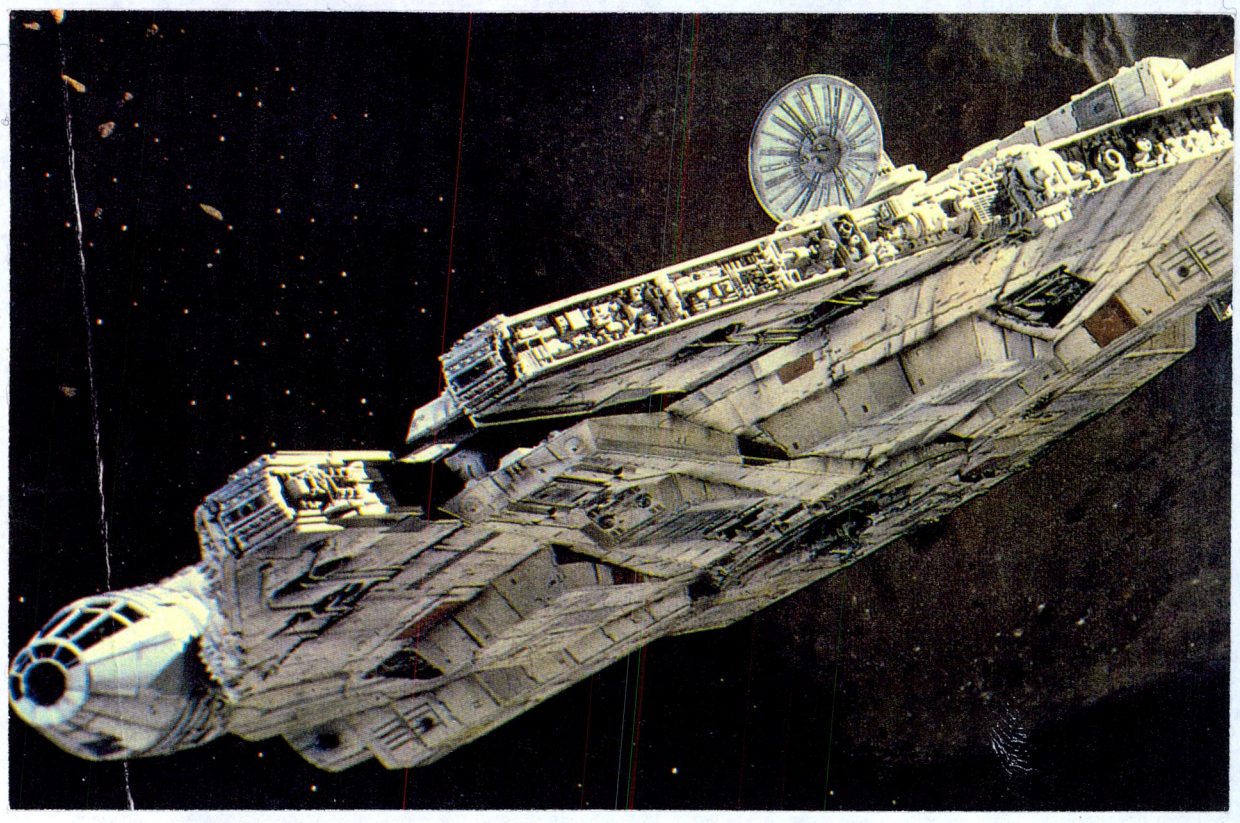


Fig.4.1 The Millennium Falcon, a cosmic hotrod.

The Millennium Falcon (see fig. 4.1 above) is not just a piece of space hardware, it is a cosmic version of a hotrod. The Imperial TIE (Twin Ion Engine) Fighters are more than enemy spacecraft, the actually look nasty. It could be said that *Star Wars* was the movie which revolutionised spaceship design in the science fiction movie industry. There were to be several imitators of these designs. Universal's *Battle star Galactica* was a pointless exercise in cashing in on the trend begun by Star Wars. Despite the presence of special effects by *Star Wars*' John Dykstra, the movie and T.V. series was hampered by Mediocre characters and plots, and in addition to this the production design was below standard.

