

# Emerging Media: collecting, preservation and access challenges

Stephen McConnachie

Erwin Verbruggen

Judy Wilcocks

Patricia Falcao

Caylin Smith

British Film Institute

Netherlands Institute for Sound and Vision

Central Saint Martins

Tate

British Library and the Legal Deposit

Libraries Committee

1. Introduction
2. Case study - Interactive Documentary
3. Case study - Interactive Narrative
4. Panel discussion
5. Next steps

# Introduction

The background is huge **economic** growth and substantial **public funding** to incubate, innovate, train, develop audience engagement and creative capacity

## 1. Economic growth predictions – search '**Immerse UK report**'

- \$1 billion in revenue in 2018
- \$95 billion in 2025 (Goldman Sachs)
- \$108 billion in 2021 (TechCrunch)
- \$569 billion in 2025 (Citi)

## 2. Major UK government funding programme - search '**UKRI Audience of the Future**'

- Industry Centre of Excellence (ICE) in Immersive Storytelling
- Demonstrator programme for immersive innovation

# A FESTIVAL APPROACH TO PRESERVING EMERGING & INTERACTIVE STORYTELLING FEATS

erwin verbruggen

netherlands institute for sound and vision

SOUND AND VISION





**SOUND AND VISION**

WEBARCHIEF  
OMROEPEN

BEELD EN GELUID

Zoeken...



PREMtime

NOVA

SPANGAS

VERRE VERWANTEN

SCHOOLTV

MELD EEN WEBSITE AAN

BEELD EN GELUID BLOG

1478 1010  
ILLUSTRATIES VAN HANS DE COCK IN  
BEELD EN GELUID

1007 1010  
DE CLAMAN KICK OFF

1001 1010  
8 APRIL: SNAAR THIS EVENT BIJ BEELD EN  
GELUID

1000 1010  
KRONIEK VAN EEN AANREKENDING  
ELFSTEDENROEIJ

HET WEBARCHIEF BEVAT

5

WEERDIELEN, MET TOTAAL  
303.618  
BEZOEKERS  
SINCE 30 OKTOBER 2011

PREMtime

Oorspronkelijke url: <http://premtime.nl/nieuws/48/>  
Let op: je hebt een geavanceerde versie van Bing website.  
Mogelijk werken zoekbalk, favorieten en extensie links niet naar behoren.

22 MAR 2013

ntr:  
Dagelijks gaat Prem met de Blue Bird Vision het land in. Op weg naar het nieuws, op zoek naar de bron.  
Elke werkdag van 10:30 tot 11:00 | Radio 1

home | nieuws | afleveringen | de bus | over prem | colofon | contact | column | Zoeken

**NIEUWS**  
LIJN 1 - vanaf 14 september  
Prem neemt afscheid (Den Haag)  
Jeanine Henis-Plasschaert, VVD (Hilversum)  
Martijn van Helvert, CDA (Hilversum)  
Renske Leijten, SP (Hilversum)

**PREMtime: BORSTVOEDING (EDE)**  
5 oktober 2010  
  
(Foto: Flickr/Elas)  
Vandaag staat PREMtime bij het **Borstvoedingscongres** in congrescentrum De Reehorst in Ede, waar de crème de la crème van borstvoedend

**PREMtime GEMIST?**  
Bekijk [hier](#) het complete archief.

**@PREMtimeRADIO1**  
 **Shajatare:**  
#FollowBack #FF #SV  
Premtime 18 pazzakonta  
ni Maqedoni, nuse për  
beçarët dhe ekskursionë ...  
<http://t.co/675uYKf8e>  
#TeamFollowBack #TFB

**VOLG ONS!**  
   

SOUND AND VISION



U bevindt zich hier: [Home](#) > [Zoeken](#) > Beeld en Geluid catalogus

## ZOEKEN IN BEELD EN GELUID CATALOGUS

◀ Zoekresultaten [Opnieuw zoeken](#)

[Alles inklappen](#) | [Alles uitklappen](#) | [Print](#)

◀ Resultaat 2 van 2 ▶

### INTERNETVIDEO

Zendgemachtigde  
Uitzenddatum

NIET VAN TOEPASSING ;  
09-01-2015;

**Titel**  
**Afleveringsnummer**  
**Publicaties**

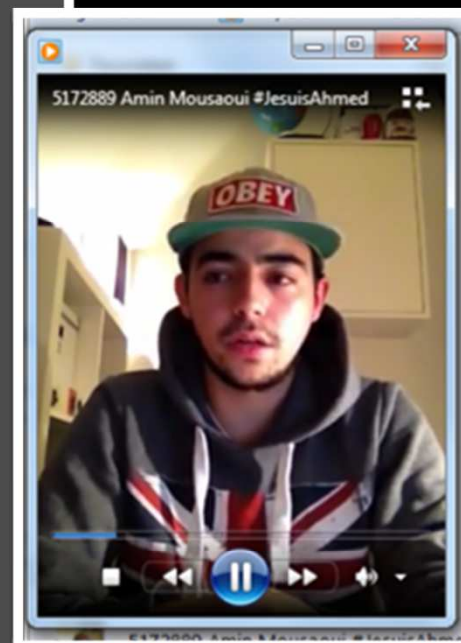
INTERNETVIDEO  
Amin Mousaoui #JesuisAhmed  
internet; 09-01-2015; NIET VAN TOEPASSING; 1' 57"

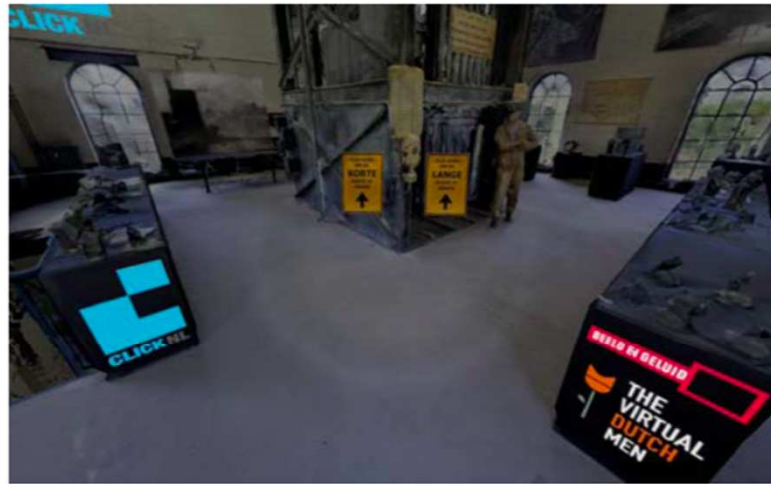
**Schone inlas**  
**Dragers**  
**Samenvatting**

Niet aanwezig  
Geen dragers beschikbaar  
De Rotterdamse Amin Mousaoui valt in dit filmpje uit tegen de extremisten die in Parijs (Frankrijk) een bloedige aanslag hebben gepleegd op de redactie van het satirische tijdschrift Charlie Hebdo. In zijn betoog zegt hij onder meer: "Ik accepteer niet dat bepaalde extremistische hufters telkens mijn religie als godium misbruiken". Hij pleit voor verbroedering: "schouder aan schouder, ongeacht de god waar je in gelooft". Mousaoui plaatste zijn betoog op Facebook, waar het massaal is gedeeld.

