Morten Kantsø
www.kantsoe.com
mortenkantsoe@gmail.com
tel. [+45] 61 68 59 42

Graphic System for Digital Displays

The project "Graphic system for digital displays" shows and emphasizes the graphic designer's role in shaping the new digital screens. In collaboration with Kulturværftet in Elsinore a new design solution has been created for the digital displays in the house. The result highlights the graphic designer's ability to clarify the visual strategy of Kulturværftet while presenting a smart, creative and dynamic solution for the screen.
The project is the first small step into a new area of design.

Graphic system for digital displays

This report will look at the digital display, as it tries use a graphic design process to communicate the information of Kulturværftet. It will consider the organization of the information, the space in which the display operate, as well as the nature of the screen. This will lead to a new visual style and structure for Kulturværftet. This project hopes to give a brief look into some of the aspects and challenges facing the graphic designer, designing for the new digital displays.
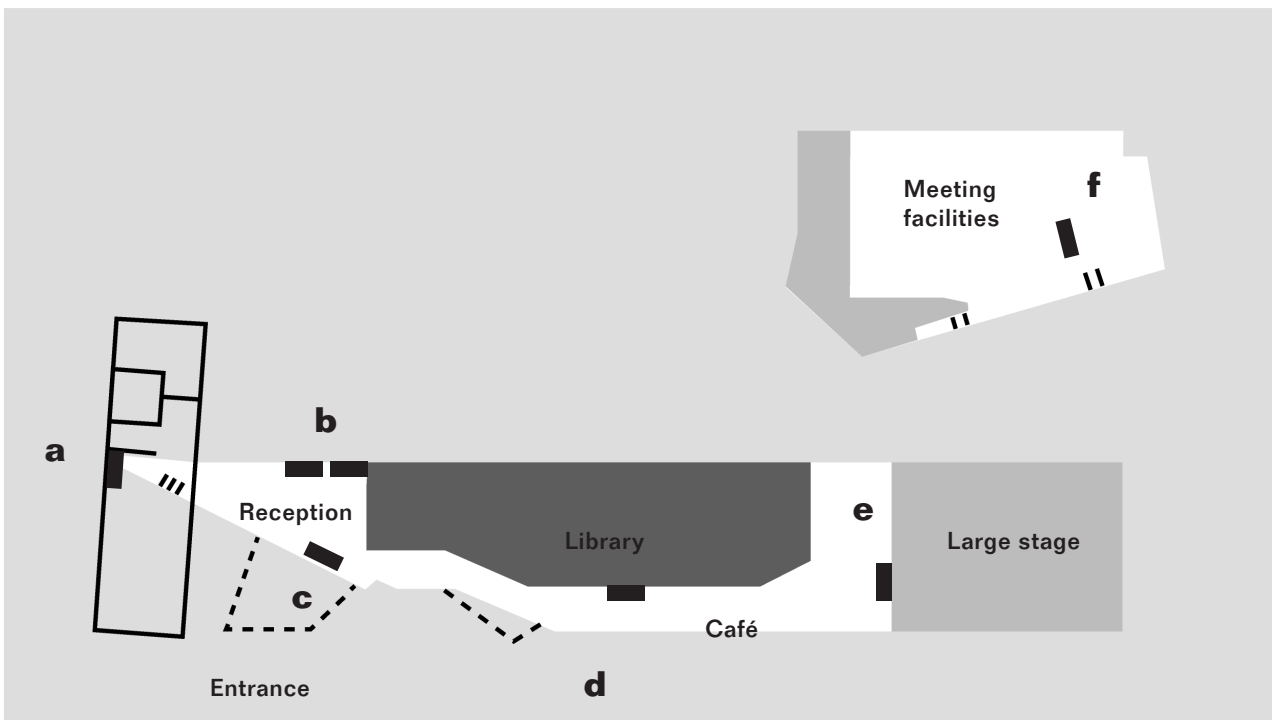
Digital displays have become a familiar element, in stores, companies, and around cultural institutions, where they advertise products, communicate information or present events. With the opportunity to replace print-based signage and advertising comes a range of benefits: reduced paper waste, the ability to easy change the content on the screen, and the option to show something dynamic. The increase in digital displays in the urban landscapes have been the subject to much research in the field of digital signage.