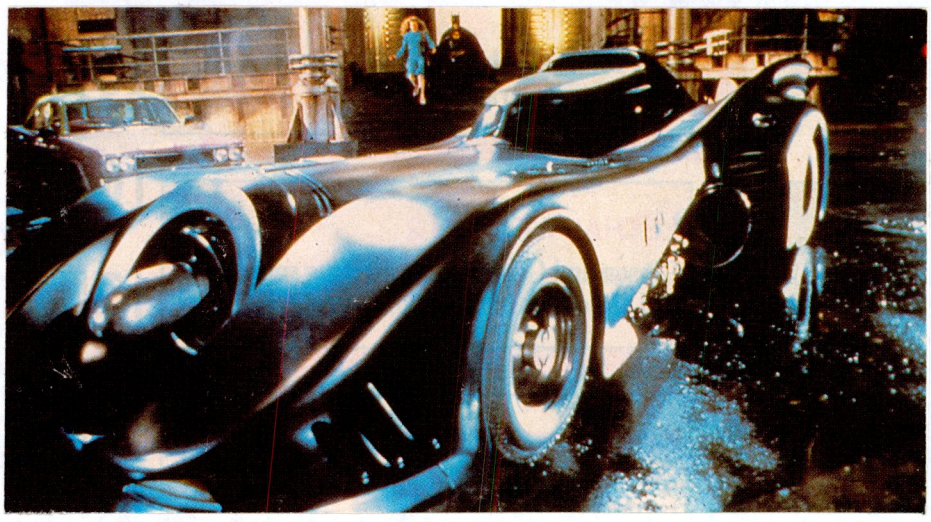


Fig. 4.2 A brutal expression of a car, The Batmobile.

Anton Furst also wanted his props for *Batman : The movie* to be original and to have some character. When he set out to design the famous Batmobile (see Fig. 4.2 above) he didn't want to create a futuristic vehicle on a pastiche 1950's car. He said " I went for a more brutal expression of a car, an image which also suggests sex and violence" (Marriott, 1989, p.71) It is almost a symbol of the earliest Batman, the Batmobile gives off a brooding air of purposeful malice and streaks through the streets like a killer bullet. It possesses the same sinister sleekness of Batman himself. Basically it is a brute force machine with a persona instead of being a characterless prop. The car is extremely aeronautical and according to Furst this was the aim of the design. " We wanted it to look very forbidding and the most forbidding things that I have seen are those surveillance aircraft, so it has that stealth look to it." (Pirani, 1989, p.32) It took a team of twelve technicians twelve weeks to build the Batmobile. All his gadgets (the speargun, steel gauntlet, ninja wheels, batarangs etc) are designed to mirror the sinister character of Batman.

On close inspection artwork and sets do not look as good as they do on screen, however, this is not the case with props. Every prop has to be designed in detail. Several drawings and renderings are made of each individual prop. Technical drawings of the prop are then drafted up so the various scale models can be made.(see Fig. 4.3 overleaf)