**Genre**  
**Trefwoorden**  
**Geografische namen**  
**Beoogd medium**  
**Rechten**  
**Task ID**

internetvideo - acties  
aanslagen ; extremisme ; moslims  
Frankrijk ; Parijs  
internet  
Herkomst YouTube  
5172889  
<https://www.youtube.com/watch?v=81ob6-s7V28>





SOUND AND VISION





BEELD EN GELUID

# GAMESCANON



## JAZZ JACKRABBIT

jaar: 1994 ontwikkelaar: Epic Megagames platform: DOS

Jazz Jackrabbit is een computerspel voor de pc uit 1994, geproduceerd door Epic MegaGames. Het spel is geschreven in Turbo Pascal 7.0 door de Nederlandse programmeur Arjan Brussee en bedacht door Cliff Bleszinski. Het spel was zo populair dat er in 1998 een vervolg, Jazz Jackrabbit 2, werd gemaakt.

Van het spel bestaan verschillende versies. Allereerst was er de sharewareversie die bestond uit één aflevering. Een aflevering bestond uit drie werelden, elk onderverdeeld in twee levels en een 3D-bonuslevel. Verder zat er in iedere aflevering nog één geheim level dat bereikt kon worden door te schieten op een rood bord met een geel vraagteken. De aflevering eindigt met een Guardian

## Julie herinneringen

+ VOEG JOUW HERINNERING TOE!

XXL-clan rulez!

XXL-XXL • Gisteren 21:33



**idfa**DOCLAB  
**INTERACTIVE**  
**DOCUMENTARY**  
**CANON**



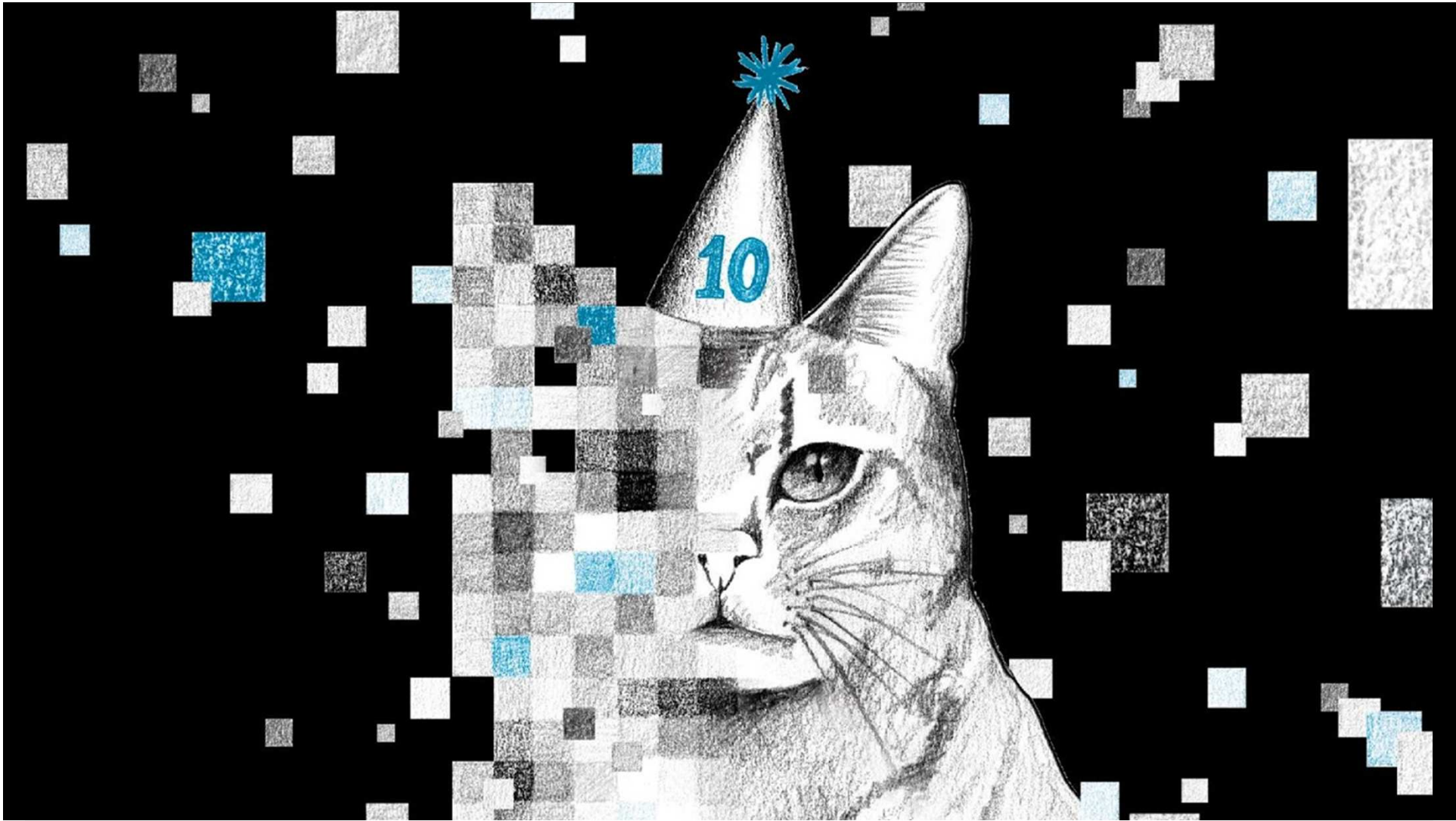
WE SPEAK A NEW AND  
POWERFUL LANGUAGE,  
CAPABLE OF SAYING THINGS  
NO OTHER LANGUAGE CAN  
SAY, BUT FEW HAVE REALIZED  
THIS, AND EVEN FEWER HAVE  
FOUND WHAT TO SAY.

**Jonathan Harris**









# **MAIN INGREDIENTS**





**STORY**



**INTERACTION**



**DIGITAL TECHNOLOGY**



**CAPTURED REALITY**

ONFB



idfa  
DOCLAB



TFI  
NEW MEDIA  
FUND

submarine  
channel

POWER  
TO THE  
PIXEL

MIT OPEN  
DOCUMENTARY  
LAB

Sheffield  
Doc/Fest

BBC iD

france télévisions

POV

Future of  
StoryTelling



Sundance Film Festival



WORLD PRESS PHOTO

theguardian  
quality independent journalism

CROSS  
VIDEO DAYS

Dpt.

