









## Introduction

\$ PRELOH FDYLWDWLRQ V\ VWHP ZDV FRQVWUXFWHG DW WKH  
WKH 8QLYHUVLW\ RI WKH :HVWHUQ &DSHV 8:& SLORW SO  
UHVHUYRLU WHPSHUDWXUH JDXJHVW ~~BOGONZYBUDDFDLRQ~~ Y  
WKH 8:& GHVLJQ DQ DFRXVWLF OLVWHQLQJ GHYLFH ZDV L  
FDYLWDWLRQ YHULILFDWLRQ 7KH 8:& V\ VWHP KDV D N:  
IHDWXUHV D K\GUDXOLF ~~FDKHDGXSJUDGEB&WWRDY~~ +S %RWK  
VWHHO SLSLQJ WR PD[LPLVH FRUURVLRQ UHVLVWDQFH 7KH  
FDSDFLW\ RI DSSUR[LPDWHO\ / ZKHUHDV WKH SLORW SO  
H[~~SHPHQW~~ REMHFWLYHV ,Q DGGLWLRQ WKH UHVHUYRLU RI  
FRQWURO WKH WHPSHUDWXUH RI WKH ZDWHU

)LJXUH 5HV ~~ELQW~~ FDYLWDWLRQ V\ VWHP IRU OHDNV DQG



# Cavitation fundamentals

)LJXUH \$Q DWWHPSW WR GHPRQVWUDWH V\SKRQLQJ FDYL  
DQG WØRWUH EXFNHWV

7KH IXQGDPHQWDOV IRU FDYLWDWLRQ RFFXU XQGHU FHU  
0LVVRXUL 8QLYHUVLW\ LQ WKH +LJK %D\ /DERUDWRU\ ZKL  
6\SKRQLQJ FDYLWDWLRQ RFFXUV XQGHU FHU\WDUHQHWRXQGD  
PP GLDPHWHU SLSH DQG EXFNHWV ZDV XVHG WR GHPRQ  
XQGHUVWDQGLQJ RI WKLV FRQFHSW WKH WDVN DW KDQG Z  
DQRWKHU ZLWKRXW WKH DGGLWLRQRIQDKPHLEKDWQZFDWHSXIP  
DQG EXEEOH IRUPLQJ RFFXUV ZKHQ QDWXUDO FDYLWDWLRQ  
WKH EXEEOH IRUPLQJ DW D FHUWDLQ KHLJKW UHVWULFWLF  
IROORZV

3 !YB ð 3!JK !YB ð !JK

:KHUH

3 3 UHSUHVHQWV GLIIHUHQW SUHVXUHV DW SRLQWV D  
Y Y UHSUHVHQWV WKH YHORFLWLHV DW SRLQWV DQG  
K K UHSUHVHQWV WKH KHLJKWV DW SRLQWV DQG





## The outcome of the project

7KH FROODERUDWLRQ EHWZHHQ WKH WZR LQVWLWXWLRQV Y  
SHUVSHFWLYH 7KH GHYHORSPHQW RI WKH PRELOH FDYLWD  
LQLWLDO WHVWLQJ DQG FHUWDOO\ RSB\ LPR VDXPSRQDSKDFLWW  
KDYH EHHQ LGHQWLILHG DQG ZHUH DGGUHVVHG WKURXJK  
YDU\LQJ RULILFH VL]HV ,Q DGGLWLRQ OHDNV DQG EORFI  
SXPSLQJ HIILFLHQF\

7KH DGDSWDWLRQ RI RULILFH SODWHV LQ K\GURG\QDPLF  
FDYLWDWLRQ HIIHFWV \$PRQJVV DOO H[SHULPHQWV WKH  
VL]H VR IDU WKDW VKRZHG WKH HGHDO\ LFRJ\GK MWLQOLV KIVUWK  
RI VHOHFWLQJ DSSURSULDWH RULILFH GLPHQVLRQV WR DFK  
SROOXWDQWV \*LYHQLWKH OLVWVHG WIDULHGEJHR RI WKH RUL  
IDFLOLWDWH WKH UDSLQ FDKQJH LQ WKH SUHVXUH GURS  
'HQJDO HDW SHU\HFFVLSH DELOLWLHV RI WKH +& V\VWHP DQG  
EH H[SORUHG LQ KLV UHVHDFK DW 8:&

## Upcoming activities

7KH PRQWKV RYSHYHG DWKK ZD\ IRUZDUG IRU D VWURQJHU  
LQVWLWXWLRQV LQ SDUWLFXODU WKH 'HSDUWPHQW RI &KH  
WKH &LYLO (QJLQHULQJ 'HSDUWPHQW DW WKH 8QWYHGUVLW  
DW 80.& LV RQJRLQJ DQG GRFXPHQWHG DORQJ WKH HD\ 7I  
UHYLWZHG QDO DUH KLJKO\ OLNHO\ EDVHG RQ IXUWKHU FRO

\$GGLWLRQDO UHVHDFK FRXOG H[SORUH WKH HIIHFWV RI Y  
DV WKH QXPEHU RI KROHV WR DFFRPPRGDWH WKH VXUIDFH  
7KH SDUDPHWHUV RI WKH V\VWHP LQ DW HG\ DORQJ, 7I DQOOGVHWR  
RI WKH VHOHFWHG G\HV 9HULI\LQJ WKDW IUHH UDGLFDQV  
K\GURJHQ SHUR[LGHV\K OLVWVHG WIDULHGEJHRWKH LQ PHWKRGV