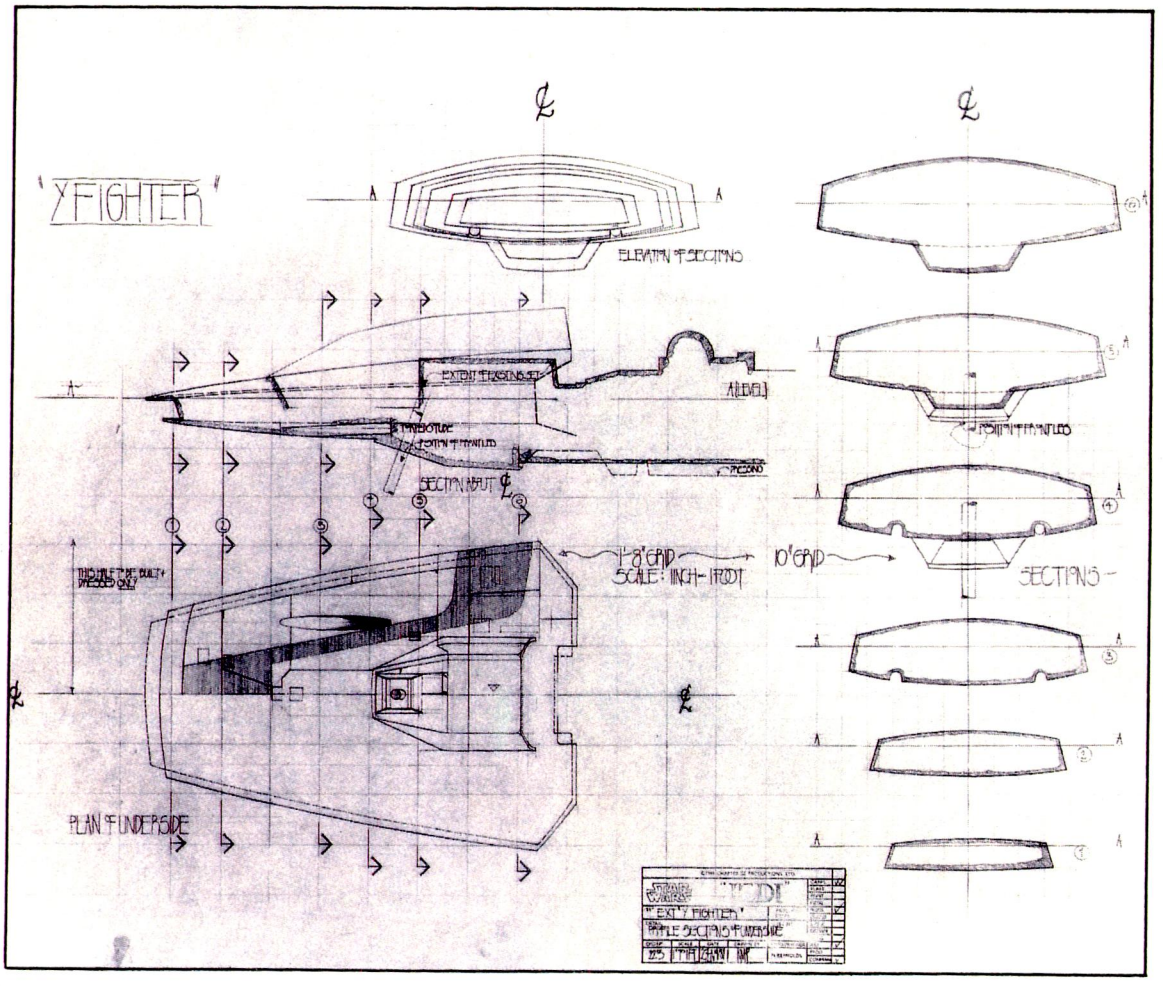


Fig.4.3 Technical drawing for the Y-Wing Fighter cockpit. From *Return of the Jedi.*

Model construction is a very important part of the prop design process. For a science fiction movie model construction is a skilled craft. The small scale models used in a science fiction film not only have to look good but they must also be durable. The are handled frequently, they are exposed to hot lights and other daily stress. To avoid damage they are constructed to be more durable than your every day hobbie kit model. Most models are filled with electronics. There are lights for the windows and engine pods and there can be miniature motors that control wing flaps etc. These models are very expensive and can cost thousands of dollars. Peter Takeuchi, the visual effects producer from ILM who worked on *Star Trek 6 : The Undiscovered Country*, said when he spoke on the Star Trek 25th anniversary special in 1992, that a model for the 'USS Enterprise' cost in the region of $800,000. Looking at the amount of time and work put into these designs and models, it is no wonder that the models cost so much.

There is a large degree of technical input into the design of props for a science fiction movie. For each item a technical drawing is made. This is so the models can be made to the exact requirements of the designer.(see fig.4.4 overleaf) The interesting thing about the designs for the spacecrafts and weapons according to the technical drawings is that they actually look feasible. The spacecrafts seem to be thought out to the extent that everything should work and apart from being aesthetically exciting they are also quite functional. This is also apparent from the technical drawings.

The most frequent prop to appear in science fiction movies is the spaceship. Spaceships have been a part of science fiction mythology since its beginnings. As early as 1865 Man had considered the possibility of travelling through space, protected by a metal capsule. Jules Verne's *From the Earth to the Moon*, (1865, translated 1873) had human astronauts make the journey in a metal capsule fired from a gun. Twenty eight years later, H.G. Wells book *First Men on the Moon* used an anti-gravity material to effect the same trip. But it was Verne's book that was filmed, in 1902 as *Voyage dans la Lune*, by Georges Meiles. Meiles' film borrowed heavily from the ideas laid down in Verne's *From the Earth to the Moon* and Wells' *First men on the Moon.* The astronauts of a *Voyage dans la Lune* climb willingly into a Bullet-shaped spaceship which is then fired at the moon by means of a vast cannon. Blissfully ignorant of the fact that they should be smeared across the back wall of the ship after suffering the same incredible G-forces that are experienced by a bullet, our intrepid heroes gambol happily on the lunar surface without any visible breathing apparatus. It was another seventeen years before filmmakers looked at spaceships and the problems of space travel in any serious way.

Up until 1951, films featuring space travel had assumed that spaceships would be built and pilotted exclusively by earthmen. No one had considered the possibility of space pilots visiting earth. *The day the earth stood still* changed all that. The movie told of the visit to earth by Klaatu and his robot aide gort in a sleek, saucer shaped craft . The design of the ship had been inspired by the then-current rash of UFO sightings which cluttered up the newspapers. Three models of the ship were built. The two smaller versions measured 2ft and 7ft across respectively. Far more impressive was the vast 100ft mockup built on the 20th century-fox backlot.