the  
creators  
project

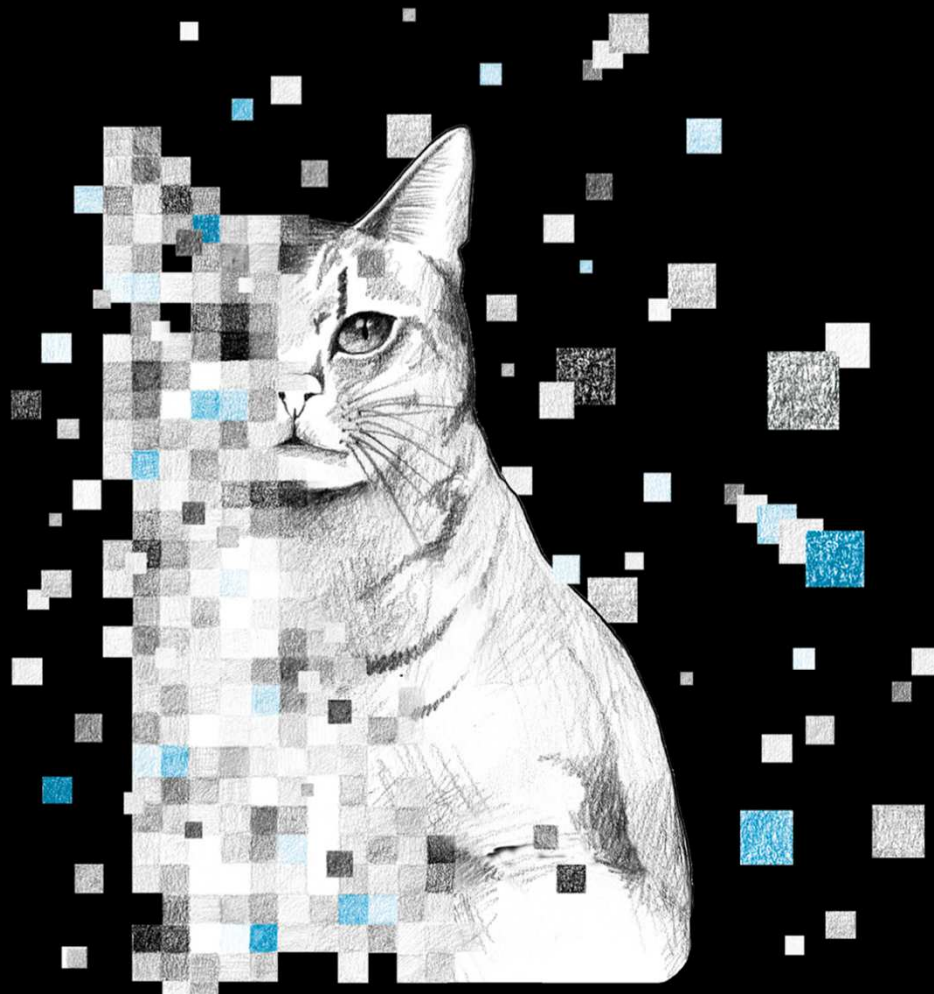


BuzzFeed

klynt

arte

# idfa DOCLAB IMMERSIVE NETWORK



Made possible by



Ministry of Economic Affairs of the  
Netherlands

Supported by

arte



SOUND AND VISION











## Past events



DocLab Live: Bloodless –  
Guided by the Ghost of a  
Korean Sex Worker

## Hieronymus Bosch, The Eyes of the Owl

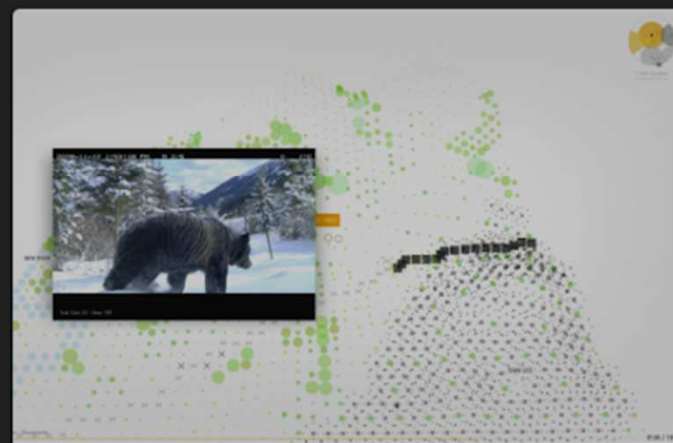
**An innovative way to experience Bosch's most famous painting up close and personal.**

Hieronymus Bosch, The Eyes of the Owl is a virtual reality

[Project details](#)

**I'M NOT  
HOME  
VIDEO**

BY BERT HANA



## Past events



DocLab Live: Bloodless –  
Guided by the Ghost of a  
Korean Sex Worker  
25 Nov 2017 at 17:00

## Bear 71 VR

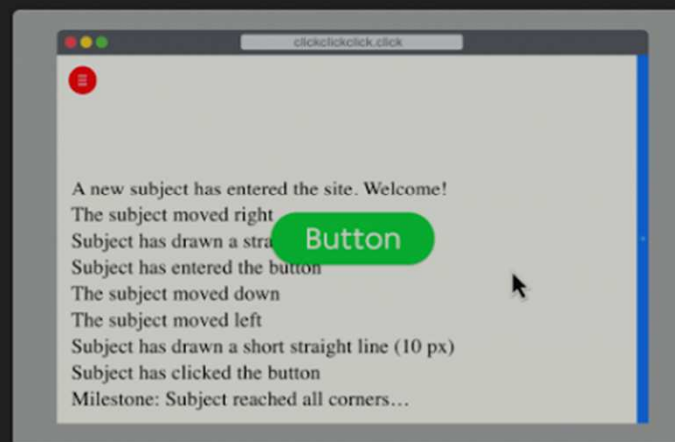
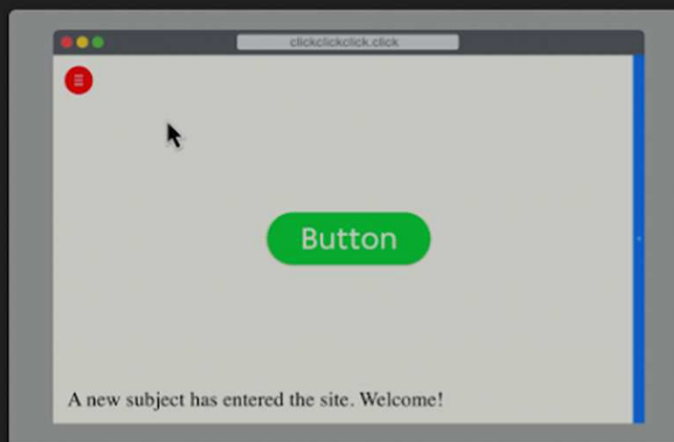
### WATCH PROJECT

A seminal piece in the history of interactive documentary, reimagined and re-released as a virtual reality experience.

Bear 71 is a groundbreaking interactive documentary experience, told from the point of view of Bear 71, a female grizzly bear living in

### Project details

Year of development : 2016



## Past events



**DocLab Live: Bloodless –  
Guided by the Ghost of a  
Korean Sex Worker**  
25 Nov 2017 at 17:00

# Clickclickclick.click

**In a likeable, playful clickbait experience, you are rewarded for exploring all the interactive possibilities of your mouse.**

You and your mouse – an intimate relationship you seldom really think about. But your mouse behavior can betray as much of your identity as your search terms. With Clickclickclick.click Studio

## Project details

**Year of development :** 2016  
**Created by:** Luna Maurer, Roel Wouters



## Past events



**DocLab Live: Bloodless – Guided by the Ghost of a Korean Sex Worker**  
25 Nov 2017 at 17:00

Special presentation on VR installation *Bloodless*, in which director Gisa Kim and