Many have studied the technical possibilities of the display, the efficiency, viewer behavior, user experience, as well as, the architectural, social, and privacy impacts. There seem, however, to be a lack of interest in investigation into the graphical content, such as text, image, video, animation, of the display itself. For graphic designers, there is a huge potential in, not only describing the use of well-designed solutions, but also an opportunity to reclaim a medium of communication to the graphic design field.

Designing for screens is, of course, not new for graphic designers. For years, graphic designers have been working on applications and interfaces for the computer screen, and before that there was the television screen. Today, a great part of visual identities are created for screens only, as Ellen Lupton illustrates in her latest book "Type on screen": from digital publishing to logotypes the computer and smartphone screen is the object of the design itself. A point Michael Rock notes: "We used to design things. Now we design things that happen on screens. The object of graphic design has melted." (Rock, 2013, p. 311).

In my recent project "The Digital Poster" I looked at what could be learned from the traditional printed poster design in order to create new digital posters. This project builds upon its results as it tries to employ a graphic system for digital displays in a physical space. It is, in other words, the hope to move a classical graphic design process into a new age of digital displays.

DET SKER I DAG 17. FEB.

10:00 DANS DANS DANS - interaktiv
danseudstilling
Krydsfeltet

UDSTILLINGER
Lyset i mørket, Helsingør Syklub - 3. etage
70-året for befrielsen af Auschwitz - 3. etage
DANS DANS DANS - Krydsfeltet

GREEN ROOM →

Meeting
facilities   **f**

b

a

Reception   **e**

                              Library   Large stage

c

                    Café

Entrance   **d**

In 2010 Kulturværftet (The Culture Yard) opened in the old shipyard in the harbour of Elsinore. In a new modern glass structure build by AART architects, the city's main library is situated together with a large and a small stage, Værftsmuseet (The Yard Museum), exhibition hall, café, and meeting facilities. In addition to the main cultural centre, the old warehouses in the city's centre (Toldkammeret) is part of a joint organization, housing a music stage, café, meeting facilities, Elsinore Theatre, and tourist information. The two institutions share a common website: http://kuto.dk/.

At the time of the opening 6 digital displays was installed for communicating the house's offers of: concerts, theatre shows, performances, events, and exhibitions. The displays consist of 50" LCD screens with dimensions following the standard aspect ratio of a HD television (16:9), the only difference being, that the orientation is vertically flipped. The displays where originally installed with Microsoft Kinect sensors, which allowed people to interact with the content on the display: by moving closer to the display, audiences could change a background of geometric lines. The interaction, however, failed due to slow reaction time between the audience's movement and the image, and the sensors have since been stored away. This year, an extra display has bee (fig. 4, d).

Although there is no overall directions for what is displaye 7 displays, the different displays show a mix between: music concerts and comedy events from their program, and a time schedule of the day. 4 of the displays are running on Windows and controlled online via the technical support website from LiveConnect (fig. 4, c–f), while the 3 remaining runs through two Mac Mini computers, that are accessed from the TeamViewer application (fig. 4, a–b).

Fig. 1–3   Photos of Kulturværftet showing old shipyard buildings, a digital display, and the signage on the wall of the wardrobe at the large stage.

Fig. 4   List of digital displays at Kulturværftet. Displays a–e are located on the round floor. Display e is located on the 2nd floor.

The current display situation at Kulturværftet is an example of good intentions of communicating but missing is a plan to follow.
Like other companies, Kulturværftet was primarily focused on the technology, spellbound by the creative and technical possibilities, and assuming that, such digital displays by themselves draw attention.
These misunderstandings seems to follow some general tendencies: first, a lack of understanding how digital displays ought to be used in the space they are placed in. Second, the design of the content, that seems to be adapted from other digital platforms such as internet or television.
In this case, the content is static pdf's taken from the printed programs, and information from the shared calendar. As a result, viewers block-out much information of the digital displays, as they drown into the steady stream of screens.

This is a misfortune. Think of how screens, if with well designed content, can seduce us. For well over a hundred years now, we have been committed to the screens of movies, television, and computers.
Jessica Helfand elaborates: "The screen is, and has always been, an immersive medium: in the movies our participation with it may be passive in a physical sense, but our attention—visually, psychologically—is riveted because of its evocative capacity to draw us in." (Helfand, 2001, p. 123).
The graphic designer know this and during the last ten years, across new platforms, moving images and animation has been an instrument for communication. It is now shown on every smartphone and website.
It seem appropriate to move this practice onto the design of the digital displays.