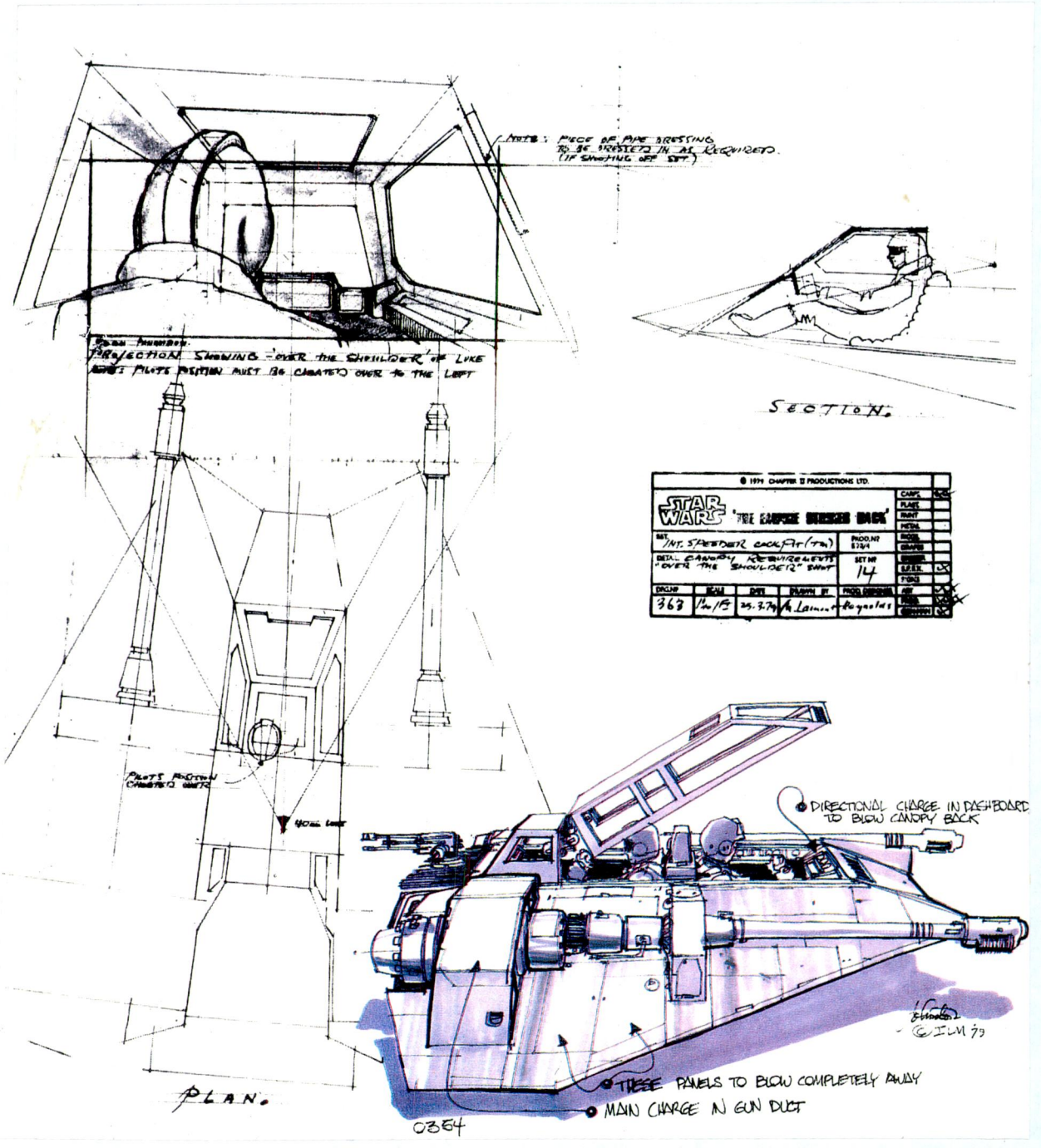


Fig. 4.4 Technical drawing of the Speeder cockpit and rendering of the craft also.

From *Empire Strikes Back*.

The back of the ship was left open to allow the technicians access to the machinery which operated the ramp and door sections of the saucer.(Murdoch, 1981, p.55)

From here on , with the possible exception of *It came from Outer Space* (1953) which featured a globular ship of immense diameter, movie spaceships slavishly adhered to either the 'rocket' or the 'saucer" school of design. It wasn't until a lot later, 1968 in fact, that a new type of space ship design made its way into the science fiction scene and changed space movies forever.