## Refugee Republic

**WATCH PROJECT**

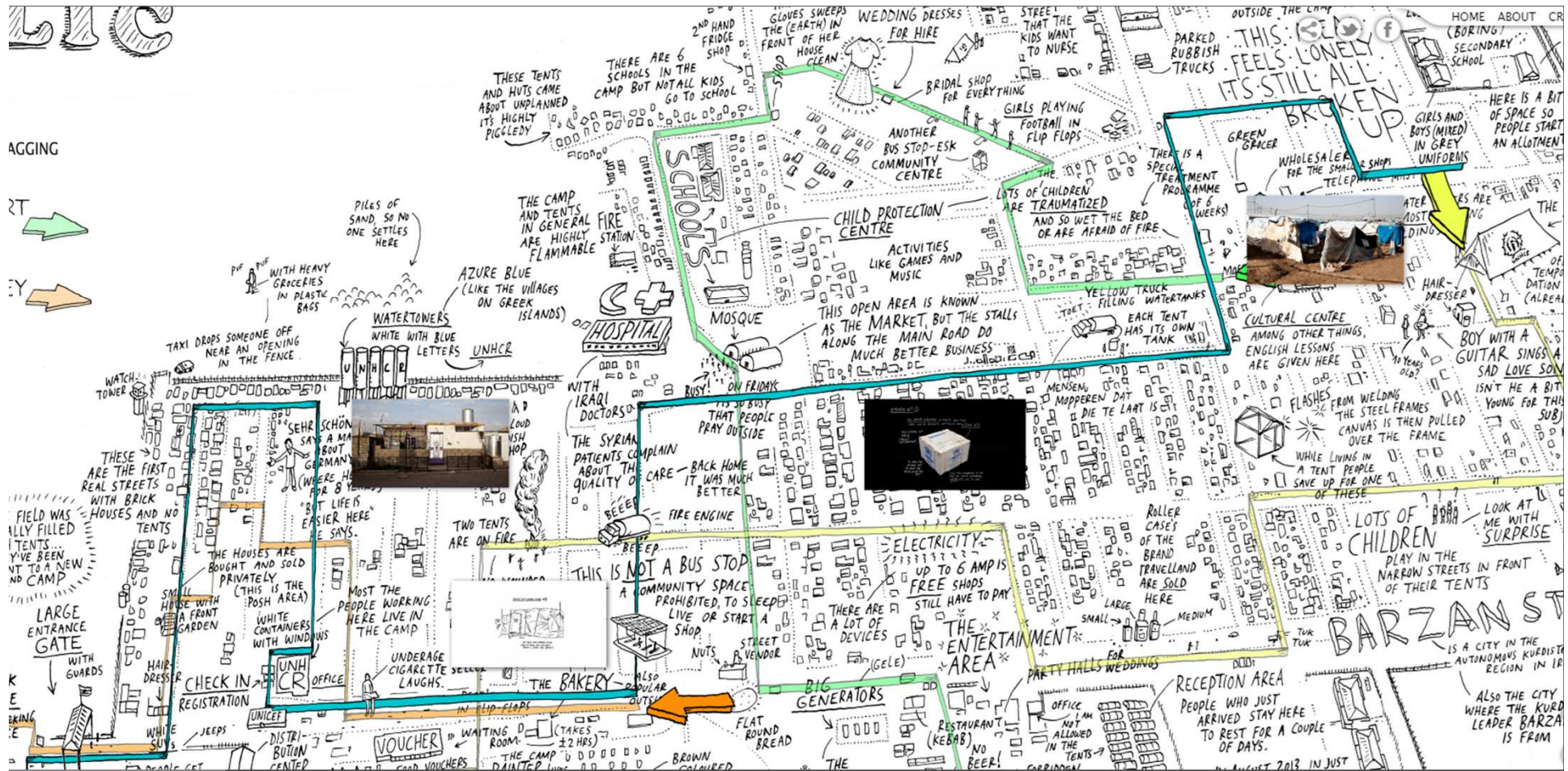
**You think refugees are passive victims? Then spend some time in Domiz in northern Iraq and find out what everyday life in a camp is really like.**

People desperately or resignedly waiting for help in the heat and the dust – this is the image most of us associate with refugee

### Project details

Year of development : 2014

Created by Dirk Jan Visser, Jan



AGGING



CAMP CONSTRUCTION ROUTE



open this kitchen set you need the knife (inside this box)



'On his way to the bakers my husband was arrested'



Firas reopened his building materials store in no-man's-land.



We fled because of the safety of our

Camp Facts

used for receiving new arrivals, with the exception of family reunification.

The camp is located 20 kms southeast of Dohuk city, in Iraqi Kurdistan and 60 km from Syria-Iraq border.

The size of Domiz Camp is 1,142,500 m<sup>2</sup>.

- Collection Navigator
- ← all lists | [Collection Index](#)
- Bookmarks
- List automatically created from visible pages on 2018-06-02 00:59:33
- 1 Refugee Republic :: Jumpstarting  
<https://refugeerepublic.submarinechannel.com/>
  - 2 Refugee Republic :: Camp Constr  
<https://refugeerepublic.submarinechannel.com/wi>
  - 3 Refugee Republic :: Jumpstarting  
<https://refugeerepublic.submarinechannel.com/in>
  - 4 Refugee Republic :: Camp Money  
<https://refugeerepublic.submarinechannel.com/wi>
  - 5 Refugee Republic :: Jumpstarting  
<https://refugeerepublic.submarinechannel.com/in>

Metadata

BOOKMARK 1 OF 26

**Refugee Republic :: Jumpstarting a new existence in an emerging city. Everyday life in a refugee camp.**

DESCRIPTION

Add annotation

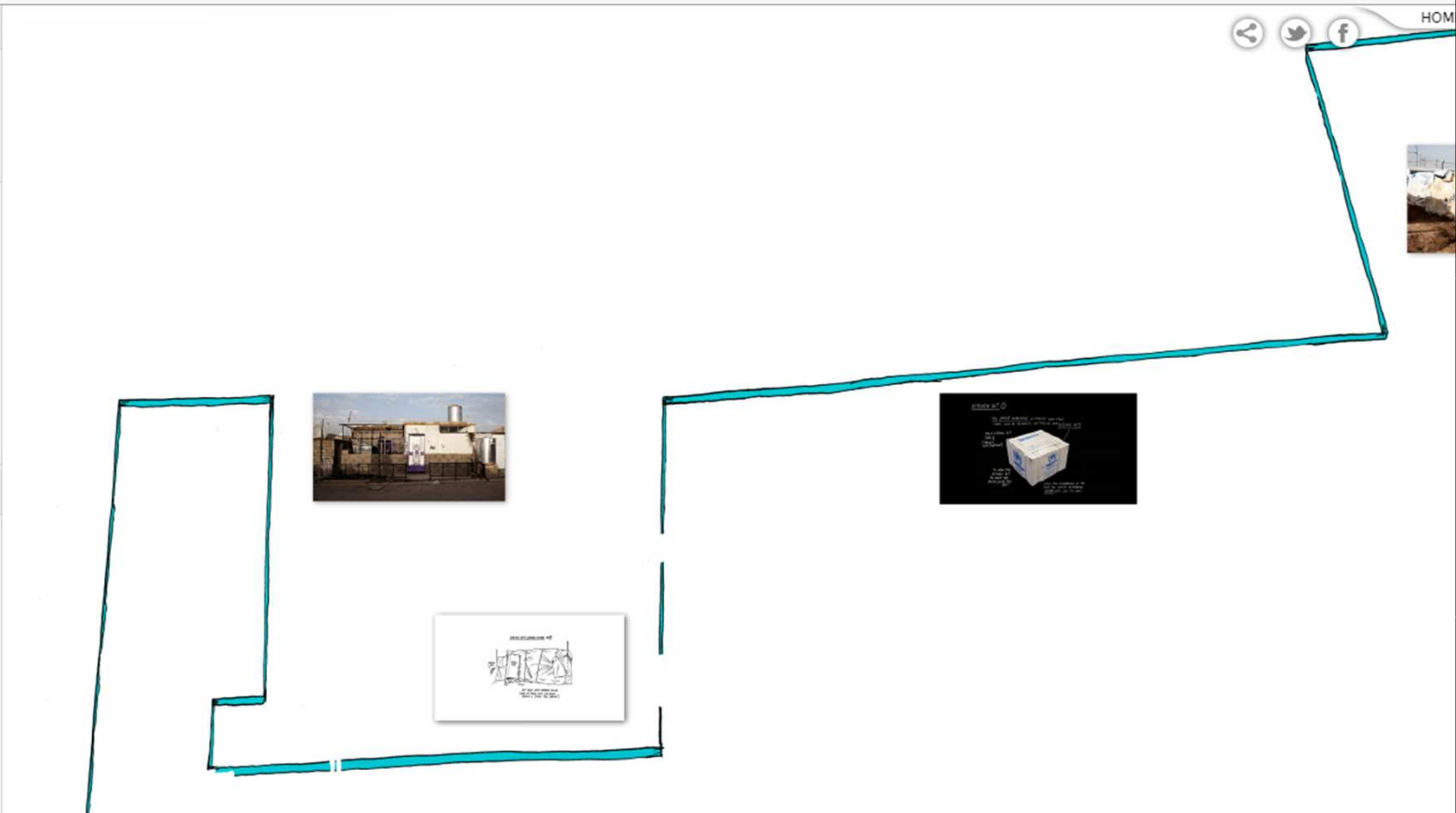
PAGE PROPERTIES


PAGE TITLE

Refugee Republic :: Jumpstarting a new existence in an emerging city. Everyday life in a refugee camp.