This is not to say, that we should just implement commercial spots or films to the display - a strategy we see advertising agencies faithfully follows. This is a plan that is doomed to fail, as the bombardment of advertisements on our smartphones, computers, and now also on digital displays continue to grow.
Instead, we must act as graphic designers, use the methods we learned in aim of creating something surprising and yet skillful.

As graphic designers we learn to fabricate a number of objects, printed or on screen, such as: books, posters, logos, business cards, illustrations, websites, typefaces etc. but more crucial is our ability to bring these individual items together. The outcome of a series of objects have therefore taking all the parts into account, effectively creating a visual identity.

For this the graphic designer frequently construct a system to order the content of the project. The way in which the content is shaped into a concept is essentially the expertise of the field. Jessica Helfand describes: "Think about design as a system of limitations, and to consider the role of the designer as one who articulates that system." (Helfand, 2001, p. 49).

One dispute among graphic designers seem to be, how much control such a system should have, or if there should be a system at all. Some advocate for the complete obeying of a system and strictly obliging that "the content determines the form." (Rock, 2013, p. 257).
While others rely on a sole personal instinctive to give form.
The practice of many graphic designers probably lies a place in-between these two points. A system can be an effective tool to interpret the information of a project. But can also be tedious and hard to work with, if followed into the extreme. Think of how some graphic designers only uses certain primary colors or typefaces, whatever the project.

What happens when a systematic approach moves into the world of the digital display. Where will the process find itself between the two opposite fields. And can it give some advise to the not entirely successful design of the digital display of Kulturværftet.

Frontpage

Kalender	Knejpe Festival	Musik	Forside	Husk	Bag om
	Click Festival	Events	Kalender	Aktuelt	
	Spisehuset Kulturværftet	Comedy	Info	Billed-galleri	
	Toldkammer-caféen	For børn	Om	Besøg også	
		Scenekunst	Cafeer	Tak til	
		Foredrag & Litteratur	Møder		
		Udstilling	Erhvervsklub		
		Film	Presse		
		Møder & Konferencer	Bag om		

Concerts & shows	Events	Café	Meeting	Info	
				Day timetable	
				Menu	

In the case of Kulturværftet the need for a system is necessary to organize the information and offers of the two houses. The existing classification of content is best derived from the website. All printed material is imitated from the website as it also store the central calendar of both houses. The overall ranking follows the number of events of each category - the more events, the more importance. There is a special focus on the concerts and the two festivals (CLICK Festival and Knejpe Festival) as well as a separate category for meetings and conferences. The library is completely separated from Kulturværftet both administrative and promotional and therefore not a part of any category.

In arranging the information the question of hierarchy is central. On Kulturværftets website and in the printed programs, hierarchy determines the ranking of offers by their significance. Size, order, color, and the placement of text and photos is created thereafter. The result is a slightly messy one.

The reason for it is not a bad one. Like all the other culture institutions around the country, Kulturværftet wants to stand out from the rest. With the slogan "Forvent det vante. Forvent det uventede." (Expect the usual. Expect the unexpected) the desire is to embrace the history of the old shipyard (the traditional) and combine it with an inventive international vision (the future). The strategy is evident in the variation of events like "Fest på Kajen" where Kim Larsen & Kjukken perform enclosed by beers and barbecue, to a 3D version of Hamlet in "Hamlets Labyrint".

The website, and the program to some degree, allow for multiple points of entry to the calendar, in a seek to quickly let users find what they need (fig. 5). The three possible ways of finding a comedy show from the frontpage of the website, combined with the endless emergence of new boxes, makes the experience quite confusing. Even more problematic is the categorization. Too many categories only link a specific event or two, while the category "Events" picks a random selection of events. This adds to the confusion.

Fig. 5   The plenty of entry points and categories on Kulturværftets website
http://kuto.dk.

Fig. 6   The new organization of information into five categories plus a daily
time schedule and a screen with the menus from the cafés. The
difference in tone indicate different layouts.