With Stanley Kubricks *2001: A Space Odyssey* came new look spaceships. The spaceships of 2001 came in all shapes and sizes. Everything from a Pan Am space liner to the vast Discovery 1 Jupiter probe. Strangely 2001 did not spawn a whole serious of imitators in the same way that 'Star Wars' did.

CHAPTER 5 : COSTUME DESIGN.

The area of costume design could be looked at as being separate from all the other areas. The normal procedure is to employ a separate designer for costume work but this is not always necessary. For set, creature, and prop design the designers usually have an industrial design background as well as an artistic one. A costume designer however would lean more towards the fashion side of the design industry.

For a film like *Batman* for instance it was absolutely necessary to have an individual designer for costume design. The area of design in the Batman movie which impressed many a critic is that of costume design. The job of creating Batmans suit of armour and The Jokers outrageous suits was left to costume designer Bob Ringwood. He had to put a lot of effort into designing something that the caped crusader could actually wear and look forbidding in, without looking clumsy. As well as designing costumes for *Excalabur*, *Santa Claus: The Movie* and *Solarbabies* Ringwood designed for David Lynchs *Dune*. The rubber stillsuits he created for that film prepared him well for *Batman*.

Before designing the suit (see fig. 5.1) Ringwood studied the Batman character from the early years to the recent years but disregarding the 60s T.V. show as Anton Furst did with his designs for this film. Ringwood tried to get the definitive Batman.

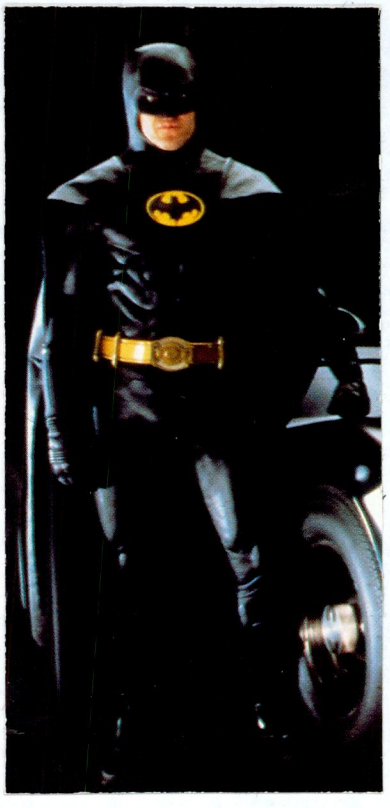


Fig.5.1 The Batman suit.

The body of Batmans suit was made from lycra, a material similar to that worn by dancers. A foam rubber cast glazed with silicone was glued on top of this. The finished costume had one main torso bodypiece plus head, cloak, boots and gloves.Ringwood compares the costume to a sculpted diving wetsuit (Shapiro, 1989, p.47). For torso of the costume a bodycast of the actor Michael Keaton had to be made. Michael Keaton was far from being extremely muscular so Ringwood and his design team had to come up with an outfit that was close to the comic characters physique but that also looked believable on the actor. They were not looking for something that turned him into a hulk. Essentially the job they had to do was to design a suit which streamlined the actors body giving him the right outlines and the right proportions. Ringwood said that he didn't want it to look like a costume. "I want Bruce Wayne to become another animal when he dorns the batman outfit." (Shapiro, 1989, p.47) Ringwood also decided to make the costume black rather than grey and blue which featured in the comics. This made the costume more sinister and sexy even. The cape was made of rubberised wool to facilitate movement and resulted in being quite heavy. Batmans helmet style headpiece caused Ringwood moments of anxiety. The seams had to be fitted so as they would be invisible on camera. If the seams were visible the suit would look like a cheap costume and not an extra layer of skin.

Bruce Wayne was at all times casually smart, dressed as he was in modern clothes with a slight forties look. Jack Palance as Grissom was dressed forties style also. This was in order to reflect the era of Al Capone and other such mobsters of the forties.(see Fig.5.2 Below) The goons in the movie were dressed in leather jackets inspired by New Yorks Guardian angels. This injection of modern styles with past styles was in order to draw it away once more from looking to much like a period piece. The look which Ringwood ended up with could be called 'a soft cell retro forties' or 'timeless modern look'.(Marriot, 1989, p.94)

Fig 5.2 Ringwoods sketch for the forties look outfits of Grissom and his colleagues

The Joker appears in what are in essence forties-style, double breasted three piece suits. Yet no forties suit would have sported the dayglo colours favoured by The Joker.(see fig. 5.3 below) Preferring dark blue and mulberry attire as the vain Jack Napier, he soon learns to blind the city as The Joker, Whose increasing psychosis is reflected in his noisy dress. Tailored blues soon make way for purple, red and green colours. All The clothes were designed with Jack Nicholsons stocky frame in mind. The costumes are a large part of the characters and Ringwood had to understand the characters perfectly in order to reflect their persona in the costumes. To do this he researched the characters by reading over 400 comics. The final designs are a product of his enormous talent and dedication.