PAGE URL

<https://refugeerepublic.submarinechannel.com/>



**CAMP CONSTRUCTION ROUTE** → become a  To open this kitchen set you need the knife (inside this box)  'On his way to the bakers my husband was arrested'

**Camp Facts** | ... ilation are below the age of 15. 57% of the population are aged between 15 and 49, only 38% of this group are female. The average age is 21. In November 2014 t

# Preserving Interactives

White Paper

May 2018

Author

Erwin Verbruggen  
Sound and Vision

# Server-side Preservation of Dynamic Websites

White Paper

July 2018

Prepared by Rasa Bočytė  
University Supervisor Annet Dekker (UvA)  
Internship Supervisors Erwin Verbruggen, Jesse de Vos (Sound and Vision)



<http://publications.beeldengeluid.nl>



# *Breathe*

## A Ghost Story by Kate Pullinger

*Caylin Smith, Legal Deposit Libraries Senior Project Manager*

*No Time to Wait, BFI, London, October 25<sup>th</sup> 2018*



# Outline

- Context

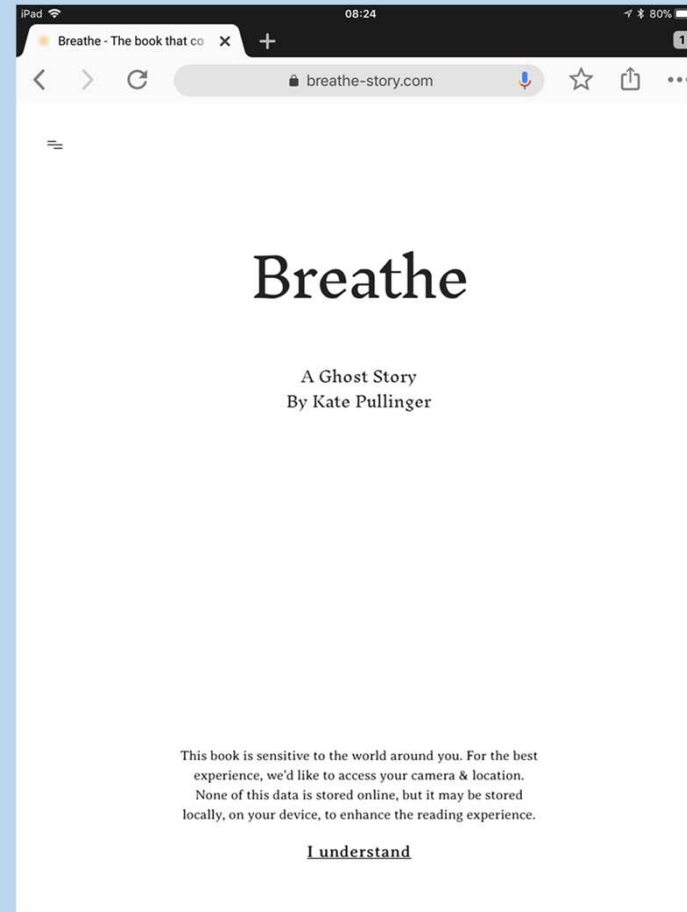
- UK Non-Print Legal Deposit
- Emerging Formats project

- About *Breathe*

- <https://breathe-story.com/>

- Capturing *Breathe* using web archiving tools

- Heritrix
- Webrecorder



# UK Non-Print Legal Deposit

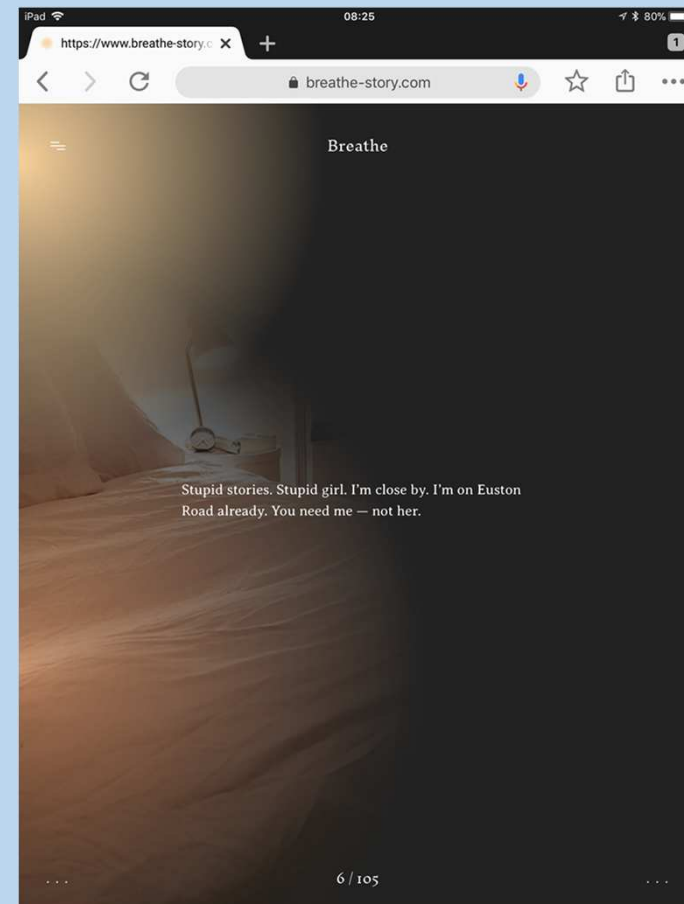
- Legal Deposit has existed in the UK in some form since 1662
- The Legal Deposit Libraries Act 2003
  - 1 copy of a publication sent to the British Library and any of the other libraries that claim it
- The Legal Deposit Libraries (Non-Print Works) Regulations 2013
  - Allowed the libraries to collect publications created in digital formats
  - Publishers must deposit a digital file that is suitable for long-term preservation
- Currently collect eBooks (EPUB and PDF), eJournals (PDF), maps (raster and vector formats), notated music (PDF), and the UK web domain (WARC)
- Preserved within the British Library's digital repository
- Access provided onsite on designated desktop terminals at each LDL

# Emerging Formats project

- Two year project (April 2017 – present)
- Identifying publications that are in scope to collect under legal deposit
- Exploring the collection management needs of more-complex digital publications
- Focused on three types of content
  - eBook mobile apps (e.g. academic books, dictionaries, children's literature)
  - Web-based interactive narratives (e.g. narrative games, ambient literature, literature written for platforms like Twine)
  - Structured data (e.g. statistics, official reports)