An unfortunate side effect of this "look at all the things we got" is that the overall strategy gets lost, as it becomes hard to find the characteristic Kulturværftet events. A plain adaptation of content from the website to the digital display is thus not possible without some major changes.

The suggestion of this project is to organize the information into five different categories. These categories combine not only the events, but also include the information about the cafés, meetings, and practical information (fig. 6).

One category presents the music concerts and comedy shows. These are standard events that pull a lot of visitors because of well known acts. Another category gathers the rest of the events, as they hold a more direct relationship with the two houses. Exhibitions, events for kids, and theatre performances including the characteristic "Hamlets Labyrint" falls into this category. Because of the cafés and meeting facilities dominant connection with visitors on the day-to-day basis of both houses, they both get an individual category. Apart from information about the menu, related offers and activities such as "Spiseklubben Grydeklar" are also found in the café category. The meeting category serves as both advertising for lectures and conferences including the business community initiative "Erhvervsklub" and promotion of the booking possibilities of the meeting facilities. Yet another category join general practical details like: online ticket booking, gift card opportunity, newsletter, and suggestions to other visits in the neighborhood. In addition a time schedule of the day, including meetings, will help visitors locate time and place of the activities of the day.

In organizing the information and offers of the two houses in these new categories, events and adverts will have a clearer sender, that highlights the typical Kulturværftet events. Visitors can easy connect events and adverts to the specific places of the two houses.

Rather than branding Kulturværftet by the use of statements, detailed descriptions or promotional photos, the events will be the main advertisement. Events that by themselves tell a story, not only about the many diverse offers of the houses, but also about Kulturværftet itself. A task fitted to the digital display.

A reason for the inefficiency in numerous of digital displays, appear to be the lack of understanding the space they are placed in, and designing appropriately thereafter. Many displays contain too many details for the moving visitor to easy comprehend or may simply be too long for people to view.

The content of the displays at Kulturværftet do not suffer from being to long, with a length just slightly under 10 seconds. The informative text and photo are displayed throughout the total length, making the motive of the display easily detectable. The problem is to be found in the relationship between the static material on the screen and the placement of the displays across the house.

Consequently, the unsuccessful use of dynamic content has left the displays filled with a series of fixed pdf's crossfading between each other. This would have been less of a trouble, had it not been for the somewhat unsuitable locations of the displays in relation to the visitors use of the house. People do not notice the displays! Whether it be the transitory space of the stairs (fig. 4, a), the immobile café area (fig. 4, d) or on your way to the toilets (fig. 4, e) the displays appear secluded. This can be resolved, not in rearranging the displays, but changing the content to fully utilize the digital displays.

This means, that the categories on the screen does not have any hierarchy between themselves (as they are displayed once at a time alone), but only in relation to the space they are shown in. The display located at the meeting facilities (fig. 4, f) will have a different order of categories than the displays located at the reception (fig. 4, b). They show more content from the "Meeting" category, whereas the reception has a higher number of "Events" displayed. This changing of content, will provide much more relevant information for the viewer depending on their location. Think of how every smartphone ask you where you are all the time. A clever ranging on each display might not follow the most logical, and the effect of the unexpected should be remembered.

The display's medium size makes them harder to notice and bigger text size is thus a necessity. The amount of text should be shortened so that it is possible to read within the duration of 10 seconds. The image has to be more similar to give room for the importance of the title, much like the environmental graphics of the signage in the building gives space to the architecture. Motion will be added to shape the transitions between the different categories and to create moving images.

The goal tries: 1) To enhance the strategy of Kulturværftet by clarifying the information and graphics 2) show that the visual presentation of the ordered information can benefit from adding time and motion. 3) acclaim the installed digital displays at Kulturværftet by using their digital ability.

In placing the strategy and content onto the canvas of the display, the nature of the screen offers a new approach to visualization.

With printed matter like signage and posters it is possible to include a lot of information at the same time. The display do not tolerate the same quantities. One reason is the size of the screen, being considerable smaller than conventional signage. Another, is our relationship with digital displays. Unlike the large time we have learned to spent with the private screens of smartphones and computers, public displays barely passes our notice. Reading is not an act familiar with the display, and putting just a moderate amount of text on it is often unsuccessful. It is therefore not possible to show longer text sections or a great deal of information, like the design of the website.