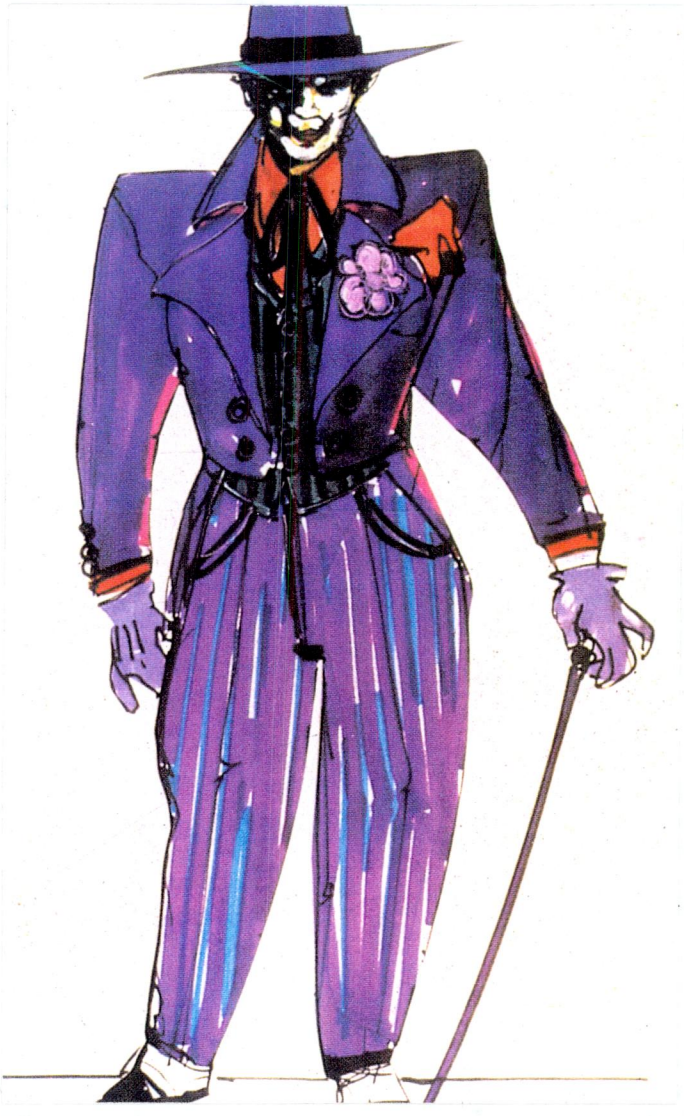


Fig 5.3 The Jokers dayglo coloured outfit as sketched by Bob Ringwood.

It is interesting to compare the Batman suit of the first movie to that in *Batman Returns*. Tim Burton wanted changes from the first movies costume so Ringwood came up with something which looks more like a suit of armour than a muscle suit.(see fig. 5.4 below) Ringwood said that this was much closer to his original ideas for the first film. (Pearce, 1992, p.36)

Fig. 5.4 The Batman suit in *Batman Returns* is like a suit of armour.

He also modified the mask , by strengthening the eye-brows and nose and changing the shape of the eyes and chin. The result was a much sharper and more sinister Batman.(see Fig. 5.5.1 and 5.5.2 overleaf)