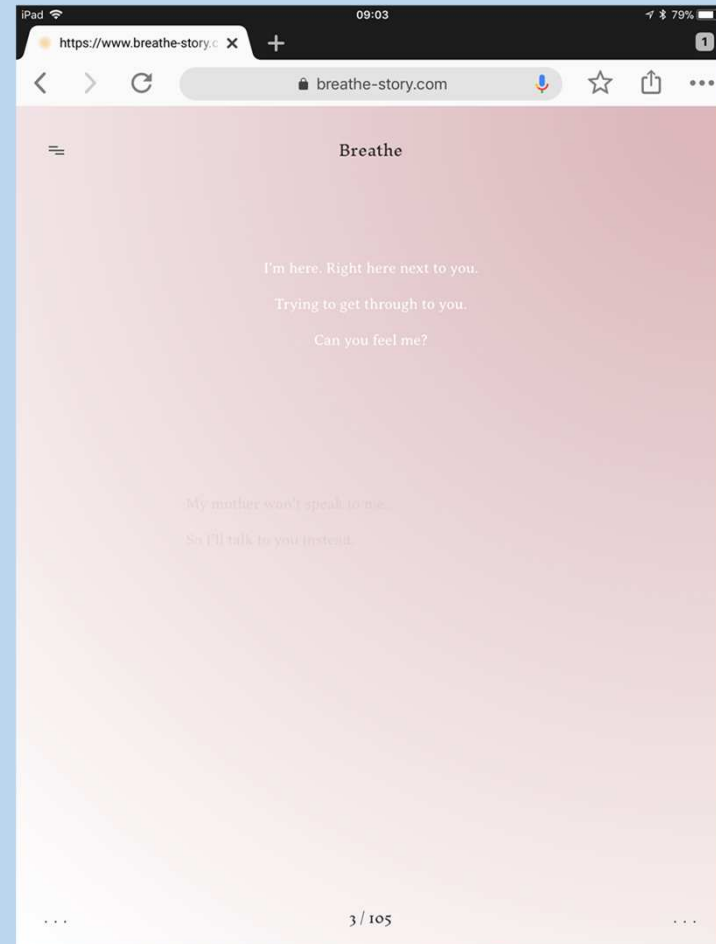
# About *Breathe*

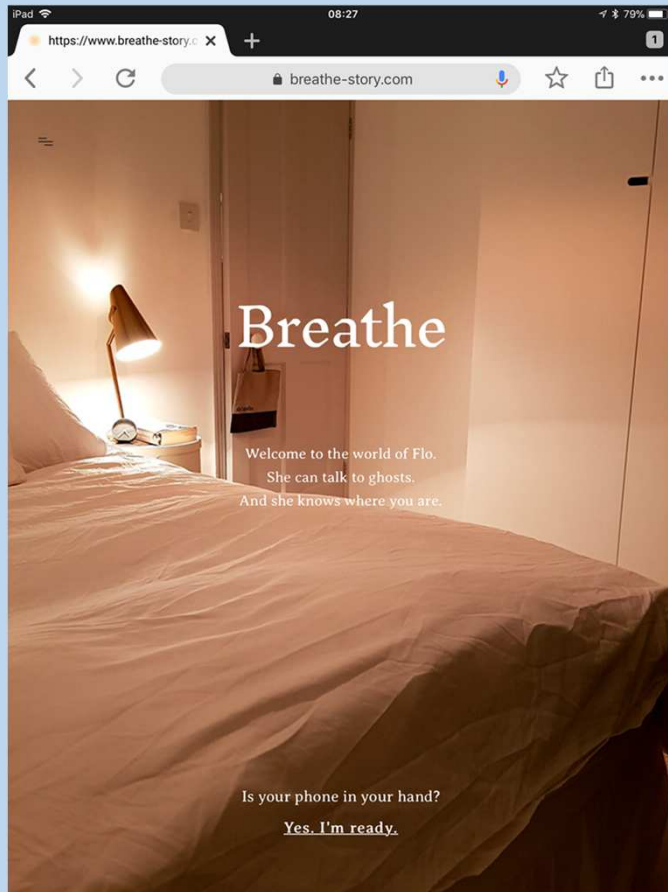
- Created by Kate Pullinger in collaboration with Editions at Play (Visual Editions + Google's Creative Lab)
- Read time 15-20 minutes; 105 pages in total
- Browser-based work of ambient fiction written in HTML that is best viewed on mobile devices
- Reader progresses the narrative by swiping left on their mobile device, or touching icon in bottom right corner
- Uses APIs to personalise the narrative to the reader's surroundings
  - Use of device's camera, GPS, and weather data
    - a "book that comes to you"



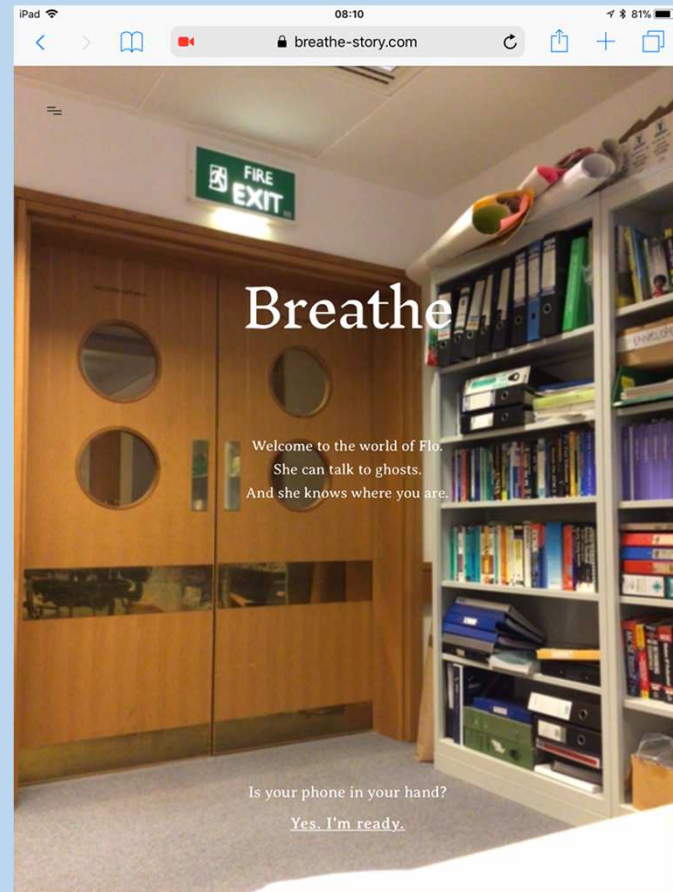
# Observations

- Mainly textual, but does include some images
  - Use of device's camera to create background imagery
- Different types of interaction (e.g. tilting the screen) are required to reveal the full story
  - The narrative does not always appear immediately onscreen
- Behavior is impacted by type of device (mobile phone, tablet), operating system (iOS, Android), browser





*Breathe* as displayed in Chrome



*Breathe* as displayed in Safari

# Capturing *Breathe*

- Heritrix
- Web Recorder



Heritrix

## Targets &gt; Breathe: A Ghost Story by Kate Pullinger

View Edit

Overview Metadata Crawl policy and Schedule NPLD scope (+) UKWA Licencing (-)

Watched Target

<b>Title</b>	Breathe: A Ghost Story by Kate Pullinger
<b>Seed URL(s)</b> (One or more URLs, separated by commas, including the http://)	<a href="https://breathe-story.com/">https://breathe-story.com/</a>
<b>Aliases/Synonyms</b> (If this content is also hosted at another URL, record it here. For example, if <a href="http://www.company.co.uk">www.company.co.uk</a> is the same as <a href="http://www.company.com">www.company.com</a> )	
<b>Record creation date</b>	22-02-2018
<b>Record last update</b>	13-09-2018 10:01
<b>Owned by</b>	Nicola Bingham
<b>QA Status</b>	none
<b>Live Site Status</b> (If known, please add the current status of the site)	Still live
<b>Hidden</b> (Is this target hidden from public)	no
<b>Key Site</b> (Is this a 'key site', i.e. one of such significance that it requires higher levels of QA and archival management)	no
<b>WCT ID</b>	
<b>SPT ID</b>	
<b>Keywords</b> (Free text keywords, private to you)	