The display, however, has an inherent element of movement. In working with sequence and motion the limits of the screen is also its strength. Information can be outlined and presented not simultaneously, but over time. This too suggests a narrative to the content.

Since the beginning of film we have come to expect a stage "intended to guide the dramatic action forward" (Helfand, 2001, p. 115) when watching screens. This means that the layout of grids, the style of typefaces, the hu of colors, the movement of transitions are all defined by this narration. This might also be one of the significant observations for the graphic designer in developing concepts for the digital displays of the future, and perhaps even a solution "as we struggle to reconcile our conflicting reactions to the information overload, the dramatic—and dynamic—model of filmic storytelling offers a more compelling way to think about the power of visual narrative." (Helfand, 2001, p. 120).

Currently, the displays at Kulturværftet have no movement and no narrative. This is a disappointment to the viewer and a mistreat of the display. Instead a new visualization brings the new categories into movement once suitable for the screen (within its limits) and a movement of narration.

Fig. 7   The new display layout with a three rows grid containing: a) visual layer b) dramatic layer, and c) textual layer.

This does not mean showing a movie on the display. The viewer still has to recognize the message within the 10 seconds timespan. The dramaturgical narration structure of film, in its simplest form can, however, prove to be an approach for the design. The new display layout for Kulturværftet consist of a visual layer (fig. 7, a), a dramatic layer (fig. 7, b), and a textual layer (fig. 7, c). In this way motion becomes not only the movement of graphical elements as they change between their fixed positions, but also a method to tell a story.

The visual layer transform the otherwise static photos into video. The videos are shown in the "Concerts & shows" category and portray the related act, much like a poster will often have a photo to highlight what it is advertising. On the display a photo can not simply be a photo, this is unnatural to the screen. Like the acts they promote the videos of the visual layer is known to the viewers from television and the internet. The textual layer display the text of the title, place, and date of a given event throughout the categories. In the "Info" category and on the "Day timetable" and menu displays, it also contain additional information. The dramatic layer consist of moving images in the form of animation, but unlike the video of the visual layer, the animation has a composed narrative. Though relatively short in time, the dramatic layer tells the story of a specific event, and as there is an animation to every event in the "Event" category, it inevitably tells the story of Kulturværftet itself.

A grid order the layers so that the information is clearly identified. It takes into account the placement of layers so that the movement is even. Three squares of same size, crop the display into three sections (fig 9, a). Rather than animating text, the title, place, date, and additional information are placed in the squares and moved around. The change of categories follows an overall right-to-left movement that copy the eyes reading direction when reading in the left-to-right pattern. The square with the title is positioned in the center and is the main guide for this movement. The visual layer in contrast, is tracking from right-to-left. Visitors are presented for changing categories each displayed for 10 seconds before moving to the next.

There are several matters to consider while creating a comprehensive style to the layers. The style of the new categories involve both graphics and motion. In the case of Kulturværftet, the displays ability to catch the eye can not be underestimated. The few sections of layers calls for a concentrated amount of graphic elements.

The existing visual identity for Kulturværftet is not fit for a duplication onto the digital display. The first problem is the master typeface used across website, printed matter, signage and for the logo. The custom typeface "Refractions" is designed by Christian Leifelt Studio, who in collaboration with Shiftcontrol Studio designed the visual and interactive identity for Kulturværftet. While the type works correctly in the program and on the walls, the form of the broken characters is not optimal on the dynamic screen, as text is less easy to read. The typeface of the main body text, on the other hand, functions well. The geometric sans-serif typeface "Flama" from the type foundry Village is designed by Mario Feliciano. The font is comparable to Linotypes DIN but with bigger width and a slab to the uppercase i. Though the type is used a lot for publications, it was initially designed for signage, which is apparent especially when looking at the numbers. On the website Flama is replaced with Google Open Sans.

The website uses only two colors and black and white with a few in-between tones. The yellow (d8da0b) and red (fb745e) are identical to the two main colors of the program. The program however, also contain just over 10 additional colors, most notably a blue/orange and a green/red complementary combination. The two colors, already faintly unconvincing, becomes uneventful on the display.

The new visual style for Kulturværftet's digital displays is clear and simple in type, color, and layout and gives room for the motion of the animation and video.