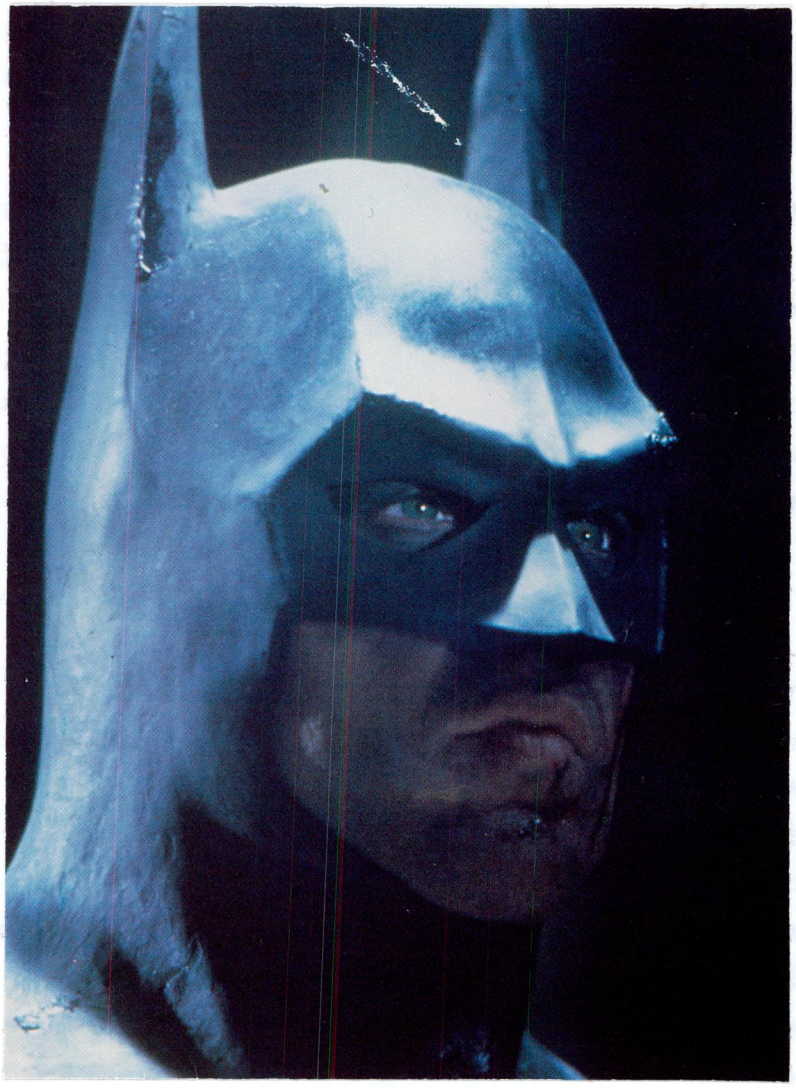


Fig. 5.5.1
Original
headpiece.

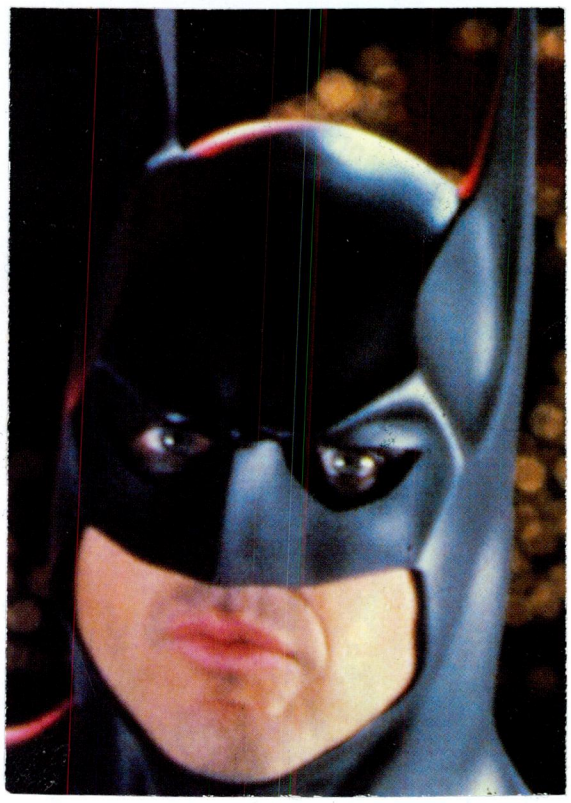


Fig. 5.5.2
The sharper
look of the
redesigned
headpiece.

Normally science fiction movies and T.V. series from the sixties and seventies would reflect some of the styles of the era in the costume design and if we were to look back now at some of these movies we would laugh at the futuristic spacemen wearing flairs and hippy outfits. With *Star Wars*, a film from the seventies, this is not the case. Ralph McQuarrie had the vision to look beyond the fashion of the era and come up with ideas which still look fresh today, fifteen years later.

CHAPTER 6: PARALLELS TO REAL LIFE DESIGN.

Science fiction film design is a subject of more importance than one would think. In many ways it provides a path for fashion to follow. Many real world designers have been influenced by science fiction film design in the same way that science fiction designers have been influenced by real world design. Science fiction design is influenced by all periods of industrial and architectural design and also has in return influenced these areas of design. If we look at the work of designer Philippe Starck for example. Starck said in an interview on BBC T.V. that one of his greatest influences is the science fiction film *Bladerunner*. He said he draws inspiration from its futuristic and artistic qualities. Syd Mead is the Designer responsible for the design work done on *Bladerunner*. Influences from this film can be seen in Starcks architecture and interiors especially.