**Instances**

<https://breathe-story.com/>



- Search QA Wayback
- Search Open UK Web Archive
- Search Other Web Archives

**Crawl Logs**


<https://breathe-story.com/>

- Find URL in crawl logs
- Find all URLs with this prefix in the crawl logs

Screen capture of *Breathe* within the BL's Annotation Curation Tool, an open source, selective web archiving workflow management application

You are here: [Home](#) > Open UK Web Archive

Provided by: 

Enter Web Address:

Searched for <https://breathe-story.com/> Set Anchor Window: none 0 Results

**Search Results for 1 Jan, 1996 - 31 Dec, 2018**

Jan 1996	Jan 1998	Jan 2000	Jan 2002	Jan 2004	Jan 2006	Jan 2008	Jan 2010	Jan 2012	Jan 2014	Jan 2016	Jan 2018 -	14 pages
- Dec 1997	- Dec 1999	- Dec 2001	- Dec 2003	- Dec 2005	- Dec 2007	- Dec 2009	- Dec 2011	- Dec 2013	- Dec 2015	- Dec 2017		
0 pages	0 pages	0 pages	0 pages	0 pages	0 pages	0 pages	0 pages	0 pages	0 pages	0 pages	0 pages	0 pages

- [23 Feb, 2018](#) \*
- [24 Feb, 2018](#) \*
- [25 Feb, 2018](#) \*
- [26 Feb, 2018](#) \*
- [27 Feb, 2018](#) \*
- [28 Feb, 2018](#) \*
- [1 Mar, 2018](#) \*
- [13 Sep, 2018](#) \*
- [14 Sep, 2018](#) \*
- [15 Sep, 2018](#) \*
- [16 Sep, 2018](#) \*
- [17 Sep, 2018](#) \*
- [18 Sep, 2018](#) \*
- [19 Sep, 2018](#) \*

Screen capture of the UK Web Archive showing the amount of crawls for *Breathe*

UK WA External links, forms and search boxes may not function within this archived website.

<https://breathe-story.com/> Go «MAR SEP OCT

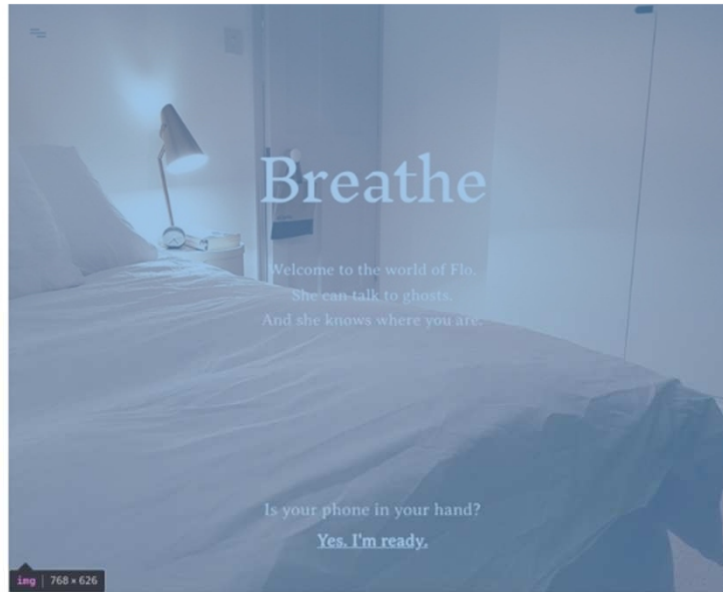
Show all captures 23 Feb 18 - 19 Sep 18

2017 19 2018 2019

Close ×  
Cymraeg  
Help ?

Screen capture of *Breathe* as displayed in the UK Web Archive

Webrecorder



```
<doctype html>
<html lang="en" c...
<head>
  <body data-page...
    <div id="root">
      <canvas widt...
        <div class...
          <video p...
          <div class...
            
              https://www.breathe-story.com/static/default-user-media-fc6e83b33852ed9fcb6d1b0689892f58.jpg
            </div>
          <header...
          <aside...
          <div class="ready app_welcome-pages__3yCz4 app_book-section__3HaSR" style="background-color: rgba(255, 255, 255, 0);">
            <h1 style="top: 25vh; color: rgb(255, 255, 255);">Breathe</h1>
            <hgroup style="bottom: 7vh; top: auto; color: rgb(255, 255, 255); opacity: 0;">
              <div class="blurb" style="opacity: 1;">
                <div class="cta-area" style="opacity: 1; color: rgb(255, 255, 255);">
            </div>
          </div>
        </div>
      </div>
    </div>
  </body>
</html>
```

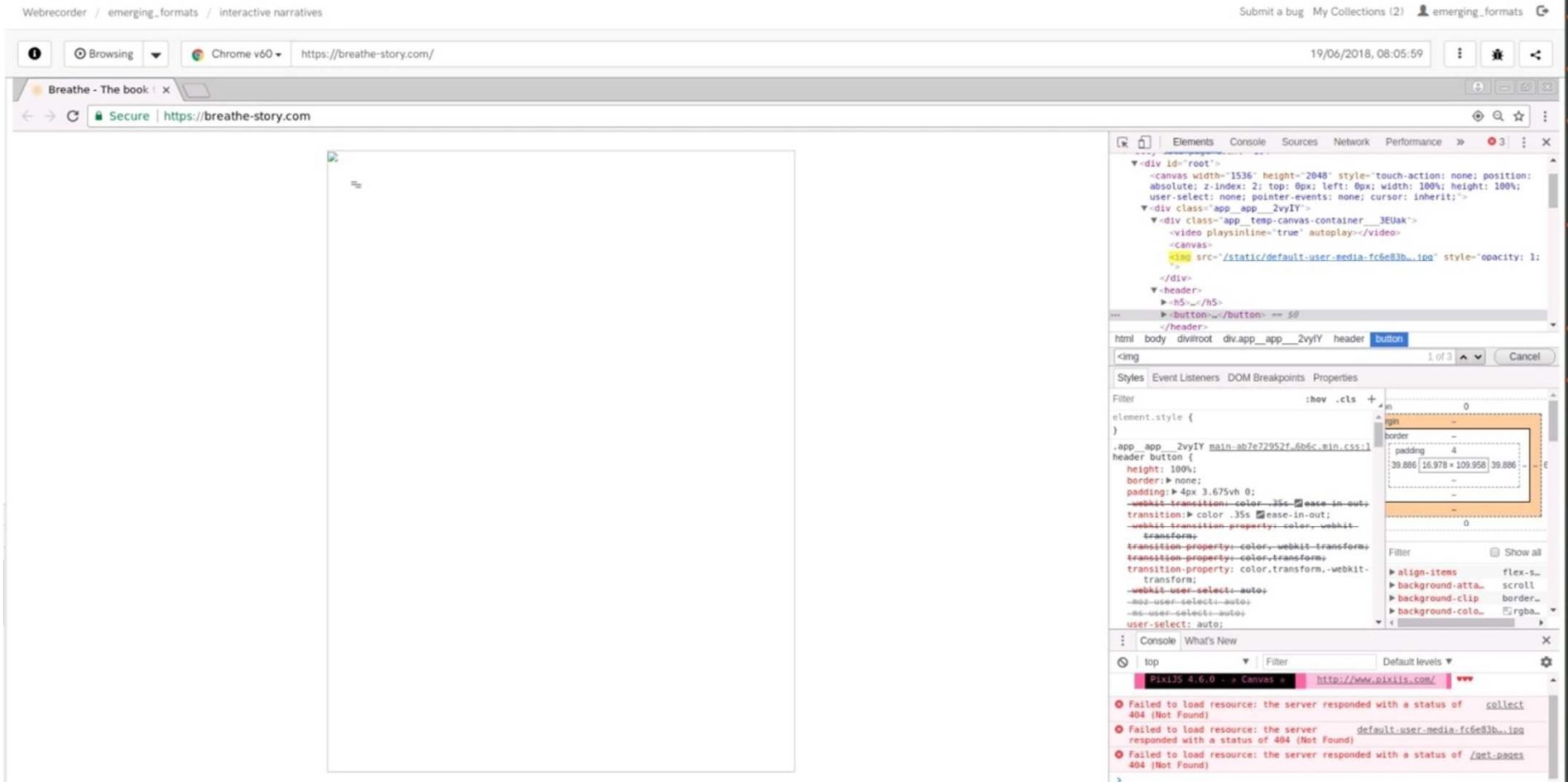
```
element.style {
}

app_app__2v_main-ab7e72952f-6b6c_min.css:1
yIY {
  height: 100%;
  width: 100%;
  padding-top: 10.5vh;
  background: > #fff;
}

*, :after, main-ab7e72952f-6b6c_min.css:1
:before {
  -webkit-box-sizing: border-box;
  box-sizing: border-box;
}

div {
  display: block;
}
```