Two typefaces are used. The signage qualities of the Flama font, makes it suitable for the place and date section. As a replacement for the Refractions font, the type Dada Grotesk is more crisp and has more character then its predecessor (see fig. 8). Dada Grotesk from Optimo, is designed by Devalence and like Flama was designed for signage (for an exhibition at the Centre Pompidou, Paris).

Four colors are appointed to the characteristic Kulturværftet categories, leaving the "Concerts & shows" black and white. The colors are highly saturated to show the intensity of the LCD screen. The intention is for the display to say: "Look at me and see what colors I can do!". The colors are used as background solids on the title square. The "Events" category has a turquoise (33eeac) solid, the "Café" and the menus an orange red (ff5217) solid, the "Meeting" a blue (3200ff) solid, and the "Info" a pale yellow grey (d3d1c6) solid. The bottom square, mainly containing the place and date, have a dark blue (00003c) background, used all through the characteristic categories. Different text colors are used for each category: white (f6f6f6), dark blue (000050), pale white (ffffd8), and deep brown (431d02).

HAMLETS
LABYRINT 346

HAMLETS
LABYRINT 436

HAMLETS
LABYRINT 346

HAMLETS
LABYRINT 346

The color palette brings an energetic feel to the display and, together with the animation, a touch of playfulness.

The center section is reserved for titles, and is the base of the textual layer. Visitors will quickly notice the name of an event and the continuing central position will keep focus on each event. The bottom section display the place and date related to the title. In cases where the place and date of a title are irrelevant because the title address both houses permanently, like "Erhvervsklubben" or "Online billetkøb", the data is omitted. This welcomingly leaves room for a short description of the title. Placed in the top section, the animation of the dramatic layer introduce the title.

A feature of contrast in the layout, is the distinctions between the "Concerts & shows" and the characteristic "Events", "Café", "Meeting" and "Info" categories (fig. 9). The "Concerts & shows" screen is build of the standard title and place and date squares, but leaves out the animation in favor of the visual layer. The video is shown fullscreen behind the textual layer. All elements are black and white with videos adjusted to have a regular and identical look: bright and even. This support the difference between the two layers and prevent the text from disappearing into the video. The use of black and white further deviates the layout from the rest of the categories, which applies color.

As noted previously, motions is used for both the animation and the transitions between the categories. The movement of the sections follow a plain, almost linear movement. All the sections have the same starting and ending point, within a 2 seconds timespan. The result is an connected steady movement of transitions that focus getting to the next screen. Viewers should not be confused and the "movement on a screen should feel purposeful" as it is "heading somewhere." (Lupton, 2014, p. 178).

Fig. 8   From top to bottom:
Refractions (2011) by Christian Leifelt Studio in collaboration with
Shiftcontrol Studio. http://www.christianleifelt.com/newculture.html
DIN 1451 (originally 1936) by Linotype.
http://www.linotype.com/306/DIN1451-family.html
Flama (2006) by Mario Feliciano through Village.
https://vllg.com/feliciano/flama
Dada Grotesk (2005) by Devalence through Optimo.
http://www.optimo.ch/typefaces_Dada-Grotesk.html

The style of animation might emulate the popular flat design seen across digital platforms, but both in look and technique it is more rough. The colors are picked from the main color palette with a new medium yellow (f6ee6c) used continually as a background solid of the square. Two methods of animation is used to create the 10 second sequences. Mostly a series of images are repeated, resulting in a steady wiggle effect of animation. Onto this image, an animation layer with an action is placed. The actions are not repeated and the animation often short. In a sequence the animation moves between a number of scenes, creating a super short film-like narrative. The speed of the motion, measured in frames per second, is half the classic european 25 fps, creating a calmer movement in the animation. This tempo fits the digital display.

a

Animation

Title

Place and date

BRUNCH
& ÅBEN
SCENE

Spisehuset
Kulturværftet

HVER
SØN–
DAG

b

Video

ANNE
LINNET

Kulturværftet
Store Scene

TOR.
12.
NOV.

With this new method from content to visual form, Kulturværftet have a basic structure, that can easily integrate new content. With every new concert or event, title, place and date is set into their sections. A video has to be gathered and adjusted or an animation has to be drawn. The structure is solid but the system is not rigid. The dramatic layer of the animation proves that everything can be added and altered, just like the screen is it shown on. But because of the fundament, the story of Kulturværftet remains wherever the movement might go.