Science fiction design and real life industrial or architectural design are influenced by each other but this is not the only relationship between real life design and science fiction design. There are many links between the two areas. During the production of *Alien* Giger decided to do the model making himself. He felt that he would get the best results by doing this. He was approached by the producer of the film and was asked if he had the technical skill for the model-making process. Giger replied, "I studied industrial design at the Zurich Art School for four years and I am in no way ashamed of getting my hands dirty at work." (Giger, 1979, p.54) This is a direct example of the close relationship between science fiction design and real life design. Most of the good science fiction movie visual designers have some formal education in the area of industrial, architectural or fashion design ; they are not simply artists. Syd Mead also studied as an industrial designer before moving into the more interesting world of movies. Anton Furst studied at the Royal College of Art, London and then went on to work as a production designer and Ralph McQuarrie had some practical experience with N.A.S.A before working on *Star Wars*. This shows us that all the good science fiction designers had a certain degree of technical knowledge. The visual design work for a science fiction movie is a technical process from start to finish. The designer must know whether it would be better to use a model or a matte painting. Anton Furst said that when designing for a science fiction movie he had to know all about the effects. The designer must know enough about it so that he doesn't build

something what could be filmed in a cheaper and simpler way.(Pirani, 1989, p.35)

Pressure to produce is another parallel which can be drawn between science fiction design and real life design. In all the cases dealt with in this thesis with regard to science fiction design , the designer always has been under pressure to get a high quality of work done on time. This was especially true of Ralph McQuarrie. He felt that when he worked on *Empire Strikes Back* he was under enormous pressure and he felt that, as an designer and artist, he could not produce a high standard of work under such pressure.

Science fiction design and industrial design are basically the same with just one difference. In both cases the designer is producing a product for the consumer. If the product is badly designed, the consumer will not buy it. With regard to science fiction design the product happens to be a film. If the visual design is poor the film viewer being the consumer will not go to the film. The fact that the end product is a film and not a domestic appliance is the only difference. The design process and the influences leading to the final design are closely related.

CONCLUSION

The quality of a science fiction film depends on the quality of the visual design in the film. A classic science fiction film is one which will evoke excitement and enthusiasm every time it is watched. The especially good science fiction films can evoke excitement several years after they are originally released. This thesis mentioned some of those films and has shown how the area of production design, which includes set design, prop design, creature design and costume design, is dealt with in various classic science fiction films by various designers.

The importance of good quality visual design in a science fiction movie is based on the fact that it is impossible to create a science fiction movie without visual design. In a science fiction movie, visual design is as important as the plot and the characters. This is not necessarily the case for special effects. It is a common misconception that a science fiction film must contain special effects to qualify as a good science fiction film. If we look at *Dracula* (1993), directed by Francis Ford Coppola, we see that it is possible to create a high quality and extremely visual fantasy film in the 90s without depending heavily on high tech special effects such as morphing and other computer tricks. In fact, Coppola made the decision to film *Dracula* in a similar style to the horror films of the 30s and 40s. This proved to be very effective for *Dracula.* Good special effects are only good for a short period of time until someone comes up with some new technology. Special effects may boost the box office success of a science fiction movie but the film will be forgotten in a few years unless the visual design is of a high quality.

Having looked at the separate areas of visual design for a science fiction movie one can see the design process is a detailed one. In order to achieve this detail the best place to start is by preplanning. No scene in a science fiction movie is totally spontaneous. For the speeder bike scene in *Return of the Jedi* designers had details up to eighteen months before the actual day of shooting. The designers had time to change their ideas if it was necessary. Preplanning leads to a well finished design.

The quality of design in a science fiction film depends on the quality of the designer. Most designers have some formal training and this can be important when it comes to designing for a science fiction movie as the design process is relatively similar to that of Industrial or Architectural design. It is also necessary for the designer to have a reasonably good working relationship with his fellow designers and especially the director. This allows for healthy combinations of ideas in the search for a fresh and unique design.

The look of the final design is often dictated by the influences which effect the designer. The more interesting designs, more often than not, result from the more interesting influences. The designers dealt with in this thesis are proof of this, and it was perhaps most obvious with Anton Furst and his work on *Batman*. He drew influences from almost every style and period of architecture for his sets and this resulted in a uniquely styled Gotham city.

The science fiction movie is becoming more popular than ever as we approach the 21st century. There are plans in the future to take on such science fiction characters as *Judge Dredd*. There are also rumours that Lucas is planning additional movies for the Star Wars saga. To the most dedicated sci-fi enthusiasts These prospects are frightening. The existing *Star Wars* films would be ruined if another film which was less than perfect was included in the saga. Our only hope is that the makers of future science fiction films have respect for the stories and characters and pay the appropriate attention to such details as visual design.

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