Screen capture of *Breathe* (cover page) in Chrome DevTools on Linux desktop computer



Screen capture of *Breathe* (cover page) within Chrome (v60) within Webrecorder Player



## Breathe

I talk to my mother at night, but she doesn't answer me. I listen for her, I wait for her, I do my best to let her in. I know she must be there, somewhere. But she does not speak to me.

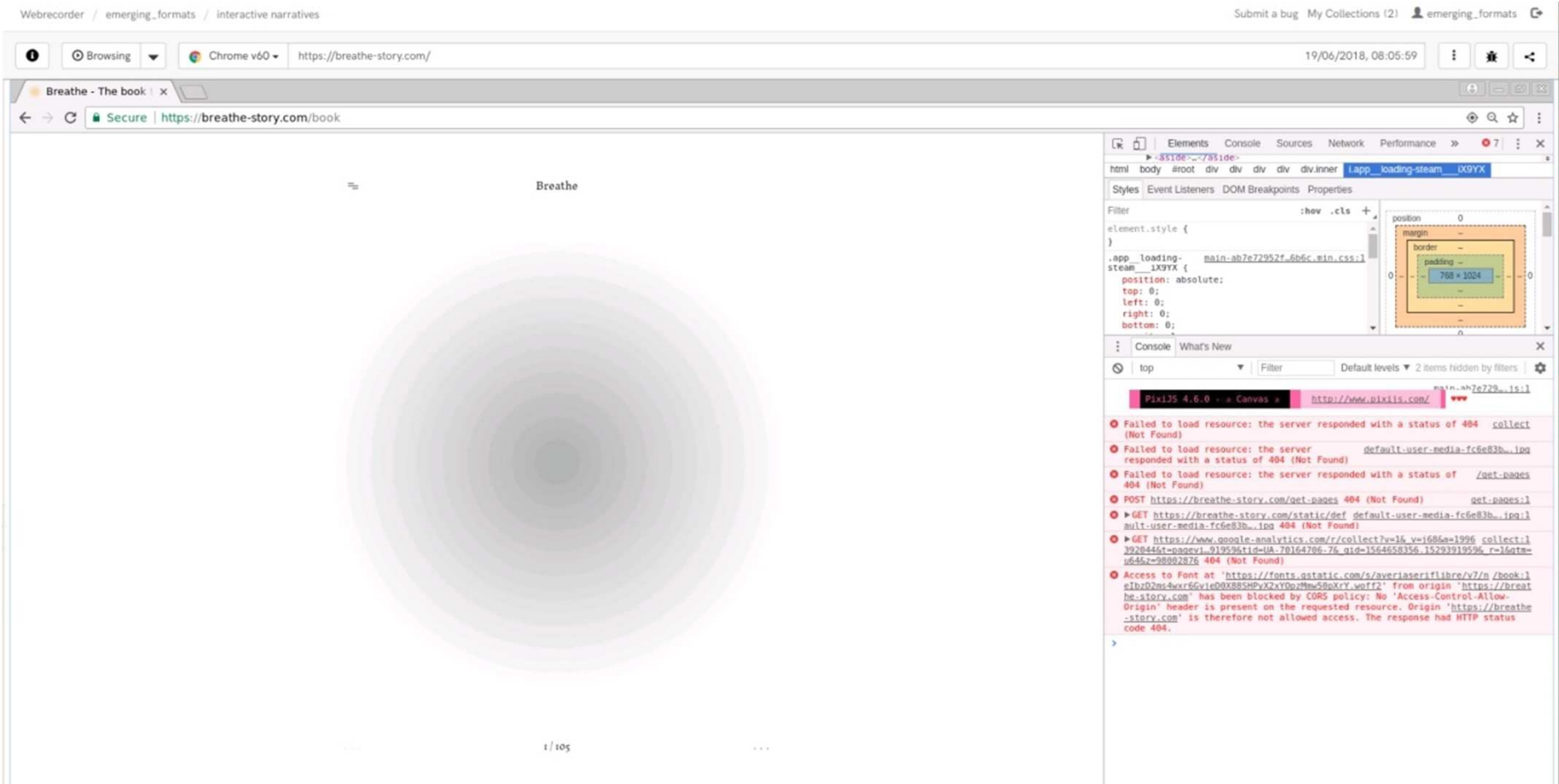
1 / 105

The screenshot shows the Chrome DevTools interface. The top bar includes tabs for Elements, Sources, Network, Performance, Memory, Application, Security, Audits, and Console. The 'Elements' tab is active, displaying a tree view of the page's DOM. The selected element is a paragraph within a nested structure of divs. The text content is: "I talk to my mother at night, but she doesn't answer me. I listen for her, I wait for her, I do my best to let her in. I know she must be there, somewhere. But she does not speak to me."

The 'Styles' pane on the right shows the default user agent styles for a `div` element, including `display: block;`. The breadcrumb at the bottom of the Elements pane reads: `html.js.flexbox.canvas.webgl.localStorage body div#root div.book-section.app_app_2vyfY div.app_carousel__Lo3R-app_book-section__3Ha5R div.panels-container div.next.app_panel__2_NwX div.inner div`.

Screen capture of *Breathe* (page 1) in Chrome DevTools on Linux desktop computer





Screen capture of *Breathe* (page 1) within Chrome (v60) within Webrecorder Player

## Next steps

- Identify URLs of individual pages to crawl with Heritrix
  - Engage with Editions at Play to better understand how *Breathe* was created
- Engage with Webrecorder community to see whether and how the text of the narrative can be captured

# Thank you!



@caylinssmith, #uknpId



caylin.smith@bl.uk



emerging-formats@bl.uk

Acknowledgements: Nicola Bingham, Ian Cooke, Maureen Pennock,  
and Adam Leggott

# Panel discussion

- Learning from previous experiences
- Creating a body of knowledge - with case studies
- Organising events to accrue knowledge, form networks
- Working with creators and industry, including tech companies
- Standards and standardisation:
  - how soon is too soon for standards?
  - opportunities for open source advocacy?
  - what is our role as preservation professionals?
- System suppliers and service suppliers
- Emulators and emulation for operating systems etc
- Leveraging developer tools for digipres outcomes

# Next steps

- Organise **events** to build knowledge and form networks
- Create **working groups** to co-ordinate activities in the networks
- Create **forums** for discussion by the networks - Slack workspaces / channels?
- Invite **industry / makers** to present their work / expertise
- Talk to creators about **preservation** - explain our work to them, in clear language

**Don't miss:** 9 March 2019, CSM London - Vanishing Point: The Curation and Preservation of Virtual Reality

[http://bit.ly/VanishingPoint\\_CSM](http://bit.ly/VanishingPoint_CSM)