In introducing a design process onto the digital displays at Kulturværftet, a new visual structure has been produced. A design process that can be studied as follows.

First, the activities of the two houses was sorted out in an attempt to understand the strategy and identity of Kulturværftet. An appropriate new organization of the information was the base of a design solution. In outlining the context of the displays, essential elements to give form where defined. In looking at the capacities of the screen, some simple principles of narration where constructed. In both cases the new tool of movement was the main component for the new communication of Kulturværftet. Finally, a visual style was created to clearly convey the message in the new display environment.

This approach is much like the procedure graphic designers use when designing a book. We try to understand the content of the book. We think of the purpose of the book, why should it be read, where and how should it be read, by whom, and then we design a concept and give it a visual style that fits. The method of examining a book is the same as examining a digital display. But the book's requirements are different from that of the display. Unlike the book, the screen allows for a great flexibility. You might even say, that it needs it! The intuitive narration cannot be put into system. It can, however, be placed in a structure that lets it change.

Fig. 9   The new visual style of the display with animation, title, place and date, and video for a) "Events" and b) "Concerts & shows" screens.

What we need is a structure of content rather than a purely logical system: The content determines the form, but movement change the form.

A critique might be, that the time-consuming method of creating individual dramatic narratives of animation to each new event, is an unrealistic goal. But how is it any different from our traditional routine of creating a new printed poster for each new event? The only difference is the medium: and the screen screams for animation. What we have to remember, is not to try and change the screen so that it can fit our graphic design solution. Think of how visual identities today gets designed as logotypes, signage, website etc., all of which later has to fit onto a digital display. This order has to be questioned. It is necessary if we want to be ready for the many screens of the future. With the ongoing development in display technologies, it cannot be long before digital displays, of all sizes, will succeed the traditional non-digital displays.

In the process and results of the new design for Kulturværftet, we may not have broken the code of digital display designing. But the project have come up with a solution for a current problem at Kulturværftet, and it has demonstrated a way for the graphic designer to claim this "new" medium. What lies ahead is further development for graphic designers, as we start to see more potentials of the public digital display. Think of the interaction possibilities of the digital display of the future, as it moves from being a "passive" viewing experience, to a context-aware display that can permit viewers to access a range of information and communication.

　　　I want graphic designers to consider the narrative tool of movement as he/she takes their steps into the cross-disciplinary time-based environment of the digital display. Don't forget what you have learned. Don't be afraid of the motion. Respect the screen and remember the space. Good Luck!

REFERENCES

B BIBLIOGRAPHY

Alt, Florian (2013) A Design Space for Pervasive Advertising
on Public Displays. Institute for Visualization and Interactive Systems
Stuttgart.

Chimero, Frank (2013) What Screens Want –
Some thoughts on digital canvases.
http://www.frankchimero.com/writing/what-screens-want/

Helfand, Jessica (2001) Screen. Essays on Graphic Design,
New Media, and Visual Culture. Princeton Architectural Press.

Huang, Elaine M. et al. (2008)
Overcoming Assumptions and Uncovering Practices:
When Does the Public Really Look at Public Displays?
https://hci.rwth-aachen.de/materials/publications/huang2008b.pdf

This research shows that the average passers-by spent less
than one or two seconds looking at digital displays, and that
they where far more likely to look at non-digital displays.

Kepes, Gyorgy (1964) Language of Vision.
Paul Theobald and Company.

Kling, Beate / Krüger, Torsten (2013) Signage Spatial Orientation.
Edition Detail.

Lupton, Ellen (2014) Type on Screen: A Critical Guide for Designers,
Writers, Developers, and Students. Princeton Architectural Press.

Müller, Jörg et al. (2009) Display Blindness:
The Effect of Expectations on Attention towards Digital Signage.
http://joergmueller.info/pdf/Pervasive09MuellerDisplayBlindness.pdf

This research draws similarities between internet-based
advertising and digital displays, in the way passer-by screen
out adverts.

Rock, Michael et al. (2013) Multiple Signatures: On Designers,
Authors, Readers and Users. Rizzoli International Publications.